ADF-Serials Telegraph Newsletter

Volume 10, Issue 4. Another COVID Ed.

Welcome to the ADF-Serials Telegraph.

Articles for those interested in Australian Military Aircraft History and Serials

Our Editorial and contributing Members in this issue are:
Garry "Shep" Shepherdson, John "JB" Bennett, and Gordon "Asuwere" Birkett

As stated on our Web Page; http://www.adf-serials.com.au/newsletter.htm

"First published in November 2002, then regularly until July 2008, the ADF-Serials Newsletter provided subscribers various news and articles that would be of interest to those in Australian Military Heritage. Darren Crick was the first Editor and Site Host; the later role he maintains.

The Newsletter from December 2002 was compiled by Jan Herivel who tirelessly composed each issue for nearly six years. She was supported by contributors from a variety of backgrounds on subjects ranging from 1914 to the current period. It wasn't easy due to the ebb and flow of contributions, but regular columns were kept by those who always made Jan's deadlines. Jan has since left this site to further her professional ambitions.

As stated "The Current ADF-Serials Telegraph is a more modest version than its predecessor, but maintains the direction of being an outlet and circulating Email Newsletter for this site".

Words from **me**
I would argue that it is not a modest version anymore as recent years issues are breaking both page records populated with top quality articles! John and I say that comment is now truly being too modest!

As stated, the original Newsletter that started from December 2002 and ended in 2008, and was circulated for 38 Editions, where by now...excluding this edition, the Telegraph has been posted 44 editions since 2011 to the beginning of this year, 2020. The ebb and flow of contributions is still a major problem and concern and if it wasn't for stalwarts like John Bennett and a few recent authors who have contributed alone and by me, I'm sure new articles and public interest would have died long ago. Like other parts of the ADF Serials.com.au site, we all do this for free and to share history.

From my prospective, all research and presented articles are produced in good faith, based on thorough research with official documentation and accumulated knowledge that, in most parts is considered "air tight", but we are always willing to include discussion should they conflict with written history, by presenting evidence, or new evidence presented.

The included Authors in each edition, are also providing their articles, based on their research that is supported by official period documentation and photos, that may provide interest and insight in lesser known subjects' or circumstances, otherwise forgotten or not fully covered by recorded History to date.

Other Stories may be of a personal account or passed down as viewed through their eyes only, and will be stated as such.

Our Bottom Line:
We do reserve the final say and do standby our presented article's accuracy; until alternative or official documentation are provisioned to state the facts are otherwise. *We will not accept or publish any knee jerk comment or unsupportive counter arguments.*

ADF-Serials Generic House Rules:

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The main site also includes:

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In this Issue

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Korea: Sqn Ldr Grahame Strout: His Missing Flight and then their Missing Leader.

Written by: Gordon R. Birkett @2020

On the 25th June 1950, an American request for aid in Korea with pilots assisting ground crews with arming of aircraft and fitting of long range fuel tanks for ferrying to Korea from Iwakuni, Japan. The following morning, the trip to Korea was cancelled, and with wing tanks unloaded, local cross country tactical exercises and section formations flown instead. The following day the wait continued and the base was on a war footing with aircraft dispersed in event of a North Korean air attack.

77SQN Mustang taking off. [*All Photographs herein are ADF-Serials.com.au sourced except where stated*].

The weather conditions were turning bad due to a nearby typhoon below Japan, on the 28th June, with all aircraft being grounded at Iwakuni. The following day, flying recommenced with section formations, low flying and strafing, but was interrupted with all aircraft returning to base, with the pilots being advised that the squadron had been placed under control of the 5th Air Force Command (USAF).

A total of twenty-nine RAAF pilots were on strength at the end of July, including an additional twelve pilots flown from Australia on the 8th July 1950.

The squadron prepared for operations against the North Korean Ground Forces, equipment and lines of communications. All aircraft were armed, fitted with wing tanks and dispersed with stand-by crews detailed. Pilots were issued with pistols, ammunition, emergency rations, medical kits etc, and all operational equipment was checked and made serviceable over the next two days. Lectures, water and ground training continued.

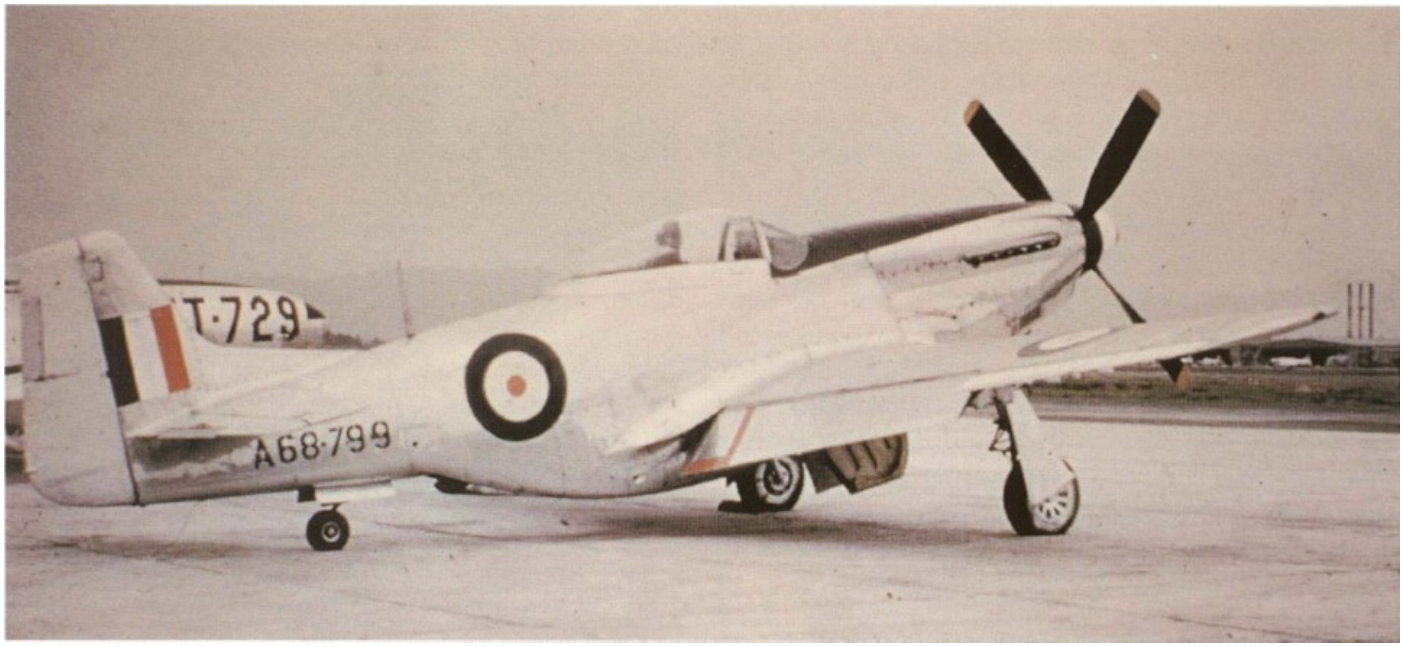
Pilots were advised if they are shot down in enemy held territory, to standby their aircraft as the best method of rescue by helicopter. If the terrain was flat, even US Army L5s would be possible.

As in the previous Pacific War, the Air Sea Rescue (ASR) Organisation in around Japan and South Korea coastal areas was excellent, and all pilots had complete faith in the knowledge that they will be also rescued from the sea within an acceptable time scale by helicopter, USAF B-17H dropped Lifeboats, Crash launches, naval Ships, USAF/USN SA16/JR2F-1 Albatross Amphibians, USN Martin Mariners and RAF Sunderland Flying Boats.

On the 30th June 1950, approval was given by the Australian Government to assist in the policing of South Korea, and to be placed formally under the 5th Air Force Command (USAF).

The following day, the first assigned scheduled mission over South Korea was cancelled due to bad weather.

On the 2nd July 1950, the first three operational missions since the end of the Pacific War were flown when the C-47 aircraft were used to escort evacuation aircraft loaded with wounded from Korea with four aircraft flight (A68-799/708/709) lead by Sqn Ldr Graham Strout Serv#031401 in A68-803 between 0505hrs and 0824hrs, and a second one escorting USAF B-26 aircraft on low/medium bombing and strafing with a further flight of eight (A68-726/753/772/720/705/757/723 which aborted) lead by W/Cdr Lou Spence DFC Serv#011315, in A68-809 between 0727hrs and 11.50hrs.



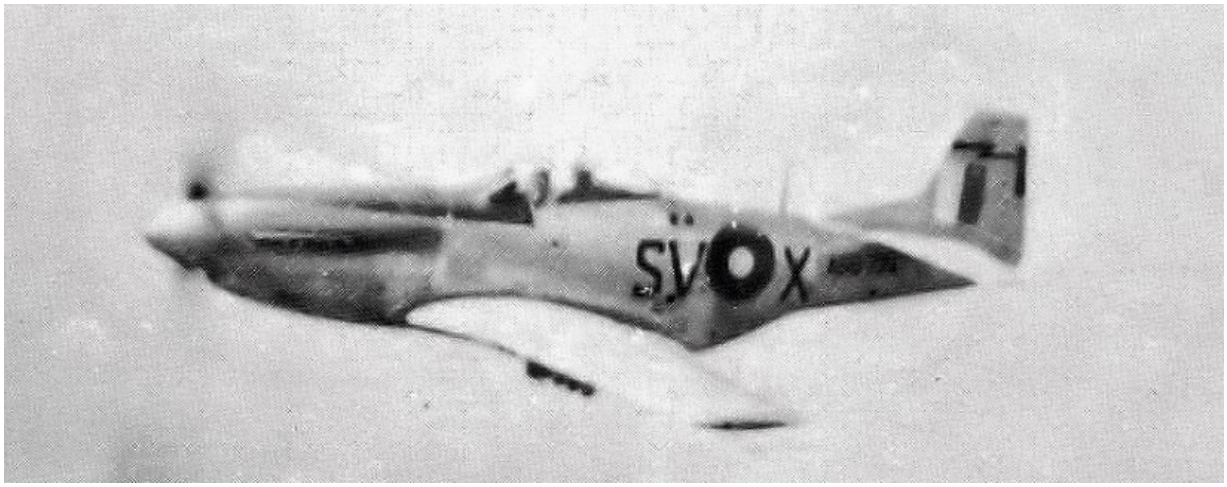
A68-799.

A third mission on that day was for USAF B-29 aircraft, escorted with a flight of six aircraft (A68-765/813/757/709/729), with F/Lt Stuart "Brick" Bradford Serv#022040 leading in A68-799 (above, who flew it on both 1st and 3rd Missions on the 2nd July 1950).

Sqn Ldr Grahame Strout flew A68-803 *"Swift in Destruction"* on 77 Squadron's first operational mission on the 2nd July 1950. Pictured in 1948 with the above scheme and art work. By April 1951 when she was written off, her spinner colour and cowling paint was long gone.

The following day, 3rd July 1950, they performed two more missions, one a strike of targets of opportunity and another escorting USAF B-26s, which on landing on the second mission resulted in the first loss of squadron Mustang.

A68-774 after a four hour mission was landed short and ground looped on landing at Iwakuni, Japan. Fortunately, the Pilot, P/O Leslie Reading serv#A5879 was not injured.



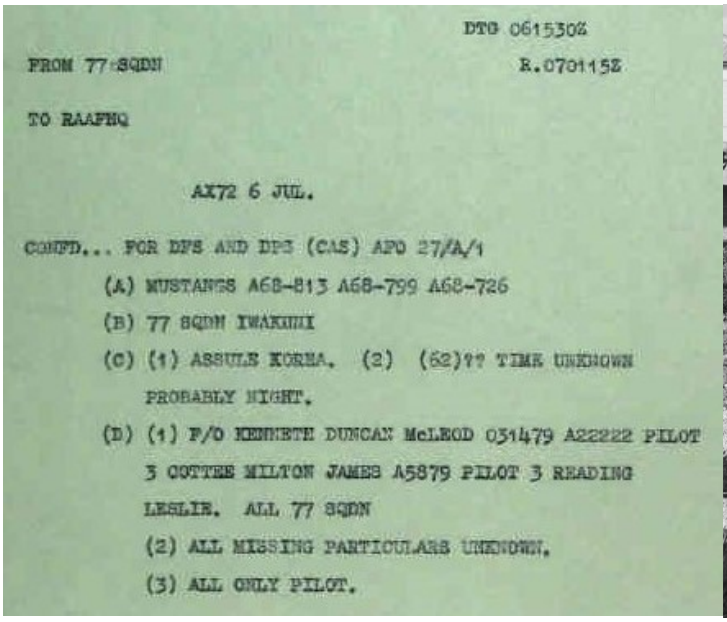
Pictured here when A68-774 was with 76 Squadron RAAF earlier, when coded as SV-X.

Days of repeated sorties and missions later, 1737hrs on the 6th July 1950, a flight of four aircraft (A68-799/813/726), led by A/Sqn Ldr Graham Strout Serv#O31401 in A68-809 (Spence's personal aircraft) were detailed to gun and rocket attack on a bridge at Pyongtaek below the 38th Parallel.

Strout's aircraft unfortunately became unserviceable shortly after take-off and returned to Iwakuni, Japan whilst the remaining flight of three (A68-799/813/726) led by F/O Kenneth D McLeod Serv#031479 in A68-799 continued and attacked the target.

Following their gun and rocket attack on a bridge at Pyongtaek, the flight had ran low on fuel and requested ground control that they remain overnight at Taegon, South Korea. However, the balloon went up at 77 Squadron when these aircraft had not returned at Iwakuni at the expected time, and a report to RAAFHQ was sent, stating all three Pilots were missing.

Actions were taken to advise the next of kin verbally that they were missing: F/O McLeod in A68-799, P/O Milton (Milt) J Cottee Serv#A22222(Pictured below; Source: AWM), in A68-813 and P/O Leslie Reading serv#A5879 in A68-726.



DTG 061530Z

FROM 77 SQDN R.070115Z

TO RAAFHQ

AX72 6 JUL.

CONFD... FOR DFS AND DPS (CAS) APO 27/A/1

(A) MUSTANGS A68-813 A68-799 A68-726

(B) 77 SQDN IWAKUNI

(C) (1) ASSULT KOREA. (2) (62)?? TIME UNKNOWN PROBABLY NIGHT.

(D) (1) F/O KENNETH DUNCAN McLEOD 031479 A22222 PILOT 3 COTTEE MILTON JAMES A5879 PILOT 3 READING LESLIE. ALL 77 SQDN

(2) ALL MISSING PARTICULARS UNKNOWN.

(3) ALL ONLY PILOT.

77SQN signal advising that crews were missing.
[*NAA: A705, 166/8/1458*].

A portrait of Milt Cottee.
[*AWM Image P03119.029*].

The aircraft were refuelled the following morning in daylight by the USAF and departed Taegon at 0725hrs and landed at Iwakuni at 0835hrs. The missing flight had arrived, much to the original flight Leader relief.

However, and sadly after his previous night's worries, the flight leader would be the first operational loss of a Mustang. This took place on the 7th July 1950, and with grim thought for all pilots, the first fatality for the British Commonwealth Occupational Forces in Japan.

A/Sqn Ldr Graham Strout had taken off at 1139hrs in Mustang A68-757 from Iwakuni, Japan as part of a four aircraft flight to strafe and rocket North Korean supplies and lines of communications on the eastern coastal side of Korea just below the 38th parallel in the vicinity of Samchok. The balance of the four aircraft flight consisted of F/Lt Tom Murphy Serv#033171 in A68-765, F/Sgt W M Garroway Serv# A22133 in A68-707 and P/O Geoffrey I Stephens Serv#A0647 in A68-739.

The four aircraft approached the town of Samchok from the east and Strout was clearly heard over the R/T to instruct his formation to jettison their wing tanks when approaching the town. His tanks were seen to drop from his aircraft and he was immediately seen to dive towards the railway yards.

Other aircraft broke away to select their own targets and from their views at this time, had not seen Strout's attack develop. On looking back following his attack, F/Lt Murphy saw a large fire spreading just beyond the railway yards where Strout had dive to. It was assumed that this was a result of Strout's jettisoned and partially full wing tanks, hitting the ground. With the balance of the flight engaging separate targets, Garroway was repeatedly heard calling Strout on the R/T without any reply.

Strafing and rocketing of the target area by the flight resulted in one truck destroyed; nine damaged, and hits on the rail yard and rail trucks stationary, with unknown results. At no time was there any anti-aircraft fire noticed.

When the formation joined up at the designated rendezvous point at the appointed time, they set off to base with one less aircraft.

F/Lt Murphy's aircraft on the 7th July 1950, pictured earlier in the forties when she was "Uncle" in the post Pacific War period.

The following day between 1053Hrs and 1420hrs, a four aircraft flight (A68-729/738/709) returned led by W/Cdr Lou Spence in A68-782. Spence flew low over the spot where the fire was seen by F/Lt Murphy the day before. This large black area near the railway yard gave every appearance of the remains of a fire caused by an aircraft crash. Spence felt that Strout would not have attacked a village hut some 200 yards from the intended railway yard and that the result of the crash could have been attributed to either small arms fire or having flown into a cable, or finally, had taken a too violent evasive action and had "flicked" over and crashed.

Author: *my view as a contributing issue for the crash is perhaps that he was sleep deprived from the previous night's worrying about his three pilots of his flight who were missing, which he missed leading due to his unserviceable Mustang A68-809. They only had just arrived that morning two hours prior to him taking off on this last mission.*

Regardless of how, A/Sqn Ldr Graham Strout Serv#O31401 was pronounced missing, presumed killed, as of the 7th July 1950. The RAAF Air Board later directed that a search team should be sent to locate Strout or his remains. This happened in late December 1950 when at the time, the Pukpyong area was regained and in control by ROK forces and the recovery party was able to get there, with assisted by the ROK Navy. The team comprised Sqn Ldr Esmond New, an RAAF Presbyterian chaplain with extensive knowledge of Korea, its people and language from prior to World War II, and Sergeant Tom Henderson, a World War II veteran of RAAF search and rescue in New Guinea, Java and New Britain.

The wreckage of A68 -757 on inspection and recovery of his remains in January 1951. [*AWM image P03193.006*].

S/Ldr Stroud's remains were later buried at the United Nations Cemetery at Pusan, South Korea, on the 26th January 1951, along with the recovered remains of P/O William Percy Harrop Serv# 033272, the pilot of A68-753 who went missing on the 3rd September 1950.

Lieutenant Commander Cha (left), Commander Paik and a Naval Commando of the Republic of Korea (ROK) Navy, with Squadron Leader Esmond New, RAAF on site. [*AWM image P03193.001*].


The burial of Sqn Ldr Graham Strout photographed in 1951 and pictured, right, in 1940, as a young airman. [*NAA: A705, 166/38/1457*].

The Squadron continued to fly some 1337 hours in support of the United Nations Forces in Korea by the end of the first month, of which a large number of those being armed reconnaissance, with most sorties being flown in close support of ground forces, under the direction of ground and airborne controllers both south and beyond the 38th Parallel.

Foot Note: Sadly, within a further two months, 77Squadron would lose their Commanding Officer, Wing Commander Lou Spence Serv#011315, who whilst flying his personal aircraft, A68-809, in similar conditions whilst attacking targets in the town of Angang-ni, in the north of Korea with rockets and Napalm.
Spence flew A68-809, above, during the first week of operations over three days to only go unserviceable for Strout on the 6th July 1950.
It was during similar diving attack that Spence also failed to pull out of a dive in time in his assigned A68-809 and was killed when it crashed into the ground in much the same circumstances as Strout. Officially Spencer was posted missing, believed killed on the 9th September 1950. The death of Wing Commander Lou Spence was also a major blow to the squadron moral and on the next day Air Commodore A.M. Charlesworth C.B.E., A.F.C. was appointed the Temporary CO until the arrival of Squadron Leader R. (Dick) Cresswell.


Wing Commander Lou Spence in A68-809 and A68-809 parked on the tarmac.

Often stated as a depiction of the first mission, A51 records (Page 4/Page 5) for the B-29 Escort Mission was in fact the third mission, with A68-757 foreground being flown by P/O J Flemming Serv#A22136 here on his first mission for the day, after the Squadron had flown the C-47 Escort Mission earlier at 0505K-0824K. [*Painting: Robert Taylor, 1986 via AWM ART28996*].

Artificially coloured black and white image of 77SQN's A68-708.

Statistics: Some 168455 rounds of 0.50cal ball were fired, in addition to 15572 rounds sourced at USAF Taegu, some 78 x 500lb Bombs dropped, 778 x 3" C/W 60lb HE Head Rockets and 150 5" rockets sourced through the USAF at Taegu. Servicing hours for this effort was almost evenly matched at some 1260hrs performed by Service crews.

Wearing a red spinner, this is A68-715.

77SQN's A68-720 on the ground at Iwakuni, Japan, late 1950. [*RAAF*].

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A50 History Sheets: Number 77 Squadron RAAF Jul 50 - Mar 52
A51 Narrative File: Number 77 Squadron RAAF
A50 History Sheets: Various Operational Base Units 1944-1962
Casualty Repatriation file for A22222, Cottee, Milton
Casualty Repatriation file for O31401, Strout, Graham
Narrative File: Commanding Officer's Reports 1950/1951
Personal File: HARROP William Percy
E/E-88 Cards

No 2 SQUADRON A.F.C.
by John Bennett

PART III – NEW MACHINES TO SWEEP THE SKIES

Once you have brought down your first or even your second or third, you suddenly realise "now that's the way to do it".
Baron von Richthofen [1]

On Thursday 13 December 1917 an announcement brought much joy and pride to 68 Squadron. For their role in the Battle of Cambrai, CO Major "Toby" Watt had ensured that six of the Australian pilots were awarded the Military Cross. An Aircraft Mechanic recorded: [2]

> Tonight news came through of 6 MCs being awarded to 68 Sqn officers – Lt Howard, Capt Phillipps, Lt Holden, Lt Taylor, Capt Wilson, Lt Huxley. Lt Howard came up to us and thanked George [Kompton] and myself for the way we had kept his machine up and said it was due greatly to its efficiency that he had been so successful.

In addition to the six pilots being decorated, the Military Medal was also awarded to four groundcrew for bravery in salvaging aircraft wrecks under fire on the front line. Those recognised for their hazardous work were Sergeants Bertram Jones and Richard Lonsdale, Corporal Richard Campbell and 1st Class Air Mechanic Herbert Raphael.

The editor of *The Aeroplane* magazine, C G Grey, wrote from London to Major Eric Harrison at Point Cook with some interesting comments on what he had seen of the men of the Australian Flying Corps. He observed:

> I hear great things about your Australian aviators. The week before Christmas I was in France staying at Flying Corps Headquarters, and the General told me that 68 Squadron, commanded by Oswald Watt, had won more Military Crosses in one day in the Cambrai battle than had been won in a day by any squadron in the Corps. I think they raked in six of them, out of 18 pilots.
>
> All the Australian squadrons have a very high reputation in the Corps, and I have never seen anything to equal the keenness of the Australian mechanics. Whenever a ship load of them arrives in this country they besiege this office with calls and letters, asking for information about where they can get the latest books on aeroplanes and engines so as to bring themselves thoroughly up to date.
>
> Of course on the average they are individually better class than our own mechanics, because many of them are properly trained engineers who in this country would probably be Equipment Officers and not mechanics, but even their keenness is extraordinary, and apparently the work which they do on active service is as well and as carefully done as if they were working in a comfortable factory at home. It is not surprising that a race of sportsmen like the Australians should make good pilots, but it is rather extraordinary and certainly highly gratifying that they should make such excellent mechanics. You and all the people associated with you at the School have every reason to be proud of yourselves.[3]

Australia's official war historian, C E W (Charles) Bean, visited the Squadron during December just as the D.H.5 was being withdrawn from service. His unpublished notes give an interesting insight into Watt and the Squadron's daily routine. [4]

> 7 Dec. I went…to the 68th Squadron AFC at Baizieux. Oswald Watt, their major, was away lecturing at Army HQ at Albert to 200 officers and NCOs on the cooperation of aircraft and infantry. "Little" Turner, their adjutant, persuaded me to stay the night. Watt had given his youngsters a night off in Amiens.
>
> 8 Dec. They are winning themselves a magnificent name, this first Australian fighting Squadron. They had a quiet time from September 21 to November 20 and then suddenly they plunged into bad flying weather into the very heavy fight. Their great doing I have made a note of in a record book.
>
> It is Watt who has worked them up to this remarkably high level of conduct and general tome – as Australian boys can always be worked. Little Turner, who was shellshocked in the infantry, told me: "I hope to God we don't lose him through his overwork; for believe me we shall never get another like him!"
>
> He was in Europe at the start of the war and at once entered the French Flying Corps and flew for a time over Verdun and Nancy. Then he was sent to command the Australian squadron forming in Egypt; and after flying there came to England and lastly flew over with his Squadron in September.

His plan is, in order to give his boys a complete night's rest, to send them to bed about 10; and not to let any of them know overnight what work, if any, they have to do in the morning. With this view he himself, with Little Turner, stays up until the orders come in about 12 or 1AM from the Wing. He then gets out the order for work of the morning and the men who are to do it. He makes out a list of the youngsters to stand by; then a list of their sergeant mechanics; then a list of their batmen. The batmen are the first to give the officers the orders of the work that are to do when they call them in the morning. They may be called at 5. Breakfast is ordered for 5.30. While the officer is having breakfast the mechanic is going through the machine. By the time breakfast is over everything is ready to start. By order all lights are turned out at night; when breakfast is on the lights are turned on again. So that the CO knows, if he sees know lights at 5AM, that they are late.

For the CO this has meant an exceedingly heavy strain – up writing till 3, sleep till 5 – up again to see them off punctually. Watt himself told me that he could always get odd hours during the day but he is very worn and he fell asleep after dinner at night over the fire. It was not a cold night, but he was shivering. His little adjutant told me of the strain – he did not mention it himself.

[colourised from AWM E01447]

B699, marked on the fin – delivered from 2ASD to 68SQN at Baizeux on 7 DEC 1917 – became '2' with B Flight

This image was taken by correspondent Charles Bean on his visit to 68SQN at Baizieux on 7 DEC 1917. The two mechanics, armourer 1/AM Harold Pitkin (right) and CPL Harold Scholes, were both original 68SQN members. Being ex Light Horsemen and trade-tested by 67SQN in Egypt, they had arrived on the *Kingstonian* in England in JAN 1917, crossing to France in SEP 1917.

The one strain he did mention was that of one peculiar trial of the last 3 weeks heavy fighting. He said that the wing commander knew him well and trusted very much to him to decide if the weather were suitable for flying. During the critical times in the Cambrai battle or any battle it was necessary to go out sometimes and carry out flights on days when flying was exceedingly dangerous and almost impossible. It was left to him to say if it were possible or not. He had often to send four of his youngsters out on days when we knew that flying was perilous. He had to make the order for these friends to go. It was not as if they were a battalion or even a company of say 120 men. They were four boys who sat at the same table every day for 6 months and had become exceeding well loved friends. "You can just imagine the feelings with which I used to sit there during two hours waiting for them to come back", he said. Five were lost in those two weeks.

One day one youngster was brought down at Coutaing and as he did not return hour after hour, he was posted missing. 14 hours later came a wire from him to say he was on his way in – he had been brought down, had got into Coutaing where he found no one of either side. He lay down in a house and went to sleep and while he slept the town was heavily shelled and the hose was hit. He got out and managed to get through his message – and Watt, sitting at home, in the office there threw up his cap till it hit the ceiling.

Of 20 officers who went out in September, 10 are still there. Of the missing only 2 are known to be killed. They may hear of the others any day – from a French hospital, or from Germany. Often the first thing they hear of a British officer prisoner is the passing of his cheque through Cox's bank.

> Watt is careful to encourage in every way good relations between the AFC and the RFC – insisting that the Australian Corps is really part of the RFC and making them proud of it. It makes the work better and smoother and the boys more generously disposed to those who are on the same big work. It makes on a little ashamed of having taken a narrower view. The youngsters certainly are proud of their connection with the RFC, and like to think that they carry out its orders, and can go home and train its recruits when their rest time comes, and so forth.

One of the Squadron's pilots, Lieutenant Lawrence Benjamin, also recalled the CO's long days:[5]

> Every morning, no matter how early the dawn patrol left the aerodrome, "Toby" would be up to see them off, even if his work had kept him up late the night before. His one thought was of us, and we in turn idolised him.

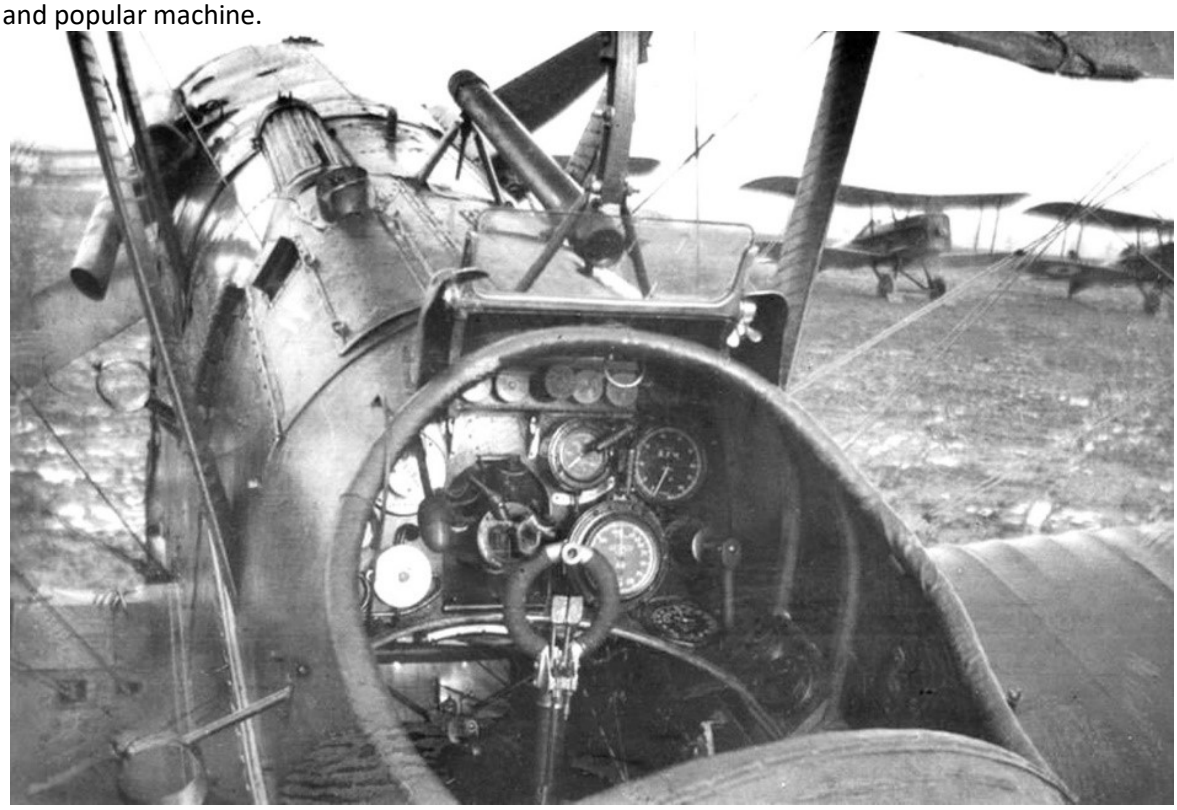
Now in the lull after Cambrai the D.H.5 was phased out of service and replaced by the S.E.5a in all RFC squadrons in December 1917. No 68 Squadron had received its first S.E.5a back in late October to begin pilot conversions. Within two days, 18 pilots on the Squadron had flown the new type. Deliveries commenced after the Cambrai Battle on 7 December.

On the afternoon of 11 December, 2LT Harold Cornell took off from Baizieux in one of the Squadron's remaining D.H.5s (A9324) when he stalled and nose-dived into the ground from 50 feet. He was killed on impact, and buried in Dernancourt Cemetery.

The final D.H.5 ground attack missions were flown on 12 December. A line patrol training sortie was flown for the benefit of some new pilots on 15 December, then the last of the D.H.5s were transferred to 2ASD four days later. Now the Squadron was properly equipped and could concentrate with its new machines.

The Scout Experimental–5 (S.E.5), a product of Britain's Royal Aircraft Factory, was introduced to beat the latest German Albatros scout that had proved so effective at the Front.[6] It was the first Allied scout into service to be armed with two guns – a drum-fed Lewis mounted on the top wing centre section, and a synchronised Vickers in front. The synchronised Vickers had a rate of fire of 1,000 rounds per minute.[7] The Lewis had been adapted for aerial use and improved to fire at 600 rounds per minute, with a magazine capacity of 97 rounds.[8]

The S.E.5 had begun operations with No.56 Squadron RFC in April 1917, and its 150hp Hispano-Suiza engine gave a top speed of 120 mph and an excellent rate of climb. The improved S.E.5a, powered by a 200hp Hispano-Suiza followed in service in June, and by the end of 1917 even RFC squadrons, including No.68, had equipped with this very capable and popular machine.



Cockpit of the S.E.5a, showing the Aldis sight and Vickers gun *[IWM Q67871]*

These new S.E.5as could fly three-hour sorties, and this endurance was to become of great importance for the attacker. Its versatility extended 68 Squadron's effectiveness in delivering air power – it now had superior speed to chase hostile aircraft from the sky, to defend its own reconnaissance vehicles and to check enemy movements. Its performance would allow a true multi-role capability. While controlling the air, this new scout would also effectively conduct the ground attack role against enemy troops, communications and supply lines that it had pioneered within the limitations of the lumbering D.H.5.

The Squadron now began an intensive training program in aerial combat to exploit its advantage over the German scouts. The pilots' experience gained already at the Front had taught them some tricks of the trade. Approaching from the rear and below in the blind spot of the slow two-seaters was quite effective, enabling an attack to be pressed home at close range. However, against a fast scout a quick single firing pass in a dive was often enough to send down an adversary. Deflection shooting, when at a large angle off an adversary's tail, was also being pioneered, but with inaccurate results.

[RAAF image]

The overwing Lewis gun fitted to the S.E.5a

Another effective tactic in combat was to rudder turn. This meant the machine skidded around a level turn, which was difficult for an adversary to detect, and threw off his aim. Good shooting was the critical factor in aerial fighting, and pilots needed the nerve to get in and shoot at point blank range, or at least within 20 metres.

The SE not only provided superior speed, but a good climbing performance over the enemy. Rate of climb to attain altitude quickly was used to get the tactical advantage from height and had become an important requirement for the fighter. By this closing year of the war, fighters were flying up to the cold heights of 20,000 feet without oxygen. These altitudes were sought, in spite of the intense cold and the effects of hypoxia, for safety and the advantage of bouncing the enemy by surprise with the additional speed of the dive. Rarely would combat be initiated from the same level or below, unless into an enemy's blind spot. Control of the air was won by the side exploiting these advantages.

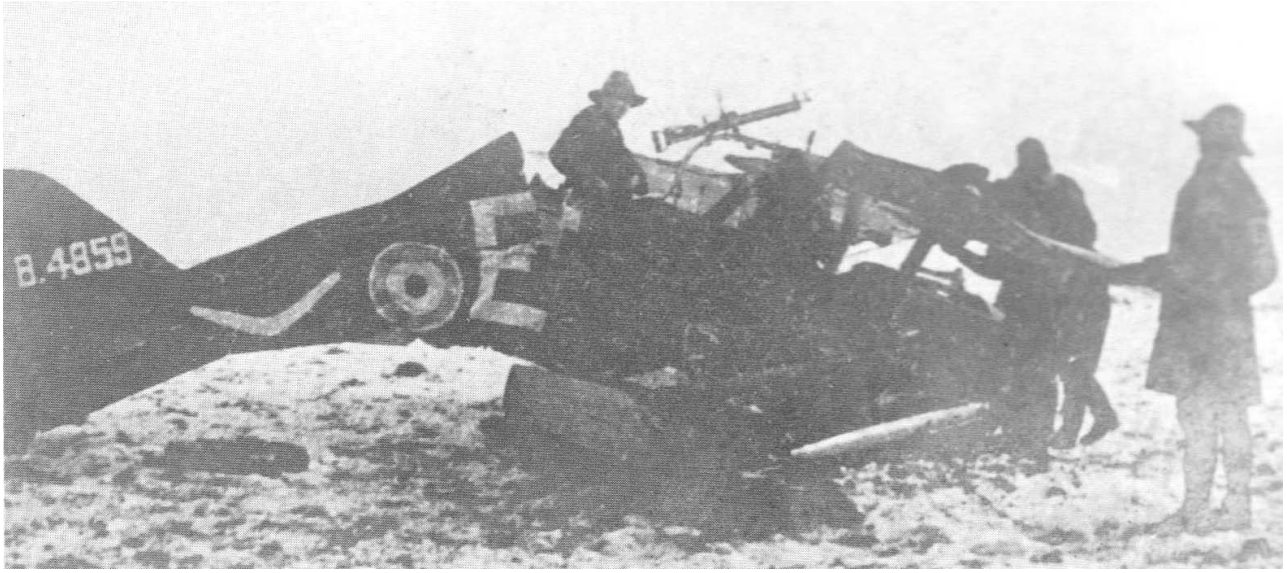
Training in handling the new machines, formation flying and weaponry at the nearby Warloy Aerial Range continued throughout December and into the new year. The flexibility of the SE meant that the Squadron could be effectively duel tasked. In Close Offensive Patrols – high level patrolling to maintain control of the air – the S.E.5a was more than a match for the German scouts and, if required, the Squadron could be thrown into the ground attack role it had helped to develop. In these final years of the war, air power had become a significant factor in the success of major ground offensives.

The bad weather of January 1918 had not been suitable for offensive air operations on the Western Front, and the month passed quietly for the Australian squadron. Training continued on the new mounts, and accidents, particularly landing, prevailed. Although pilots were full of praise for the SE's fine flying qualities and performance, it was a tricky machine to land. Unless a three-point touchdown could be mastered, a bounce was assured. Also the undercarriage was not as strong as the contemporary Sopwith Camel, so throughout the SE squadrons a smashed

undercarriage became the expected thing. If these difficulties were not enough, the SE also tended to swing on touchdown.

On 27 December 2LT Alex Clark had written-off one machine (B64) when he ran into a snow drift after landing. LT Robert Clark came to grief touching down at Baizieux on 3 January, and penned to the back of this photo of his crashed machine B4859:

"At this game – those who live, learn – and those who don't, teach others by their mistakes.
– Oswald Watt"



[J Leeuwin-Clark]

"At this game – those who live, learn – and those who don't, teach others by their mistakes" – Oswald Watt

Lieutenant Taylor (B74) was also to crash on landing that afternoon, but was uninjured. In his accident, Robert Clark had broken his ankle and was repatriated to England, where he later instructed with fellow 68 Squadron pilots on the Australian S.E.5 training unit – No 6 (Training) Squadron at Minchinhampton.

Significant for the Australians at this stage was the change of title for the unit. From Friday 4 January, its old title was regained, and No 68 (Australian) Squadron Royal Flying Corps became No 2 Squadron Australian Flying Corps.[9]

Orders were then received to deploy to join the 10th Wing of the First Army at Auchel/Lozinghem aerodrome, 60km north of Baizieux, near Bethune. On 6 January the first of the Squadron's machines left for their new base. 2LT Percy Lawson (B55) crashed on the approach to land at Auchel. His machine flat turned into a spin from 400 feet, caught fire on impact, and he was burnt to death. He had been on the Squadron for six weeks. The remainder of the aircraft deployed from Baizieux three days later. LT Lewis Truscott, another new arrival, was diverted by bad weather to Yvrench. He crash landed, damaging his machine (A8906), but was uninjured.

Another Squadron move was carried out later in the month to Savy, an aerodrome 20km to the south. On 22 January, Les Holden wrecked his aircraft (A8936) taking-off from Auchel for Savy. On the same detail 2LT Frank Power (C5312) crashed on landing at the new airfield. He survived another incident two days later when his new machine (B504) suffered engine problems and he crashed during his forced landing. If minor damage could be repaired within 36 hours, this work was done on the Squadron. Otherwise, more extensive damage ensured that No 2 Aircraft Depot, at Candas, was kept busy with S.E.5 repair work.

The first operational flying for the SEs was flown by "C" Flight on 24 January, led by the new Flight Commander Henry Forrest, coincidentally escorting photographic reconnaissance machines of No 2 Squadron RFC. Offensive patrols were mounted for the remainder of the month, but these were uneventful, with no engagements with the enemy.

Air operations in February were again severely hampered by bad weather. On 5 February, four enemy scouts were engaged near Lille with no result. Heavy fogs over the next ten days restricted operations to weaponry practice and general flying. On Saturday 16 February, command of No 2 Squadron passed from Oswald Watt to Major William Sheldon. A graduate of the Second Course at Point Cook, Sheldon had been the "A" Flight Commander in Egypt with No 67 Squadron, and then had led the other Australian unit, 71 Squadron RFC, destined to become No 4 Squadron AFC, during its training work-up period in England during 1917. Watt returned to England to organise and lead the new Australian Training Wing in Gloucestershire.

Captain Fred Huxley (B4895) did have some success on the 18th to open the account with the Squadron's new machines. He was leading a pair, and with 2LT Anthony Paxton (C5347) encountered four Albatros scouts over Lille. Huxley attacked the leading machine which had a red nose, green fuselage with yellow stripes and blue tail. He was able to drive this gaudy machine down out of control:

> I had superior height and dived on the leader who turned on his wing tip and fell out of control after I had fired about 50 rounds at 150 yards range. I then attacked another machine of hostile formation, with no result. The EA then flew East of Lille. One enemy machine attacked me whilst I engaged the leader. 2LT Paxton engaged one of the enemy machines and fired a burst of 20 rounds with Lewis gun with no result.[10]

Continuing their patrol over the lines, the pair then encountered a DFW two-seater, which Huxley pursued, exhausting his ammunition as the enemy machine dived to the east. Later that morning Richard Howard (D212) and Les Holden (D214) departed on an offensive patrol east of the lines towards Lille, and near Carvin met six red-tailed Albatros scouts. Howard dived his pair into the attack, sending one Albatros into a vertical spin, with the others heading off east to land at Lille.

The following morning Lieutenants McKenzie (C9539) and Benjamin (B579) engaged three Albatros scouts near Pont a Vendin, north of Lens. Although McKenzie's Vickers gun had failed, he was able to successfully engage one aircraft with his Lewis gun, watching it fall out of control. The British Army observed the enemy machine crashing, so McKenzie was credited with its destruction.

Six RFC pilots had been attached to the Squadron on 10 January to gain experience at the Front, and two were to feature in the operations of 21 February – 2LTs Ronald Lang and George Logan. Lieutenant Alex Clark (B4895) led four machines off on a morning patrol, with Benjamin (C1060), Lang (B535) and another new arrival, a Canadian, 2LT William Adams (C9496). Flying at 15,000 feet, Clark sighted an enemy formation of ten red-nosed Albatros scouts near Brebieres, south-west of Douai:

> One hostile machine dived at me. I fired both Lewis & Vickers into the nose of this machine, getting a burst of about 50 rounds into it at a range of 40 yards. The machine fell over on its left wing and dropped vertically in an uncontrolled spin.
>
> Lieutenant Benjamin engaged an enemy machine which dived across his front. He fired a burst of about 50 rounds from his Lewis gun at about 30 yards range, the machine went down out of control, finally getting into a steep fast spin and was not observed to come out of it 2000 feet lower.[11]

2LT Ronald Lang observed one of the enemy machines crashing, but in the engagement he was badly wounded. He succeeded in making it back to land at No 5 Squadron's aerodrome at Acq, between the lines and Savy; however, his wounds necessitated the amputation of his leg. Later in the morning, 2LTs Paxton (C5347) and Logan (B619) departed for an offensive patrol. Over the German lines they were engaged by groundfire, with Logan being shot down and taken prisoner.

Bad weather brought a quiet period for the rest of February and early March and the enemy squadrons used this respite to nurse their strength for the imminent great offensive. A resurgence of air activity on 8 March saw Captain Howard (D212) drive down two black two-seaters near Lens, sharing one with Paxton, and then an Albatros to the south at Brebieres. That afternoon Les Holden (D214) also scored an Albatros.

The Squadron was successful above the Front near La Bassee over the next two days with Richard Howard (D212) driving down two Albatros scouts on 9 March, and another on the 10th. Over the next days, both Les Holden and Robert McKenzie were then to score several enemy machines each, with Howard scoring again on the 18th, destroying a Rumpler two-seater in flames over Haubourdin, near Lille:

> I first noticed this machine flying East from Lines towards Lille gradually losing height. Our formation approached unobserved and I dived and fired about 60 rounds into the enemy machine; smoke immediately

issued from fuselage. Lieut Holden and Lieut Rackett saw the machine diving steeply out of control and in flames.[12]

Perhaps the most significant strategic development at the end of 1917 had been the Armistice between Germany and the revolutionary Bolshevik regime in Russia. Finally, in early 1918, all was quiet on the Eastern Front.

In France the Allies once again had the control of the air, but now hundreds of thousands of German troops with large numbers of aircraft that had been fighting against Tsarist Russia could be released to the Western Front. Now, as the weather cleared, a final massive offensive was expected to smash the Allied armies once and for a ll.

The Armistice with Russia had allowed Germany to strengthen its forces in the west in early 1918. With America's entry into the war, General Ludendorff, commander of the German Army, needed to strike before the arrival of any substantial numbers of US forces, but any offensive could not be planned before the end of winter.

During March, with the German assault imminent, No 2 Squadron's offensive patrols, flying normally at around 15,000 feet, had been reporting on all enemy movements. As anticipation of the German attack grew, the strength of each offensive patrol was increased to two flights, numbering up to ten aircraft. The weight of the German offensive was to fall on the fronts held by the British Third and Fifth Armies, to the south of Arras. Enemy air activity had intensified in preparation for a next offensive, although was still restricted by increasingly bad weather.

On the misty morning of Thursday 21 March 1918, the Germans began their push, which would be their last great offensive, the 1918 Spring Offensive, or *Kaiserschlacht* ("Kaiser's Battle", also known as the Ludendorff Offensive), with an immense assault of 56 divisions. This was directed against a 100km Front, between the Rivers Scarpe and Oise. The RFC had 31 squadrons in the area of the Third and Fifth Armies, a total of 579 serviceable machines of which 261 were single-seat fighters. Opposing these, the Germans had 730 aircraft, including 326 single-seat fighters.[13] When the fog cleared, every machine that could carry bombs was thrown into the attack. The determined bombing and strafing attacks by Allied aircraft helped prevent the British retreat from turning into a rout. By 1918, air power had indeed become a major factor in the war on the ground.

No 2 Squadron, attached to the First Army, was diverted with other fighting squadrons to cover the Third Army Front. Here, to the south of Lille around Douai, the Germans had concentrated their best units, with their brightly painted Albatros scouts and Fokker triplanes. The Australians were required to operate on this Front for the remainder of the battle. Large formations of scouts would engage daily in dogfights, preventing opponents from attacking and creating havoc amongst the low-flying ground support flights.

Tactics were now changed with the Squadron flying across the lines at around 1000 feet to protect the dedicated ground attack aircraft and carry out reconnaissance of the enemy's movements. The SEs were also briefed to engage targets of opportunity, such as troop concentrations and transport; anything to hamper the enemy's advance. Over the last ten days of the month, No 2 Squadron's SEs fired 14,000 rounds at ground targets. This changeover to low-flying was not to change the overall situation as the Germans, too, had left the upper air.

The effect that Allied air power had on the enemy in their assaults was described by the war diary of the German 73rd Regiment:

> The English got valuable support from their aircraft which attacked regardless of consequences. The squadrons, flying very low, found profitable targets for bomb and machine-gun in the thickly concentrated masses of the 111th and 2nd Guards Reserve Divisions. Our own aircraft were absent.[14]

On 22 March, the British line was broken west of St Quentin, enabling the Germans to push towards the River Somme. Ten S.E.5as of No 2 Squadron took off to rush the ninety kilometres south-east to St Quentin, on the Fifth Army Front. Two turned back with engine problems, the other eight encountered five two-seater machines escorted by a number of single-seaters. Captain Forrest (C9539) sent a two-seater down in flames, and Lieutenant McKenzie (C5382) forced down an Albatros D.V out of control. They headed north to Bourlon Wood, where Captain Phillipps (C9541) attacked the leader of a flight of Fokker triplanes, sending it down into a spin. On the return to Savy more Albatros scouts were engaged over the lines at Bullecourt and Forrest sent down another two, with Lieutenant Les Holden (D214) scoring a third.

On an evening patrol, Lieutenant Archie Rackett (B70) drove down a two-seater at Honnecourt, near Bapaume. However, 22 March was not to prove totally one-sided for the Australians. From this formation the Squadron lost one of its experienced flight leaders. Captain Richard Howard (D212) was last seen at 3000 feet about three kilometres over the lines near Epehy, south of Cambrai. Then, in an engagement fifteen kilometres to the south near Vermand, he was

shot down by Lieutenant Boehning of *Jasta 79*, a 17-victory ace, and died of his wounds that night.[15] He had come to France with the Squadron in December, and had been awarded the Military Cross for conspicuous gallantry and devotion to duty during the Battle of Cambrai. In February, he had been promoted to Flight Commander, and during March he had created a record on the Squadron by accounting for seven enemy aircraft. His place as "B" Flight Commander was taken by Les Holden.

By 23 March, the Allies were in retreat, with the Germans making substantial ground on the Front from Cambrai down to St Quentin. The roads on the Allied side were full of traffic, as ten Australian SEs went out on a morning offensive patrol along the Third Army Front between Arras and Douai. McKenzie (C5382) dived on a two-seater between Brebieres and Vitry and destroyed it from close range. Flying south about fifteen kilometres behind the lines, ten minutes later they encountered a formation of eight enemy scouts. Phillipps (C9541) was successful in driving down a red-nosed Albatros north of Bourlon Wood. That afternoon, Forrest (C9539) destroyed a two-seater near Bapaume, and Phillipps (C9541) drove down another, killing the observer, before it made the safety of the enemy's lines. No 2 Squadron flew 65 hours over the lines this day.

The following day, another two enemy aircraft were claimed by the Squadron in addition to its continual harassment of the German advance, which was now threatening Bapaume and pushing towards Albert. With all Allied fighter squadrons thrown into ground attack, air activity was having quite an effect on German morale. A German soldier of the German 8th Grenadier Regiment recorded:

> As we were moving forward after crossing the Somme, there suddenly appeared before us some twenty British aeroplanes which dived to a height of about 100 metres and then, continuing to within 2-3 metres of the ground, attacked us with their machine-guns. Several Tommies flew so low that the wheels of their aeroplanes touched the ground. My company commander, Lieutenant Nocke, had to fling himself flat on the ground, but for all that he was struck on the back by the wheels of one machine, thus being literally run over. Not far from me an aeroplane appeared about one metre above the ground making straight for me and for the moment I did not know in what direction to throw myself: the pilot appeared determined to run over me.[16]

[AWM E1882 colourised by Benjamin Thomas]

C9539 'V' of 2SQN's C Flt, on its nose at Savy Aerodrome, 25 March 1918

By 25 March, the position on the Front was grave, with large concentrations of enemy infantry making further progress between Arras and Peronne, and forming to the east of Bapaume. Stubborn resistance by the Third Army was successful, but the Fifth Army defending Amiens, in spite of French reinforcement, was forced to withdraw, and some airfields had to be evacuated. Allied ground attackers were taking heavy losses from groundfire during these near suicidal missions. A flight of Australian Camels from No 4 Squadron was bounced by enemy scouts during a strafing run, but was able to shoot down three of its attackers. However, the Camels lost two pilots, with another three wounded, all to ground fire.

