ADF Serials Telegraph News

News for those interested in Australian Military Aircraft History and Serials

Volume 6: Issue 6: Summer's Start 2016 *Editor and contributing Author: Gordon R Birkett,*

Message Starts: **In this Large Issue:**

Message Traffic Selections: Please address any questions to: question@adf-serials.com.au
Message Board – Current hot topics: These boards can be accessed at: www.adf-messageboard.com.au/invboard/

News Briefs

- **Redux, 23rd February 2016:** The PNGDF and Central Supply Tenders Board(CSTB) signed an agreement on Monday 23rd February 2016, for the acquisition of a new aircraft that will be purchased and brought over from New Zealand. ***In total there will be four PAC 750 planes and two CT 4 military trainer planes bought over under the package.*** The PNGDF Commander Gilbert Toropo, when signing the agreement said that those planes will be very useful for PNGDF to assist with defence call out requirements. He says the PAC 750 would be exceptional to land on our rugged short landing strips around the country. The P-750 XSTOL is the world's first XSTOL aircraft unmatched by any other production aircraft and sets the benchmark for ten seater utility aircraft. The P-750 is Single Pilot IFR Certified (FAA) and in 2012 gained certification against ICAO Annex 6 for Single Engine IFR Passenger Transport Operations. The CT-4E model of the aircraft, provides a very capable aircraft which challenges the students while also being a forgiving platform. PAC750 XSTOL Pictured***. Did you know? Three of these PAC 750 XSTOL Aircraft are now in service with the North Korean Air Force(Kiwi Scruples' amok ? as C/n 198 &199 delivered to China's Shangdong General Aviation Services in October 2015)***

- **8th August 2016:** The second RAAF PC-21, A54-002/HB-HWB(c/n 235) took to the air for the first time from Stans-Buochs, Switzerland.
- **16th August 2016:** The 100th F-35A, FY14-5099, was delivered to the USAF. This follows a week earlier of delivery of the second Israeli F-35I , 902, on the 8th August 2016. Other events include the first flight of Japan's first F-35A, 69-8701 on the 24th August 2016.
- **18th August 2016:** RAF has two FMS ordered two P-8A funded, which will be delivered from 2019, along with eight others. Currently, since the demise of the Nimrod, crews have been embedded in Allied P-3/P-8

Sqn's, including 92 Wing RAAF. **Meanwhile, RAAF P-8A A47-001**(c/n62288 ex N940DS) is due to arrive in Australia on the 15th November 2015.

- **6th September 2016:** XTEK has been selected as the preferred tenderer for the LAND 129 Phase 4 Unmanned Aerial Vehicle project. A Wasp AE system consists of two air vehicles and one ground control system. With a 29-inch wingspan, the 1.3 kg micro air vehicle is designed for ground and water landings, making it suitable for both land and maritime missions.
- **9th September 2016**: China has signed an agreement with a Ukrainian firm to restart manufacture of the AN-225, the world's largest airplane. According to the reports, China now plans to fly the first of an unspecified number of An-225s in 2019. Rumours states that up to 9 airframes are planned so far, along with the initial completion of the second Ukrainian Aircraft that was never finished (Pictured below right).


- **12th September 2016:** Lockheed Martin, together with the U.S. Navy, ceremonially delivered the 24th, and final, MH-60R SEAHAWK helicopter to the Royal Australian Navy (RAN). Australia chose the MH-60R "Romeo" SEAHAWK helicopter in June 2011 to fulfil the Australian Defence Force's requirement for a fleet of 24 new-generation, multi-role naval combat aircraft. The program has run on time and on budget with all 24 MH-60 Romeos now delivered to the Royal Australian Navy - a feat which saw the program win Australia's Capability Acquisition and Sustainment Group "Project of the Year" award in 2015. The last of Navy's 24 MH-60R Maritime Combat helicopters was accepted by Chief of Navy, VADM Tim Barrett. Navy has three MH-60R deployed at sea, including two that recently participated in Exercise RIMPAC. A fourth flight will now deploy by the end of 2016.

- **19th September 2016**: The new USAF Bomber, the **B-21** was named ***Raider***
- **21st September 2016**: The Government of Japan requested the sale of four (4)Boeing KC-46A aerial refueling aircraft. Each aircraft is powered by two (2) P &W Model 4062 (PW4062) Turbofan engines.
- **18th October 2016:** RAAF C-27J A34-003 (c/n4182/FY12-27050) arrived in Australia.

- **During Pitch Black 2016:** Air Combat Officers, Pilot Officers Brayden and Nelson, with the E-7A Wedgetail aircraft featuring the nose art on both forward sides on **A30-005**, celebrating the 100th anniversary of No 2 Squadron.

- **Redux March 2016: It just looks so new, shiny and clean: EC135 T2+ N52-001** VH-AQG 841 on arrival to Nowra. The Type is the replacement aircraft for the venerable 30 year old AS135BA Squirrel helicopter.

OPERATION OKRA continues.

- **Redux June 2016:** The ATG comprises six RAAF F/A-18A Hornet fighter aircraft, an E-7A Wedgetail airborne command and control aircraft, and a KC-30A Multi-Role Tanker Transport air-to-air refuelling aircraft. On this page: 2OCU Tiger Plated F/A-18A+ Hornet's **A21-18** in full colour during the day, and **A21-34** in tone down colours at night, and E-7A **A30-002** with ***"Rotation 6 "*** nose motif, with the ATG Task Group 630.

- Ready for the night's operation, sundown August 2016 for an ATG 77Sqn Badge F/A-18A+ **A21-40**.

- **Back on 4th August 2016:** Another first, an RAAF Air Task Group KC-30A has, for the first time, successfully refuelled two F-16C aircraft extending support to the US-led multi-national coalition in the fight against Daesh. F-16C-50 FY01-344

- **30th August 2016:** Serco Defence, witnessed the launch of the new RAN's 94 meter long Multirole Aviation Training Vessel "Sycamore" was launched in Vietnam.
- **14th September 2016:** During trials conducted from the White Sands Missile Range, the unmodified F-35B detected an over-the-horizon threat and passed targeting data via its Multi-Function Advanced Data Link (MADL) to the land-based USS Desert Ship test facility via a ground station, with the target subsequently engaged and intercepted by an SM-6 missile. The trial was of likely of great interest to the ADF, which is acquiring F-35A JSFs for the Royal Australian Air Force and Aegis-equipped Air Warfare Destroyers (AWDs) for the Royal Australian Navy. Perhaps *food for thought* , if ever ordered, the future second tranche of 28 F-35 Aircraft should incorporate a small number of F-35Bs for the RAN Amphibious Group deployment.
- **20th September 2016:** HMAS Perth, an Anzac-class frigate of the Royal Australian Navy (RAN), and its embarked MH-60R multi-mission helicopter recently supported a civilian search and rescue mission off the Seychelles coast. During the mission, two survivors were located by the MH-60R Romeo, call sign *'Helicat',* with the aircrew then directing a local vessel to the exact location to complete recovery. This marked the first time that an operationally deployed RAN MH-60R has used its sensors and communications systems to coordinate a rescue mission.
- **24th September 2016**: The Air Warfare Destroyer Alliance based in South Australia, has achieved a significant milestone with the successful completion of builder sea trials for the first destroyer, NuShip Hobart, following several days at sea off the coast of South Australia. Significant progress has been made on the project and the first destroyer to reach this milestone, the AWD Alliance stated, with the ship build having commenced in January 2010, hull consolidation in March 2014 and official launch (when the ship floats for the first time) in May 2015. Hobart is scheduled to be delivered in June 2017. The second destroyer , NuShip Brisbane, is due to enter the water in December, and hull consolidation of the third destroyer, NuShip Sydney, is expected in August 2017. A second phase of sea trials planned for early 2017 will test the Hobart's combat and communications systems.

- **26th September 2016**:. India finally signed a deal to buy 36 Rafale fighter jets from France on Friday for around $8.7 billion, the country's first major acquisition of combat planes in two decades and a boost for Prime Minister Narendra Modi's plan to rebuild an ageing fleet. The force is down to 33 squadrons, against its requirement of 45 to face both China and Pakistan.
- **29th September 2016:** The first of 12 Boeing P-8A Poseidon's for the RAAF was rolled out at the company's airfield in Seattle. The first aircraft will arrive in Australia on the 15th November 2016, with the remaining 11 aircraft to be delivered by March 2020. Three more aircraft are optioned.
- **14th October 2016:** One of the two additional Airbus A330-200s being converted into KC-30A tanker transports for the Royal Australian Air Force is set to be modified with a VIP interior to support long-range government transport needs, Defence has confirmed. These two aircraft – second-hand ex-Qantas aircraft – will be converted to tanker configuration by Airbus Defence and Space at Getafe, Spain through this year and next. *Source AA.*
- **4th November 2016:** F/Lt Todd "Woody" Woodford (RAAF)became the first Foreign exchange Officer to graduate from the Growler course at the USN Airborne Electronic Attack School, HAVOC, in Nevada. He also won the prestigious Cdr Louis "Seadog" Fodor Memorial Award for his outstanding Leadership in his host USN Sqn, VAQ-135 . HAVOC Graduates are known as Growler Tactics Instructors and perform simular duties as Fighter Combat Instructors in the RAAF. Our twelve Growlers will reach Australia in June 2017 onwards, then obtain IOC sometime in 2018.

Exercise Bersama Lima was conducted from RAAF Base Butterworth from 11th - 21st October 2016. Participating nations include Australia, Malaysia, Singapore, the United Kingdom and New Zealand operating together under the Five Power Defence Arrangements. Australian assets included 77SQN F/A-18A Hornets, a 2SQN E-7A Wedgetail, an 11SQN AP-3C Orion and a 38SQN King Air. Exercise Bersama Lima enabled these assets to conduct a variety of 'dissimilar' combat sorties with assets from partner nations such as the RAF FGR4 Typhoon, and the RMAF Sukhoi-30 and F/A-18D Hornets. Notably, this exercise was the very first time RAAF F/A-18A 'Classic' Hornets have flown close combat sorties against the Sukhoi-30 aircraft and provides a unique opportunity for 77SQN pilots to develop their high performance combat manoeuvring against an unfamiliar opponent.

77Sqn Pilots sit on A21-49 in Malaysia, marked in 70th Anniversary markings : Photo :OFFCDT David Campbell RAAF

Photo All of 77Sqn Support and aircrew photographed: Photo OFFCDT David Campbell RAAF

An Introduction to International Call Signs By Garry "Shep" Shepherdson @2016

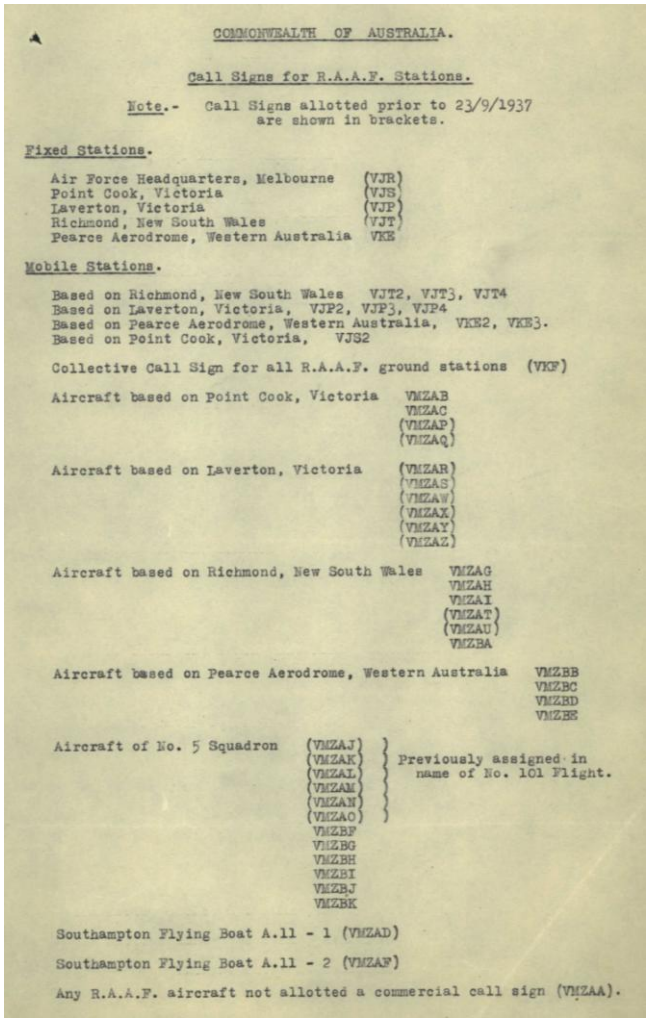
International call signs were (and still are) allocated in blocks and assigned to different countries by what is now known as the International Telecommunications Union (ITU). A domestic authority within that country is then responsible for issuing the call sign for an appropriate purpose. International call signs consist of 3 or more characters depending on their purpose and nationality is identified by the first one or two characters.[i]

Up until the mid-1970's, that domestic authority in Australia was the Postmaster General's Department. This call sign system was originally specified in Article 14 of the General Regulations annexed to the International Radiotelegraph Convention in Washington, 1927. Within Section 1 of Article 14 appeared the "Table of Distribution of Call Signs" which comprised a list of all countries and the call sign blocks allocated to them. The allocations made to the then Commonwealth of Australia was VHA – VMZ.[ii] This meant that the entire VH, VI, VJ, VK, VL and VM blocks (that is VHA to VHZ, VIA to VIZ, etc.) were available for use by Australia from that time.

Section 2 of Article 14 of the General Regulations described the form that call signs for certain purposes were to take.

(a) three letters in the case of fixed and land stations;
(b) four letters in the case of ship stations;
(c) five letters in the case of aircraft stations[.][iii]

So the allocation of the entire blocks in the VH to VM series meant that any combination of three, four or five-letter call signs could be used within those blocks. The RAAF allocations in force as at 23rd September, 1937:



COMMONWEALTH OF AUSTRALIA.

Call Signs for R.A.A.F. Stations.

