



# ADF Serials Telegraph News

News for those interested in Australian Military Aircraft History and Serials

Volume 7: Issue 3: Winter 2017 *Editor and contributing Author: Gordon R Birkett,*

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## News Briefs

**21st February 2017:** The first delivery of EA-18G Growlers to the RAAF in Australia when A46-305, A46-306, A46-307 and A46-308 touched down at Amberley RAAF Base. A 33 Sqn RAAF KC-30A provided support from the USA. Two of these aircraft then made their debut at the Avalon Air Show on the 28th February 2017. *A46-306 pictured DOD*



- **21st February 2017:** The RAN is currently withdrawing its fleet of S-70B-2 Seahawks and is offering 11 airframes and associated inventory for commercial sale. The Assets will be divided into Lots.
- **28th February 2017:** Just before 5:00pm on Monday, two RAAF F-35As, A35-001 and A35-002, landed at Amberley Air Force Base outside Brisbane, after flying the fifth generation fighters from their current home in the United States.



- **16th March 2017:** From the third quarter of 2017, Air Affairs and Discovery will operate three Dassault/Dornier Alpha Jet aircraft on RAAF air defence training, Joint Terminal Attack Controller (JTAC) training for the Australian Army and anti-surface training for the RAN. Air Affairs has provided training support, including aerial target towing and tactical flight mission services to the ADF since 2015, using seven modified Lear 35/36 aircraft
- **27th March 2017:** Schiebel Camcopter S-100, one of two under contract to the RAN, crashed at the Beecroft Air Weapons Range



- **30th March 2017:** The RAAF has received its fifth C-27J Spartan battlefield airlifter, A34-004, at RAAF Base Richmond. A34-004 is the aircraft which sustained minor damage in a hard landing incident at Waco, Texas in May 2016 during a night training flight.
- **20th April 2017:** marked the first time that a Australian Army M777 and Mack 6x6 limber had been loaded on a RAAF C-17A.



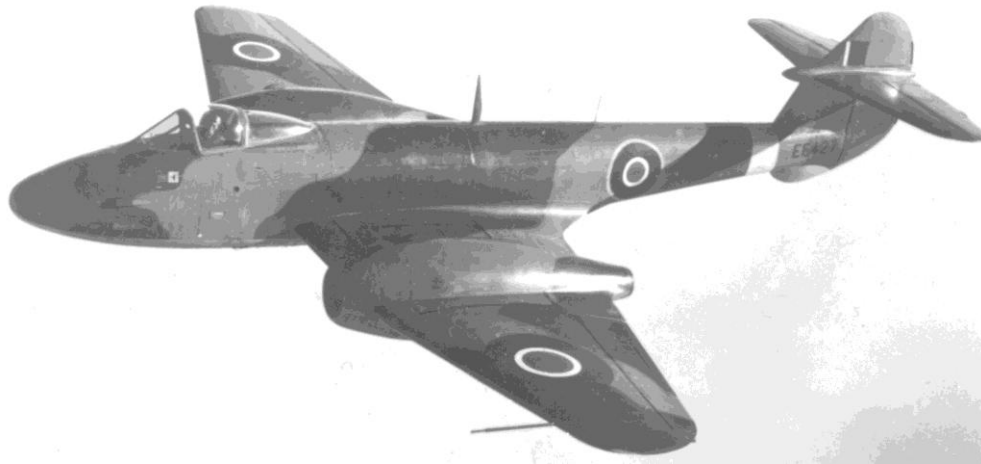
- **1st May 2017:** The US State Department has made a determination approving a possible Foreign Military Sale (FMS) to Australia for AGM-88B HARM anti-radiation missiles at a cost of \$US137.6 million. up to 70 AGM-88B High Speed Anti-Radiation Missiles (HARM) Tactical Missiles; up to 40 AGM-88E Advanced Anti-Radiation Guided Missiles (AARGM) Tactical Missiles; up to 16 CATM-88B and 16 CATM-88E HARM Captive Air Training Missiles (CATM); up to 25 AGM-88B and 20 AGM-88E control sections; up to 25 AGM-88B and 20 AGM-88E guidance sections; up to 48 Telemetry/Flight Termination Systems; and US Government and contractor engineering, technical and logistics support services, and other associated support equipment and services.

## RAAF AIRCRAFT MARKINGS SINCE 1950

### SQUADRON MARKINGS – PART 3 – THE METEOR

John Bennett 2017

The first jet for the RAAF was a Meteor III, or F.3 (EE427/A77-1), which was delivered to the RAAF soon after the end of the Second World War in June 1946 for evaluation, jet experience and tropical trials by 1 Aircraft Performance Unit (1APU). But while this aircraft was lost in a crash at Darwin in May 1947, more jets were in the process of being acquired from UK. 1APU at Laverton took delivery of three Vampires (A78-1, 2 and 3) over the period 1947-49, and from 1951 Canberra bombers would be delivered.



**Australia's first jet, Meteor F.3 A77-1**

It was at this stage that the RAAF's remaining Mustang unit in BCOF, 77 Squadron, was preparing to return from Japan to Australia, but this changed immediately with the Communist invasion into South Korea. 77's Mustangs began operations in June 1950 on ground attack strikes against North Korean ground forces. When Communist China entered the war that October, it was realised that the Mustang would be no contest in an aerial war against Russian-supplied MiG-15s.

The preferred choice to replace 77SQN's Mustangs was the latest US fighter, the F-86 Sabre. Unfortunately, these were unavailable in the 1951 timeframe, and the only other jet option was the Meteor, which the UK made available for accelerated delivery from their own orders. The first Meteor F.8s began to reach RAF front-line squadrons in the second half of 1950,<sup>1</sup> and on 10 DEC 1950 the RAAF order for 36 Meteors F.8s at the cost of about UKP 5m was announced.<sup>2</sup> The stipulation was that deliveries from UK must be expedited, with the first twelve aircraft for delivery in 3-4 months.<sup>3</sup> Indeed, this tight schedule was made with time to spare – within two months the first consignment had been ferried from UK to Singapore, then shipped to Iwakuni, where 77SQN was supported by 91 Wing in Japan.

All of Australia's Meteor F.8s would be shipped or ferried to Japan up to 1953, and would be prepared by the RAAF's 91 Wing (491 Maintenance Squadron) for RAAF acceptance and training at Iwakuni. In mid-1951, 77SQN moved back to Korea, and would operate there, primarily at Kimpo, until 1954. All 93 RAAF Meteor F.8s (of the 94 ordered, plus four T.7 trainers) were delivered via Iwakuni for acceptance before combat duties in Korea.

From contemporary photography of 77SQN Meteors in Korea over 1951-54, several modifications become obvious. Firstly, the AN/ARN-6 radio compass was added as a mandatory requirement for combat operations in 1951 – this 'loop' antenna is seen in a perspex fairing on the dorsal spine of the aircraft.<sup>4</sup> In addition, aircraft were delivered with the initial narrower, or 'small bore', or 'narrow breather', intakes, but these began changing from late 1952 when the 10cm-wider intake nacelles (to increase thrust and improve climb performance) were delivered in the third Meteor order.<sup>5</sup> These broader intakes are associated with most of our WH and all WK RAF serial numbers as standard, with the required RAF Mod.1175 embodied on the production line, and the remainder as an upgrade when available. While many Meteors were then modified over 1953-54, many were not fully upgraded until being refurbished by 2 Aircraft Depot at Richmond before re-issue to 77SQN in Williamstown in 1955. The third modification is even more apparent, the fully transparent canopy which replaced the earlier metal rear hood.<sup>6</sup> Although some F.8s delivered in 1953 may have had the new canopy, the older aircraft in the fleet did not receive this upgrade until after the cessation of hostilities in July 1953. Subsequently, all aircraft were fitted with the improved bubble canopy at Kunsan in 1954 and in Australia in 1955.





**A77-15 at Iwakuni early 1951 soon after delivery, before addition of the dorsal radio compass loop antenna**




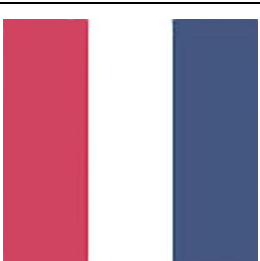
### **Colour Scheme – Aluminium / ‘High Speed Silver’**

The Meteor’s ‘High Speed ‘Silver’ was colloquial RAF shorthand for a painted aluminium finish applied using a fairly complex process laid down in 1949 by a high gloss finishing scheme to the Directorate of Technical Development (DTD) 772 specification.<sup>7</sup> The aluminium paint required for the scheme was ‘Finish, glossy aluminium’ (A.P1086 stores reference ‘33B/865’),<sup>8</sup> which was made up of a mixture of aluminium and clear dope as a process for application to metal, wood and fabric over several coats of red dope, as a stabiliser and protection from UV light. High Speed Silver started off glossy, but faded to matt.

### **National Markings**

While this instalment details primarily the markings of RAAF Meteors in Korea, four aircraft of different marks (one mark III or F.3, two T.7s, and a NF.11) were delivered for early assessment in Australia. A further three T.7 trainers were delivered to Australia in late 1955 for RAAF training duties, and a multitude were delivered for a number of weapons trials for the Weapons Research Establishment (WRE) at Woomera. Roundels were the standard RAF 3:2:1 Type-D which had been introduced in May 1947:<sup>9</sup> for early Meteors, the sizes were 36” diameter on the fuselage, 54” upper wing, 32” under wing<sup>10</sup> – smaller lower roundels were for RAF aircraft with serial numbers on the lower wing surfaces. The ex-RAF Meteors that had been supplied direct to Australia from UK came in a variety of markings. For instance, A77-1 (an F.3) was in RAF “standard day fighter” colours of Ocean Grey and Dark Green with Type-C/C1 and Type-B markings for the duration of its short RAAF career. A77-2 (T.7) and A77-3 (NF.11), both carried Type-D markings. A77-2 was overall aluminium like the F.8s. A77-3 appears to have been overall white, and then had red added when it conducted trials work at Woomera.

The Meteors that were delivered directly from RAF stocks in UK to Iwakuni, Japan, were in ‘High Speed Silver’ still with their RAF serials, and the overall aluminium finish accorded with the RAAF standard finishes and markings of aircraft policy introduced in 1948.<sup>11</sup> The 8” RAF serial numbers were replaced by 8” RAAF numbers, prior to aircraft moving forward to Korea. RAF policy stated D-Type roundels were 36” diameter, except mainplanes when specified.<sup>12</sup> In the RAAF, the RAF 32” underwing roundels were replaced by 36”. The fin flash on the Meteor F.8, marked above the tailplane, was 28” high and 24” wide – this varied with the mark of Meteor, for instance the T.7 (with its shorter F.3/F.4 fin) had a flash only 18” high. Colours of Type-D national markings had standardised from the previous “dull” colours to the brighter glossy BS381C-110 *Roundel Blue* and BS381C-538 *Post Office Red*.<sup>13</sup>

			
<b>A77-1 Type-C1</b>	<b>A77-1 Type-C</b>	<b>Silver Meteor Type-D</b>	<b>Type-D Fin Flash</b>



## Serial Numbering

With the Meteor having been allocated the RAAF group identifier A77, various deliveries received different series of 'last three' numbers, depending on the extant policy at the time. The first aircraft were "consecutive" (A77-1 to -4), then the deliveries direct to Japan and Korea were purposely "scrambled" for security, and then finally the last deliveries during 1952 were in the "century" block numbering system.<sup>14</sup> This meant that in accordance with the policy of FEB 1952, the trainers were re-serialised in a block from A77-701, and the later 1952 deliveries were numbered in a block from A77-851. These are summarised below.

Serial Number	Policy	Aircraft Mark	Details
A77-1, -2, -3, -4	Consecutive	F.3/T.7s/NF.11	Early deliveries to Aust from UK 1946-53
A77-11 to A77-982	Scrambled	F.8	57 Korean deliveries 1951-52
A77-701/-707	Century	T.7	Four originally scrambled, T.7 del 1951-52 (policy changed FEB 1952), three more deliveries direct to Aust in 1955
A77-851/-886	Century	F.8	Final 36, delivered from AUG 1952
Existing A77 serial	Scrambled and century	U.21A	Modified F.8 to U.21A over 1961-63



**A77-982 at Iwakuni early 1951 – with underwing drop tanks, not carried on ground attack missions**

## Squadron Markings

No specific 77SQN unit markings were applied to RAAF Meteors in Korea. However, individual nose art proliferated, and examples are provided in this article. On return to Australia, 77SQN provided the 78 Wing formation team with green/white check markings in 1956, and the 75SQN "Meteorites" team later that year with bright blue markings. Unlike the Citizen Air Force Vampire fighters, the CAF units equipped with Meteors – both 22 and 23SQNs – maintained unadorned overall aluminium F.8s and T.7s, apart from a small unit badge (crest) on the nose. When 22SQN, like other CAF units, ceased flying in 1960, three of its Meteors were transferred to 38SQN at Richmond – F.8s A77-157 and -193, and T.7 A77-702 – which featured a stylised red cheat line along the length of the fuselage.

## Unmanned Meteors

The unmanned U.15/U.16/U.21 drone modified aircraft carried high visibility red and white overall schemes. To test new weapons, a high performance aerial target was required for missile development, and this role was tasked to the Meteor (and later the Canberra). The differences of models were:

**U.15** – A total of 94 Meteor F.4s were converted to the target role under the designation U.15: 20 of these were delivered to the RAF at Llanbedr in Wales, the remainder to WRE in Australia.

**U.16** – As the number of U.15s decreased, 91 ex-RAF Meteor F.8s were modified with a similar equipment fit as the Meteor U.16 (later changed to D.16).<sup>15</sup>

**U.21** – Further ex-RAF F.8s were modified for use at WRE Woomera with specific equipment as the U.21<sup>16</sup>

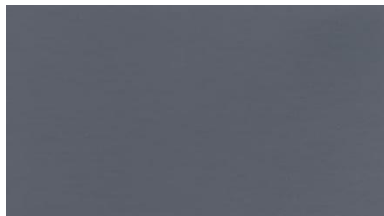
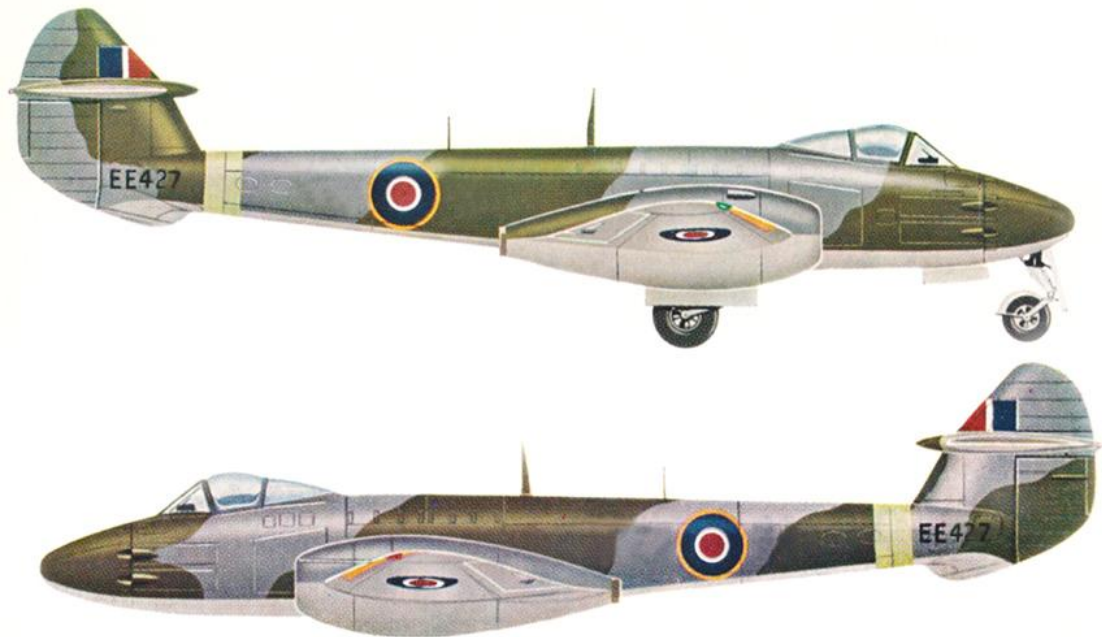
**U.21A** – In Australia, 15 ex-RAAF A77-numbered aircraft were modified by Fairey Aviation at Bankstown with kits supplied from Flight Refuelling in UK over the early 1960s, designated the U.21A.<sup>17</sup>

While the U.16 and U.21 looked similar, the significant difference was the latter had electronic telemetry equipment specific to WRE at Woomera; the U.16 (being an ex-RAF F.8) if upgraded with specific telemetry became a U.21, but when converted from an ex-RAAF ('A77') F.8, it was a U.21A.