That evening, Major-General John Salmond, the new GOC of the RFC in the Field, wrote to his predecessor, Trenchard:

> We managed to concentrate 100 machines on the threatened line of the 3rd Army. They had orders to low fly and to take every risk; nothing was to count in carrying out their duties. I had news from the 1st Brigade that our machines were so thick over this point that there was every danger of collision in the air, so it looks as if we must have had a great effect against the enemy attack.[17]

The next morning, as the Allied Front was driven back towards Arras and Albert, the Squadron was tasked with escorting the low-flying Camels, and joined them in strafing the enemy advance. Lieutenant Lawrence Benjamin (C5382) was over the lines, as enemy forces were approaching Albert, when he spotted an Albatros scout:

> I observed this machine near Pozieres flying NW towards Arras. I dived on it, firing a continuous burst with both guns until within 20 yards of it; it rolled over on its back, burst into a cloud of smoke and went down in a vertical nose dive.[18]

By 27 March, the rapid German advance over the week had succeeded in the capture of Albert. No 2 Squadron's offensive patrols, in addition to protecting the low-flying Camels, strafed the enemy's trenches and transport. At noon, Phillipps (C9541) reported:

> When near Albert, our formation was attacked by 6 triplanes. I zoomed up into the mist and came out over Pozieres. I got onto the tail of a triplane and caught it over Suzanne and when at close range I fired about 50 rounds and the enemy machine burst into flames, and fell slowly to earth.[19]

Returning to patrol Albert, twenty minutes later he spotted a new type enemy scout:

> I was following one of our machines across the line, when I saw an enemy machine below me about 200 feet, firing at our troops. I dived on it, and, when at close range, fired about 100 rounds and machine rolled over and crashed, apparently on our side of lines near Meault.[20]

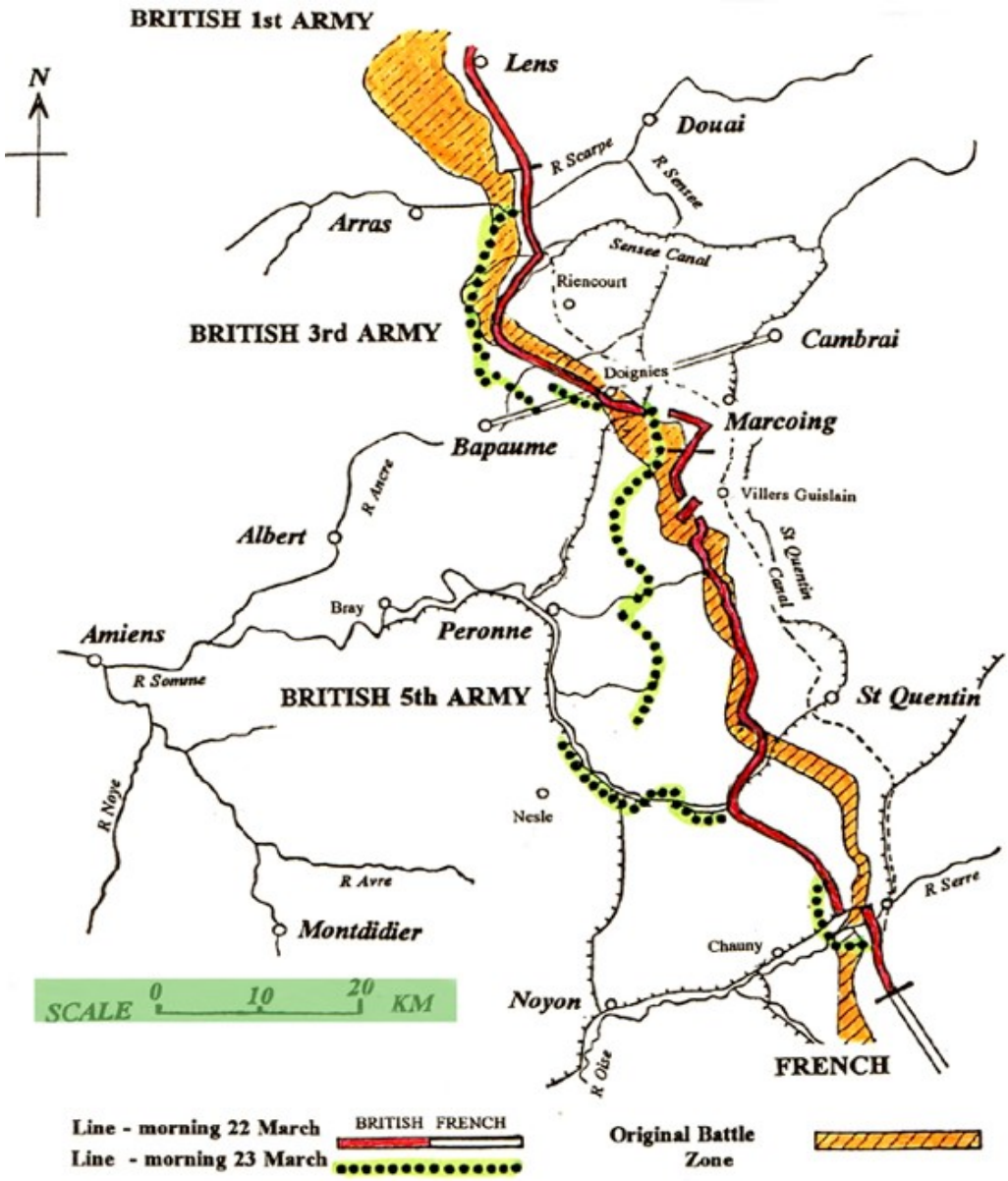
These were the fifth and sixth victories for the "A" Flight Commander. In the same formation 2nd Lieutenant Thomas Hosking (A8906) destroyed a Fokker triplane at Fricourt, five kilometres east of Albert.

On the morning of Thursday 28 March, the Germans launched a major assault on Arras. Lieutenant Les Holden led a formation, twelve-strong, on an offensive patrol escorting low flying Camels of No 4 Squadron AFC, which was now also part of the 10th Wing. From this mission, Thomas Hosking (A8913) failed to return. He had only been on the Squadron a month, and had just claimed a kill the previous day. Another newcomer was also lost that afternoon, when Lieutenant Oscar Flight (B102) departed on a similar sortie. He became split up from his formation and was eventually bounced and shot down behind enemy lines at Etaing, near Arras. He later described the details of this, his last flight.

> Four of us left the Aerodrome to escort No 4 Australian Squadron and also for trench strafing. Just after getting over the enemy's lines we were split up on diving through clouds. After this I sighted one of No 4's machines and followed him about ½ hour. At the end of this time the machine I had been following went home. This was about 12.45pm. Then I went to Arras and strafed along Arras-Cambrai Road. I was there about 15 minutes under a good deal of AA and machine gun fire when all of a sudden AA fire stopped. Very soon after this, shots came at me from the rear. On looking round I saw three enemy Albatros machines. I pulled round in a climbing turn, but two of the machines had too much height on me. The fire was more or less incessant for a minute or so. Up to that time my machine had not been hit. About this time four enemy triplanes joined in the fight and gradually forced me down to within 150 feet of the ground. Bullets were coming from all directions. All at once one machine got a big burst into my right plane and rear strut, also severing a flying wire. A few seconds later my rear strut flew out; the bottom socket had been blown out. The machine immediately heeled over and all attempts to right it failed. I switched off and held onto the front of the cockpit. The machine then dived into the ground tearing down a number of enemy telephone wires. I was rendered unconscious.[21]

When Flight regained consciousness he was able to set fire to the wreckage with his Verey pistol before being captured. He was sent to Landshut POW camp, in Bavaria. During September, he tried to tunnel out of the prison with another AFC pilot, Lieutenant Cecil Feez of 4 Squadron, who coincidently had been shot down and captured on the same day in March. They were informed upon by an Italian prisoner, and remained POWs until the Armistice. In December 1918, he was repatriated to England.

The German thrust to the south-east of No 2 Squadron's aerodrome at Savy had pushed the Third Army Front back to a line joining Arras and Albert, but here they were brought to a standstill. The German aim of overwhelming the Arras bastion and striking towards the coast was defeated by the British Third Army, and the main objective then switched to the south against Amiens.[22] The British Fifth Army, overwhelmed and driven back towards Amiens, was relieved by the Fourth Army on 28 March[23] – significant as the Fourth Army comprised III (British) Corps and the Australian Corps. In this extremely critical situation, the last enemy assault made against Amiens was halted two days later by the Australian Corps, which had been moved south to the Somme valley to become the flank of the Fourth Army beside the French. Following an unsuccessful attack against Arras by the German 17th Army, enemy advances made during the *Great Battle of France* had almost reached their limits – on Good Friday, 29 March, the enemy was then pushed back in retreat with heavy losses. Indications were that the tension on the British Army sectors had ended, and the First Army to the north might be attacked any time in early April. Consequently, the Squadron deployed on 2 April south to Bertangles, north of Amiens, with the 22nd Wing RAF. Then, two days later, the Squadron was grouped into the 51st Wing of IX Brigade at La Bellevue. This was 20km from Arras, which the Allies considered would be the vital point for the next attack on the threatened northern Front.



The Western Front on 23 March 1918

The start of the month – Easter Monday 1 April 1918 – had seen the birth of the first independent air arm with the formation of the Royal Air Force by the amalgamation of the Army's RFC and the Royal Naval Air Service. There had been considerable inter-service wrangling over the creation of this new Service, but Lieutenant-General Jan Smuts' committee had won the day, and their foresight in 1917 had pointed out:

> The day may not be far off when aerial operations with their devastation of enemy lands and destruction of industrial and populous centres on a vast scale may become the principal operations of war, to which the older forms of military and naval operations may become secondary and subordinate.[24]

The first Chief of the new force was Major-General Sir Hugh Trenchard. It was a significant time for the birth of the world's first independent Air Force. The German advances had been halted and air power was being decisive in ground battles, preventing an enemy breakthrough to the Channel coast.

Because of enemy air inactivity, most of early April for No 2 Squadron was spent on low-level work, dropping bombs and strafing enemy trenches and strongpoints. The German troops were exhausted and, with transport hampered, any further offensive against Amiens was frustrated. Now the focus of German attacks was switched against the Second Army, further north in the Ypres-Armentieres sector, on the plain of the River Lys. It was here, between La Bassee and Armentieres, that Ludendorff decided to strike in the German 1918 Lys offensive (9 April - 8 May).

The second week of April began with pouring rain, restricting the Squadron's flying effort until the 11th. On that evening, an offensive patrol of ten SEs met a large formation of enemy Fokker triplanes and Albatros scouts, and drove them back to the east. The next morning, another large effort was mounted, this time with Captain Alex Clark (B4895), now the "B" Flight Commander, driving down an Albatros over Lorgies, between Bethune and Lille. That afternoon, Captain Forrest (C9539), the "C" Flight Commander, destroyed a two-seater beyond the lines over Vieille Chapelle, north of Bethune.

The German attacks had led to rapid advances on the First and Second Army Fronts between Bethune and Ypres, but by the end of the month the Allies had consolidated into a strong defence. To the south, the German commander Ludendorff was determined that his offensive would not again develop into what he described as a "battle of exhaustion".[25] His last push on the Somme was made on 24 April, when the Germans captured Villers-Bretonneux and Hangard. However, the following night, these towns were retaken by Australian troops, thus ending the last German chance to take Amiens.

For his leadership during the spring offensives, Captain Roy Phillipps' bar to his Military Cross was awarded during April, and read:

> Conspicuous gallantry and devotion to duty. When engaged with hostile aircraft during the recent operations, he has destroyed three enemy machines, and has in addition brought down two hostile planes out of control. He has also brought back accurate and valuable information regarding hostile movements under the most adverse conditions, particularly on one occasion, when he flew through a heavy barrage at a low altitude behind enemy lines. He has shown conspicuous skill and determination when escorting low flying bombing patrols.[26]

A new pilot to the Squadron, who was to follow in Phillipps' footsteps in becoming another of its most successful aces was Lieutenant Eric Cummings. The press later reported his first combat of 3 May 1918 with much excitement:

> One of the most popular pilots in No 2 Squadron was Captain Cummings DFC of Hobart. During the spring of 1918 the Hun was doing a lot of damage with his tri-planes - facetiously known to all our men as "Tripes" - which machines were then being flown by Richthofen and his famous Circus. Encounters with these machines at about 17,000 feet were a daily occurrence, and some terrific "dog-fights" resulted. Whilst doing a patrol Captain Cummings – then a Lieutenant, by the way, and almost new to the Front – spotted a Hun two-seater a few thousand feet below. Sticking the nose of his S.E.5 down he dived after the Hun, and opening fire when about 100 feet away, had the satisfaction of seeing the two-seater topple over and fall after a few bursts. Turning to climb back again, Cummings saw one or two suspicious rips appear in his wings, and the next second a bullet whizzed past his head into the windscreen. He looked round to see the ugly shapes of half-a-dozen tri-planes diving on to him, and a sky that was full of little phosphorous paths made by their tracer bullets. Cut off from any assistance his position was desperate, but he decided on his tactics immediately. Turning the nose of his machine towards the nearest Hun he flew straight at him with both guns blazing tracer bullets. It was a great nerve test, for both machines were racing nose-on towards one another, apparently to a certain collision. The nerve of the Hun gave out. He pushed his joy-stick forward and dived under the very nose of Cummings' machine. Instantly the Australian dived after him; the couple of seconds that he was on the Hun's tail were sufficient, for a well-placed burst hit the machine in a vital spot and it went spinning down to earth. But the other enemy machines followed

Captain Cummings down, and the bullets were ripping his tailplane to shreds. The dashboard in front of him was perforated with bullet-holes, and the cockpit filled with fumes from the compass and the thermometer as one after another of his instruments was smashed.

It was hopeless to try and fight the Germans off, so he put his machine into a terrific dive in the hope of getting clear. The Huns followed down with an unceasing stream of bullets but the speed forced them to pull out of the dive for safety one by one. With a "conked" engine and a machine shattered by bullets, and the strain of over-diving, the Pilot gingerly steadied up, glided just over "No Man's Land" and crashed into our support trenches, while the Hun made frantic efforts with machine and field guns to hit him. Beyond a shaking up from the crash he was unhurt. [27]

In this engagement over Meteren, on the Second Army Front south of Ypres, Cummings (B188) was credited with a Fokker Dr.I destroyed, and it is believed he was shot down by Lieutenant Karl Bolle of *Jasta "Boelcke".*[28] He crashed beyond the lines near Merville, and was rescued by Australian troops while German guns destroyed what remained of his wrecked SE.

The German Air Service commander, General von Hoeppner, had considered that both the Somme and the Lys Battles had similar characteristics.[29] In the first two days of each offensive, the Germans had held air superiority. Then, with the arrival of Allied aerial reinforcements, control of the air had passed back to the Allies. Now the Allies were developing new tactics to maintain that control of the air – the German doctrine of "Circus" formations was being adopted. From the Allies' perspective, the difference was that the Germans were always unwilling to attack, unless from a winning position with surprise, superiority in numbers, and an advantage in height. Indeed, they were not very enterprising, and did not hesitate to flee from a scrap if these factors were not in their favour. On the other hand, the Allies would always maintain the offensive in their quest for control of the air. The move south for No 2 Squadron in April had also provided a change in operations for the unit, as it had been selected to roam the Front in large numbers, forming a Circus. This was a stage in the development of air power on the Western Front as the RAF commenced flying large formations, maintaining continuous patrols, to seek out and destroy enemy aircraft. These fighting formations, in close support of one another and hitherto considered as unwieldy, were then to become fairly common.[30]

The amalgamation of the Australian squadron into such a wing was coincident with the death of the greatest of the Circus exponents – Richthofen. The German ace, credited with eighty victories, was shot down on 21 April. The psychological impact of his death, according to the commander of the German Army, General Ludendorff, was equivalent to the loss of thirty divisions.[31] Richthofen had held some interesting views on the attributes of different nationalities in air fighting:[32]

In my opinion the whole thing is a question of initiative, and that is what we Germans possess. Thanks to it we shall always maintain the supremacy of the air. The Frenchman likes to lie in ambush and pounce upon his prey. This will not work in the air. The Englishman now and then shows a trace of his Germanic blood.

By the beginning of May, the German offensive on the Lys had been contained. The focus of operations now reverted back to the south as the Squadron took on its new role as a Circus unit. The RAF's adoption of German Circus tactics saw No 2 Squadron flying with two Royal Air Force Camel units – Nos 43 and 80 Squadrons – forming the 51st Wing. The Circus operated with the Australians at 16,000 feet, above the Camel squadrons, which were staggered below at 2,000-foot intervals. The Circus was to sweep the sky of enemy machines, roaming beyond the lines of the Third Army Front around Bapaume. But activity was quiet and not many enemy patrols were encountered. The Squadron felt that perhaps the large formations were acting as a deterrent, which, while keeping the upper air clear of enemy machines, was having the detrimental effect of not being able to engage and destroy them. The philosophy in No 2 Squadron was:

There are two methods of working scouts, viz:-

(a) In large organised formations capable of dealing with similar formations of the enemy, and

(b) small patrols of anything up to five machines, whose primary object is to destroy two seaters, balloons and small enemy scout patrols who are liable to molest our Artillery machines.

The advantages of these methods are as follows:-

(a) Pilots are encouraged to work with one another and to sacrifice individual results for those of the patrol.

(b) Much more is given to the individual pilot so that he may take advantage of the fleeting chance which often offers itself.

Therefore, the suitability of Circus tactics for control of the air was being questioned. The Squadron considered this viable against large enemy formations at height, but during May had only served to frighten any enemy machines off to the east to avoid combat. Among the few scorers for the remainder of the month were Lieutenants James Adam, Frank Smith and Gregory Blaxland.

On an evening patrol on 17 May, Captain Murray Jones (C9496) was at 16,000 feet over Bapaume, when he pounced onto a red Fokker triplane:[33]

> This machine was one of a formation of 8 enemy triplanes. I followed one down and dived on it, firing about 180 rounds. The machine fell out of control, going down in a vertical nose dive in which it remained until my attention was attracted by three other machines which were attacking me.

In a Circus patrol in the same area on 30 May, 2nd Lieutenant George Cox (D3431), flying behind Captain Forrest, opened his account when they dived on a formation of six Pfalz scouts:[34]

> I singled out one machine and fired a burst of about 50 rounds at a range of 200 yards without effect. I zoomed up and dived a second time, reserving my fire till I was about 50 yards from the EA, then firing a long burst into it. The EA turned over sideways on its back. I zoomed up to engage another EA and did not observe what became of the first machine.
> Capt Forrest states:- When diving on this formation, I observed one EA Pfalz scout turn over on its back and burst into flames just as the Camels came up to engage.
> This machine is also confirmed by a patrol of 43 Squadron.

An unfortunate accident, common in the fog of war, had occurred to the Squadron earlier in the month. On 4 May Lieutenant Blaxland had mistakenly shot down a French SPAD[35] killing its pilot. This was not an isolated instance in confusion between the Allies. Another SPAD was brought down near Hazebrouck four days later by a British patrol, which reported:[36]

> The French machines were apparently single-seaters coloured yellow and red, the latter predominating, and making the national markings hard to distinguish.

Three days later, on 11 May, a flight of five French SPADs was attacked by another RAF patrol. Salmond noted that the similarity of the colouring of French aircraft to Albatros scouts was causing this misidentification. Accordingly, the *Commandant l'Aeronautique Francaise* was requested to adopt a single colour, one-toned similar to the RAF scheme, when French aircraft were operating over the British lines.

No 2 Squadron had, however, attempted to cover up this incident, but had been unsuccessful. The following week, Blaxland was posted back to England for instructional duties, and the CO was replaced.[37] Murray Jones was promoted to Major on the 22nd, and took over command. Like other COs of flying units, the squadron commander hitherto had chiefly administrative duties, "and his influence on morale of the squadron had to be exerted from his chair in the squadron office rather from the seat of an aeroplane".[38] Now, as the CO was allowed to fly in combat, Jones became No 2 Squadron's first commander to lead his unit on operations.

2 Squadron's aircraft establishment had also been raised to 19 machines: six for each flight and one for the CO. During May the Squadron began receiving S.E.5as with different power plants. The geared 200hp Hispano engine, driving a four-bladed propeller, had proved unreliable. As a result machines powered by the licensed-built Wolseley variant, the 180hp Viper with direct drive to a two-bladed airscrew, began arriving.[39]

During late May, large-scale enemy troop movements on the River Aisne (in the Champagne district near Reims) were being reported by the reconnaissance crews. These were ignored, and on 27 May the Germans made a deep advance through the Allied front. The RAF C-in-C in France, Major-General John Salmond, vowed that such an error would not happen again. Air power would guarantee no more such unpreparedness: "the responsibility that the British Army is not surprised, is on the Royal Air Force".[40]

By 30 May, the Germans had pushed past Reims and had reached the River Marne, where the Allies were able to hold them. The Germans had failed to achieve control of the air to assure the success of their spring offensives on the Somme and Lys. Perhaps, if their new fighters had become operational earlier, they may have wrested back air superiority, and the result of the German spring offensives could then have been devastatingly different.

S.E.5a AIRCRAFT of 68 (AUSTRALIAN) / 2AFC SQUADRON 1917–1919

One earlier S.E.5 model (A4856) was received for training in late OCT 1917 at Baizieux, and as this was a "training hack" for the units on the Front, was passed to 24SQN RFC on 8 DEC. No.68 (Australian) Squadron equipped with the S.E.5a from early DEC 1917 with six aircraft per Flight – 'B' Flight was the first on 7 DEC 1917, followed by 'A' FLT on 15 DEC, and 'C' FLT on 19 DEC.[41] The S.E.5a was powered by the 200hp Hispano-Suiza geared engine, but technical problems led to it being replaced through 1918 by the Wolseley Viper direct-drive engine.[42]

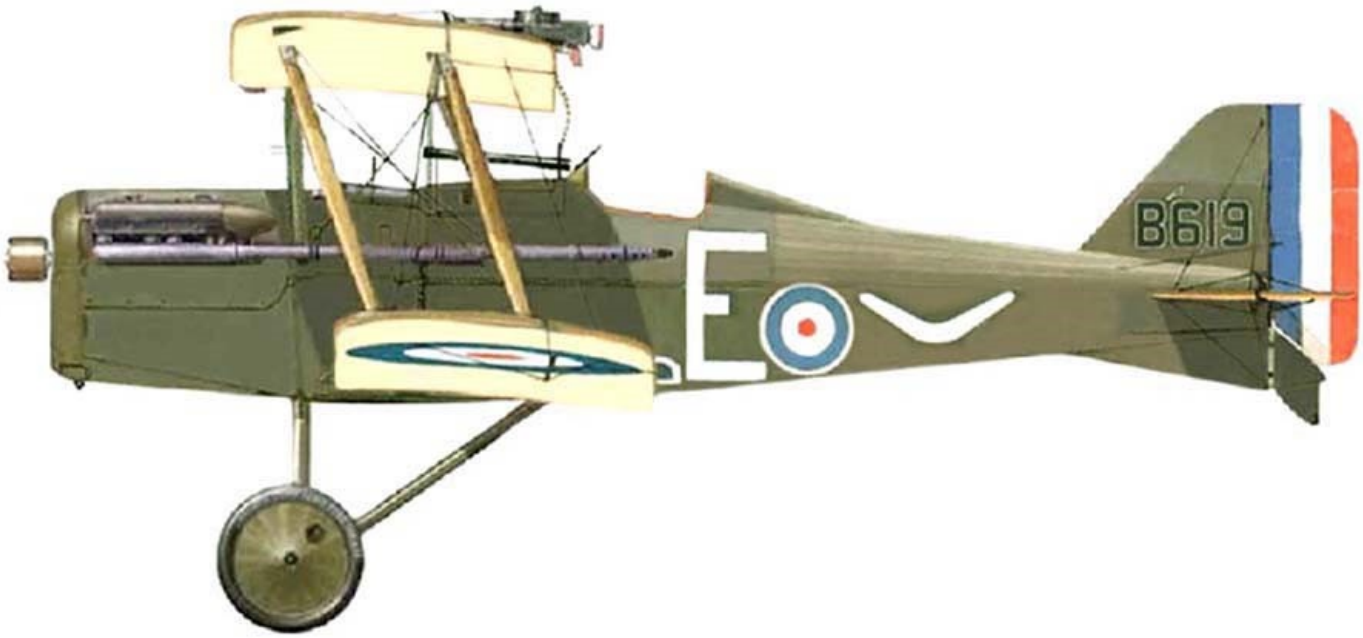
In this list, SQN Codes that are shown in red are unconfirmed by documentation or photography, but by analysis should be accurate; when codes are not known the Flight is listed. Known Presentation machines are highlighted.

RFC Serial	Date On Sqn	Sqn Code[43]	Date Off Sqn	Details
A4856[44]	27/10/17	–	8/12/17	Ex-56, 60 and 41SQNs RFC. First S.E.5 for 68SQN for initial training, to 24SQN RFC. 1ASD SOC 4/4/18.
A8906	19/12/17	U	13/1/18	Ex-56SQN RFC. Forced landing 9/1/18 at Yvrench (Truscott), to 2ASD and repaired.
	21/3/18	A FLT	18/4/18	Dam mid-air collision 17/4/18 (Davies), to 2ASD and SOC 22/4/18.
A8913	9/3/18	A FLT	28/3/18	Ex-56, 40SQNs RFC. Failed to return from patrol over Oppy (Hosking killed).
A8936	15/12/17	C	26/1/18	Ex-60SQN RFC. Wrecked on take-off 22/1/18 at Auchel (Holden), returned to 1ASD and SOC 25/3/18.
B12	19/12/17	Z	12/3/18	Ex-56SQN RFC. Forced landing at Marieux 8/3/18 (Truscott), to 1ASD and SOC 25/3/18.
B55	7/12/17	1	6/1/18	Crashed on landing at Auchel (Lawson killed), SOC.
B61	7/12/17	3	18/2/18	Crashed on landing 16/2/18 (Paxton), to 1ASD and SOC 25/3/18.
B64	7/12/17	6	31/12/17	Crashed on landing 27/12/17 (A Clark), to 2AD and SOC 1/1/18.
B70	7/12/17	5	4/6/18	Crashed on take-off at Foquerolles (Hamilton), SOC.
B74	15/12/17	2	5/1/18	Crashed landing 3/1/18 (Taylor), to 2AD. Repaired, to 64SQN RFC 22/3/18.
B102	21/2/18	W	28/3/18	Shot down by EA at Etaing (Flight POW), claimed by LTN E Koch *Jasta 32*, SOC.

2AFC 'C' FLT's B185/Y and B102/W, in late MAR 1918 *[AWM cine film]*

B149	30/3/18	B FLT	6/4/18	Ex-84SQN RFC. Damaged landing at Bertangles 30/3/18 on delivery from 1ASD (Hamilton), to 2ASD and SOC 12/4/18.
B150	7/4/18	Y	20/4/18	Crashed landing at La Bellevue (Cox), to 2ASD and SOC 23/4/18.
B181	23/3/18	1	29/3/18	Damaged by EA 28/3/18 (Holden), to 1ASD and SOC 8/4/18.

S.E.5a AIRCRAFT of 68 (AUSTRALIAN) / 2AFC SQUADRON 1917–1919				
RFC Serial	**Date On Sqn**	**Sqn Code**	**Date Off Sqn**	**Details**
B184	30/3/18	C FLT	4/7/18	Forced landing at Tancques 1/7/18 (Alberry), to 1ASD and SOC 5/7/18.
B185	18/3/18	Y	6/4/18	Forced landing nr Doullens 5/4/18 (Sexton), to 2ASD SOC 14/4/18.
B187	30/3/18		5/8/18	To 2ASD for exchange with Viper S.E.5a. To UK 19/8/18.
B188	25/4/18	A FLT	3/5/18	Shot down by EA nr Merville (Cummings), SOC.
B194	12/4/18	A FLT	30/5/18	Forced landing at Bertangles 28/5/18 (Primrose), to 2ASD SOC.
B195	4/5/18	A FLT	10/6/18	Forced land at Cachy-le-Grand 8/6/18 (Cummings), to 1ASD SOC.
B504	15/12/17	A FLT	28/1/18	Ex-56 and 60SQNs RFC. Forced landing 24/1/18 at Bailleul (Power), to 1ASD and SOC 18/2/18.
B505	19/12/17	X	14/3/18	Ex-56SQN RFC. Forced landing 12/3/18 (Benjamin), to 1ASD and SOC 22/3/18.
B513	23/2/18	A FLT	13/3/18	Ex-56 and 84SQNs RFC. Crashed landing 11/3/18 (Follett), to 1ASD and SOC 25/3/18.
B525	28/3/18	B FLT	1/6/18	Ex-56SQN RFC. Forced down behind lines nr Villers-Bretonneux (Rackett POW), SOC.
B535	9/1/18	1	5/3/18	Ex-60SQN RFC. Damaged by EA 21/2/18 (Lang), assessed as time expired 1/3/18, to 1ASD. Repaired by 2ASD, to 84SQN 4/6/18.
B571	15/3/18		17/5/18	Ex-84SQN RFC. Crashed landing at Bapaume (Murray-Jones), to 2ASD and SOC.
B579	19/12/17	Y	18/3/18	Ex-84SQN RFC. Forced landing 16/3/18 (Sexton), to 1ASD SOC.



B619/E of 68SQN 'A' Flight with a Hispano-Suiza engine, lost when LT Logan was shot down in FEB 1918

B619	5/1/18	E	21/2/18	Ex-84SQN RFC. Failed to return from patrol (Logan POW).
B699	7/12/17	2	12/12/17	Wrecked nr Lille (Pratt). To 2ASD and repaired, to 84SQN.
B4858	17/12/17	A	7/2/18	Ex-60SQN RFC. Damaged landing 5/2/18 (Phillipps), to 1ASD, SOC.
B4859	15/12/17	E	4/1/18	Ex-56SQN RFC. Crashed landing at Baizieux 3/1/18 (R Clark), to 2AD and SOC 6/1/18.
B4895	7/12/17	4	26/6/18	WFS war worn after 145 hours over lines, to 1ASD, SOC 17/7/18.
B8237	5/3/18	1	14/3/18	Forced landing 12/3/18 (Rackett), to 1ASD and SOC 22/3/18.
B8392	24/8/18	1	9/10/18	Damaged landing 27/8/18 (Currie), forced landing 7/10/18 at Noyelles (Long), to 1ASD, SOC 12/10/18.
B8400	11/5/18	Y	11/6/18	Landed with seized engine 2/6/18 (Cox), to 2ASD and SOC.
B8520	5/7/18	–	5/7/18	Crashed into hangar 5/7/18 at Reclinghem on delivery ferry from 1ASD (Dibbs), to 1ASD and SOC 8/7/18.
C1060	21/1/18	U	6/4/18	Ex-40SQN RFC. Forced landing nr Marieux 5/4/18 (Truscott), to 2ASD and SOC 12/4/18.

S.E.5a AIRCRAFT of 68 (AUSTRALIAN) / 2AFC SQUADRON 1917–1919				
RFC Serial	**Date On Sqn**	**Sqn Code**	**Date Off Sqn**	**Details**
C1125	28/6/18	A FLT	29/11/18	Damaged at Reclinghem (Follett), unfit WFS war worn 22/11/18, to 1ASD Tourmignies, SOC.
C1129	17/10/18	A FLT	19/2/19	Forced landing nr Serny 4/1/19 (Wright). To 32SQN RAF.
C1837	13/6/18	C FLT CDR	25/6/18	Forced landing Eggewaertscapelle (Manuel), wrecked SOC.
C1934	23/6/18		14/8/18	Crashed landing at Allonville 13/8/18 (Cole), to 2ASD and SOC.
C1948	7/7/18	W	31/1/19	War worn unfit for further service 16/1/19, to ASD and SOC.
C5309	13/3/18	A FLT	2/4/18	Ex-60SQN RFC. Forced landed 29/3/18 at de Belleville (Follett), to 1ASD and SOC 7/4/18.
C5312	15/12/17	B	26/1/18	Damaged landing 22/1/18 at Savy (Power A FLT), to 1ASD. Repaired to 40SQN RAF 12/4/18.
C5320	15/12/17	F	9/2/18	Crashed due engine failure 6/2/18 at Roclincourt (Brettingham-Moore), to 1ASD. Repaired to 40SQN RAF 12/4/18.
C5328	29/12/17	6	21/2/18	Forced landed 18/2/18 at Estree-Cauchee (W Adams), SOC 1ASD.
C5347	22/1/18	T	19/3/18	Forced landing 18/3/18 (Rackett), to 1ASD and SOC 21/3/18.
C5349	24/1/18	B	8/4/18	Damaged on road transit to La Bellevue 6/4/18, to 1ASD SOC.
C5380	16/2/18	A FLT	11/3/18	Crashed taking-off Savy 8/3/18 (Hosking), to 1ASD SOC 22/3/18.
C5382	12/3/18	Z	24/4/18	Damaged landing at La Bellevue 23/4/18 (Stutterd), to 2ASD SOC.

C5382/Z of 'C' FLT 2AFC, late MAR 1918

C5382 a Vickers-built S.E.5a showing the Crayford serial style on the fine, with smaller prefix letter.

C5387	21/2/18	B FLT	16/3/18	Crashed with engine fail 15/3/18 at Savy (J Adam), to 1ASD SOC.
C5440	2/4/18	A FLT	27/7/18	Forced landed 25/7/18 at Rubecourt (Disney), 1ASD, SOC 29/7/18.
C5441	4/5/18	A FLT	4/6/18	Crashed low flying nr Clermont (Primrose killed), SOC.
C5442	2/4/18	A FLT CDR	17/6/18	Forced landed at Verrines 16/6/18 (Cummings), 1ASD, SOC 7/7/18.
C5443	4/5/18	Z	20/5/18	Forced landing at Savy 19/5/18 (Cameron), to 2ASD and SOC.
C6403	4/6/18	C FLT CDR	9/11/18	Shot down by groundfire at Enghien (Smith wounded), SOC
C6473	18/6/18	A FLT	15/11/18	Named "1st (R) Garrison Bn, Kings Own Yorkshire Lt Infantry". WFS war worn 219 hours, to 1ASD to become instructional airframe.
C8728	26/6/18	V	20/7/18	Crashed taking-off 17/7/18 (Forrest), to 1AD and SOC.
C8901	19/11/18		20/2/19	To 32SQN RAF.
C9489	19/12/17	W	20/2/18	Forced landing due ignition failure 18/2/18 (Brettingham-Moore), to 1ASD, and SOC 25/3/18.
C9496	9/1/18	2	27/6/18	WFS 25/6/18 war worn after 181 hours. To 1ASD and SOC 1/7/18.
C9539	19/12/17	V	26/6/18	Pic of landing accident at Savy 25/3/18 (Forrest); WFS war worn after 137 hours over lines, to 1ASD.
C9541	6/2/18	Y	5/8/18	WFS war worn 142 hours 26/7/18, to 1ASD. Flown to UK 10/8/18.
C9619	19/2/18	C FLT CDR	28/3/18	Forced landing 27/3/18 at La Gorgue (Smith), 1ASD SOC 29/3/18.

S.E.5a AIRCRAFT of 68 (AUSTRALIAN) / 2AFC SQUADRON 1917–1919				
RFC Serial	**Date On Sqn**	**Sqn Code**	**Date Off Sqn**	**Details**
D204	15/3/18	C FLT	7/4/18	Forced land Villers Bocage 6/4/18 (Benjamin), 2ASD SOC 14/4/18.
D212	27/1/18	D	22/3/18	Shot down by EA over lines nr Épehy (R Howard killed), SOC.
D214	26/1/18	C	11/4/18	Forced landing 4/4/18 at Amiens (Primrose), to 2ASD SOC 14/4/18.
D379	29/10/18	B	31/1/19	Still on 2AFC charge 22/1/19, WFS as war worn.
D406	28/7/18	A FLT CDR	1/11/18	Damaged by groundfire 26/10/18 (Simonson), to 1ASD and SOC.
D3429	30/3/18	B FLT	10/6/18	Damaged by groundfire 9/6/18 and crashed landing (W Adams), to 1ASD and SOC 4/7/18.
D3431	7/4/18	C FLT	25/7/18	Forced landing 24/7/18 Reclingham (Alberry), 1ASD SOC 27/7/18.
D3502	16/3/18	A FLT	27/3/18	Shot down by groundfire over Bouzincourt (Brettingham-Moore), unsalvable and SOC.
D3512	20/4/18	C FLT	10/5/18	Forced landing at Famecon (Stutterd), to 2ASD and SOC.
D3514	7/4/18	T	30/5/18	Forced landing 29/5/18 La Bellevue (Hammond), 2ASD SOC 5/6/18.
D3535	19/4/18	A	4/5/18	Forced landing 3/5/18 at Tangry (Phillipps), to 2ASD SOC 6/5/18.
D3923	24/4/18	Z	5/5/18	Damaged landing 3/5/18 at Auchel (Cameron), to 2ASD and SOC.
D3924	7/4/18		24/4/18	Forced landed 22/4/18 Treizennes (Cummings), 2ASD, SOC 4/4/18.
D3960	20/5/18	C FLT	12/6/18	Shot down by EA nr Noyon (Hammond killed), claimed by LTN H Pippart *Jasta 19*, SOC.
D3962	17/5/18	A FLT	10/7/18	Crashed landing 8/7/18 (Knight), to 1ASD and SOC 11/7/18.
D6187	6/6/18	A	10/6/18	Forced landing 8/6/18 Courperque (Simonson), 1ASD, SOC 4/7/18.
D6190	6/6/18	C FLT CDR	10/7/18	Forced landing 8/7/18 (Smith), to 1ASD and SOC.
D6191	6/6/18	C FLT	9/6/18	Forced landing 8/6/18 St Laurent (Sexton), to 1ASD, SOC 4/7/18.
D6194	11/6/18		5/8/18	To 2ASD exchanged for Viper S.E.5a. Rebuilt as H7242 5/11/18.
D6196	11/6/18	C FLT	9/7/18	Crashed landing 7/7/18 (Cox), to 1ASD and SOC 10/7/18.
D6860	31/5/18	A	21/10/18	Forced landing 18/10/18 Fleur-Paix (Davies), 1ASD, SOC 24/10/18.
D6869	30/5/18	T	8/10/18	Damage landing 15/7/18 (Copp), assessed war worn to 1ASD SOC.
D6891	12/7/18	A FLT	7/9/18	Wheel off taking-off 6/9/18 (Disney), to 1ASD and SOC 9/9/18.
D6903	26/6/18	2	14/10/18	Crashed 13/10/18 landing in dark (Blaxland), 1ASD, SOC 17/10/18.
D6912	7/7/18		20/2/19	To 32SQN RAF.
D6913	26/6/18	B FLT	26/8/18	Crashed taking-off 23/8/18 at Marquise (Ebeling killed), to 1ASD and SOC 27/8/18.
D6919	10/7/18	6	18/2/19	Assessed war worn 7/1/19, to 1ASD.
D6941	6/8/18		7/9/18	Crashed landing 5/9/18 (Ross), to 1ASD and SOC 8/9/18.
D6948	5/8/18	Y	13/8/18	Forced landing in trenches 12/8/18 (Alberry), 1ASD, SOC 16/8/18.
D6950	26/7/18	V	27/10/18	Shot down over Tournai (F Howard killed), SOC.

D6950/V 2AFC 'C' FLT with a Wolseley Viper, failed to return from patrol on 14 OCT 1918

D6964	14/8/18	1	19/2/19	To 32SQN RAF.
D6968	6/8/18	B FLT	14/10/18	Failed to return from patrol nr Tournai (McKeown killed), SOC.[45]
D6995	13/8/18	Y	20/2/19	To 32SQN RAF.

S.E.5a AIRCRAFT of 68 (AUSTRALIAN) / 2AFC SQUADRON 1917–1919				
RFC Serial	**Date On Sqn**	**Sqn Code**	**Date Off Sqn**	**Details**
D7004	29/11/18	A	10/2/19	Crashed nr Fruges 10/2/19 (Dibbs), to AD. Flown to UK 5/3/19.
D7006	17/11/18	B FLT	18/2/19	Forced landing 18/2/19 nr Marquise (Wellwood); believed to AD.
E1265	11/6/18	A	23/6/18	Forced landing 22/6/18 Droinville (Simonson), 2ASD, SOC 27/6/18.
E1351	2/7/18	T	9/7/18	Crashed landing 7/7/18 (Murray-Jones), to 1ASD, SOC 10/7/18.
E3154	11/6/18	A FLT	5/8/18	Crashed 5/8/18 (Disney), exchanged at 1ASD for Viper-machine, SOC 19/8/18.
E5659	8/10/18		20/2/19	To 32SQN RAF. Flown to UK 5/3/19
E5757	9/10/18	1	20/2/19	To 32SQN RAF.
 **E5757/1 served with 2AFC 'B' Flight until the Armistice, passing to the RAF in FEB 1919**				
E5765	21/10/18	A	15/2/19	Crashed at Aire, nr Marquise (Coy), SOC.
E5782	30/10/18	V	20/2/19	Damaged landing 23/11/18 (Kay), presume repaired to 32SQN.
E5965	18/7/18	X	21/9/18	Crashed at Amentières behind lines (Cox POW), SOC.
E5989	6/8/18	B FLT	14/10/18	Failed to return from patrol nr Tournai (Cornish POW), SOC.
F860	22/9/18	C FLT	20/2/19	To 32SQN RAF.
F930	29/11/18		20/2/19	Named 'Zanzibar No 24'. To 32SQN RAF, flown to UK 5/3/19.
F940	29/11/18		20/2/19	To 32SQN RAF.
F5457	14/10/18	2	18/11/18	Believed damaged 14/11/18 (Stutterd), to 1ASD, SOC 22/11/18.
F5465	7/9/18	B FLT	26/10/18	Crashed landing 26/10/18 at Lesquin on transit Auchel to Pont-à-Marq (Marshall), to 1ASD and SOC 31/10/18.
F5466	7/9/18		13/2/19	Crashed nr Marquise (Denton).
F5511	17/10/18	B FLT	20/2/19	To 32SQN RAF.
F8955	14/11/18	C FLT CDR	26/11/18	Named 'Teddy'. Crashed landing 22/11/18 in dark (Manuel), to AD and SOC 7/12/18.
H7165	28/10/18	A FLT	26/11/18	Rebuilt ex-E5705. Crashed landing 23/11/18 (Coy), to AD and probably SOC.

S.E.5a Production. There were six contractors who filled production contracts for the S.E.5a, on 31 separate production contracts. These were the Royal Aircraft Factory, Martinsyde Ltd, Vickers Ltd, the Austin Motor Co Ltd (with Vickers, the two largest manufacturers), the Air Navigation Co Ltd, and Wolseley Motors Ltd. The total contracted production (below) adds up to 5125 aircraft. This differs from the S.E.5a production total of 5148 (cited in *The S.E.5 File*) – the discrepancy is due to cancelled or curtailed contracts, with those aircraft not being delivered.[46]

Serial Numbers. The images shown in the 2AFC aircraft listings illustrate the variety in the marking of serial numbers as described below – this was dependent upon the aeroplane manufacturer during 1917 and early 1918, before the RAF standardisation policy introduced in mid-1918, when regulations decreed serials would be in white on the rear fuselage ***and*** in black on the rudder striping, where practicable.[47]

S.E.5a Serials	Contractor [48]	Contract No.[49]	Remarks
A8898 – A8947	**Royal Aircraft Factory** – Farnborough, Hampshire	1916 order, Extract 133 from Royal Aircraft Factory	(50) **220 total**. Serial with apostrophe between letter and the digits.
B4851 – B4900		A.S.9615/17, 20 JUN 17	(50)
C1051 – C1150		A.S.19636, 20 SEP 17	(100)
D7001 – D7050		A.S.3299, 7 JAN 18	(50) 30 cancelled.
B1 – B200	**Martinsyde Ltd** – Brooklands	87/A/1616, 1 FEB 17	(200) **415 total**. Serial on fin in black.
D3911 – D4010		A.S.12516, 8 DEC 17	(100)
E3154 – E3253		35A/222/C137, 14 MAR 18	(100) Apparently only 15 delivered.
F5249 – F4348		35A/1265/C1124, 5 JUN18	(100)
B501 – B700	**Vickers Ltd** – Weybridge, Surrey	87/A/1627, 6 FEB 17	(200) **2165 total**. Serials marked on fin.
C9486 – C9635		A.S.10480, 3 NOV 17	(150) Weybridge serials with apostophe.
D201 – D300		A.S.31574, 8 NOV 17	(100)
D3426 – D3575		A.S.7861, 6 DEC 17	(150)
D5951 – D6200		A.S.42113, 5 JAN 18	(250)
E1251 – E1400		35A/33/C17, 1 MAR 18	(150)
E3904 – E4103		35A/221/C13, 14 MAR 18	(200)
F5449 – F5698		35A/1177/C1071, 5 JUN18	(250)
F8946 – F9145		35A/1763/C1884, 19JUL18	(200)
C5301 – C5450	**Vickers Ltd** – Crayford, Kent	A.S.10480/17, SEP 17	(150) Crayford used smaller prefix letter.
D301 – D450		A.S. 31574, 8 NOV 17	(150)
D8431 – D8580		A.S.37767, 17 JAN 18	(150) Approx 80 cancelled.
F551 – F615		35A/537/C414, 9 APR 18	(65) Apparently only 5 delivered.
B8231 – B8580	**Austin Motor Co Ltd** – Longbridge, Birmingham	A.S.22251, 30 JUL 17	(350) **1550 total**. Serial in white on fin.
C8661 – C9310		A.S.22251, 2 NOV 17	(650) Apparently added to earlier Contract.
E5637 – E5936		35A/387/C280, 3 APR 18	(300)
F7951 – F8200		35A/1764/C1883, 17JUL18	(250) Later production serial in one line across rudder striping.
C1751 – C1950	**Air Navigation Co Ltd** – Addlestone, Surrey	A.S.20367, 20 AUG 17	(200) **340 total**. Serial in white on fin.
E5937 – E6036		35A/390/C281, 3 APR 18	(100)
H674 – H733		35A/1697/C1801, 25JUL18	(60) Last 20 not delivered, held in store.
C6351 – C6500	**Wolseley Motors Ltd** – Adderley Park, Birmingham	A.S.11452, 11 OCT 17	(150) **435 total**. Serial in white on fin.
D6851 – D7000		A.S.30281, 9 JAN 18	(150)
F851 – F950		35A/534/C410, 9 APR 18	(100)
F7751 – F7800		35A/1756/C1865, 11JUL18	(50) Last 15 not delivered.

S.E.5a Production

Notes: 1. *Cancelled S.E.5a orders:*
- Whitehead Aircraft Co, Richmond Surrey, B1001 to B1100 (87/A/1755 of 23 FEB 1917);
- Martinsyde Ltd F8321 to F8420 (35A/1762/C1885 of 18 JUL 18);
- Austin Motor Co H5291 to H5540 (35A/1764/C1883 of 31 AUG 1918).

2. Reconstructed aeroplanes from the various Depots not included.
3. Variations in total production due to curtailed contracts.
4. Variation in marking serials was corrected by RAF standardisation policy of JUN 18.

National Markings. Colours for identification colours from MAR 1918 were Red VR3, White VW3 and Blue B2.[50]

Squadron Markings. Individual squadron markings were introduced initially for the Corps reconnaissance squadrons in APR 1916, and by the end of that year squadron markings were widely adopted on the Western Front. Squadrons were allocated unit markings on arrival in France: 68SQN D.H.5s were identified by a thin white vertical stripe in front of the tailplane,[51] allotted on 19 SEP 1917. In MAR 1918, these unit markings were only retained by the fighter squadrons on the Western Front.[52] Individual aircraft in 68SQN were identified by large white letters or numbers after arrival in France, and the initial 18 aircraft carried the following codes:

'A' Flight aeroplanes were marked A to F,
'B' Flight 1 to 6, and
'C' Flight U to Z.[53]

A Moment in Time
Memories from my Service

"*Get Your Arms Up, Charlie!*"

Shep

In early(ish) 1986, I sustained a knee injury which, in the fullness of time, lead to me being considered Medically Unfit for Further Duties as an ADG. Accordingly, I was offered either a discharge or a re-muster to one of five or so pro-offered musterings. I didn't want to leave the RAAF before my enlistment period was up so, I chose one of the re-muster options – COMMSOP (Communications Operator).

The period between awaiting the decision of the Medical Board and then waiting for a vacancy on a COMMSOP Basic Course was spent at Defence Section at Williamtown. The normal establishment of which was a FLTLT Ground Defence Officer, a FSGT ADG and a CPL ADG. For nine months or so during 1986 and early 1987, one LAC ADG was added. Defence Section was situated away from the Rifle Flight and we didn't have much to do with them on a day to day basis. We spent our time in our own little building and were kept busy doing … very, very little. The only major task that I remember was conducting regular continuation weapons training for the rest of the base population. People had to maintain a basic currency with weapons such as the usual L1A1 SLR and, particularly for pilots, the Browning 9mm SLP so, Defence Section facilitated that by running refresher training and (re)qualification shoots. I don't remember how often we'd do range work, but it was pretty regular. One of our duties naturally was organising and drawing the necessary weapons from the armoury and for ordering the exact quantity of ammunition for the shoot – we never, ever ordered any extra by mistake, just so as we could have our own yippee shoot.

Anyway, time passed and a slot opened up on a COMMSOP course commencing in March, 1987 and I was duly posted to the RAAF School of Radio (RADS) at RAAF Base Laverton, Victoria.

The COMMSOP Basic Course was quite lengthy, being some six-months long (remember the old joke, "three months ago, I couldn't even spell ADG, now I are one"; well you can immediately see why the COMMSOP course was so long, look at all of them letters!). It was also reasonably intense with a lot to learn and some specific, dextrous, skills to master. Most of the time was spent in a classroom (of one sort or another). We learnt all about all sorts of things. We learnt about radio theory and radio wave propagation, message formats, all about tape relay, how to read Murray Code, Commcen duties and procedures and computer messaging amongst other things and we learnt how to type [ahh, who could forget: headphones on, shield over the keyboard and, "a-a-a-sem", "a-a-a-sem" – over and over again].

Periodically, we were allowed out of the classroom. One such occasion was for the "Tactical Exercise" – wherein we went bush for about a week. This is when I learnt what recreational camping was like. I never knew that you could have great big fires to sit around – even in the morning! And generators and electric lights and cooking … Wow! And, evidently, when you went bush, you didn't have to go for 4 to 6 weeks at a time, you could actually go for as little as 5 days; Monday to Friday and, really, Monday was a write-off because you had to pack and travel and setup camp and get the fire going and organise a bbq and cold drinks. Then, Friday was similar with packing up, breaking camp; although it was more rushed because you needed to get back to base before 3pm for early knock-off.

The other reason for being granted short-term parole from the class room was to attend the occasional CO's parade.

Most of the student population at RADS were adult trainees undergoing RADTECH training of one form or another (which courses were quite long). The students on these courses, like our COMMSOP course arrived at RADS direct from 1RTU (not the apprentices – apprentices did a four-year course which included their own version of recruit training – and whilst there seemed to be a large number of them about, they were largely separate from adult trainees – except for CO's parades).

ADG's excepted, by the time that people made it out into real air force, parades were accomplished by doing a form of drill called the "techo-shuffle". I'd seen it on OC's parades at Williamtown. The march passed looked like vast groups of neatly dressed people sauntering about the flight line like a line of blue slugs.

The other students on my COMMSOP course had all just graduated from recruit training. I, as you know, was a remuster. They were all still reasonably regimented. I was looking forward to trying my hand at this techo-shuffle business that I'd seen and heard so much about.

So, CO's Parade, RADS style.

With the parade just about over, we were cruising along having just gone past the dias when I heard the WOD screaming out to some unfortunate from somewhere further back on the parade ground, "Get your arms up, Charlie!". Then again, "*GET YOUR ARMS UP*, *CHARLIE*!"