Note.- Call Signs allotted prior to 23/9/1937 are shown in brackets.

Fixed Stations.

Air Force Headquarters, Melbourne (VJR)
Point Cook, Victoria (VJS)
Laverton, Victoria (VJP)
Richmond, New South Wales (VJT)
Pearce Aerodrome, Western Australia VKE

Mobile Stations.

Based on Richmond, New South Wales VJT2, VJT3, VJT4
Based on Laverton, Victoria, VJP2, VJP3, VJP4
Based on Pearce Aerodrome, Western Australia, VKE2, VKE3.
Based on Point Cook, Victoria, VJS2

Collective Call Sign for all R.A.A.F. ground stations (VKF)

Aircraft based on Point Cook, Victoria VMZAB, VMZAC, (VMZAP), (VMZAQ)

Aircraft based on Laverton, Victoria (VMZAR), (VMZAS), (VMZAW), (VMZAX), (VMZAY), (VMZAZ)

Aircraft based on Richmond, New South Wales VMZAG, VMZAH, VMZAI, (VMZAT), (VMZAU), VMZBA

Aircraft based on Pearce Aerodrome, Western Australia VMZBB, VMZBC, VMZBD, VMZBE

Aircraft of No. 5 Squadron (VMZAJ), (VMZAK), (VMZAL), (VMZAM), (VMZAN), (VMZAO) Previously assigned in name of No. 101 Flight.
VMZBF, VMZBG, VMZBH, VMZBI, VMZBJ, VMZBK

Southampton Flying Boat A.11 - 1 (VMZAD)

Southampton Flying Boat A.11 - 2 (VMZAF)

Any R.A.A.F. aircraft not allotted a commercial call sign (VMZAA).

Allotment Statement of 23rd September, 1937 (NAA: A705, 201/6/121).

Further expansion to Australia's block allocations were made at the 1938 convention in Cairo. Australia's block allocations were expanded to read "… Commonwealth of Australia … VHA – VNZ …" and "… VZA – VZZ …"[iv]

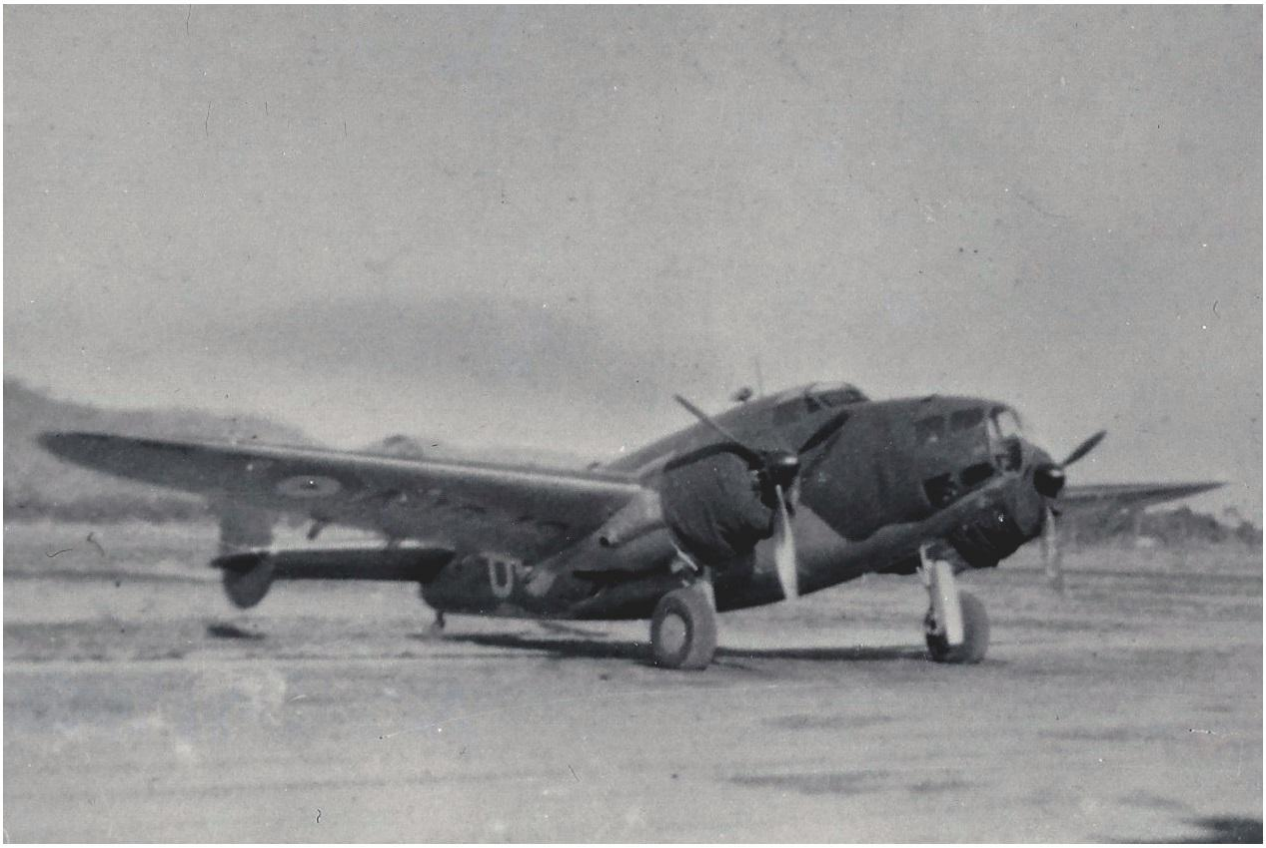
As a matter of interest, at the Atlantic City conference of 1947, a further block (AXA – AXZ) was allocated to Australia.[v] These allocations from 1927, 1938 and 1947 (AXA – AXZ, VHA – VNZ and VZA – VZZ) are still in force in 2016. RAAF International call signs immediately prior to the outbreak of war in September, 1939, were:[vi]

RAAF Station	**Fixed Station Call Sign**	**Mobile Station Call Signs**	**Aircraft Call Signs**	**Remarks**
Air Force Headquarters, Melbourne, Vic.	VJR			
Point Cook, Vic.	VJS	VJS2 to VJS9	VMZAB VMZEC VMZAC VMZED VMZAP VMZEE VMZAQ VMZEF VMZEA VMZEG VMZEB VMZEH	
Laverton, Vic.	VJP	VJP2 to VJP9	VMZAR VMZAD VMZAS VMZBL VMZAW VMZBM VMZAX VMZBN VMZAY VMZBO VMZAZ VMZBP	VMZAD ex A11-1
Richmond, NSW.	VJT	VJT2 to VJT9	VMZAG VMZBQ VMZAH VMZBR VMZAI VMZBS VMZAT VMZBT VMZAU VMZBU VMZBA VMZBV	
Pearce, WA.	VKE	VKE2 to VKE9	VMZBB VMZBW VMZBC VMZBX VMZBD VMZBY VMZBE VMZBZ	
Darwin, NT.	VMO	VMO2 to VMO9	VMZCA VMZCE VMZCB VMZCF VMZCC VMZCG VMZCD VMZCH	
Townsville, Qld.	VMF	VMF2 to VMF9	VMZCI VMZCK VMZCJ VMZCL	
Brisbane, Qld. (Archerfield)	VMG	VMG2 to VMG9	VMZCM VMZCO VMZCN VMZCP	
Lake Macquarie, NSW. (Rathmines)	VML	VML2 to VML9	VMZCQ VMZCT VMZCR VMZCU VMZCS VMZCV	
Canberra, ACT.	VMC	VMC2 to VMC9	VMZCW VMZDC VMZCX VMZDD VMZCY VMZDE VMZCZ VMZDF VMZDA VMZDG VMZDB VMZDH	
Unspecified additional Station.			VMZDO VMZDU VMZDP VMZDV VMZDQ VMZDW VMZDR VMZDX VMZDS VMZDY VMZDT VMZDZ	
Wagga, NSW.	VMQ	VMQ2 to VMQ9		
Port Moresby, TPNG.	VMP	VMP2 to VMP9		
All 1 Group	VMA			
1 Group Headquarters	VMD			
1 Armament Training Camp	VME			
All 2 Group	VMB			
2 Group Headquarters	VMK			
2 Armament Training Camp	VMM			
Spare	VMN			
Miscellaneous	VKF		VMZAA	

On 13th July, 1940, the Department of Air requested the entire 5-letter aircraft-station block of international call signs from VMZAA to VMZZZ be allocated to the RAAF and that 50 3-letter call signs for RAAF ground stations also be reserved.[vii] The 5-letter block of call signs was allocated to the RAAF by the Postmaster General's Department on 25th July as requested, but the reservation of the 50 fixed station call signs was not, although alternative arrangements were being looked into to facilitate the request by some other means.[viii]

It should be noted that, with the exception of two survey aircraft and those that were deployed at sea, the RAAF did not allocate international aircraft-station call signs to specific aircraft, but to bases, with aircraft temporarily acquiring a call sign on an as required basis (see also the Allotment Statement of September 23rd, 1937, above). An example of this temporary allocation in practice was the ferrying of four 24 Squadron Hudson's, which had been on temporary duty with 7 Squadron at Laverton, to Townsville during late October, 1940.

The four aircraft involved were A16-91 (which was allocated the international aircraft-station call sign VMZCI), A16-39 (VMZCJ), A16-16 (VMZCK) and A16-13 (VMZCL). As can be seen from the table above, these were call signs permanently allocated to Townsville and where available for use by any RAAF aircraft operating from there.*(Pictured below:* ***A16-13*** VMZCL *of 24Sqn RAAF at Garbutt Qld)*



From November 14th, 1940, wide spread changes to many fixed land-based radio stations commenced with the change from normal 3-letter international call signs to 4-letter ship-station type international call signs commencing with the civilian aeronautical Aeradio network:

> *As from Thursday 14 NOV [the] following alterations [to] commercial callsigns [of] Aeradio stations are to come into force. Second letter of callsign to be Z for Zebra instead of H. Broome changed from VIO to VZBR. Geraldton changed from VIN to VZGN. Wyndham VIW to VZWM. Rabaul VJZ to VZRB. Flinders Island VIL to VZFI. King Island VIK to VZKI. Reorganisation [of] commercial callsigns [for] RAAF aircraft also to come into force [on the] above date.*[ix]

By 6th March, 1941, further changes, similar to those referred to above, were approved by the Postmaster General's Department in accordance with a proposal dated March 4th from the Department of Air[x] in which the RAAF was allocated the entire 4-letter ship-station type international call sign block VNAA to VNZZ with the proviso that they be assigned to fixed stations only.[xi]

By the end of November, the army had also received new call sign allocations, receiving the 3-letter fixed land-station block VMA to VMZ (except VMJ – already allocated; VMS – could possibly be confused with SOS if transmitted quickly; and VMZ – which the army voluntarily chose not to use so as to avoid any possibility of confusion with RAAF aircraft stations) and the four-letter ship-station style block VMXA to VMXZ.[xii]

The Department of Air advised that it had decided to relinquish all 3-letter fixed-station type international call signs previously assigned for use by the air force with effect 10th March, 1941.[xiii] Curiously though, some six months later, the Department of Air belatedly sought (and received) confirmation from the Postmaster General's Department that the three-letter call sign blocks VNA to VNZ and VZA to VZZ had been retained for RAAF use.[xiv]

The United States Army also received Australian five-letter aircraft-station international call signs, with 100 being allotted for allocation to US aircraft from the RAAF's VMZAA to VMZZZ series on 17th March, 1942. Those blocks allotted being:

(a) VMZOG to VMZOU (except ZOM, N and O),
(b) VMZPD to VMZPL,
(c) VMZQD to VMZQP (except ZQM, N and O),
(d) VMZRE to VMZRX (except ZRM, N and O),
(e) VMZTD to VMZTZ (except ZTJ, K, L, M, N and O),
(f) VMZUD to VMZUZ (except ZUS, T, U, V, W and X), and
(g) VMZVB to VMZVZ (except ZVI, J, K, L, M, N and Y).[xv]

Extra five-letter aircraft-station call signs were required by the RAAF and accordingly, the block VMYAA to VMYZZ was allotted on 24th March, 1942.[xvi]

The US Army Air Force also received small allocations from that block. Some examples being:

(a)	3rd BG	VMYHK
(b)	8th BS	VMYTS
(c)	89th BS	VMYHNxvii

As we have seen – pre-war – it was RAAF policy to allocate five-letter aircraft-station call signs to bases. Transport aircraft aside, at some point during the Second World War (perhaps during the large scale alternations during late 1940 and early 1941, but probably more likely during 1942), that policy seems to have been altered to also include the allocation of aircraft-station call signs to units. It is from this type of allocation that *six*-letter aircraft-station call signs appear. By way of an example, Number 13 Squadron's allocation seems to have been VMZFM – the squadron had it during 1942 and was still using it during 1945; a period during which several changes of base occurred. An aircraft from that squadron, when the need to use its international call sign arose, would use VMZFM plus the aircraft's individual identification letter. So aircraft "A" from 13 Squadron would become VMZFMA.
Fast forward to February, 1945, and the Royal Navy Fleet Air Arm received the block VJAAA to VJAAZ,[xviii] for use by 724 Squadron[xix] and the Royal Air Force received the block VMYAA to VMYZZ,[xx] for use by RAF Transport Command[xxi] (238 Squadron, 243 Squadron and 1315 Flight).

During mid-April, 1945, a new Appendix "A" was drafted (and minor alterations approved) for the forthcoming new edition of AOU101 *Commercial Call Signs* being AOU 101/3. Whilst AOU 101/2 seems to be extinct, it is believed that paragraph 3 of the new appendix "A", was a change from the superseded edition and was a reversion to pre-war RAAF practice. In it, it said: "Call signs in this publication are allotted to <u>locations</u> and not to units."[xxii]

The use of four-letter ship-station type call signs for RAAF land stations and six-letter aircraft-station call signs seems to have quickly evaporated with the end of hostilities. Stations were closed and squadrons disbanded and most, if not all, of these types of call signs had become extinct in the RAAF by the end of 1946.