**A77-1 / EE427 METEOR F.3**



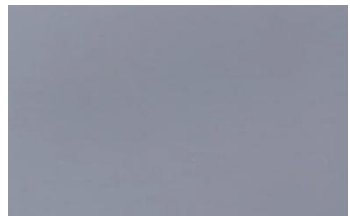
Camouflage colours for A77-1 were RAF “standard day fighter” colours of Ocean Grey and Dark Green, with the lighter Medium Sea Grey undersides.<sup>18</sup> The 18” (45.72cm) fighter band around the rear fuselage was Sky. Standard fuselage roundels were 36” (91.44cm) diameter Type-C1 (white being 2” wide); underwing roundels 32” (81.28cm) diameter Type-C; overwing were 54” (137.16cm) diameter Type-C. Type-C fin flash was 24” (60.96cm) wide (white strip was 2” wide) and 18” high.<sup>19</sup>



**Ocean Grey**  
**33B/681**



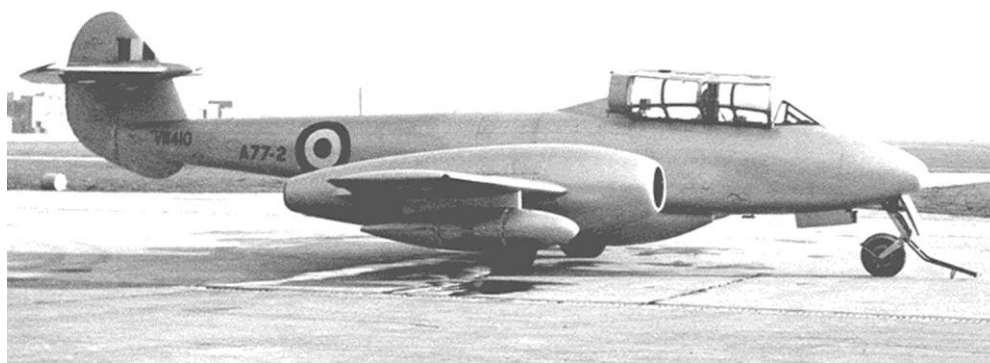
**Dark Green**  
**33B/677**



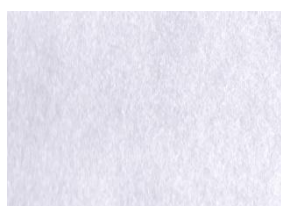
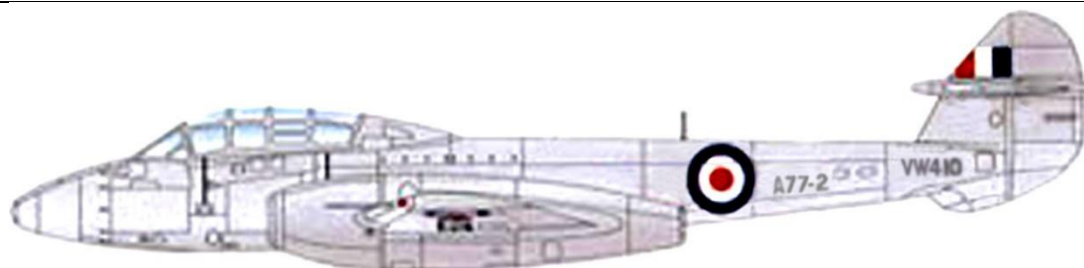
**Medium Sea Grey**  
**33B/679**

A77-1 was delivered to the RAAF as EE427 on 7 JUN 1946 for trials by 1 Aircraft Performance Unit (1APU) at Laverton, and carried both these serial numbers during its RAAF service. Used for evaluation assessments and tropical trials, A77-1 suffered a heavy landing at Darwin on 14 FEB 1947, to be written-off and broken up on 21 MAY 1947. A short RAAF career, but it is unique as our first jet and our sole Meteor F.3. The RAF *Standard Aircraft Colours* 1939-1945 are in accordance with the UK Ministry of Aircraft Production (MAP) specified by *name*, and directed by Air Publication A.P.2656A of OCT 1944<sup>20</sup> – before the introduction of Air Publication A.P.1086 stores identification 33B/ numbering in 1948, and later the British Standard BS381C.<sup>21</sup>

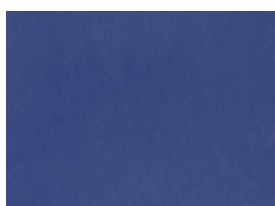
## A77-2 / VW410 METEOR T.7



A77-2, the first production T.7, was delivered to the RAAF as VW410 on 9 NOV 1951 and retained both serial numbers. Colour scheme for A77-2 was the same as the RAAF F.8s serving in Korea with 77SQN, which had become the RAF standard day fighter colour in 1949 of overall aluminium 'High Speed Silver'. Standard roundels were 36" diameter Type-D; and the Type-D fin flash was 24" wide (each colour being 8" wide), but with the short F.3/T.7 fin was only 18" high. Previously, marking and roundel colours had been referred to by name, but now had identifiers.



**Aluminium 'High Speed Silver'**  
A.P.1086 33B/865



**Roundel Blue**<sup>22</sup>  
BS381C-110

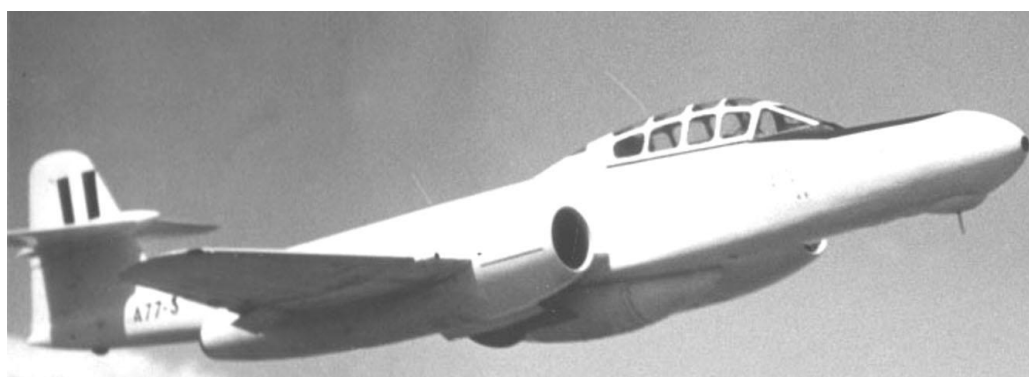


**Post Office (Roundel) Red**  
BS381C-538

A77-2 served at Laverton with 1APU, and crashed on 28 SEP 1956 near Woomera at Evett's Field,<sup>23</sup> and was struck off charge on 6 MAR 1957. In addition, a second T.7 was delivered as A77-4 in 1953.

## A77-3 / WM262 METEOR NF.11

A77-3 was a Meteor NF.11 received from the UK as WM262 on 25 AUG 1953 and 1AD Laverton commenced assembly the following month. In DEC 1953 A77-3 was delivered to 1APU Trials Flight (which became Air Trials Unit) for *Blue Boar* missile trials, to be again renumbered WM262 in MAY 1955. It crashed and was destroyed by fire on take-off at Mallala on 16 SEP 1955.<sup>24</sup>





## Delivery of Meteors to Korea

As no other jet fighter aircraft were available to replace 77SQN's Mustangs for operations in Korea, the Australian Government accepted RAAF advice so that 36 Meteor F.8s and two T.7 trainers were ordered for delivery in early 1951.<sup>25</sup> The first shipment of Meteors via Singapore was received at Iwakuni in FEB 1951, and 77SQN suspended Mustang operations in Korea in APR 1951 to return to Iwakuni for re-equipment. All 93 RAAF Meteor F.8s (of 94 ordered<sup>26</sup>) were delivered under three contracted indent orders over 1951 and 1953.



New A77-982 with Mustang A68-709 at Pusan in early 1951, one of the first Meteor visits to Korea – this shows how the same rectangular stencil serial number style on both Mustangs and Meteors (unique to 91 Wing at Iwakuni)

### 1st order (O.I.3276), initial delivery - FEB 1951

The first batch of Meteors was to comprise 36 F.8s and two T.7s, but there had been a mishap in delivery. To achieve the quick delivery required, aircraft were flown out from UK to Singapore, then shipped as deck cargo up to Iwakuni – the first delivery was to comprise 16 F.8s and two T.7s, which would then be followed by the remaining 20 F.8s over the next months. First delivery was on 21 FEB 1951 when the light carrier HMS *Warrior* arrived off Iwakuni, but there were only 15 Meteor F.8s and the two trainers.<sup>27</sup> On the long ferry from UK during February 1951, one F.8 – WA935 which had been allocated the RAAF number A77-300 – disappeared over the Persian Gulf.<sup>28</sup>

### 1st order, later deliveries – MAR-MAY 1951

The additional deliveries of the remaining 20 F.8 aircraft continued to be ferried to Singapore from UK. On 23 MAR 1951, ten arrived at Iwakuni aboard HMS *Unicorn*, with a further ten in MAY 1951 – which concluded 1951 deliveries. Presumably financial accounting should later have picked up the undelivered contracted F.8. The table below provides details of this first batch, and the later Meteor orders.



Iwakuni line-up of 19 Meteors JUN 1951 (visible are A77-305, -911 and -744) – before the loop antenna mod

## 77 SQUADRON – FIRST METEOR ORDER

TELEPHONE No. : CANBERRA 531.  
TELEGRAPHIC Address : "PRIMISTER," CANBERRA.  
CABLE Address : "KINDLIER," CANBERRA.



### COMMONWEALTH OF AUSTRALIA.

PRIME MINISTER'S DEPARTMENT,

*Canberra,*

*In reply quote No.*

7th December, 1950.

#### PROPOSED ORDER FOR METEOR AIRCRAFT FROM UNITED KINGDOM FOR RE-ARMING NO. 77 SQUADRON

Cabinet - 4th December, 1950.

Cabinet was informed by the Minister for Air that Mustang fighters with which 77 Squadron is now equipped would not compare with any Jet aircraft which might be brought against them and that General Strademeyer had recommended that they be re-equipped with twin engine jets - Meteors. He pointed out that the Meteor is a much better aircraft than the Vampire and is the best British jet fighter available. At the moment 36 Meteors plus 4 Meteor trainers can be obtained from England at the rate of 6 aircraft per month ex works commencing 3 months from the signature of the contract. The cost would be £2½m. It was reported that the Defence Committee had endorsed the recommendations.

Cabinet decided to seek the advice of the Chiefs of Staff on the question whether they supported the proposal generally or only because of the need for operating in Korea. The Chiefs of Staff were summoned to attend Cabinet at 10 tomorrow.

(See notes of 5th December for further  
consideration of this subject -  
Submission No. 236)

The letter from the PM of 7 DEC 1950 regarding the acquisition of 36 Meteor F.8 fighters and four T.7 trainers. The first order (O.I.3276) would in fact be for only two T.7s initially – with a further two on the second Meteor order in 1951 (O.I.3412). National Archives of Australia 4639/236/27

Order Indent	Delivery Sequence	RAAF Serials	RAF Serials	Details
<b>1st–O.I.3276</b>	1st delivery 15 F.8 and two T.7 delivered by HMS <i>Warrior</i> 21FEB51	Sequence F.8 numbers allocated: A77-911, 373, 446, 735, 741, 163, 616, 744, 29, 811, 740, 982, 728, 368, 730, 300* <b>T.7</b> A77-229, 305	WA782 / WA956  WA731/WA732	36 F.8s ordered, but only 35 delivered as *A77-300 lost in Persian Gulf on ferry UK to Singapore; plus two T.7s.
	2nd delivery six F.8 HMS <i>Unicorn</i> 23MAR51	A77-231, 128, 15, 189, 251, 139	WA944 / WE911	
	3rd delivery 10 F.8 MAY51	A77-949, 734, 959, 721, 726, 597, 559, 464, 385, 354	WA907 / WE918	
	4th delivery four F.8 HMS <i>Unicorn</i> 17JUL51	A77-17, 510, 316, 31	WA694 / WE905	
<b>2nd–O.I.3412</b>	1st delivery two T.7 on SS <i>Glenelg</i> 22JAN52	<b>T.7</b> A77-380, 577	WG974/WG977	22 F.8s ordered [running F.8 total delivered 57] and two more T.7s. A77-397 delayed on ferry through Burma, not received until MAY.
	8 HMS <i>Unicorn</i> FEB52, remainder staggered MAR52-APR52 via <i>Ben Line</i> merchant shipping	Between A77-11 and A77-953 [E/E.88 do not specify order of allocation]	WA998/WE/WF to WH475	
<b>3rd–O.I.3659</b>	1st delivery 18 F.8 by HMS <i>Unicorn</i> 22AUG52	A77-851 / A77-868 consecutive ‘century’ block numbers	WH405/WK735	36 F.8s ordered [running F.8 total delivered 93]. From FEB 1952, ‘scrambled’ numbers policy replaced by ‘-800’ numbers.
	2nd delivery 18 F.8 by British <i>Ben Line</i> JAN toOCT53	A77-869 / A77-886 consecutive ‘century’ block numbers	WK727/WK973	

Australian Meteors were unique in being fitted with the ARN-6 radio compass loop antenna in a clear housing on the fuselage spine.<sup>29</sup> The delay in obtaining this equipment for fitting at Iwakuni<sup>30</sup> meant that restrictions were deemed necessary, to finally allow operations to commence in JUL 1951 – this required at least one aircraft in each formation to have a radio compass fitted with a mandated weather minima (i.e. airfield cloud base and visibility).<sup>31</sup> Soon after commencing training on the Meteor at Iwakuni, the Commander of the US Fifth Air Force, MAJ GEN Partridge, flew familiarisation flights in the T.7 then the F.8 to assess the new aircraft’s capabilities. While the obsolescence of the Meteor was recognised, he considered that by working in conjunction with the F-86 Sabres of the 4th Fighter Wing that “the Meteor could make a useful contribution to the contest for air superiority”.<sup>32</sup>

77SQN’s Meteors were established at Kimpo (K.14) on 25JUL51, and flew their first operation on the 29JUL on fighter sweeps in protection of fighter bombers and escorting bombers.<sup>33</sup> Air combat tasking in “MiG Alley” against MiG-15s (flown by Chinese and later established against Russian pilots) soon showed that the Meteor was no match in combat for the agile Russian fighter – it was hopelessly outclassed at high altitude in the air-to-air role as the MiG was superior in speed, rate of climb and manoeuvrability.<sup>34</sup> Meteor operations were subsequently restricted to bomber and reconnaissance escort and by DEC 1951 largely nugatory runway alert for airfield defence, with no fighter sweeps over North Korea.<sup>35</sup> A change in the role from JAN 1952 saw the Meteors tasked with rockets for interdiction and against other ground attack targets, and from MAY 1952 was again tasked with low level protective fighter sweeps.<sup>36</sup>



**A77-258 1952 – at Kimpo with smaller diameter engine intakes, early metal rear canopy and dorsal antenna**



### **2nd order (O.I.3412) – FEB-APR 1952**

To cover battle losses and accidents – already 14 Meteors had been lost by the beginning of DEC 1951 – the following order O.I.3412/51 was for more Meteor F.8s and T.7 trainers. The order covered 22 F.8s and two T.7s which were received at Iwakuni over the first months of 1952 (the first eight aboard HMS *Unicorn* in FEB 1952) – however, one aircraft (A77-397) was delayed until received on 20MAY52 aboard HMS *Unicorn*, as it had suffered an accident in Burma on the ferry to Singapore.