Ooo, thought I, Charlie's going to be in strife if he doesn't get his arms up – and, how lazy must this person be, you don't have to get them up very high anyway! I could hear some footsteps now, out of step and quicker than our marching and, getting louder,

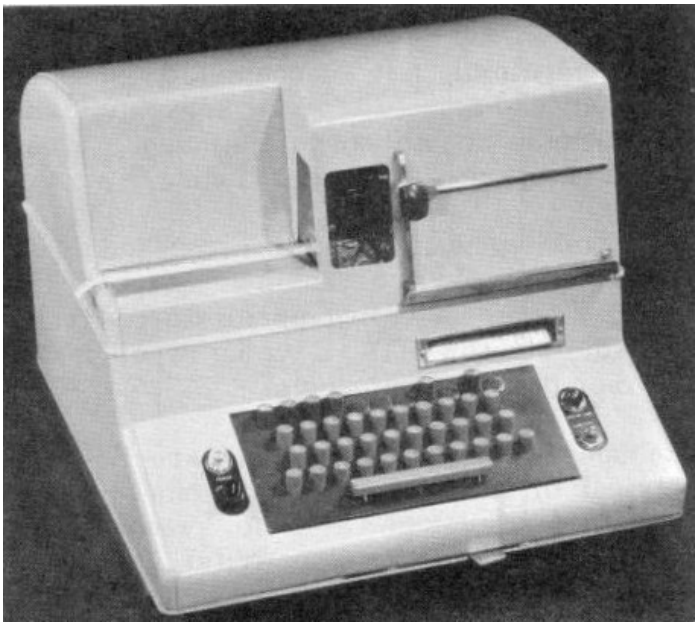
Before I knew it she was walkin' next to me, singin'
"Do wah diddy diddy dum diddy do"

The flustered visage of the RADS WOD appeared to my left (I was in the middle rank so, he appeared next to whomever it was that was marching along next to me). "Oh, 'morning, Sir! Lovely morning for stroll, warms you up of a cold Melbourne morning, this, doesn't it?" I nearly said except that the WOD cut me off, "I Said, *Get Your Bloody Arms Up*!" Me? Well, why didn't you just say so, I thought you were talking to Charlie. "See Me In My Office!" He continued, without letting me get a word in edge-ways and evidently thinking that I was much farther away than I actually was, because he was Shouting. But what a nice chap though, inviting me to visit him at his office – I expect I will, if I ever go past there. "Straight After Parade!". Oh, well, now I know when. But, before I could ask him where his office was, he'd gone. This, then, must have been the very beginning of my RAAF research journey. I had to do all the researcherating that I could … well, ask one of the girls in the orderly room where the WOD's office was. Down the hall, turn left, third door on the right (or something like that).

In the fullness of time, the WOD made his entrance down the hallway of dread, striding passed the quivering and quacking defaulters who had transgressed in one awful way or another. I was near the head of the queue and, seeing me, he said in a menacing sort of tone, "I'll see you first …" As I went to walk (sorry, march) into the WOD's office, I noticed the young, worried looking face of the young chap who was at the head of the line. Evidently an apprentice. He looked about 15 years old and, it was easy to read in his visage, had not previously been summonsed to His office before. He looked as if he was watching me take my last steps and was visualizing his own imminent demise.

The wrath of the WOD was ~~brief~~ non-existent. After I had closed the door, he asked in a quiet conversational voice, "remuster?". Yes, sir. "What course you doing?". COMMSOP. "What mustering were you?". ADG. He smiled. After a very brief and friendly conversation, I commented that there were a few worried looking faces outside. He smiled again and said, "yeah, I know – send the next one in". No worries, sir. I turned and opened the door and as I walked out I said to the poor young chap next in line in a voice loud enough for the WOD to hear clearly, "you're next, mate – sorry, he's *really* angry now!"

COMMSOP – Air Force code for "I don't do parades".



Teletype Model 28 KTR (Keyboard Typing Reperforator). For all of you ex-members out there – no matter if it was your postings, promotions, the quantity of tomato sauce available at your mess, or bits and pieces for your Macchi, Mirage or F/A-18 or some juicy gossip about some sprog PLTOFF flicking a switch when he shouldn't have which caused something to go fizz which resulted in a sortie being aborted and/or an airframe clogging up a hangar, or what so ever – all of the gory, blow by blow details were hammered out my someone like me on one of these. [*via www.navy-radio.com/tty/reperf/tt352-ug-01*].

Applications unlimited . . .

TELETYPE
Model 28 Line

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Teletype Model 28 Automatic Send-Receive Set. A "complete station" in a compact console—with facilities for sending and receiving on message paper or sprocket-fed business forms . . . preparing punched tape . . . sending or receiving with tape . . . integrating tape and manual keyboarding . . . producing tape automatically, as a by-product of send-receive operations. Optional accessories customize unit to special needs.

Teletype Model 28 Receive-Only Page Printer. A message receiving unit (without keyboard). This is "terminal" equipment, for use where two-way communication is not necessary. No attendant is needed. Produces a printed record on plain paper or multipart business forms. Table models of this unit and the send-receive set at the right are also available.

Teletype Model 28 Send-Receive Page Printer. Message originating unit, for sending and receiving. Model 28 page units, including the Automatic Send-Receive Set, feature a built-in "stunt box" control system for automatic station selection and electrical control of remote equipment. Horizontal tabulation and form positioning arrangement available.

Teletype Model 28 Tape Punch. Receives incoming electrical signals, punches a 5-level "common language" tape, and prints the data right on the tape, for easy identification and handling. This unit is used for message relaying . . . for integrating data from several sources into a single tape . . . and for providing punched tape as a by-product of send-receive operations.

Teletype Model 28 Tape Reader. This is a sending unit. Reads punched tape and instantaneously transmits data to local or remote receiving equipment. As with all Teletype transmitting units, data may go to one destination or a number of destinations simultaneously—either nearby or thousands of miles away.

Teletype Model 28 Tape Reader—Multi-Contact. Unit is similar to tape reader at left. Besides reading punched tape for on-line transmission, twin-shaft reader-distributor design offers facilities for tape transmission to business machines and direct read-out, from business machines, for on-line transmission.

TELETYPE CORPORATION

Amongst many other things, some of the typical equipment in the COMMCEN included the Model 28 Receive-Only Page Printer (top picture, centre; ours didn't have an attendant lady-in-blue – well it would have sometimes, but not quite like her); we also had a legless version that sat on the desk (again – hardly ever like that lady) and, like the Model 28 Tape Reader, (bottom centre) was co-located with our KTR's. Versions of the Tape Reader were also used on the transmit circuit (by the way, my nails rarely looked that good – come to think of it, looking at that image, my hands were starting to look a bit soft!). [*Teletype Corporation advertisement from upload.wikimedia.org/wikipedia/en/9/93*].

No.6 – RAAF Oxfords

The Airspeed A.S.10 Oxford was a multi-engine three-seat advanced trainer monoplane used as a military trainer by the RAF in the 1930s. The Oxford was developed to fit specifications T.23/26 for a trainer aircraft, and the prototype Oxford which first flew in 1937, was the military version of the Airspeed A.S.6 Envoy. The aircraft was a cantilever low-wing monoplane, powered by two Armstrong-Siddeley Cheetah air-cooled radial engines of 375 hp, giving a speed of 190 mph at 10,000 feet. At the outbreak of War, Oxfords were selected as one of the trainer aircraft in Canada, Australia and New Zealand as part of the Empire Air Training Scheme (EATS). The RAAF received 393 Oxfords[54] – the first aircraft, P6878, was received on 5 NOV 1940 and the last, LW999, on 12 MAR 1944. Discrepancies lie in the number of each variant – the Mk.I or Mk.II – that were delivered, and indeed the number that were even manufactured.

British author J D R Rawlings notes that his compilation of Oxford production numbers was made from the then Ministry of Supply and differed from previously published lists largely in the delineation of Mk.Is and Mk.IIs in the early batches. He made the point that the possibility *"of now establishing which is correct appears remote"*.[55] Mark numbers were not introduced until contract B.32843/39, after which the earlier contracts were retrospectively indicated as Mk.I or Mk.II. But we can safely say that over 8,500 Oxfords were produced, and Rawlings assessed this as 8,558 Oxfords.[56] Subsequent analysis by several credible sources appears to accurately refine this number at 8,580.[57]

[Etienne du Plessis WWII Colour collection]

RAF Oxford Mk.II T1244, produced by Airspeed at Portsmouth and delivered in 1941 – here as 'H5' of 6SFTS RAF in FEB 1942

The RAAF received 255 Mk.I Oxfords, and 138 Mk.IIs, for a total of 393 between NOV 1940 and JAN 1944. All these retained their original RAF serials in RAAF service (and several Oxfords were also used by RAAF Article XV Squadrons operating from the UK as communication hacks). RAAF Oxfords were the Mk.I (originally with an Armstrong Whitworth dorsal turret for gunner training but was soon removed) and the Mk.II (which was never fitted with a turret) – all used for dual pilot training. Known universally to trainees as the "Ox-Box", the Oxfords were used at EATS Service Flying Training Schools – primarily **1SFTS and 6SFTS** – for instruction in flying, navigation, gunnery, radio and bombing. In addition, Oxfords operated with the southern-based CUs. In the years after World War II, Oxfords remained with the RAAF as trainers and communication aircraft. The last RAAF Oxford was retired from service in 1952, being offered for disposal in OCT 1952. The Oxford was the initial multi-engined trainer in the RAAF for over a decade.

RAAF Oxford Serial Summary

1. The RAAF's 393 Oxfords comprised 255 Mk.Is, and 138 Mk.IIs,[58] and all were delivered under EATS, retaining RAF serials.

2. While both had dual controls, the Mk.I was originally a general purpose aircrew trainer with the removable Armstrong Whitworth turret, the Mk.II was a pilot trainer with no turret. With the turret removed, a rear cabin roof hatch filled the gap.

3. There is confusion on Oxford Mark numbers, as they were not introduced until a 1939 contract, and so the earlier contracts were retrospectively designated as Mk.I or Mk.II – causing some confusion.

Type	Quantity	Delivery	Serials
A.S.10 Mk.I [255]	50	MAR 1941	**R**9979, R9985, R9988.
		MAR 1941-JUN 1942	**T**1008, T1131, T1171, T1318, T1327, T1329, T1331.
		MAR 1941-JUN 1942	**V**3354, V3355, V3356, V3357, V3359, V3375, V3383, V3384, V3428, V3432, V3440, V3461, V3475.
		AUG 1941-JUN 1942	**X**6542, X6592, X6663, X6672, X6682, X6687, X6690, X6691, X6726-X6732, X6782, X6787, X6788, X6805, X6806, X6808, X6842-X6847.
	17	AUG 1941-OCT 1941	**AR**758, AR816, AR831, AR838, AR879, AR884, AR888, AR915-AR917, AR933, AR934, AR936, AR947, AR949, AR979, AS145.
	18	SEP 1941-JAN 1942	**AS**476, AS498, AS558, AS609, AS615, AS618, AS622, AS623, AS627, AS636, AS638, AS665, AS671, AS672, AS687, AS694, AS702, AS703.
	46	OCT 1941-JAN 1942	**AT**439, AT454, AT459, AT462, AT468-AT471, AT475, AT477, AT484, AT487, AT506, AT508, AT588, AT614, AT623, AT644.
		MAR-JUN 1942	**BF**869, BF885, BF887, BF888, BF912, BF913, BF915, BF916, BF918, BF919, BF976, BF982, BF983, BF984, BF987, BF996.
		JUN-NOV 1942	**BG**119, BG124, BG201, BG202, BG204, BG217, BG219, BG223, BG226.
		NOV 1942-JUN 1943	**BG**588, BG590, BG614.
	124	NOV 1942-JUN 1943	**EB**802, EB818, EB819, EB838, EB841, EB842, EB844, EB847, EB852, EB889, EB897, EB898, EB899, EB902.
		DEC 1942-OCT 1943	**HN**266, HN271, HN273, HN300, HN314-HN318, HN320, HN321, HN330, HN331, HN335, HN336, HN363, HN364, HN373-HN376, HN412 [applied as 'HN-316' and 'HN-412'], HN414, HN552, HN612-HN614, HN631-HN636, HN638-HN640, HN645, HN647, HN648, HN650, HN651, HN653-HN660, HN663, HN692, HN693, HN754-HN758, HN817, HN818.
		OCT 1943-JAN 1944	**LW**829, LW850-LW853, LW859-LW861, LW874-LW879, LW891, LW897, LW898, LW919-LW924, LW926, LW947, LW966-LW973, LW987, LW996-LW999.
		SEP-OCT 1943	**LX**181-LX193.
A.S.10 Mk.II [138]	11	NOV 1940	**P**6878.
		MAR-MAY 1941	**R**6140, R6151, R6152, R6182, R6183, R6184, R6190, R6191, R6193, R6194.
	35	OCT 1941-JUN 1942	**X**6956, X6960, X6966, X6968, X6972-X6974, X7043, X7045, X7046, X7052, X7054, X7107-X7111, X7113, X7115, X7138, X7139, X7142, X7195-X7197, X7256, X7259, X7260.
		JAN-MAR 1942	**AP**427, AP432, AP433, AP451, AP488, AP493, AP494.
	42	SEP 1941-FEB 1942	**AS**160, AS161, AS175, AS179, AS188, AS201, AS216, AS271, AS309-AS311, AS323, AS325, AS355-AS357, AS370, AS371, AS374, AS375, AS378, AS383, AS385, AS386, AS389, AS392, AS742, AS743, AS789, AS793, AS831, AS840, AS841, AS843, AS863, AS866-AS868, AS909, AS923, AS932, AS940.
	17	APR-NOV 1942	**BG**358, BG373, BG427, BG429, BG432, BG446, BG447, BG449-BG451, BG453, BG456, BG459, BG473, BG475, BG483, BG486.
	33	MAR-NOV 1942	**BM**686, BM692-BM695, BM698, BM703-BM712, BM737-BM746, BM755-BM757, BM765, BM782, BM783, BM818.

Origin of the Oxford

As the RAF expanded in the 1930s, an operational requirement (OR.42) called for a new multi-engine training aircraft. Aircraft technology had advanced considerably in the previous few years, and there was a need for trainers with modern aircraft features, such as flaps and retractable landing gear. Airspeed offered a derivative of its A.S.6 Envoy airliner for the role, with the Air Ministry then issuing Specification T.23/36 on 10 JUL 1936. The initial Contract 537876/36 was placed for 136 aircraft (serialled L4534 to L4669) which were delivered over 1937/1938.[59]

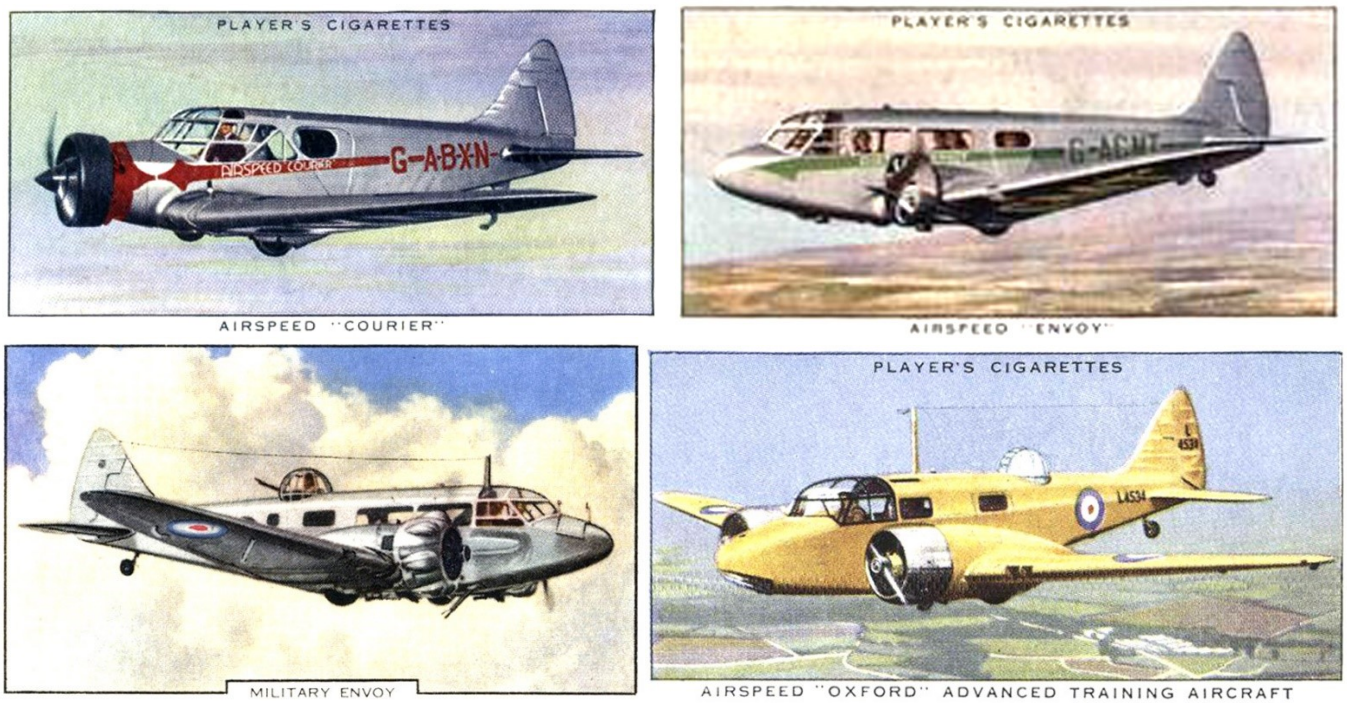
[Airspeed Oxford, Profile p.97]

The first RAF Oxford I L4534, in JUN 1937 with dummy AW dorsal turret

The prototype of the Airspeed A.S.10 Oxford, L4534, flew at Portsmouth on 19 JUN 1937. Although Airspeed, not having previously built aircraft in much quantity, it was able to deliver production aircraft to be in service with the RAF Central Flying School by the end of that year.[60]

Airspeed had been founded Alfred Tiltman and Neville Shute Norway in 1931 in Yorkshire, with other aviation names such as Alan Cobham and Amy Johnson as shareholders. The company's first aircraft was the A.S.1 Tern, a small glider created to gain publicity through record breaking. In 1933, Airspeed relocated to Portsmouth and the following year, in association with Swan Hunter, became Airspeed (1934) Limited. Various aircraft designs followed including the A.S.5 Courier, a twin-engined derivative the A.S.6 Envoy and then, in 1937 the A.S.10 Oxford. In 1940, the de Havilland Aircraft Company Ltd purchased a controlling interest in Airspeed (1934), although the company continued to operate under its own name. At the same time Airspeed (1934) was brought in to manage the Ministry of Aircraft Production (MAP) factory at Christchurch (where it built nearly 700 of the 3600 A.S.51 Horsa gliders used to great effect during the D-Day landings). In 1951, Airspeed was fully merged with de Havilland and the name ceased to exist.[61]

1931	Airspeed Limited
1934	Airspeed (1934) Limited
1940	Purchased by De Havilland Aircraft Company Ltd but retained name
1951	De Havilland Aeroplane Company
1963	Hawker Siddeley Aviation
1977	British Aerospace
1999	BAE Systems



British cigarette cards show the Airspeed lineage: A.S.5 Courier, A.S.6 Envoy, A.S.6 "military Envoy" concept, A.S.10 Oxford

In DEC 1936, Airspeed had expressed its willingness to manufacture aircraft in Australia. This was reiterated by Sir Alan Cobham two months later that Airspeed could assist production of aircraft for Australian defence, which included the Oxford.[62] While local production of the Oxford was not eventually undertaken, Australia was caught out in 1940 when Britain introduced a brief embargo on the export of aircraft.[63]

[colourised from IWM CH1094]

RAF Oxford Mk.I N4587 lineup of 14 SFTS RAF Cranfield, mid-1940, different styles of early camouflage
N4587 and N4640 from the DH Hatfield factory, P1927 '19' from Airspeed Portsmouth, possibly L9651 '26' appears to be a Mk.II (no turret), and possibly P8823 '24' from Airspeed Portsmouth. These aircraft were ordered on 1938 contracts and delivered in 1939, so camouflage was not IAW A.D.1168 (of JUN 1939) but possibly and earlier adaptation of A.D.1159 – these had *Trainer Yellow* marked high up the fuselage and with inconsistencies. The markings of these Oxfords of 14SFTS (RAF Cranfield, Beds) typify those of early aircraft delivered to Australia – camouflaged in RAF colours of *Dark Green* and *Dark Earth* with *Yellow* undersides.

[BAE Systems]

Main production of the Oxford was at the Airspeed factory in Portsmouth – here in 1940

The Oxford in Australia

With war in 1939, Australia's initial offer of an expeditionary force for overseas service of six squadrons was abandoned in favour of joining the Empire Air Training Scheme (EATS) for the training of aircrew.[64] The main aircrew trainer would be the Avro Anson, which could be adapted to all aspects of aircrew training – as a dual pilot trainer, for instructing fledgling navigators, and for trainee gunners and wireless operators. But with War Britain introduced a brief embargo on the export of aircraft, and as this was eased, in AUG 1940 Britain offered Oxfords instead of Ansons for the EATS SFTSs. The RAAF Air Board reluctantly accepted to "ensure delivery of twin-engined training aircraft" – by the end of 1940, Britain committed to supply 189 Oxfords to Australia.[65]

The A.S.10 Oxford Mk.I was introduced by the RAF as this general-purpose trainer for use with all aircrew grades (having a dorsal gun turret, bombbay and additional internal equipment), while the Oxford Mk.II was a dual-control pilot trainer. Much confusion has been caused over the years, however, by the fact that the Oxford saw little service in other than the pilot-training roles – and the majority of Mk.Is flew for most of their time without turrets.[66]

[du Plessis colour collection]

RAF Oxford Mk.I X6559 without turret from 1941 – 'B' scheme, *Yellow* RAF trainer undersides, type-A1 roundels

Although the fuselage keeps to the A.D.1168 'B' pattern, the port engine here is *Dark Green* and not *Dark Earth* as per the Diagram, which appears to be a common deviation in Oxford camouflage. Being an RAF trainer, undersurfaces were *Yellow*, serial number also in *Yellow*, type-A1 fuselage roundels, wings type-A lower and type-B upper, and *Black* serials on the lower mainplanes.

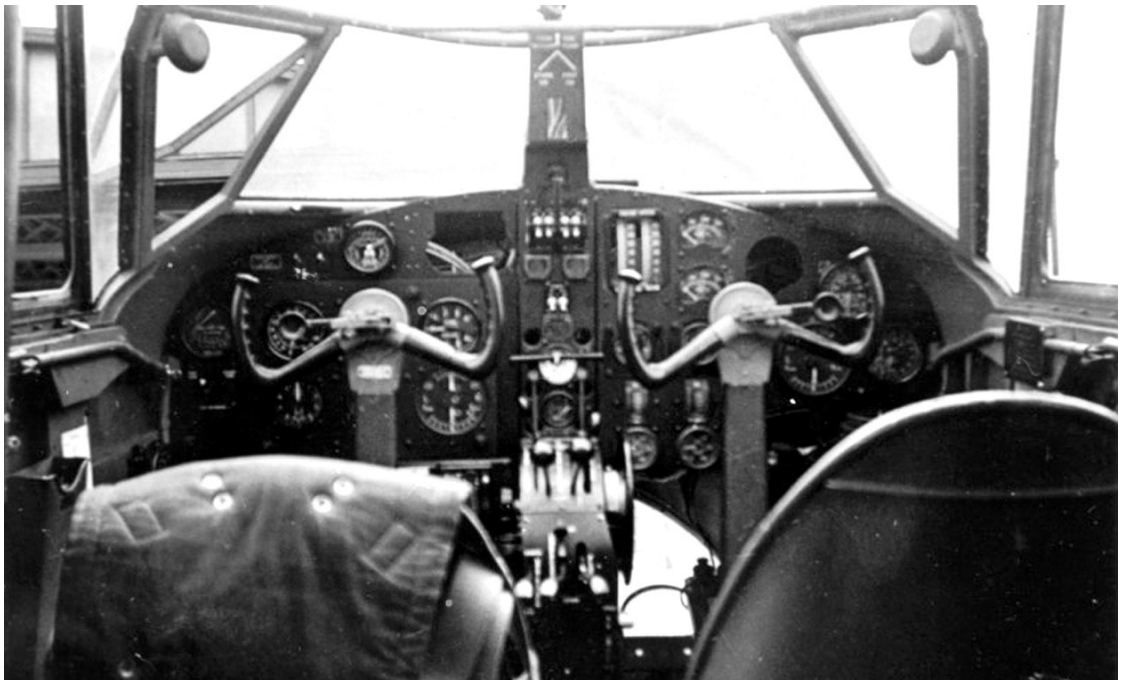
The RAAF's first Oxford, P6878, arrived at 2 Aircraft Park (2AP) Bankstown for assembly in OCT 1940. This sole example had arrived from New Zealand before the main EATS deliveries, coming from RNZAF stocks to assist Australian induction of this new type. At the end of NOV 1940, P6878 flew to CFS at Camden to allow flying instructors to convert, and then returned to 2AP in FEB 1941 for familiarisation in erection before the main deliveries arrived.[67]

[RAF in Colour in WW2 website]

Percival/Luton-made Oxford Mk.II AP468 in 1942 type-C markings, with RAF trainer *Yellow* undersides

As with the RAAF's original Ansons, a foot operated Armstrong Whitworth AW.38 Whitley "bird cage" turret (used as the Whitley's tail turret) was standard for the Oxford and in the upper fuselage fitted aft of the wings. Although it looked like a power-operated turret, the "bird cage" was in reality just a cupola with rhodoid (i.e. cellulose acetate plastic) glazing on a rotating mounting, and moved manually by the gunner sitting on an attached bicycle style seat, pushing it around with his feet on the floorboards.[68] The AW turret was not generally used in Australia on Oxfords, and was removed on arrival as the aircraft were used primarily at 1SFTS – it was not until 1943 that the turrets were refitted to some aircraft for use by 3BAGS at West Sale.

The Oxford was powered by two 375hp Armstrong-Siddeley Cheetah X seven-cylinder air-cooled radials driving fixed-pitch wooden propellers[69] – more powerful than the Anson's 335hp Cheetah IX. Being a development of the Envoy, the Oxford had the same layout and construction, but was heavier with a modified nose, featuring glazing for a bombardier in a prone position, and a greater wingspan. There was the dorsal turret for gunnery training, and a radio operator station behind the cockpit, but this flexibility was overkill, as the Oxford Ox-Box was used primarily for pilot training, and particularly useful for instrument / blind flight training.[70]



[adf-serials]

Oxford Mk.I cockpit showing duplication of flight instruments for both seats

An experienced postwar pilot recorded: “For an aeroplane designed in the mid-thirties, the cockpit layout and accessibility of all key items could not be faulted. Full dual controls were fitted and the central pedestal accommodated all the required kit: the two throttle levers, a single mixture control (with take-off, normal and weak settings), undercarriage, flap, and carburettor heat controls, fuel cocks, elevator trim wheel, rudder bias and even landing lights were all within easy reach of both front-seat occupants. Instruments were sensibly positioned, with not only the full standard panel and fuel gauge immediately ahead of the left-hand seat, but with boost, rpm (interestingly, reading vertically); oil pressure and oil temperature gauges paired just to the right of centre, with duplicate ASI, altimeter and turn-and-slip indicator immediately ahead of the instructor’s position. Many later designers could – and should – have learnt from this early Airspeed initiative.” [71]

Oxford Production Details

The Oxford was produced in the following variants:

- Oxford Mk.I – general purpose aircrew trainer;
- Oxford Mk.II – dual-control pilot trainer, no gun turret;
- Oxford Mk.III – one only (Mk.I P1864) with Cheetah XV engines;
- Oxford Mk.IV – one only (Mk.I AS504) with DH Gipsy Queen engines; and
- Oxford Mk.V – upgraded variant, 450hp Pratt & Whitney Wasp Junior R-935-AN, obvious by the two intakes on the top of the cowling.

A total of over 8500 Oxfords was built, the last being delivered in 1945. This total below is from Rawlings,[72] showing production of 8,558 Oxfords. While produced mainly by Airspeed at its Portsmouth factory, others were made by the shadow factory at Christchurch in Dorset; others were subcontracted to de Havilland at Hatfield, Percival Aircraft at Luton, and Standard Motors at Coventry.

Company/ Factory	Model	Number	Comments
Airspeed Ltd, Portsmouth, Hamps	Oxford I	3,272	RAF orders, including prototype L4534
		25	RCAF pre-war
	Oxford II	895	
		5	RNZAF pre-war
	Oxford V	190	Mk.I AS592 was Mk.V prototype
Airspeed Ltd, Christchurch, Dorset	Oxford I	300	
	Oxford II	250	
De Havilland Aircraft Co Ltd, Hatfield, Herts	Oxford I	1,365	
	Oxford II	150	
Percival Aircraft Ltd, Luton, Beds	Oxford I	800	
	Oxford II	550	
	Oxford V	6	
Standard Motor Car Co Ltd, Coventry	Oxford I	750	None to RAAF

The airvectors.net website assesses a total of 8,586 Oxfords were produced, and as mentioned the *britishaviation* website has added aircraft that Rawlings had left off his totals, assessing this total to be 8,580 aircraft.[73]

RAAF Oxford Maintenance

On arrival in Australia, Oxford assembly and acceptance testing was undertaken by 2AP at Bankstown, 1AP at Geelong, and 1AD at Laverton. Some assembly and testing was also contracted to CAC at Fisherman’s Bend. Routine servicings up to 240-hourly inspections were conducted on the unit, with repairs and overhauls contracted at Bankstown to de Havilland Australia and also Marshall Airways, and some work was done by the Newcastle Aero Club. In Victoria, at Essendon overhauls were undertaken by Ansett, and by Victorian & Interstate Airways Ltd (VIA).

Gun turret removal was evidently the relatively simple procedure of lifting out the turret “module” with the rear fuselage then enclosed by a roof hatch. This appears to have occurred on Oxford induction on arrival by the RAAF APs, where the turrets were presumably stored. Some turrets were re-installed on allotment to 3BAGS West Sale in early 1943, but then removed again in DEC 1943 as most aircraft departed on allotment to 6SFTS at Mallala.

Maintenance at Ansett, 1945. These two AWM paintings of APR 1945 show RAAF Oxford overhaul undertaken by Ansett Airways at Essendon.

[AWM ART 23399]

Oxford being spray painted with red zinc chromate primer, aluminium and bright yellow by Ansett Airways Ltd, APR 1945

[AWM ART 23400]

Oxford rebuilt by Ansett Airways Ltd at Essendon APR 1945

[du Plessis colour collection]

RAF Oxford ambulance with WAAF medical orderlies – the Oxford air ambulance modification was not pursued by the RAAF

An RAF Oxford image c1943 with C-1 roundel and Red Crosses. Camouflaged in the A.D.1168 'B' pattern, because when mirror drawings were cancelled in 1941, the sole scheme became the 'B' pattern. A distinguishing feature is that the colour demarcation on the port side slants forward (from top to bottom), and slants aft on the starboard side; the mirror 'A' pattern was the reverse.

RAAF Oxford "Mirror" Camouflage from 1937

RAAF Aircraft General Instruction C.11 (of 22 SEP 1939) determined the camouflage scheme for twin-engined aircraft to be "*Scheme No.2*", with the pattern from Diagrams A-1733 and Z-1152.[74] Markings historian Ian Baker assesses that RAAF Drawing Z-1152, which applied to both the DC-3 and Anson, was probably based on RAF A.D.1159.[75] The colours used over 1939-40 were referred to as *Camouflage Green* and *Camouflage Brown*. The Oxfords being received for EATS were mainly in Temperate Land Scheme green/brown A.D.1168 camouflage pattern (shown below), which would be the RAAF standard.[76] This Diagram of JUN 1939 was a later representation of Oxford colours, as the earlier patterns (presumably covering from 1937) had training Yellow extended higher up the fuselage. The disruptive pattern would remain until changed by new policy in 1944. However, some provisos must be remembered:

- these drawings appear more to be a guide than for exact adherence, the first sets of camouflage Diagrams were prepared in JUN 1936;[77]
- the RAF then introduced "mirror" disruptive camouflage patterns from **FEB 1937** – the A.P.970 specified two schemes known as 'A' and 'B', the latter being a mirror image of 'A'; [78]
- the term "mirror image" does not mean a reversal of the *colours*, but is a reversal of the coloured *pattern* – to determine a mirror image of a scheme, a mirror held against an 'A' scheme will show the 'B' scheme, it is not just a matter of using one pattern and transposing the *green* with *brown*; also Hawkers in 1940 with its Tornado prototype P5224 had used the standard reversed Hawker drawing D.114155, but also reversed the colours;[79]
- 'odds' and 'evens' – to ensure a flow of mixed patterns, individual manufacturers would start a production batch with one scheme, swapping the scheme with the next aircraft on line (e.g. Spitfire); but often it was more rigid with an odd serial number in 'A' scheme (e.g. Hurricane), or it could be an even number in 'A' scheme (Defiant);
- the RAF cancelled the requirement for mirror schemes in **JAN 1941**,[80] and manufacturers then selected only one pattern as standard – while most manufacturers selected the 'A' pattern, Oxford production adopted the **'B' scheme**, but with field-repaints the original basic patterns were still adhered to, and also often engine shrouds should have been *brown* but black and white imagery often shows *green* (a darker tone);
- in **JUL 1941**, RAF markings schemes were further simplified by discontinuing the multitude of A.D. diagrams – of which the RAAF had reference of 19 [81] – with AMO A.513/41 replacing them with a series of five patterns;[82]
- also as RAAF markings were added – or repairs were made – touch-ups in RAAF camouflage were made, typically with *Foliage Green* over *Dark Green*, but sometimes over the *Dark Brown*.

[colourised from RAAF image]

X6729 '729' delivered to Australia in 1942 in the now standard 'B' camouflage scheme – 1SFTS crash in OCT 1943

Standard SFTS Oxford markings at the time as 1SFTS was the sole Oxford pilot school – *Foliage Green* repaint evident near roundel.

The Oxford's dedicated A.D.1168 camouflage in the sole 'B' pattern would have commenced soon after the RAF JAN 1941 instruction, as for the factories this was definitely a time-saving efficiency. The contracts that were in place from early 1941 primarily related to Oxfords in, and subsequent to, the V- and X-serial batches. The follow-on Oxford deliveries continuing to reach the RAAF were later 1942-1943 manufacture,[83] and surviving imagery of these serials confirms the standardisation on the A.D.1168 'B' scheme.

RAF AIR DIAGRAM CAMOUFLAGE SCHEMES

Aircraft Design Memorandum No.332 (Issue 3) of 15 NOV 1940 (referenced as CD44/41[84]), listed the Air Diagram Numbers for camouflage schemes for the different types of aircraft. The design of camouflage or other external colours scheme must be IAW the appropriate Air Diagram.

The RAAF examples are added from RAAFHQ messages SAS.9984 (DTS 368/41) in DEC 1941 (D.C.2, Anson, Wirraway, Battles), then additionally SAS.7396 (DTS 280/42) in JUN 1942 (Hudson, B-17).[85] This final list was consolidated for all types by AGI C.11 (Issue 4) in AUG 1942.[86] However, there was still a shortage of the drawings in Australia at this stage, and the AGI directed that some aircraft should use the closest drawing available.[87]

Air Diagram No.	Types of Aircraft	RAAF Examples
A.D.1157	Twin-engined monoplanes – bombers, general reconnaissance, transports (span 75' and over)	Douglas D.C.2, D.C.3
A.D.1158	Cancelled, and included in A.D.1160	
A.D.1159	Twin-engined monoplanes – bombers, general reconnaissance, transports, army co-op aircraft (span less than 75')	Anson, Hudson, Beaufort, Beaufighter

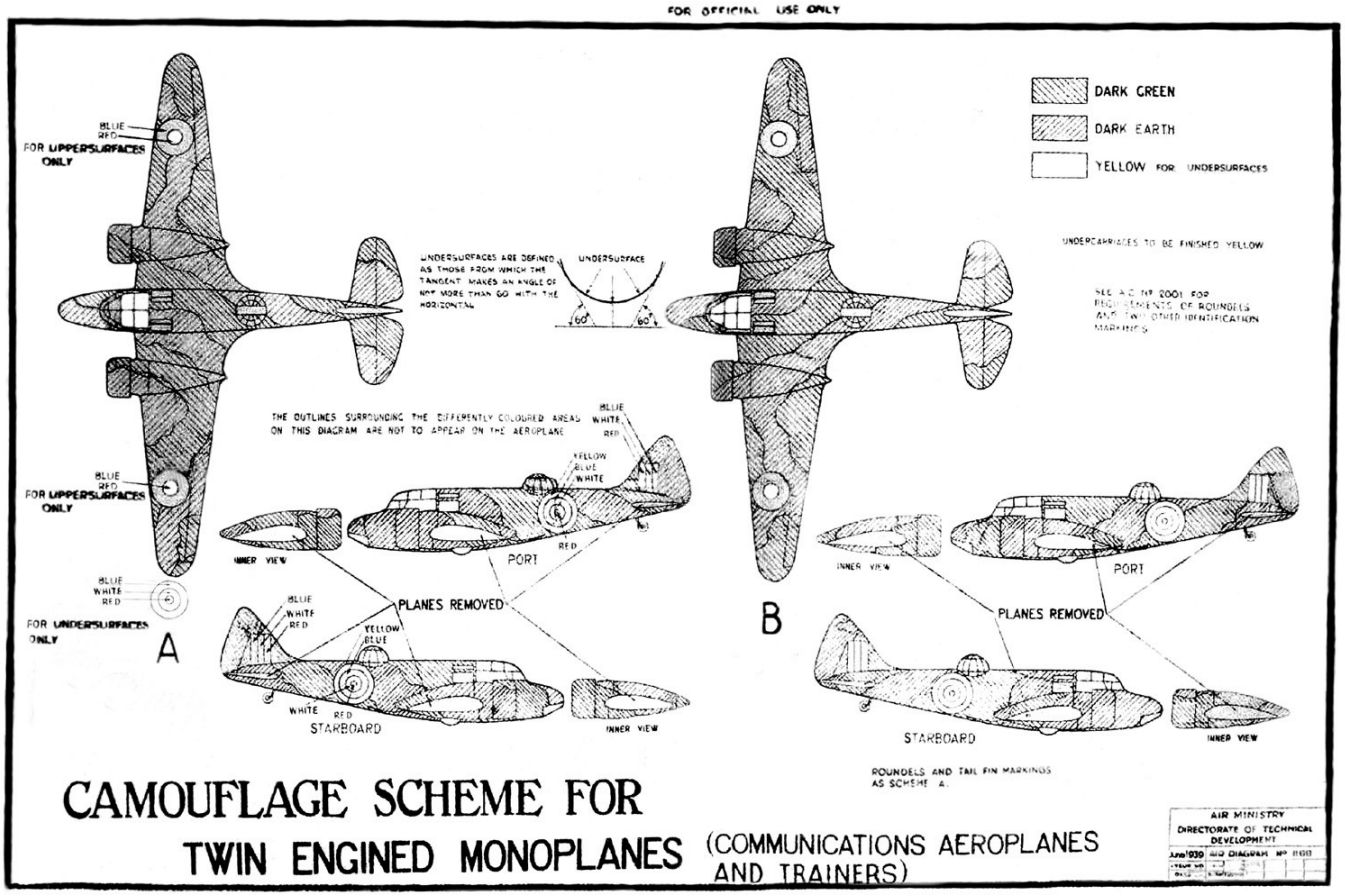
[du Plessis Colour Collection]

A.D.1159 – Blenheim Mk.IF P4834 at Bristol's plant, Filton, in AUG 1939 accurately replicates the A.D.1159 'A' pattern

A.D.1160	Single-engined monoplanes – army co-op aircraft, fighters	Wirraway, Battle, Hurricane [88]
A.D.1161	Four-engined monoplanes – bombers, general reconnaissance, transports	B-17 Fortress
A.D.1162	Single-engined biplanes – army co-op aircraft, fighters	Demon
A.D.1163	Four-engined monoplanes – general reconnaissance (flying boats)	
A.D.1164	Twin-engined monoplanes – general reconnaissance (flying boats)	Catalina
A.D.1165	Twin-engined biplanes – general reconnaissance (flying boats)	Seagull V
A.D.1166	Twin-engined biplanes (sesquiplane) – general reconnaissance (flying boat)	
A.D.1167	Single-engined monoplanes – communications aeroplanes, trainers	Wackett
A.D.1168	Twin-engined monoplanes – communications aeroplanes, trainers	Oxford
A.D.1169	Single-engined biplanes – communications aeroplanes, trainers	Tiger Moth
A.D.1170	Single-engined monoplanes – target towing	
A.D.1171	Single-engined biplanes – target, pilotless aeroplanes	
A.D.1172	Single-engined biplanes – Fleet Air Arm	
A.D.1173	Single-engined monoplanes – Fleet Air Arm	
A.D.1174	Single-engined biplanes – general reconnaissance, FAA	
A.D.1175	Twin-engined biplanes – communications aeroplanes, trainers	
A.D.1176	Cancelled, and included in A.D.1159	
A.D.1291	Four-engined biplanes – communications aeroplanes	D.H.86

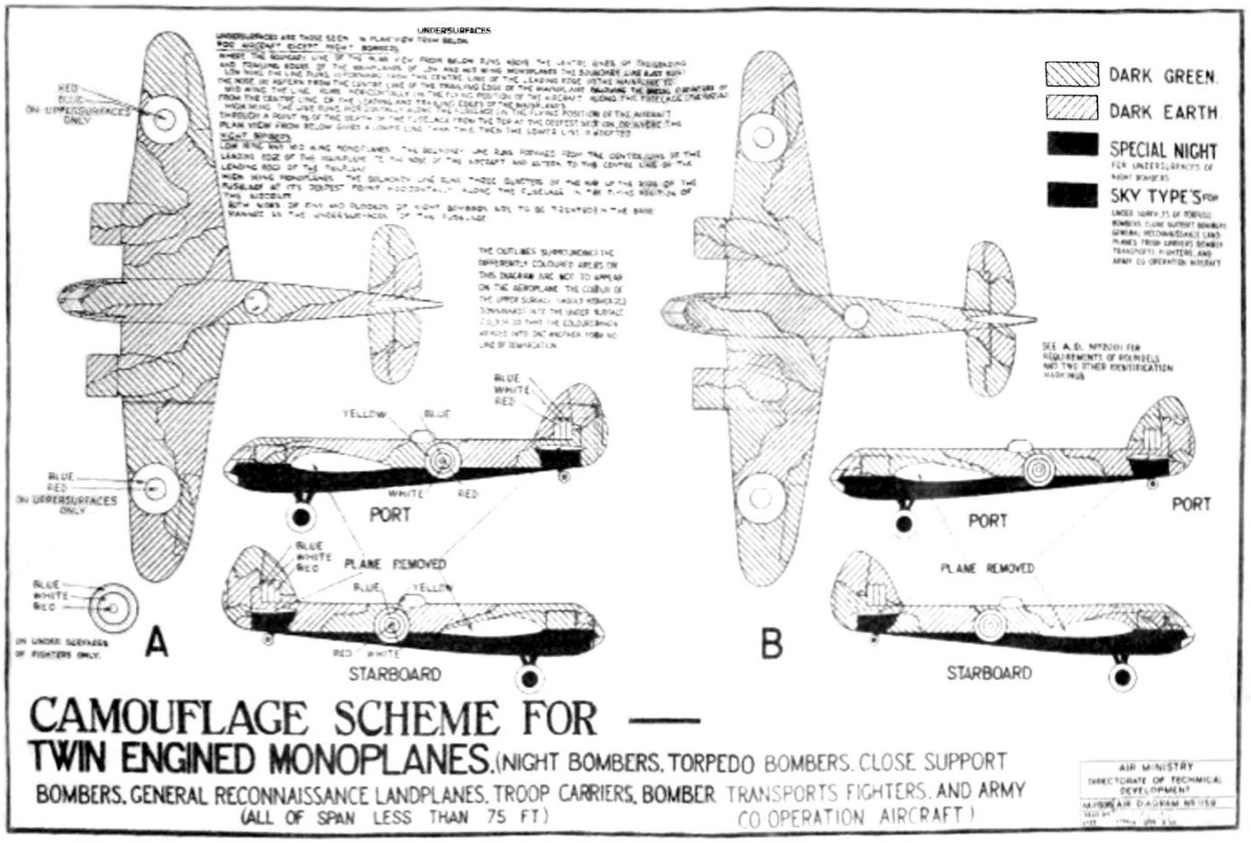
Mirror Images. Where the Air Diagram shows two variations of the scheme, being mirror images of one another, the variations must be allocated to aircraft as directed in the contract instructions.

AIR DIAGRAM A.D.1168 MIRROR SCHEMES



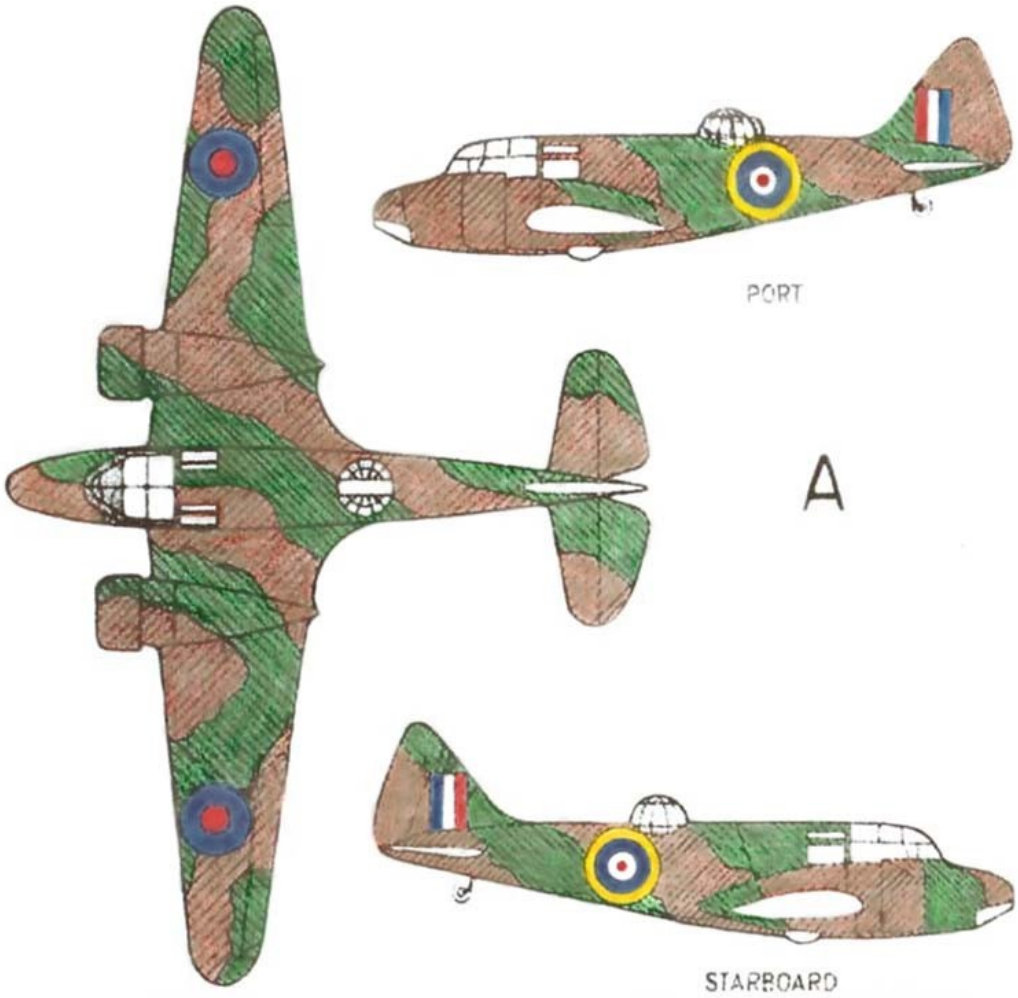
A.D.1168 Air Ministry Diagram for Twin Engined Monoplanes– Communications Aeroplanes and Trainers[89]

A.D.1168 was dated JUN 1939, and Scheme 'B' was the mirror image of Scheme 'A'. Why a separate drawing was required is unsure, as the Anson's A.D.1159 for "twin-engined monoplanes with wingspan less than 75 feet" could easily have sufficed, these **A.D.1159 patterns are shown below** for comparison – as the A.D.1159 'A' is the Oxford's A.D.1168 'B'.



AIR DIAGRAM A.D.1168 SCHEME 'A'

A.D.1159 was evidently used for the Oxford before its specific A.D.1168 was introduced – they are a reversal of each other. These patterns (based on the JUN 1939 release of A.D.1168) show the 'A' camouflage colours of this scheme sloped aft (when looking from the top of the fuselage side) on the port side, and forward on the starboard side.



[coloured from A.D.1168]

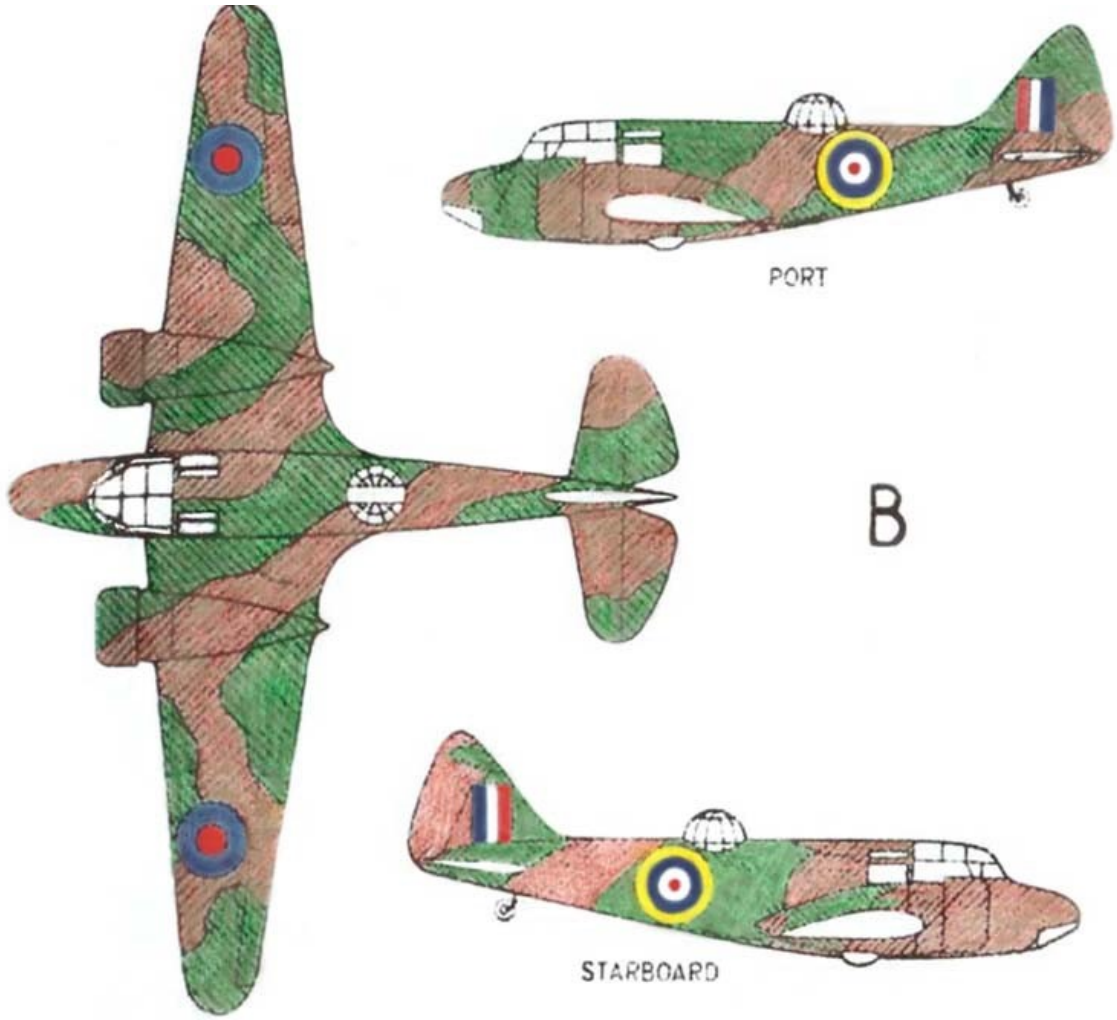
[du Plessis WWII colour collection]

British female wartime ATA pilots in 1942

These colour images of RAF Oxfords in 'A' scheme show that the actual painted scheme differed from A.D.1168 that had been issued in JUN 1939. This was particularly the case in Australia, where repairs/refurbishments used RAAF colours, and RAF *Yellow* was overpainted causing deviations. "Mirror schemes" were discontinued from JAN 1941 – manufacturers selected one scheme.