So there you have it. A brief introduction to international call signs. Shep

Next Issue: **Dutch International Call Signs NEI Aircraft in Australia 1946"** Garry Shepherdson @2016

SILVER TO GREY – RAAF AIRCRAFT MARKINGS SINCE 1950

John Bennett 2016

The last year of WWII had seen RAAF aircraft largely stripped of camouflaged finishes back to bare metal, as Ian Baker has covered in his *Aviation History Colouring Book* #35 – "Into the Silver Years". The immediate Cold War period saw the RAAF remaining ready for operations during the period of the "interim air force", with deployment to the Berlin Airlift and the Korean War.

To generalise RAAF aircraft finishes, I have broken the seven decades from 1950 into three distinct periods which have largely been determined by the RAAF's operational tempo. Again, I have relied on the image library of *adf-serials*, so thank you to all those who have contributed imagery.

"ON SILVER WINGS" Silver and High Viz Finish (1950–1963)

During the 1950s, the RAAF was involved in several conflicts and long-term overseas deployment. These were 91 Wing (77 Sqn Meteors and C-47s) based in Korea and Japan; 78 Wing (75 and 76 Sqns Vampires) based in Malta; 1 Sqn (Lincolns) in Singapore; and at the end of these commitments the Sabres of 78 Wing (3 and 77 Sqn) together with 2 Sqn Canberras were deployed to the new RAAF base at Butterworth in Malaysia.

RAAF aircraft during the 1950s into the first half of the 1960s were invariably finished in overall silver or aluminium, which was largely the bare metal construction of the aircraft. However, often aluminium doping was applied for protection against corrosion, and in some instances for the integrity of the wood or fabric of the airframe or control surfaces – primarily on trainers, and the Mosquito and Vampire were obvious examples. Colours used in the general finish of aircraft over this period are listed below.

Colour	Silver	Silver	Yellow	Black
Designator	Enamel Cellulose Aluminium K3/162	Dope Finishing Cellulose Aluminium K3/168	Yellow BS1-356 K3/185	Black Glossy K3/344
Purpose	general finish	general finish	training band	serial number

From the latter half of the 1950s there were colourful squadron markings – which will be covered in future instalments – but this overall silver/aluminium policy applied across the RAAF with high visibility yellow training bands and later "dayglo" orange markings, with some exceptions covered below.

- Fighters – Mustangs, Vampires, Meteors, Sabres, Mirages all overall silver;
- Bombers – Lincolns, then Canberras until camouflaging in lightish green/grey commenced over 1963-64;
- Transports – C-47 Dakotas, Freighters and C-130 Hercules silver but with "dayglo" panels (Federal Standard FS38915) from the late 1950s and deleted from C-130s approx 1965;
- Maritime – Lincoln silver; P2V-5 Neptune dark "midnight blue" from delivery in 1951; P2V-7 dark grey from delivery in 1962 (with all Neptunes changing to gloss light grey from 1964);
- Trainers – Tiger Moths, Wirraways, Winjeels, Vampires, all overall silver with yellow training bands, later replaced by "dayglo" orange high visibility panels;
- Helicopters – S-51 and Sycamore support helos overall silver; first UH-1B Iroquois delivered for SAR overall silver until changed in 1963 to olive green for the new battlefield support role;
- Army Coop – Austers, Cessna 180s, Bell Sioux overall olive green;
- Antarctic – Austers and Beavers in varying shades of yellow and orange;
- Test aircraft – traditionally had carried the "P" prototype markings, Sabre A94-946 and A94-881 at ARDU had reddish panels c1960 for Sidewinder trials, some range support aircraft at ATU overall white.

Newly delivered Meteors 77 Squadron in Iwakuni Japan 1951 shows the prevalent overall silver

Silver 10 Squadron Lincoln MR.31 and Winjeel at RAAF Townsville

Canberra T.4 A84-502 trainer served in 2 Squadron over 1956-1957

A20-644 Wirraway trainer at Point Cook in 1956 with the standard yellow training bands

The change in trainer colours shown by the CA-25 Winjeel

The C-47B Dakota – the standard transporter of the 1950-60s – showing the addition of "dayglow"

Convair 440 Metropolitan A96-313 served as a VIP transport over 1956-1968

Orange Antarctic aircraft c1956 – the "two -201s", Auster A11-201 and Beaver A95-201

The first attempts at camouflage 1963-1964 – Canberra A84-230 of 1 Squadron, light grey/green upper surfaces, silver undersides with large main plane roundels, and large white serial numbers

“A STORY OF COLOURS”, SILVER TO CAMOUFLAGE – Bell UH-1B Iroquois A2-384

A2-384 was the RAAF’s first Iroquois delivered in October 1962. This original batch of eight helicopters had been ordered for search and rescue and this lead aircraft was accordingly marked with “RAAF RESCUE” on the fuselage and with “dayglow” panels on the undersides and the tail. Almost immediately the role of the Iroquois changed to battlefield support with insurgency actions in Malaysia and soon after in South Vietnam. This role change resulted in camouflage colours – a gloss olive green. A2-384 was hastily changed and all other Iroquois of this batch, and indeed all future deliveries, were in the olive scheme. A2-384 was our only silver “Huey”.

Iroquois side markings became “RAAF” – toned down in Vietnam – which in the 1970s was changed to “AIR FORCE”. While later Iroquois were camouflaged tan/green, the Bravos remained gloss olive, when in service.

“LET’S GET TACTICAL” Camouflage Tactical Finish (1963–1990)

As Australia entered the Vietnam War, the trend for marking most aircraft was away from overall silver, for various reasons depending on role and disposition, to camouflage schemes. Accompanying the camouflaging of aircraft was a reduction in the size of roundels, and in some cases removal of roundels altogether from main planes. The Vietnam deployment involved 2 Sqn Canberras, 9 Sqn Iroquois, and 35 Sqn Caribous, plus Army aviation assets. These deployed units were supported by the transport fleet, while maritime patrol aircraft supported RAN movements.

- Fighters – Sabres, Mirages all overall silver, until green/grey camouflage for the Mirage in 1967 and later air superiority grey from 1985; Hornets delivered from 1986 in air superiority grey;
- Bombers – Canberras upper main plane roundels deleted 1965 and a darker green/grey camouflage from approx 1966; three-colour green/tan USAF southeast Asian camouflage on the F-4E from 1970 and F-111C from 1973;
- Transports – Caribou delivered from 1964 in overall gloss olive green and later various tactical camouflage schemes, and also white for UN commitments; C-130A Hercules silver with orange “dayglo” on fin, deleted approx 1965, C-130E silver from 1966 and changed to light grey/white in 1978; C-130H delivered in gloss “US Europe” camouflage in 1978 (later changed to a matt scheme);
- Maritime – SP-2H (P2V-7) Neptune gloss Light Gull Grey from 1964 which then conformed with P-3B/C Orion aircraft from 1968 onwards;
- Trainers – Winjeels and Vampires still overall silver with “dayglo” panels; Macchis overall silver until orange/white scheme from 1972, and later grey/green camouflage for fighter lead-in training; CT-4s in green/yellow scheme from 1975 until changed to the orange/white “fantail can” scheme from 1982; PC-9 similar orange/white from 1987 until adopting the red overall “Roulettes” scheme across the fleet;
- Helicopters – Iroquois battlefield support role delivered in gloss olive green, green/tan cam adopted in c1976, but overall white for UN Sinai deployments over 1976-79 (UNEF) and 1982-85 (MFO); CH-47C Chinook delivered in US Army brown drab in 1974 then several colour changes such as white upper surfaces and two-tone green/tan camouflage;
- Army Aviation – Cessna 180s, Porters, Bell Sioux, Kiowas and Nomads overall gloss olive green, in some cases with orange “dayglo”; Porters, Kiowas and Nomads in the 1980s with the new standard Army three-tone green/tan/black camouflage;
- Test aircraft – the Mirage test green/yellow replaced by the trainer orange/white scheme; the test F-111C A8-132 with a white fuselage and camouflaged upper surfaces.

A84-228 Canberra of 2 Squadron Vietnam in 1969 in the darker camouflage and no wing roundels

TACTICAL SCHEMES 1963 to 1990

Two international colours standards are used: British Standard BS381C colours, or US Federal Standard 595a 'FS' specifications. The FS colour names confusingly vary.

Decoding FS number specifications:

- comprises five digits: the first is '1' for gloss, '2' for semi-gloss, '3' for matt;
- the second number is '0' shades of brown, '4' greens, '5' blues, '6' greys (or US spelling, 'grays').

Aircraft Type	Scheme and Colours	Period	Remarks
SP-2E Neptune	*Midnight Blue* FS35042 'Sea Blue', changed from 1964 to FS36440 'Light Gull Gray' with white upper	1963-1968	replaced by P-3B Orion in 1968 in FS36440 'Lt Gull Gray' and white upper fuselage
SP-2H Neptune	*Gull Gray* FS36231 'Dark Gull Gray', changed from 1964 to FS36440 'Light Gull Gray' with white upper fuselage	1963-1978	replaced by P-3C Orion in 1978 also in FS36440 'Lt Gull Gray' and white upper fuselage
UH-1B/H Iroquois	*Glossy Olive Green* FS14084 'Glossy Olive Drab' FS17875 'Glossy White'	1963-1976	gloss with white roof prior to Vietnam service; 1976 changed on UH-1H to two-tone tan/green; UH-1B retained original scheme until 1989
UH-1H	*Two-tone matt camouflage* FS30219 'Tan' FS34102 'Light Green' or FS34082 'Olive Green'	1976-1990	'Light Green' sometimes referred to as 'Forest Green'; F-111C camouflage colours provided by 3 Aircraft Depot
Canberra	*RAAF grey/green* BS381C 640 'Extra Dark Sea Grey' BS381C 298 'Olive Drab'	1967-1983	'Dark Sea Grey' undersides replaced earlier silver and light grey; no main plane roundels; trainers silver with white upper fuselage
Mirage	*RAAF grey/green 'Lizard'* BS381C 638 'Dark Sea Grey' BS381C 298 'Olive Drab' BS381C 627 'Lt Aircraft Grey'	1967-1984	roundels on light grey undersurfaces; replaced by Dark Sea Grey and no undersurface roundels
Mirage	*Air superiority grey* FS36491 'Gray' poss	1984-1988	air superiority greys TBD
F-4E Phantom	*USAF South-East Asian* FS30219 'Tan' FS34079 'Leaf Green' FS34102 'Light Green' FS36622 'Light Gray'	1970-1973	the dark green also given as 'FS34078 'Shadow Green'; 'Light Green' also referred to as 'Olive Green' and 'Forest Green'; aircraft on lease and retained USAF colours
F/RF-111C	*USAF South-East Asian* FS30219 'Tan'	1973-1993	'Black' replaced the earlier FS36622 'Light Gray' on undersides, when aircraft were stored in the US 196873;

	FS34079 'Leaf Green' FS34102 'Light Green' FS37038 'Black'		this scheme later replaced by all-over FS36118 'Gunship Gray'
CH-47C Chinook	*US Army Olive Drab* FS34087/34088	1974-1980	white upper fuselage added 1977
CH-47C	*Two-tone matt camouflage* FS30219 'Tan' FS34102 'Forest Green'	1979-1989	same scheme as UH-1H, retired from service 1989
Army aircraft: Porter Kiowa Nomad	*Glossy Olive Green* FS14084 'Glossy Olive Drab'	1968 1971 1975	all changed to Army three-tone scheme from 1984
Army aircraft: Porter Kiowa Nomad	*Three-tone Army scheme* FS30219 'Tan' FS34102 'Light Green' FS37038 'Black'	1984	until withdrawn from service: Porter 1992, Nomad 1995, Kiowa in service
C-130H Hercules	Similar to *USAF European I*, but gloss, tan instead of grey FS14092 'Dark Green' FS14102 'Forest Green' FS10219 'Tan' FS16622 'Light Gray'	1978-1986	'Forest Green' in addition to being 'Olive Green' also known as 'Medium Green'; light grey undersides
C-130H Hercules	Similar colours but matt wrap-around: FS34092 'Dark Green' FS34102 'Forest Green' FS30219 'Tan'	1986-1990	this matt, wrap-around scheme then replaced by toned-down low-viz grey
F/A-18A/B Hornet	*US Navy Air Superiority* FS36492 'Gray' FS 36485 'Light Gray'	1985-present	

Other notes:

1. FS colours are designated by the 5-digit code the name descriptors change and may apply to several tones of colour, such as 'Tan' and 'Olive Drab'.
2. Canberra Mk 21 trainers remained silver with white upper fuselage until 1983.
3. C-130A/E all-over silver until 1978; C-130E gloss grey with white upper fuselage from 1978; C-130A replaced by C-130H in gloss camouflage 1978.
4. In 1990s, some Army Iroquois (transferred from RAAF over 1989-90) to all-over red for Bougainville Operation *'Bel Isi'* deployment, e.g. A2-649.
5. Exceptions for test aircraft: Mirage aircraft at ARDU were green/yellow overall, replaced by orange/white; test F-111C A8-132 camouflage upper surfaces with white sides and under surfaces.
6. Generally from 1990 onwards, the trend was to low-visibility ("low-viz") shades of grey.
7. Range support aircraft all-over white scheme – DHC-3 Otter (1961-67) and Allouette III helicopters (1964-67), same as that of the earlier DHC-2 Beaver (1958-1961).

35 SQN Vung Tau, Vietnam 1970, shows A4-140 in gloss olive green overall (the original delivery scheme) and A4-159 in American camouflage (as the USAF serviced the Caribous in Thailand) – note fuselage roundels are reduced in diameter and there are no underwing national markings

A2-377 of 9 SQN Vietnam, a UH-1H "Bushranger", in olive green and black kangaroo 'roundels'

SP-2E (P2V-5F) Neptune A89-309 with the gloss light grey that replaced midnight blue from 1965

Mirage A3-2 in the various test marking schemes

“TONED-DOWN , SO YOU WON’T SEE ME” Low-visibility Finish (1990–present)

With Australia’s Middle East commitments increasing in 1990 prior to Gulf War 1, maritime and transport became more involved on operations than at any stage in the post-WWII era. This resulted in toned-down “low-viz” schemes for all aircraft. Toned-down is normally a matt grey with varying shades – fast jets are normally a lighter air superiority grey, and similar to tankers and AEW support aircraft, while transports could also be this light shade but more probably a dark “gunship grey”.