**A77-258 1953 – (the 2nd order delivered in MAR 1952) at Kimpo shows nose art, which might read “NO HARM”**

The aircraft configuration for the Meteor for the duration of the War was generally carriage of the underfuselage belly tank<sup>37</sup> (and not the underwing tanks), which then allowed the fitting of rocket rails as the 77SQN role changed. 77SQN also introduced double rocket rails in 1953 to allow an additional weapons load to be delivered onto targets.<sup>38</sup>

### **3rd order (O.I.3659) – 1952/1953 deliveries**

The third order of 36 Meteor F.8s (A77-851/868, and subsequent batch A77-869/886) were primarily delivered with large bore intakes, and would later receive a fleet-wide modification during 1954 with the clear-view canopy (to replace the metal rear-section canopy). The first 18 (A77-851/868) were received on 22AUG52, and the second 18 (A77-869/-886) were delivered throughout 1953. By this stage the aircraft were stored typically for six months by 91 Wing at Iwakuni until required by 77SQN as replacements. Meteor war operations ended in JUL 1953, but 77SQN continued to sit alert, and in March 1954 moved from Kimpo (K.14) to Kunsan (K.8).



**Arrival off Iwakuni in AUG 1952 of HMS *Unicorn* with a lighter, and WH479 (A77-852) lifted off**

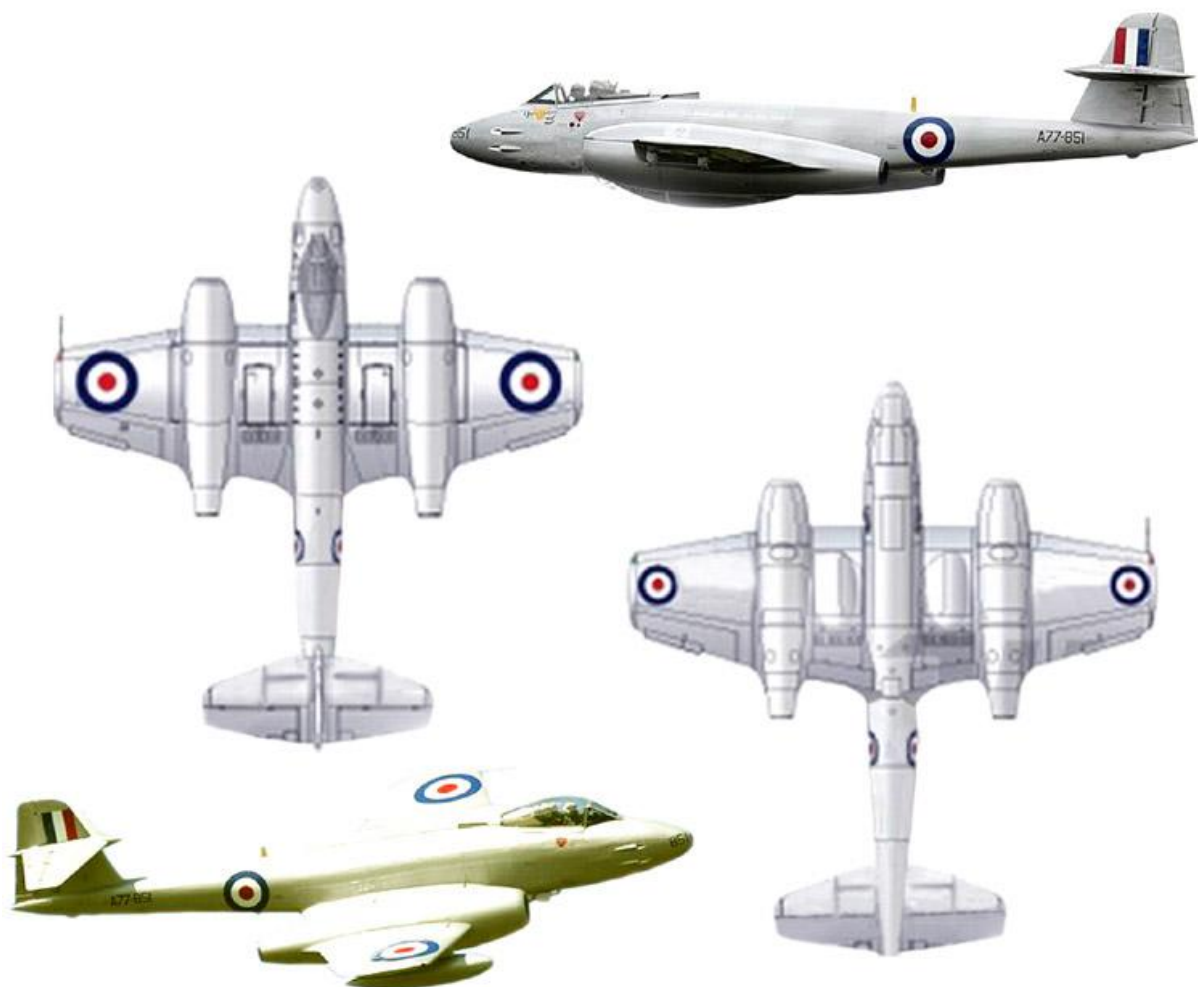
**Meteor Losses.** Between 1951 and 1954, 77SQN lost 54 Meteors in Korea and Japan.<sup>39</sup> Below is provided a table of these 54 aircraft in a chronological serial number list, which includes a T.7 (A77-704) lost in Japan, and an F.8 (WA935/A77-300) lost on RAF ferry to Singapore in the Persian Gulf in 1951. This comprehensive list has been compiled from primary sources: 77SQN RAAF Unit History Sheets A.50 and A.51; RAAF Aircraft Status Cards E/E.88; Australian War Memorial (AWM) casualty reports; RAAF Form A.180 Aircraft Accident Reports; National Archives of Australia (NAA) accident reports; cross referenced with the *adf-serials* aircraft database.

## 77 SQUADRON METEOR LOSSES IN KOREA / JAPAN <sup>40</sup>

A77-11 'EASY II' crashed landing at Kimpo (SGT Geoff Collins injured) 26MAY53, SOC to components  
 A77-15 'Elayne' missing after attack on railway tunnels nr Sinmak (FLGOFF Francis Booth RAF MIA) 27JAN53  
 A77-29 shot down by MiG-15 nr Sunchon (SGT Bruce Thomson POW) 1DEC51  
 A77-46 missing when strafing vehicles (FSGT John Halley MIA) 11FEB53  
 A77-65 crashed landing at Kimpo (SGT Geoff Lushey uninjured) 29AUG52, SOC to components  
 A77-120 shot down by groundfire at Haeju (SGT Lionel Cowper MIA) 30MAR52  
 A77-128 COL with A77-354 nr Kimpo (SGT Ron Mitchell killed) 22AUG51  
 A77-134 'Snookes' crashed when aircraft disintegrated nr Kimpo (SGT Des Nolan killed) 11JUN53  
 A77-139 belly landing Kimpo (SGT Ted Jones) 17FEB53; repaired, crashed Iwakuni (PLTOFF R Ramsey) 12OCT54  
 A77-163 shot down by groundfire after strafing attack (SGT Peter Chalmers MIA) 26MAR53  
 A77-189 shot down by groundfire nr Chinnampo (FLTLT Ian Purssey MIA) 22APR52  
 A77-231 crashed during acceptance test nr Iwakuni (SGT Tom Stoney ejected and injured) 14JUN51, SOC  
 A77-251 shot down by MiG-15 nr Sunchon (SGT Vance Drummond POW) 1DEC51  
 A77-300 never received, lost on delivery ferry over Persian Gulf, SOC 1MAR51  
 A77-316 'The Korean Kid' shot down by groundfire at Chaeryong (FLGOFF Olaf Bergh RAF POW) 27AUG52  
 A77-343 shot down by groundfire on strafing attack on tank nr Hanoori (SQNLDR Don Hillier MIA) 8MAR53  
 A77-354 COL with A77-128 nr Kimpo (SGT Reg Lamb RAF killed) 22AUG51  
 A77-373 shot down by groundfire (PLTOFF Don Robertson MIA) 15MAY52  
 A77-385 'Chloe' crashed landing at Kimpo (SGT Max Outhwaite injured) 11MAY52, SOC converted to components  
 A77-393 crashed on strafing attack nr Yonch'on (PLTOFF Ken Smith MIA) 8 JUL52  
 A77-415 groundfire damage forced landed on beach Paengnyong (SGT Bill Monaghan) 13JUN53; repaired, hit by groundfire Paeguri and returned to friendly airspace and ejected (FLOFF John Coleman RAF uninjured) 22JUN53  
 A77-436 shot down by MiGs nr Cho'do Island (FLG OFF Oliver Cruickshank RAF ejected, but 'chute failed) 2OCT52  
 A77-464 shot down by groundfire nr Sariwon (SGT Richard Robinson MIA) 10FEB52  
 A77-559 'The Verla J' shot down by groundfire nr Haeju (FLTLT Mark Browne-Gaylord MIA) 27JAN52  
 A77-570 take-off accident when blew tyre Kunsan (FLGOFF Peter Clemence) 18MAR54, SOC  
 A77-587 COL with A77-959 nr Kimpo (FLGOFF Ken Blight ejected) 11NOV51  
 A77-616 shot down by groundfire Kuman-Ni (FLTLT John 'Butch' Hannan POW) 6FEB52  
 A77-627 shot down by groundfire nr Haeju (SGT Max Colebrook MIA) 13APR52  
 A77-643 probably shot down by groundfire on rocket attack at Chodi-Ri (FLGOFF Roger James RAF MIA) 7APR53  
 A77-704 crashed from thunderstorm Aomi Shima (PLTOFF Allan Avery/FLTLT Henry Johnston both killed) 1SEP52  
 A77-721 shot down by MiG-15 nr Anju (WOFF Ron Guthrie POW) 29AUG51  
 A77-726 damaged by MiG 5SEP51, repaired; shot down by groundfire nr Haeju (SGT Bruce Gillan MIA) 27JAN52  
 A77-728 'Betty Toot' heavy landing at Kimpo (PLTOFF B Coleman) 27OCT53, SOC and converted to components  
 A77-730 heavy landing at Kimpo (SGT Bruce Thomson) 7OCT51, SOC  
 A77-735 ditched Inland Sea, Koryo, Japan (SGT Dick Bessell) 7MAY51; components at 91Wing Inst A/F #1 JUL51  
 A77-740 landing accident at Kimpo 12AUG51, SOC to components  
 A77-741 engine failure and crashed turning to make landing approach Kimpo (FLTLT Val Turner) 24JAN52, SOC  
 A77-811 damaged by MiG-15, belly landed Kimpo (SGT Doug Robertson) 3NOV51, SOC to components  
 A77-852 shot down by groundfire during road recce (FLTLT Fred Lawrenson MIA) 24DEC52  
 A77-853 'No Sweat' crashed landing at Kimpo (PLTOFF S Eggleston uninjured) 28DEC53, SOC to components  
 A77-856 shot down by groundfire on rocket attack at Anji-Dong (FLGOFF George Dollittle RAF MIA) 17MAY53  
 A77-857 'Top O' the Mornin' crashed on takeoff Kimpo (FLTLT B Ball RAF) 29AUG53, SOC to components  
 A77-858 shot down by groundfire on strafing attack at Soha-Ri (FLGOFF Arthur 'Taffy' Rosser RAF MIA) 28MAR53  
 A77-859 'Darky Jones' ran out of fuel, crashed on approach Kimpo (SGT Doug Doel) 4AUG53, SOC to components  
 A77-860 crashed after takeoff Kimpo (SQNLDR Len McGlinchey killed) 16JUL53  
 A77-862 COL with A77-866 and crashed nr Kunsan (FSGT Dalway Oswald ejected) 31MAY54  
 A77-864 crashed landing at Kimpo (WGCDR D R Beattie uninjured) 13FEB54  
 A77-866 COL with A77-862 and crashed nr Kunsan (PLTOFF Harry Andrews killed) 31MAY54  
 A77-911 crashed on strafing attack Chunghwang-Ni (PLTOFF John Surman MIA) 9JUN52  
 A77-920 shot down by groundfire nr Pyong-San (SGT Ian Cranston MIA) 9MAR52  
 A77-949 shot down by MiG-15 nr Sunchon (FSGT Don Armit MIA) 1DEC51  
 A77-953 crashed on take-off Kimpo (FLTLT Lance 'Slim' Haslope killed) 5AUG52  
 A77-959 COL with A77-587 nr Kimpo (PLTOFF Doug Robertson killed) 11NOV51  
 A77-982 shot down by groundfire strafing vehicle nr Chodong-Ni (SGT Don Pinkstone ejected, POW) 15JUN53

## METEOR F.8 77 SQUADRON KOREA

Overall aluminium High Speed Silver <sup>41</sup> and Type-D national markings



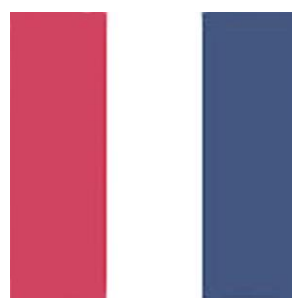
Roundel inches (cm): fuselage and underwing 36" (91.44), upper wing 54" (137.16) <sup>42</sup>

Fin flash: 24" (60.96) wide (each colour 8") x 28" high (71.12)

Originally on earlier RAF Meteors, the roundel was 32" diameter beneath the wings to allow for marking the underwing RAF serial number but not required on RAAF aircraft.



Silver Meteor Type-D



Type-D Fin Flash

Black serial number figures: height 8" x 5" in a RAAF rectangular stencil font <sup>43</sup>

A77-1 2 3 4 5 6 7 8 9 0

The last two or three digits of the A77- serial number were repeated in 8" figures on both sides of the nose.



## 'High Speed Silver'

High Speed Silver was the nickname given to overall gloss aluminium applied to RAF aircraft from the late 1940s – for Meteors, Canberras, Vampires and even later mark Spitfires. The RAF specification DTD772 (in Air Publication A.P.2656A) refers to specific finishes in the RAF stores vocabulary 33B, 'glossy aluminium' was 33B-865. National markings glossy red, white and blue are also listed with their stores identification, but were not defined under the British Standard (BS) 381C specifications – *Roundel Blue* BS381C-110, and *Post Office Red* BS381C-538 – until 1966.<sup>44</sup>

This leaf issued with A.L. No. 40, April, 1949

A.P.2656A, Vol. I, Sect. 9

## Chapter 4

### HIGH GLOSS FINISHING SCHEME, D.T.D.772

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#### Introduction

1. The high gloss finishing scheme to D.T.D. 772 is a smooth finish for use on the external metal surfaces of high speed aircraft. The scheme is a composite synthetic-cellulose one, but, because the final finishing coats have a cellulose base, the scheme is classified as cellulose ("C"). Components finished in accordance with this scheme should be marked as follows:—

D.T.D.772  
C

The markings should be in 1 in. letters, in colour Black, near the serial number.

#### Materials

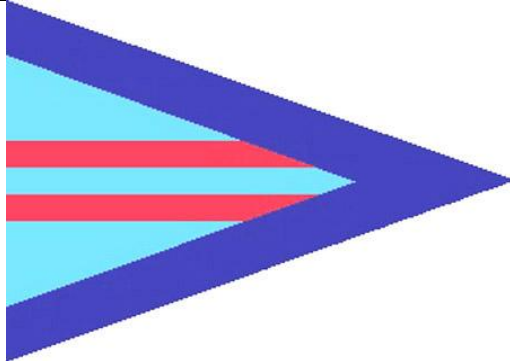
2. The materials required for finishing aircraft in accordance with D.T.D.772 are as follows:—

Material	Stores Ref. No. (Sect. 33B)	Container size
Primer, synthetic	863	1 gall.
Filler, synthetic-cellulose	864	1 ..
Finish, glossy aluminium	865	1 ..

Material	Stores Ref. No. (Sect. 33B)	Container size
Finish, extra dark sea grey (for Naval aircraft)	908	1 gall.
Finish, sky (for Naval aircraft)	909	1 ..
Finish, matt black (for Naval aircraft)	910	1 ..
Finish, glossy black (for Naval aircraft)	911	1 ..
Thinners, primer, synthetic	867	1 ..
Thinners, synthetic-cellulose	868	1 ..
Stopper	869	1 lb. tin
Identification colours:—		
Bright Red	912	1 gall.
White	913	1 ..
Bright Blue	914	1 ..
Yellow	915	1 ..
Black	916	1 ..