AIR DIAGRAM A.D.1168 SCHEME 'B'

Scheme 'B' fuselage camouflage colours sloped forward (when looking from the top) on the port side, and to aft on the starboard side. Mirror schemes were discontinued by the RAF in 1941, Oxfords standardising on the 'B' scheme, which was similar to A.D.1159 'A' scheme. A constant deviation with imagery from this pattern is the port engine appears to be *Dark Green*, not *Dark Earth*. A.D.1168 was re-designated by the RAAF as Drawing A5188.[90]



[coloured from A.D.1168]

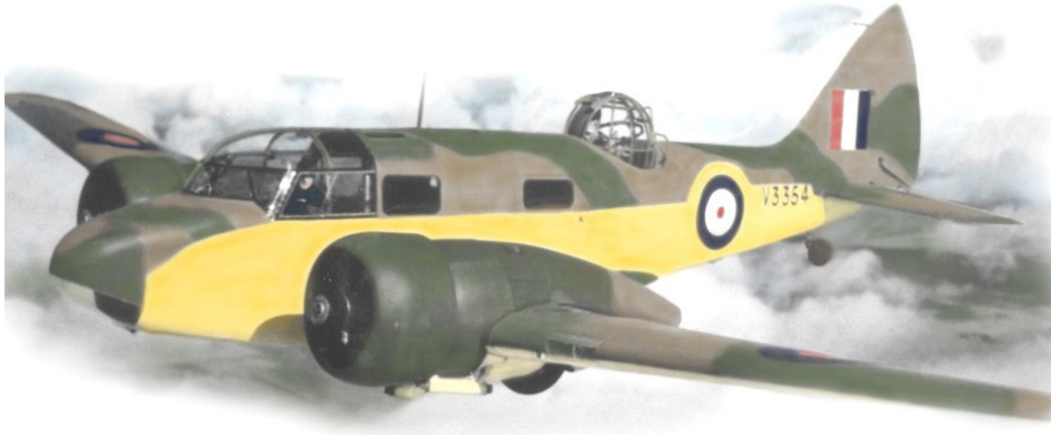
[du Plessis WWII colour collection]

Oxfords in A.D.1168 'B' scheme

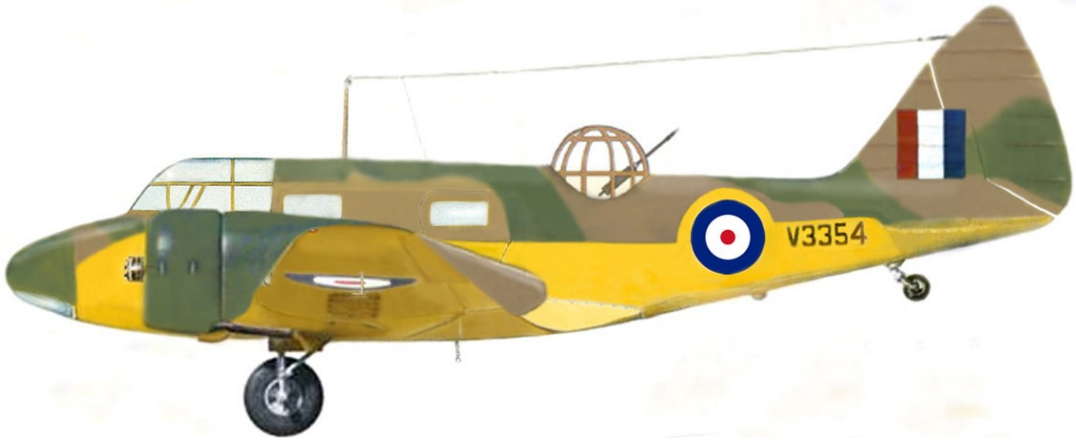
These colour images of RAF Oxfords in 'B' scheme c1942 show some small differences from Air Diagram 1168 that had been issued in JUN 1939. The serial number could be in *White, Black* or *Yellow,* and with the JUL 1942 introduction of type-C1 fuselage roundels, wings had type-C lower and type-B upper, with the type-C fin flash.[91]

V3354 – AN EARLY RAAF OXFORD

V3354 was one of the RAAF's first Oxfords, a Mk.I received at 2 Aircraft Park (2AP) Bankstown on 4 MAR 1941, and delivered to 1SFTS Point Cook on 21 APR. These AWM images (anotated as 1 MAY 1941) show V3354 fitted with the original dorsal AW gun turret – rare images as most Oxfords evidently had turrets removed on arrival in Australia. The primary role over 1941-1942 was dual pilot instruction at 1SFTS. At the end of 1942 when Oxfords were to equip 3BAGS at West Sale, gun turrets were refitted – then again removed in DEC 1943 when returned to pilot training.



[colourised from AWM AC0022]



V3354 was manufactured by DH Hatfield in 1940 and was marked in the early RAF training scheme with the *Yellow* underside extending high on the fuselage sides, with the *brown/green* uppersurfaces being close to the 1939 A.D.1168 'A' pattern, but with variations. RAAF National Markings at this stage in early 1941 were: RAF type-A1 (RAAF M.3) fuselage roundels, upper RAF type-B (RAAF M.1) *blue-red* roundels, lower RAF type-A (RAAF M.2) roundels, *red-white-blue* fin flashes. Oxfords in RAAF service retained the RAF practice of marking serial numbers on the mainplane lower surfaces, but *Yellow* undersides were replaced by *Sky Blue*.

[colourised from AWM AC0110]

A real warplane – the turret gunner is armed with a Thompson submachine gun !

RAAF EATS TRAINING

As related in our article on the Avro Anson,[92] under the EATS the Commonwealth countries undertook aircrew training, which was predominantly to supply trained aviators to the RAF. Accordingly, a variety of Schools were established around Australia for pilot, navigator/observer, air gunner and wireless operator/air gunner training, along the lines of the RAF syllabi. For pilots, after basic flying training at an Elementary Flying Training School (EFTS) on Wackett trainers and Tiger Moths, students were passed on to the intermediate and advanced training at a Service Flying Training School (SFTS). The SFTS would grade and then specialise in either single-engined tuition (on Wirraways) for prospective fighter pilots prior to an OTU, or twin-engined (on Anson and Oxfords) for progression to the larger multi-engine aircraft.

To organise the EATS (which in Canada was known as the British Commonwealth Air Training Plan, BCATP or 'The Plan'), the conference in London in NOV 1939 agreed all the various dominion training responsibilities – Australia, Canada and New Zealand – with Australia to provide 40 percent of the output from the dominions. Among those commitments for the RAAF was the establishment *inter alia* of eight Service Flying Training Schools (SFTS).[93]

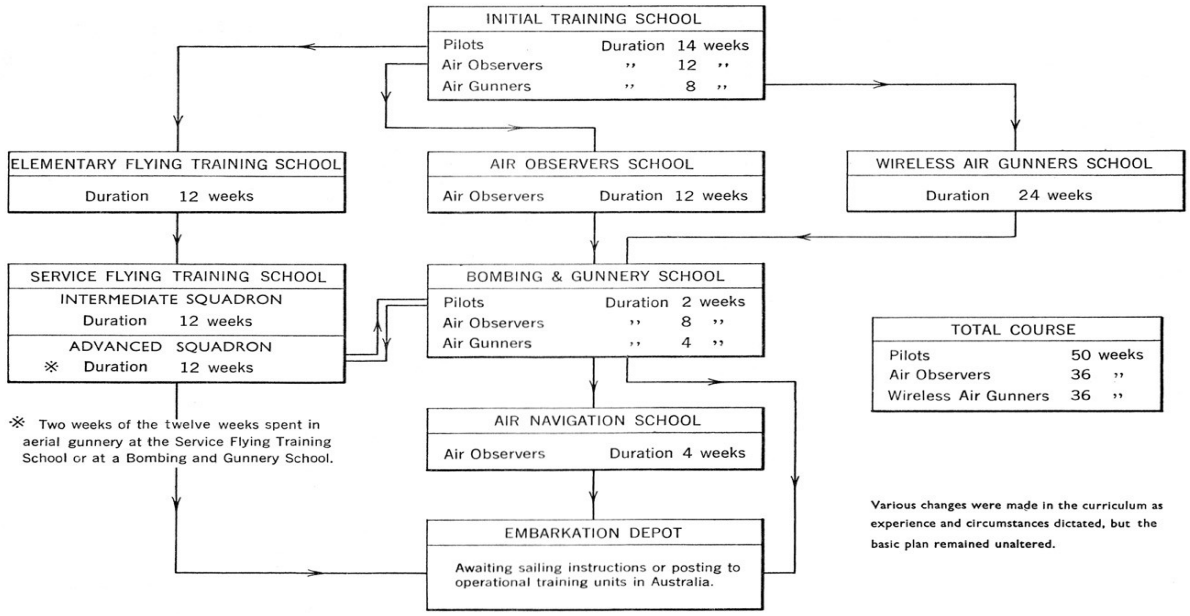
Training Establishment	Number of Units
Initial Training School (ITS)	5
Elementary Flying Training School (EFTS)	12
Service Flying Training School (SFTS)	8
Air Navigation School (ANS)[94]	3
Air Observer School (AOS)	2
Bombing and Gunnery School (BAGS)	3
Wireless Operator-Air Gunner School (WAGS)	3

The original finishing date of the EATS had been MAR 1943, but the conference in Ottawa in MAY 1942 extended this to MAR 1945.[95] For the Australian training commitment to the scheme, a variety of RAF training aircraft were being imported mainly for training – Ansons, Oxfords, Battles and Tiger Moths,[96] all of which retained their RAF serial numbers and were generally delivered camouflaged – with the role of the SFTS providing intermediate and advanced flying instruction to trainee pilots. After the brief British embargo in 1940 on the export of aircraft, the UK undertook the initial supply of 189 Oxfords in place of Ansons at SFTSs.[97] The throughput planned for the RAAF contribution to EATS was to provide 1120 crewmen every four weeks – 336 pilot trainees for the EFTS, 280 pilot trainees for the SFTS, 184 observers and 320 WAG trainees.[98] In addition to the original three dominions, Southern Rhodesia also joined the scheme to establish four EFTS, four SFTS and a combined AOS/WAGS unit.[99] RAAF pilots might complete their pilot training at an SFTS in Australia, Canada or Southern Rhodesia.

[du Plessis colour collection]

RAF Oxford Mk.I AS513 in UK with early wartime training markings

The SFTS syllabus – after trainee pilots had successfully passed **14** weeks recruit training, 'groundschool' and flight grading at Initial Training School (ITS), then **12** weeks at EFTS – comprised **12** weeks with Intermediate Squadron followed by a further **12** weeks with Advanced Squadron, before graduation and despatch to an Embarkation Depot.[100] The RAAF Official History traces the progression of aircrew trainees through the Australian EATS model, from ITS through the various Schools, to the Embarkation Depot, and is shown below.



[RAAF 1939-1942 by Gillison, p.108]

Trainees undertook ITS training, for grading and streaming into the best assessed mustering. EATS crewmember training schools specialised on the relevant aircrew syllabi, flying typically Ansons, some with DC-2s and Dragons. The only EATS Oxford school was 3 BAGS during 1943. SFTS units/Reserve squadrons are covered in detail in the Anson article, the 'other' aircrew Schools that were established are shown below, with Reserve squadron numbers in blue.

School	Function	Unit and Reserve SQN	Course Details [101]
AOS	Air Observer School	1AOS - Cootamundra - 73(R) 2AOS - Mt Gambier SA - 72(R) 3AOS - Port Pirie SA - 55(R)	12-week (O) Course, every 4 weeks, for training in basic navigation, aerial photography. To gunnery training at BAGS for 8 weeks.
WAGS	Wireless Air Gunnery School	1WAGS - Ballarat VIC 2WAGS - Parkes NSW 3WAGS - Maryborough QLD	24-week (WAG) Course for wireless/radio operation and air gunnery training, graduates to BAGS for 4 weeks.
BAGS	Bombing and Gunnery School	1BAGS - Evans Head NSW 2BAGS - Port Pirie SA - 54(R) 3BAGS - West Sale VIC - 53(R)	Pilots (2 weeks if required), Observers (8 weeks) and WAGs (4 weeks) for bomb-aimer and air gunnery training; 3BAGS Oxfords during 1943.
ANS	Air Navigation School	1ANS - Parkes NSW 2ANS - Mt Gambier, Nhill SA - 97(R)	Observers for 4 weeks advanced nav training, primarily in astro-navigation.

[colourised from AWM P08233.004]

2AOS observer training with Ansons and D.H.84 Dragons at Mt Gambier – 2AOS formed 72 (Reserve) SQN in MAR 1942

Flight Training Changes

From **mid-1942**, with sufficient aircraft equipping 1SFTS, Oxfords were transferred to 1OTU – the twin-engined bomber operational training unit – as the next step in the pilot instructional progression. This enabled twin-engined procedural training, such as instrument flying and basic operational technique preparations on the Oxford for lead-in to flying Hudsons and Beauforts.

[colourised from adf-serials]

Oxford II X7196 '196' of 1SFTS with trainee pilots, c1942 – the white band on the forage cap designated trainee aircrew

The Oxford II was specifically designed as a dual pilot multi-engines trainer. Although both the Oxford I and II had dual controls, the Mk.II was produced without the gun turret – i.e. as a pilot trainer, not as a general aircrew trainer , a difference from the role of the Anson. As Oxfords arrived in Australia for induction into the RAAF, the gun turrets were removed. When the role of the aircraft was expended in 1943 as a gunnery trainer, turrets were re-installed to about 30 Oxfords at 3BAGS West Sale VIC, for that year. Turrets were then removed again – images of RAAF Oxfords with the AW turret are extremely rare.

Then **1943 and 1944** saw fundamental changes in twin-engined pilot training in the RAAF, extending out of the rigid EATS SFTS structure. 1SFTS at Point Cook had been the Oxford intermediate twin-engined EATS training unit which acted as a stepping stone to the advanced Anson SFTSs. From JAN 1943, with sufficient Oxfords for pilot training requirements, some 30 aircraft were transferred to 3BAGS at West Sale for gunnery training, and had the dorsal AW turrets refitted – these had been removed on original acceptance in Australia.

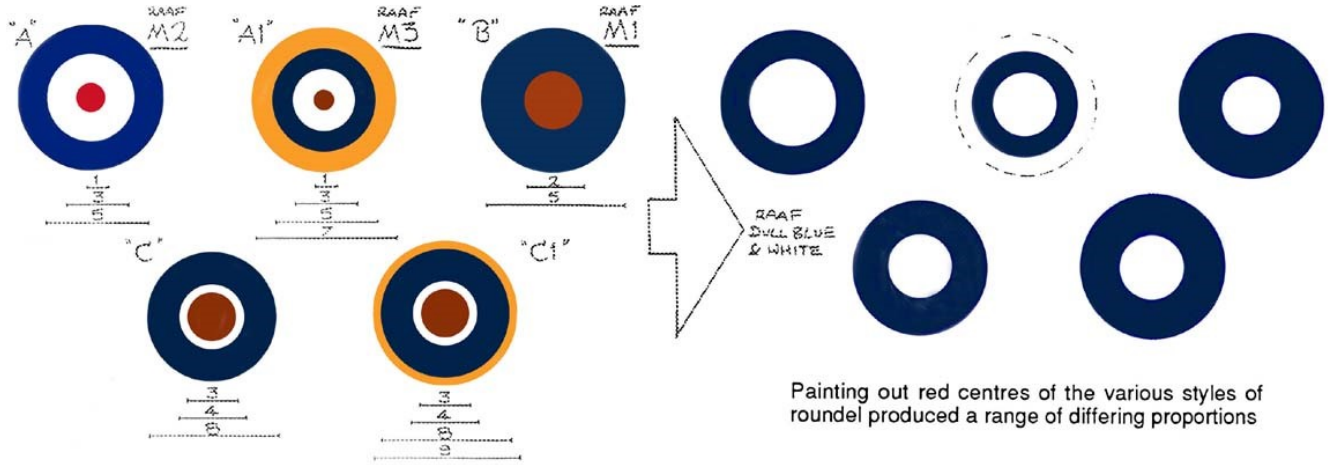
In **SEP 1944** the "home of RAAF flying training", Point Cook, went through a major change in organisation which affected Oxford deployment. 1SFTS was disbanded, which enabled the following flying training changes:

- most Oxfords were transferred to 6SFTS Mallala SA, which up until this stage had been solely an Anson training unit, and now became the Oxford SFTS training unit;
- some Oxfords were transferred from 1SFTS to 7SFTS at Deniliquin NSW, which in DEC 1944 changed its title to Advanced Flying and Refresher Unit (AFRU), and its role changed from an EATS SFTS to specific refresher courses and instructor training;
- Central Flying School (CFS) at Parkes NSW (having moved from Tamworth in JAN 1944), with its specific training and standardisation roles, was transferred to Point Cook to take the tarmac and circuit space that had been vacated by 1SFTS; and
- the Beam Approach Training Flight (BATF) was formed within CFS to teach instrument approach flying.

RAAF NATIONAL MARKINGS

The designation of RAF national roundels we know as 'A', 'B', 'C', etc were developed in the 1950s, purely for simplicity. These British 'non-official' designators are attributed to author Bruce Robertson, used from his early benchmark Harleyford *Aircraft Camouflage and Markings 1907-1954*. The official terminology was both cumbersome and ambiguous – the same term could apply to different roundels at different times,[102] so Robertson's invention has simplified this. As the RAAF followed markings policy of the RAF, major changes were about to occur from 1939. The Munich crisis, in SEP 1938, saw the RAF adopt camouflage finishes for the majority of its front line aircraft, and also the *Red* and *Blue* roundel on wings and fuselage as the wartime National Marking.[103] The RAF formalised this on **27 APR 1939** as **AMO A.154/39 – *Identification Markings on Aircraft of Operational Units*.**

*RAF AMO A.154/1939 in its revision of the National Markings for all British military aircraft included a Yellow surround for roundels on camouflaged aircraft and introduced Red/White/Blue stripes on the fin.[104] National Markings of RAAF aircraft were then changed soon after declaration of war with Germany. On 12 SEP 1939, Directorate of Technical Services in RAAFHQ advised that for top surfaces and fuselage the roundel would be Red/Blue (i.e. what would become the "Marking M.1"), and roundels on undersides would be Red/White/Blue ("M.2").[105] While this was formalised by the policy **Aircraft General Instruction (AGI) No.C.11 of 22 SEP 1939**, these 'M-series designators' were not applied until the **AGI C.11 of OCT 1940.***



Coloured from Ian Baker's AHCB #5, Roundels, Tail Stripes & Other Markings (2)

RAAF "M.1" was the RAF type-B; the "M.2" was the standard red-white-blue type-A; the "M.3" marking was the M.2 with a Yellow ring around the outside (like converting the RAF type-A to the type-A1). The "M.4" designator was the red-white- blue fin flash.

[colourised from RAAF image]

1939 Changeover: *A1-53 new type M.1 roundel, and A1-57 still with M.2 roundel, both with M.1 on wings* [106]

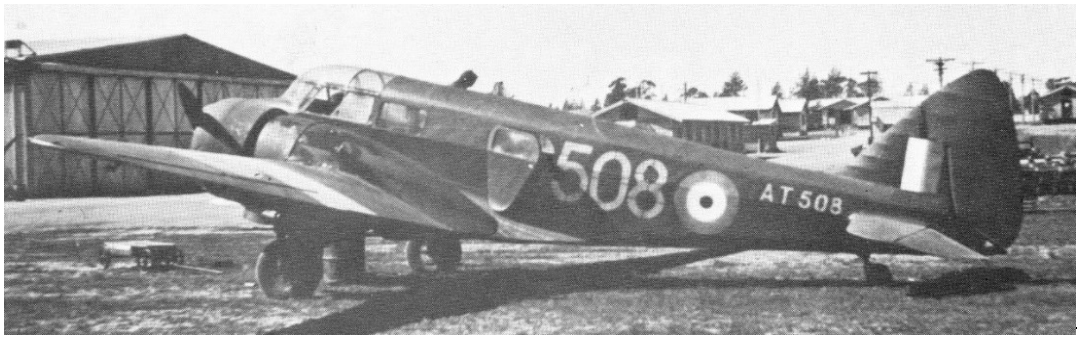
Oxford Deliveries. From the beginning of 1941, the RAAF "M" designators appear to have been dropped, and the RAAF accepted the Oxfords in RAF delivery schemes: type-A roundels underwing, B overwing, A1 on fuselages, and red-white-blue fin flashes. In 1940, the RAAF fuselage roundel had reverted back from type-B roundels to the earlier type-A[107] - but with the type-A1 Yellow ring if applied on camouflage. Yellow was deleted in JUN 1942 and the type-A was applied directly to camouflage finishes (see AT508 below). In SEP 1942 the Red was deleted also, making the RAAF Pacific roundel in 3:5 proportions, with the fin flash then being retained in two-colour Blue/White, of equal widths.

AT508 – AN OXFORD WITH CHANGING MARKINGS

AT508 was received in OCT 1941, and accepted by 1SFTS at Point Cook in DEC 1941. The image below is interesting:

- it shows type-A roundels, unusual as without the type-A1 *Yellow* surrounding ring, deleted in **JUN 1942**;
- National Markings of *red-white-blue* fin flash and type-A fuselage roundel, deleted in **SEP 1942**; and
- training number '508' apparently *Grey*, but no *Yellow* fuselage trainer band although marked on the mainplanes.

Pentland assumed this to be in 1943 at Temora (location possible, on a land-away as this is not Point Cook), but *Red* in the National Markings in 1943 was against policy. When 1SFTS ceased at Point Cook in SEP 1944, AT508 joined AFRU, crashed in OCT 1944 (image below shows it in *Yellow*), and was converted to Instructional Oxford No.7.



[image from Pentland Vol.1, p.101]

1942: 1SFTS AT508, on a land-away from Point Cook – the markings suggest JUN-SEP 1942

AT508 served on 1SFTS until OCT 1944 when the unit disbanded – the Oxfords were dispersed to 6SFTS at Mallala (which then became the sole Oxford SFTS), or 7SFTS at Deniliquin (which became the advanced instructional AFRU).

[colourised from RAAF image]

1943: AT508 at Point Cook in standard 1SFTS training camouflage with *Yellow* cowls and trainer bands

In SEP 1944 as 1SFTS disbanded at Point Cook, most of the Ansons were dispersed to 6SFTS at Mallala, or 7SFTS at Deniliquin. On 12 OCT 1944 when with 7SFTS (before the unit became AFRU, a "mini-CFS"), AT508 suffered a fault in the undercarriage selector system which resulted in this wheels-up landing.

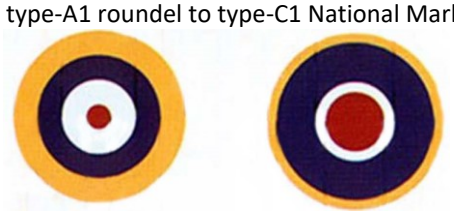
[colourised from RAAF image]

1944: AT508 overall *Yellow* when wheels-up with 7SFTS at Deniliquin on 12 OCT 1944

RAAF CAMOUFLAGE AND MARKINGS

In past articles in this series, individual aircraft camouflage and marking details for the RAAF from 1939 have been covered, with the changes up to 1945, often resulting from the origin of the aircraft. Below is a chronology of RAAF policy for generic, and Oxford specific markings (prewar all-over *Aluminium*, and then camouflaged RAF deliveries for EATS), so this can be followed in a logical timeline through to postwar.

Year	Change	Policy and References
1939	Introduction of the 2:5 type-B to RAAF aircraft fuselages and uppersurfaces – this became the M.1 roundel in 1940. RAAF aircraft finishes, identification markings, and squadron code letters – training aircraft *Aluminium*. 	**RAAFHQ DTS 9/1/442 of 12 SEP 1939.** **RAAFHQ Aircraft General Instruction No. C.11**, **of 22 SEP 1939,** 9/1/396(13A). Drawn largely from **AMO A.154/39 of 27 APR 1939.**[108]
1940	RAAF camouflage colours were *Camouflage Green* and *Camouflage Brown*, RAAF copies of RAF *Dark Green* and *Dark Earth* colours. **JAN 1940.** Introduction of *Yellow* for ***Elementary Trainers***. **OCT 1940.** Policy AGI No. C.11 Issue 3 specified trainer schemes E.1 (overall *Yellow*) E.2 (36" *Yellow* bands) and detailed National Markings: ○ *Marking M.1* – a *Blue* ring surrounding a red centre, the diameter of the *Red* to be 2/5 of the *Blue* circle, on upper wings (i.e. type-B roundel). ○ *Marking M.2* – a *Blue* ring surrounding a White ring surrounding a *Red* circle, the proportions to be 1:3:5 (type-A roundel). ○ *Marking M.3* – three colour circle (i.e. *M.2*) surrounded by a *Yellow* ring, proportions as for M.2 and the *Yellow* the same width as the *Blue* circle, i.e. 1:3:5:7 proportions (type-A1 roundel).  ○ *Marking M.4 – Red, White* and *Blue* stripes on the fin, stripes the same widths as the rings of the roundel, *Blue* nearest rudder (Seagull only). **NOV 1940.** The **RAF's Aircraft Design Memorandum (ADM) No.332** specified Air Diagrams for camouflage schemes for different types of service aircraft. The RAF ***Temperate Land Scheme*** **(TLS)**, had been mandated by **RAF AMO A.926 in DEC 1940** – upper surfaces in Ministry of Aircraft Production (MAP) *Dark Green* and *Dark Earth,* and undersides MAP *Sky* – not adopted by the RAAF.	**AGI No. C.11 A/L.5 of 26 JAN 1940,** 150/4/658. **RAAFHQ *Aircraft General Instruction* No. C.11**, **Issue 3, of 3 OCT 1940,** AFHQ file 1/501/329. Para2(i) stipulated grey serial number and code letters on camouflaged aircraft. **RAF ADM 332 (Issue 3) of 15 NOV 1940**, ***External Colour Schemes of Aircraft***, RAAFHQ file 150/4/852 AGI C.11, *Standard Finishes and Markings*. Air Diagram A.D.1174 "Camouflage Single-engined Biplanes – G/R, FAA" applied to the Seagull, which the RAAF adopted as A-1813.[109] **AMO A.926/40 of 12 DEC 1940 replaced A.154/39.**[110]
1941	**JAN 1941.** The RAF cancelled the requirement for "mirror" camouflage schemes in JAN 1941 and manufacturers then selected only one pattern as standard. Oxford production adopted the 'B' scheme The RAAF adopted 1941 policy of the RAF Directorate of Technical Services (DTS) in **DTS 368/41**, which also for the first time laid out the RAAF's standard overland camouflage scheme; specifying *Foliage Green* (K3/177, to	Merging of the 'A' and 'B' schemes occurred from 15 JAN 1941. [111] **RAAFHQ DTS directive 368/41**, **file 150/4/852(53A) of 23 DEC 1941,** letter S.A.S.9984, paras.2 and 4. **RAF ADM 332 (Issue 3) of 15 NOV 1940**, ***External Colour Schemes of Aircraft.***

	replace RAF *Dark Green*), *Earth Brown* (K3/178 to replace RAF *Dark Earth*), and *Sky Blue* (K3/195 instead of RAF *Sky*). **DEC 1941.** Directive to 51(Reserve)SQN of no requirement to be marked with *Yellow* trainer bands. This presumably applied to all Reserve squadrons that were staring to form.	**RAAFHQ Letter 36/501/244 to CO 51(R)SQN, cDEC 1941, files as 1/501/329(56A).**
1942	**US colours:** When US-produced aircraft began to arrive for the RAAF in 1942, these continued in British colours and markings being diverted from RAF contracts; US manufacturers tried to match their paint to the RAF colours. (Later, RAAF aircraft were delivered in USAAF standard camouflage of *Dark Olive Drab* and *Neutral Gray,* adopted for the Curtiss P-40 in 1940 and remaining the benchmark until late 1943 until natural metal.)	Matching US paints to MAP colours [112] **USAAC Spec 24114, Air Corps Bulletin No.41, of 22 OCT 1940.**[113]
	JUN 1942. Deletion of *Yellow* from RAAF roundels.	**RAAFHQ DTS 280/42 of 18 JUN 1942,** filed on 1/501/329(63A); 1TG signal T.670 19 JUN 1942; Signal School Point Cook A.50, 29 JUN 1942.
	JUL 1942. RAF changes to Temperate Sea Scheme (TSS), Day Fighter Scheme (DFS) and Desert Scheme, and changes type-A1 roundel to type-C1 National Markings. 	**RAF AMO A.664/42 of 2 JUL 1942, para.5**.[114]
	AUG 1942. The *RAAF Technical Order, Aircraft General Instruction (AGI) No.C.11* was changed by Issue 4 of 31 AUG 1942, for operational aircraft retained *Red/White/Blue* National Markings, dropped the *Yellow* outer ring, but there were still unintended consequences. ○ Upper surfaces – *Red* was dropped, so the roundel was specified as *Matt White* and *Matt Dull Blue*, with the *White* diameter to be 2/5 of the *Blue* –the first directive for what we call the 'Pacific' Roundel. Red was deleted because on 26 JUN 1942 a USN fighter had attacked a RAAF Catalina confused by the *M.1* roundel *Blue/Red* roundel. ○ Fuselage sides – *Dull Red, White,* and *Dull Blue* roundels in the 1:3:5 proportions. ○ Undersurfaces – the same *Dull Red, White,* and *Dull Blue* roundels but only for day fighters and trainers, but not for bombers or seaplanes. ○ Fin markings – all aircraft marked with *Dull Red, White* and *Dull Blue* stripes of the same width, with red leading.	**RAAFHQ Technical Order AGI No.C.11 (issue 4) of 31 AUG 1942.** Colours were specified as *Matt Dull Red* K3/214 or K3/199, *Matt Dull Blue* K3/196 or K3/197.
	This *Issue 4* of the AGI, in addition to reiterating the 36" Yellow trainer band requirements, also directed that "Training and Communication Aircraft" were to have *Yellow* undersufaces. This did not apply to the Anson, due to its Reserve squadron commitments.	
	SEP 1942. On 19 SEP 1942 *Red* was dropped completely from National Markings – *Blue* and *White* roundel with *Blue* not to exceed 48", with the *White* diameter 3/5 (3:5) of the *Blue*. Roundels were to be in the six positions, with *Blue/White* fin stripes – specified colours *Matt White* K3/170 and *Matt Dull Blue* K3/197. The *Yellow* surround of the A1 fuselage roundel had been overpainted in AUG 1942 with camouflage paint.	**RAAFHQ message T520, file 0947/19 (30A), of 19 SEP 1942.** **USAAF War Dept Circular #141, 12 MAY 1942,** had removed *Red* from the US National Markings.[115]

1943	**JAN 1943.** RAAF squadron code letters – three letter codes introduced in *Sky Blue* K3/195, two letters signifying the squadron/unit, the third as an individual aircraft identifier. **1943 2nd Quarter.** RAAF Blue/Grey camouflage. **JUL/AUG 1943**. Cease re-camouflaging US aircraft arriving in OD/NG – the standard RAAF camouflage colours up to 1943 were uppersurfaces *Earth Brown* and *Foliage Green*, undersides *Sky Blue*; in DEC 1943 in line with 1940 US colours Spec 24114 (Air Corps Bulletin 41, 22 OCT 1940) this was changed to uppersurfaces *Green*, undersides *Grey*. ('Green' in this context refers to *Foliage Green* for Australian refurbishment, *Olive Drab* from US factories.) **JUL 1943.** Already some roundels were 1:2 ratio, from converting type-C1 roundels, and common for the Walrus. RAAFHQ AMEM specified that the roundel *White* circle was to be smaller, 2/5 the size of the *Blue*, the 2:5 roundel.  **Ratio of the *White* to the *Blue,* 3:5 and 2:5**	**Air Force Confidential Order (AFCO) A.3/43, *Code Letters for Operational and Reserve Squadrons*, of 4 JAN 1943,** 62/1/271. Request from HQ 5MG 300/3/1 of 20 JUL 1943, 1/501/329 (89A), to cease re-camouflage. **RAAFHQ DTS Special Instr Gen/8 (SIG/8) 26 AUG 1943:** Aircraft finished in American camouflage scheme are to be accepted and not to be re-camouflaged in RAAF scheme during erection. Aircraft will be finished in RAAF camouflage when repainting required or during major overhaul. **RAAFHQ AMEM DTS 1/501/329 SAS 13552, 8 JUL 1943,** adopted from RAF AMO A.664/42, of 2 JUL 1942. Further, in NOV 1943 SEAC specified the size of its new roundel (**based on that of the RAAF**) for 'medium' aircraft as approx. 2:5 32" (and fin flash 24" high x 22" wide) – Air Force Order (India) No.357. RAAF DTS specified 32" Blue roundel, 12" White, i.e. 3:8 (approx 2:5) and fin flash 24"x16".[116]
1944	**MAY 1944.** Revision of AGI "Camouflage Schemes and Identification Markings": for the Oxford primarily the applicable order was Appendix E overall *Yellow* for trainers. Training numbers were to be in Black forward of the fuselage roundel. For camouflaged aircraft (i.e. on OTUs and CUs) code letter colours changed from *Sky Blue* to *Medium Sea Grey*. Serial numbers were still marked in RAF style underwing. Fin flash 24" high x 22" wide. **OCT 1944.** RAF camouflage Scheme and Marking changes.	**RAAFHQ T.O. AGI Pt 3(c), Instruction 1, file 150/4/5056 (1A), of 26 MAY 1944.** **Also issued as DTS Special Instr Gen/34, 1 MAY 44.** Accompanied by RAAF Diagram A-5524 (4 sheets) of MAY 1944. **RAF Air Publication A.P.2656A of OCT 1944.**[117]
	 **The MAY 1944 AGI introduced overall *Yellow* for trainers – these fuselage roundels show the 1:2 ratio**	
1945	**APR 1945.** RAAF squadron code letters, more added to the list of AFCO A.3/43. **APR 1945.** No removal of camouflage from transport aircraft. **OCT 1945.** Enquiries were made, as camouflage was being removed from RAAF transport aircraft, could Foliage Green be removed from the ASR Catalinas.	**AFCO A.11/45, *Code Letters for Operational and Reserve Squadrons*, of 26 APR 1945,** 62/1/271. **RAAF Command letter 2198 of 27 APR 1945,** 1/501/329 (21A). From 4 (Maint) Gp to RAAFHQ **4MG file 301/15/1 (61A) of 10 OCT 1945, filed as RAAFHQ 1/501/329 Pt.2 (30A).**

	NOV 1945. Review of aircraft camouflage policy for post-war aircraft: AGI should be amended to revert to pre-war practice of aircraft being uncamouflaged.	**RAAFHQ DTS SIG/71 of 13 NOV 1945.** Filed as message T.1219 PGM, TSD 443/45, 62/4/93 (51A). Inter alia, for post-war aircraft undergoing complete overhaul to have camouflage removed; aircraft undergoing repair requiring repaint, to have camouflage removed; other aircraft to have camouflage removed when manpower and materials permit.
	DEC 1945. Formalising of 1944 target-towing scheme for **beam approach calibrators** – for Oxfords at Point Cook.	**RAAFHQ 1/501/329(M.31) of 6 DEC 1945.** Then introduced by AGI 3(c)1, *Issue 2*.
1946	**SEP 1946.** RAAFHQ D/Ops reviewing AGI of 26 MAY 1944.	**RAAFHQ 1/501/329 Pt.2 M.34 of 3 SEP 1946.** Also recommended that domestic aircraft production be delivered uncamouflaged.
	OCT 1946. New "standard finishes and markings" of postwar aircraft. Retained fin flash as 24" x 22".	**RAAFHQ T.O. AGI Pt 3(c), Instruction 1, *Issue 2*; RAAF Drawings A5524 *Issue 2/3*, sheets 1-3, OCT 1946.**
1947	**MAY 1947.** RAF re-introduce *Red* to National Markings. Fin flash size the same – but equal widths for thee colours.	**RAF Air Ministry Order (AMO) A.413/47 para 18, of 15 MAY 1947.**
	AUG 1947. RAAFHQ assessed that "Red in roundels is not a requirement".	**RAAFHQ 9/1/1595 *Aircraft Markings – General Technical File* 1945-1950, M.12 of 4 AUG 1947.**
	AUG 1947. Squadron code markings no longer required.	**RAAFHQ DTS SIG/92 of 5 AUG 1947.** Filed as message T.1740 PGM, 1/501/329 Pt.2(46A).
	SEP 1947. RAAF flying boats "to be painted with *Aluminium* and with the smoothest possible finish".	**RAAFHQ 9/1/1595 *Aircraft Markings – General Technical File* 1945-1950, duplicated from 9/1/1755(5A) of 30 SEP 1947.**
1948	**JAN 1948.** *Aluminium* finish to all aircraft; *Yellow* trainer bands; *Red/White/Blue* National Markings 1:2:3 introduced to RAAF in 'bright' colours, known as type-D; fin flash rules as for 1947 RAF – maintain same size but equal widths for the three colours (this applied to several Oxfords still in service with CFS and as squadron hacks until disposal in 1952). Serial numbers not required underwing. 	**RAAFHQ DTS SIG/96 of 14 JAN 1948.** Filed as message T.1840 PGM, 9/1/1595. Reintroduction of *Red* to RAAF National Markings, para D(8). Retained associated drawings A5524 *Issue 2/3* of OCT 1946; new drawings not issued until 1951 – **RAAF Drawings A5524 *Issue 4*, sheets 1-4, JAN 1951.**

Back to *Aluminium* with *red-white-blue* National Markings (type-D roundels) and fin flashes for the Oxford from the 1948 SIG/96.

[colourised from adf-serials]

RAAF CAMOUFLAGE 1939-1940

As war arrived, colours changed virtually overnight for the RAAF's 'service' aircraft. First, roundels were toned-down to *Red/Blue* at the end of 1939, and camouflage replaced the *Aluminium* – introduced by the **AGI No. C.11 of 22 SEP 1939** (the first RAAF policy on markings) specifying the Anson was to be in "Scheme 2", later specified as Diagram A-1733 and Z-1152[118] – reprints of the 1939 RAF Air Ministry Diagram A.D.1159 for 'Twin Engined Monoplanes'. The AGI also specified the use of *Red/Blue* roundels (for the fuselage and upper surfaces) and *Red/White/Blue* below the mainplanes, and also assigned single code letters to designated units (e.g. 'A' to 1SQN, 'B' to 2SQN etc). But by 1940 it was determined that the *Red/Blue* roundels on camouflage were too difficult to see, and CAS himself determine – like the RAF had done – to re-introduce *White* to the fuselage roundel, as the RAAF did by APR 1940.

Across the whole RAAF, **by JUL 1940** camouflage had been applied and was being confirmed by the units to RAAFHQ. But where the RAAF did depart from RAF policy was with undersurface colours – the RAF used *Sky*, or "duck-egg blue" for the European haze, but *Sky Blue* was adopted here, as the richer blue was required for the Australian clearer and brighter atmosphere.

- The overland camouflage for **Ansons** received from UK in 1939 were the RAF colours *Dark Green* (DG) and *Dark Earth* (DE), however the RAAF departed from British schemes by introducing *Sky Blue* (K3/195) for undersurfaces, with *Red* and *Blue* identification colours in *dull* colours.[119]
- When **Oxfords** arrived from the end of 1940, they were delivered in the typical RAF training scheme of camouflage in DG/DE on uppersurfaces, and training *Yellow* on the sides and lower surfaces. This was not retained in the RAAF. The early RAF *Yellow* sides were soon eliminated in UK production, and RAAF lower surface colours were Sky Blue, which would have been applied from 1941. To continue the RAF's preference with *Yellow* for training aircraft, the RAAF implemented *Yellow* trainer bands, and training numbers.

K3/216 RAF *Dark Green* 33B/201	**K3/209 RAF *Dark Earth* 33B/198**	**K3/195 *Sky Blue***

1940 RAAF camouflage colours for RAF Temperate Land Scheme (TLS)

RAF colours were identified by the name, but for inventory had stock numbers which varied with the amount that was ordered.[120]

[colour image du Plessis Collection]

A good example of RAF colours – Anson R9968 in *Dark Green* and *Dark Earth* 'B' pattern, transferred to RCAF in 1940 as 6165

RAAF TRAINER BANDS and TRAINING NUMBERS

Training numbers in the RAAF started in the mid-1930 with 1FTS at Point Cook, and applied to the aircraft then on strength – Avro Cadets (known as Avro 'Trainers'), D.H.60 Moths, and Wapitis. With War, in 1940 1FTS became 1SFTS as the first advanced "Service" Flying Training School within the RAAF's EATS contribution.

SEP 1939. RAAF training aircraft policy was laid down in Aircraft General Instruction (AGI) C.11 as overall finish to be Aluminium (V.84),[121] but no mention was made of "training numbers", only *Grey* 'Squadron letters' allocated to units.

JAN 1940. Amendment List No.5 to AGI C.11 introduced overall *Yellow* for **elementary trainers**, with *Yellow* trainer bands on the fuselage and mainplanes in the interim.[122]

MAR 1940. Reference is made from RAAFHQ Director of Technical Services (DTS) to AMOE regarding "*Yellow* bands" to be used by AGI C.11 (as introduced by A/L.5), which were to be painted on training aircraft around the fuselage and wings. It was noted that this had not been done to date as supplies of yellow paint had not been obtained. Also reference was made that Tiger Moths being delivered from DH at Bankstown were finished in overall *Yellow*. [123]

JUN 1940. 1SFTS Point Cook had queried through HQ Southern Area whether RAAF HQ would approve its numbering system – with *Red* numbers for Intermediate SQN, and *Yellow* numbers to designate Advanced SQN.[124]

[colourised from RAAF image]

A4-19 in 1940 of 1SFTS with two training numbers! – '19' ahead of the roundel and '6' on the nose

Once properly formalised, the later training numbers would be on the 36" *Yellow* trainer band, at the same height (as shown here) as the roundel. The significance of the *Red* '6' evidently signifies 1SFTS 'Intermediate SQN'.

OCT 1940. Release of AGI C.11 Issue No.3 stipulated two training schemes. **Scheme E.1** was to be the permanent scheme for training aircraft, with the entire airframe to be finished in *Yellow*. **Scheme E.2** was an interim finish comprising "a *Yellow* **band** three feet in width" around the fuselage and around the mainplanes.[125] These 36" E.2 trainer bands were to be used by Ansons and not the overall elementary trainer *Yellow*, as the Anson was a "service aircraft" which could be rotated through operational squadrons and would be required to revert to a camouflage finish.

OCT 1940. Training Numbers. AGI C.1 Issue 3 also stipulated "training aircraft are to have the **last two numbers** of their identification numbers painted on both sides of the fuselage forward of the national markings". There were some caveats: one digit could be used if serial number was under 10; if more than one aircraft in the unit had the same 'last two', then three numbers could be used; numbers were to conform to the size of squadron code letters, i.e. under 48" in height.[126] However, there was probably confusion over the *colour* of the training numbers:

- This AGI did not list the Oxford – as the first had yet to be delivered. But comparable types in respect to role and EATS delivery system, were the Anson and Battle. Both were listed as 'Training Aircraft' as '*Scheme E.1'* with a permanent scheme of overall *Yellow*, or '*Scheme E.2'* as an interim finish with *Yellow* trainer bands. The "training numbers" were to be Black on E.1 *Yellow* or *Aluminium* finishes, and ***Yellow*** on camouflage. However,

Wirraways on service squadrons (S.1) were listed to have ***Grey* "squadron code letters"** (later defined as *Medium Sea Grey*), or as trainers (E.1 *overall Yellow*) with "training numbers" in *Black*.

- The next issue of this AGI in AUG 1942 – the first policy since the Oxford entered service – did not define the Oxford as a 'Second Line Operational Aircraft' nor as a 'Training and Communication Aircraft', but camouflage and *Yellow* trainer bands were specified for both categories – the difference being for second line aircraft the undersurfaces were *Sky Blue* (K3/195), for trainers undersurfaces were to be *Yellow* (K3/185). Interpolating from the previous AGI Issue 3 in 1940, units apparently marked Oxfords with trainer bands and not *Yellow* undersides, therefore it is likely when this amended AGI was introduced in 1942, changing of underside colours was probably not warranted. Furthermore, while this revised AGI did now specify that "training numbers" were to be marked in *Medium Sea Grey*, again it is likely that changing the colours of numbers did not occur.

DEC 1941. RAAFHQ AMOE Letter S.A.S.9984 to all flying training establishments detailed colour schemes and camouflage of second line aircraft. This, inter alia, specified that: Air Diagram A.D.1168 applied to the Oxford; replaced the RAF camouflage colours with RAAF *Earth Brown* (K3/178) and *Foliage Green* (K3/177); and that undersides were to be Sky Blue (K3/195), noting that *Yellow* and *Aluminium* finishes were no longer to be used.[127]

DEC 1941. Reserve Squadrons. After a query from 51(R)SQN, the unit was advised that there was no requirement to have *Yellow* trainer bands.[128] This evidently applied to all the Reserve squadrons that were then starting to form.

JAN 1942. RAAFHQ noted that *Yellow* painting was "gradually being implemented", with recommendation from DTS to DCAS "to adopt the English scheme for training aircraft" of *Yellow* undersides with camouflage on the upper surfaces.[129] *Yellow* undersides were implemented for elementary trainers – Wacketts and Tiger Moths – but not for the SFTS Oxfords and Ansons, particularly the latter being 'Service Aircraft' with Reserve squadron commitments.

JUN 1942. DTS noted the removal of the *Yellow* ring from the fuselage roundel, "IAW instructions issued by the Allied Air Command" [130] – this deleted the RAAF M.3 roundel, reverting to the M.2.

AUG 1942. Release of AGI C.11 Issue No.4 formalised some of the earlier decisions that had been discussed, inter alia *Foliage Green/Earth Brown* uppersurfaces and *Sky Blue* lower surfaces; the 36" *Yellow* band around the fuselage and wings; and a 9" wide *Yellow* band longitudinally around the nose and on wing leading edges out to the engines.[131] The last instruction is seen mainly on Oxfords (to a lesser extent on Ansons), and within the nose *Yellow* band was the 'last three' as a training number. But other aspects of this order were apparently not necessarily implemented:

- as stated above, the "training number" was to be in *Medium Sea Grey*, but up to this stage training numbers were *Yellow* (and it is difficult to distinguish *Yellow* and *Grey* from black-and-white imagery), so it is possible that some training numbers may have been *Yellow*, others *Grey*;
- also policy stated that for Trainer and Communication Aircraft "the undersurfaces are to be camouflaged *Yellow* (K3/185)" – this did not apply to the Anson stage because of Reserve squadron commitments, but there were anomalies as this should have applied to SFTS Oxfords;
- at OTUs the RAAF followed the RAF policy of using operational colours and markings; and
- some Oxfords had *Yellow* cowls (particularly 1SFTS) although not a requirement as for single-engined trainers, so perhaps a unit marking for 1SFTS (with Oxfords too carrying a small RAF crest on the nose).

MAY 1944. The next major revision of RAAF camouflage and markings was Aircraft General Instruction (AGI) Part 3, Section (c), Instruction No.1. The different roles of aircraft were detailed in the appendices: **Appendix "C"** stipulated ***Foliage Green*** to be applied to attack aircraft, and *inter alia*, Communication aircraft – the Anson with Communications Units (CUs); and **Appendix "E" *Yellow*** for all training aircraft, with training numbers (or letters) in *Black* to be placed forward of the roundel.[132] By this stage of the War, both the Oxford and Anson generally had standardised with a 30" diameter 3:5 fuselage roundel, and normally the adjacent training number was the same height, 15" wide and in a 3" stroke.[133]

DEC 1945. The MAY 1944 AGI Appendix "E" specified *Yellow-Black* striping for target-towers. This appears to have been adopted informally by 'Beam Approach' Oxfords at Point Cook – was not formalised into Policy until addressed in DEC 1945 and apparently applied to Beam Approach *calibration* Oxfords only within the dedicated Flight at CFS.[134]

COMMS UNITS

The southern-based Comms Flights (which became Comms Unit in OCT 1943, 1CU and 2CU) typically had an Oxford on strength. 1CU had a commitment to provide an Oxford at Laverton for the RAAFHQ Inspector of Air Accidents. In 1943, several Oxfords serving with 1 OTU had suffered from fatigue with wood glue failure, so there may have been a precaution of not issuing Oxfords for that reason to the tropics, although the USAAF (centred around Townsville) had borrowed six RAAF Oxfords as light transports.

RAAF Communications Units

Unit	Code	Formation	Details	Disbandment	Known Oxfords
1CU	EV	1 NOV 1939 Laverton	Moved to Essendon 1943, one role became Dragon conversions for RAAF units, back to Laverton 1946	30 JUL 1948	R9988, X7052, AP488, BG429, EB802, HN638, LW860, LW874, LW897, LW919, LW971.
2CU	JU	2 DEC 1940 Mascot	Ferrying aircraft a major role, moved to Wagga 1942	31 JUL 1944	X6806, AR879, AR888, HN266, HN273, HN335, HN647,HN692.
3CU	DB	20 JUN 1942 Mascot	Replaced 2CF as the Sydney-based unit, detachments at Camden and Nowra in 1944	28 FEB 1946	AS374.
4CU	VM	7 SEP 1942 Archerfield	Anson, Hudson, Lodestar, Vengeance	16 APR 1946	X6729 accepted back from USAAF as VH-COC, to Mascot.
5CU	KF	1 DEC 1942 Townsville	Anson, Dragon, Tiger Moth, Vengeance, Walrus for ASR	9 MAR 1946	BF976 KF-W, had flown with USAAF as VH-COI. [135]
6CU	XJ	8 DEC 1942 Manbulloo	Anson, Dragon for remote bases, FEB 1943 Batchelor, Walrus ASR, Darwin OCT 1945	30 DEC 1945	–
7CU	YB	10 NOV 1943 Pearce	Dragon, Anson, Vengeance, to Guildford NOV 1944	31 MAY 1946	–
8CU	ZA	4 NOV 1943 Goodenough	Formed from 1R&CS, Walrus, Catalina for ASR, det at Momote 1944, Madang 1944	4 MAR 1946	–
9LASU	TX	4 NOV 1943 Port Moresby	Formed from 1R&CS/Det as 9CU, Dragon and Anson, changed to 9LASU at Lae MAR 1945, to Morotai, Labuan	10 MAY 1946	–
10LASU	UB	11 SEP 1944 Cairns	Formed at 10 CU moved to Bougainville DEC 1944, changed to 10LASU MAR 1945 – Anson, Beaufort	24 FEB 1946	–
11CU	HM	13 MAR 1945 Morotai	Ventura, Beaufort with det in Manila APR 1945	MAR 1946	–
12LASU	TA	18 APR 1945 Tadji	Anson, Beaufort, Tiger Moth, JAN 1946 to Finschhafen	11 MAR 1946	–
13CU	-	17 JUL 1945 Kingaroy	No aircraft issued	23 OCT 1945	–

[colourised from adf-serials]

5CU DJ447/KF-L – the Anson was the prolific CU transport serving in northern Australia and New Guinea

USAAF OXFORDS

In AUG 1942, the RAAF transferred six Oxfords to the USAAF in Australia for communications duties. These aircraft were X6690, X6729, BF976 and BF987, and retained these serials. RAAFHQ Signal Q.7216 of 1 AUG 1942 assigned these aircraft to the USAAF.[136] The E/E.88 Cards are detailed as: "1-8-42 For issue to USAAS" – this is an "allotment" so the aircraft may have been handed over at any time during **AUG 1942**, and were all probably issued to the 5th Air Force in Townsville. Five were returned to the RAAF in **mid-1943**.

X6690 for issue to USAAF 1 AUG 1942, E/E.88 marked "Assigned to USAAF", no further details, evidently not returned.
X6729 for issue to USAAF 1 AUG 1942, received back by 4CF on 14 APR 1943, and transferred to 1SFTS on 17 MAY 43.
AP433 for issue to USAAF 1AUG 1942, returned to 12 RSU at Macrossan 16 JUN 1943, to 13ARD, 1SFTS 26 FEB 1944.
BF976 for issue to USAAF on 1AUG 1942, where it was operated as VH-COA, to 5CF Townsville on 13 JUL 1943 until OCT 1943 as KF-W, to 13ARD at Breddan (north of Charters Towers) for servicing, and storage at Point Cook SEP 1945.
BF987 for issue to USAAF 1 AUG 1942, received back by RAAF at 2AAU Kingaroy 14 APR 1943, 1SFTS on 17 MAY 1943.
BM740 issued to 22nd Troop Carrier SQN, 374th Troop Carrier Group, returned to 12 RSU at Macrossan (east of Charters Towers) 16 JUN 1943, became Instructional Oxford Airframe No.4 in 1944.