- Fighters – F/A-18A Hornet air superiority grey; and the same for F-35A Lightning from 2018;
- Bombers – F-111C/G dark grey overall until withdrawn in 2010; F/A-18F Super Hornet air superiority grey;
- Transports – C-130H/J Hercules toned-down grey in various shades; Caribou various camouflage schemes until withdrawn in 2009; C-27J Spartan a dark almost greenish grey; C-17A dark grey;
- Maritime – P-3C from gloss light grey/white to overall matt toned-down light grey and serial numbers removed from aircraft; P-8A from 2017 overall gloss light grey;
- Special Mission – both AEW&C E-7A Wedgetail and KC-30A tankers are gloss light grey;
- Trainers – PC-9 and PC-21 overall red; PC-9 FAC and Hawk air superiority grey;
- Army Aviation – S-70A Blackhawk, MRH-90 Taipan and ARH Tiger in Army three-tone green/tan/black camouflage olive green; CH-47D/F Chinook standard US Army drab which has changed from a dark greenish/brown tone to a light tan.

C-17A airlifter A41-213 in a dark shade of grey, more apparent with the lighter KC-30 tanker (below)

Various camouflage schemes were tried with the Caribou – above A4-231 in 1986, and below on A4-236 the definitive shades-of-green carried in the 1990s until withdrawal from service in 2009

A47-001, the first P-8A for 11 Squadron, in gloss light grey

National Markings – Roundels

In the previous article on roundels, the introduction of the post-war "D"-type roundel was covered – known to the RAAF "National Marking I" and the fin flash as "National Marking II" – and this 5:3:1 roundel in gloss colours was introduced in January 1948.

Standard	British Standard BS 381C	1947 RAAF Designator K3	Remarks	Dulux Identifier	1948 RAAF Designator K3
Red	BS 381C-37 *Signal Red*	K3/235		*Bright Red* 388-5302	K3/346
White	no standard	K3/236		*White* 388-026	K3/242
Blue	BS 381C-4 *Azure Blue no.4*	K3/232	adding a "dash" of K3/231 *Black* produced *Royal Blue no.6*	*Royal Blue* 388-041	K3/343

Also in the previous article, the introduction of the kangaroo roundel was covered. Australia's new national marking from 1956 became the leaping kangaroo on the fuselage of RAAF aircraft – in all six positions on RAN aircraft – but RAAF delayed introduction to main planes until 1965. At the time of the introduction of the leaping kangaroo, the fuselage roundel sizes are given below in inches. Roundel diameters are consistent with the "D"-type 3:2:1 proportions.

Aircraft Type	Blue diameter	White diameter
Lincoln P2V Neptune 440 Metropolitan C-47 Dakota	48"	32"
Sabre Canberra Winjeel	33"	22"
Vampire	18"	12"

From the mid-1960s, as aircraft were tactically camouflaged, roundels were generally reduced in diameter on the fuselage, and discarded completely from the main planes. By this stage too, “pressure sensitive markings” – i.e. transfers or decals – were being used for roundels and fin flashes. Of course two sets of decals were required, a left and a right, so that the kangaroo was always leaping forward!

C-130Hs in 1978, at the Lockheed factory acceptance in Atlanta, with small kangaroo roundels

Later the roundel became toned-down grey, or black, when applied to operational aircraft from 1990. These examples are repeated from the kangaroo roundel article.

“Low-viz” kangaroos

C-27J A34-001 Spartan provides a good example of toned-down markings – black roundel and no fin flash, black 35 Squadron marking across the tail, other detailing in black

Below are two interesting examples of the kangaroo roundel on the Mirage. A3-1 shows the original roundel positioned over the intake suction relief door, which when opened made the kangaroo disappear! In 1965 this was rectified by a smaller roundel moved closer to the intake, as shown on 75 Squadron's A3-15. This then became the standard Mirage roundel position.

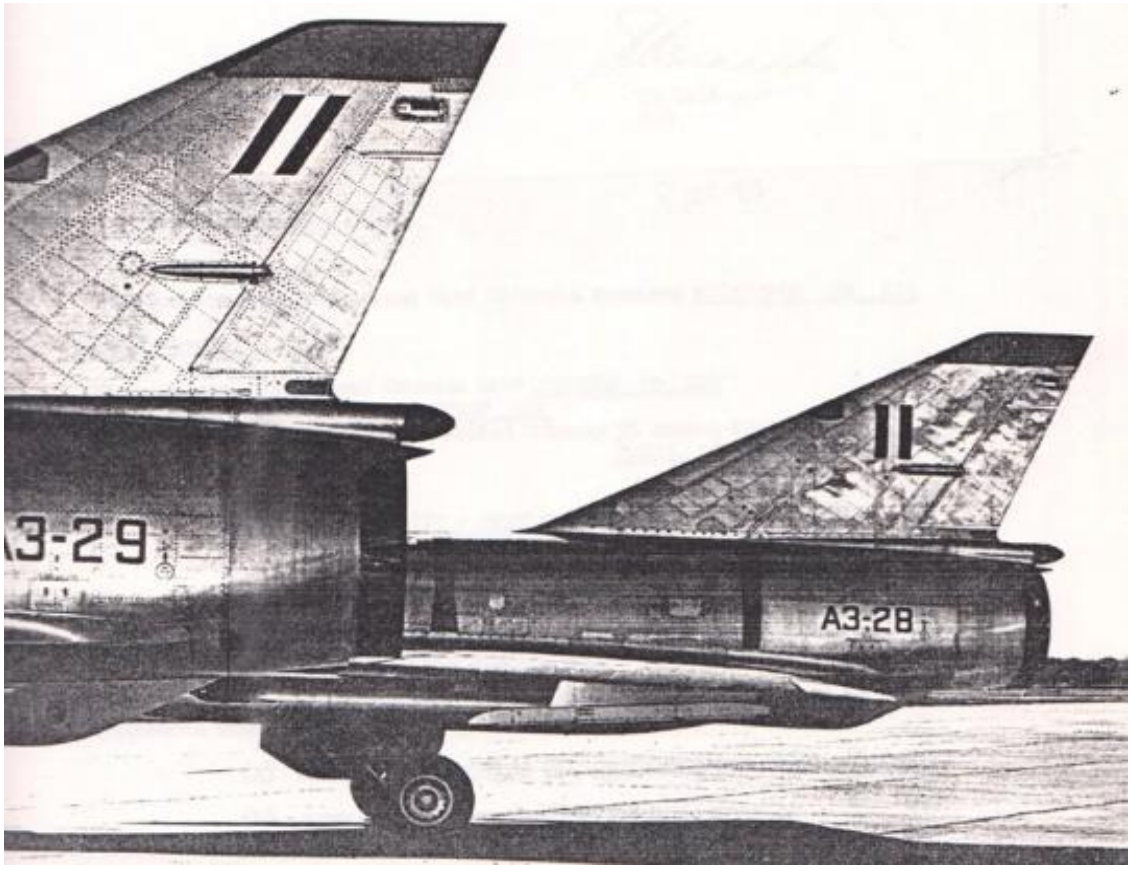
National Markings – Fin Flashes

So as not to confuse readers, the fin flash is the tricolour national marking on the fin of an aircraft – it is not the squadron marking that colourfully adorns the tail of an aircraft. The flash is marked on the fin, at the base or higher up the vertical surface, but it does not impinge onto the rudder. Often squadron markings do.

Fin flashes, or tail striping, had undergone subtle changes in the 1960s, and eventually the policy of having this form of national tail marking was totally reconsidered, with the abolition of a tail national marking on toned-down aircraft completely in the 1990s.

Fin flashes had been a consequence of the "rudder striping" national markings of WWI. Initially British aircraft carried the red/white/blue stripes on the rudder, with blue on the leading edge against the rudder post. The RAF reversed this order of colours (i.e. so that red was forward) in August 1930, followed by the RAAF at the beginning of 1931. Rudder striping was then abandoned altogether from 1934, as improved aircraft performance demanded smoother control surfaces free of paint. Similarly from 1935, roundel sizes on the wings had been reduced so as not to overlap control surfaces. Fin flashes were introduced to RAAF aircraft in the early WWII years, and the colours were matched to the roundels (as described in the previous article on roundels), whether they be A-, B- or C-type roundels. When the RAAF introduced its blue/white roundel from late 1942, the fin flash was similarly blue/white (with white leading). As the red/white/blue D-type roundel was introduced from January 1948, the corresponding red/white/blue fin flash (with red leading) was applied.

Since its reintroduction to the RAAF, the tricolour red/white/blue fin flash has undergone several changes. The three colours have always been equal in width but with varying height and positioning on the fin. The image below of Mirages in July 1966 below, shows the introduction of the swept fin flash on fighter aircraft. This was initially applied across the fighter fleet to Mirage and Sabre aircraft, and later to the Macchi, Hornet and Hawk.



The C-130 carried a broad tricolour at the base of its fin, often mistaken for a French flag! This raised the question – why is the marking carried, what purpose is it serving? As a previous picture shows, the flash was carried by the silver C-130A, and the silver and grey/white C-130E. But with delivery of the camouflaged C-130H in 1978 (and a later matt finish is shown) the flash had been discarded. Similarly the toned-down C-130J is not marked with a fin flash – sanity prevailed! The F-111 also went through losing the fin flash when colours were changed in the 1990s from green/tan camouflage to overall grey.

A8-291, like all F-111Gs, was delivered in an overall dark grey scheme in 1993 and existing F-111Cs were changed from this time – now all aircraft types delivered in grey schemes have no fin flashes

Squadron Markings

The bland overall silver finish to aircraft encouraged the application of colourful squadron markings, particularly flamboyant for the fighter units. These will be covered and illustrated in detail in future articles in this series. But to whet appetites, here are two examples.

Silver finished Sabres of 78 Wing at Butterworth in 1960 – 3 and 77 Squadrons

This 1974 Mirage image below, shows the variety of colours of unit markings on the sleak "French lady" – 77 Squadron, then 3, 76, 75, 2OCU and ARDU.

Aerobatic Teams

The various fighter squadron aerobatic teams (with Meteors, Sabres and Mirages) will be covered under the future squadron marking instalments. However, some teams such as the Red Sales, Telstars and Roulettes have used their normal CFS Vampires and Macchis to constitute their teams. With the introduction of the PC-9, the Roulettes received the distinctive all-over red scheme - which was then introduced on all RAAF PC-9s to replace the previous orange/white trainer colours. It appears the PC-21 is being delivered in a similar red scheme, and it remains to be seen whether the Roulettes will once again adopt a unique aerobatic team scheme.

Individual Nose Art

77 Squadron Meteors in the Korean War over the 1951-54 period introduced a wide selection of nose art, typically selected and named by the squadron pilots.

A77-316 *Korean Kid*

A77-unknown *Bowl 'Em Over*

A77-unknown *Blue Ribbon*

A77-851 *Halestorm*

A77-853 *No Sweat*

A77-853 *Robyn*

Above: Examples of 77 Squadron Meteor nose art over 1951-54

1 Squadron Lincolns during the Malayan Emergency over 1950-58, flying from Singapore, were less flamboyant than the fighters, with markings restricted to a 1 Squadron badge aft of the nose glazing, bomb markings below the cockpit denoting operational missions, and red propeller spinners.

A73-41 1 Squadron Lincoln B.30 with operational bomb missions marked during Operation *Firedog*

This type of bombing mission markings was also used on 2 Squadron Canberras in Vietnam from 1967, but had been discontinued by 1969. It was not until Australia's involvement in the Middle East and later Afghanistan that imaginative and prolific, and *risque*, nose markings resurfaced – primarily on Hercules and Chinooks. While the C-130H/J art was somewhat amateurish, the CH-47D had particularly tasteful artwork,

similar to the 'Vargas Girls' of the 1950s-60s era – and it is hard to imagine that anyone would object to these, even in this current time of political correctness!

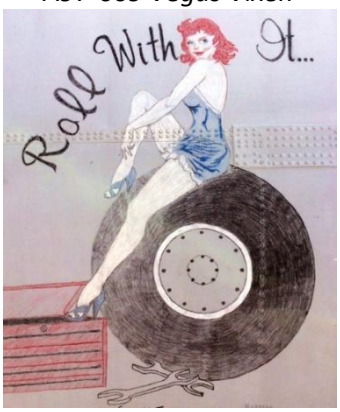
A97-004 *Rain Maker*

A97-006 *Miss Behavin*

A97-009 *Vegas Vixen*

A97-440 *Longer Harder Faster*

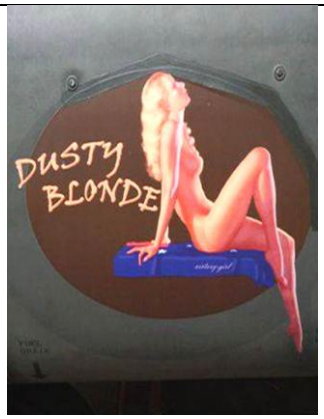
A97-442 *High Maintenance*



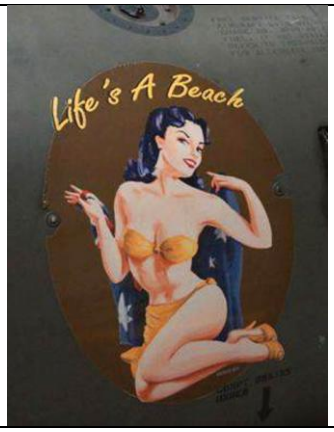
A97-447 *Roll With It*

Examples of RAAF Middle East C-130H/J nose art during the 2000s

A15-102 *Naughty 'N' Nice*



A15-104 *Dusty Blonde*



A15-106 *Life's A Beach*

A15-152 *Silky Smooth*

A15-201 *Rough'N Reddy*

A15-202 *Good As Gold*

Examples of professionally tasteful 5 AVN REGT CH-47D 'Vargas Girl'-inspired Chinook art in 2009

More conventional peacetime markings are used for Squadron anniversaries and the fighter force, in particular, have painted their aircraft in appropriate commemorative colours (to be covered more under the squadron marking instalments). Below are some special mission aircraft in recent anniversary colours.