3. Information on the weight addition of the various coats, thinning, and average drying times is given in Table 1.

## 77 SQUADRON COMMANDERS' FLAGSHIPS 1950-1953



WGCDR Lou Spence in A68-809 was 77SQN's first CO in Korea, killed in his Mustang in 1950



SQNLDR Dick Cresswell in a Mustang MAR 1951, and was CO for the Meteor introduction



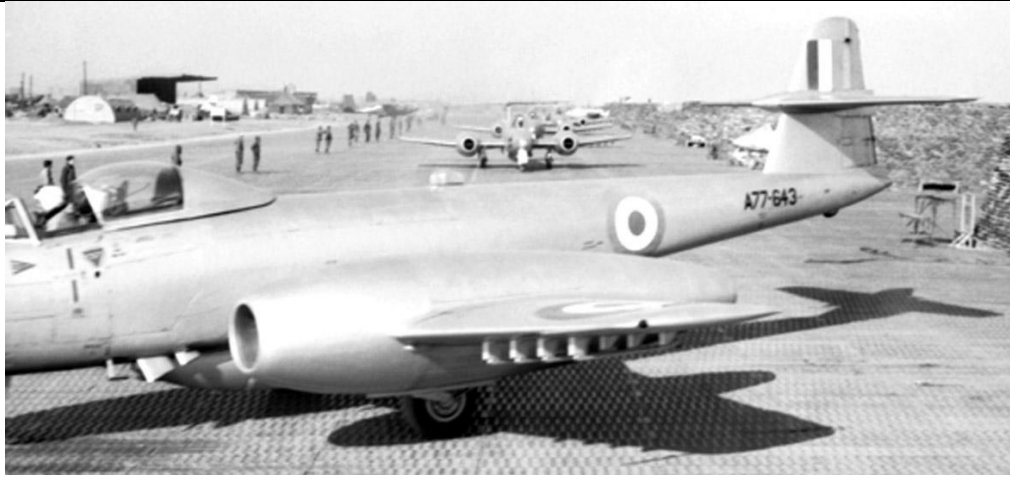
WGCDR Gordon Steege (standing) DEC 1951



WGCDR Ron Susans CO first half of 1952



WGCDR Ron Susans (CO until MAY 1952) supervised the re-rolling of Meteor operations from air-to-air against the MiG-15s to hazardous low level interdiction ground attack missions. This aircraft A77-11 [q.v.] was named "Mart & Geoff" after his sons – as CO he flew A77-11 over his last two months on 77SQN (APR and MAY52).



**A77-643 CO WGCDR Kinninmont's mount from mid 1952**



**WGCDR Jack Kinninmont CO 77 at Kimpo from JUL to NOV 1952**



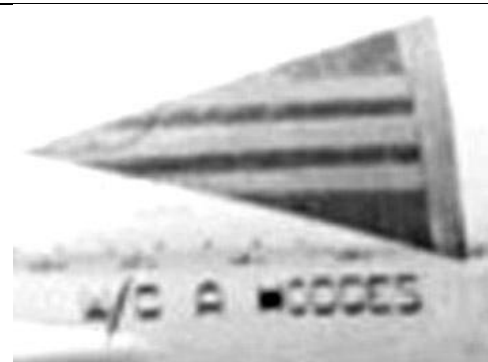
**A77-857 MAR 1953 with CO WGCDR John Hubble, who flew A77-857 over FEB-JUN 1953**



**WGCDR Al Hodges (left) replaced WGCDR John Hubble (right) as CO at Kimpo 5 JUN 53 and saw the end of war ops in JUL 53**



**A77-864 with WGCDR Al Hodges JUL 1953**



**Unusual interpretation of WGCDR pennant on CO's A77-864 in JUN 1953 (Hodges served as CO until 24NOV53)**



## 77 SQUADRON KOREA METEOR NOSE ART

### A77-11 (WH259) "Mart & Geoff"



A77-11 was received as WH259 in the 2nd order of RAAF Meteors, shipped to Iwakuni on the SS *Ben Cruachan* in MAR 1952, and was WGCDR Ron Susans' aircraft over his last two months in command (APR and MAY 1952) and named "**Mart & Geoff**" after his sons.



The "Mart & Geoff" script was probably painted in red (shown in a coloured rendition above), as this was the contemporary 77Sqn nose art style in early 1952. Later in 1952, A77-11 became "**EASY II**".

## A77-11 (WH259) "EASY II"

After being the CO, WGCDR Ron Susans', aircraft over his last two months in command (APR and MAY 1952) as "Mart & Geoff", in late 1952 A77-11 received the "EASY II" nose art (probably inspired by its serial number "11"). This was in a different style to the previous cursive script used on 77SQN Meteors.



FLT LT Michael Whitworth-Jones RAF 24 JAN 1953



FLT LT John Price RAF in early 1953



By FEB 1953, A77-11 had become the aircraft of FLG OFF John Price RAF (later AVM), who enlarged the "EASY II" nose art (as coloured above). Price flew A77-11 until MAY 1953, until it crashed landing at Kimpo on 26MAY53 (SGT Geoff Collins injured), and A77-11 was SOC to be converted to components.

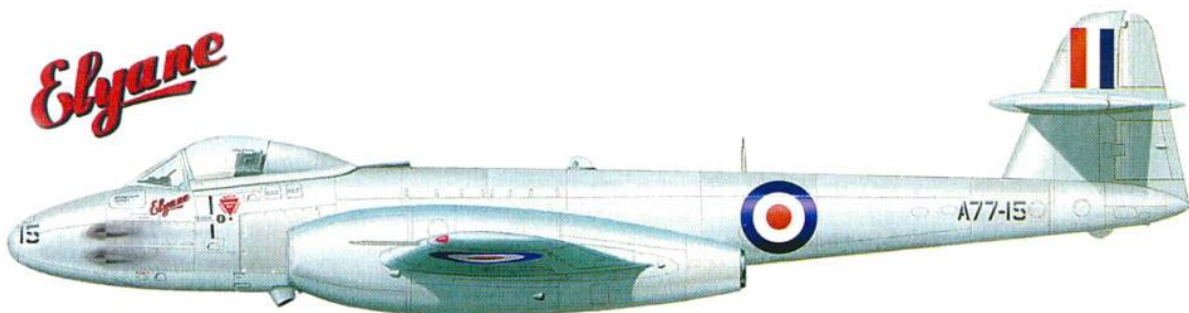




## A77-15 (WE911) "Elyane"



WE911 was delivered in the first RAAF Meteor order (O.I.3276) in MAR 1951 on HMS *Unicorn*, and as A77-15 on 1 DEC 1951 was flown by PLTOFF Bruce Gogerly when he scored his MiG kill – the first confirmed for 77SQN. Twelve Meteors were engaged by over fifty MiG-15s over Pyongyang, and in the opening attack two Meteors were damaged with one (A77-559 FSGT Bill Middlemiss) being forced to return to Kimpo. PLTOFF Bruce Gogerly (A77-15) latched onto the tail of one MiG-15 and saw his fire scoring hits on the MiG's fuselage, and it crashed in flames. Several other pilots had fired at MiGs and a second aircraft was seen to hit the ground, so Gogerly was credited with one destroyed and one shared. It is probable the "Elyane" nose art was adopted by Gogerly after the DEC 1951 engagement, but this is unconfirmed, however he did fly A77-15 until JUN 1952.



WOFF Bob Turner climbs out of A77-15 at Kimpo JAN 1953



Colourised "Elyane" marking

Remaining as "Elyane", this aircraft has reportedly been identified as the aircraft of WOFF Bob Turner, which he did fly 5 times in JAN53 – however, A77-15 was lost on 27JAN53, when FLGOFF Francis 'Bertie' Booth RAF failed to return from an attack on railway tunnels near Sinmak in northern Korea. Bob Turner then adopted A77-17 "Audie" as his aircraft (which he flew until JUN 1953).

## A77-17 (WA964) "Audie"



A77-17 was also part of the RAAF's first order (as WA694) and offloaded from HMS *Unicorn* at Iwakuni in JUL 1951. After the loss of A77-15, WOFF Bob Turner took A77-17 in JAN 1953, who named "Audie" after his wife, also with his home South Australian crest. Turner flew A77-17 until his tourex in JUN 1953.



Back on his second tour, in APR 1953 FLTLT Bruce Gogerly posed with A77-17

A77-17 survived the war to be shipped to Australia in 1954, flew in "Operation Welcome Home" and served with 78 Wing in 1955, and transferred to 22SQN in JUL 1956 until 1958. It was then relegated to training duties as Instructional Airframe No.11, before being consigned to fire dump training at RAAF Laverton in 1961.



## A77-134 (WE898) "Snookes"



**A77-134 "Snookes" with FSGT John Halley**

A77-134 was delivered to the RAAF as WE898 in FEB 1952, and was nicknamed "**Snookes**" and was flown by FSGT John Halley (above) from NOV 1952. PLTOFF Halley was lost on operations in A77-46 on 11 FEB 1953



A77-134 "Snookes" typified the early 77SQN nose art in 1952 – a simple name in red cursive script below the windshield, on the port forward fuselage

A77-134 crashed four months later when it broke up on training flight near Kimpo on 11 JUN 1953. SGT Des Nolan was killed as the aircraft disintegrated whilst recovering from a barrel roll. It was struck off charge to be converted to components.

## A77-157 (WE889) "COCK O' TH' NORTH"

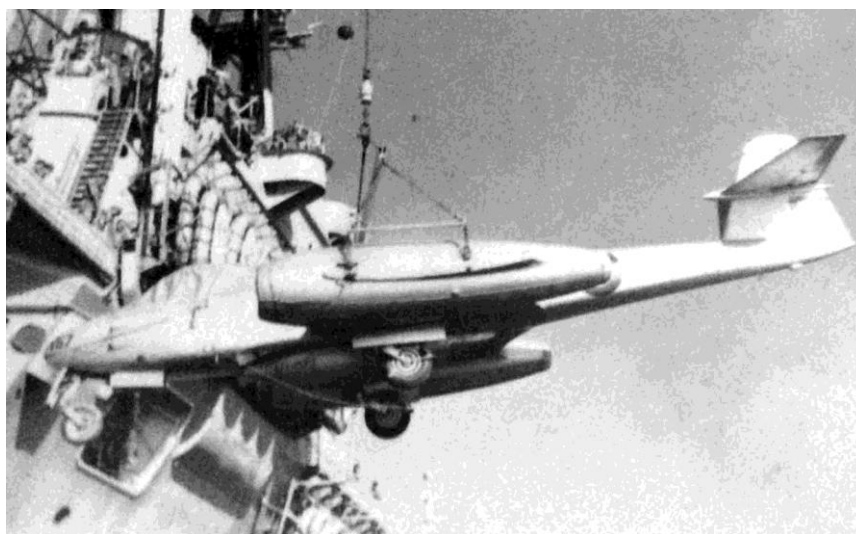


A77-157 (below) in revetments beside A77-258 (possibly named "NO HARM") and A77-207 "BOWL 'EM OVER"



interpretation of the nose art and colours

WE889 was delivered in APR 1952, and as A77-157 was the aircraft of 'A' Flt Cdr, FLTLT Doug Hurst, over the second half of 1952 until JAN 1953. Then A77-157 was handed on to FLTLT Michael Whitworth-Jones RAF in FEB 1953 which he flew until MAY. It was over this stage that A77-157 had probably carried **"COCK O' TH' NORTH"** (perhaps the RAF pilot was from the north of England, naming it after the express London & North Eastern Railways locomotive?). Whitworth-Jones was awarded a DFC at the end of his tour in JUN 1953, and was tragically killed a month later in a Venom crash at Holbeach weapons range in UK.



A77-157 hoisted aboard HMAS *Vengeance* NOV 1954

A77-157 returned to Australia over NOV/DEC 1954 aboard HMAS *Vengeance*, and served with 78 Wing over 1955-56, 22SQN 1957-60, and then as the CAF reserve squadrons ceased flying, to 38SQN Communications Flight. In 1963, A77-157 was converted to a U.21A drone for both of the Air Trials Units (1ATU and 2ATU), where it was destroyed by missile at Woomera in SEP 1969.



## A77-207 (WH251) "BOWL 'EM OVER!"



**"BOWL 'EM OVER"** was received as WH251 from the SS *Benlech* at Iwakuni in APR 1952 to become A77-207, and by MAR 1953 had been assigned to SGT Geoff Collins at Kimpo who flew it until the end of hostilities in JUL 1953. Collins had played VFL with Melbourne's Demons club, and "Bowl 'Em Over" was the club's slogan – the 20" high red devil (coloured below) may have inspired 20TU's later 'Red Devil' Vampire marking.



Pilot, Melbourne Demon SGT Geoff Collins 1953



A77-207 Geoff Collins' demon Bowl 'Em Over



SGT Frank Martin borrowed A77-207 in MAR 1953

Geoff Collins, promoted to PLTOFF in JUL, flew A77-207 until AUG 1953. In 1954 he captained the Melbourne Demons to the Grand Final. A77-207 returned to Australia 1954: 78Wing 1955-56, 22SQN 1957-60, then 38SQN Comms Flt 1960-62. Converted into a U.21A drone from 1963, and destroyed by a missile in NOV 1971.

## A77-316 (WA945) "The Korean Kid"



WA945 was delivered to the Iwakuni via HMS *Unicorn* in JUL 1951, and as A77-316 was the mount of SGT Jim Kichenside who served in Kimpo from MAR-SEP 1952, and is shown above on 5AUG52 with PLTOFF Randy Green (early in his tour). Ground crew had named A77-316 "**The Korean Kid**" after the unit's youngest pilot, and a brief handing-over ceremony was held in MAY 1952 to 'present' the aircraft to SGT Kichenside (below right), who flew it on several missions over MAY-AUG 1952. Kichenside was to complete 148 missions on Meteors with 77SQN.



On 27AUG52, Kichenside was programmed to fly A77-258 while "his" A77-316 was allotted in the same formation to FLGOFF Olaf Bergh RAF for a rocket strike mission near Yongmadong, North Korea. A77-316 was hit by ground fire, and FLG OFF Bergh ejected safely, but was captured to spend the remainder of the war as a POW. Another "kid" name, later over MAR-MAY 1953, was **A77-31** SGT (later AVM) Billie Collings' aircraft "**Billie the Kid**".



## A77-368 (WA952) "Rosemary"



A77-368 "Rosemary" line-up at Kimpo June 1952

Delivered as WA952 in the original delivery on HMS *Warrior* in FEB 1951, at the beginning of 1952 A77-368 was named "**Rosemary**" assigned to SGT Bob Strawbridge (after his girlfriend) – he was awarded the DFM for Korea.



Another A77-368 line-up in 1953



A77-368 at the RAAF base in Canberra in 1960



After Korean War service, A77-368 flew with 78 Wing over 1955-58, then with 22SQN until 1960 with the cessation of CAF reserve flying, when it was then stored pending allocation to the AWM. A77-368 "Rosemary" is in the care of the AWM in Canberra: shown above in storage, then on AWM display.

## A77-385 (WE918) "Chloe"

WE918 was part of the RAAF's first Meteor order, but was held in Singapore and not delivered to Iwakuni until MAY 1951. As A77-385, it was flown PLTOFF Bill Simmonds on 8 MAY 1952 when he was credited with shooting down a MiG-15, the pilot being seen to bale out. A77-385 carried "Chloe" apparently over 1951-1952, in the simple red script used by 77SQN at that early stage for nose art. However, A77-385 crashed shortly after the MiG engagement when landing at Kimpo on 13 MAY 1952, to be written-off and converted to components.

Chloe



In early 1952 A77-385 was marked on the tip of the nose as "Chloe", as seen here with 77SQN pilots SGT Phillip Zupp and SQNLDR Bill Bennett.



Subsequently A77-875 was briefly marked with "Chloe" nose art at Fighterworld museum at Williamtown, obviously in salute to Bill Simmonds' MiG-15 kill in A77-385/"Chloe" of MAY 1952.



## A77-422 (WF750) "Die-R-Ear" / "Benny II"

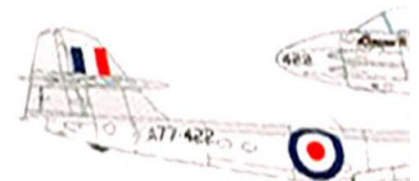


We have seen no pictures of this nose art, but 'Red Roo' Models have produced a decal sheet for A77-422 as "Benny II".

### Boring Old Silver

Sheet Number One: A77-422, "Benny II"  
A Red Roo Models United Roo Decal Sheet

This Meteor F Mk8 was operated by 77 Squadron RAAF, at Kimpo, Korea was transferred to the RAAF in May 1952. The aircraft survived its crash at Woomera in August 1969. The aircraft was finished in a national markings of this period. The serial numbers were applied were fitted to each wing.