[colourised from adf-serials]

Unidentified RAAF Oxford in USAAF service in northern Australia 1942-43 **USAAF cockade from MAY 1942**

This unidentified Oxford above is basically in A.D.1168 'B' scheme camouflage, with US *Olive Drab* on the fin and rudder, and probably around where the new roundel has been added – probably on the mainplanes too, as US National Markings were always only marked on the upper port and lower starboard mainplanes. The new USAAF National Marking, introduced on 12 MAY 1942, had deleted the *Red* centre.[137]

[colourised from Americanairmuseum]

Oxford T1203, USAAF 353rd Fighter Group, crashed in MAY 1944 near Ipswich, Suffolk [138] **USAAF cockade from AUG 1943** [139]

In the UK, the USAAF 8th Air Force inducted 144 RAF Oxfords for light transport duties and beam approach instrument flying trainers.[140] These retained RAF serials, and did not receive a US military designation (unlike the Tiger Moth which became the PT-24[141]). Here, Oxford Mk.II T1203 made by Airspeed at Portsmouth in 1941, shows 'B' scheme A.D.1168 camouflage and the newer USAAF cockade introduced on 14 AUG 1943.

OPERATIONAL OXFORDS

Unlike the Anson, the Oxford was not a 'Service' aircraft used widely by the operational squadrons, or by Reserve Squadrons. During the war, the most operationally orientated roles were with 1OTU, and the Communications Units, primarily 1CU and 2CU. Also BF918 served with 34SQN, a transport unit at Parafield SA over 1944-45.

Over 40 Oxfords were used by 1OTU at East Sale from 1942 in its role as the twin-engined bomber training unit. Also, several were used by 5OTU Williamtown over 1943-45, mainly for pilot dual checks for the Beaufighter and Mosquito. In addition, very late in the war in 1945, several were transferred to the RN FAA, then working up the British Pacific Fleet in Australian waters – known transfers include T1318, AR758, AR979, AS355 and LX183.

1OTU – OXFORDS

1 Operational Training Unit (1OTU) was formed on 8 DEC 1941 at its temporary base at RAAF Nhill, to provide advanced operational flying and instruction, with operational training beginning at Nhill on 22 DEC. As accommodation facilities at East Sale would not be available until OCT, it was decided to locate 1OTU temporarily at Bairnsdale. On 14 JUN 1942 the unit began moving, and by JUL, 1630 personnel manned the unit. 1OTU Detached Flight was formed on 10 DEC 1942, for operations in North Eastern Area to transport troops, weapons and equipment to the forward battle areas in Papua. This Flight was made up of 15 Hudsons and crews, together with maintenance personnel, comprising a total of 108 personnel.

On 20 APR 1943, 1OTU commenced its move across East Gippsland to the new East Sale station – a move of 2411 personnel and 128 aircraft. After only 36 hours at the RAAF's newest station, the courses had already logged more than 200 flying hours. The fleet comprised 25 Hudsons, 55 Beauforts, 35 Oxfords, and 14 Fairey Battles to train pilots, observers (navigators) and wireless operator/air gunners for multi-engine squadrons. Oxfords served at East Sale from mid-1942 until mid-1944; Oxfords would also serve during 1943 at 3BAGS at West Sale.

The first part of each OTU course involved preliminary training and a six-week conversion to the Hudson or Beaufort – while pilots were undergoing conversions, the observers and WAGs received instruction in the Oxford and Anson. The sorties tested bombing and gunnery, ship recognition and reconnaissance, navigation and searchlight evasion among other operational tasks. The first accident at East Sale occurred when Beaufort A9-304 crashed into Bass Strait near King Island on 28 APR 1943. The subsequent loss of life became a portent of accidents to follow. With an establishment of some 130 aircraft and an intensive flying program of 2000 hours monthly, the demands of EATS training meant that 1OTU worked virtually 24 hours a day. In about three and a half years, 1OTU had suffered 147 aircraft accidents in southern Australia and New Guinea which left 131 aircrew dead or presumed missing during the Unit's intense program of training exercises and operational missions. The last entry in the Unit History Record is dated DEC 1945.[142] However, this bomber operational training unit reformed in JAN 1959 as 1(B)OCU at Amberley for conversion on to Canberras; disbanding in 1971 when 2SQN returned from Vietnam.

OTU Colours:

The marking of OTU aircraft generally mirrored the 1942 RAF policy, which stated: "Ansons and other aircraft engaged on ***operational training duties normally conform to the operational scheme***".[143] Therefore OTU Oxfords carried no *Yellow* training bands nor apparently *Yellow* training numbers.

Known 1OTU Oxfords include:

T1171, T1327, T1329, T1331, V3354, V3356, V3357, V3375, V3428, X6592, X6842, X6844, X6846, X7195, AR884, AR888, AS179, AS476, AS618, AS636, AT468, AT470, AT475, BF918, BG119, BG219, BG223, BG226, BG449, BG473, BG475, BG558, BM686, BM765, EB818, EB889, HN300, HN320, HN321, HN363, HN374, HN613, HN631 and HN633. BG473 disintegrated in mid-air on 6 FEB 1943 near Bairnsdale with the loss of three lives.

5OTU

In addition, 5OTU at Williamtown operated Oxfords to assist with twin-engined conversions to Beaufighters and Mosquitos over 1943-45, and then to demonstrate rocket projectile (RP) weapons training profiles. Known aircraft include: AS323, BG124, EB841, EB852, EB899, HN318, HN412, HN335, HN375, LW947, LW966, LW973 and LW999.

1OTU – OXFORD BG223 '223' FEB 1944

BG223 '223' was received in Australian in SEP 1942 and was operated by 1OTU from JAN 1943. Suffering a taxying accident on 26 FEB 1944, it was repaired at 1OTU and transferred to GRS (also at Bairnsdale) in NOV 1944. With disbandment of GRS, it was stored with CMU Bairnsdale from MAR 1946 and written off as scrap by DAP in 1947.

[colourised from RAAF image]

BG223 taxy accident 26 FEB 1944 1OTU Bairnsdale – B-scheme cam, no trainer bands, faded fin flash makes it appear uneven

Camouflage patterns could change from the laid down A.D.1168 drawing as RAAF National Markings would be painted over the RAF markings – these alterations in *Foliage Green/Earth Brown* over RAF *Dark Green/Dark Brown*. *Sky Blue* undersides, with no *Yellow* training band as – like Reserve squadrons – this was not a requirement on OTUs. The 30" fuselage roundel was 3:5 proportions; later the 1:2 and 2:5 roundels were used, but not to a large extent. The 30"-high training number appears to have been *Medium Sea Grey*, not training *Yellow*, serial number in *Black.*

[colourised from RAAF image]

BG223 '223' of 1OTU at Bairnsdale – the rear cabin roof hatch on the spine where the turret had been removed is visible

BG223 '223' in 1944 – The MAY 1944 policy changed Oxford colours to all-over *Yellow*. It also stipulated 'special markings' for trainers: ***Training Aircraft* – In order to keep a check on the flying of pupils at flying training schools, COs may, if it is so desired, introduce a simple code of letters and/or numerals for marking individual aircraft. Such letters and/or numerals will be placed forward of the fuselage roundel and in the most conspicuous position possible. They must not exceed a height of 4 feet.**[144] For the training overall *Yellow* Oxfords, the numbers were *Black* and typically 30" high, later reduced to 20".

CENTRAL FLYING SCHOOL – PARKES 1944

Central Flying School (CFS) was re-formed on 29 APR 1940 from the Instruction Training Squadron of 1FTS. The School lodged at Point Cook briefly until relocating to Camden on 14 MAY. CFS comprised 'A' and 'B' Flights with Avro Cadets, 'C' FLT with Ansons, and 'D' FLT with Wirraways. In NOV 1940 CFS received the RAAF's first Oxford, P6878, to commence converting flying instructors to the new type. As EATS deliveries to Australia commenced, CFS received more Oxfords in MAR 1941. On 28 MAR 1942, the School vacated Camden and moved to Tamworth, completing the move on 21 APR. At Tamworth CFS operated Ansons, Wirraways and Oxfords, and then moved to Parkes on 18 JAN 1944.[145] By JUN 1944, CFS had 37 Oxfords on strength and in AUG with the reorganisation of Point Cook, it was another move with the main CFS party arriving at Point Cook on 19 SEP 1944.[146]

[colourised from RAAF image]

HN-316, coded '16' of CFS, crashed at Parkes on 25 MAR 1944 – no trainer band

Interesting interpretation of the serial number as 'HN-316', applied in *Medium Sea Grey*. Training number '16' in *Yellow* as 30" x 20" in 4" strokes, but no other training markings. Fuselage roundel in 1:2 proportion. After this crash of HN316 in MAR 1944, it was to have been converted into Oxford Instructional Airframe No.5 (I/A No.5), but because of the pending move of CFS from Parkes to Point Cook planned for SEP 1944, instead it was determined to convert it to components.

[colourised from RAAF image]

AT475, coded '75', of CFS Parkes in AUG 1944 – trainer band

AT475 was delivered to the RAAF in NOV 1941, serving its flying career with 1SFTS, 1OTU and CFS. On 3 AUG 1944 it forced-landed one mile north of Geebung strip, and was sufficiently damaged to see it immediately reduced to components by 2CRD.

Although not all Oxfords of CFS aircraft had *Yellow* training bands, AT475 did, from its previous service with 1SFTS and also retained the *Yellow* engine cowls. However, what is unusual is the camouflage scheme – not in the delivery and standard 'B' scheme, but in an odd pattern more similar to the 'A' scheme (discontinued since 1941). The reason for this pattern is unknown, but it had been refurbished by Ansett at Essendon over SEP-DEC 1943. It has the later style 1:2 proportioned roundels.

CENTRAL FLYING SCHOOL – POINT COOK 1944-1947

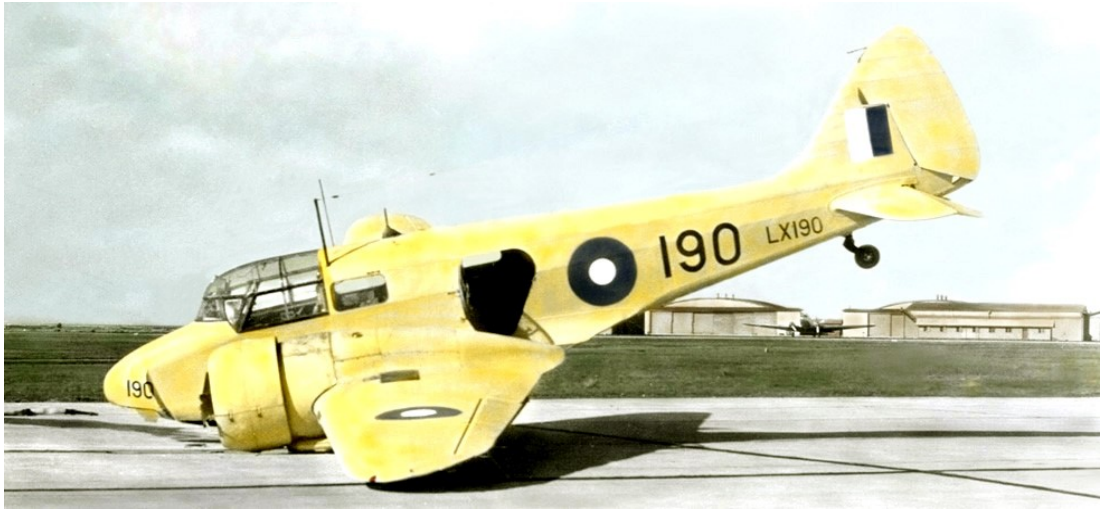
In SEP 1944, CFS moved from Parkes to Point Cook as 1SFTS was disbanded. The 1SFTS Oxfords were dispersed, mainly to 6SFTS at Mallala and 7SFTS at Denilquin. One new role for CFS with the Oxford was assuming the role of the **Beam Approach Training Flight** (BATF) which had been with 1SFTS, to instruct flying instrument approaches.

HN755 was operated by CFS at Point Cook over 1944-1945

HN755 was in the standard 1944 trainer *Yellow*, with 3:5 Pacific roundels, 30" diameter and fin flash 24" x 22". '**755**' 30" x 20" in thicker 5" strokes. HN755 was not required for postwar use and was disposed of immediately after the war. Offered on Point Cook Disposal List AIR 1606 of 13 MAY 1946, it was scrapped by DAP in 1950, and remnants sold in 1951 for £5/17/6 ($11.75).

Over Point Cook *[colourised RAAF image]*

While training colours had changed with the MAY 1944 AGI to overall trainer *Yellow,* markings would still change subtely. Initially marked in 3:5 Pacific roundels, these became 2:5 roundels (here) and the training numbers reduced slightly in size. Fin flash size would standardise to 24" x 22", which remained with the 1948 change to 'D' National Markings of *Red-White-Blue*.



[colourised RAAF image]

LX190 of CFS at Point Cook in AUG 1947

LX190, flown by CFS at Point Cook from SEP 1944, came to grief on 8 AUG 1947. Still in overall *Yellow*, National Markings were 30" diameter 2:5 Pacific roundels, apparently 36" on the wings, with fin flash 24" x 22", smaller training number '**190**' 20" x 12" in 2½" strokes. This is before *Red* was added to introduce D-markings the following year. LX190 was not repaired as it was not required postwar, and already in 1946 had been added to Disposal List AIR 1606, so was stored until DAP disposal in 1951.

CENTRAL FLYING SCHOOL – BEAM APPROACH TRAINING FLIGHT

One new role for CFS with the Oxford was assuming the role of the **Beam Approach Training Flight** (BATF) which had been with 1SFTS since AUG 1942, to instruct flying instrument approaches. Beam approaches were the flying of blind instrument letdowns by the receipt of a localiser beam, indicating left or right of the runway centreline – this later became Instrument Landing System (ILS) when glidepath information was added. By NOV 1944 the Flight had a strength of eight Oxfords and three Wacketts.[147] In AUG 1945, the BATF was retitled **Instrument Flying Flight**. Throughout the war in Britain, the RAF had numbered Beam Approach Training Flights (Nos. 1501-1551 FLTs), with **Oxfords marked by a *Yellow* triangle;** Beam Approach units in South Africa were marked with target towing stripes.

In 1945 there had been RAAFHQ discussion on future colours for training aircraft. A query from within DTS to the Operational Planning Staff queried: "In the past, target towing aircraft were finished in training yellow with superimposed black stripes to indicate that the aircraft was flying on a set course. This would also apply to beam approach calibration aircraft. Are stripes to be retained for these roles?".[148] 'Flying on a set course' implied flying 'head-in' the cockpit on instruments. The response from the planners was in the affirmative, these stripes would be retained: "Both target towing and **beam approach calibration** aircraft are to be finished in yellow with black stripes superimposed…where the aircraft is specifically allotted for this duty it is to be so finished."[149] This scheme did not apply to all Oxfords in BATF, but **only** *Calibration* aircraft homing to check the beam.

This was finally formalised by AGI Part 3(c) Instruction 1 (*Issue 2*), Appendix B (vi): "Beam Approach Aircraft. Beam approach calibration aircraft are to be finished in yellow with black stripes superimposed as for target towing aircraft." [150] The requirement for *Yellow/Black* striping for target towing aircraft had been covered by Appendix E of the original issue of this AGI in MAY 1944, but there was no mention at that stage for beam instrument trainers. Apparently the requirement to stripe the Beam Approach calibration Oxfords came later in 1944; not formalised until later Policy. There were typically six Oxfords in BATF.[151]

[colourised from adf-serials]

Oxford Mk.I X6727 in *Beam Approach calibrator* markings, possibly at Point Cook in 1944

Received in MAY 1942, X6727 was taken on 1SFTS Point Cook strength in AUG 1942, operated by the Beam Approach Training Flight. It remained in this Beam Approach calibrator role until stored in OCT 1944 at Wagga – therefore these markings had been applied by OCT 1944, but had not been specified in the MAY 1944 AGI. The assumption is that these markings became a requirement for calibrators in the MAY-OCT 1944 period. CMU Wagga passed X6727 to the Ground Training Unit at Wagga in MAY 1946, for conversion into **Instructional Airframe No.7** in 1947 for the RAAF Technical College, until disposal in JAN 1951. Its sole flying had been at Point Cook on Beam Approach instruction or calibration duties.

[colourised AWM UK 0624]

Australian pilots in UK with *Yellow* triangle-marked Beam Approach Oxford of 1534 FLT, at RAF Shawbury OCT 1943

EATS – SERVICE FLYING TRAINING SCHOOLS

SFTSs were formed in Australia from 1940 to provide the intermediate and advance phases of EATS pilot training for graduates of the Elementary course. For the RAAF, the first SFTS was achieved quickly by re-titling 1FTS at Point Cook as 1SFTS. Several of the early Schools formed were restructured, and even disbanded, to provide a more efficient system utilising bases away from the capital cities. Single-seat Schools used the Wirraway (which will not be detailed here), and multi-engined training units were equipped with the Anson, and to a lesser extent the Oxford.

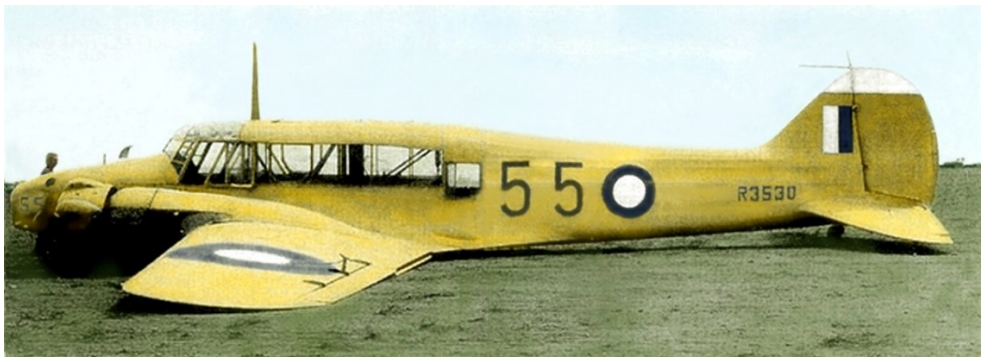
From 1941, the primary SFTS user of Oxfords for multi-engined pilot training was 1SFTS at Point Cook, then later 6SFTS at Mallala from SEP 1944.

[colourised from AWM 138098]

1SFTS Oxford at Point Cook on 10 MAR 1943, with the 9" nose trainer band and RAF badge as marked on several aircraft

This trainee pilot shows that he is quite confident that the brakes will hold on his idling Oxford with no-one in the cockpit! The official RAF badge, sometimes referred to as the crest, is surmounted by the 'King's Crown', more correctly a Tudor Crown.[152] 1SFTS Oxfords carried this on the port side of the nose and some also, as here, on the starboard side. These aircraft tended to be 1942-delivered Oxfords from the AS/BG/BM serial range.

1SFTS was the first multi-engined training school from 1941, when the aircraft markings policy was regulated by the AGIs of 1940 and 1942. This meant Oxfords were camouflaged with *Yellow* trainer bands. By the time 6SFTS received their Oxfords in 1944, these were affected by the MAY 1944 policy of all its Ansons and Oxfords in the *overall Yellow* trainer scheme.



[colourised from adf-serials]

Anson MG824 '19' of 6SFTS in the later 1944-1945 training colours – the White tip of the tail signified 6SFTS

6SFTS had formed in 1941 with Anson, but with the disbandment of 1SFTS in SEP 1944, assumed the Oxford dual instruction SFTS role – with its aircraft colours being directed by the MAY 1944 AGI 3(c)1 to overall *Yellow*.

EATS – 1SFTS 1942-1944

1SFTS formed at **Point Cook** VIC on 1 MAY 1940 when 1FTS was renamed to be part of the EATS system. The School consisted initially of 1118 personnel, who were to be involved in the training of some 150 pilots, using the advanced syllabus, initially with a strength of 52 aircraft – this comprised five Ansons, 12 Wapitis, seven Demons, 27 Avro Cadets, and a Tiger Moths. [153] By JUN 1941, unit strength comprised 13 Oxfords, 33 Ansons, 22 Wirraways and 38 Demons.[154] However as rationalised by Air Board policy in SEP 1941, the **Oxford** and **Wirraway** became the main training types. A mid-air between Oxfords R6191 and AS687 on 28 JUN 1942 saw both aircraft written-off with loss of lives. By the latter part of 1943, training reached its peak, and in 1944 prior to shutting down, 1SFTS had graduated 2691 students. As part of a reorganisation of EATS schools, 1SFTS disbanded at Point Cook on 15 SEP 1944, which enabled CFS to move from Parkes to Point Cook.[155]

[colourised from RAAF image]

1942: AS932 coded '932' and BG446 '446' both served with 1SFTS at Point Cook over 1942-1944

AS932 1SFTS without *Yellow* cowls, so probably late 1942. The small badge above the *Yellow* nose trainer band was uniquely a 1SFTS symbol – the RAF 'badge' or crest, which could be marked either side, but appears to have been removed by 1944. The **different size in fin flashes** is evident with AS932 being 24" x 12" (received in FEB 1942 and possibly trimmed down from the 1941 RAF 'A' markings); narrower than that on BG446 which was 24" x 22" (received in SEP 1942, adjusted from type-'C' flash).

[colourised from adf-serials]

1944: 1SFTS formation in early 1944 – BM704 '704', BM705 '705', AS843 '43', and LW926 '926'

Yellow trainer bands 36" around the rear fuselage and upper mainplanes, 9" trainer band wrapped around the nose (sometimes containing the side training number), and 1SFTS *Yellow* engine cowls added in 1943.

1SFTS – OXFORD X7196 / '66' JAN 1943

X7196 '66' arrived from UK in DEC 1942, transferring to 1SFTS Point Cook in JAN 1943. Suffering an engine failure on take-off on 28 JAN 1943, it was repaired by 1SFTS and flying again by APR 1943.

[colourised from RAAF image]

X7196 engine failure on take-off 28 JAN 1943, B-scheme cam with *Yellow* nose trainer band and *White* '66' training number

1SFTS in A.D.1168 'B' pattern camouflage, *Sky Blue* undersides, with standard 36-inch wide *Yellow* trainer band around the rear fuselage aft of the 30" roundel. Trainer bands on wings appear further outboard than what became standard. Although not a requirement - as it was for single-engined trainers - cowls were also in training *Yellow,* however the 30"-high training number appears quite bright and looks to be *White*. The nose 9" *Yellow* training band (with '66' training number in *White*) extends onto the wing leading edge inside the engines. Roundels are 3:5 in all positions, fin flash was 24" high by 22" wide.

[colourised from RAAF image]

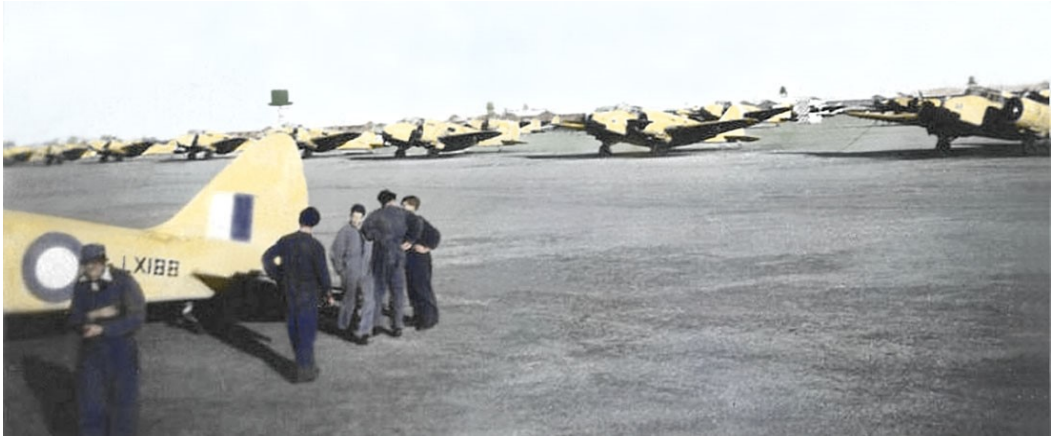
X7196/'66' of 1SFTS after engine failure on take-off 28 JAN 1943

After repairs, X7196/'66' flew with 1SFTS from APR 1943 until 1946, when it was designated for storage. Transferred to Mallala in JUL 1947, X7196 was on Disposal List AIR 606 of 13 MAY 1947, and disposed of by DAP.

1FTS disbanded on 15 SEP 1944, and 84 of its Oxfords were transferred to 6SFTS at Mallala SA, and 29 to 7SFTS at Deniliquin NSW.[156]

EATS – 6SFTS

6SFTS formed at **Mallala** SA on 25 AUG 1941 under CO, W/C Norman Brearley, the notable West Australian aviation pioneer. Flying training commenced at Mallala on 23 SEP 1941 with Ansons. By AUG 1942, 6SFTS had formed two Anson Reserve squadrons – **67(R) SQN** (which had moved from 3SFTS and was supported by 6SFTS Maintenance Wing's No.1 Maintenance Sqn) and the new **70(R)SQN** (from No.2 Maint Sqn),[157] which however soon stood down. With 1SFTS Oxford activities reducing at Point Cook in 1944, 6SFTS became the RAAF's main twin-engined training school, with 84 of the Point Cook Oxfords being transferred to Mallala by SEP 1944.[158]



[colourised from adf-serials]

LX188 with 6SFTS Oxfords at Mallala in 1945

LX818 was a late Oxford delivery received in OCT 1943, and after brief service with 1SFTS at Point Cook, with most other Oxfords was transferred to 6SFTS in SEP 1944. Stored at Mallala in OCT 1945, it was offered for disposal by CDC on 13 MAY 1946 at Mallala on List AIR 1606, and scrapped by DAP in 1947.

Training ceased in SEP 1945 with 2178 trainees having graduated, and Survey Flight arrived in OCT 1945 to use Mallala as its new base. 6SFTS ceased to function on 1 JAN 1946, becoming Care and Maintenance Unit Mallala[159] to store and then dispose of the multitude of Ansons and Oxfords.

[colourised from adf-serials]

X6842 '171' of 6SFTS over 1944-1945 with the unit's *White* rudder tip

X6842, transferred from 1SFTS in SEP 1944, in all-over late-war trainer *Yellow*, with Pacific roundels – 30" 1:2 on fuselage, fuselage training number '171' in 30" numbers, and '171' repeated on the nose in 8" stencil size, and fin flash 24" x 22". Many 6SFTS Oxfords appear to have been coded between **150 to 199**, presumably as most two-digit codes were used by the Ansons.

A few known 6SFTS Oxford codes									
37	BM737	80	LW924	153	X6846	168	BG358	185	BG204
56	AS940; HN634	84	HN650	154	EB889	171	X6842	189	HN656
60	X6960	92	AS392	155	BM692	177	V3475	192	EB847
69	BF869	152	R6190 *Superman*	160	HN639	179	R6183	193	X6788

A few known 6SFTS Anson codes									
5	DJ507	19	MG824	51	W2472	64	MG983	85	W1529
8	W2267	21	R3521	52	K8713	73	W2599	86	R3560
17	A4-23	40	EF954	55	R3530	79	R3378	88	DJ508
18	R9888	47	MG172	61	AX350	81	MG775	89	W2589

6SFTS – TRAINER YELLOW

The 1944 policy stipulated 'special markings' for trainers: ***Training Aircraft* – In order to keep a check on the flying of pupils at flying training schools, COs may, if it is so desired, introduce a simple code of letters and/or numerals for marking individual aircraft. Such letters and/or numerals will be placed forward of the fuselage roundel and in the most conspicuous position possible. They must not exceed a height of 4 feet.**[160] Here both aircraft are in scale, which emphasises the shorter, stubby Oxford.

Oxford BG204 '185' of 6SFTS at Mallala in JUL 1945

Overall late-war trainer *Yellow*, with Pacific roundels – **1:2 on fuselage** and under the wings. Fuselage training number '185' in 30" x 15" numbers, '185' repeated stencilled on the nose in standard 8" size. The *White* rudder tip was a 6SFTS marking.

Anson R3530 '55' of 6SFTS at Mallala in FEB 1945

Overall post-1944 allover trainer *Yellow*, with Pacific roundels – **3:5 on fuselage** and 2:5 on wings. Fuselage training number '55' in 30" x 15" numbers, '55' repeated on the nose in standard 8" size. The *White* tail tip was a 6SFTS marking.

These had been repainted in overall training *Yellow* (K3/185) IAW the extant markings Policy AGI 3(c)1, Appendix E, of 26 MAY 1944. The AGI stated for 'Identification Markings' – the aircraft serial number and training numbers – to be in *Black*.

Oxford fuselage 1:2 roundel diameter 30" (0.76m)

The later 'Pacific' 1:2 roundel was applied to the fuselage and wings – these proportioned roundels were on the Oxford, Beaufighter and Walrus (previous articles) late in the war from 1943/1944, derived by overpainting the *Red* centres of RAF type-C roundels.

Anson fuselage 3:5 roundel diameter 30" (0.76m)

3:5 roundels were the early 1942 'Pacific' roundels, derived by simply overpainteng the *Red* centre of RAF type-A roundels – here applied to the fuselage.

Oxford Wing 2:5 roundel diameter 36" (0.91m)

Anson '55' had 2:5 Wing roundels; Oxford '185' appeared to have 1:2 undersides, and 2:5 upper. The 2:5 roundels were derived from overpainting the *Red* centre of type-B roundels.

Oxford Fin flash: 24" high x 22" wide (11" each colour)

Anson Fin flash: 24" high x 16" wide (8" each colour)

Training Numbers: 30" high, 15" wide, 3" stroke in *Black*

Training number policy was introduced due to congestion in training airspace, so students could be readily identified. Ideally this would be two digits, and not to be duplicated on other aircraft within the unit (which is why this number is not always the 'last two' of the serial). The number was not to exceed 48" in height – both on the Oxford and Anson 30" was common (reduced to 20" in 1945). Three numbers were often used by Oxfords.

6SFTS – OXFORD BG204 / '185' 1945

BG204 was delivered to the RAAF in JUL 1942 and served with 1SFTS from JUL, until damaged in JUL 1943 by a fire in the port wing. Repaired by Ansett at Essendon from AUG it returned to 1SFTS in NOV 1943. In SEP 1944 as 1SFTS disbanded, BG204 was transferred with most of Point Cook's Oxfords to 6SFTS Mallala. This was part of the consolidation of RAAF SFTS twin-engined training, with 6SFTS assuming that prime responsibility, and Point Cook hosting CFS. BG204, with the unit training number '185', had a wheels-up landing at one of Mallala's satellite aerodromes on 14 JUL 1945, when the undercarriage was selected up during the after-landing vital action checks.

[colourised from RAAF image]

BG204 undercarriage collapse in JUL 1945

The 1944 policy stipulated 'special markings' for trainers: ***Training Aircraft*** **– In order to keep a check on the flying of pupils at flying training schools, COs may, if it is so desired, introduce a simple code of letters and/or numerals for marking individual aircraft. Such letters and/or numerals will be placed forward of the fuselage roundel and in the most conspicuous position possible. They must not exceed a height of 4 feet.**[161]

Roundels – overall late-war trainer *Yellow,* with Pacific roundels: 1:2 on fuselage and, apparent in these images, 2:5 on the wing uppersurfaces and 1:2 on the undersides.

Fin flash – late wartime (1944) standard 24" high x 22" wide.

Fuselage training number – '185' in 30" numbers, which was standard on Oxfords, with the '185' repeated on the nose in standard serial number 8" size. Later training numbers were generally reduced to 20" height.

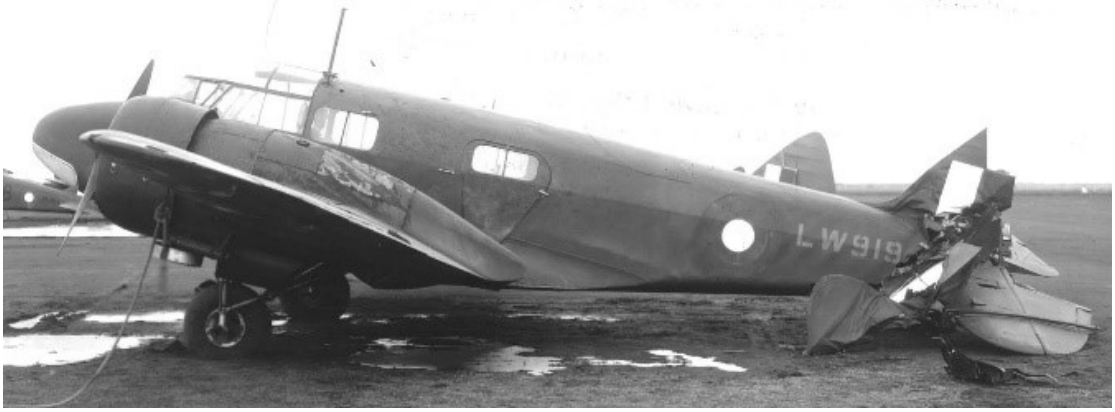
Unit marking – the *White* rudder tip marking indicated 6SFTS, and on the Anson extended across the fin and rudder.

[colourised from RAAF image]

BG204 was repaired at 6SFTS and resumed flying until storage at Mallala in JAN 1946, and authorised by CDC for write-off. It was offered on CDC Disposal List AIR 1606 and disposed of by DAP in 1947, and bought for the nuts and bolts and other parts that could be used in a motor garage business at Maitland SA. It was chopped up in around 1960, and by 1966 only the engine cowlings remained, used as flower pots! [162]

EATS – 7SFTS / AFRU

7SFTS formed at **Deniliquin** NSW on 30 JUN 1941 as an intermediate and advanced Wirraway training unit, and in JUL the first course of 50 trainees arrived.[163] In AUG 1942 7SFTS formed 62(R) and 63(R) SQNs, as RAAF Reserve units were established with Wirraways and Ansons.[164] On 29 AUG 1944, the last regular SFTS course – No.50(P) Course – commenced as the role of the unit was changing, and with 2206 graduates having passed out.



[RAAF]

Oxford I LW919 of AFRU when hit by a taxying Wirraway A20-578 in the wet at Deniliquin on 23 JUN 1945

In SEP 1944 the first Oxfords arrived from 1SFTS for the School's new role, and by the end of the month there were 30 Oxfords on strength, and single-engined trainers had been reduced to 100 Wirraways. In OCT new monthly pilot training courses started – 'OTU Qualification' and 'Elementary Instruction Refresher' Courses, which had incredibly high failure rates and students failing to reach the standard were posted for discharge.[165] The end of the War was imminent. On 16 DEC 1944 7SFTS changed name to **Advanced Flying & Refresher Unit (AFRU)**, and 1945 saw new courses in the form of 'Service Instructors Refresher Course', 'Staff Pilots Training Course' and 'Flying Refresher Course'. By the end of JAN 1945, aircraft strength was down to 13 Wirraways but with 43 Oxfords, increasing the following month to 55 Oxfords. These advanced instructional roles were eventually taken over by CFS.

By 31 DEC 1945 Oxford strength had built up to 71 aircraft, with the unit claiming an unbelievable 100% serviceability. AFRU ceased operating on 15 FEB 1946, disbanding on 21 MAR when the CMU Deniliquin took over its aircraft for storage. After disposal of the Oxfords and other RAAF assets, the CMU closed in APR 1948.

[RAAF]

The other side of Oxford LW919 when hit by Wirraway A20-578 on 23 JUN 1945

LW919 is apparently in overall *Foliage Green* with no trainer markings (perhaps as it had flown with 1CU over MAY-SEP 1944) with *MSG* serials. It was then transferred to 7SFTS at Deniliquin, with 7SFTS becoming AFRU in DEC 1944. LW919 was hit by an AFRU Wirraway – perhaps the Wirraway pilot claimed he couldn't see it as it had no *Yellow* markings! In NOV 1945 LW919 was converted to components.

Other known 7SFTS/AFRU Oxfords were R6140, R6152, R6182, T1171, V3384, V3428, V3440, X6672, X6726, X6787, X6808, X6960, X7109, X7111, X7259, AS323, AS370, AS622, AS623, AS793, AT471, AT506, AT508 (which became I/A.7), BF885, BF888, BF984, BF987, BF996, BG451, BG483, BM686, BM694, BM698, BM705, BM707, BM741, BM746, BM755, EB802, EB902, HN314, HN331, HN375, HN632, HN653, HN564, HN658, HN663, LW852, LW874, LW898 and LX184.

Many of these were stored at Deniliquin, and then flown to the 1AD Detachment at Tocumwal in 1948 for ultimate disposal.

EATS – 1AOS EVANS HEAD

1AOS – which had been an Anson training unit at Cootamundra – re-formed at Evans Head on 9 DEC 1943, as the resident 1BAGS, with Fairey Battles, was disbanded. During its period at Evans Head, 1AOS primarily operated the Anson with an establishment of 32. In FEB 1945, a reorganisation in navigator training saw the Oxford inducted to replace the Anson – by the end of the month 1AOS had 29 Oxfords, with only 14 of the Ansons remaining. [166] A mini-cyclone hit the airfield at Evans Head on 9 APR 1945, damaging most aircraft. Some Oxfords were repairable, and some despatched for repair to be replaced by new aircraft. But it hardly mattered this late in the war as 1AOS ceased operations in JUN 1945, and was disbanded on 15 AUG 1945. [167] By this stage there were 27 Oxfords in storage which passed to the Care and Maintenance Unit (CMU) at Evans Head.

Out of the 17 Bellman hangars that occupied the airfield during the War, one still remains at Evans Head. The Evans Head Memorial Aerodrome had been listed on the NSW Heritage Register which includes the Bellman Hangar #156 which houses the Museum's F-111C A8-147, Canberra A84-203, Kiowa A17-020, wartime Tiger Moth A17-284 (still registered as VH-EWR). In 2018, the Museum received the remains of Anson MG422, and the museum now forms part of the RAAF Aviation Heritage collection.

Known 1AOS Oxfords include: X7115, AS188, AS498, AS638, AT487, BG202, BG217, BG446, BG456, BG486, BG590, BG695, BM706, BM739, BM744, HN273 and HN633.

EATS – 3AOS PORT PIRIE

3 AOS formed at **Port Pirie** SA later in the War, by the amalgamation of 2ANS and 2BAGS, on 9 DEC 1943.[168] 3AOS was to provide aircrew navigation and bombing training on Ansons and Battles, having 46 Ansons and 102 Battles on strength.[169] As well as this basic aircrew training, Anson conversion courses were also run for navigators who had been trained on other aircraft. During 1944 a reorganisation of 3AOS saw all the Battles off strength by MAR with observer training continuing on the Anson. Two Oxfords (**AP451 and HN412**) were received in JUL 1945, and by the end of SEP 45, with 22 Ansons on strength, 52 were in storage, and training ceased. Disbandment of 3AOS was completed on 31 JAN 1946 as the last personnel were discharged.[170] But the main involvement of the Oxford with Port Pirie was about to begin. The CMU stored many Ansons and Oxfords pending disposal over 1946-1948, and many of these were bought by the local farmers for stripping to usable components. The best known Oxford from the CMU was an ex-3AOS aircraft, **HN412,** because of its long life on a farm near Port Pirie.

[Neil Follett colour image from Goodall Aviation site]

HN412 on the farm at Agery SA (near Port Pirie) in APR 1965 – then it was still in good shape after 15 years inside a barn

The scheme on HN412 suggests that it was applied in 1945: in **overall 1944 AGI 3(C)1** *Yellow*, late war 2:5 fuselage roundels, what had become standard 24" x 22" fin flashes, and smaller training numbers (now only 20" x 12" in 2½" stroke). However, incorrect interpretation of the serial as "HN-412" is interesting.

EATS – 3BAGS

The advance party for the formation of 3 BAGS arrived at **West Sale**, five miles west of Sale, 30 DEC 1941, and on 12 JAN 1942 the unit was formed under the command of 1 (Training) Group. The School was formed to carry out the function of completing the training of air gunners, and to train air observers in bombing and gunnery. The unit's first Fairey Battle arrived on 2 FEB 1942, and training commenced on 8 MAR 1942 with 43 trainees arriving from Mount Gambier.[171] 3BAGS formed an Anson Reserve unit – **53(R)SQN** – in 1942. From the beginning of 1943, 3BAGS received Oxfords with the manual AW turrets refitted, most probably these were fitted before receipt at West Sale, at an Aircraft Depot or Aircraft Park.

[RAF in Colour]

Oxford Mk.I AS513 in UK with AW turret – turrets were removed on arrival by RAAF and re-installed in early 1943 for 3BAGS

3BAGS continued operating until disbandment on 9 DEC 1943 with a strength of 67 Fairey Battles, 24 Ansons and 33 Airspeed Oxfords.[172] At this stage all the gunnery schools were combined as the **Air Gunnery School (AGS)** with the object of training all air gunners, WAGs and other RAAF personnel in air gunnery, and the Oxfords were replaced by Ansons and Battles. During DEC 1943, 30 Oxford were allotted away, most going to 6SFTS Mallala, leaving only three Oxfords on strength.[173] AGS ceased to function on 31 DEC 1945 with its aircraft going to storage at the local CMU.

[colourised from AWM VIC0097]

Anson LV211 with AGS trainees at West Sale VIC probably in DEC 1943 with the Bristol B.1 Mk.VI hydraulic turret

The 30 Oxfords that had served with 3BAGS through 1943 and allotted away from AGS in DEC 1943 (with most going to 6SFTS) were: R6193, X6691, X6806, X6845, X6956, X6960, X6968, X7113, X7256, AP427, AP432, AR888, AS160, AS355, AS370, AS866, AT484, BF915, BG459, BG614, BM706, BM709, BM710, BM742, BM757, EB352, EB819, EB841, EB899 and HN273.

OXFORD INSTRUCTIONAL AIRFRAMES

Eleven aircraft were converted to Instructional Oxfords during the war and up to 1952. Used initially for technical training at the Engineering School, Ascot Vale Melbourne; several Oxford training schools (AFRU and CFS); at the Ground Training Unit/School Wagga (GTU/GTS, later becoming RAAF Technical College – RTC); and RTC Det 'A' at Rathmines, which ultimately merged into No.2 National Service Training Flight at Officers' Training School (OTS).[174]

[colourised from adf-serials]

Rathmines instructional hangar 1955 – three I/A Tiger Moths, four Wirraways, a civilian Sea Otter and Mustang are visible

Oxford I/A No.	Serial	Date	Details
I/A No.1	AR917/AS161	JAN 1942	1 Eng School (1ES) 2 x aircraft combined; components 17 OCT 1945
I/A No.2	n.k.		No details known
I/A No.3	AR816	APR 1944	1SFTS to I/A.3 JUL 1944, CFS Point Cook, to East Sale 1949; target at nearby Dutson Air Weapons Range JUL 1956
I/A No.4	BM740	APR 1944	1 CRD Werribee converted to I/A.4, to 11 EFTS Benalla JUL 1944
I/A No.5	HN316	JUL 1944	CFS Tamworth, HN316 had crashed MAR 1944 was to be converted to I/A.5 but cancelled due CFS move to Point Cook, scrapped
I/A No.6	X7110	SEP 1944	6SFTS converted to I/A 6, to CFS MAY 1948, disposal AIR7222 1952
I/A No.7	AT508	NOV 1944	AFRU Deniliquin forced-landing 12 OCT 1944, approved to I/A.7
I/A No.8	X6731	MAY 1946	Stored 1944-46, issued to RTC, became I/A.8 1947
I/A No.9	X6730	MAY 1946	Issued to RTC, became I/A.9 1947
I/A No.10	X6727	MAY 1946	GTU Wagga, JAN 1947 approve I/A.10 RTC, disposal AIR7200 1952
I/A No.11	HN757	MAY 1952	RTC Rathmines as I/A.11, moved to Wagga MAR 1954, disposal 1957

[colourised from adf-serials]

I/A No.11 – Oxford HN757 served with CFS Point Cook from 1945, then at East Sale 1949-51, here at Rathmines 1952

Several other Oxfords were not complete Instructional Airframes but were used as other forms of training aids. [175]

POSTWAR 1945-1952

With the end of the War, the RAAF had to be trimmed back to peacetime levels, and until this composition was finalised, an "interim air force" was evolved consisting of 15,000 personnel – and the training aircraft initially to be the Tiger Moth, Wirraway and Oxford.[176] Although in late 1945 most CFS Oxfords at Point Cook were placed in storage, several did serve as CFS trainers until 1951. Also a handful of Oxfords served as "hacks" or unit transports up until 1952. Aircraft camouflage and markings changed with the peacetime air force – "Camouflage schemes and identification markings (due to cessation of hostilities) were no longer a requirement".[177] The primary policy changes that came into effect over 1946-1951, specifically the Oxford, were determined by the following RAAFHQ directives.

- **DTS SIG/71 of 13 NOV 1945**. All aircraft retained for postwar use were to have camouflage removed during overhaul. This was refined in DEC 1945 specifying SFTS trainers would remain in *Yellow*, and beam approach *calibration* aircraft and target towers would have *Black* stripes superimposed.[178]
- **RAAF AGI 3(c)1 Issue 2 cOCT 1946**, undated but issued with RAAF Drawings A5524 *Issue 3* of OCT 1946. Appendix A applied to all aircraft (except trainers) no longer a requirement for camouflage i.e. *Aluminium;* and Appendix B applied to trainers and target-towers, in overall *Yellow*.
- **DTS SIG/96 of 14 JAN 1948.** *Aluminium* finish for all aircraft; *Yellow* trainer bands. *Red* back into the National Markings, with roundels of 1:2:3 proportions. Diagrams issued as RAAF Drawings A5524 *Issue 4* of JAN 1951.
- **RAAF AEIG Pt 2, Sect 1, Instruction No.11 of 27 JUL 1951.** This Instruction followed the associated four diagrams, RAAF Drawings A5524 *Issue 4*, of JAN 1951.

The main postwar operators of the Oxford were **CFS at Point Cook** and the **AFRU at Deniliquin**. AFRU aircraft went to storage in 1946 and were flown to Tocumwal for disposal in MAY 1948. CFS transferred to East Sale from Point Cook in NOV 1947 – its fleet then comprising nine Wirraways, seven Tiger Moths, three Oxfords (**HN692, HN758, LW969**), a Lincoln, two Dakotas and a Mustang. CFS and the other RAAF postwar operators are listed below.

78WG Williamtown. Three aircraft – **BG124, LW878, LW947** – were held by 78WG in 1947, before disposal SEP 1947.

RAAF Townsville / 10SQN. Two Oxfords, **AS323** and **AS370**, were on strength at RAAF Garbutt (Townsville) from AUG 1947 until MAR 1949 when they were transferred to 10(GR)SQN, being retained until storage at Sale in AUG 1950.

25SQN Pearce. One Oxford, **HN648**, flown up to AUG 1950.

3AD Amberley. AS627 was a long-term trainer with 1SFTS at Point Cook over 1941-1944, and after selection for postwar service it was flown by 2AD Richmond, and then 3AD at Amberley until NOV 1950.

CFS East Sale. The last Oxfords on CFS strength were **HN757, HN758** and **LW875,** until JUN 1951.

Base SQN Point Cook. During 1951 **AT462, HN376, HN663, LW874,** flown until last delivered to Tocumwal in FEB 1952.

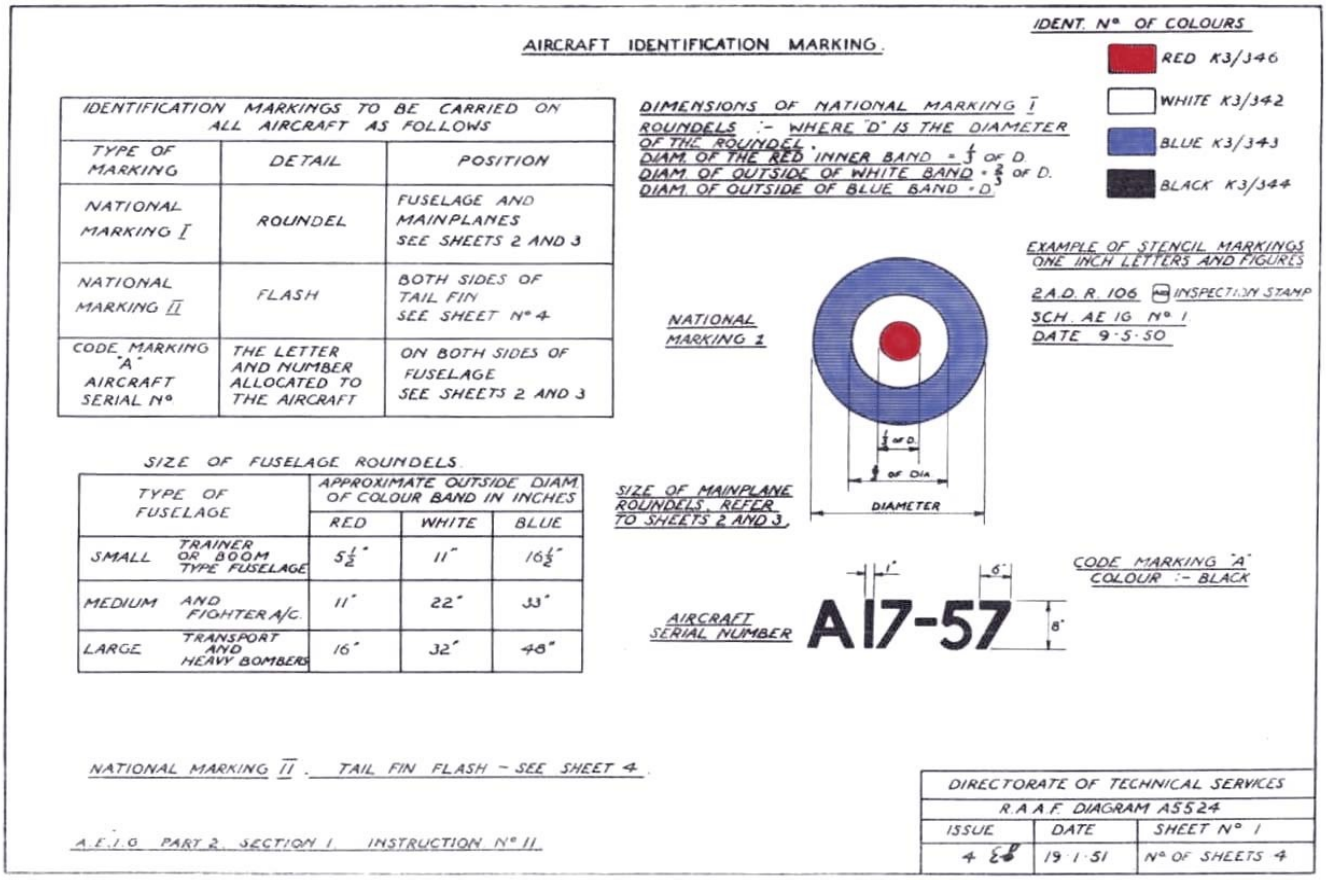
30SQN Schofields. Three, **AT462, LW922, LW973,** operated over APR 1949-MAR 1952. AT462 until FEB 1950, then flown with other Oxfords at Point Cook during 1951; LW973 stored 1951; LW922 damaged taxy accident in MAR 1952.

The last major Oxford disposal was on Tocumwal Disposal List AIR 7203 with at least 60 offered on 9 OCT 1952, and these were sold off by 1 MAY 1953. Some even were flown out of Tocumwal on a dispensation permit as late as FEB 1955 to a Sydney buyer, Mr C W Smith, but they never flew commercially.

[colourised from RAAF image]

AS627 served with 3AD until NOV 1950, then to Tocumwal on Disposal List AIR 7203

RAAF DRAWING A5524 – JAN 1951



AIRCRAFT IDENTIFICATION MARKING.

IDENT. N° OF COLOURS
RED K3/346
WHITE K3/342
BLUE K3/343
BLACK K3/344

IDENTIFICATION MARKINGS TO BE CARRIED ON ALL AIRCRAFT AS FOLLOWS		
TYPE OF MARKING	DETAIL	POSITION
NATIONAL MARKING I	ROUNDEL	FUSELAGE AND MAINPLANES SEE SHEETS 2 AND 3
NATIONAL MARKING II	FLASH	BOTH SIDES OF TAIL FIN SEE SHEET N° 4
CODE MARKING "A" AIRCRAFT SERIAL N°	THE LETTER AND NUMBER ALLOCATED TO THE AIRCRAFT	ON BOTH SIDES OF FUSELAGE SEE SHEETS 2 AND 3

DIMENSIONS OF NATIONAL MARKING I
ROUNDELS :- WHERE "D" IS THE DIAMETER OF THE ROUNDEL
DIAM. OF THE RED INNER BAND = 1/3 OF D.
DIAM. OF OUTSIDE OF WHITE BAND = 2/3 OF D.
DIAM. OF OUTSIDE OF BLUE BAND = D.

EXAMPLE OF STENCIL MARKINGS ONE INCH LETTERS AND FIGURES

2.A.D.R. 106 INSPECTION STAMP
3CH. AE 16 N° 1
DATE 9·5·50

NATIONAL MARKING 1

SIZE OF FUSELAGE ROUNDELS.