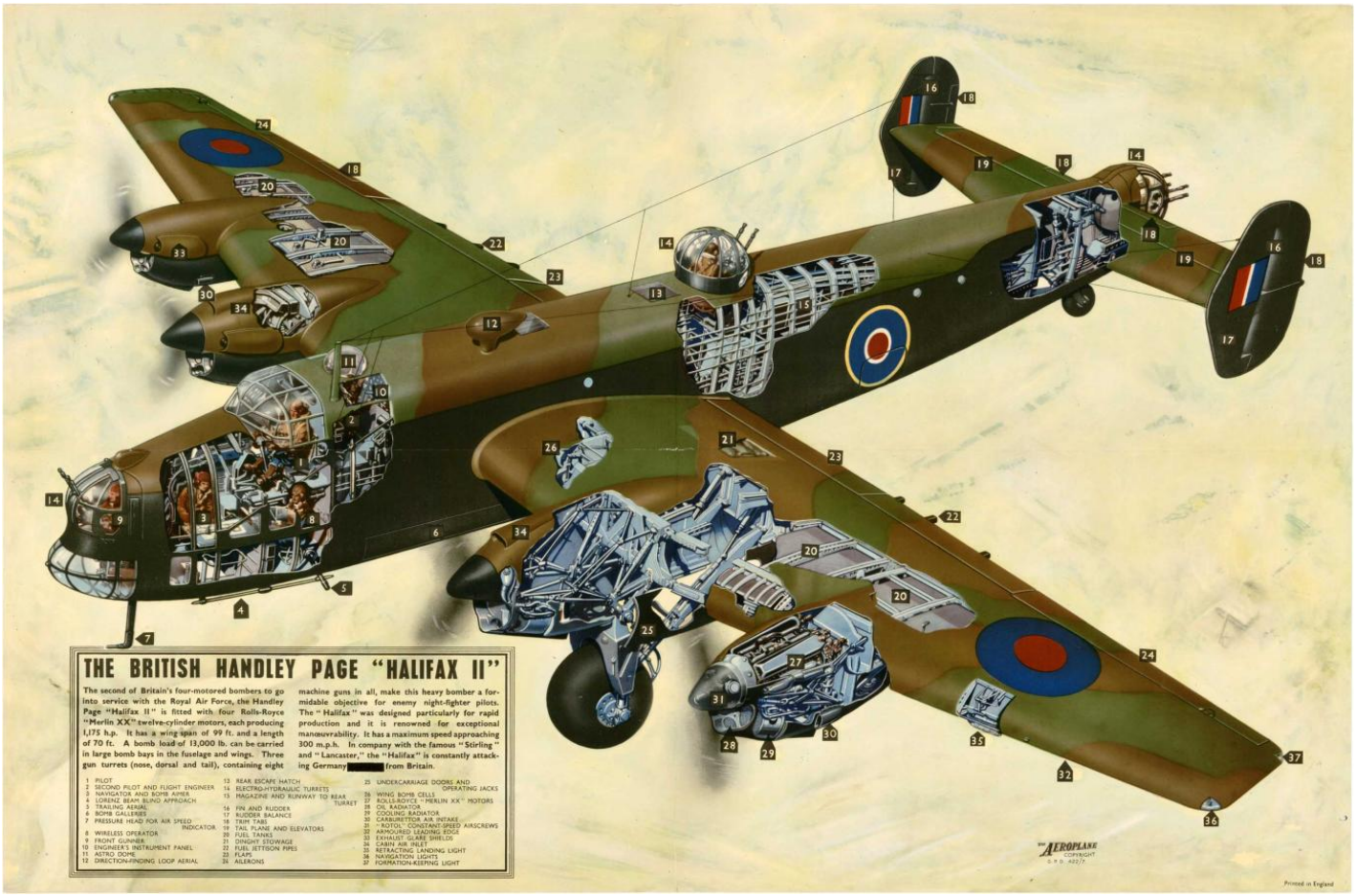
E-7A Wedgetail 2 SQN 100th anniversary 2016

AP-3C Orion, 10 and 11 SQN 75th in 2014

The 70th anniversary F/A-18 Hornet of 77 SQN in 2012 showed tradition – incorporating the green/white checks of 77 SQN Meteors and Sabres, and 'grumpy monkey' shield of the Mirage

In RAAF (RAF)Service: Handy Page Halifax Bomber; a Slice of RAAF EW History.

Gordon R Birkett@2016



The Handley Page HP.57 Halifax, following its first flight on 25th October, 1939, was the second of the RAF's four-engine heavy bombers to enter service (about three months after the Stirling) on November 1940. The HP.57 Halifax was made in numerous versions, the most numerous being the Mk. I and II with 2,050 produced. Halifax MK1s also proved reluctant to exceed 18000 feet when loaded, and thus, when approaching targets they were very vulnerable to AAA.

Five months later, with 35 Sqn RAF, the type made its operational debut during an attack on Le Havre on the night of the 11th and 12th March 1941, with six aircraft. They were supported with eight Blenheim Fighter-bombers. Sadly, being a new and secret type, the one and only casualty, was lost on return when it was shot down by a RAF Night Fighter, whose pilot was totally unfamiliar with the twin tail type since the only known RAF four engine Bomber at that time, was the Short Stirling, with a single fin.

The Mk. I Halifax heavy bomber carried a crew of seven (pilot, engineer, bomb aimer/observer, navigator, wireless operator, mid-upper gunner and tail-gunner). It was powered by four Rolls-Royce Merlin X engines each generating 1,280 hp using three-bladed, variable pitch, metal propellers. It had a maximum speed of 265 mph (426 km/h) at 17,500 ft (5,300 m), with a ceiling of 22,800 ft (6,950 m) and a range of 1,860 miles (3,000 km). It carried six 0.303 in. machine guns, two in the mid-upper position and four in the tail turret. It was capable of hauling 13,000 lbs (5,890 kg) of bombs or mines.

Unfortunately, the Halifax Mk. I had a serious flaw in the design of its tail structure that caused it to go into a rapid, uncontrollable spin if it was flung about the air too much. This undoubtedly caused a number of fatal crashes.

The design of the tail structure was changed in the Mk. II and III versions. The Mk. II had more powerful Merlin engines, a single Vickers K machine gun for the bomb aimer and a redesigned tail structure that improved handling

characteristics considerably. The Mk. III was the second major production variant. It had a radical change in engine, with the Merlin being replaced by the Bristol Hercules XVI air-cooled engines, each developing 1,615 hp.

At the time Merlin engines were in great demand and the AVRO Lancaster with Bristol engines proved to be underpowered, so it got the Merlins and the Halifaxes got the Bristols. These proved to be far superior to the Mk. I's performance.

A total of 2,060 Mk. IIIs were produced from February 1944 to the war's end. Mk. VI and VII versions were completed at the war's end with more powerful engines and longer range. The Halifax was primarily a night heavy bomber, but it was also used in Coastal Command to hunt U-boats as the Mk. V and for dropping paratroops. It was also used to ferry troops, as an air ambulance and a glider-tug.

In the night bomber role Halifaxes flew a total of 47069 sorties (night and day)against Germany, dropping more than 227,795 tonnes of bombs, compared to the Lancaster's 107085 sorties(night and day) with more than 618350 tonnes of bombs dropped.

Even so, the Halifax dropped more bombs than any other type, excluding the Lancaster, totals combined. Loss rate, some 2236 Halifaxes were lost compared to 3936 Lancaster Lost. At its operational peak, the Halifax Force consisted of 1500 aircraft in 35 line squadrons and Heavy Conversion Units.

The 1st RAAF (Electronic Warfare) prospective: No 462 Squadron(RAAF Article XV) RAF

The Unit was formed at Fayid in the Suez Canal Zone of Egypt on 7th September 1942, by the amalgamation of Nos 10/227 and 76/462 bomber squadrons and was the first Middle East Halifax squadron.

Tobruk was its first target on 8/9th September 1942 and thereafter its operational area was steadily widened to include, in addition to much of North Africa, Italy, Greece, Crete, the Dodecanese islands and Sicily.

Halifax B.MkII JN895 ZA-C, would go *Missing on a supply drop over Yugoslavia in 1944 with 1586 Flight RAF*

Early in 1944 they dropped leaflets on Greece, Crete, Rhodes, Leros and Samos and on the 3rd March,1944, it was re-numbered No 614 Squadron RAF and given a Pathfinder role.

Reformed

On 12th August 1944, No 462 RAAF Squadron re-formed at Driffield, Yorkshire, as a heavy-bomber squadron in No. 4 Group. It was equipped with Halifax B.III aircraft and operated in the Main Force with No 466 RAAF Squadron , its sister unit at Driffield in both day and night ops, until 22nd December 1944, and was then screened from operations pending a move to Foulsham in No 100 (Bomber Support) Group.

It moved to Foulsham during the last few days of 1944 and began operations with No 100 Group on New Year's Day.

The original intention was to equip the squadron as a radio counter-measures unit with aircraft fitted with the latest W/T, R/T and radio equipment, the most important items of which were the ABC (Airborne Cigar) and the W/T jammer known as Carpet. These were HP.61 Halifax B.MkIII(BS) "Airborne Cigar" aircraft.

These Halifaxes were equipped with three(3) "Airborne Cigar" jamming transmitters, together with Carpet II and Pipe rack jammers and window. Two massive ABC Type 313 antenna masts were carried above the fuselage, and a further one under the forward fuselage.

ABC 's use was to affect the Luftwaffe Radio Transmissions for fighter control channels and against also certain Luftwaffe fighter aids, and required having on board a German speaking operator for effective operation.

ABC receiver whip antennas were placed in between the mid-upper Turret and the tail , on the top of the rear fuselage. Carpet II antennas were carried below the rear fuselage between the H2S Radom and tail wheel. Of the

eleven aircraft that were equipped with Pipe rack, these were installed as pairs on each wingtip, in pairs, above and below.

Halifax B.MkIII NA147 Z5-G *of 462Sqn RAAF*

The first HP.61 Halifax B.MkIII(BS) "Airborne Cigar" Aircraft arrived with 462 Sqn RAAF on the 15th February 1945.

HP.61 Halifax B.MkIII(BS) ABC "Airborne Cigar" equipped Aircraft: MZ913/G(Z5-N),"Jane", of 462Sqn RAAF which survived the war to be SOC in 1947. She was built by English Electric Co.

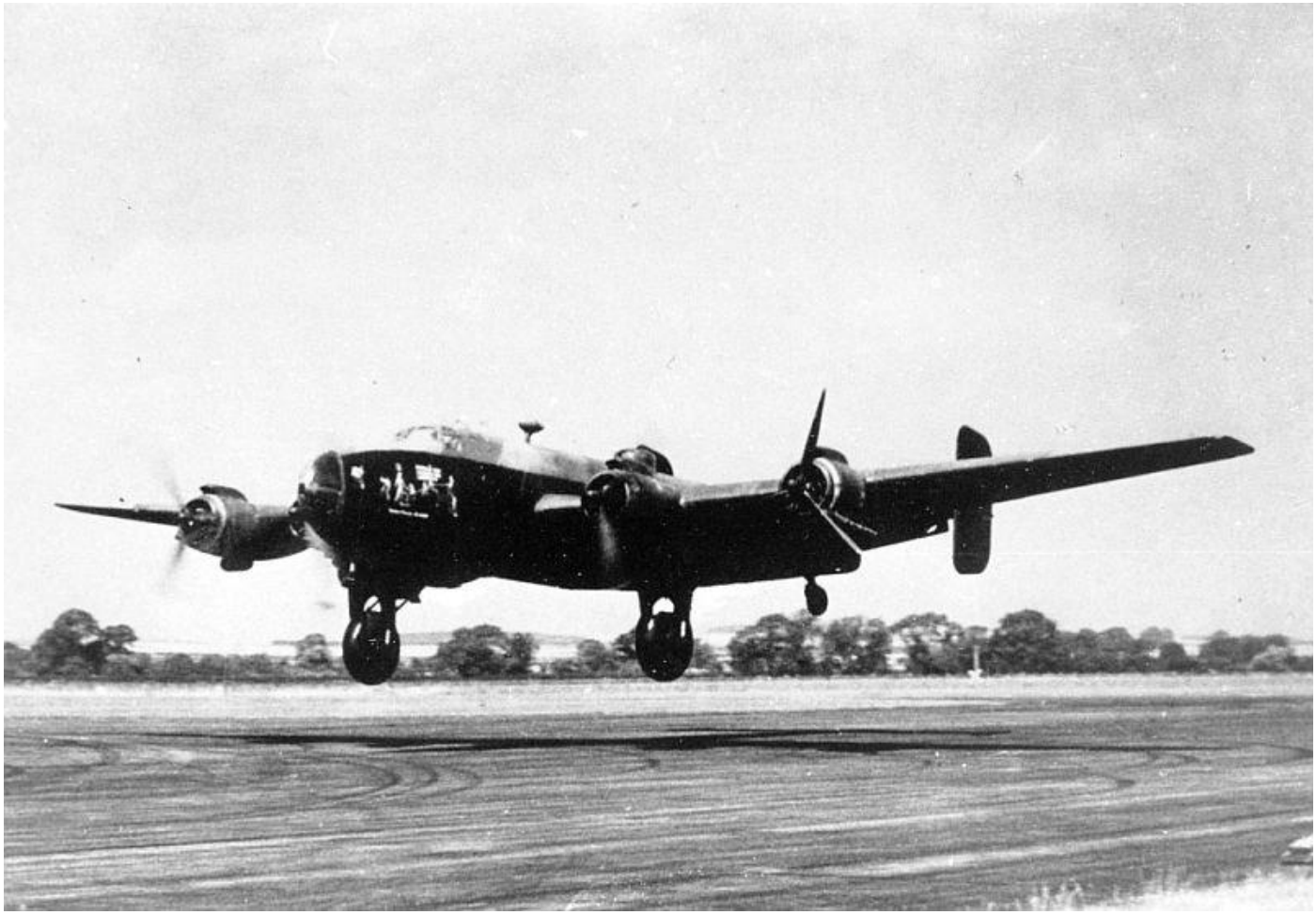
Window, bundles of aluminium foil cut to reflect certain Radar Wave lengths as spoofing , would be used to provide phantom bomber streams, whereupon to set up aerial ambushes by DH Mosquito Night Intruders on diverted/spoofed Luftwaffe night fighters. This would cause the Luftwaffe to leave the main bombing force to do their job.