"Die-R-Ear PASS ANYTHING!" – probably marked in red in 1952 or 1953 – had been delivered as WF750 to Iwakuni aboard the SS *Ben Cruachan* in MAR 1952. As A77-422 it was assigned to FSGT Tom Stoney over AUG-NOV 1952 who was awarded the DFM (after his US DFC in 1951 on Mustangs); then FSGT D Ramsay for NOV-DEC 1952; over the first half of 1953 to RAF pilot FLG OFF Bryan 'Bugs' Burley. The "Benny II" nose art probably appeared over mid-1954 at Kunsan probably when assigned to SGT Roy 'Nugget' Hibben – whose wife was nicknamed 'Benny'. Hibben was later awarded the AFC for flying instruction, and the DSO as WCDR CO of 9SQN in Vietnam in 1970. Damaged in landing accident at Kimpo in OCT 1953, A77-422 survived the war and was shipped to Australia in 1954.



A77-422 c1958 serving with 22SQN, on the 23SQN flightline at Amberley

Stored over 1955, A77-422 flew with 78WG in 1956, 22SQN 1957-60. The converted by Fairey Aviation at Bankstown into an unmanned U.21A in 1961, A77-422 served with the ATUs from 1962 and crashed at Woomera in AUG 1969.

## A77-446 (WA783) "Black Murray"



WA783 was of the original RAAF Meteor shipment on HMS *Warrior*, delivered to Iwakuni in FEB 1951, and as A77-446 it carried nose art "**Black Murray**" over SGT Ken 'Black' Murray's two tours (OCT1951-JUN1952 and SEP1952-MAR53). He departed Korea on 13MAR53 as a PLTOFF, completing 333 Meteor jet missions in Korea<sup>45</sup> with a DFC and DFM. On the 27MAR53 (the A77-851 "Halestorm" engagement), a flight of four Meteors on an armed reconnaissance mission spotted a MiG-15 chasing two USAF F-80 Shooting Stars, with two more MiGs appearing as the Meteors approached. A77-446, flown by SGT Dave Irlam, received major hits from one of the MiG-15's 37mm cannon, broke contact to limp back to Kimpo, and A77-446 was able to be repaired.



SGT Ken Murray 1952



SGT Phillip Zupp 1952



SGT Phillip Zupp again, APR 1952

A77-446 later was named "**Marara I**" in 1954 (FLGOFF Hampton), survived the war to be shipped to Australia. After service with 78 Wing over 1955-56 (including "Operation Welcome Home"), A77-446 was offered for disposal in 1958 to be sold for scrap in APR 1959, and was converted to saucepans with other Meteors at Tocumwal over 1961.



### A77-559 (WA910) "The Verla J"



"The Verla J" the nickname for WA910/A77-559, delivered in MAY 1951. A77-559 was named after FSGT Bill Middlemiss' fiancée in late 1951, so this is one of earliest examples of Meteor nose art. A77-559 was lost on 27 JAN 1952, with pilot FLTLT Mark Browne-Gaylord missing in action.

### A77-570 (WE890)



A77-570, delivered as part of the 2nd order in MAR 1952 aboard the SS *Ben Ledi*, did not see 77SQN service in Korea during hostilities, remaining at Iwakuni with the Conversion Flight, and is not linked to any nose art. A77-570 crashed on take-off when it blew a tyre at Kunsan on 18MAR54 (FLG OFF Peter Clemence), with the resulting damage (below). Written-off. A77-570 was shipped to Australia for 2AD to convert its components in 1955. This picture also shows that even as late as 1954 at Kunsan, some Meteors still had the original early style metal rear canopy.



## A77-702 (WA732) "Leonie"



The first Meteor delivery aboard HMS *Warrior* in FEB 1951 included the first 35 F.8s, and the first pair of T.7s – A77-229 (which became A77-701) and A77-305 (A77-702). Here A77-305 is lined-up with F.8s at Iwakuni in JUN 1951. Below, reserialled A77-702 in 1952, carrying nose art "Leonie".



The change in serial to A77-702 in FEB 1952, was part of the policy for all RAAF T.7 trainers to be numbered in the '700-series'. A total of four T.7s were delivered to Iwakuni, and a further three to Australia in 1955 after the end of hostilities. Shown below, SGT George Hale (left) briefs his brother CPL Vernon Hale prior to a flight.



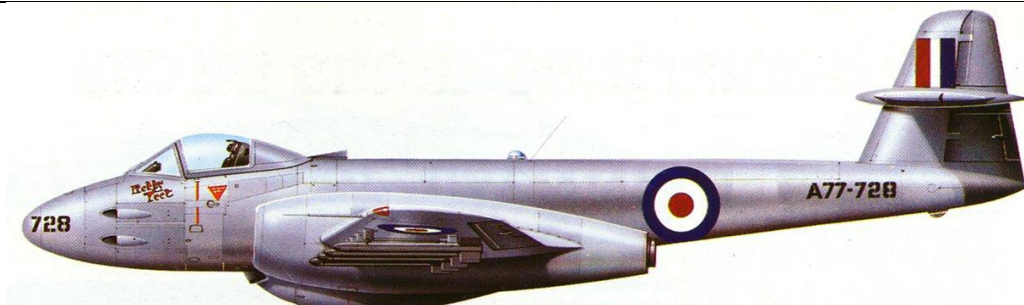
A77-702 had a long history in the RAAF, serving on 78 Wing from 1955, 23SQN over 1956-60, then 38SQN Comms Flight until transferred in 1963 as Instructional Airframe No.13 at Laverton. Since 1971, A77-702 has been on display at RAAF Museum at Point Cook.



## A77-728 (WA951) "Betty Toot"



Another of the original Meteors delivered on HMS Warrior in FEB 1951 as WA951, A77-728 flew with 77SQN over 1951-53. From early 1952 **"Betty Toot"** was flown by FLTLT Keith Martin DFC until tourex mid-year, then taken by 'B' Flight Commander FLTLT Fred Lawrenson over SEP-DEC 1952 (until he was MIA in A77-852), and then to FLTLT Viv Shearn over JAN-JUL 1953. The name "Betty Toot" was a cartoon character spoof on Betty Boop.



FLTLT Keith Martin DFC, 2iC 77SQN, early 1952 with the first iteration of "Betty Toot"



FEB 1953, now the aircraft of FLTLT Viv Shearn (right) who flew 'Betty' until his posting home in JUL 1953



A third variation on A77-728 later 1953



1952



1953

Above, the first and second variations of "Betty Toot"

A77-728 crashed on landing at Kimpo on 27 OCT 1953 (PLTOFF B. Coleman) to be SOC for components.

## A77-744 (WA786) "The Littlest Angel" / "Miss Bunbury"



The first delivery of Meteors - A77-744, A77-229 (later -701) and A77-728 in Korea 1951

WA786 was delivered aboard HMS Warrior in FEB 1951, and as A77-744, it became flight commander SQNLDR Bill Bennett's aircraft by early 1952, with "The Littlest Angel" being an early example of 77SQN nose art.



77 SQN nose art began at the end of 1951, and initially until 1953 was typically simple cursive names in red, with black edges. Here is a colour art rendition, "The Littlest Angel" reportedly referring to his young daughter's favourite record, carried over mid-1952.

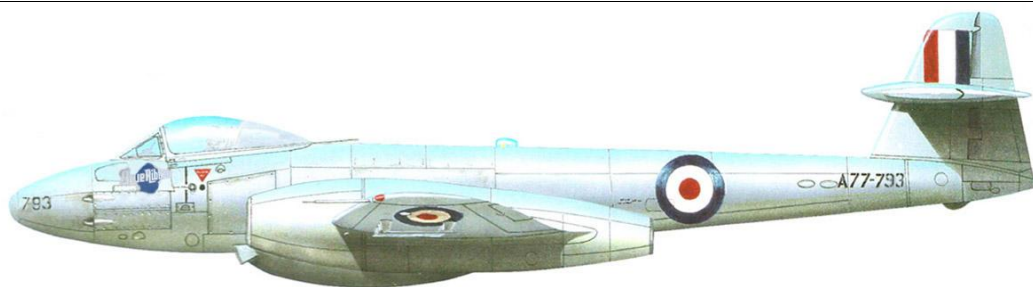
On 8 MAY 1952 PLTOFF Bill Simmonds was credited with shooting down a MiG-15 (in A77-385), and after this confirmed kill he was allocated A77-744 over SEP and OCT 1952, which he called "Miss Bunbury" (replacing "The Littlest Angel" marking). This is another example of early 77SQN red cursive naming nose art used in 1952.



On return to Australia in 1954, A77-744 flew "Operation Welcome Home" then with both 75SQN and 77SQN in 78 Wing over 1955-57, and was declared surplus in 1958 to be sold for scrap in APR 1959.



## A77-793 (WH252) "Blue Ribbon"



"Blue Ribbon", reportedly A77-793, has proved an enigma, as it apparently was never accepted onto 77SQN in Korea. Delivered to Japan as WH252 on SS *Benledi* in APR 1952, A77-793 did survive the war to be shipped to Australia in 1954. But there is no record of issue to 77SQN in Korea on its E/E.88 and no record of it flying on operations in the 77SQN A.51. There are no details on the NCO shown below, and the sophistication of the art work suggests it was applied in 1953 as more detailed Meteor nose art appeared. The marking relates to Pabst 'Blue Ribbon' beer, a US beer from Milwaukee that was available through American forces in Japan. So – the story?



Art rendition of the "Blue Ribbon" logo

The E/E.88 for **A77-793** has it remaining at 91 Wing for the duration, with no mention of it in the 77SQN Unit History, and was shipped to Australia at the end of 1954, to be received by 2AD for re-issue. As A77-793 apparently never went to Korea, it can be assumed that it was retained at Iwakuni for conversion training of replacements prior to proceeding to Korea. The trainer T.7s normally were held here too, so several single-seat F.8s were required to complete the conversion process, remembering that for the duration of hostilities there were no Meteor aircraft at Williamtown for 2OTU training – the pilots arrived in Japan incredibly without ever seeing a Meteor! The conversion to Meteors initially involved a couple of dual rides in the T.7, then onto the F.8 for basic handling, formation and weaponry, then to Korea with some 8 hours on the Meteor.<sup>46</sup> Later, fortunately the training became more thorough, and by early 1953 pilots were doing some 18 hours on the Meteor at Iwakuni.<sup>47</sup> Therefore, A77-793 saw out its war with 91 Wing Conversion Flight, returned to Australia at the end of 1954, and served with 78 Wing over 1955-56, 23SQN 1956-57, and declared surplus in 1958 for sale to scrap in APR 1959.

Other Meteors in this category of no operational Korean service were **A77-570** [q.v.] and **A77-397**, both part of the RAAF's 2nd Meteor order. **A77-397** as WE896 was badly damaged in Burma on the ferry flight from UK to Singapore. Although initially considered a write-off, it was able to be repaired, delivered to Iwakuni aboard HMS *Unicorn* on 20MAY52 and retained by 91 Wing, until 1954 when it served with 77SQN at Kunsan. In NOV 1954, A77-397 was shipped to Australia, flew on "Operation Welcome Home" in early 1955, and then after crashing at Williamtown on 13AUG55, in 1956 was relegated to technical training at Wagga as Instructional Airframe No.2.

## A77-851 (WK683) "The Trumps"



A77-851 was delivered to the RAAF as WK683 in AUG 1952, joined 77SQN the following month being allotted to PLTOFF John Slater and carrying **"The Trumps"** nose art over SEP 1952-MAR 1953. In MAR 1953, the name was changed by new pilot SGT George Hale to **"HALESTORM"**.



SGT Geoff Lushey in SEP 1952 boarding "The Trumps"



FSGT Ken Murray with A77-851 "The Trumps" on completing his 300th mission in Korea, and by JAN 1953 he was Deputy 'B' FLT CDR – still as an NCO. He was promoted to PLTOFF in MAR 1953 prior to returning home.



## A77-851 (WK683) "HALESTORM"



A77-851 was assigned in MAR 1953 to SGT George Hale and "The Trumps" became **"HALESTORM"**. On 27MAR53, Hale shot down a MiG-15 and claimed another damaged, finishing his tour in JUN 1953. Shipped to Australia aboard HMAS *Vengeance* at the end of 1954, A77-851 was flown on "Operation Welcome Home".



**"HALESTORM"** was not to be preserved for history, as A77-851 ended its days as a U.21A drone, and was struck off charge in 1964. However, its forward fuselage was recovered and is on display at the South Australian Aviation Museum. And for an airworthy example, ex-RAF F.8 VZ467 was purchased by Temora Air Museum and has been kept in flying condition as VH-MBX in the markings of A77-851 **"HALESTORM"**.





## A77-853 (WK715) "Robyn"



Delivered as WK715 in AUG 1952, A77-853 began operations on 77SQN in OCT 1952 assigned to FLGOFF Randy Green who flew it over three months until his tourex, with the name "**Robyn**" (probably his wife's name).



1952 images (with a rare one in colour) of FLGOFF Randy Green with the "**Robyn**" nose art – these were evidently for PR release to mark his 100th mission on 3 DEC 1952. A77-853 then passed on to FLTLT John Rose in JAN 1953 until MAY 1953. The nose art was later changed to "**No Sweat!**"



FSGT Ken Murray with "Robyn" JAN 1953



A colour rendition of the nose art

## A77-853 (WK715) "No Sweat!"



After "Robyn", from mid-1953 A77-853 changed to **"No Sweat!"** which featured some excellent artwork – the images below show the higher quality of the nose art being adopted at this stage in the war. A77-853 at this stage was assigned to FLTLT B. Ball RAF, and then apparently to FLTLT Keith Williamson RAF (below) – so "No Sweat!" could have been their creation. ACM Sir Keith Williamson became RAF Chief of Air Staff in 1982.



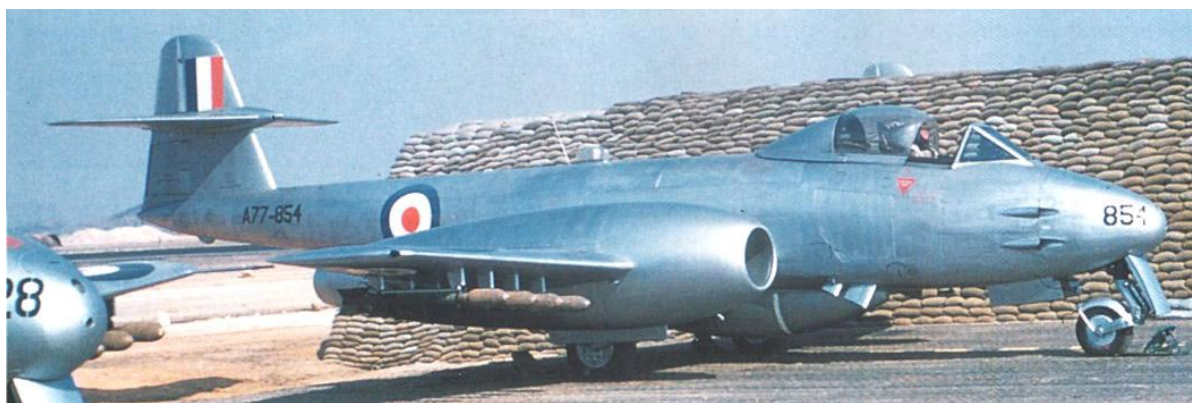
Colourised art rendition of "No Sweat"



A77-853 crashed on landing at Kimpo in DEC 1953 (PLTOFF Eggleston was uninjured) and the aircraft was SOC and converted to components.