TYPE OF FUSELAGE		APPROXIMATE OUTSIDE DIAM. OF COLOUR BAND IN INCHES		
		RED	WHITE	BLUE
SMALL	TRAINER OR BOOM TYPE FUSELAGE	5½"	11"	16½"
MEDIUM	AND FIGHTER A/C.	11"	22"	33"
LARGE	TRANSPORT AND HEAVY BOMBERS	16"	32"	48"

SIZE OF MAINPLANE ROUNDELS. REFER TO SHEETS 2 AND 3.

CODE MARKING "A" COLOUR :- BLACK

AIRCRAFT SERIAL NUMBER

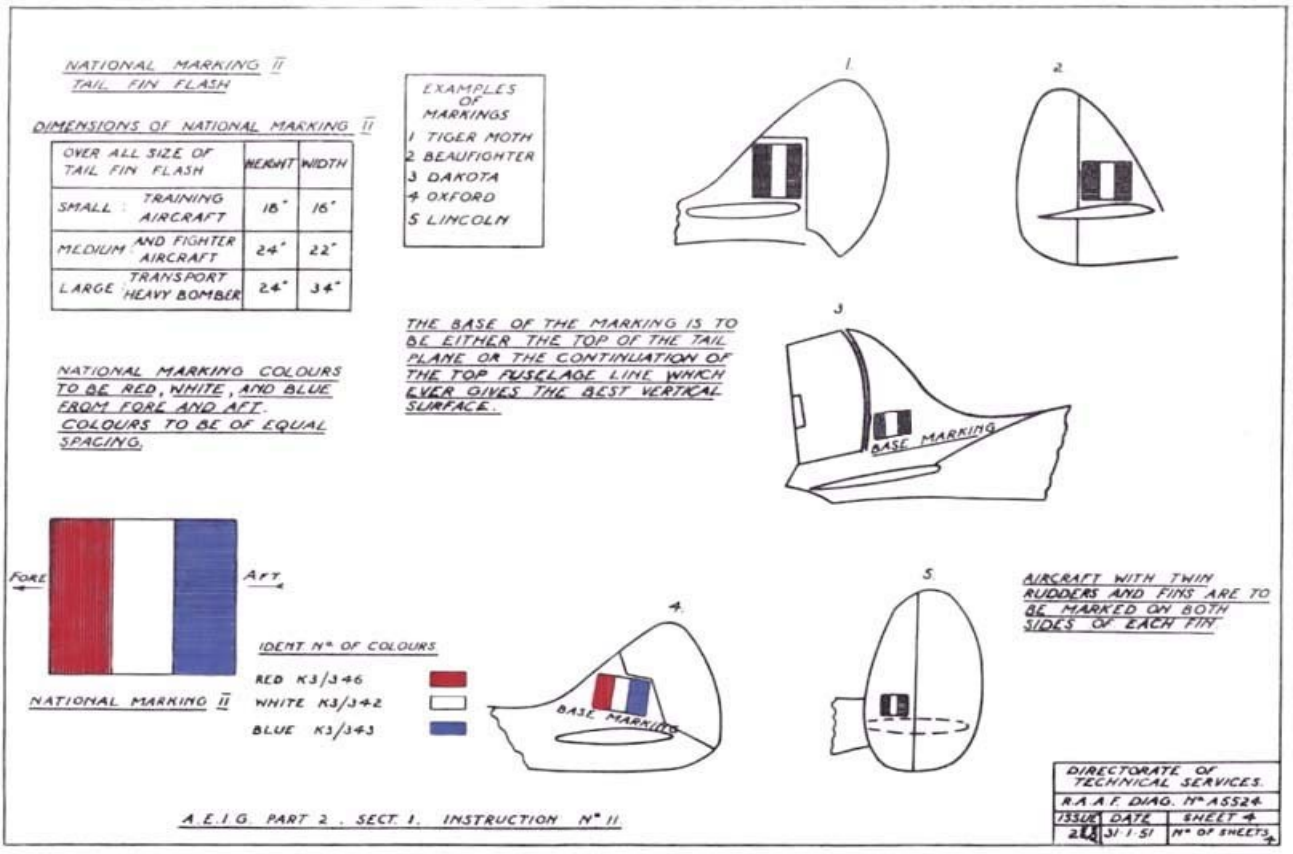
NATIONAL MARKING II . TAIL FIN FLASH - SEE SHEET 4.

A.E.I.G. PART 2. SECTION 1. INSTRUCTION N° 11.

DIRECTORATE OF TECHNICAL SERVICES		
R.A.A.F. DIAGRAM A5524		
ISSUE	DATE	SHEET N° 1
4	19·1·51	N° OF SHEETS 4

RAAF AEIG Pt 2, Sect 1, Instruction No.11 of 27 JUL 1951

This Instruction was accompanied by four DTS A5534 Diagrams, dated JAN 1951. Sheet 1 gave the fuselage roundel size as 33" diameter – it was probably too late for this roundel size to apply to the Oxford. Sheet 4 again gave the fin flash as 24" high x 22" wide – consistent from the 1944 AGI. Serial numbers no longer required underwing.



NATIONAL MARKING II
TAIL FIN FLASH

DIMENSIONS OF NATIONAL MARKING II

OVER ALL SIZE OF TAIL FIN FLASH		HEIGHT	WIDTH
SMALL	TRAINING AIRCRAFT	18"	16"
MEDIUM	AND FIGHTER AIRCRAFT	24"	22"
LARGE	TRANSPORT HEAVY BOMBER	24"	34"

EXAMPLES OF MARKINGS
1 TIGER MOTH
2 BEAUFIGHTER
3 DAKOTA
4 OXFORD
5 LINCOLN

THE BASE OF THE MARKING IS TO BE EITHER THE TOP OF THE TAIL PLANE OR THE CONTINUATION OF THE TOP FUSELAGE LINE WHICH EVER GIVES THE BEST VERTICAL SURFACE.

NATIONAL MARKING COLOURS TO BE RED, WHITE, AND BLUE FROM FORE AND AFT. COLOURS TO BE OF EQUAL SPACING.

NATIONAL MARKING II

IDENT N° OF COLOURS
RED K3/346
WHITE K3/342
BLUE K3/343

AIRCRAFT WITH TWIN RUDDERS AND FINS ARE TO BE MARKED ON BOTH SIDES OF EACH FIN

A.E.I.G. PART 2. SECT. 1. INSTRUCTION N° 11.

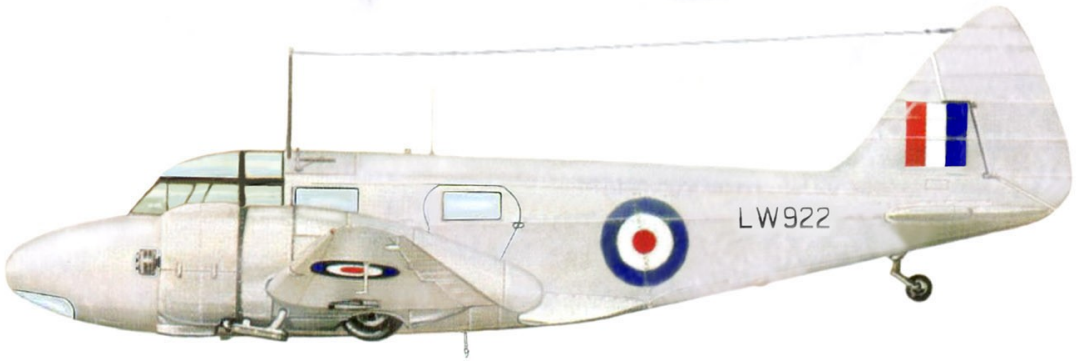
DIRECTORATE OF TECHNICAL SERVICES.		
R.A.A.F. DIAG. N° A5524.		
ISSUE	DATE	SHEET 4.
2	31·1·51	N° OF SHEETS 4.

OUR LAST OXFORD – LW922 30(TT) SQN, SCHOFIELDS 1950-1952

[colourised from RAAF image]

The last RAAF Oxford, LW922, suffered a brake failure when taxying at Schofields on 19 MAR 1952

LW922 was operated by 30(TT)SQN at Schofields as a hack over 1950-1952, and was the last Oxford operated by the time of this accident in MAR 1952 – it was not repaired. This shows a great example of the latest AEIG Pt.2 Sect.1 Instruction No.11 of JUL 1951 on postwar *Aluminium* finishes. It was on the last large Oxford Disposal List AIR 7203 at Tocumwal in OCT 1952.



CENTRAL FLYING SCHOOL – EAST SALE 1948-1951

LW875 was a long-time trainer with 1SFTS at Point Cook, and served with CFS from SEP 1946, until passing to storage at Tocumwal in JUN 1951. On the last large Oxford Disposal List AIR 7203 of OCT 1952 at Tocumwal, it was sold in MAY 1953.

[colourised from adf-serials]

***Aluminium*-finished LW875 '875' of CFS 1950-51, probably at East Sale – sold in 1953 on disposal List AIR 7203**

DISPOSALS AND SURVIVORS

Unlike the Anson, no Oxford is likely to take to the air again. The last Oxford to fly was V3388, registered GAHTW and operated for 14 years as a company hack by Boulton Paul Aircraft Ltd, at Wolverhampton. It had been well maintained throughout, and four years after retirement it was acquired by the now defunct Skyfame Aircraft Museum, at Staverton, where it was repainted in RAF camouflage and flown for several years. Now it is on static display (with its former sister ship at Skyfame, Anson Mk.I N4877) at the IWM at Duxford.[179] In Australia, by mid-1946, the RAAF had selected the best Oxford airframes to retain for postwar use, with others allotted to the Commonwealth Disposals Commission for offer by auction, often as scrap "remnants". While Ansons were stored in hangars at RAAF bases for disposal, the CDC auction notices included the advice that the Department of Civil Aviation (DCA) accepted the Anson was eligible for issue of an Australian Certificate of Airworthiness. However, this was not the case for the Oxford – DCA determined there would be no civil certification due to integrity of the Oxford's glued wooden construction.

[colourised from adf-serials]

HN648 at Tocumwal 1952 – retained postwar HN648 had served with 25SQN at Pearce over 1949-1950

Red-white-blue roundels, visible underwing (the fuselage *Red* appears to have been shot out as target practice); no *Red* in the fin flash, reason not known. Flown to 1AD Det 'B' at Tocumwal in AUG 1951, declared surplus in OCT 1951 and held in Cat E storage until offered on Disposal List AIR7203 at Tocumwal on 9 OCT 1952 – the largest disposal list with over 60 Oxfords sold.[180]

CDC sales of Ansons brought a strong response and bids accepted settled in a range between £500-£250 per aircraft. At those low prices some buyers purchased additional Ansons for resale or just for engines and parts, and a total of 42 Ansons were purchased from CDC over 1946-47.[181] However, because of the Oxford's glued wooden construction ban, by 1947 hundreds of Oxfords could not be readily sold – so public auctions disposed of the Oxfords by selling them cheaply at a standard price of £5/10/- ($11) to promote quick sales of these "remnants". To ensure the aircraft were not airworthy, they had to be removed through a Base's front gate, particularly at Port Pirie and Mallala. This meant the wings had to be hacked off before removal, then these remains were stripped and scattered around local farms. Accordingly, there are no airworthy Oxfords or complete static display aircraft in Australia.

Greenock Collection's V3475 in Barossa Valley *[Lincoln Nitschke]*

HN631, ex 1OTU, displayed West Sale *[Gippsland Museum]*

V3475 (Nitschke's Military & Historical Aircraft Collection at Greenock) was sold from Mallala in 1947. On a farm, by 1963 it had disintegrated to a centre-section and nose – the forward fuselage and cowl were later collected by John Boden for storage in Salisbury North, then moved to Nitschke's at Greenock. By 2014 a complete Oxford Cheetah engine was held; also the fuselage of Anson AX350 is being restored while on display. The nose of **HN631** is displayed at www.gippslandarmedforcesmuseum.com/

SOUTH AUSTRALIAN FARMS – HN412 ex-3AOS

Probably the best known Oxford that survived on South Australian farms was **HN412** which had an unusual RAAF career by not being an SFTS pilot trainer. Arriving in MAY 1943, HN412 served with 5OTU at Williamtown over 1943-1944, then in JUL 1944 to CFS at Tamworth. Remaining with CFS for its move to Point Cook in SEP 1944, it then late in the war went to 3AOS Port Pirie in JUL 1945 until FEB 1946, when it was stored by the local CMU. The story of Oxfords and Ansons moved as scrap onto farms in SA is related at Geoff Goodall's website:
https://www.goodall.com.au/australian-aviation/ansonsonfarms/ansonsonfarms.html

[Neil Follett colour image from Goodall Aviation site]

HN412 on the farm at Agery SA (near Port Pirie) in APR 1965 – still in good shape after 15 years inside a barn

This unique colour image of an RAAF Oxford from 1965 shows some interesting features. Overall *Yellow* iaw MAY 1944 AGI, the serial is displayed unusually as 'HN-412'. Several markings suggest application in 1945: later 2:5 30" fuselage roundels, the then standard fin flash 24"x22", and smaller style training number adopted on Oxfords, i.e. at 20"x12" is not the height of the roundel.

Offered for disposal on List AIR 1688 in MAY 1946, DAP disposed of HN412 in late 1947. Geoff Goodall records: *"Oxford HN412 was by far the best preserved of the 150 Oxfords and Ansons located. It was found on a farm at Agery SA in February 1965, after being kept in a barn for 15 years. Allover Yellow with Pacific blue & white roundels."* [182]

[ANAM colour image from adf-serials]

HN412 deteriorating down on the farm near Port Pirie when recovered by ANAM in 1968

HN412 was bought by Eric Fuss for his farm at Agery, and towed from Port Pirie to this farm by Arthur Sawley who had devised an effective towing method of aircraft. When found in 1965, this Oxford was parked on its inflated tyres on the farm in surprisingly good condition as Mr Fuss had kept it inside a barn until several years earlier. Both wings outer of the engines were stacked nearby, also in good condition. Moorabbin Air Museum negotiated with Mr Fuss to acquire HN412, but by the time they arrived with their truck a year later in 1968, local vandals had wrecked the aircraft in the preceding months. The Moorabbin team was forced to just salvage engines and parts. Now parts from HN412 are being used in the construction of an Oxford replica at Werribee VIC.[183]

WERRIBEE OXFORD

The B-24 Liberator Memorial for A72-176 under restoration at Werribee VIC also has an Oxford being restored as a replica. The Werribee Oxford goes back to early 2000s, when the RNZAF Museum in Wigram sent major assemblies from their own Oxford to Werribee for the museum to take measurements. They also sent Oxford manuals for duplication. Having original components on site allowed the team at Werribee to build accurate jigs for their project. Once the measurements were completed, components were returned to New Zealand, but the Australian project spent the next four years on hold. Then a well-worn, original centre section arrived from South Australia as a donation – this had been discovered behind a barn and research showed that it came from an unidentified crashed Oxford which had remained in situ for many years.[184] Components from the earlier HN412 "barn find" are being used in this reconstruction, after their recovery in 1968 by the Moorabbin Air Museum.

The wing centresection from a wrecked Oxford seen soon after it had arrived via donation from South Australia. This item provided many useful original (small) parts, templates and details for the project.

Putting the finishing touches on the Oxford's left wing – the centresection is seen in its jig on the right side of the frame

The port wing nearing completion – RAAF B-24 Liberator A72-176 can be seen in the background

One of the project's two Armstrong-Siddeley Cheetah engines has been restored to running condition

[images from B-24 Liberator Memorial Fund]

The Werribee team's Mission Statement says that the museum will display the Liberator and associated training aircraft, so the Oxford is a perfect fit for their long term goals. Work to date has comprised: the tailplane is completed and stored against the hangar wall; one propeller is completed; the port wing is almost completed; the centre section awaits completion; work has begun on the starboard wing, the cockpit floor and structures. The Museum already has a pair of Oxford Armstrong-Siddeley Cheetah X engines for their aircraft, with one already restored to running order. It is planned to fit the replica with the two restored Cheetah X engines that will be in full operating condition.[185] So the long-term plans aim to eventually provide the Museum with a full-sized replica Oxford, constructed in accordance with Airspeed drawings. The B-24 project team is very thankful that, due to a couple of generous benefactors, there is enough dedicated money to allow the Oxford replica to proceed.

OVERSEAS SURVIVORS

MP425 (ex G-AITB) was built by Standard Motors of Coventry in 1943. It is displayed at the RAF Museum[186] in later wartime markings: type-C1 roundels, *Dark Green* and *Dark Earth* but without *Yellow* undersides, and showing the *Yellow* triangle indicating a beam training Oxford, of No.1536 Beam Approach Training Flight, at Spittlegate, Lincs.

[AerialVisuals website]

Oxford Mk.I MP425/G-AITB at the RAF Museum, Hendon

[airvectors.net]

V3388/G-AHTW on display at the Imperial War Museum, Duxford

In addition in UK are: **V3388** (ex G-AHTW), Mk.I on static display at the Imperial War Museum at Duxford;[187] **AT605** an Oxford Mk.I wreck under rebuild with the Midland Aircraft Recovery Group;[188] and **EB518** an Oxford Mk.V stored in Baxterley in Warwickshire.[189]

The most notable local restoration to date is in New Zealand – **PK286** an Oxford I on static display at the Air Force Museum of NZ at Wigram (below).[190] This is on long-term loan from the Canada Aviation and Space Museum in Ottawa, and has been displayed since FEB 2016. NZ also has the wreckage of **NZ277/P2030**, which was found in 1974, on display at the Taranaki Aviation Transport and Technology Museum near New Plymouth, Taranaki.[191]

[demobbed website]

PK286 at the NZ AF Museum, Wigram

[SAAF Museum]

ED290 of the South African AF Museum, Port Elizabeth Airport

Above is **ED290** (ex G-AITF), an Oxford Mk.I under restoration to static display at the South African Air Force Museum at Port Elizabeth.[192] Below is Mk.I **016/MP455** on static display at the Belgian Royal Museum of the Armed Forces and Military History in Brussels.[193]

B016/MP455 at the Armed Forces Museum in Brussels *[Jetphotos]*

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Australians Killed in USAAF Service;
Pilot Officer Allan Davenport Serv# 409296: Navigator.

At the start of March 1942 the group had no operational B-17Es, all of the aircraft that had escaped from Java needing urgent repairs. By the end of the month the surviving aircraft (B-17Es and LB-30s) and crews of the 7th Bombardment Group had been transferred to the 19th Bomb Group, giving it some capability for operations with about twenty-seven aircraft, with over half in poor material condition.

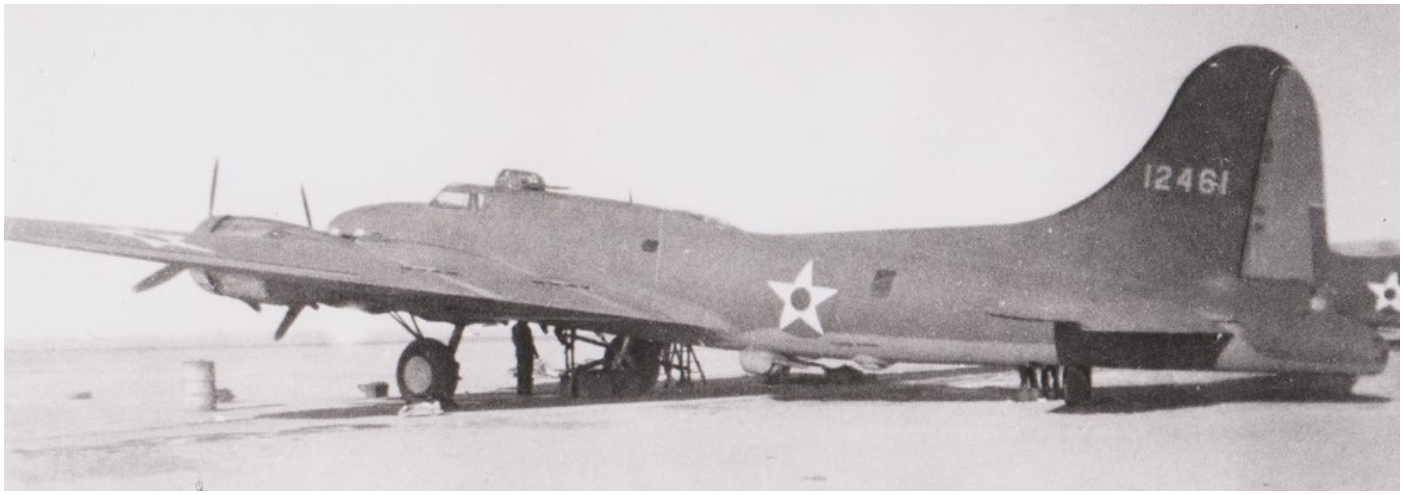
There on, more factory fresh B-17Es started to arrive in theatre, to bring the 19th Bomb Group up to a TOE of thirty eight aircraft, divided amongst four Squadrons and a HQ Flight by the beginning of May 1942.

The group took part in the Battle of the Coral Sea (4th-8th May 1942), flying reconnaissance searching for the Japanese fleet (the group also attempted to attack US and RAN warships that it had incorrectly identified as Japanese, fortunately without any success. In the period of April, May and June 1942, the 19th Bomb Group carried out eighteen attacks on Rabaul, flying sixty sorties from Mareeba and Port Moresby. They were awarded a second Distinguished Unit Citation for a series of raids on 7th-12th April 1942, including the Royce Raid.

Whilst the efforts of the 28th, 93rd and 435th Bomb Squadrons are well documented, there were deficiencies with the fourth squadron within the Group, the 30th Bomb Squadron.

A Letter from the Officer Commanding No 32 Squadron RAAF, Wing Commander Derek Kingwell, whilst on Horn Island to A.C.H Townsville, requested an explanation as to why four B-17E aircraft of the 30th Bomb Squadron were some hours late at departing on an operation on the 1st July 1942.

Those four B-17E aircraft and Captains were: 41-2636 (1st Lt Charles Hillhouse O-021838), 41-2653 (1st Lt. Paul M. Lindsey, O-406701), 41-2655 (Lt William Railing O-398588) and ex-Java 7th BG B-17E Veteran, 41-2461 (1st Paul Irving Williams O-418154).



B-17E 41-2461. Captained by Major C.F. Necrason 11th BS/7thBG left Mc Dill Florida on the 26th December 1941. Pictured in Egypt after crossing the Atlantic from South America, and then flown across Africa, before flying to Iraq, then India, Ceylon and then Sumatra, then onto Java under Project X on the 12th January 1942, before evacuating to Broome Australia on the 3rd March 1942.Note the Sperry remote Belly Turret. B-17E 41-2459 is behind. [*All Photos: GRB Private Collection unless otherwise advised*].

It must be remembered, even on the 7th July 1942, the Japanese bombed Horn Island again with sixteen bombers and once more on the night of the 29th July 1942 by flying boats.
It was therefore deemed as a necessity to be quick on refuelling and loading, and aloft before daylight.

Whilst the Commanding Officer of the Operational Base at Horn Island was responsible for loading of bombs and servicing aircraft coming through from Mareeba to their targets, the captains of the aircraft should take sufficient responsibility to issue appropriate instructions to ensure that the bombs are in fact correctly loaded by the RAAF.

B-17E 41-2653 pictured months later

During a discussion with 1st Lt C H Hillhouse O-021838 by Kingwell, it became evident to him that this officer did not know the latest requirements for "lane of entry" (a set air corridor for landing approach and take-off for IFF purposes). Previous incidents had occurred with the 30th Bomb Squadron carrying out its operational missions in an unsatisfactory manner, with an example of one occasion where an aircraft of this squadron transmitted a signal in plain language reporting the composition and position of a friendly convoy approaching Port Moresby.

This incident occurred on the 19th June 1942. But consider the fact that the 30th Bomb Squadron was based at Cloncurry and staged through Horn Island from there up to the 24th July 1942.

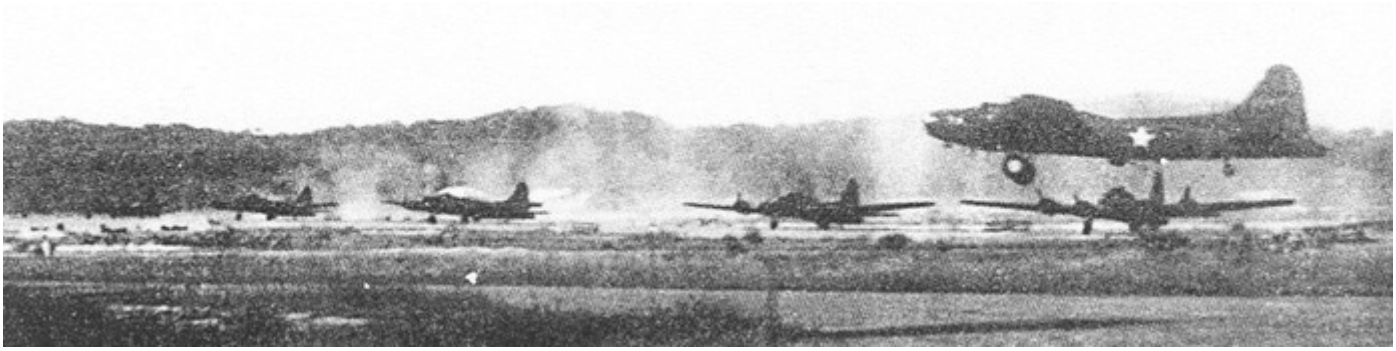
Basically, AOC.HQ Townsville's Staff Officer Operations, North Eastern Area, Sqn Ldr J A Mitchell, states on receipt of Kingwell's communication; and in consultation with his co responsible USAAF Officer, Capt Jack W Hughes O-22442, that the way this squadron carries out its operations has been noticed to be in direct contrast with other squadrons of the 19th Bomb Group, who take a keen interest in their operations and all relevant operational information and help.

As a result, an order from the Chief of Staff Operations, Lt Colonel Ray T Elsmore, to the Commanding Officer of the 19th Bomb Group, Lt Colonel Richard Carmichael, on the 8th July 1942, requested that he take the necessary action to correct these deficiencies and checks should be made to ascertain if lack of knowledge on sea lanes and methods of reporting sea power is prevalent among flight personnel, and if it is so, take action to ensure such information is given and absorbed by such personnel.

One of the four mentioned 30th Bomb Squadron B-17Es, 41-2655, captained by 1st Lt. Paul M. Lindsey, O-406701, was lost on the 14th July , 1942 when as the fourth of six B-17E/F to took off from Horn Island Airfield around 3:30am amidst a tropical storm, crashed into the sea roughly a mile from Horn Island.

Five minutes after, B-17E 41-2636 captained by 1st Lt Curtis J Holdridge O-417633, crashed off the end of the runway into the mangrove swamp roughly 300-400m off Horn Island in the following taking off five minutes behind 41-2655 as the fifth aircraft of the formation.

Alas two more, when 1st Edward J. Bechtold had a taxi accident when he was moving B-17E 41-2460 on Horn Island struck a stationary B-17E 41-2640 of 1st Lt Cary L O'Bryan O-022936 on the 27th July 1942 and destroyed the nose. Two of the crew were killed, with B-17E 41-2640 being written off. *1st Lt Charles H Hillhouse O-021838 actually flew 41-2460 out from USA via Africa Project Route in January 1942 to Java.*



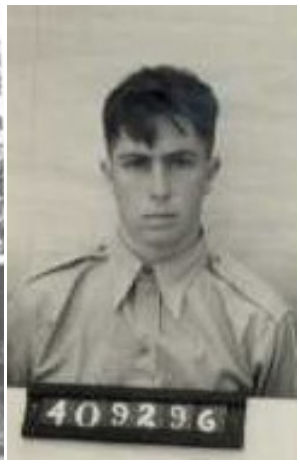
B-17E/Fs at Horn Island mid 1942

In a period of three weeks, some four B-17Es were put out of action or lost at Horn Island, all 30th Bomb Squadron aircraft. Sadly even 1st Lt. Paul M. Lindsey, O-406701 along with crew and the new Commander of the 30th Bomb Squadron, Major Dean C. "Pinky" Hoevet, O-22248, would be killed, when B-17E 41-2434 blew up from a flare trial over Yorkey's Knob near Cairns on the 16th August 1942.

Further discussions between RAAF North Eastern Command and USAAF Head Quarters Air Force were held on a possible expansion of the supplement of Pilots and Air Observers embedded into USAAF Operational Squadrons as time expired USAAF crews were rotated home or withdrawn for rest. This additional assistance given by the RAAF was to allocate a cadre of Navigator/Observers by the beginning of August 1942, in addition to the previously supplying Co-pilots and Observers, to assist in the navigation and identification purposes for operations.

One of those was P/O Allan Devonport Serv#409296 who had completed his training and commissioned on the 28th May 1942, after completing his training as a Qualified Observer (Astro- Navigator) within No 19(Observer) Course, at No 2 Air Navigation School at Nhill, NSW. He arrived at Mareeba, then the main base for the 30th Bomb Squadron on the 7th August 1942.

On the 5th October 1942, eight 19th Bomb Group B-17E/Fs took off at 02.00hrs from Seven Mile Strip, Port Moresby, to bombed Vunakanau Aerodrome at Rabaul in New Britain. One of those aircraft was a B-17F-5-BO, Serial 41-24403 that had arrived in Australia and assigned on the 21st August 1942 to the 30th Bomb Squadron, 19th Bomb Group, and had been named "Blitz Buggy". Captained by Major John A Rouse O-22472, (ex Java Vet) it was assigned as Number 1 Ship in the "A" Flight. During the flight to the target, two aircraft were separated from the rest of the flight



Left; B-17F 41-24403 pictured at Mareeba and right, Pilot Officer Allan Davenport: Credit NAA RAAF Personnel File

On the bombing run from the south east over the target at twenty four thousand feet at dawn, the weather was clear but a cloud was over the target, requiring the formation to go around for another bomb run from the northwest. Because of the delay, the paired formation was intercepted and attacked by between twenty and thirty enemy fighters. Over a period of thirty to forty minutes, repeated attacks were made on all aircraft, which resulted in one aircraft being shot down and others damaged, including B-17F 41-24403. Rouse successfully eluded the fighters after going into cloud to take cover between attacks.

Near the release time, 07.30hrs, a large calibre bullet from an attacking zero came through the fuselage under the bombardier's seat and struck Davenport in the right leg, below the knee. The Bombardier, 1st Lt Ritchie B Gooch O-412732, applied a tourniquet and stopped the bleeding. He then gave Davenport a Morphine Syrette and bandaged his wound.

Gooch also began administrating Sulphathiosal tablets between attacks, two every five minutes until twelve were taken. Davenport was covered by winter clothing to ensure he was kept warm and Gooch ensured that his oxygen mask was securely fitted, given their altitude of twenty four thousand feet.

During this time, attacks caused Number 2 engine to be shot out and numerous holes were received in the fuselage, wings and nose of the aircraft. The formation by then became separated while in the clouds and all aircraft returned to Port Moresby individually.

As the aircraft made its way back to Seven Mile Strip, Davenport vomited twice, and by 10.00hrs began to exhibit great pain.

Three tablets of codeine were given as there were no further Morphine Syrettes available. He after a short time later started to rest easier and the aircraft was landed at Seven Mile Strip at 12.30hrs, where a Doctor and ambulance attendants took Davenport out of the aircraft unconscious, then administered another Morphine Syrette and placed him into the Ambulance for transport to the RAAF Hospital No 1 in Port Moresby.

On examination, he had suffered a gunshot wound, through and through below his right knee, a compound fracture of his right tibia, haemorrhage and shock. He was given a drip, as he had lost quite a deal of blood.

Sadly, he passed away a few minutes on at 13.00hrs and was buried at Hanaubada Cemetery, Port Moresby, later that afternoon.

General Order 7th November 1942, Headquarters 19th BG (Heavy) APO922 (Abridged)
Reference Letter, Subject; Citation of the 19th BG HQ, dated 22nd October 1942. Having been a member of the 19thBG from 7th August to 12th August 1942, period for which this unit was cited for outstanding performance of duty, P/O Davenport, RAAF attached to 30th BS/19thBG is hereby authorised to wear the individual device prescribed by Executive Order 9075 as part of the uniform at all times and wherever servicing.*
Lt Col Felix M Hardison, O-021354 Commanding Officer, 19thBG.
Allan had been awarded the Silver Star (USAAF) for Gallantry in action over Rabaul 12th August 1942.
**The 19th BG bombed airdromes, ground installations, and shipping near Rabaul, New Britain, to cover the landing of the 1st Marine Division at Guadalcanal.*
A post note: 1st Lt Ritchie B Gooch O-412732 was almost killed himself, on the 7th August 1942 when **B-17E 41-2617** crashed on takeoff at Port Moresby, with all crew not injured. The pilot was none other than, now Captain C. H. Hillhouse O-021838. As for B-17F-5-BO, Serial 41-24403 "Blitz Buggy", she was renamed "the Ole Man" and survived the war after being used as a transport.

The smouldering remains of B-17E, 41-2641. Destroyed on the ground by strafing at Port Moresby, 24th April, 1942. 32SQN Hudson at rear left. [*19th BG Robert Rocker Collection via Gordon Birkett*].

Sources:

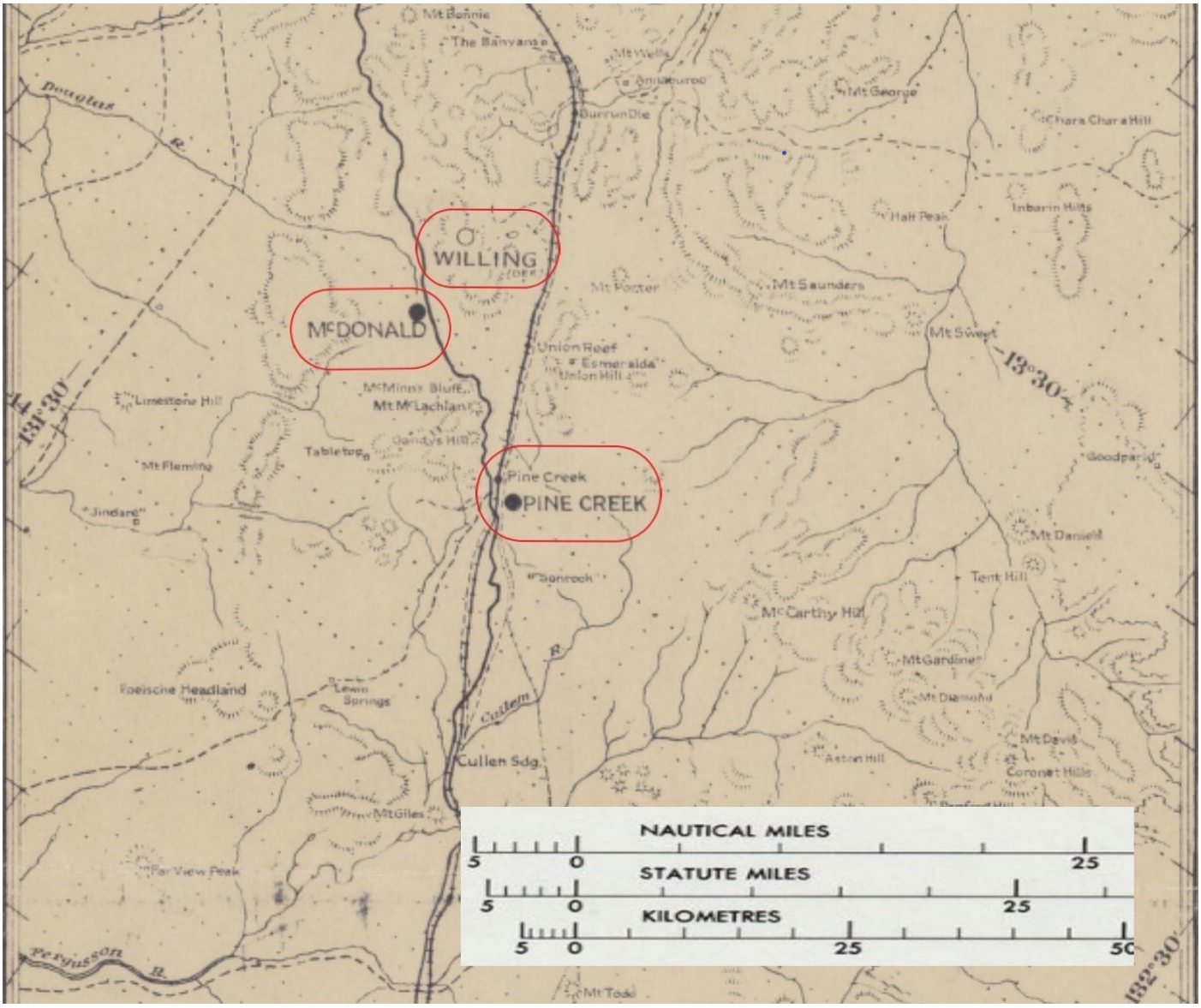
Microfilm: 5th Bomber Command Diary USAF AHRA
Microfilm: 19th Bomb Group Historical Diary USAF AHRA
Personal File: F/O Allan Jack Davenport 409296 NAA
North Eastern Area, Townsville - Personnel Occurrence Reports
A50 History Sheets North Eastern Area. NAA
Checking page details per Pacific Wrecks which was incomplete. Sorry.

Former RAAF Aerodromes along or near the Stuart Highway

Part 3, Pine Creek Region

Garry Shepherdson

This is a short edition, only three airfield sites.

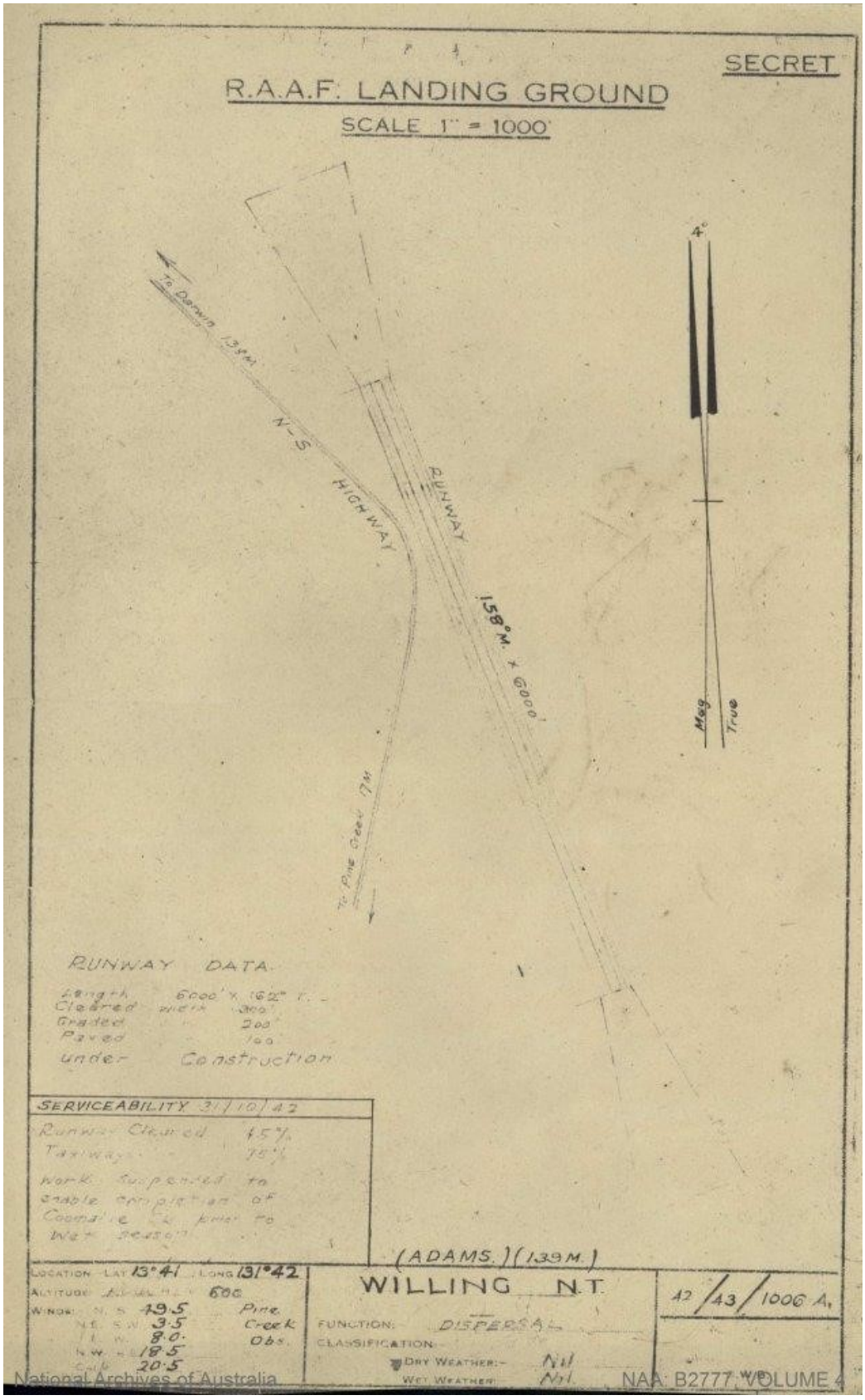


Portion of Drawing No. 42/43/2914, Aerodromes and Landing Grounds in the Northern Territory between Darwin and Birdum, 1943. Here showing the airfields covered by this instalment. [*National Library of Australia; obj-233091255*].

District	Name	Location	Position
Pine Creek	Willing [Adams or 139-Mile]	18 miles NW Pine Creek	13°41'S 131°42'E
	McDonald	11 ½ miles NW Pine Creek	13°46'S 131°43'E
	Pine Creek	Pine Creek	13°50'S 131°51'E

WILLING
[Adams / 139-Mile]
13°41'S 131°42'E

This proposed airfield was named in honour of Flight Lieutenant Maurice Phillip Willing of 13SQN[194] who, along with his crew, failed to return from a mission from Laha whilst flying Hudson A16-64 on 20th January, 1942.[195]



Basic aerodrome diagram for Willing, NT. No taxiway or dispersal point layout was provided. [*NAA: B2777, VOLUME 4*].

Its recorded function was that of a Relief Landing Ground under construction but deferred, to be capable of operating Medium Bomber sized aircraft in any weather. The aerodrome elevation was 600 feet and it was to have had a 6000-foot runway aligned 158°.[196]

The aerodrome diagram notes that the runway was (to be) aligned 162°T (the 158° referred to above was the magnetic bearing) with a paved width of 100 feet, graded width 200 feet and a cleared width of 300 feet. The diagram also notes that the facility was under construction but that work had been "suspended to enable completion of Coomalie Ck prior to wet season".

No evidence of the airstrip is apparent in this Google Earth image as at 9th July, 2020. The "new" Stuart Hwy (running north/south) crosses the old Stuart Hwy at 13°41'44"S 131°41'38"E. The dirt road running into the upper centre left of the image from the top right-hand corner joins the old Stuart Hwy just to the south east of that intersection. [*Google Earth*].

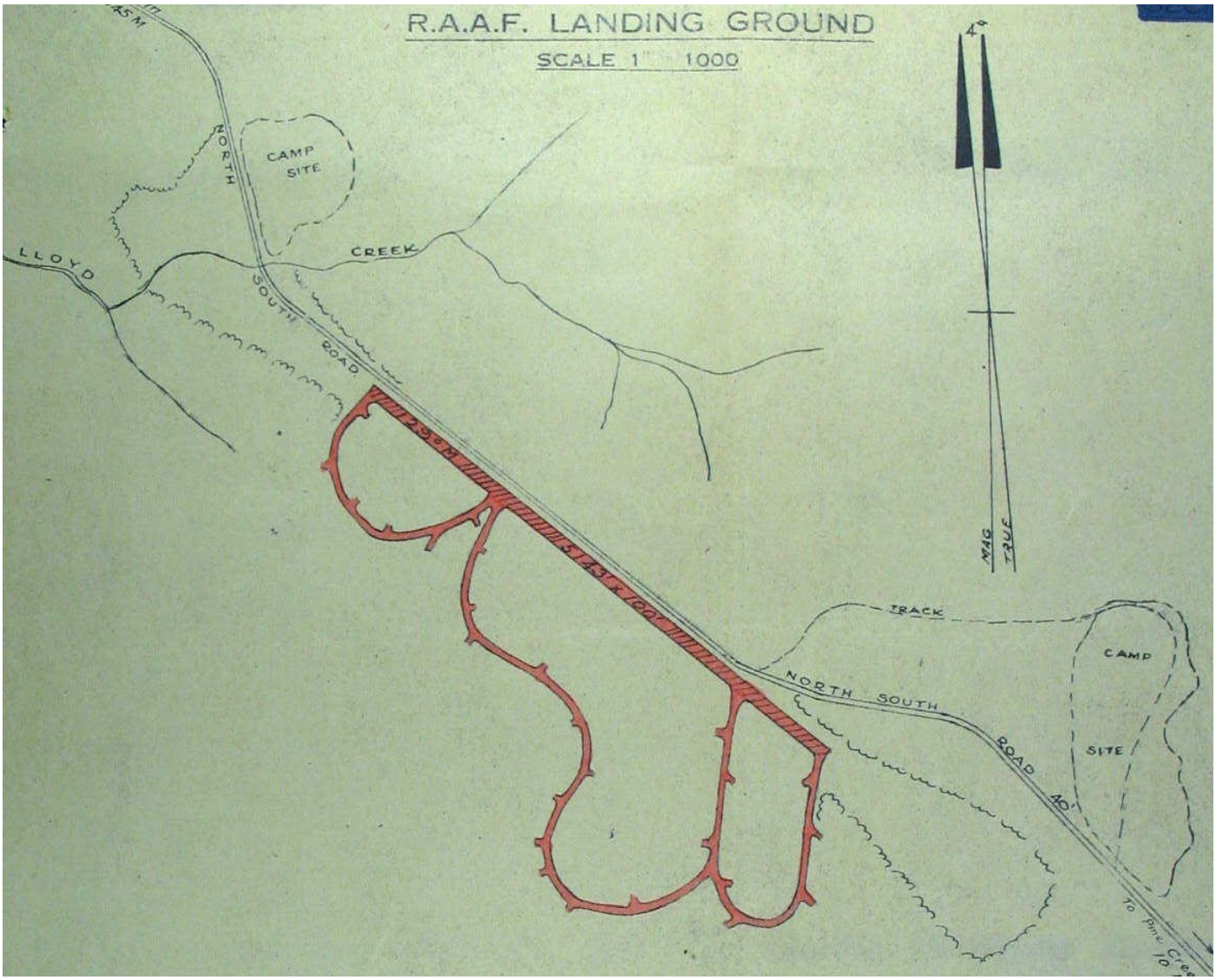
If any physical work had commenced (such as clearing or earth works), no evidence is apparent from current vertical imagery.

McDONALD
[Burkholder]
{MAC}
13°46'S 131°43'E

Named after Wing Commander J.R.G. McDonald, Commanding Officer of Number 13 Squadron,[197] RAAF, who, along with his crew, were killed at Laha taking off on an operation against the Japanese in Hudson A16-69, on 10th December, 1941.[198]

McDonald (often mistakenly called "Macdonald") was classified as an existing Operational Base suitable for the operation of Medium Bombers in any weather. The aerodrome elevation was quoted as being 660 feet and it had a single, sealed, runway of 5150 feet, aligned 129° [Runway 13/31]. Individual dispersal was available for 19 medium bomber sized aircraft with plans for a further 5 dispersal points.[199]

McDonald Strip was the home of Number 18 (Netherlands East Indies) Squadron from January, 1943, until the squadron moved to Batchelor during May, 1943.



RAAF Landing Ground McDonald, also known as Burkholder, Drawing No. 42/43/1008B. [*NAA: A9716, 783*].

An American assessment of the field, compiled by the Air Engineer, 5th Air Force Service Command, dated 1 February, 1944, noted that the airfield had not been in use since the previous May (1943), but was a well-kept field maintained by Number 5 Replenishment Centre, RAAF. The airfield had dispersed fuel dumps but with limited supply and no hangars or repair facilities. Eight 2000 gallon water storage tanks and one 3000 gallon tank plus a 2000 gallon per day bore. Heavy gun emplacements were sited about the field but were not equipped with guns.[200]

This Google Earth image (as at 10th July, 2020) shows the airfield surviving in good condition. During a visit in 2015, the only section of taxiway that needed any significant work was the apex of the southern loop, which had developed a fairly significant wash-away. Aside from that, the only major work required was vegetation clearing along and around the taxiways and the verge of the runway. [*Google Earth*].

The remains of a revetment supported by Pierced Steel Planking. This revetted wall shielded the taxiway (farside) from the dispersal bay (foreground). Entrance to the bay is visible at left. [*Garry Shepherdson, 2015*].

The wall is suffering from severe erosion, as are some portions of the taxiways. [*Garry Shepherdson, 2015*].

Triangular concrete pad facing away from the taxiway, perhaps this dispersal bay was used as a gun butts. Taxiway runs left to right in the background (small camp fire <u>not</u> mine). [*Garry Shepherdson, 2015*].

Warning sign nailed to a tree, road-side on the (old) Stuart Highway near the intersection of the (new) Stuart Highway not far north of McDonald Strip. [*Garry Shepherdson, 2015*].

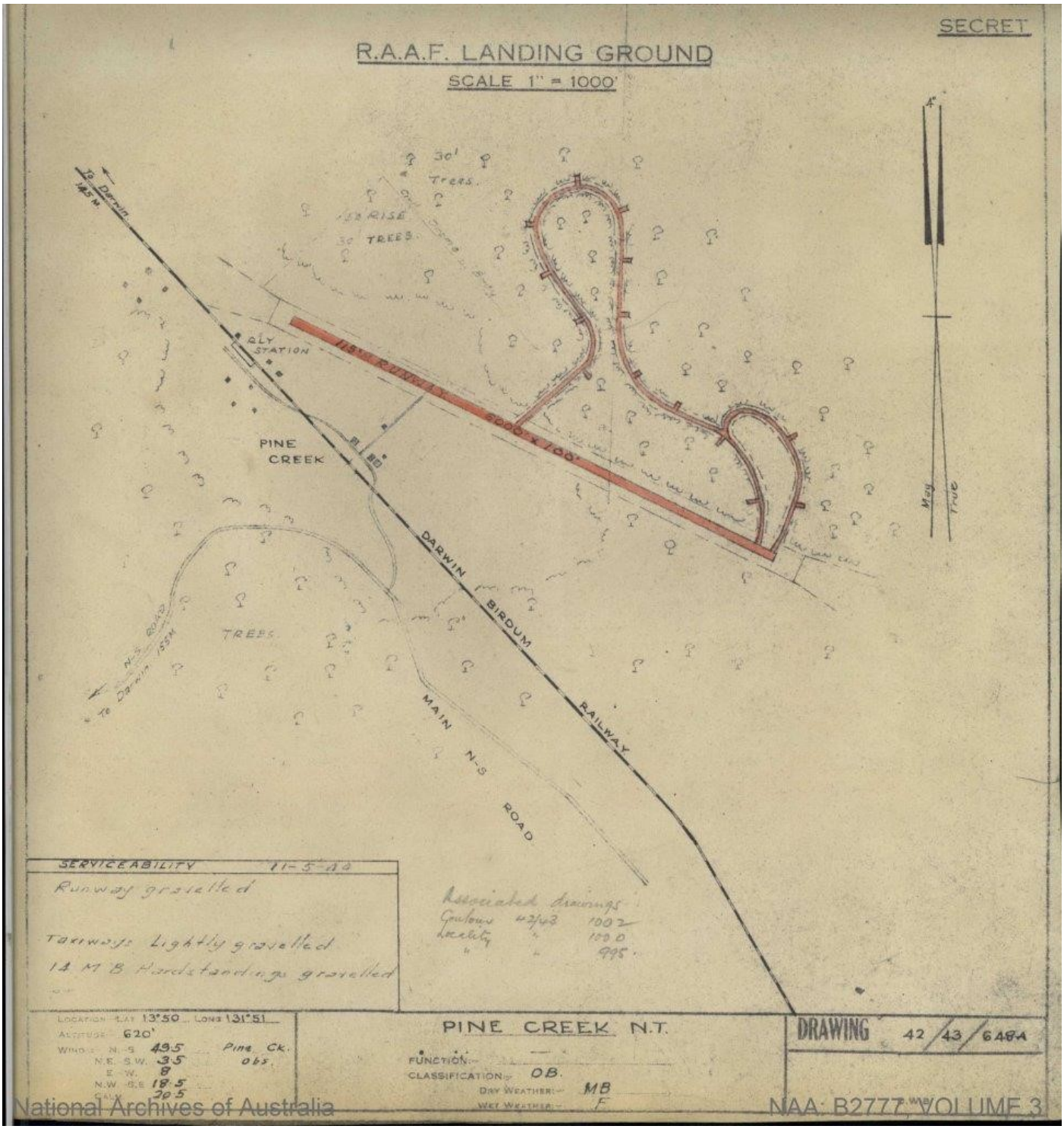
Despite only being used operationally for five months or so, it has survived remarkably well.