It would be a month before the squadron's first serviceable ABC and Carpet jammer aircraft made its first operational sortie on 1800hrs 13th March 1945. It operated with the Special Window Force and dropped both bombs and Windows during these "Spoofs". Thereafter, ABC Halifaxes operated in small numbers continuously and the re-equipment of aircraft progressed steadily until at the end of hostilities in Europe. The last operation of 100 Group was on the night of the 2nd and 3rd May 1945 with some 86 aircraft involved. 462 Sqn RAAF contributed 10 Halifaxes which carried out Window and Bombing on the target; Flensburg.

All Special Duties Flight's eleven converted HP.61 Halifax B.MkIII(BS) "Airborne Cigar" Aircraft carried "G" Suffixes in addition to their normal serials. Confirmed 462 Sqn RAAF ABC Aircraft are: MZ308/G*, MZ457/G(Z5-Y), MZ913/G(Z5-N), PN391/G , PN423/G(Z5-I),PN426/G(Z5-O), PN430/G, RG432/G(Z5-A), PN442/G(Z5-H), and PN450/G.

*The "G" suffix, meant that the aircraft was to be guarded on the ground, due to its "special" equipment fitting.

A further Squadron aircraft, the twelfth conversion, **MZ431/G,** was sent to 32 MU, St Athans to be ABC modified on the 23rd April 45. Squadron Aircraft strength during April 1945 was 27 Halifaxes.



Standard "Window" Halifax B.MkIII MZ296 Z5-L "Lili Marlene" in April 1945, coming in to land with a feathered engine. She was built by LPTB, (London Public Transport Board) of Leavesden.

Sources:

http://www.bomber-command.info/serialshalifax.htm
National Archives 462Sqn ORB
GRB Data Collection

P-40K-15-CU A29-201

A29-201 P-40K-15-CU CW#1191 USAAF FY42-10422 Delivered 1AD, Laverton Victoria 9th February 1943

Squadron Code: AM-W Overscored . *Above Profile is only a indication*

P-40K Background: The P-40K-1 that followed on from the Merlin Powered P-40F, were ordered in Oct 1941, the very start of the US Fiscal 1942 Year.

They were ordered to Curtiss Spec Number 98-610-13 to Specification 7437A, however this was updated to Spec 7437KF (showing the change in engine), and powered by a Allison V-1710-73, with the initial order being for 600 aircraft. The remaining aircraft were ordered on the 15th Jun 1942 along with some of the L models and M models in place of the Curtiss Wright P-60. (USAAF XP-60 Pictured below:)

This was after the decision was taken not to proceed with the P-60 thus ensuring that plants had not to stop and to re-jig and re-tool for the P-60 type. One of the main reasons for the difference in the serial numbers was that the first 600 K models were actually ordered for the Chinese.

But a further order for 1299 P-40K type aircraft were also cancelled later. (USAAF P-40K-15 Pictured below:)

The first 600 P-40K-1 aircraft were for the Chinese Air Force, but were reposed and dispersed through lend lease to USAAF, RAF and other countries etc, as they were the follow-on P-40-5's being delivered from Aug to Sep 1942, then continuing with the P-40K-10 being delivered from Sep to Nov 1942 (including some delivered to the 7thFS of the 49thFG in Australia) . Finally the final 165 P-40K-15 built (**FY42-10265 to 42-10429**) , including being Lend Lease to Australia, with the last being delivered 7th Nov 1942.

This last P-40K-15 airframe was actually dispatched to Australia, however, it became a victim of a German U-Boat Attack in transit in the Caribbean Sea , being sunk on 29/01/43 on Alied transport Ship CV266 after leaving Charleston, along with three other undelivered RAAF P-40K-15 Aircraft (P-40K-15's FY42-10424,42-10425, 42-10428 and **42-10429**).

A29-201 was ordered under USAAF Contract W535-AC- 22714,as **FY42-10422**, Lend Leased RAF Contract RDFA 32244, RAAF Mac (Air) Case 126; Requisition BSC 311, Indent 2012A Diversion 151, AUS #6 of 35 a/c. Shipped with last 9 delivered P-40K-15 and first 9 P-40M-1s, ex New York on CV59 16/12/42, arriving Geelong, 09/02/43. Rec 1AD ex USA 09/02/43.

Received by 13ARD Reserve Pool ex 1AD 09/04/43. Received by 77 Sqn RAAF ex 13ARD RP on 06/05/43. Coded AM-W ("W" overscored, as pre-marked reserve aircraft), with A29-179 carrying the normal AM-W Coding at the same time. Sqn Ldr Perrin flew this aircraft on the 20th July 1943, and G*roup Captain McLaughlan also flew this aircraft on the 22nd July 1943.*

This aircraft, following its take-off from Vivigani Strip at 0601hrs 02/08/43, as part of a eighteen P-40K aircraft 77 Sqn RAAF detail (in two flights) to provide close escort to a attacking force of six 22Sqn RAAF Boston aircraft and six 30 Sqn RAAF Beaufighters on a strike on Japanese held Gasmata Airstrip, was lost an hour and fourteen minutes later .

Approaching Gasmata Strip, two of the Detail P-40K's detached themselves and increased altitude to observe all enemy AAA Emplacements whilst the twelve attacking force aircraft made their runs in. These two aircraft then escorted the attacking force home.

The remaining fourteen P-40K aircraft, (each carrying 2x 30lb Incendiaries bombs and 4x 40lb G.P. Bombs) proceeded as ordered on a fighter sweep along the south coast of New Britain from Gasmata to Jacquinot Bay, then to head home to Vivigani Strip on Goodenough Island.

Attacks were made on barges and buildings sighted, but one P-40K, Yellow 1, was seen to be apparently hit by AAA fire or by shrapnel from one of his own 40lb bombs, at 0715hrs, which forced the pilot to make a forced landing on

the beach in the vicinity of Lindenhafen Plantation. Though witnessed by the other fifteen pilots that he evacuated his aircraft, though not further witnessed, the pilot was thought to have either made an escape into the bush or was captured.

The Pilot of A29-201 on the day of the loss: Sqn Ldr Daryl Maxwell Sproule

The pilot, F/Lt Daryl Maxwell Sproule Serv#250641 was posted missing on the 2nd August 1943.
F/Lt Sproule had only been appointed Commanding Officer of 77 Sqn RAAF on the 01/08/43, after temporarily filling in that role in the past month of July 1943. Sqn Ldr R C Cresswell was flying his last mission as a supernumery, on the 02/08/43, but due to the loss, continued on.

Employed originally before the war as a Article Law Clerk in Hobart, he had been a member of the CMF (12 Field Company, RAE(M)). His flying career started at 1EFTS at Parafield, on the 8th January 1940, and was awarded his flying badge on the 4th May 1940 at SFTS Pt Cook. He had flown DH60, DH82A, Wapiti, and Wirraway aircraft.

Sproule (Red circled) with Dick Cresswell to his right

On graduation of wings, posted on the 13th May 1940, to 21 Sqn RAAF flying Wirraways. Later with 21 Sqn RAAF was posted to Malaya 26th August 1940, and eventually converted late 1941 to Brewster Buffaloes. He was one of six pilots to deliver the ex 21Sqn RAAF Wirraways on the 10th October 1941,to the newly formed Operational Training Unit at RAF Base Kluang, Malaya and to remain there on temporary duty training new pilots. He, flying AN186, was part of an air party of 13 Buffaloes that moved from Sembawang to RAF Sungei Patani on the 25th November 1941.i.

*From the start of the Pacific War on the 8th December 1941, he flew these until the 28th January 1942, as a F/Lt, when he was evacuated to Palembang, Sumatra, then finally arriving in Java before being evacuated to Melbourne, Australia. Example aircraft Flown(Buffalo **AN186** on 09/12/41 ex Butterworth). He flew intercepts for the next few weeks.*

On the 14th January 1942, he and Sgt Parsons flew a early morning tactical reconnaissance mission to Kuantan, where up to thirty Navy "O" aircraft were spotted on the aerodrome.(This would lead him to be transferred to 1PRU in Australia months later). Later on the 16th January 1942, on Gemas Road, southern Malaya. Later that afternoon, he and three others carried out a tactical reconnaissance mission over the Malacca Straits.

On the 18th January 1942, on return from a close air support escort and strafing mission with six RAF Blenheim Bombers in the Gemas Area, near Sembawang, enemy fighters were encountered, with Sproule shooting down a Japanese Army Type 97 single engine fighter.

Later that day, he and another pilot would perform a evening Tactical reconnaissance mission in the Segamat and Gemas Areas. He carried out fighter sweeps on the 19th January 1942 near the Muar Area.(Below: nine 21Sqn RAAF Buffaloes at Kalang, Malaya)

On the 21st January 1942, he and F/O Montefiore carried out another Tactical reconnaissance mission of the Batu Pahat and Yon Peng Area. Two days later, whilst on a Fighter Defence Standby, took off with F/Lt Kirkman to intercept unsuccessfully some twenty enemy bombers over Singapore.

On the morning of the 25th January 1942, whilst on a Fighter Defence Standby, again took off with F/Lt Kirkman and two 453Sqn RAAF Pilots to intercept unsuccessfully enemy bombers over Singapore. Later that day, fourteen Buffalo pilots, including Sproule, provided escort to nine Hudsons attacking Endau. They were attacked by twenty enemy fighters. Though none shot down, all fourteen Buffaloes were damaged. Later that day, news circulated that No 21 Squadron RAAF would return to Australia.

The following day, Sproule with five other Buffalo pilots failed to intercept incoming bombers to Singapore.

On the 28th January 1942, due to insuffiencent pilots from 453Sqn RAAF, F/O Sproule, Hooper and Hood, manned the standby Flight that was sent up at 0900hrs to intercept raiders over Singapore. This was the first time that they received R/T directions from Fighter Control to intercept. They landed to refuel.

At 0956hrs they took off again, this time with eight RAF Hurricanes which did manage to catch up with the Raider; the Buffaloes did not due to their speed. This was his last flight in a No 21Sqn/453Sqn Buffalo.*

The Squadron boarded the SS Takliwa for Palembang, Sumatra at 0800hrs on the 30th January 1942. Providing Maintenance staff for RAF Blenheim Bombers at Palembang until they boarded the SS Ban Goen on the 8th February 1942 to Batavia, where they were barracked at the Lann Travelli Artillery Barracks.

The Squadron was finally evacuated by sea to Australia on the SS Giang Ann 0730hrs on the 17th February 1942.They would arrive at Fremantle, Western Australia on the 4th March 1942.

**No 21 Squadron RAAF was disbanded; later to reform as a Dive Bomber, then even further later as a heavy Bomber Unit.*

After a short leave, He became an original member of 77 Sqn RAAF when it formed on P-40Es, from the 31st March 1942 to 22nd May 1942 when he was transferred to 25 Sqn RAAF. He was transferred, due to his experience, to 1 PRU on the 8th June 1942, to resume flying Buffaloes on their introduction as Recon aircraft, at Darwin.

He returned to 77 Sqn RAAF on the 10th September 1942,also by this time, at Darwin, as a flight leader, and stayed with 77 Squadron RAAF until his loss.

His usual P-40E-1 mount was **A29-104** "K". Following on from this period , his favourite P-40K was **A29-172** (AM-K), *with (A29-183(AM-H), A29-191(AM-I)and A29-192(AM-E)flown on occasions pre and following the 25/05/43 crash landing of A29-172)*

On the 14th April 1943, contact was made against a enemy force of 45 Bombers and between 20-30 enemy fighters over Milne Bay. A total of Five Enemy aircraft were destroyed, with a further five probable's. *Sadly one P-40K, A29-169 was lost with the pilot; Sgt Lloyd Melrose and* P-40Ks A29-*185 and A29-195 were damaged.*

Sproule, flying P-40K **A29-183** (AM-H) was credited with one enemy Bomber destroyed and by the end of April 1943, he would be awarded a Distinguish Flying Cross for his flying during Malaya(awarded one kill) and for leading an intercept and being credited with another kill(Medium bomber) during that month.

A29-183 AM-H ended it days on the 10/02/44

A month on, F/Lt Sproule had cheated death, when with Cresswell (A29-166 AM-U)was on a travel flight to Milne Bay, had previously pranged P-40K **A29-172** (AM-K), on Wedau Strip (beach). It had happened at 1730hrs on the 25/05/43 during falling darkness and bad weather when attempts to land at Gurney Strip(Milne Bay) had failed. He had suffered facial injuries and had written the aircraft off.

As for the P-40K-15 A29-201 was written off per AMSE Approval to Write off per File#9/16/977, 07/08/43 as lost in Enemy Territory, and was replaced in 77 Sqn RAAF by Reserve Aircraft **A29-202** by the following day.