## A77-854 (WK650) "The GEELONG FLYER"



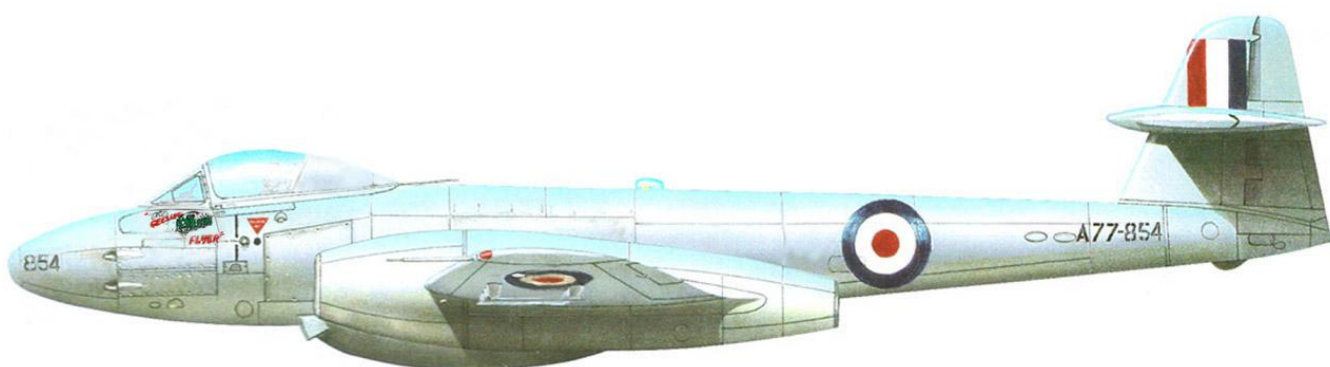
A77-854 was delivered to the RAAF in the third order of Meteor F.8s as WK650 in AUG 1952, and started on ops in JAN 1953, initially flown by the 77SQN 2IC SQNLDR Don Hillier of Adelaide over JAN-MAR (who was lost on ops flying A77-343 on 8MAR53). On 22MAR53 A77-854 blew a tyre on take-off at Kimpo and belly landed (PLTOFF 'Taffy' Rosser RAF uninjured), was repaired at 91 Wing and back on 77SQN after a month. It was then assigned to Victorian pilot SGT J McCarthy (presumably from Geelong) for the final three months of combat missions until the end of JUL 1953 as **"The GEELONG FLYER"**. The Geelong Flyer was the first officially named train operated by Victorian Railways from 1926, providing a high-speed one-hour service between Melbourne and Geelong, at 115km/hr. This provided some good nose art. A77-854 returned to Australia aboard HMAS *Vengeance* in NOV 1954.



"The GEELONG FLYER" 1953



Coloured rendition of "The GEELONG FLYER"



Back in Australia in 1954, A77-854 was inducted by 2AD and re-issued to 77SQN and named **"Hot to Trot"** for the "Operation Welcome Home" formations over capital cities in JAN-FEB 1955 (see postwar).



### A77-855 (WK728) "Boots"



Delivered as WK728 in AUG 1952, A77-855 flew with 77SQN from JAN 1953 (above), and by FEB 1954 was marked as **"Boots"** – most probably painted in yellow outlined in black. Returned on HMAS *Vengeance*, A77-855 flew with 77SQN on "Operation Welcome Home" and remained in 78 Wing until serving on 22SQN at Richmond in the late 1950s. A77-855 was later converted as a U.21A and crashed in 1963.

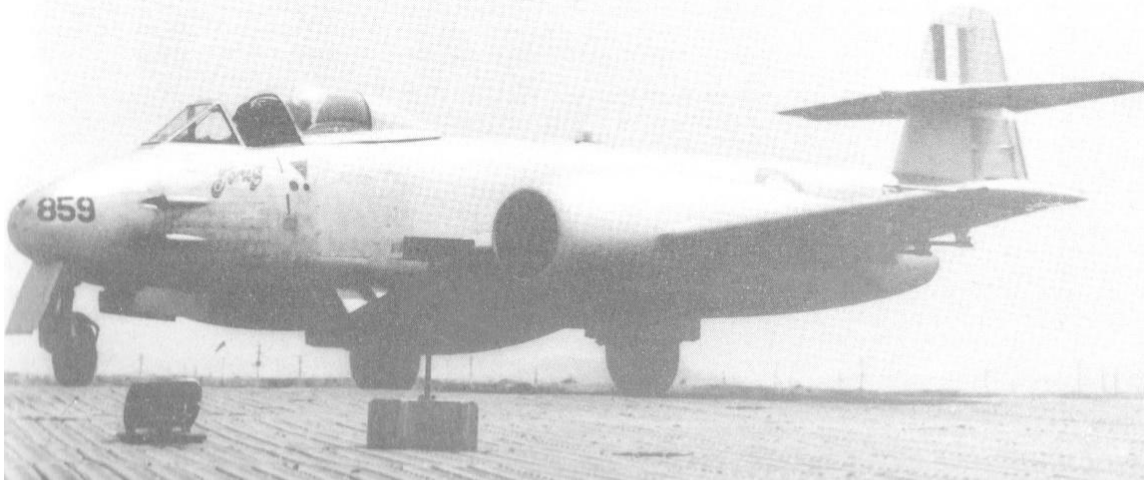


### A77-857 (WK684) "Top O' The Mornin' "



Delivered as WK684 in AUG 1952, A77-857 was accepted by 77SQN in FEB 1953 and flown by the CO WGCDR John Hubble over FEB-JUN 1953, so the **"Top O' The Mornin'"** nose art may very well have been his (as his replacement adopted A77-864 in JUN 1953). A77-857 crashed on takeoff at Kimpo on 29 AUG 1953 (FLTLT Ball RAF uninjured), SOC and converted to components.

## A77-859 (WK688) "Darky Jones"



A77-859 "Darky Jones" APR 1953  
FSGT Ted Jones



A77-859 "Darky Jones" art rendition

Delivered as WK688 in AUG 1952, A77-859 "Darky Jones" became the normal mount of SGT H.E. 'Ted' Jones from APR 1953 until JUL 1953. On 8AUG53 returning from a mission short of fuel, A77-859 crashed on approach to Kimpo (SGT Doel unhurt) and written-off for components.





### A77-861 (WH418) "MARGERY"



Delivered as WH418 in AUG 1952, A77-861 reached 77SQN in APR 1953. While A77-861 was allotted to FLT LT 'Sainy' Rees over APR-JUL 1953, it is unknown to whom the aircraft was then handed over to for this image of **"MARGERY"** at Kimpo FEB 1954. (The postwar flying records – 77SQN A.51 – from AUG 1953 were not maintained, so it is difficult to try to match 1954 photographs to individual pilots.) A77-861 was shipped to Australia NOV 1954 and flown in "Operation Welcome Home" in JAN-FEB 1955. It then flew with 78 Wing until 1956, and in 1958 was issued for technical training at Wagga as Instructional Airframe No.3. It ended its days at Point Cook for fire fighting training over 1962-64.

### A77-862 (WH417) "THE DUKE OF BATH"



THE DUKE  
OF  
BATH

Delivered as WH417 in AUG 1952, and accepted by 77SQN in JUL 53 as A77-862, it was assigned to one of the RAF officers FLGOFF R. Smith and was named **"THE DUKE OF BATH"** – perhaps someone in his family tree! The above colour photograph shows the 'Old English Text' font script is apparently in black. Postwar, A77-862 collided on a mission with A77-866 and crashed at Kum-Gang River, Korea, on 31 MAY 1954 (pilot FSGT D Oswald ejected).



## A77-865 (WH405) "MOUNTAIN DEVIL" / "Curly BLOODNUT"



**"MOUNTAIN DEVIL"** was delivered as WH405 in AUG 1952, issued as A77-865 to 77SQN in JUN 1953, and by MAR 1954 was carrying this attractive nose art – probably a red devil and yellow script. However, this was changed to **"Curly BLOODNUT"** at Kunsan (K.8, below) prior to being shipped to Australia at the end of the year.



**"Curly BLOODNUT"** was still the name carried by A77-865 at Williamtown in early 1955. The pilot below is FLG OFF Eric Haywood, probably during "Operation Welcome Home" JAN-FEB 1955. After 78 Wing service in 1955, A77-865 to 22SQN over 1956-57 when the aircraft "clipped the top of a fence in a paddock" in SEP 1957, so was retired to 1AD until being sold for scrap in APR 1959.



## A77-868 (WK674) "CAP'N MAC"



Delivered as WK674 in AUG 1952, A77-868 was issued to 77SQN in JUL 1953 and flown by SQNLDR Neville McNamara as **"CAP'N MAC"**. McNamara was 77SQN 2iC and Temporary CO (T/CO) over NOV-DEC 1953 – ultimately he rose to the rank of Air Chief Marshal (ACM) as Chief of the Defence Force Staff in 1982. The larger diameter 'wide-bore' intakes are obvious here. Surviving the war, A77-868 flew on "Operation Welcome Home", then with 75 SQN 1955, 22SQN 1956, and disposal 1958. After time with Ultimo Technical College in Sydney, from 1971 A77-868 has been an exhibit at Camden Aviation Museum.



**"Cap'n Mac"**, probably an earlier iteration in AUG 1953



## MATCHING SOME UNKNOWN KOREAN LADIES

Below are images of several 77SQN Meteors in Korea over 1952-1953, some of which we have been unable to identify. Mostly nose art names were in red, but from 1953 markings developed beyond simple red cursive script.

In early 1952, individual aircraft appear in general to have only been allocated to the CO, the 2iC and to Flight Commanders: WGCDR Susans flew A77-11 and SQNLDR Bennett flew A77-744; then WGCDR Kinninmont flew A77-643, FLTLT Hurst flew A77-157, SQNLDR Parker flew A77-343, and FLTLT Lawrenson flew A77-728. There were exceptions: one experienced long-term mission leader who would complete two tours was SGT Ken Murray who flew A77-446 "Black Murray" and would become Deputy 'B' Flight Commander; the youngest pilot SGT Jim Kichenside had A77-316 "Korean Kid", but he flew this only intermittently over MAY-OCT 1952.

Unfortunately photographs do not always reveal the ideal nose art: a clear image, an aircraft number, with a pilot and an accurate date. Some have been identifiable by matching the photograph to the 77SQN A.51 *Unit History Sheet, Detail of Operations* – which provides date and time, aircraft number and pilot, his position in the formation, with details of each specific mission. If this happens in a consistent pattern over several months, the pilot can be matched with a specific tail number, indicating which aircraft has been allocated to a pilot and hence the nose art in a photograph.

What a study of the 77SQN A.51 does also reveal, in addition to the CO and Flight Commanders, the more junior pilots appear to have been allocated individual aircraft – when achieving a section (4-ship) lead, or sometimes an element (2-ship) lead, and particularly from AUG/SEP 1952. Now, this did not mean the pilot would always fly "his" aircraft exclusively the aircraft, as it may not always be available. 77SQN had a strength of some 28 pilots, and would fly often in excess of 50 missions a day, sometimes 70 or 80 – such a busy schedule did not always afford the luxury of allocating a specific aircraft to match the pilot, unless of course it was the CO!



PLTOFF Bryan Howard with "Margie" and he consistently flew A77-46 over SEP to NOV 1952



"Dear Liz" in 1952 with FLGOFF Ross Frayne could possibly be A77-734 which he flew before leaving 77SQN in AUG 1952 to instruct on Conversion Flight



PLTOFF Griff Boord with "Dear Ruth" – probably A77-193 which he consistently flew over SEP- NOV 1952



"AMBER II" Kimpo 1953, markings in yellow/amber





**"Querida Mia" 1952 FLTLT Doug Hurst**



**"Querida Mia" 1952 RAF pilot FLTLT John Mellers**

**"QUERIDA MIA"** (or 'My Darling') could possibly have been A77-510, which John Mellers flew over SEP to DEC 1952. Over this period Doug Hurst had been allocated A77-157, but he did fly A77-510 on a sortie in DEC 1952 after Mellers was posted back to UK. A77-510 returned to Australia and ended its career as a U.21A drone.



**"Av's Job" FLG OFF Avenal Turner** in late 1952, he flew A77-139 his last few months until his tourex in NOV 1952



**"Constipated Can't Be Passed!"** was a variation on A77-422's "Die-R-Ear" – this picture from Kimpo in 1953 could possibly be A77-17, after removal of the earlier "Audie" nose art mid-1953



**"MG"** – possibly A77-871, PLTOFF Smithies in 1954



A77-446 FLG OFF D Hampton cMAR 1954 **"Marara I"**

## 77 SQUADRON POSTWAR – DEPARTURE FOR AUSTRALIA

77SQN's Meteors left Korea for the final time on 12 OCT 1954, ferrying from Kunsan to Iwakuni. The only incident was A77-139 a crash landing at Iwakuni. 491 Maintenance Squadron (as part of the RAAF's 91 Wing at Iwakuni) then prepared and wrapped the aircraft for the sea voyage from Japan. By 29OCT, all aircraft had been stripped and inhibited for their voyage back to Sydney aboard HMAS *Vengeance*. Loading commenced on 9NOV, and the 77SQN Unit History (A50) recorded the following day that "loading of 41 Meteor aircraft completed".<sup>48</sup> These are presumably 41 F.8 aircraft, in addition to the three remaining T.7 trainers. *Vengeance* departed Japan on 19NOV, arriving in Sydney on 3DEC54 for transfer of the Meteors to Richmond. 2AD records show 40 Meteor F.8s and the three T.7s received from 10DEC54.<sup>49</sup>



**Return of HMAS *Vengeance* – “the last of 41 Meteors was loaded onto *Vengeance*” on 10 NOV 1954**

### Summary – the balance sheet of deliveries

The 41 aircraft recorded by the 77QN A50 must be F.8 aircraft. Maybe it is recorded this way as the T.7s belonged to 91 Wing. 94 F.8s were ordered (93 delivered) and four T.7s ordered and delivered, which are accounted as follows:

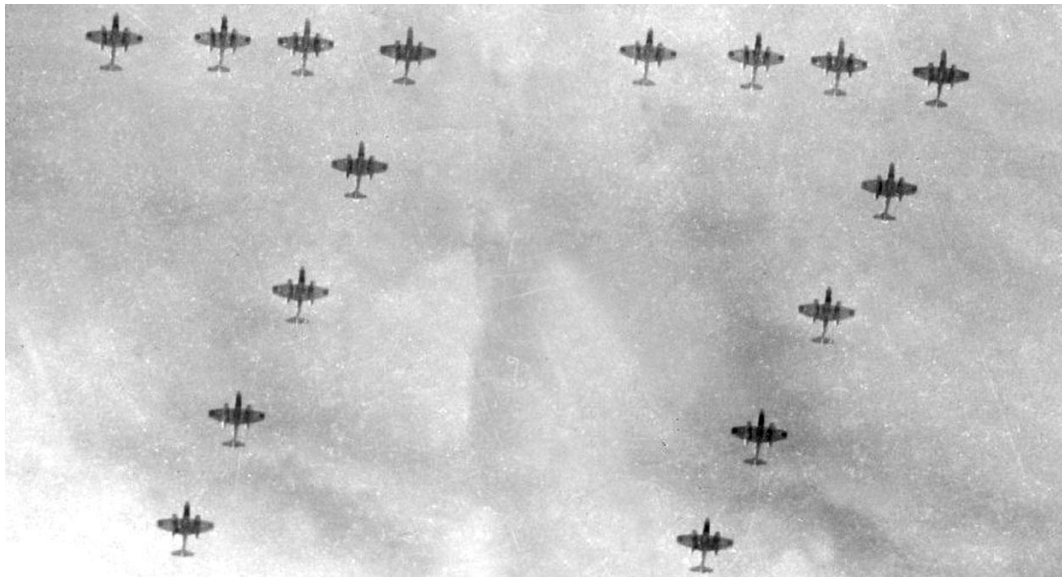
- a. Losses in Korea and Japan 53 x F.8 (including WA935 lost on ferry through Persian Gulf) and 1 x T.7.
- b. Returned on *Vengeance* 41 Meteor F.8s, in addition to 3 x T.7s.

Balance total = 94 x F.8 ordered, and 4 x T.7.

The 2AD Unit History (A50) lists the three T.7s, but only 40 F.8s received at RAAF Richmond over DEC54-JAN55. Why this discrepancy? This appears a simple transcription error, as there is no mention of A77-368 being received. Although A77-368 (which was ultimately allocated to the AWM) does not appear on the 2AD A50, its individual Aircraft Status Card (E/E.88) does record its receipt by 2AD over this time period, and then its subsequent re-issue to 78 Wing (the parent unit for 77SQN) at RAAF Williamstown. So the 41 returned to Australia, and the 53 F.8 losses accounted for, balances the 94 Meteor fighters that had been ordered.

In addition to the three T.7 trainers received back from Japan, the RAAF later received a further three in 1955 as A77-705, A77-706 and A77-707.