The site is within the bounds of a cattle station and the area just beyond the southern loop is sign-posted as being private property.

PINE CREEK
13°50'S 131°51'E

Pine Creek was an existing civil aerodrome that was reconstructed for wartime use. As such it was considered to be an Operational Base capable of operating Medium Bomber sized aircraft in wet or dry conditions. The aerodrome elevation was 620 feet. It was equipped with 18 dispersal bays and had two oiled gravel runways each of 5800-feet. Runway 36 (aligned 001°) and runway 11 (aligned 115°) – which clearly wasn't represented in the aerodrome diagram, reproduced below.[201]

Reconstruction was undertaken by the 808th United States Engineer Battalion (Aviation), but the airfield was never used for operations.[202]



Pine Creek, NT. Drawing 42/43/648A. Only 14 dispersal points were marked on this diagram, although the loop taxiway at the eastern end probably had at least another two dispersal points and possibly more. [*NAA: B2777, VOLUME 3*].

Remnants of the runway and faint traces of the eastern loop taxiway, Google Earth image as at 25th May, 2020. [*Google Earth*].

Most of the visible remains are on private property.

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North Western Area Aerodromes and Landing Strips (Existing and Projected) Named After RAAF and USAAC Pilots Killed or Missing During This War. NAA: A9695, 18.
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How to Read RAAF Historical Records

Coloured Signal Forms

Garry Shepherdson

Coloured Signal Forms, also known as "Rainbow Forms" were a system devised so as to "simplify the issue, recording and identification of operational instructions".[203] They came into force, in North Western Area at least, on 1st April, 1942. Prior to that date, Orders were issued via an "A" prefixed message with numbers between 800 and 999, for example (say) "A808".

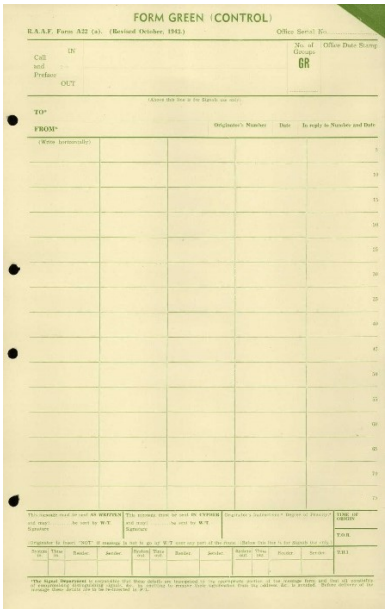
Whilst each of the "coloured forms are specially printed [on] Forms A.22 (message form)"[204] a researcher should be aware that finding examples of these specific forms actually used for their correct purpose, are not all that common. One can find hand-written Rainbow Forms written on all sorts of paper, frequently on Message Forms but also Forms Green written on Forms Orange, Forms Mauve written on Forms Green, Forms Mauve written on the back of the page from some other official document or indeed on a piece of scrap paper. Typed Rainbow Forms may or may not be on the correct colour Form and teleprinter versions are invariably on a torn off sheet of teleprinter paper.

But what were these forms? The main Forms relevant to researching air operations were Forms Green [more correctly but, rarely, called, "Forms Green (Control)"], Forms Mauve and Forms Blue. There were other Forms which served other purposes.

A Headquarters would issue orders to a Squadron via a Form Green, that squadron would acknowledge the orders via a Form Mauve. Additional Forms Mauve would be originated by the squadron to advise of any amendments to the acknowledgment and to announce the departure and then the return of aircraft carrying out the orders. A Form Blue would then also be raised by the squadron if some sort of offensive or defensive action was taken during the operation. However, if nothing occurred, then there'd be no Form Blue.

Form Green (Control)

A Form Green (Control) was the method by which an Air Operations Room or higher authority issued orders to squadrons to initiate particular air operations. They were usually referred to simply as a "Green" or "Form(s) Green", the word "Control" being rarely used. If you had a printed pad of Forms Green, this is what they'd have looked like:


FORM GREEN (CONTROL)

R.A.A.F. Form A22 (a). (Revised October, 1941.)

Office Serial No.

IN

Call and Preface

OUT

No. of Groups

Office Date Stamp

GR

TO*

FROM*

Originator's Number

Date

In reply to Number and Date

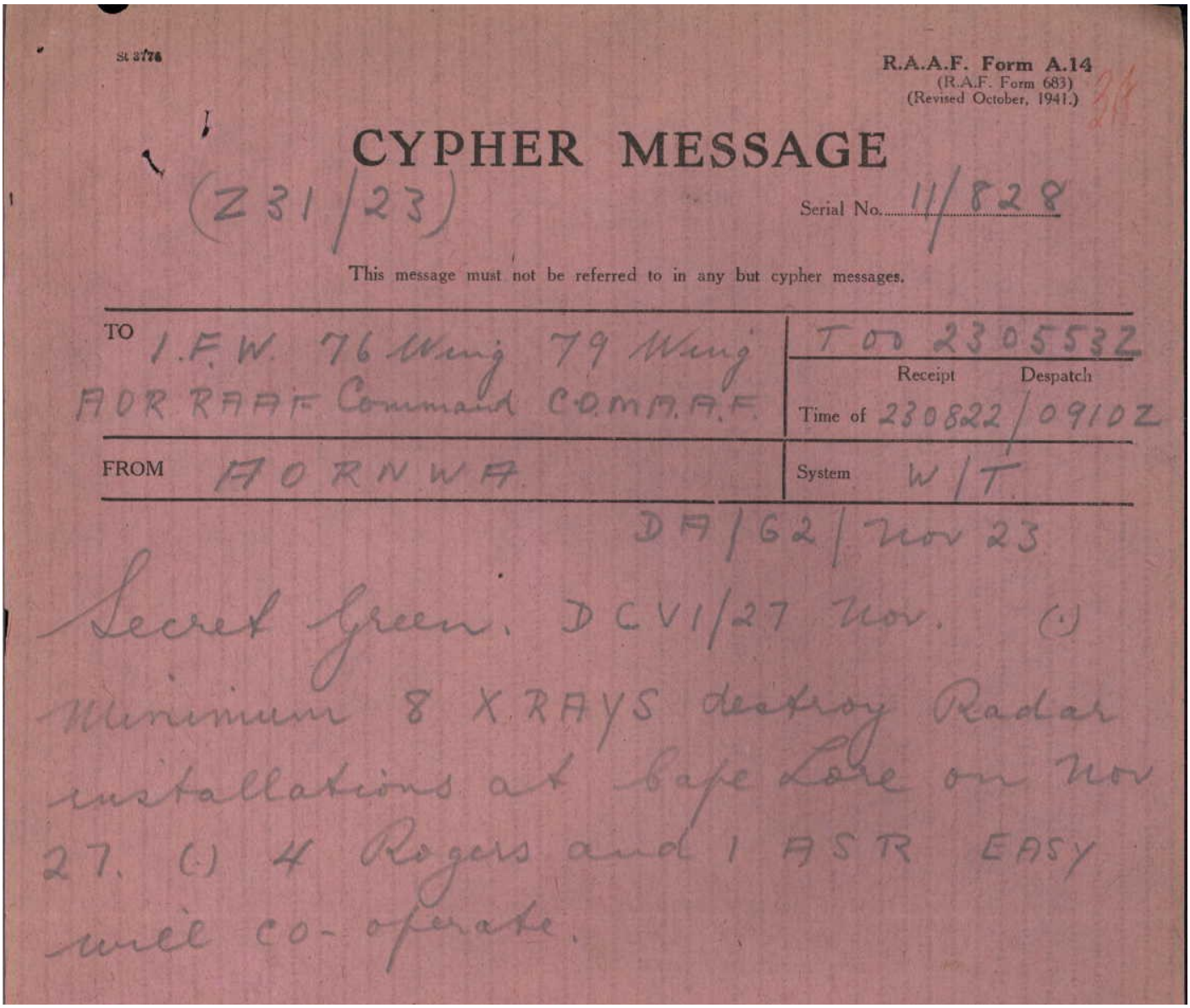
(Write horizontally)

TIME OF ORIGIN

TOR

This is what a Form Green (Control) looked like, from the publication, RAAF Command, Allied Air Forces, *ASD205/1 RAAF System of Operational Control* (1943). [*NAA: AA1966/5, 360*].

Remember though, that this is only what a pad of printed Greens looked like, an *actual* Form Green was *anything* that had a "G" at the beginning of its originators number. As an example [the following examples of the various Forms Green, Mauve and Blue can be found in the National Archives of Australia in a file titled "No 1 (Fighter) Wing – Intelligence – Offensive Operations"; NAA: A11231, 5/50/INT.[205] This file has also been digitised and is freely available on-line and, here, I'm concentrating solely on the attack on Radar Installations at CAPE LORE, TIMOR on 27th November, 1944]:



R.A.A.F. Form A.14
(R.A.F. Form 683)
(Revised October, 1941.)

CYPHER MESSAGE

(Z 31/23)

Serial No. 11/828

This message must not be referred to in any but cypher messages.

TO 1.F.W. 76 Wing 79 Wing AOR RAAF Command COMM.A.F.

T 00 230553Z
Receipt Despatch

Time of 230822/0910Z

FROM AORNWA

System W/T.

DA/G2/Nov 23

Secret Green. DCV1/27 Nov. (.)
Minimum 8 X RAYS destroy Radar installations at Cape Lore on Nov 27. (.) 4 Rogers and 1 ASR EASY will co-operate.

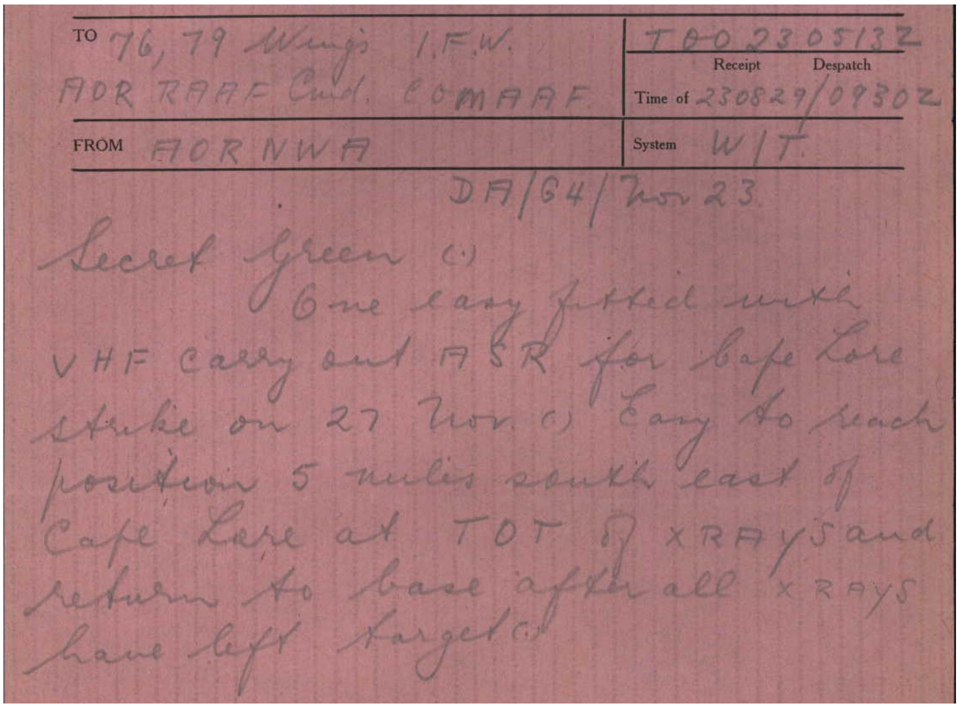
This is DA/G2/23 Nov, ordering the attack on Radar Installations at CAPE LORE on 27th November, 1944. [*NAA: A11231, 5/50/INT*].

Here, DA/G2/23 Nov [notice that the correct way to record the date should have been 23 Nov and not Nov 23], which was originated at 230553Z by AORNWA (Air Operations Room North Western Area) and distributed by W/T to 1FW, 76WG, 79WG, AOR RAAFC and the Americans. The text begins with the security classification, "Secret" [security classifications from least sensitive to most sensitive are Unclassified, Restricted, Confidential, Secret and Top Secret. Not in this case, but in other examples you might also see a special handling caveat, "NODECO" which means that the message could only be handled (including encryption and decryption) by an appropriately authorised commissioned officer.[206]], the Form colour "Green" and then the Operation Title, "DCV1/27 Nov" [Darwin Civil One of 27th November]. There follows the orders which are largely self-explanatory except perhaps the reference to, "8 X-Rays", "4 Rogers" and, "1 ASR Easy". These are the numbers and types of participating aircraft. An "X" ["X-Ray" in the phonetic alphabet of the time] indicated Spitfires; "R" or "Roger" stood for B-25's and "E" or "Easy" was a Catalina. "ASR" simply means Air Sea Rescue.

Aircraft types were usually referred to by a single letter code found in Identification Letters for Aeroplanes.[207] This is a late 1943 list:

Letter	Phonetic Letter	Aircraft
A	Able	Hudson
B	Baker	Anson
C	Charlie	Wirraway
D	Dog	Seagull / Walrus
E	Easy	Catalina
F	Fox	Mosquito
G	George	Beaufort
H	Howe	Ventura
I	Item	
J	Jig	Vought-Sikorsky
K	King	Vengeance
L	Love	B-17
M	Mike	B-24
N	Nan	B-26
O	Oboe	Boomerang
P	Peter	P-40
Q	Queen	
R	Roger	B-25
S	Sugar	Boston
T	Tare	P-39
U	Uncle	P-38
V	Victor	
W	William	Beaufighter
X	X-ray	Spitfire
Y	Yoke	Mariner
Z	Zebra	Sunderland

Orders issued by an Area Air Operations Room, just like any other record, can contain spelling mistakes, incorrect abbreviations and, vary in content. Although a variation in content isn't necessarily a mistake. Here, DA/G4/23 Nov, ordering a Catalina to provide ASR coverage during the CAPE LORE strike of 27th November hasn't specified an operation title, that normally being the responsibility of the Wing when allocating the task to one of its Squadrons.


TO 76, 79 Wings 1.F.W.
AOR RAAF Cmd. COMAAF.

TOO 230513Z
Receipt Despatch
Time of 230829/0930Z

FROM AOR NWA

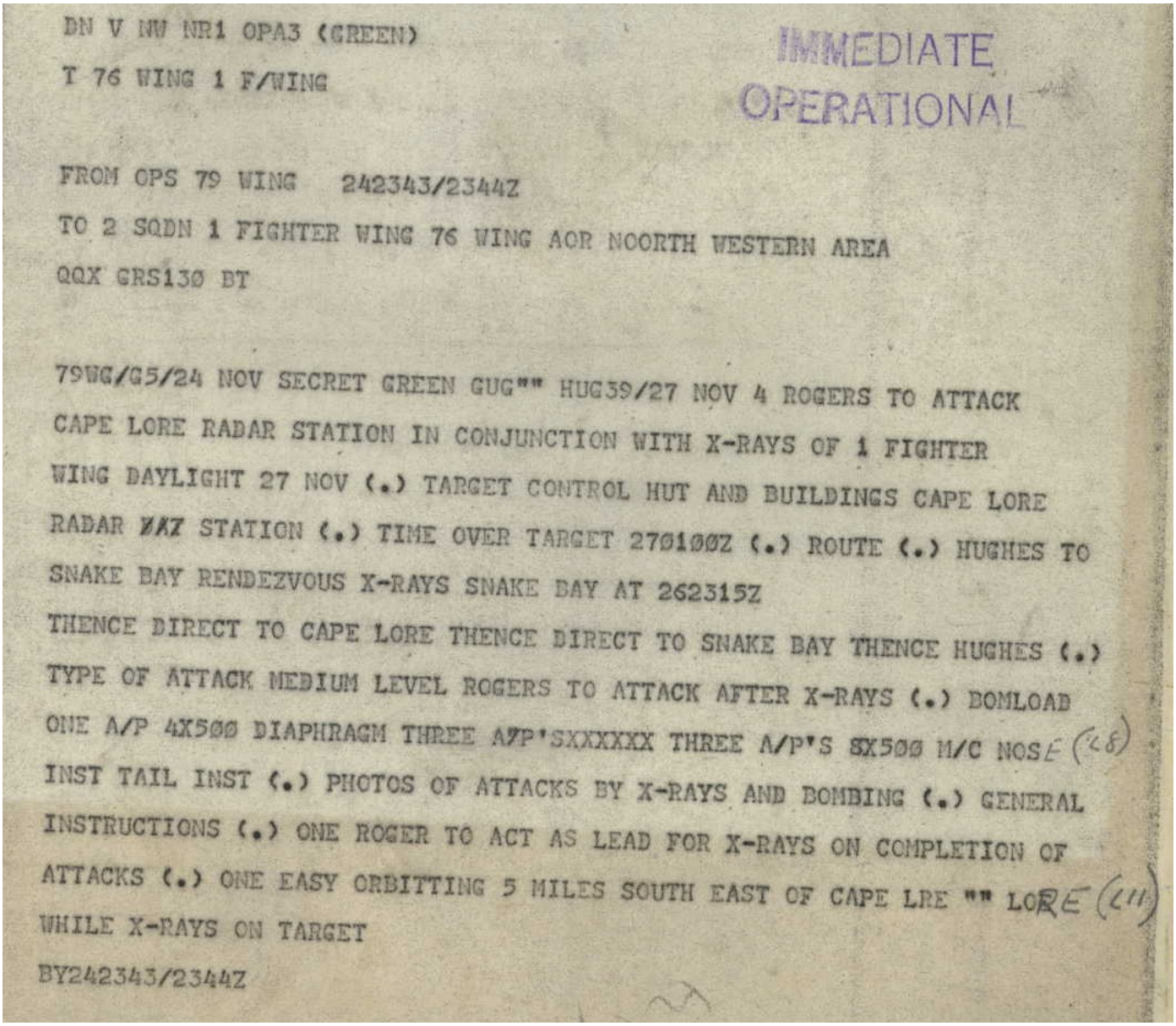
System W/T

DA/G4/Nov 23

Secret Green (.) One Easy fitted with VHF carry out ASR for Cape Lore strike on 27 Nov. (.) Easy to reach position 5 miles south east of Cape Lore at TOT of XRAYS and return to base after all XRAYS have left target (.)

Form Green DA/G4/23 Nov. [*NAA: A11231, 5/50/INT*].

Number 79 Wing's Green is a teleprinter version:



DN V NW NR1 OPA3 (GREEN)
T 76 WING 1 F/WING

IMMEDIATE
OPERATIONAL

FROM OPS 79 WING 242343/2344Z
TO 2 SQDN 1 FIGHTER WING 76 WING AOR NOORTH WESTERN AREA
QQX GRS130 BT

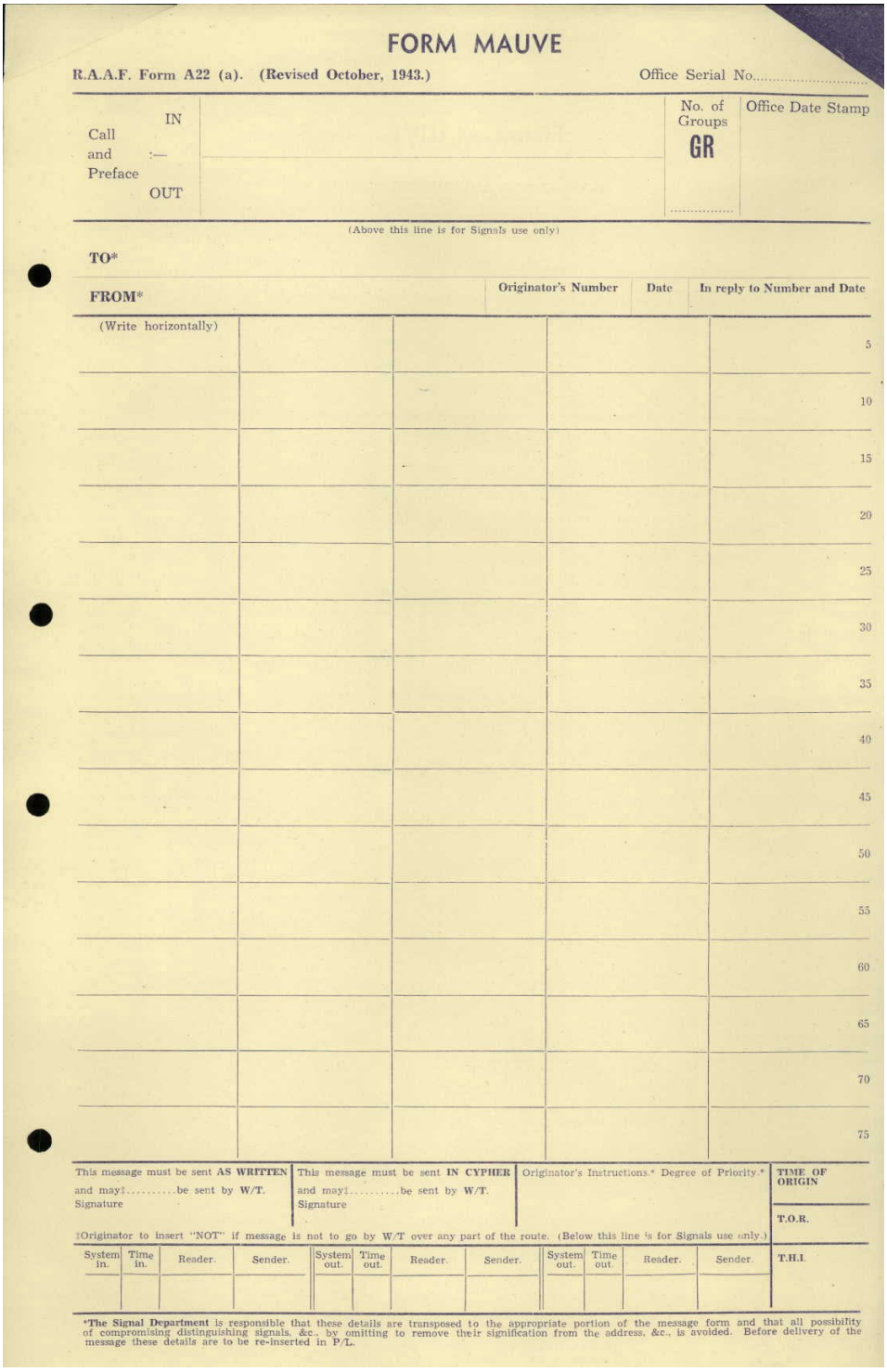
79WG/G5/24 NOV SECRET GREEN GUG"" HUG39/27 NOV 4 ROGERS TO ATTACK CAPE LORE RADAR STATION IN CONJUNCTION WITH X-RAYS OF 1 FIGHTER WING DAYLIGHT 27 NOV (.) TARGET CONTROL HUT AND BUILDINGS CAPE LORE RADAR ~~XXZ~~ STATION (.) TIME OVER TARGET 270100Z (.) ROUTE (.) HUGHES TO SNAKE BAY RENDEZVOUS X-RAYS SNAKE BAY AT 262315Z
THENCE DIRECT TO CAPE LORE THENCE DIRECT TO SNAKE BAY THENCE HUGHES (.)
TYPE OF ATTACK MEDIUM LEVEL ROGERS TO ATTACK AFTER X-RAYS (.) BOMLOAD ONE A/P 4X500 DIAPHRAGM THREE A/P'SXXXXXX THREE A/P'S 8X500 M/C NOSE (28)
INST TAIL INST (.) PHOTOS OF ATTACKS BY X-RAYS AND BOMBING (.) GENERAL INSTRUCTIONS (.) ONE ROGER TO ACT AS LEAD FOR X-RAYS ON COMPLETION OF ATTACKS (.) ONE EASY ORBITTING 5 MILES SOUTH EAST OF CAPE LRE "" LORE (11)
WHILE X-RAYS ON TARGET
BY242343/2344Z

79WG's Green ordering Hughes 39 of 27th Nov, 79WG/G5/24 Nov. [*NAA: A11231, 5/50/INT*].

I won't dwell on the communications specific information contained in teleprinter copies of message traffic, suffice to say that abbreviations such as "V" means, "this is", "T" means, "relay to" and, "BT" means, "break" which refers to the separation of the text of the message from other parts; the "BY" down the bottom should actually be another "BT". The two times are TOO (Time of Origin) and THI (Time Handed In); these appear twice – firstly on the "FROM" addressee line and then secondly at the end of the transmission (after the second "BT"). Notice the spurious characters and corrections – this message would have been typed "live" in exactly the same fashion as RATT (Radio Automatic TeleType) or CRATT (Covered Radio Automatic TeleType) except that these would have been via land-line not via radio. That means that the operator at AORNWA (Air Operations Room North Western Area) would have been standing at a keyboard equipped teleprinter typing this message and the operator at Darwin would have been standing at his own keyboard equipped teleprinter watching the message being created. For you modern humans, think of it as being a bit like e-mail except that you don't have the luxury of typing, correcting, editing the message before you send it – it's being sent as you type it AND it's being read as you type it – keystroke by keystroke – no hiding behind copy and paste or delete.

Form Mauve

In most instances, a Form Mauve was an acknowledgement of orders issued by Form Green (Control). But Forms Mauve were also used for other reasons. They were used to advise of delays or amendments to previously sent acknowledgments. They were also used as a Return Report, advising the time and place of returning missions and an initial, brief, report on results. There were several different types of Form Mauve. Form Mauve (Reconnaissance), "MR*n*". Form Mauve (Anti-Submarine), "MAS*n*". Form Mauve (Strike), "MS*n*". Form Mauve (Travel), "MT*n*". With the issue of the revised edition of ASD205/1 came a generic Form Mauve – abbreviation "M*n*", whereby the previous sub-types were abandoned. This seems to have taken effect (in North Western Area at least) from 1st Jan, 1944. Depending on the context of Form Mauve and whether it was an acknowledgement, amendment, or return report, decided which pre-formatted paragraphs were used.



FORM MAUVE

R.A.A.F. Form A22 (a). (Revised October, 1943.) Office Serial No.....

Call and Preface IN :— OUT | No. of Groups GR ..... | Office Date Stamp

(Above this line is for Signals use only)

TO*

FROM* | Originator's Number | Date | In reply to Number and Date

(Write horizontally)

5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

This message must be sent AS WRITTEN and may‡.....be sent by W/T. Signature

This message must be sent IN CYPHER and may‡.....be sent by W/T. Signature

Originator's Instructions.* Degree of Priority.*

TIME OF ORIGIN

T.O.R.

‡Originator to insert "NOT" if message is not to go by W/T over any part of the route. (Below this line is for Signals use only.)

System in.	Time in.	Reader.	Sender.	System out.	Time out.	Reader.	Sender.	System out.	Time out.	Reader.	Sender.

T.H.I.

*The Signal Department is responsible that these details are transposed to the appropriate portion of the message form and that all possibility of compromising distinguishing signals, &c., by omitting to remove their signification from the address, &c., is avoided. Before delivery of the message these details are to be re-inserted in P/L.

The later, generic, Form Mauve. [*NAA: AA1966/5, 360*].

A.S.D. 205/1
(Oct., 1943)

FORM MAUVE

OWN AEROPLANE MOVEMENTS

TO No..... FIGHTER SECTOR HEADQUARTERS or ZONE FILTER CENTRE (Sections A to H) and AIR OPERATIONS ROOM (.....AREA).

FROM .....FORM MAUVE SERIAL NUMBER

A. Reference OPERATION No.....

B. TYPE OF OPERATION (Recce., Strike, A/S or Convoy).....

C. DUTY ORDERED.

1. Duty.
2. Number of aeroplanes and type.
3. Aeroplane duty numbers, aeroplane code letters, captains' ranks and names.
4. Intended time(s) of take-off.
5. Departure or datum point/line, intended track(s) (also depth in search operations).
6. Estimated time and position of arrival at convoy or patrol area.
7. Estimated time on datum or target.
8. Approximate position of centre of patrol area or approximate course of convoy.
9. Intended height over coast.
10. Estimated time and position of leaving convoy or patrol area.
11. Estimated time(s) of return to operating aerodrome.

D. ALTERED TIME OF TAKE-OFF (if differing by more than 15 minutes from that previously forecasted).

Reference OPERATION No.....

The time of take-off is.....for.....

E. Reference OPERATION No....., the following deviation of aeroplane movement(s) has been ordered, or has taken place.

F. Reference OPERATION No....., the following aeroplane(s) landed at .....time .....place.

G. Frequency(ies).....

H. Aeroplane callsign(s).....

J. Bombs carried on each aeroplane and/or total number of torpedoes.

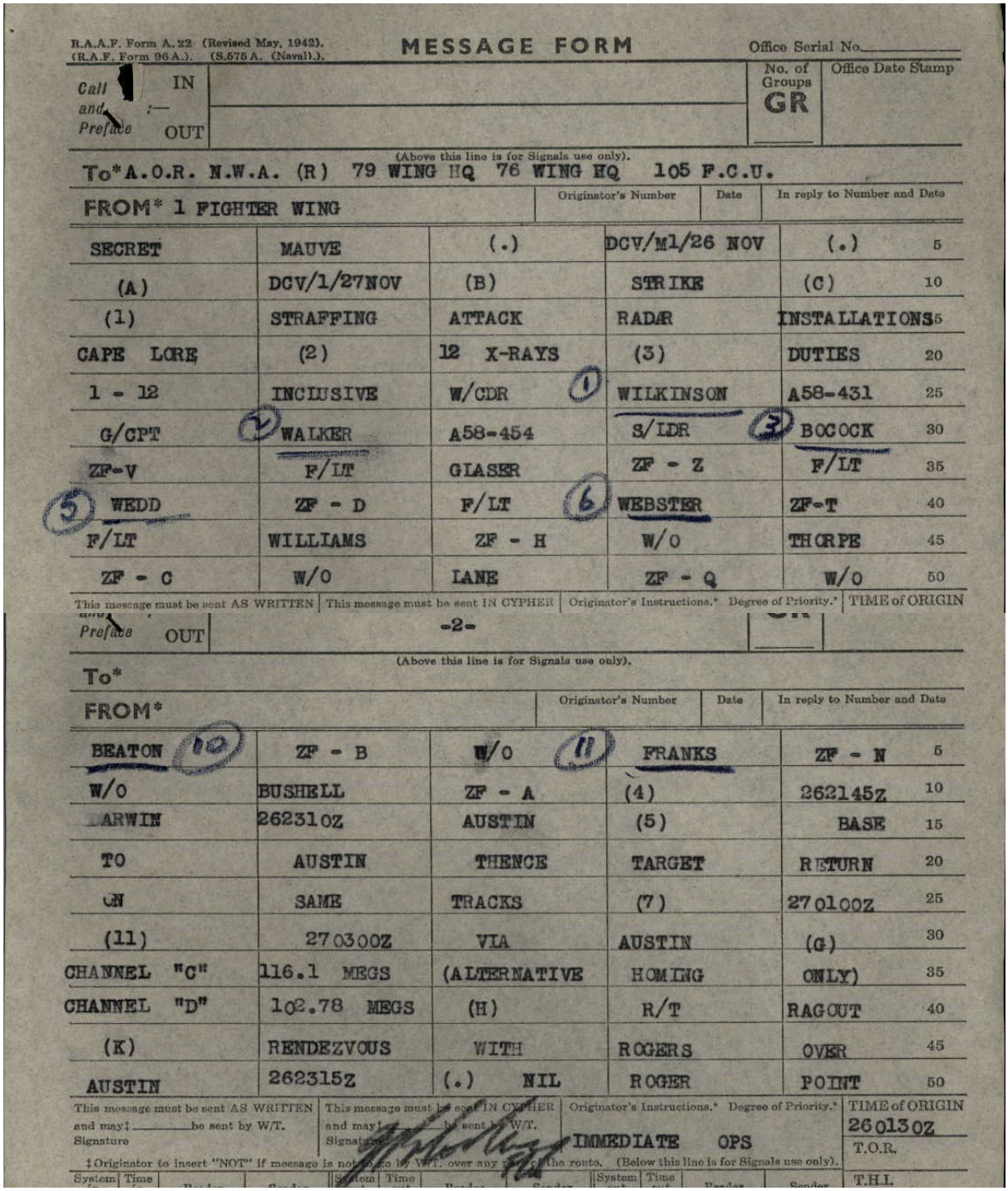
Number..... Type..... Fuse Nose..... Tail.....

K. Any other remarks for AOR.....A or AORC (brief results of operations, e.g., NEGATIVE).

L. T.O.O.

The reverse side of the later, generic, Form Mauve, showing the meanings of the pre-formatted paragraphs. [*NAA: AA1966/5, 360*].

This is 549SQN's acknowledgment for the orders described previously:



R.A.A.F. Form A.22 (Revised May, 1942). (R.A.F. Form 96A.). (S.575A. (Naval).). **MESSAGE FORM** Office Serial No.

Call and Preface :— IN / OUT | No. of Groups GR | Office Date Stamp

(Above this line is for Signals use only).

To* A.O.R. N.W.A. (R) 79 WING HQ 76 WING HQ 105 F.C.U.

FROM* 1 FIGHTER WING | Originator's Number | Date | In reply to Number and Date

SECRET	MAUVE	(.)	DCV/M1/26 NOV	(.)	5
(A)	DCV/1/27NOV	(B)	STRIKE	(C)	10
(1)	STRAFFING	ATTACK	RADAR	INSTALLATIONS	15
CAPE LORE	(2)	12 X-RAYS	(3)	DUTIES	20
1 - 12	INCLUSIVE	W/CDR (1)	WILKINSON	A58-431	25
G/CPT	(2) WALKER	A58-454	S/LDR (3)	BOCOCK	30
ZF-V	F/LT	GLASER	ZF - Z	F/LT	35
(5) WEDD	ZF - D	F/LT (6)	WEBSTER	ZF-T	40
F/LT	WILLIAMS	ZF - H	W/O	THORPE	45
ZF - C	W/O	LANE	ZF - Q	W/O	50

This message must be sent AS WRITTEN | This message must be sent IN CYPHER | Originator's Instructions.* | Degree of Priority.* | TIME of ORIGIN

Call and Preface OUT -2- GR

(Above this line is for Signals use only).

To*

FROM* | Originator's Number | Date | In reply to Number and Date

BEATON (10)	ZF - B	W/O (11)	FRANKS	ZF - N	5
W/O	BUSHELL	ZF - A	(4)	262145Z	10
ARWIN	262310Z	AUSTIN	(5)	BASE	15
TO	AUSTIN	THENCE	TARGET	RETURN	20
ON	SAME	TRACKS	(7)	270100Z	25
(11)	270300Z	VIA	AUSTIN	(G)	30
CHANNEL "C"	116.1 MEGS	(ALTERNATIVE	HOMING	ONLY)	35
CHANNEL "D"	102.78 MEGS	(H)	R/T	RAGOUT	40
(K)	RENDEZVOUS	WITH	ROGERS	OVER	45
AUSTIN	262315Z	(.) NIL	ROGER	POINT	50

This message must be sent AS WRITTEN and may‡ be sent by W/T. Signature | This message must be sent IN CYPHER and may‡ be sent by W/T. Signature | Originator's Instructions.* IMMEDIATE OPS | Degree of Priority.* | TIME of ORIGIN 260130Z T.O.R.

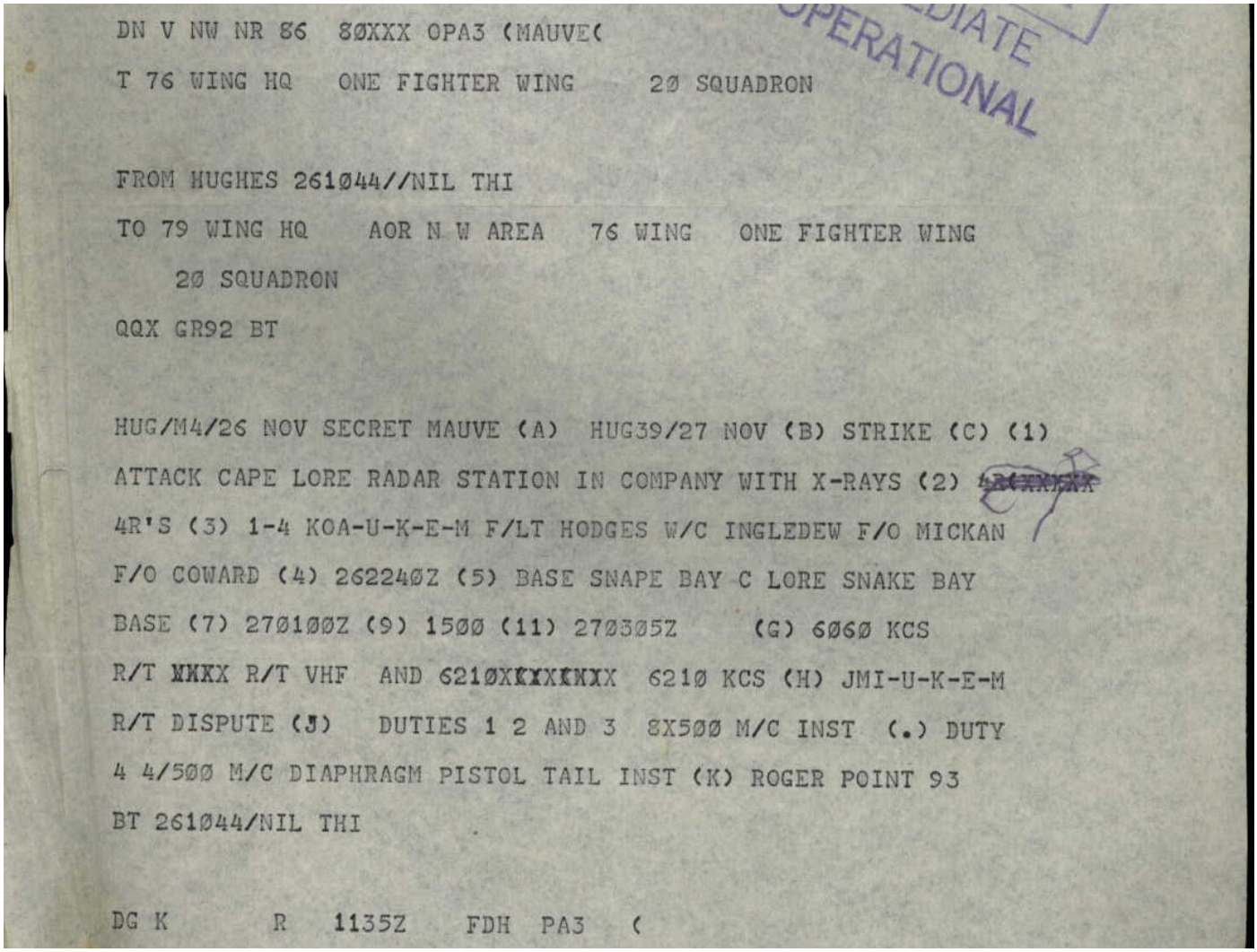
‡Originator to insert "NOT" if message is not to go by W/T. over any part of the route. (Below this line is for Signals use only).

System | Time | Reader | Sender | System | Time | Reader | Sender | System | Time | Reader | Sender | T.H.I.

549SQN's Mauve (sent via 1FW), DCV/M1/26 Nov, acknowledging NWA's Orders from DA/G2/23 Nov. [*NAA: A11231, 5/50/INT*].

This one commences with the security classification, "Secret" then the Form colour, "Mauve". The message type and number is next, "Darwin Civil/Mauve One/of the 26th Nov". Paragraph "A" is the Operation Title, "B" is the type of operation and paragraph "C" describes how the orders will be carried out. Sub-paragraph "1" is the duty, "2" is the number and type of aircraft, "3" is the duty numbers, aircraft code letters and aircraft captains' surnames (all in duty number order), "4" is the wheels up time, "5" is the planned route, "7" is [in this case] Time on Target and "11" is the estimated wheels down back at Base. Paragraph "G" is for frequencies. "H" is for call signs. Paragraph "J" [not relevant with this Mauve] is the bomb load. Paragraph "K" is for additional information and here it advises that there is no "Roger Point" [designated Rescue location] for the single-seaters on this operation [interestingly, 2SQN's Mauve quotes one – fuel, or lack of it, presumably precluding its possible use by the single-engined types].

This is 2SQN's acknowledgment Mauve:



DN V NW NR 86 8ØXXX OPA3 (MAUVE(

T 76 WING HQ ONE FIGHTER WING 2Ø SQUADRON

FROM HUGHES 261Ø44//NIL THI

TO 79 WING HQ AOR N W AREA 76 WING ONE FIGHTER WING

2Ø SQUADRON

QQX GR92 BT

HUG/M4/26 NOV SECRET MAUVE (A) HUG39/27 NOV (B) STRIKE (C) (1)

ATTACK CAPE LORE RADAR STATION IN COMPANY WITH X-RAYS (2) 4R~~XXXXX~~

4R'S (3) 1-4 KOA-U-K-E-M F/LT HODGES W/C INGLEDEW F/O MICKAN

F/O COWARD (4) 262240Z (5) BASE SNAPE BAY C LORE SNAKE BAY

BASE (7) 270100Z (9) 1500 (11) 270305Z (G) 6060 KCS

R/T ~~XXXX~~ R/T VHF AND 6210X~~XXXXXX~~ 6210 KCS (H) JMI-U-K-E-M

R/T DISPUTE (J) DUTIES 1 2 AND 3 8X500 M/C INST (.) DUTY

4 4/500 M/C DIAPHRAGM PISTOL TAIL INST (K) ROGER POINT 93

BT 261044/NIL THI

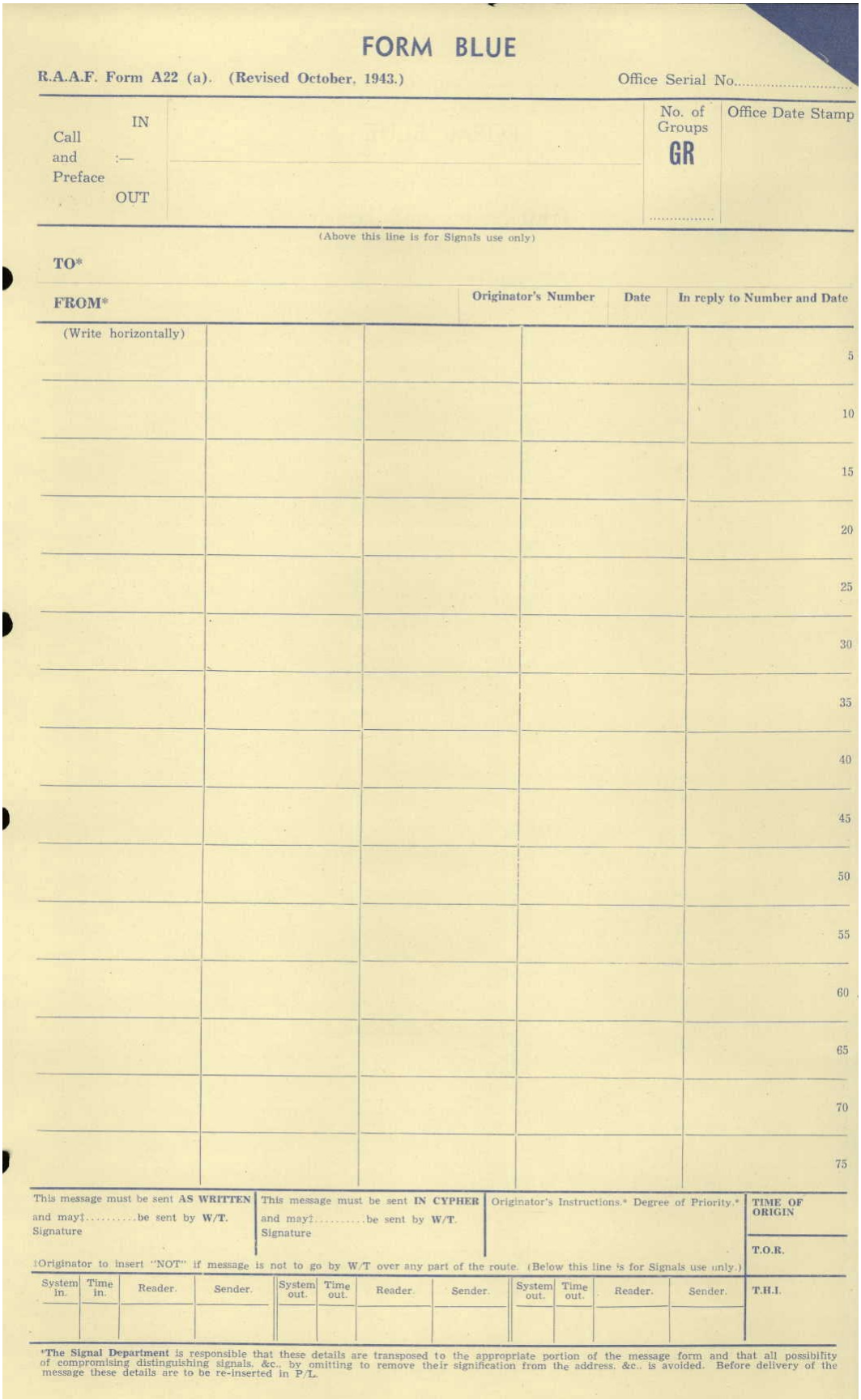
DG K R 1135Z FDH PA3 (

2SQN's Form Mauve for Hughes 39 of 27th Nov, HUG/M4/26 Nov. [*NAA: A11231, 5/50/INT*].

Another typical teleprinter version which closely follows the required format – with typical teleprinter errors. Paragraphs "A", "B" and "C1" have come through cleanly and paragraph "C2" initially suffered from a mild stutter. However, an unrecognised error has crept into paragraph "C3". It looks straight forward enough but a spurious letter "A" has appeared giving the impression that the first assigned aircraft was "KOA", followed by aircraft "U, K, E and M". But that is not correct, the first assigned aircraft was "KO-U". This is perhaps one reason why duty numbers, assigned aircraft letters and assigned aircraft captains were all in the same sub-paragraph – so as an initial cross-check could be made. There are only four duty numbers ("1 – 4") and four captains but with five apparent individual aircraft – one of them must be surplus; this would then be verified with reference to paragraph "H". Estimated time of departure, route, Time on Target, height crossing the coast (outbound) and estimated time of arrival back at base appear without errors. Paragraph "G" was for frequencies. Typically, a unit like 2SQN would nominate two HF frequencies (one primary and one secondary) which would be used for both W/T and R/T traffic. VHF was rarely nominated. Here it seems that the intent was to use 6060 Kcs for W/T (Wireless Telegraphy – i.e. Morse code) with R/T (Radio Telephony – i.e. voice) being on VHF (the channel letter is missing) or HF on 6210 Kcs. Paragraph "H" has the assigned W/T and R/T call signs. The W/T call sign was "JM1" followed by the individual aircraft identification letters "U, K, E and M" (this identifies and therefore corrects the error in paragraph C3) with the R/T call sign being "Dispute". It was uncommon for the individual letters to be repeated after the R/T call sign in Forms Mauve but they were still assigned. Paragraph "J" describes the bomb loads for the four aircraft – duties 1, 2 and 3 each carrying 8 x 500-lb Medium Capacity bombs with Instantaneous fuses; duty 4 carry 4 x 500-lb Medium Capacity with diaphragm pistols (fuses) in nose and tail. Paragraph "K" nominates Rescue Point 93 as being available for B-25 crews should they end up in the drink.

Form Blue

This was essentially a generic attack or combat report and for formalised reporting and transmission, replaced the previous RAAF Form A108.



FORM BLUE

R.A.A.F. Form A22 (a). (Revised October, 1943.) Office Serial No.....

Call and Preface IN :— OUT | No. of Groups GR ..... | Office Date Stamp

(Above this line is for Signals use only)

TO*

FROM* (Write horizontally)	Originator's Number	Date	In reply to Number and Date	
				5
				10
				15
				20
				25
				30
				35
				40
				45
				50
				55
				60
				65
				70
				75

This message must be sent **AS WRITTEN** and may†.....be sent by **W/T.** Signature

This message must be sent **IN CYPHER** and may†.....be sent by **W/T.** Signature

Originator's Instructions.* Degree of Priority.*

TIME OF ORIGIN

T.O.R.

†Originator to insert "NOT" if message is not to go by W/T over any part of the route. (Below this line is for Signals use only.)

System in.	Time in.	Reader.	Sender.	System out.	Time out.	Reader.	Sender.	System out.	Time out.	Reader.	Sender.	T.H.I.

*The Signal Department is responsible that these details are transposed to the appropriate portion of the message form and that all possibility of compromising distinguishing signals, &c., by omitting to remove their signification from the address, &c., is avoided. Before delivery of the message these details are to be re-inserted in P/L.

Form Blue obverse. [*NAA: AA1966/5, 360*].

ATTACK AND COMBAT REPORT

TO AIR OPERATIONS ROOM.....AREA (OR COMMAND AIR OPERATIONS ROOM)

FROM .....FORM BLUE SERIAL NUMBER

A. TASK NUMBER, NUMBER AND TYPE OF AEROPLANES.

B. TARGET.

C. TIME OF ATTACK, ALTITUDE.

D. RESULTS.

E. ACK ACK.

F. INTERCEPTION.

G. BRIEF DETAILS OF COMBAT.

H. OWN CASUALTIES, AEROPLANES, PERSONNEL.

I. LIST PHOTOGRAPHS TAKEN.

J. SIGHTINGS.

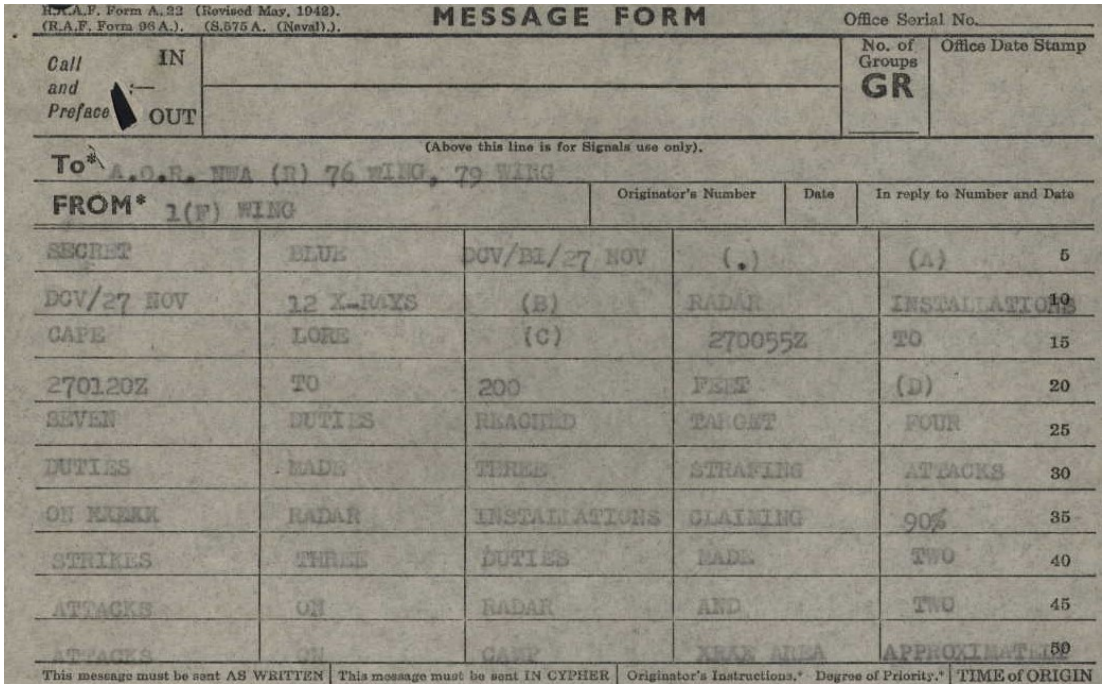
K. WEATHER.