Previously reported missing on operations 2nd August 1943, he was reclassified as killed whilst Prisoner of War, on the 16th August 1943. *(Further on, we will see that this was and still is, actually nine days after his death)*

AUSTRALIAN WAR MEMORIAL P01868.001

Sproule (Red circled) with Dick Cresswell to his left

Post war on the 15th March 1946, a RAAF Search Party, in company of a DADWGS Rabaul and a Lt R H Millynn arrived at the crash scene of A29-201, which was located in six feet of water, near the shore west of, and close to the mouth of the Lula River, some eight miles north east of Gasmata, New Britain. Only a propeller blade was above the water. All instruments and equipment was already removed by the Japanese. Efforts were made to retrieve parts after a block and tackle was erected, explosives used, resulting in parts of the corroded fuselage taken to the shore. It could be deciphered that this was in fact A29-201 due to location, despite the salt corrosion and damage. However, information via 77 Squadron's Confirmation Memorandum, gives no doubt as to its identity: it was A29-201.

A local native being interrogated by ANGAU, "Kokoma" , a native of Sangarit, who with others, saw the aircraft crash and found the pilot. He was located in the bushes nearby, along the shore. He was in a dazed condition, holding his pistol.

At the time, the pilot was described by "Kokoma" as tall, slim, dark eyes, brown eyes, full set of teeth, wearing long flying boots, green shirt and trousers, handkerchief on head, no badges of rank, and was carrying a clasp knife, long knife in belt and a pistol. Natives that were with Kokoma were Tipopo, Makis, Kupkup and Malis. Kokoma took the pistol away from the pilot, and handed it to Tipopo. They escorted him to the nearby village of Paronga, during which he stated he was an Australian and had crashed to a shortage of fuel.

Ten Japanese came to Paronga accompanied by Tipopo. The pilot walked out of the house with hands raised, and surrendered. They took him into custody, then tied his hands with rope and was led to a canoe, during which he was repeatedly struck by the Japanese and was paddled away to Myong Plantation for an overnight stay, before taking him to Gasmata.
Tipopo was given Lava Lava for payment for the pistol. Kokoma, and the other natives then never saw him again*.
*This was untrue, as information given during a post war interrogation of Sergeant Major Singerau (INJA) indicates they were present for the pilot's execution.

The pilot was taken to Gasmata Aerodrome for an overnight stay, then on the following day, taken halfway between the Tolock River and Akam , where he was made to dig his own grave and beheaded. Natives had been invited, and

one, Wanton, witnessed the execution and on the Japanese encouragement, the natives clapped hands. He would later lead the DADWGS to locate and exhume his remains, whereupon they were interned in Rabaul Cemetery

Due to the inconsistencies of the witnesses, some evidence places his execution as of the 4th August 1943. Discussion with Sqn Ldr Rundle (RAAF Search Party) as on the 3rd March 1947, fixed the date of death and re-classification as: Died, whilst POW the 16th August 1943.

Later the remains would be exhumed again and reburied at Lae War Cemetery .

LAE WAR CEMETERY was commenced in 1944 by the Australian Army Graves Service and handed over to the Commission in 1947. It contains the graves of men who lost their lives during the New Guinea campaign whose graves were brought here from the temporary military cemeteries in areas where the fighting took place. The cemetery contains 2,818 Commonwealth burials of the Second World War, 444 of them unidentified.

As a Cade 1940, at Darwin late 1942, and during last leave , late June or early July 43.

EXTRACT FROM FLYING LOG BOOK

F/O. D.M. SPROULE (250641) DECEASED

21 Squadron Wirraways, Buffalos,	First Flight 29/5/40 Last Flight 28/1/42	
	Operations carried out	
77 Squadron Kittyhawks	First Flight 31/3/42 Last Flight 2/6/42	
1 P.R.U.	First Flight 11/6/42 Last Flight 30/8/42	
77 Squadron Kittyhawks	First Flight 10/9/42 Carshed off Lindenhafen 0715 on Fighter sweep from Gasmata 26/6/43	

Units

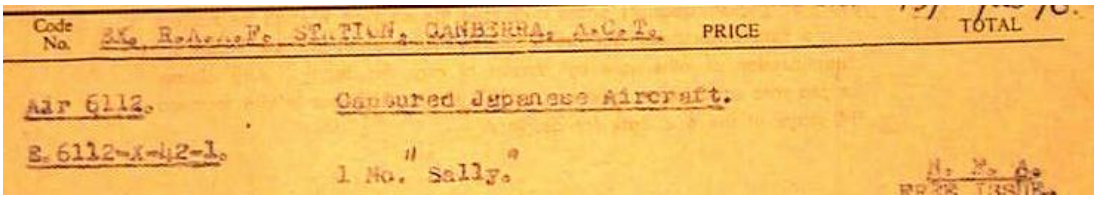
1 F.T.S.	11/ 3/40	-	2/ 5/40
21 Squadron	13/ 5/40	-	10/ 3/42
77 Squadron	31/ 3/42	-	26/ 5/42
25 Squadron	27/ 5/42	-	3/ 6/42
1 P.R.U.	8/ 6/42	-	10/ 9/42
77 Squadron	10/ 9/42		

Above , Left: his official Log extract has him crashing 30/08/43! Right: First burial in Rabaul

SPROULE, Squadron Leader, DARYL MAXWELL, D F C, 250641. Royal Australian Air Force. Date of Death, 16th August 1943. Age 25. Son of Albert Walter and Irene Pansy Sproule, of Sandy Bay, Tasmania. LL.B. T. C. 8.

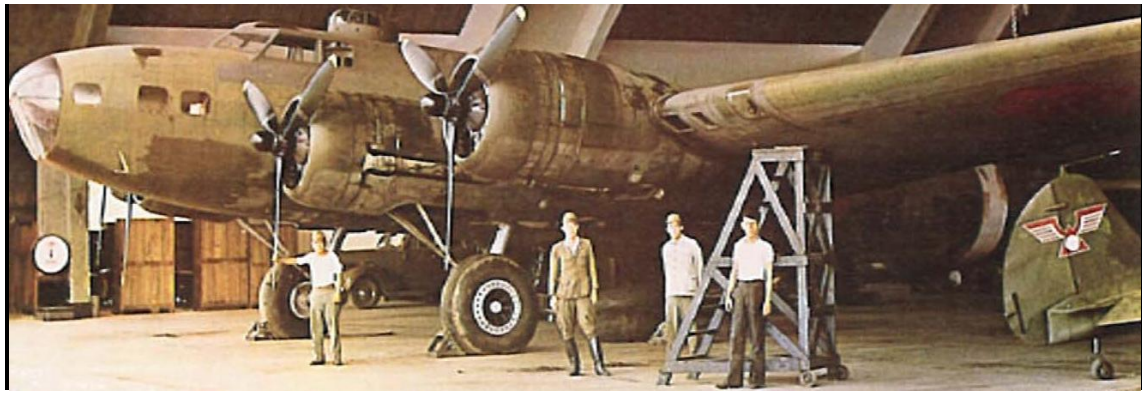
ooOOOoo

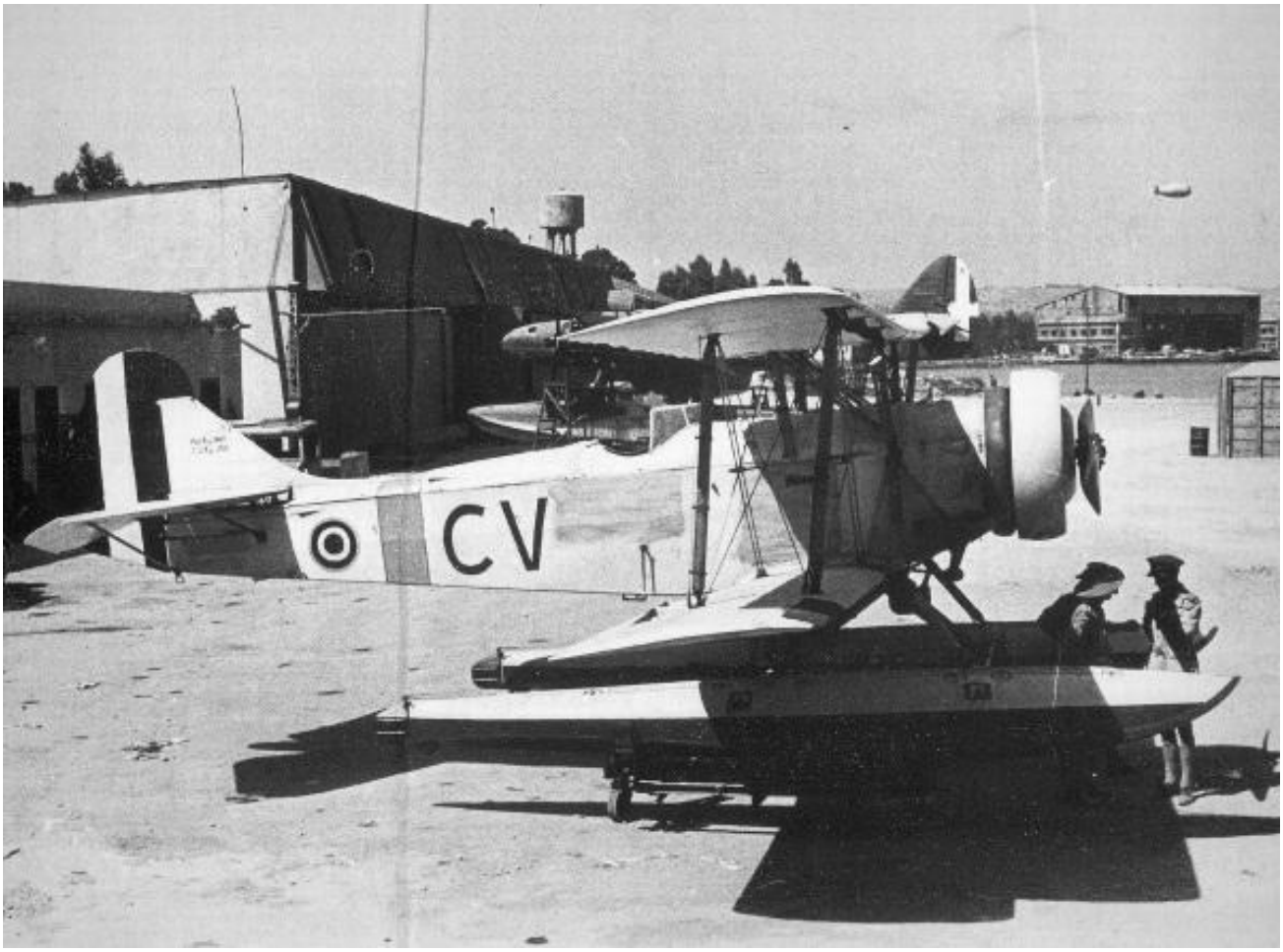
Odd Shots: : **Ours/there's and mine again!; Captured, both on film and in war.**



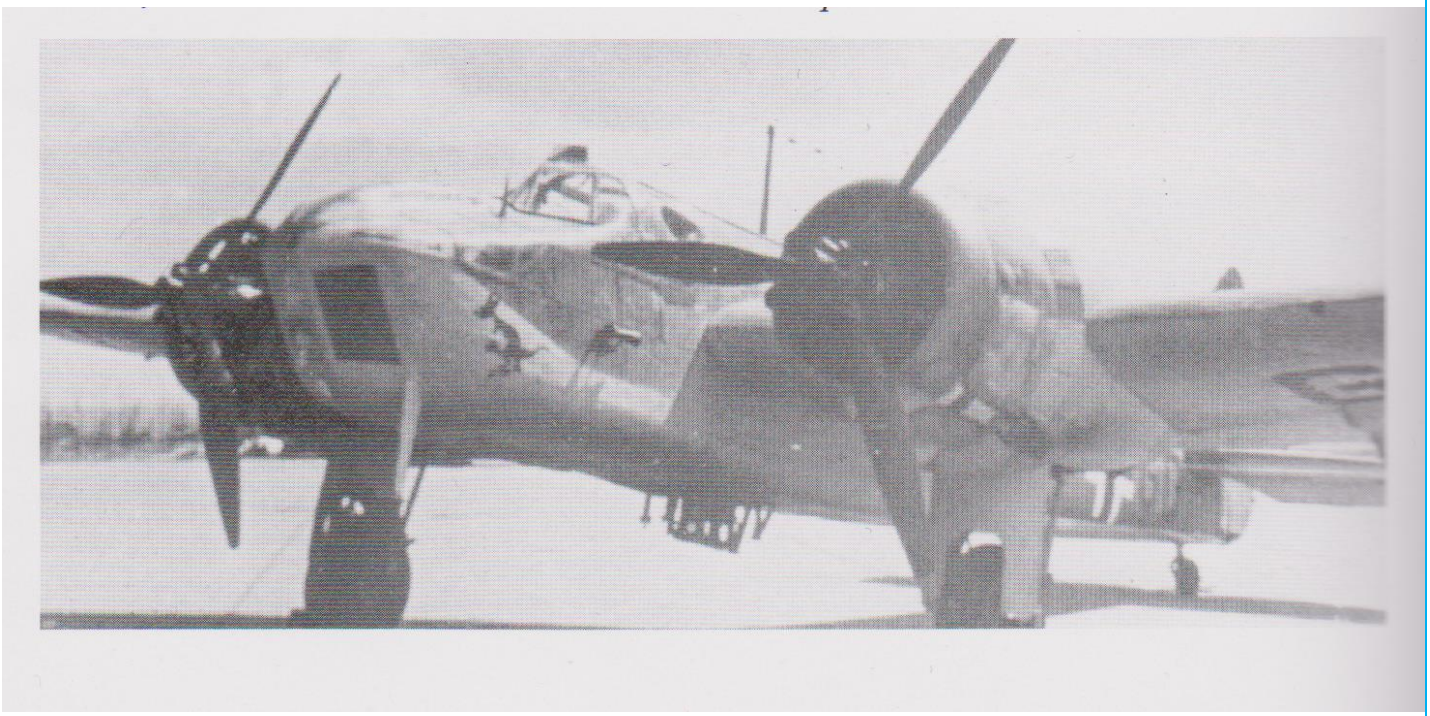
Per notation, did this Sally held by the AWM in late 1940's ever raid Darwin five times?

On the early balance Sheet, RAAF Hudson A16-53 US-T was captured December 1941. By March 1942, even USAAF B-17Es were captured in Java, including two flyable ones.