## 77 SQUADRON POSTWAR – “OPERATION WELCOME HOME”



“Operation Welcome Home” – JAN-FEB 1955



When 77SQN commenced flying “Operation Welcome Home” over late JAN 1955 and FEB 1955 all aircraft had passed through 2 Aircraft Depot at Richmond, and most had received the new clear canopies and larger bore intakes. The operation involved flying a 16-ship Meteor formation as a “77” over each capital city, supported by two spare Meteors and four (later five) 38SQUON Dakotas. The formation flyover dates were Canberra 22JAN55, Melbourne 24JAN55, Adelaide 25JAN55, Perth 31JAN55, Hobart 5 and 8FEB55, Brisbane 16FEB55, and Sydney 18FEB55. The above photo of the A77-867 line-up was taken at RAAF Laverton on 23 JAN 1955.<sup>50</sup> In JAN 1955, 2AD had issued the following 19 Meteor F.8s to 77SQUON for “Welcome Home”: A77-157, 193, 258, 397, 446, 734, 744, 802, 851, 854, 855, 861, 863, 865, 867, 868, 871, 880 and 881.<sup>51</sup> After several aircraft incidents, a further spare (A77-17) was borrowed from 2AD on 3FEB55 to complete the flyover schedule.





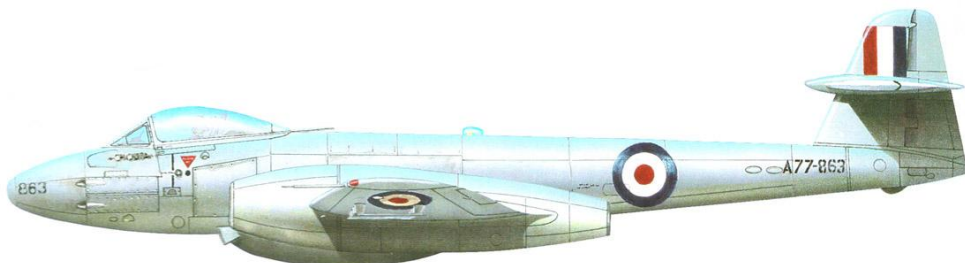
## 77 SQUADRON POSTWAR – “OPERATION WELCOME HOME”

### A77-854 (WK650) “HOT TO TROT”



Delivered as WK650, A77-854 had carried “The GEELONG FLYER” nose art in Korea. Postwar, with 77SQN at Williamtown A77-854 became **“HOT TO TROT”** and took part in the around-Australia “Operation Welcome Home” over JAN-FEB 1955, as seen (right) in a poor quality newsreel download. Subsequently it then served with 75SQN, and then to 1AD storage in 1957, to be sold for scrap APR 1959.

### A77-863 (WK730) “CHIQUITA II”



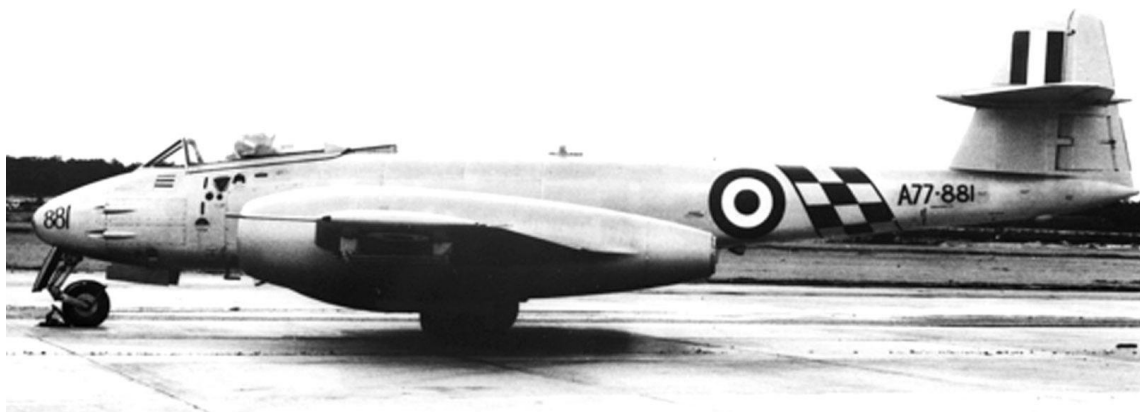
Delivered as WK730 in AUG 1952, A77-863 **“CHIQUITA II”** was shipped to Australia in 1954. Served with 78 Wing over 1955-56 at Williamtown (where above image appears to have been taken) and damaged landing at Laverton during “Operation Welcome Home” in JAN 1955. Then to 22SQN 1957, approved 1960 for conversion to a U.21A over 1962, to ATU and crashed at Woomera in FEB 1969.

### A77-881 (WK910) “WING COMMANDER”



CO 77SQN WGCDR Royston’s A77-881, in which he led “Operation Welcome Home”, then kept over 1955-1956

## 77 SQUADRON CO's CHECKERED BAND A77-881 1955



77SQN's CO in the second half of 1955, CO SQNLDR Roy Royston (he had been WGCDR in 1954 and early 1955 but with postwar restructuring, like many others reverted a rank), had A77-881 marked with a green/aluminium checked band across the rear fuselage – this may have been a trial before selection of a final design. SQNLDR CO's pennant under the windshield on the port side. These markings did not remain long in 1955, as the aircraft was changed to the green/white checkered tail for the 77SQN formation display team. A77-875 has been restored to replicate these markings by Fighterworld at Williamtown.



77SQN band on A77-875 Fighterworld



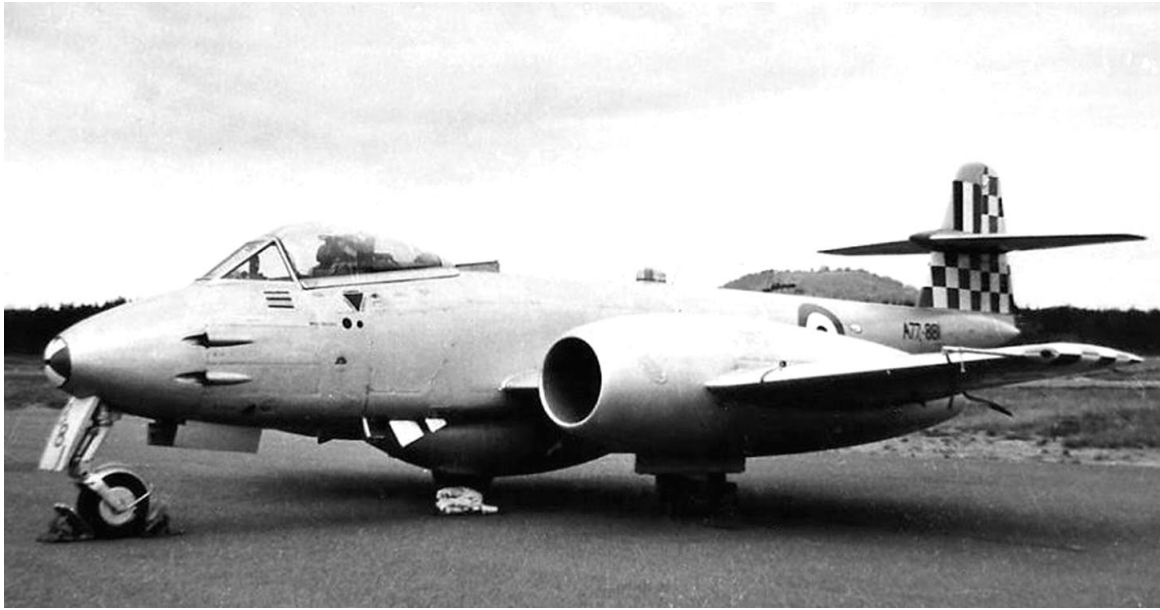
SQNLDR pennant for CO 77SQN A77-881



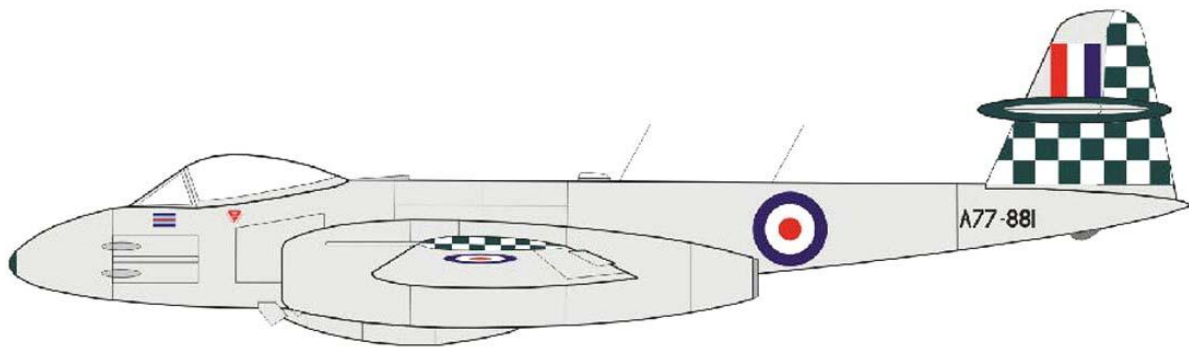
The main eye-catching marking was the three rows of 9" green and aluminium checks on a band across the rear fuselage. The colour was probably more towards "Light Brunswick Green" BS381C-225 – bearing in mind that in 1955 the RAAF used the British Standard BS381C. Like the A77-867 restoration at Classic Fighter Jets at Parafield, Adelaide, Fighterworld's A77-875 may be showing its shade of green too light – close to "Bright Brilliant Green" FS14187 (but at that stage the RAAF was not using US Federal Standard colours).



## 77 SQUADRON CHECKERED TAILS 1956



78 Wing's unnamed aerobatic display team in 77SQN over 1955-56, led by the CO SQNLDR Royston, selected the green and white checkerboard marking in JAN 1956. Known aircraft marked were A77-881 (leader), 874, 886, and at least one other – possibly 875. The 77SQN team disbanded later that year as the unit prepared for conversion to the Sabre.



**A77-881 in 1955**



**BS381C-225**  
**Light Brunswick Green**



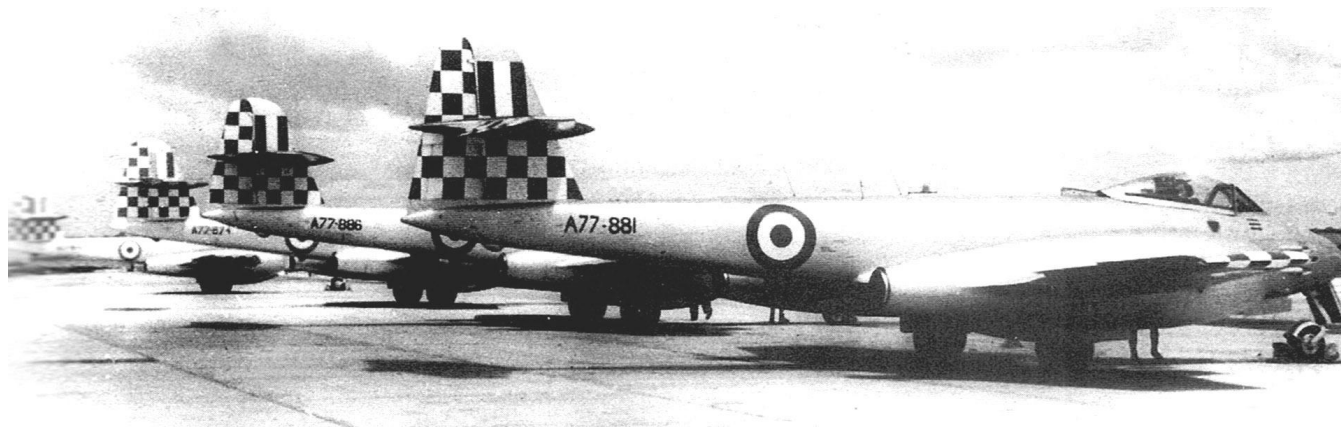
**A77-867 restoration Parafield**

Place	Date	Summary of Events	References to Appendices
ILLIAMTOWN N.S.W.	1955		
	DECEMBER 16	Squadron stood down for Xmas period.	
	JANUARY 9	Pilots return after leave to find the runway still closed after repairs. Four sorties only of individual aerobatics were flown after 1700 hours.	
	1956		
	10	Early start for the whole squadron at 0330 hours. Flying from 0500 to 0800. This system was used to avoid interfering with work on the runway during normal hours. However, the jet blast removed the top dressing gravel from the strip and this idea had to be abandoned.	
	11	No flying this day. Pilots occupied experimenting with squadron markings for the aircraft. A green and white checker board pattern was finally selected.	



## 77 SQUADRON CHECKERED TAIL – RESTORED A77-867

SQNLDR Royston's 77SQN formation team formed in late 1955 and, as seen in the 77SQN A50 Unit History Sheet (see above),<sup>52</sup> on 11JAN56 the unit selected the green and white checkerboard design for the tail. The 77SQN team had disbanded by AUG 1956 as the unit was now converting to the Sabre, and 78 Wing's formation duties passed to 75SQN's "Meteorites". The image below shows four aircraft with the checkered tail at RAAF Williamtown in 1956. A77-867 was subsequently restored at Parafield with these colourful markings, however, it is doubted whether this aircraft actually carried them in service back in 1956.



Tail markings were 9" green and white squares, three rows below the tailplane and four above, checks on wingtips and on nosecone, with a green tailplane bullet fairing. From contemporary B&W (admittedly) photography, and generally accepted profile artworks, the colour was probably more towards "Light Brunswick Green" BS381C-225 – bearing in mind that in 1956 the British Standards were used. The A77-867 restoration at Classic Fighter Jets at Parafield, Adelaide (and now at Ardmore NZ) showed a shade of bright lime green – close to "Bright Brilliant Green" FS14187. However, *in 1956 the US Federal Standard was not used by the RAAF*, so this colour was not used on aircraft at that stage, and there was no direct BS381C equivalent for this bright lime green. Several lighter shades of green were BS381C-218 "Grass Green" (too dark for this lime green used at Parafield), and BS381C-280 "Verdigris Green" (too blue-ish).



A displayed A77-867 at Parafield, Adelaide, in 2006. It has subsequently passed to Ardmore museum in NZ.

## 75 SQUADRON "METEORITES" 1956



The "Meteorites" was 75SQN's short-lived 3-man formation team, formed in AUG 1956 but had disbanded by DEC 1956, as 75 SQN pilots had already begun conversion to Sabres. Led by FLT LT Jim Flemming (A77-875), other pilots were FSGT F. Riley (A77-871) and FSGT O. Bartrop (A77-870), with aircraft A77-874 and A77-882 also painted as spares. Public displays flown were: 16SEP at Wagga, 3NOV at Bankstown and 15NOV at Williamtown.<sup>53</sup> Markings were in light blue thinly outlined in red: blue nosecone, "Meteorites" 40" trailing star below cockpit on both sides, blue wingtips, blue horizontal stabiliser, and blue tail with red bullet fairing. The shade of blue used in "Meteorite" markings appears to have been BS381C-175 "Light French Blue".



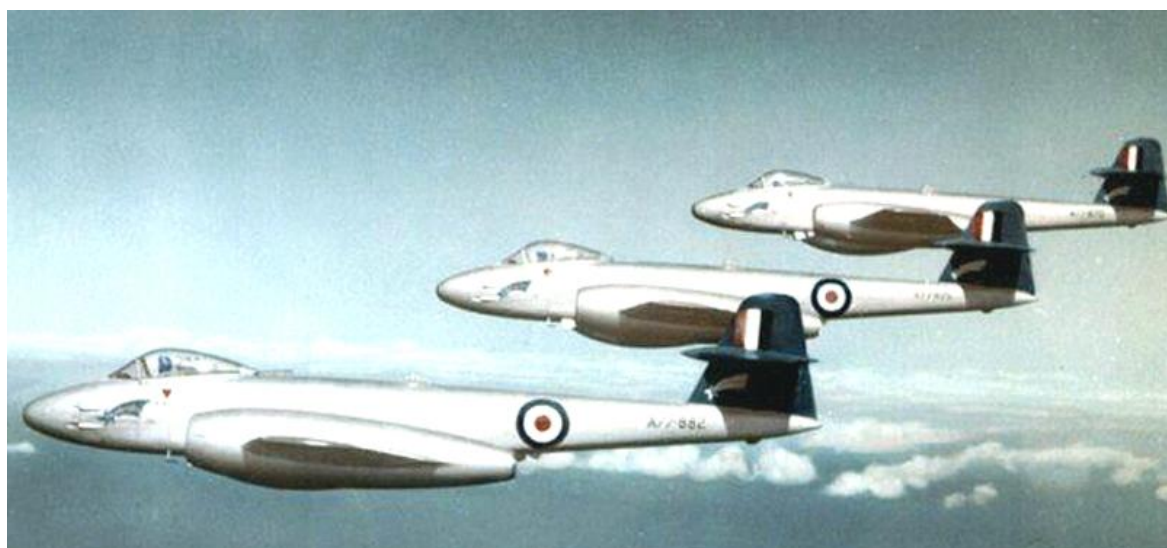
"Meteorite" tail



"Meteorite" nose



BS381C-175 *Light French*  
(*"Meteorite"*) Blue



A colour-tinted RAAF official image of the era shows the blue "Meteorites" markings as too dark for the bright BS381C-175 "Light French Blue".