L. GENERAL.

M. BOMBS, AMMUNITION, TORPEDOES EXPENDED.

Form Blue reverse (cropped) with the significations of the paragraph letters. [*NAA: AA1966/5, 360*].

A copy of 1WG's Form Blue is included in this file, the first page of which is here:



R.C.A.F. Form A.22 (Revised May, 1942).
(R.A.F. Form 96A.). (S.575A. (Naval).).

MESSAGE FORM

Office Serial No.

Call and Preface: IN / OUT

No. of Groups: GR

Office Date Stamp

(Above this line is for Signals use only).

To* A.O.R. NWA (R) 76 WING, 79 WING

FROM* 1(F) WING

Originator's Number	Date	In reply to Number and Date

SECRET	BLUE	DCV/B1/27 NOV	(.)	(A)	5
DCV/27 NOV	12 X-RAYS	(B)	RADAR	INSTALLATIONS	10
CAPE	LORE	(C)	270055Z	TO	15
270120Z	TO	200	FEET	(D)	20
SEVEN	DUTIES	REACHED	TARGET	FOUR	25
DUTIES	MADE	THREE	STRAFING	ATTACKS	30
ON RADAR	RADAR	INSTALLATIONS	CLAIMING	90%	35
STRIKES	THREE	DUTIES	MADE	TWO	40
ATTACKS	ON	RADAR	AND	TWO	45
ATTACKS	ON	CAMP	AREA AREA	APPROXIMATELY	50

This message must be sent AS WRITTEN | This message must be sent IN CYPHER | Originator's Instructions.* Degree of Priority.* | TIME of ORIGIN

Page 1 of DCV/B1/27 Nov. [*NAA: AA1966/5, 360*].

For clarity, I've typed the entire text:

> SECRET BLUE DCV/B1/27 NOV (.) (A) DCV/27 NOV 12 X-RAYS (B) RADAR INSTALLATIONS CAPE LORE (C) 270055Z TO 270120Z TO 200 FEET (D) SEVEN DUTIES REACHED TARGET FOUR DUTIES MADE THREE STRAFING ATTACKS ON RADAR INSTALLATIONS CLAIMING 90% STRIKES THREE DUTIES MADE TWO ATTACKS ON RADAR AND TWO ATTACKS ON CAMP AREA APPROXIMATELY 100 YARDS NNE OF ANTENNAE ONE FIRE AND TWO OTHER THIN COLUMNS GREYISH SMOKE SEEN AFTER ATTACK MANY STRIKES SEEN ON HUTS AND INSTALLATIONS FIVE DUTIES WENT U/S AT AUSTIN DUE TO AIRLOCKS (E) SLIGHT LIGHT INACCURATE FROM MG POST IN TREE 70 YARDS NORTH OF RADAR (F) THRU (H) NIL (I) CINE-CAMERA OF ATTACKS AND COAST AREA NEAR CAPE LORE (J) FOUR DUTIES SAW BOMBS FROM FIRST BOMBER FALL IN TARGET AREA TWO SAW REMAINING BOMBERS ALSO HIT TARGET AREA ONE EUROPEAN TYPE HOUSE AND SMALL PLANTATION APPROXIMATELY 3 ½ MILES NNW CAPE LORE NIL ENEMY ACTIVITY AT CAPE LORE AND ELG (K) 1-2/10 THS CU BASE 4000 FEET VISIBILITY CLEAR OVER TARGET EN ROUTE 5/10 S/CU AND CU BASE 3000 FEET TOPS TO 20,000 FEET VISIBILITY 15 TO 20 MILES (L) CAMP AREA NEAR RADAR INSTALLATIONS COMPOSED OF APPROXIMATELY 7 WOODEN OR BARK COVERED HUTS AND ONE MORE SUBSTANTIAL BUILDING TWENTY FEET SQUARE (M) 703 ROUNDS EACH SAPI AND HEI 20MM 6681 ROUNDS 60/40 .303 API
>
> [TOO: 0720Z]

The significations of the various lettered paragraphs can be found on the reverse side of the printed Form Blue reproduced on the previous page. The rest of the Blue is self-explanatory. "NNE" and "NNW" simply mean north-northeast and west respectively. "U/S" means unserviceable. "MG" means machine gun. An "ELG" is an Emergency Landing Ground. Fractions in tenths such as, "1-2/10 THS", means the amount of cloud coverage. Before the modern "FEW", "SCT", "BKN" or "OVC", coverage was expressed in tenths – which became abbreviated "OKTAS" after the war. Abbreviations like, "CU", or "S/CU" or variations thereof mean, cumulus and stratocumulus. In terms of ammunition expended, "SAPI", "HEI" and "API" mean Semi-Armour Piercing Incendiary, High Explosive Incendiary and Armour Piercing Incendiary, respectively.

Coloured Forms were devised to standardise the transmission of operational information. Other types of reports continued to be compiled such as Narrative Reports and Intelligence Officer Reports, an example of each is to be found filed for this mission. One should also remember to compare information with the Unit History Sheets. Errors or omissions are likely to be found but, having a knowledge of what the information is actually telling you can make unravelling inconsistencies a lot easier.

If one were to compile the information contained in the various Forms and Reports contained in this NAA file and compare that information with the various A50/A51's, a reasonably complete picture of an operation can be drawn.

From the various Forms Mauve, the *planned* allocation of aircraft and crews is shown here in black, the actual allocation according to post mission reports in blue, additional A51 information in green and own research in orange:

Mission/Duty	A/C Letters	A/C Captain	W/T Call sign	R/T Call sign	Assigned and flown A/C
DCV1/1		W/C Wilkinson	-	Ragout Red 1	A58-431 A58-431
DCV1/2		G/C Walker	-	Ragout Red 2	A58-454 A58-454
DCV1/3	ZFV	S/L Bocock	-	Ragout Yellow 1	A58-341 ZFV
DCV1/4	ZFZ	F/L Glaser	-	Ragout Blue 1	A58-379 ZFZ U/S DNF
DCV1/5	ZFD	F/L Wedd	-	Ragout Red 3	A58-304 ZFD
DCV1/6	ZFT	F/L Webster	-	Ragout Blue 3	A58-332 ZFT
DCV1/7	ZFH	F/L Williams	-	Ragout Yellow 3	A58-351 ZFH U/S DNF
DCV1/8	ZFC	W/O Thorpe	-	Ragout Red 4	A58-402 ZFC U/S DNF
DCV1/9	ZFQ	W/O Lane	-	Ragout Blue 4	A58-322 ZFQ U/S DNF
DCV1/10	ZFB	W/O Beaton	-	Ragout Yellow 2	A58-323 ZFB
DCV1/11	ZFN	W/O Franks	-	Ragout Blue 2	A58-414 ZFN
DCV1/12	ZFA	W/O Bushell	-	Ragout Yellow 4	A58-373 ZFA U/S DNF
Spare		F/O Walker	-	*Ragout* Black 1	A58-381
Spare		F/O Wareing	-	*Ragout* Black 2	A58-326
HUG39/1	KOU	F/L Hodges	JM1U	Dispute-*U*	A47-25 KOU
HUG39/2	KOK	W/C Ingledew	JM1K	Dispute-*K*	A47-26 KOK
HUG39/3	KOE	F/O Mickan	JM1E	Dispute-*E*	A47-29 – KOD replaced A47-34
HUG39/4	KOM	F/O Coward	JM1M	Dispute-*M*	A47-23 KOM
ZEA24/1	RBU	W/O Schulz	AA41	Eagle 1	A24-54 RBU

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No 1 (Fighter) Wing – Intelligence – Offensive Operations; NAA: A11231, 5/50/INT.
Secret Publication ASD1 RAAF Manual of Instruction for Cypher Officers; NAA: A1196, 40/501/271.

Regarding the Potential Restoration of A19-144
Some Thoughts on Colours and Code Letters

Garry Shepherdson

A Beaufighter aircraft utilising components from several Beaufighter wrecks, has been under long-term restoration in the UK. There has been talk of it being eventually restored to flying condition. Currently it is wearing spurious Foliage Green camouflage and I believe that some knowledge of its former identities might make for a more visually accurate restoration.

A19-144 was received at Number 1 Aircraft Depot (1AD) at RAAF Laverton, Victoria, from the UK on 2nd July, 1943. After assembly, it was sent to Number 31 Squadron (31SQN) at Coomalie Creek, Northern Territory, who received it on 11th September and coded it "EH-S". It flew on operations on the 17th (Whyte/Powell), 21st (Henry/Hooke) and twice on the 23rd September (both McCord/Childs). It was tasked for a fifth operation during September, on the 26th, but was evidently replaced. It flew one operation during October (on the 3rd, McCord/Childs) but suffered a mishap on return. Whilst rolling out after landing, first the left and then the right main gear legs collapsed, leaving the aircraft to come to rest on its belly. The crew of two and their passenger, a navigator under instruction, were uninjured.

A19-144 was sent off to Number 14 Aircraft Repair Depot (14ARD) at Gorrie, Northern Territory, for repairs; they received it on the 10th. It was returned to 31SQN on December 11th.

A19-144's individual identification letter "S" had since been taken over by A19-163 which had arrived at 31SQN on 23rd November so, A19-144 had to be re-coded when it returned and was allocated the letter "J". It flew 4 operations during December: on the 15th (S/L Gordon/Smith), 16th (S/L Gordon/Smith – claimed one Japanese "Nick" destroyed and one damaged), 21st (S/L Gordon/Shaw) and on the 30th (Garnham/Delaney). It was employed on another operation on 2nd January, 1944 (Garnham/Delaney). Then, on the afternoon of January 3rd, 1944, A19-144 was one of a formation of eight Beaufighter's ferrying from Coomalie Creek to Drysdale River Mission so as to reposition for an operation the next day (Coomalie 19 of 4th January). Six of the Beaufighter's had already landed and were parked on the side of the runway. When A19-144 landed, the tailwheel collapsed causing the aircraft to swing so, the pilot deliberately retracted the undercarriage so as to avoid crashing into the other machines. It was later broken up for spares by Number 4 Repair and Salvage Unit (4RSU).

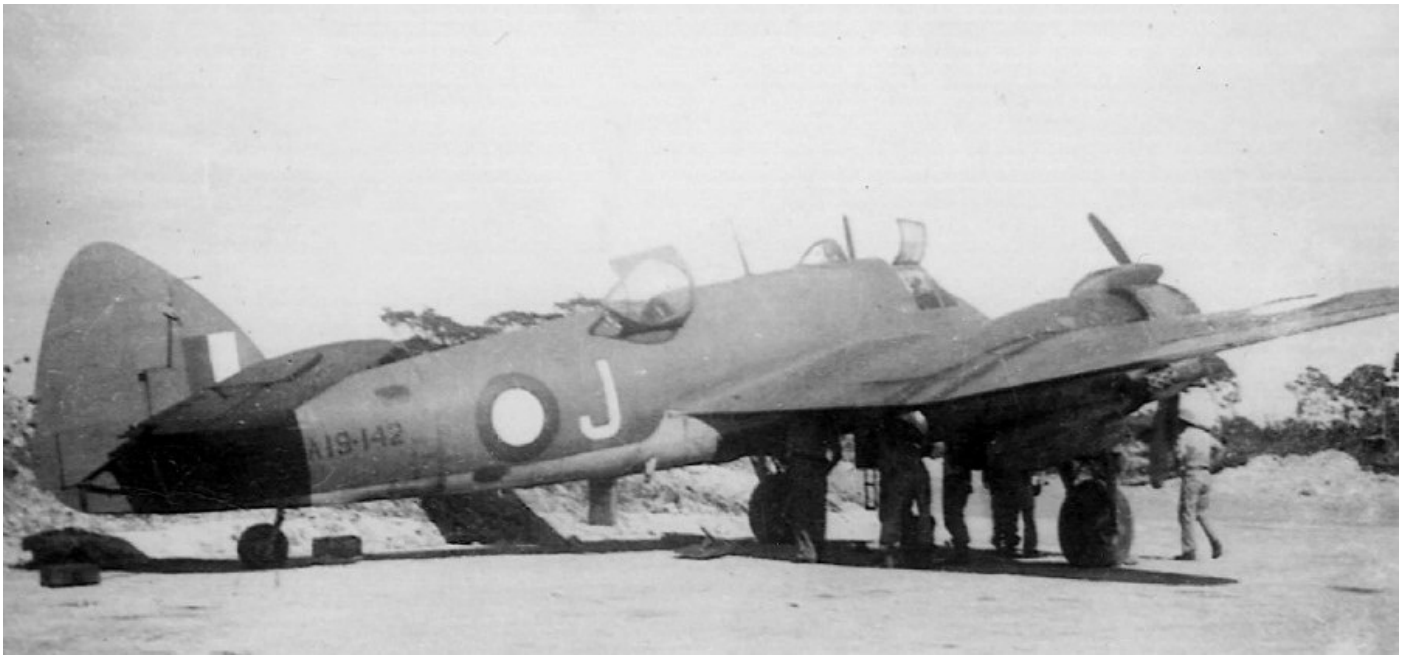
As can be seen, the aircraft had two identities during its service with 31SQN. It was initially coded "EH-S" but, after its return to the squadron from repairs was re-coded "EH-J".

As far as I'm aware, no war-time photographs of A19-144 exist.

Photographs of a contemporary of A19-144, another Mk XIc with 31SQN, A19-140 (ex JM184), which was received at No.1 Aircraft Depot from the UK a few days after A19-144, show it wearing factory camouflage with no evidence of local repainting (other than national insignia and the application of squadron code letters). It appears to be wearing Temperate Sea Scheme upper camouflage of Dark Slate Grey and Extra Dark Sea Grey over Sky type S. The demarcation between the upper and lower camouflage colours is sharp and straight, suggesting no local overpainting. The aircraft is wearing its serial number in black – which is also emblematic of UK surface finish – local orders called for serials to be in Medium Sea Grey. The code letters would have been applied in RAAF Sky Blue (K3/195) upon receipt by the squadron and in the photograph below, show a different hue than either the Matt White (K3/170) centres of the RAAF roundels or the British Sky type S under-surface, suggesting the colour of both the codes and the under-surface. The blue of the roundels was called Matt Dull Blue (K3/197). It is interesting to note the positioning of the underwing roundels on A19-140.

Another 31SQN Mk XIc, A19-140/EH-W, ex JM184, which arrived in Australia a few days after A19-144 and passed through the same Aircraft Depot. The visible fuselage join (seen here encompassing the fuselage between the "E" and "H") also indicates British, factory applied, surface finish. [*31 Squadron Beaufighter Association image*].

A photograph also exists of another contemporary Mk XIc, A19-142, the former JM177, which served in New Guinea with 30SQN. It was received at 1AD from the UK on the same day as A19-144 and, like the image of A19-140, above, shows largely unaltered, British applied Dark Slate Grey and Extra Dark Sea Grey over Sky type S Temperate Sea Scheme with Black serial number, No.1 Aircraft Depot modified/applied Australian national insignia and No. 30 Squadron applied RAAF Sky Blue individual identification letter.



30SQN's A19-142, another Mk XIc. Factory surface finish, including UK applied black serial is evident, as is the join between the empennage and the fuselage. [*Image via ADF-Serials image gallery*].

Given the photographic evidence of these two other Mk XIc machines which arrived in Australia either on the same day or within a few days of A19-144 and passed through the same Aircraft Depot as A19-144 and because I haven't seen any evidence to the contrary, I believe that A19-144 would have been delivered to 31SQN wearing British applied Temperate Sea Scheme of Dark Slate Grey and Extra Dark Sea Grey over Sky type S with Black, British applied, RAAF serial number. It's initial code letters of EH-S would have been applied by 31SQN in RAAF Sky Blue and read "EH-S" on both left and right-hand sides.

As indicated above, A19-144 was damaged in a landing accident after a period of operational service and was sent off to 14ARD for repairs. As with the first phase of its operational life, without photographic or physical evidence, it is impossible to say with certainty how A19-144 would have looked after it returned to 31SQN. However, I believe that, given the likely damage to the underside of the aircraft and metal work required to repair same, it is highly probable that repainting of the underside of A19-144 would have been required and if that was the case, then there is no doubt that it would have been repainted in RAAF specification Sky Blue (K3/195). Whilst this is speculation, there is contemporaneous supporting evidence supplied again by its close relative, A19-140.

After several months of operational service, A19-140 fell due for a 240-hourly inspection and was sent to the local Repair and Salvage Unit. When it returned, it had been given a fresh application of under-surface camouflage over its original RAF Sky type S – in RAAF Sky Blue. The upper surface camouflage and serial number (which, remember, was in non-standard British applied Black) were left untouched. See photograph, below.

Another image of A19-140/EH-W at Coomalie Creek. This is a later image and shows that the under-surface has been re-camouflaged with RAAF Sky Blue – evidenced by the uneven demarcation, the change in curvature where the camouflage rises to meet the trailing edge wing root and the apparent removal of the join line under the fuselage – although a portion of that line is still visible above the application of Sky Blue. Note also that the code letters have been re-applied. [*31 Squadron Beaufighter Association image*].

There is photographic evidence which suggests that some TSS delivered Beaufighters had their RAF Sky type S under-surfaces repainted in RAAF Sky Blue on arrival and prior to onward delivery to the squadrons. It seems that aircraft that passed through 1AD prior to delivery did NOT have their undersides re-finished.

RAAF specified camouflage colours during the period of A19-144's service (continued to be), Earth Brown (K3/178) and Foliage Green (K3/177) over Sky Blue (K3/195) with Medium Sea Grey (K3/183) serials – which sometimes appeared in Sky Blue – and Sky Blue code letters. The officially approved scheme for attack aircraft was changed to overall Foliage Green with Medium Sea Grey codes and serials in April/May, 1944, which is too late to be of relevance to A19-144. But, in any event, 31SQN had a well-known preference for the RAF TSS upper colours.

I've read that components from A19-148 (ex JL946) and even A19-36 (ex T5000) are being used in the restoration of A19-144. If correct, that gives some scope for future alternative finishes for the aircraft. Both A19-148 and A19-36 served with 31SQN.

A19-148 was taken on charge by 31SQN on 18th September, 1943 and was coded "EH-L". During the course of Coomalie 7 of 9th October, 1943, it shot down a Japanese "Sally". Later, during Coomalie 41 of 22nd January, 1944, an

Armed Reconnaissance, it suffered a tree-strike which tore a large hole in the leading edge of the starboard wing. Upon return to its Forward Operating Base, and moments from touch-down, it dropped it starboard wing, smacking it into the ground with the result that the aircraft lost its undercarriage and slid to a halt. It was converted into components.

A19-36, a flat tailed Mk Ic, served with 30SQN before being issued to 31SQN. With 31SQN, it was coded "EH-O" and whilst engaged on Coomalie 40 of 21st November, 1943, was on the receiving end of a burst of machine gun fire from a Japanese Rufe and shortly afterwards was hit by Anti-Aircraft fire which blew a large hole in -36's left wing. It made it back home and was repaired but didn't fly on operations again. It was later sent to 5OTU but, sadly, was involved in a fatal mid-air collision and crashed into the sea a short distance off Evans Head, NSW.

I for one would be very happy to see A19-144 restored in authentic No. 31 Squadron, RAAF markings – whether airworthy or as a static display. That machine represents a lot of operational history and personal sacrifice and I believe that a faithful rendering would be a fine way to honour the memory of those who flew, serviced and supported this aircraft.

The official badge of Number 31 Squadron, RAAF. It should be noted that this is a relatively recent badge, 31SQN did not have a badge during its service as a Beaufighter squadron. Note also, that these devices are called "badges" they are not "crests". [*RAAF*].

Thanks to the RAAF Brand Manager for permission to include a copy of 31SQN's Badge and thanks also to Ian Maddern, 31 Squadron Beaufighter Association for permission to use photographs from their collection.

No 2 Squadron AFC Part III – New Machines to Sweep the Skies

[1] PRO AIR1/1/4/26/4 "extracts of translation of von Richthofen's book *Der Rote Kampfflieger",* 29 SEP 1917, p.4.
[2] F R Cox, personal diary, of 13 Dec 1917, Museum of Army Aviation and Flying, Oakey.
[3] AA CRS A1952/1 E524/10/408, letter from C G Grey, editor of *The Aeroplane*, to Maj Eric Harrison, Commandant CFS Point Cook, of 7 FEB 1918.
[4] C E W Bean, personal diary Nov-Dec 1917, AWM38 3DRL, Item 94 [1], pp.84-91.
[5] Letter from Lt L Benjamin, of 22 SEP 1921, in S Ure Smith, B Stevens & E Watt, *Oswald Watt*, Art in Australia Ltd, Sydney, 1912, pp.43-44.
[6] PRO AIR1/2132/207/137/1 "Development of Airplanes During the World War", paper by Lt Col V E Clark US Army, Feb 1919, p.13.
[7] PRO AIR1/2301/215/1 "Aerial Armament 1914-1918".
[8] PRO AIR1/2301/215/2 "Aircraft Armament". The Lewis was manufactured by the Birmingham Small Arms Company, and in France by *La Societe Francaise des Armes Lewis*, IWM 73/183/1.
[9] Official records refer at various times to No 68 (Australian) Sqn RFC, and to No 68 Sqn AFC. With the new identity, the unit was alternatively called 2 Sqn AFC or the 2nd Sqn AFC. AWM10 4301/10/35 of 31 MAR 1917; AWM25 225/6 Pt.1 180 of 13 NOV 1917; AWM25 225/6 Pt.1 204 of 11 DEC 1917; AWM22 509/1/1 of 4 JAN 1918; PRO AIR1/1044/204/5/1506 of 11 JAN, 27 JAN and 21 AUG 1918; and PRO AIR1/2086/207/6/1 AO/1005 of 21 AUG 1918 all refer.
[10] AWM4 8/5/1 Combat in the Air Report No 27, of 18 FEB 1918.
[11] AWM4 8/5/1 Combat in the Air Report No 35, of 21 FEB 1918.
[12] AWM4 8/5/1 Combat in the Air Report No 47, of 18 MAR 1918.
[13] H A Jones, *The War in the Air*, Vol IV, Clarendon Press, Oxford, 1934, p.273.
[14] War Diary, German 73rd Regiment, of 22 MAR 1918. Cited in Jones, Vol IV, p.301.
[15] C Shores, N Franks & R Guest, *Above the Trenches*, Grub Street, London, 1990, p.200.
[16] War Diary, German 8th Grenadier Regiment, cited in Jones, Vol IV, p.316.
[17] PRO AIR1/475/15/312/201, General Salmond's letter to General Trenchard, JS 2/1/48A, of 25 MAR 1918.
[18] AWM4 8/5/1 Combat in the Air Report No 59, of 26 MAR 1918.
[19] AWM4 8/5/1 Combat in the Air Report No 60, of 27 MAR 1918.
[20] AWM4 8/5/1 Combat in the Air Report No 61, of 27 MAR 1918. This scout could possibly have been a Siemens-Schuckert D.III.
[21] AWM30 B3.6, Statement by LT O Flight, Repatriated POW, of 27 DEC 1918.
[22] Jones, Vol IV, p.264.
[23] Maj Gen Sir Archibald Montgomery, *The Story of the Fourth Army*, Hodder & Stoughton, London, 1919, p.2.
[24] PRO AIR8 2/ID2/132 "Committee on Air Organisation and Home Defence Against Air Raids (2nd Report)", paper 5, GT.1658, of 17 AUG 1917, p.4.
[25] General Ludendorff, *My War Memories*, p.600, cited in Jones Vol IV, p.367.
[26] AWM4 8/5/1 Summary of War Diary, for month ending 30 APR 1918.
[27] "Knights of the Air", in *Smith's Weekly*, Sydney, Saturday 29 MAR 1919, p.13.
[28] AWM4 8/5/1 Combat in the Air Report No 69, of 3 MAY 1918; and Shores, Franks & Guest, p.128.
[29] General von Hoeppner, *Deutschlands Krieg in der Luft*, pp.157-8, cited in Jones Vol IV, p.403.
[30] Jones, Vol IV, p.351.
[31] R Jackson, *Aces' Twilight*, Sphere Books, London, 1988, p.65.
[32] PRO AIR1/1/4/26/4 "Extracts from translation of von Richthofen's book *Der Rote Kampfflieger*", 20 Sep 1917, p.7.
[33] AWM4 8/5/1 Combat in the Air Report No 75, of 17 MAY 1918.
[34] AWM4 8/5/1 Combat in the Air Report No 76, of 30 MAY 1918.
[35] French single-seat fighter manufactured by *Societe anonyme pour l'Aviation et ses Derives.*
[36] PRO AIR1/533/16/12/122, letter CRAF 1730.G from Salmond to GHQ, of 21 MAY 1918.
[37] Shores, Franks & Guest, p.79.
[38] Jones, Vol IV, p.287.
[39] By AUG 1918, all Hispano Suiza powered machines had been replaced by Vipers.
[40] Jones, Vol VI, p.405.
[41] This list is based on Appendix 9 of *Highest Traditions*, pp.364-369, updated by more recently available UK records. During DEC 1917 'B' FLT had already crashed B699 on 12DEC (replaced by B74 on 15DEC), then B64 crashed on 27DEC (replaced by C5328 on 29 DEC).
[42] Visual differences between these two engines are: the Hispano-Suiza 8 had complex driveshaft gearing (i.e. 'geared-drive'), and the propeller boss was high on the radiator; the Viper was direct-drive from the crankshaft and so the propeller boss was lower. The cowling front of the Viper has two widely-spaced radiator blocks, and with shortened cylinder head fairings was squarer at the top..
[43] **Squadron codes** are determined from photographs, documents, secondary sources and artwork. When shown in red, this is unconfirmed and assessed by pilots in their known Flights, and by dates of the gaps of known allocations to and from Depots.
[44] A4895 was an S.E.5 model, powered by a 150hp Hispano-Suiza, provided to 68SQN for training. Other machines were all S.E.5a models powered by the 200hp Hispano-Suiza, and later by the 200hp Wolseley Viper.
[45] Two 2SQN S.E.5a lost on 14 OCT 1918: D6968 (McKeown KIA) and E5989 (Cornish POW), one claimed by Feldwebel W Kahle *Jasta 27*.
[46] R Sturtivant & G Page, *The S.E.5 File*, Air Britain, Tunbridge Wells UK, 1996, p.6.
[47] B Robertson, *WWI British Aeroplane Colours and Markings,* Albatros, Berkhamsted UK, 1996, p.47.
[48] B Robertson, *British Military Aircraft Serials 1878-1987*, Midland Counties, Leicester UK, 1987.
[49] *S.E.5 File,* of 1996, provides some details; www.airhistory.org.u/rfc Award of Contracts, of 2013, appears more definitive – Contract dates can vary by a month.
[50] J M Bruce, *RAF S.E.5a*, Windsock Datafile, Berkhamsted UK, 1993, p.41.
[51] PRO AIR1/867/204/5/523, CRFC 1693G, dated 19 Sep 1917.
[52] L Rogers, *British Aviation Squadron Markings of WWI*, Schiffer, Atglen PA USA, 2001, pp.7, 132.
[53] Pilots would normally fly their allocated aircraft within their Flight, and remained in that Flight, aircraft numbers can often be matched to pilots and his Flight.

RAAF WWII in Colour, No.6 – RAAF Oxfords

[54] The total of 391 Oxford deliveries to the RAAF is often quoted: R J Francillon, *The RAAF & RNZAF in the Pacific*, Aero Pictorials 3, Aero Publishers, Fallbrook CA, 1970, p.6; also the RAAF Museum website gives 391. Goodall gives 389. However, an extra aircraft was delivered earlier than the main EATS batches, P6878 which was a DH-built aircraft intended for the RNZAF (sometimes referred to as a Mk.II, or sometimes as a 'Mk.I/II Inter'), and received in NOV 1940, before the main EATS deliveries began to flow in MAR 1941; and additionally a Mk.II AS831 is often left off totals. These ***additional two aircraft*** give a total of **393 to the RAAF**. (The 'Mk.I/II Inter' designation is ignored by both Rawlings and Robertson, and is described as 'spurious' by *britishaviation*.)
[55] J D R Rawlings, *The Airspeed Oxford*, *Aircraft in Profile, Vol.11*, Profile Pubs, Windsor Berks, 1971, p.120.
[56] Rawlings, pp.119-120. Compared to this 8,558 total: the airvectors website states 8,586 Oxfords; the credible *britishaviation* website gives 8,580; and the RAAF Museum website states 8,751 Oxfords.

[57] The *britishaviation* website credibly gives the analysis of Rawlings, Robertson, Taylor and Hamlin of **8,580**: http://britishaviation-ptp.com/airspeed_as10.html#prodlist
[58] Like the total Oxford production, there has always been conjecture over Oxford mark numbers, and the total delivered to Australia. Rawlings (p.119) lists **P6878** as a Mk.I; Robertson (p.111) as a Mk.II, as does the *britishaviation* site; Hamlin (p.198) lists it as a "Mk.I/II Inter" – this not indicating an 'intermediate version' between the Mk.I and Mk.II, but purely that the aircraft were made before 'Mk.I' and 'Mk.II' designators were allocated. The *adf-serials* website lists 393 receipts by the RAAF. But, the *britishaviation* site lists 392 deliveries to Australia (255 x Mk.I and 137 x Mk.II), missing out Mk.II **AS831** (which they list as a delivery to Canada, although we have the RAAF E/E.88) – this gives 255 Mk.Is, and 138 Mk.IIs, for our total of 393 Australian Oxfords.
[59] http://britishaviation-ptp.com/airspeed_as10.html
[60] Airvectors.net, https://www.airvectors.net/avanson.html
[61] https://www.baesystems.com/en/heritage/airspeed
[62] N Parnell & T Boughton, *Flypast*, AGPS, Canberra, 1988, p.163.
[63] D Gillison, *Royal Australian Air Force 1939-1942*, AWM, Canberra, 1962, p.135.
[64] C D Coulthard-Clark, *The Third Brother*, Allen & Unwin, Sydney, 1991, pp.456-8.
[65] Parnell & Boughton, p.165; D Gillison, *Royal Australian Air Force 1939-1942*, AWM, Canberra, 1962, p.137.
[66] Rawlings, p.99. Similarly, the Anson mainly had its AW turret removed in its training roles, removed during major servicing (Jackson, pp.322-325), but this was apparently even easier for the Oxford – in Australia turret removal appears to have been done on receipt at the Aircraft Park, and the upper gap filled by a rear cabin roof hatch.
[67] 2AP A.50 Unit History, OCT 1940-FEB 1941.
[68] J Kightly, 'Avro Anson Database', in *Aeroplane*, Key Publications, Stamford Lincs, JAN 2019, p.64.
[69] Rawlings, p.118.
[70] G Goebel, *The Avro Anson and Airspeed Oxford*, 2020. https://www.airvectors.net/avanson.html
[71] D Ogilvy, *Airspeed Oxford*, 2007, www.iaopa.eu/mediaServlet/storage/gamag/apr07/p22_p25.pdf, p.22.
[72] Rawlings, pp.119-120.
[73] The *britishaviation* website credibly gives an analysis of 8,580: http://britishaviation-ptp.com/airspeed_as10.html#prodlist
[74] RAAFHQ AGI C.11 of 22 SEP 1939, para 1(c), RAAF file 9/1/396 and based on RAF AMO A.154/39 of 27 APR 1939.
[75] I K Baker, *Aviation Colouring Book 67, RAAF Colour Schemes Pt.3*, Queenscliff Vic, 2009, pp.16-17.
[76] RAAFHQ S.A.S.9984 1/501/329(53A), DTS 368/41, of 23 DEC 1941.
[77] P Lucas, *Camouflage & Markings No.2*, Scale Aircraft Monographs, Guideline, Luton, Beds, 2000, p.9.
[78] For fighters – the Spitfire and Hurricane – Air Ministry drawings were issued on 20 FEB 1937, and both Supermarine and Hawker had received them by MAR 1937. E B Morgan & E Shacklady, *Spitfire – The History*, Guild Publishing, London, 1988, p.622.
[79] J Goulding & R Jones, *Camouflage & Markings RAF Fighter Command 1936-1945*, Doubleday, New York, 1971, p.78.
[80] With the Hurricane, the mirror 'B' scheme was abandoned in JAN 1941 (having been used since 1937) and future Hurricanes were produced in the 'A' scheme only. Goulding & Jones, p.64. For the Spitfire, on 14 JAN 1941 the 'A' and 'B' mirror scheme merged to become the 'A' scheme only; Morgan & Shacklady, p.624; Goulding & Jones, p.18. However, the choice of which pattern to use as standard was left to individual companies, with the Defiant being continued in the 'B' scheme only; Goulding & Jones, p.176. Similarly, for the Oxford in 1941, the 'B' scheme became the sole pattern.
[81] RAF A.D.M.332 Issue 3, CD44/41 of 15 NOV 1940, filed as RAAFHQ 150/4/852(12).
[82] AMO A.513/41 of 10 JUL 1941, in J Tanner, *British Aviation Colours of World War Two*, Arms Armour Press, London, 1986, p.20.
[83] *britishaviation* website: http://britishaviation-ptp.com/airspeed_as10.html#prodlist
[84] RAF ADM.332 (Issue 3) filed as RAAFHQ 150/4/852(12).
[85] RAAFHQ file 1/501/329(53A), SAS.9984 also listed as DTS 368/41, of 23 DEC 1941. This message also directed that RAAF *Earth Brown* (K3/178) and *Foliage Green* (K3/177) be used instead of RAF *Dark Earth* and *Dark Green*. RAAFHQ file 1/501/329(63A), SAS.7396 also listed as DTS 280/42, of 18 JUN 1942
[86] RAAFHQ Aircraft General Instruction No.C.11 (Issue 4), Appendix I, of 31 AUG 1942.
[87] Appendix I of the AGI noted that: A.D.1164 (twin-engined flying boats) be used for Sunderland and Empire, as no separate scheme for 4-engined flying boats was available (this was A.D.1163); A.D.1165 (twin-engined biplane flying boats) be used for Seagull V (Walrus), as no separate scheme for single-engined flying boats was available; A.D.1291 (4-engined biplanes) be used for Gannet, D.H.84 and D.H.89 as no diagram for these types was available (for the biplanes this was A.D.1175).
[88] Neither the Kittyhawk nor Vengeance were listed.
[89] NAA A11083 21/4/AIR, *NEA HQ Camouflage of Aircraft*, pp.88-89.
[90] Years later in 1966, RAAF Support Command in Melbourne in response to a query from Dept of Air, realised that all the wartime camouflage drawings had not been retained and "disposed of for the purpose of saving space"; RAAF DEPAIR letter 579/3/104 of 22 DEC 1966. However, the response to DEPAIR revealed that some drawings still existed and were identified by RAAF Drawing Numbers, probably from 1943, listed below; RAAF HQSC C3/8/Air Pt 2, dated JAN 1967.
A.D.1157 RAAF Drawing No A5185; A.D.1159 A5189-1; A.D.1160 A5192; A.D.1161 A5189-2; A.D.1162 A1813; A.D.1164 A5189-1; A.D.1168 A5188; A.D.1291 A5186.
[91] RAF AMO A.664/42 of 2 JUL 1942, cited in Tanner, p.20.
[92] http://www.adf-gallery.com.au/newsletter/ADF%20Telegraph%20Vol%2010%20Issue%203%20Winter%202020.pdf
[93] AM Sir Richard Williams, *These Are Facts*, AWM, Canberra, 1977, pp.269-270.
[94] The syllabus of an air observer school included dead-reckoning navigation, signalling (morse and visual), reconnaissance, etc; the air navigation school gave the trained observer (who had survived the air observer and bombing-and-gunnery courses) a further four weeks' instruction on astro-navigation. Gillison, p.83.
[95] J Herington, *Air War Against Germany & Italy 1939-1943*, AWM, Canberra, 1962, pp.530-1; Williams, pp.300-1. This Ottawa Conference also recast the original EATS, greatly empowering Canada's size and influence within the scheme, which probably accounts why they prefer reference to 'The Plan', and not to EATS.
[96] Australian-produced Wacketts, Wirraways and Tiger Moths also served on EATS and SFTS units.
[97] Gillison, p.137.
[98] N M Parnell & C A Lynch, *Australian Air Force since 1911*, Reed, Sydney, 1976, p.54. From initial training, Australia would hand over 194 trainees per month for further training in Canada.
[99] J Forsyth, *The D.H.82A Tiger Moth in Australia*, Skyline, Melbourne, 1995, p.xxiii.
[100] Gillison, p.108.
[101] Gillison, p.108.
[102] For example, official references for roundels were generally a description of the colours, but from OCT 1944 referred to roundels as Type I, Type II, Type III, etc (which related to the postwar invented 'non-official' references B, C, C1 respectively); AP 2656A Vol 1 Sect 6 Chap 2, and Chap 2 Table 1 of OCT 1944, Tanner pp.49-56.
[103] Lucas, p.13.
[104] The *Yellow* was introduced to the RAF roundel on 1 MAY 1940; P Lucas, *Camouflage & Markings No.2*, Scale Aircraft Monographs, Guideline Pubs, Luton, 2000, p.45.The RAAF policy AGI C.11 of SEP 1939 used AMO A.154 as a main reference, which introduces the Type-B roundel to fuselages (which would become the RAAF "M.1" roundel) in 1939; AMO A.154/39 of 27 APR 1939, cited in Tanner, p.1. The RAAF revised AGI C.11 policy of OCT 1940 introduced the outer *Yellow*

ring to the "M.2" roundel to become the "M.3"; and the tri-colour fin flash was the "M.4" marking. *Yellow* shows as a light colour on panchromatic film, but as a dark colour on orthochromatic, which can be altered by lens filters.
[105] RAAFHQ DTS 9/1/442 of 12 SEP 1939.
[106] *These Demons are marked with unit code "Y" for 1FTS. The M.1 was in a 2:5 ratio; the RAF 2:5 type-B wing roundels varied in size with aircraft type, with some as 25":63", 22":56", 20":50", or 16":40"; Goulding & Jones, Camouflage & Markings 1936-1945, Doubleday, New York, 1971.*
[107] The 1940 policy changed the M.1 roundels, in general, back to the M.2 – the only exception was for the Wirraway which retained the M.1 on upper wings. This was mandated by AGI C.11 *Issue 3* (note that *Issue 2* earlier in 1940 has been unavailable); RAAFHQ AGI C.11 *Issue 3*, of 3 OCT 1940, filed on 1/501/329.
[108] Cited in Tanner, p.1.
[109] RAAF London advised that Admiralty Air Diagram 1174 applied to the Seagull/Walrus, London AB.2426, 1/501/281(25A) of 4 DEC 1939; A.D.1174 was distributed in the RAAF as A1813, 1/501/281(29A) of 27 FEB 1940.
[110] Cited in Tanner, p.9.
[111] The Hurricane 'B' scheme was abandoned in JAN 1941 and future Hurricanes were produced in the 'A' scheme only. Goulding & Jones, p.64. For the Spitfire, on 14 JAN 1941 the 'A' and 'B' mirror scheme merged to become the 'A' scheme only; Morgan & Shacklady, p.624. However, the choice of which pattern to use as standard was left to individual companies, and for the Oxford in 1941 the 'B' scheme became the sole pattern.
[112] P Malone & G Byk, *Understanding RAAF Aircraft Colours*, Red Roo, Melbourne, 1996, p. 27.
[113] Cited in Archer, p.42.
[114] Cited in Tanner, p.21.
[115] Cited in Archer, p.70.
[116] RAAFHQ AMEM D/DTS 1/501/329 SAS 13552 of 8 JUL 1943, specified 32" *Blue* roundel, 12" *White*, i.e. 3:8 (approx 2:5); fin flash 24" (high), 16" wide (8" each colour). If hurriedly repainted, the type-C flash would be asymmetric with 13" *White*, 11" *Blue*.
[117] Cited Tanner, pp.32-56.
[118] RAAFHQ AGI C No.11 of 22 SEP 1939, filed as 9/1/396(13), and which referred to the RAF AMO A.154.
[119] RAAFHQ S.A.S. 2699 1/501/329(55A), undated but c JUL 1940.
[120] P Lucas, *Camouflage & Markings No.2*, Scale Aircraft Monographs, Guideline, Luton, Beds, 2000, p.79. The MAP 33B stores reference series are stock numbers with the last three digits identifying the size of the paint can – so on the RAF Directorate of Technical Development (DTD) 314 scale, *Dark Green* 33B/201 was for a half-gallon can of varnish, 33B/202 a one-gallon can, and 33B/203 a five-gallon container. Similarly, the various size cans for *Dark Earth* were 33B/198 to 33B/200. The DTD specifications for compliance were DTD 314 (matt pigmented oil varnishes), DTD 308 (matt cellulose finish), or DTD 83A (aeroplane doping schemes); *Aircraft Design Memorandum No.332 (Issue 3),* CD44/41, para.4, of 15 NOV 1940, filed on RAAFHQ 150/4/852(12).
[121] RAAFHQ AGI No. C.11, para. 1(a), of 22 SEP 1939.
[122] RAAFHQ AGI No.C11 A/L.5 filed on 150/4/658, of 26 JAN 1940.
[123] DTS Minute to AMOE 62/3/431(31A) of 26 MAR 1940.
[124] Letter HQ Southern Area to RAAFHQ 1/501/269(9A) of 27 JUN 1940.
[125] RAAFHQ AGI No. C.11, Issue 3, para. 1(a) Training Aircraft, of 3 OCT 1940.
[126] RAAFHQ AGI No. C.11, Issue 3, para. 4(b) Training Aircraft, of 3 OCT 1940. This Instruction also left to the discretion of the Station CO to allot different coloured numbers for identification to different units operating at the base.
[127] RAAFHQ AMOE Letter S.A.S.9984, DTS 368/41, of 23/12/41 filed as 1/501/329(53A). This directive referred to the troop carrier D.C.2 to comply with A.D.1157, the Anson to A.D.1159, and Wirraways and Battles to A.D.1160.
[128] RAAFHQ Letter 36/501/244 to CO 51(R)SQN, cDEC 1941, files as 1/501/329(56A).
[129] RAAFHQ file 1/501/329 Minute Sheet, M.2 DTS to DCAS of 6 JAN 1942; M.3 DCAS agreement same date.
[130] RAAFHQ Letter S.A.S.7396 DTS.280/42, filed as 1/501/329(63A), from DTS for AMEM to all Area HQs, of 18 JUN 1942.
[131] RAAFHQ AGI No. C.11, Issue 4, of 31 AUG 1942, files as 150/4/852(1A). This AGI lists all the A.D. numbers (in Appendix I) for the various types.
[132] RAAFHQ T.O. AGI Pt 3(c), Instruction 1, file 150/4/5056 (1A), of 26 MAY 1944.
[133] **Mensuration:** These training numbers of 30" x 15" in 3" strokes are determined by mensuration – the sizes of some aircraft markings are often provided here from mensuration, checked against surviving policy documents. Digital imagery, with large monitors, now makes it easier to accurately measure markings. For calibration, known dimensions are used and extrapolated – for instance, aircraft serial numbers are 8" high and 5" wide (Imperial measures used, as that was the standard of the day), and some Tech Orders provide roundel and fin flash dimensions. Generally, squadron code letters vary, and no laid down localised standards survive. Such mensuration is accurate if the camera lens is directly perpendicular and horizontal to a flat subject. But perspective is further affected by fuselage curvature, or other shaped panels, and there can be camera lens imperfections. So, while an imperfect art, in general sizes of aircraft markings can be provided inside a 2" (50mm) margin of error.
[134] The first reference found to striping Beam Approach calibrators was a query by 1/501/329 Minute 30 on 4 DEC 1945, formalised by RAAFHQ 1/501/329(M.31) of 6 DEC 1945, and then into Policy by AGI 3(c)1, *Issue 2*.
[135] VH-COA was an Allied Directorate of Air Transport/DAT registration.
[136] E/E.88 Aircraft Status Cards.
[137] R D & V G Archer, *USAAF Aircraft Markings & Camouflage 1941-47,* Schiffer, Atglen PA, 1997, p.70.
[138] Americanairmuseum.com.
[139] Archer & Archer, p.153.
[140] Although Wikipedia [!] quotes 137 RAF Oxfords transferred to the USAAF, 144 Oxfords were transferred, comprising 26 x Mk.I and 118 x Mk.II; http://britishaviation-ptp.com/airspeed_as10.html
[141] 200 Canadian built D.H.89C Tiger Moths (designated PT-24-DH and serialled 42-964 to 421163) that were funded under Lend Lease and supplied to the RCAF with RAF serials in the FE- and FH-range; J M Andrade, *US Military Aircraft Designations and Serials Since 1909*, Midland Counties, Leicester, 1979, p.159.
[142] *Units of the RAAF, Vol.8 Training Units*, pp.65-68.
[143] AMO A.1377/42, Appendix II, of 24 DEC 1942, cited in Tanner, p.30.
[144] AGI Pt 3(c), Instruction 1, Appendix E (v) (a), of 26 MAY 1944.
[145] *Units of the RAAF, Vol.8 Training Units*, pp.137-138.
[146] CFS A.50 Unit History, SEP 1944.
[147] CFS A.50 Unit History, NOV 1944.
[148] RAAFHQ 1/501/329(M.30) of 4 DEC 1945.
[149] RAAFHQ 1/501/329(M.31) of 6 DEC 1945.
[150] RAAFHQ T.O. AGI Pt 3(c), Instruction 1 (Issue 2), files 1/501/329 and 150/4/5056, undated c1946.
[151] The Oxfords that were in BATF with 1SFTS and CFS from AUG 1942 into 1944 were: X6805, X6727, X6730, X6731, X6732, BF916, BF983, HN331, HN336, HN376, and HN640; then when CFS reformed BATF into Instrument Flying Flight in SEP 1945, the following aircraft were on strength: BF918, HN757, HN817, LW853, LW859,LW876, LW877, LW922, LW926, and LX193. Oxford E/E.88s.
[152] During WWII it was the the Tudor, or 'King's', crown that was on the badge. This was later changed to the 'St Edwards', or Queen's, crown after the Coronation in JUN 1953.
[153] *Units of the RAAF, Vol.8 Training Units*, p.100.

[154] 1SFTS A.50 Unit History, for 30 JUN 1941.
[155] No.1 Training Group HQ, A.50 Unit History, SEP 1944.
[156] 1SFTS A.50 Unit History, for SEP 1944.
[157] 6SFTS A.50 Unit History, for 31 AUG 1942, HQ Mallala 4/AIR/2 of 2 SEP 1942.
[158] 1SFTS A.50 Unit History, for SEP 1944.
[159] *Units of the RAAF, Vol.8 Training Units*, p.109.
[160] AGI Pt 3(c), Instruction 1, Appendix E (v) (a), of 26 MAY 1944.
[161] AGI Pt 3(c), Instruction 1, Appendix E (v) (a), of 26 MAY 1944.
[162] https://www.goodall.com.au/australian-aviation/ansonsonfarms/ansonsonfarms.html
[163] *Units of the RAAF, Vol.8 Training Units*, p.111.
[164] http://www.adf-gallery.com.au/newsletter/ADF%20Telegraph%20Vol%2010%20Issue%203%20Winter%202020.pdf
[165] 7SFTS A.50 Unit History OCT 1944.
[166] 1AOS A.50 Unit History, FEB 1945.
[167] *Units of the RAAF, Vol.8 Training Units*, p.8.
[168] No.1 Training Group HQ, A.50 Unit History, 9 DEC 1943.
[169] 3AOS A.50 Unit History, 31 DEC 1943.
[170] *Units of the RAAF, Vol.8 Training Units*, p.8.
[171] *Units of the RAAF, Vol.8 Training Units*, pp.13-14.
[172] 3BAGS A.50 Unit History, 8 DEC 1943.
[173] AGS A.50 Unit History, 31 DEC 1943.
[174] *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.
[175] Oxford T1008 was sent to 1ES at Ascot Vale DEC 1941 as training parts. X6542 was used as a cockpit trainer at 8EFTS Narromine from FEB 1944.
[176] Parnell & Lynch, p.156.
[177] RAAFHQ Technical Order AGI 3(c)1 Issue No.2, undated c1946.
[178] DTS SIG/71 on RAAFHQ file 62/4/93(51A) distributed as Message T.1219 PGM of 13 NOV 1945. Follow-up details on RAAFHQ 1/501/329 Minutes M.28 of 15 NOV 1945, and M.31 6 DEC 1945.
[179] Ogilvy, p.25.
[180] A25 E/E.88 Aircraft Status Cards.
[181] https://www.goodall.com.au/australian-aviation/anson-civil-1/civilansons-1.html
[182] https://www.goodall.com.au/australian-aviation/ansonsonfarms/ansonsonfarms.html
[183] http://www.demobbed.org.uk/aircraft.php?type=822
[184] http://warbirdsnews.com/aviation-museum-news/australian-airspeed-oxford-project-update.html
[185] https://acesflyinghigh.wordpress.com
[186] www.rafmuseum.org.uk/london
[187] https://en.wikipedia.org/wiki/Imperial_War_Museum_Duxford
[188] http://www.aviationarchaeology.org.uk/marg/projects.htm
[189] http://www.demobbed.org.uk/aircraft.php?type=822
[190] https://www.airforcemuseum.co.nz/
[191] www.tatatm.tripod.com/museum
[192] https://saafmuseum.org.za/articles/artefacts/airspeed-oxford-restoration/
[193] www.klm-mra.be

Former RAAF Aerodromes along or near the Stuart Hwy, Part 3, Pine Creek Region

[194] North Western Area Aerodromes and Landing Strips (Existing and Projected) Named After RAAF and USAAC Pilots Killed or Missing During This War. NAA: A9695, 18.
[195] RAAF Form A51, Unit History Sheet, Detail of Operations by No. 13 Squadron, sheet number 48, entry for Laha 20.1.42 in RAAF Unit History Sheets Number 13 Squadron Jun 40 – Dec 45; NAA: A9186, 35.
[196] RAAF and Civil Official Lists of Aerodromes, Emergency Landing Grounds and Flying Boat Bases Australia and Territories. NAA: A9716, 1555.
[197] North Western Area Aerodromes and Landing Strips (Existing and Projected) Named After RAAF and USAAC Pilots Killed or Missing During This War. NAA: A9695, 18.
[198] RAAF Form A50, Operations Record Book of No. 13 (G.R.) Squadron, sheet number 40, entry for Laha 10/12/41 in RAAF Unit History Sheets Number 13 Squadron Jun 40 – Dec 45; NAA: A9186, 35.
[199] RAAF and Civil Official Lists of Aerodromes, Emergency Landing Grounds and Flying Boat Bases Australia and Territories. NAA: A9716, 1555.
[200] War Department A.A.F. Form No. 63, Special Form Foreign Airport Description dated 1 February, 1944, in RAAF Directorate of Works and Buildings Engineer Intelligence Section at MacDonald (Burk-Holder); NAA: A9716, 783.
[201] RAAF and Civil Official Lists of Aerodromes, Emergency Landing Grounds and Flying Boat Bases Australia and Territories. NAA: A9716, 1555.
[202] Memorandum "Lease:Lend Expenditure – North Western Area" dated 23/MAR/44 in RAAF Emergency Landing Ground Pine Creek NT. NAA: A705, 7/1/1578.

How to Read RAAF Historical Records, Coloured Signal Forms

[203] Chapter IV, Detailed Organisation of Operations Rooms, Section (A) General, Use of Coloured Signal Forms Paragraph (5), RAAF Command, Allied Air Forces, *ASD205/1 RAAF System of Operational Control* (1943) 41 in RAAF – System of Operational Control – RAAF Command, Allied Air Forces; NAA: AA1966/5, 360.
[204] Paragraph (6), ibid.
[205] Attack on Radar Installations – Cape Lore – 27 Nov 44, DCV1/27 Nov in No 1 (Fighter) Wing – Intelligence – Offensive Operations; NAA: A11231, 5/50/INT.
[206] AFCO 64/1940 Security of Secret and Confidential Information by Signal, paragraph 12 "Cypher Messages to be Handled by Officers" and ASD1 RAAF Manual of Instructions for Cypher Officers, paragraph 2 "Security of Matter Within the Cypher Office", p4 sub-paragraph (d) "Nodeco Messages" both in Secret Publication ASD1 RAAF Manual of Instruction for Cypher Officers; NAA: A1196, 40/501/271.
[207] Chapter II Conduct of Operations, Identification Letters for Aeroplanes Paragraph 28, RAAF Command, Allied Air Forces, *ASD205/1 RAAF System of Operational Control* (1943) 15 in RAAF – System of Operational Control – RAAF Command, Allied Air Forces; NAA: AA1966/5, 360.