Italian Breda 25, captured and marked by 3 Squadron RAAF

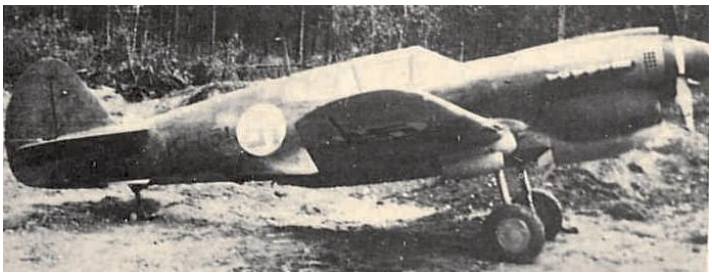


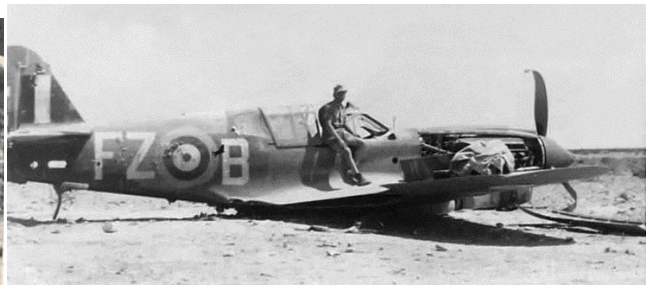
A Preloved Aussie Roo Motif, and perhaps Aussie crewed Blenheim IV, captured by the Germans in 1942

Japanese Captured 21 Sqn RAAF Buffalo W8163 in 1942

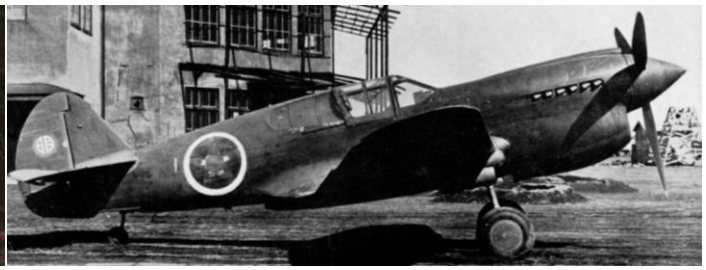
Captured Hap in PNG in 1944, and below in Brisbane mid 1943 is a captured Zero. B-17E 41-2633 "Sally in rear.

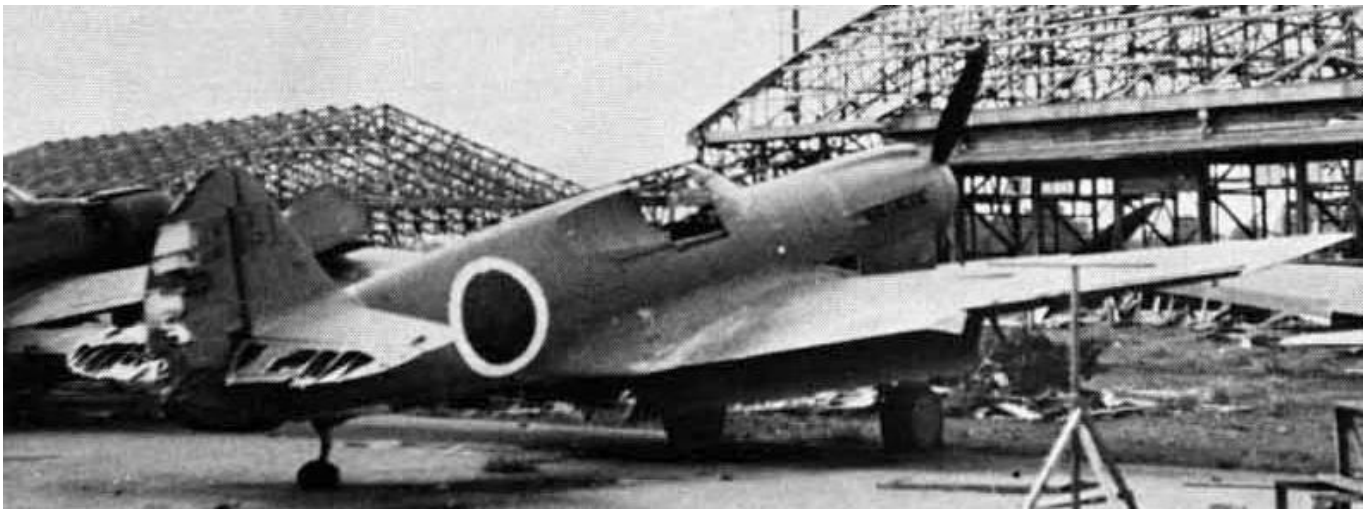
Captured Macchi 205 MM9377 of 3Sqn RAAF in 1943, and below laying abandoned and captured is Wirraway "fighter" A20-128 of 24Sqn RAAF, that now lies derelict at Rabaul post Feb 1942.



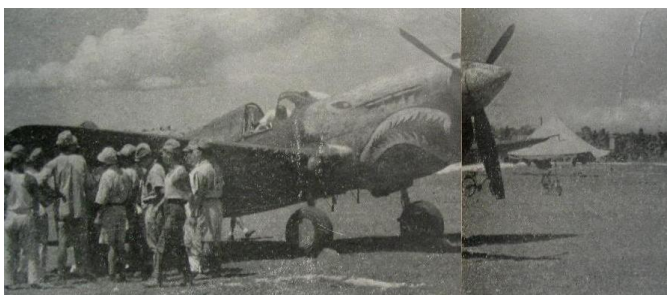


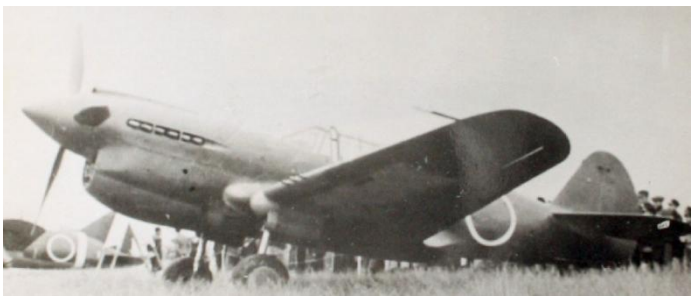
Even Russian P-40M's got captured, per Finnish marked example in 1944 and so it's no surprise that the German Afrika Corp captured a few RAF Kittyhawk Mk1a's in 1942.





Left Above: Marked as R-511, one of three pictured at Japanese Astugi AFB based captured P-40Es found by US in late 1945. Wonder if any record of the old FY Serials were ever noted! The real odd ones above, are some three P-40E captured by the Japanese in 1942 and recaptured following the surrender in 1945, being three of twenty-one ex USAAF P-40E/E-1's that were flyable after capture in the Philippines and Java in 1942 (50th Hikosentai operated eighteen P-40Es near Rangoon in 1943).





A PI P-40E pictured above with shark mouth left and one Java captured example right: Date 1942.

All but three of the USAAF FY Serials (the three PI captured examples)have been narrowed down by my research back in the early 2000's to the aircraft cargo ex SS Sea Witch that left Melbourne Australia, vis

Fremantle in Convoy MS-5 in Feb 1942 to Java. (includes examples:P-40E's 41-5566, 41-5569, 41-5587, 41-5601, 41-5604, 41-5605, 41-5608, 41-5618, 41-5623, 41-5625, 41-5639, 41-5640, and P-40E-1s 41-24778, 41-24836, 41-24837, 41-24839 and 41-24841)

Editor's Notes:
Contributors are most welcome to provide written articles or even topics to be covered by others.
Special thanks to John and Shep on their inclusion of articles: Many Thanks

Shep will continue in the next issue with **"Dutch International Call Signs NEI Aircraft in Australia 1946"**

End Notes:

Article 1: An Introduction to International Call Signs

[i] International Radiotelegraph Convention in Washington, *General Regulations, Article 14, Section 1*, (1927) 69.
[ii] International Radiotelegraph Convention in Washington, *General Regulations, Article 14, Section 1*, (1927) 70, Table of Distribution of Call Signs.
[iii] International Radiotelegraph Convention in Washington, *General Regulations, Article 14, Section 2*, (1927) 71.
[iv] International Telecommunication Convention Madrid, *General Radiocommunication Regulations*, *Article 14, Call signs*, (1932) Revision of Cairo (1938) [291] 50, Call Sign Allocation Table.
[v] International Telecommunication Convention in Atlantic City, *Radio Regulations, Ch VII, Article 19, Section II*, (1947) [419] 92-E.
[vi] Memorandum G.38/12727 to The Secretary, Air Board, from the Postmaster General's Department, dated 22nd March 1939 and Memo 7555 to The Chief Inspector, Wireless, Postmaster General's Department, from the Secretary, Air Board, date stamped -1 JUN 1939, titled Call Signs for R.A.A.F. Stations and Aircraft; in Commercial and International Callsigns for Air Force Stations and Aircraft; NAA: A705, 201/6/121.
[vii] Department of Air Memorandum number 31210 of 13th July, 1940 to the Chief Inspector (Wireless), Postmaster General's Department in Commercial and International Callsigns for Air Force Stations and Aircraft; NAA: A705, 201/6/121.
[viii] Letter G.38/12727 to The Secretary, Department of Air, from the Postmaster General's Department, dated 25th July, 1940 in Commercial and International Callsigns for Air Force Stations and Aircraft; NAA: A705, 201/6/121.
[ix] RAAFHQ message S626 of 26/10(/1940) in Commercial and International Callsigns for Air Force Stations and Aircraft; NAA: A705, 201/6/121.
[x] Department of Air Memorandum number 13309 of March 4th, 1941 to the Director General Posts and Telegraphs, Postmaster General's Department titled Signals – Call Signs in Commercial and International Callsigns for Air Force Stations and Aircraft; NAA: A705, 201/6/121.
[xi] Memorandum W.50 to The Secretary, Department of Air, from the Postmaster General's Department, dated 6th March, 1941 titled Call Signs for Fixed Stations of the RAAF in Commercial and International Callsigns for Air Force Stations and Aircraft; NAA: A705, 201/6/121.
[xii] Postmaster General's Department Memorandum W.157 of 13th November, 1941 to The Secretary, Department of the Army titled International Call Signs for use by Department of the Army and Department of the Army memorandum SM15471 of 27th November, 1941 to The Secretary, Department of Air both in Commercial and International Callsigns for Air Force Stations and Aircraft; NAA: A705, 201/6/121.
[xiii] Department of Air Memorandum number 17947 of March 15th, 1941 to the Director General Posts and Telegraphs, Postmaster General's Department titled Signals – Call Signs in Commercial and International Callsigns for Air Force Stations and Aircraft; NAA: A705, 201/6/121.
[xiv] Department of Air memorandum number 69014 of September 16th, 1941 to the Director General Posts and Telegraphs, Postmaster General's Department titled Signals – Call Signs and Memorandum W.50 to The Secretary, Department of Air, from the Postmaster General's Department, dated 23rd September, 1941 titled Allocation of Call Signs VNA to VNZ and VZA to VZZ both in Commercial and International Callsigns for Air Force Stations and Aircraft; NAA: A705, 201/6/121.
[xv] Director of Signals memorandum S.A.S.3207 of 17th March, 1942, to Headquarters US Army Forces in Australia (and attached list) in Commercial and International Callsigns for Air Force Stations and Aircraft; NAA: A705, 201/6/121.
[xvi] Postmaster General's Department Memorandum W.50 of 24th March, 1942 to The Secretary, Department of Air in Commercial and International Callsigns for Air Force Stations and Aircraft; NAA: A705, 201/6/121.
[xvii] Air Board Signal S.553 of 11/8 [1942] in Commercial Call Signs Allocated to Allied Air Forces and Australian Aeradio Stations. NAA: MP721/1, W50/1.
[xviii] Memorandum titled "Allocation of International Call Signs to R.N. Fleet Air Arm Aircraft" from The Secretary, Department of the Navy to The Secretary, Department of Air, dated 7 February, 1945 in W/T and R/T Callsigns Policy File; NAA: A1196, 48/501/191.
[xix] FONAS signal (Time of Origin 300452Z Jan 45) to Australian Commonwealth Naval Board in W/T and R/T Callsigns Policy File; NAA: A1196, 48/501/191.
[xx] Memorandum titled "Commercial Call-signs for Aircraft stations – Series VMYAA – VMYZZ", from The Director-General, Postmaster-General's Department to The Secretary, Department of Air, dated 5th March, 1945 in W/T and R/T Callsigns Policy File; NAA: A1196, 48/501/191.
[xxi] Department of Air memorandum S.A.S. 1655 of 21st February, 1945, to The Director-General, Posts and Telegraphs in W/T and R/T Callsigns Policy File; NAA: A1196, 48/501/191.
[xxii] Appendix "A" to AOU101/3 – Commercial Call Signs, paragraph 3 in Telecommunications and Radar Publications AOU101 Series Amendments To; NAA: A705, 201/24/227.

Bibliography

International Telecommunications Union
International Radiotelegraph Convention in Washington 1927, General Regulations; via http://www.itu.int/dms_pub/itu-s/oth/02/01/S02010000144002PDFE.pdf
General Radiocommunication Regulations (Revision of Cairo 1938) annexed to the International Telecommunication Convention (Madrid 1932); via http://www.itu.int/dms_pub/itu-s/oth/02/01/S020100002A4002PDFE.pdf
International Telecommunication Convention in Atlantic City 1947, Radio Regulations; via http://www.itu.int/dms_pub/itu-s/oth/02/01/S020100002B4002PDFE.pdf
National Archives of Australia
Commercial and International Callsigns for Air Force Stations and Aircraft. NAA: A705, 201/6/121.
Commercial Call Signs Allocated to Allied Air Forces and Australian Aeradio Stations. NAA: MP721/1, W50/1.
W/T and R/T Callsigns Policy File. NAA: A1196, 48/501/191.
Telecommunications and Radar Publications AOU101 Series Amendments To. NAA: A705, 201/24/227.