## A77-510 – AN INTERESTING METEOR



**A77-510 at Kimpo in Korea 1951.** Delivered to Japan as WE905 aboard HMS *Unicorn* in JUL 1951, A77-510 had long service on 77SQN operations throughout the war, then suffered a two-wheel landing at Kunsan in SEP 1954 when the starboard undercarriage failed to lower. Repaired and returned to Australia in DEC 1954. After brief service with 78 Wing over 1955-56, in 1958 it was issued to 1ATU for trials work at Woomera, including sometime fitted with a PR.9 nose for photographing trials. By the end of the 1950s “dayglo” orange was being introduced to the RAAF as a high visibility aid for aircraft sighting and tracking, and this was probably the only dayglo coloured Meteor F.8 (note that at this stage, c1960, A77-510 still has the narrow bore intake, below). Later serving with 2ATU, A77-510 was then converted to a U.21A in 1961, being destroyed by a missile at Woomera in 1968.



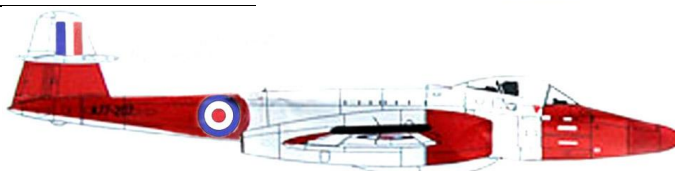
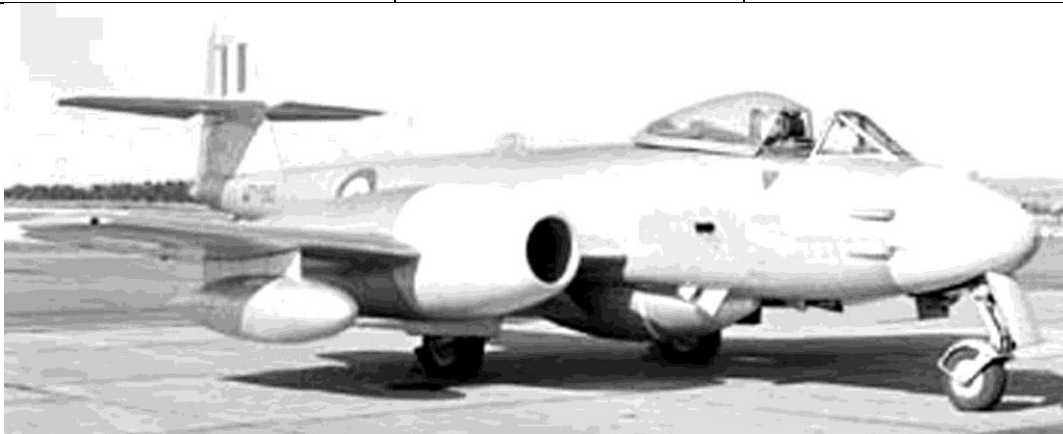
Aluminium High Speed Silver



Dayglo “Blaze” FS28913



Kangaroo Roundel



A77-510 was modified to a U.21A in 1961



Probably the only dayglo T.7, A77-705

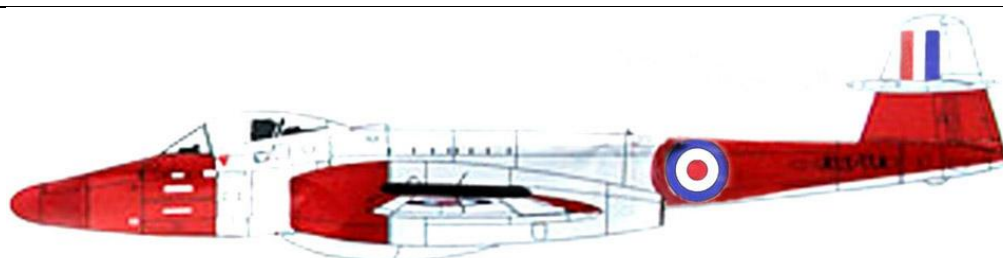


## A77-876 / WK800 – ANOTHER INTERESTING METEOR



**A77-876 serving with 23SQN in a RAAF line-up of the late 1950s at Townsville**

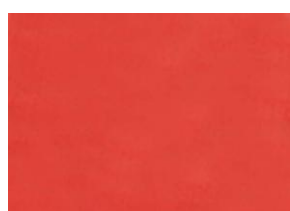
A77-876 was delivered to 77SQN as WK800 in JUL 1953, returned to Australia in 1954, and served with 78 Wing over 1955-56 and 23SQN 1958-60. It was converted to an unmanned U.21A in late 1960 by Fairey Aviation at Bankstown, serving with Air Trials Unit at Woomera. In 1971 it was returned to UK under its original RAF serial WK800 to continue as a target aircraft at RAE Llanbedr. This change of scenery and configuration meant it was redesignated as a Mk.16 – or now in UK terminology as a D.16, as 'D' was the new designator for 'drones' replacing 'U' for 'unmanned', as UK adopted 'U' for 'utility'. Different from Australia, the high visibility scheme in UK for target aircraft (and for the UK Jindiviks too) was gloss red and yellow. WK800 is currently on display at the Boscombe Down Museum.



**A77-876 U.21A configuration at Woomera**



**BS381C-356  
Training "Golden Yellow"**



**BS381C-538  
"Post Office Red"**



**RAF Roundel**



**WK800 Flash**



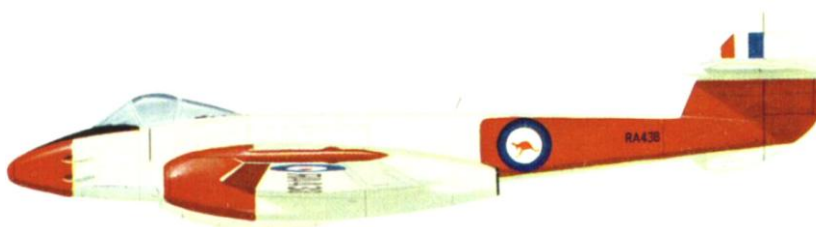
**WK800 Meteor D.16 (A77-876 U.21A) was returned to UK in 1971 for trials work at Llanbedr**

## UNMANNED METEORS



**U.15 VT130 at Evett's Field near Woomera c1962**

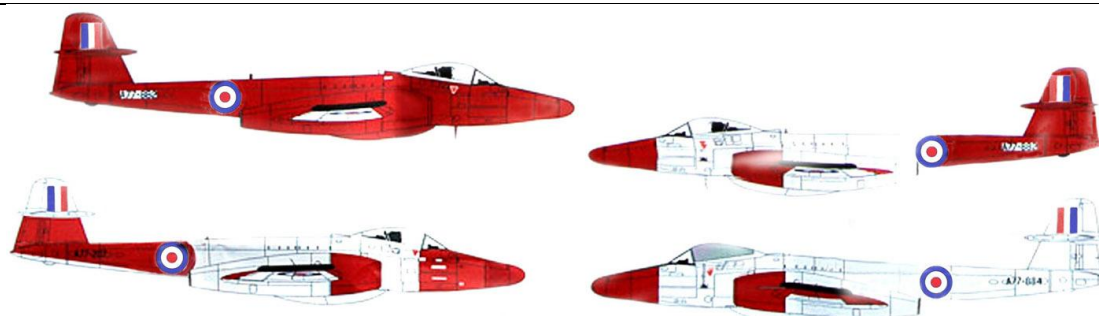
Meteor U.15s were converted in UK from Meteor F.4 fighters for operation at Llanbedr in UK, and in Australia at Woomera. As U.15 numbers dwindled, RAF Meteor F.8 fighters were converted to U.16 and U.21 drones. The U.16 designation was later changed in UK to D.16; the U.21 designation was uniquely for Australian operation with specific telemetry for Woomera. The U.21A applied to ex-RAAF F.8s converted at Bankstown by Fairey.



**U.15 RA438** was UK-owned at Woomera and marked with kangaroo roundels by Air Trials Unit in 1956



**U.21A A77-873 late 1960s** – a normal Meteor target drone career: 77SQN Korea, 1954 back to 78 Wing, 1957 to 23SQN, converted by Fairey to U.21A in 1961, 1ATU 1963, destroyed by missile 1971



A variety of U.21A red and white markings: top, the all-red A77-882 after conversion in 1960 and later in 1965 when it was written-off in red/white scheme; lower left A77-207 in 1967 in what became the standard colours; and right A77-884 in the colours when it was written-off in 1965.

## In RAAF (RAF) Service: Westland Whirlwind@ Gordon R Birkett 2016



The only Westland fighter to achieve operational status with the RAF, the Whirlwind was designed in response to Specification F.37/35 for a "cannon fighter" armed with four 20mm guns.

As the P.9, the Westland design emerged as a low-wing monoplane with two Rolls-Royce Peregrine I 12-cylinder liquid-cooled Vee engines, each rated at 885hp at 4575m. The four Hispano Mk I guns were grouped in the nose, the pilot enjoyed a good all-round view from a fully-enclosed cockpit in line with the wing trailing edge, and radiators were buried in the wing leading edges inboard of the nacelles. Construction was of metal throughout, with flush-riveted stressed skins, a novelty being the use of magnesium rather than aluminium sheet to cover the monocoque fuselage aft of the cockpit.

Two prototypes were ordered by the Air Ministry in February 1937, L6844 and L6845, with the first of these flown on the 11th October 1938. Despite delays in development and production of the Peregrine engine, two contracts were placed in 1939, each for 200 fighters as Whirlwind Is, and the first series aircraft flew in June 1940.<sup>54</sup>

Construction of these aircraft had been delayed chiefly due to the new features, and also because of the late delivery of the engines. L6844 was eventually passed to RAE Farnborough at the end of the year, while further service trials were later carried out at Martlesham Heath.

The Whirlwind exhibited excellent handling characteristics and proved to be very easy to fly at all speeds. The only exception was the inadequate directional control during takeoff which necessitated an increased rudder area above the tailplane. The Whirlwind was quite small, only slightly larger than the Hurricane in overall size, but smaller in terms of frontal area. The landing gear was fully retractable and the entire aircraft was very "clean" with few



openings or protuberances. Radiators were in the leading edge on the inner wings rather than below the engines. This careful attention to streamlining and two 885 hp Peregrine engines powered it to over 360 mph (580 km/h), the same speed as the latest single-engine fighters.

There were problems as well, however. The aircraft had limited range, under 300 miles combat radius, which made it marginal as an escort. The first deliveries of Peregrine engines did not reach Westland until January 1940. *No 25 Squadron (RAF) tested three aircraft between May and July 1940, then based at North Weald. The squadron was fully equipped with radar-equipped Bristol Blenheim IF night fighters when Squadron Leader K. A. K. MacEwen flew prototype Whirlwind L6845 from Boscombe Down to North Weald on 30th May 1940.*

By late 1940, the Supermarine Spitfire was scheduled to mount 20 mm cannon so the "cannon-armed" requirement was being met. In addition, by this time the role of escort fighters was becoming less important as RAF Bomber Command turned to night bomber missions. The main qualities the RAF were looking for in a twin-engine fighter were range and carrying capacity (to allow the large radar apparatus of the time to be carried), in which requirements the Bristol Beaufighter could perform just as well as or even better than the Whirlwind.<sup>55</sup>

Earlier, due to the lower expected production at Westland, there had been suggestions that production should be by other firms and an early 1939 plan to build 600 of them at the Castle Bromwich factory was dropped in favour of Spitfire production.

Westland argued for the creation of a Mk II model using two Merlin engines, but by this time the role of escort fighter was becoming less important as Bomber Command turned to night bomber missions.

However, in spite of the Whirlwind's initial promise, production ended in January 1942, after 400 ordered, with only 2 prototypes & 114 (or 112?) production aircraft, making total aircraft built as at 116. These aircraft would only serve with only three RAF squadrons (Nos 25, 263 and 137 Squadrons, RAF). One aircraft, P6994, was sent to the USA for trials in June 1942 and survived there until at least late 1944..<sup>56</sup>



Westland Whirlwind P7116 HE-F, Squadron Leader's aircraft in Winter 1941.

The first production aircraft were delivered to No. 263 Squadron in July 1940, after the decision had been made that No. 263 Squadron RAF would be the first RAF Whirlwind squadron.

However, from then until October, production of the Peregrine engine was so slow that only 11 Whirlwinds could be delivered to the squadron. Due to slow deliveries and the delays involved in transitioning from Hawker Hurricanes to the new fighter, the squadron did not become operational with Whirlwinds until December 1940, but went on to fly them until December 1943.

A second Whirlwind squadron, No. 137, flew the type from September 1941 until June 1943.



A well weathered and worn 263 Sqn Whirlwind P7089 in early 1942.

No. 263 squadron became operational with the Whirlwind in December 1940, carrying out convoy patrols from Exeter. The Whirlwind's first confirmed kill occurred on 8th February 1941, when the squadron shot down an Arado Ar196 floatplane. The squadron went on to carry out day bomber escort missions with the Whirlwinds, including the escort of six Blenheim squadrons to Antwerp on the 12th August 1941.



In the summer of 1942, both squadrons' Whirlwinds were fitted with racks to carry two 250 lb or 500 lb bombs and redesignated Whirlwind IA (Picture above is P6997 loaded).

These model undertook low-level cross-channel "Rhubarb" sweeps, attacking locomotives, bridges, shipping, and other targets until late 1943 when both squadrons re-equipped with Hawker Typhoons.<sup>57</sup>

### **Despatch to Minister for Air (RAAF) from RAAF Kingwell UK , Mr Drakeford. Dateline April 1943:**

#### **"They flew between the masts of the Enemy Ship, Australia's Success in Whirlwind Bombers"**

*"Single Seater, twin-engine Whirlwind bombers, each carrying two 250 pound bombs and four cannons firing 20 millimetre shells, are striking at Axis communications in Northern France and Belgium. Some of them are flown by men of the RAAF. Their attacks on railway trains and sweeps against shipping have been very successful, and even attempts by Axis ships to slip through the English Channel at night have become hazardous under the watchful eyes of their crews."*

*One 5000 ton armed sea raider, escorted by five E Boats was badly damaged by one whirlwind flown by Flying Officer Edward Musgrave, who was recently awarded the Distinguished Flying Cross for his courage, skill and determination in air operations in Northern France.* <sup>158</sup>

The date of this action was sometime during February 1943 and although the night was very dark, he had sighted the vessel, along with its five escorts, sailing close to the shore, south of Boulogne, France. Skilfully approaching the vessel, he flew in to attack, but was frustrated by heavy AAA fire from the coastal defences.

*"Musgrave went in so low that he flew between the mast of the ship, and scored several hits. It was appropriate that Musgrave was the first pilot to take the new course for bombing leaders, which he topped against experienced observers and bomb aimers. He is now back at his squadron base teaching other Whirlibomber pilots, as well as taking part in raids, two of which were very effective against the German Aerodrome at Abbeville, France."*

Despite this, he persisted and after diving through search lights from the shore, he attacked his objective, releasing bombs from low level. Although his aircraft was damaged by opposing fire, he flew safely to his base

***"The Whirlibomber may have no bomb sights", Musgrave admits, "but it is without vice in the air, and with its four cannon in the nose, it lends itself to great accuracy of fire"***

From this mission he was awarded the DFC after displaying great courage, skill and determination in the execution of his task.

F/O Musgrave had joined the RAAF on the 6th August 1940, and after initial flying training, sailed from Australia to Canada on the 13th June 1941 with the EAT Scheme.

After completing his Wings Course, He was commissioned 25th September 1941 as a Pilot Officer. After arriving in the United Kingdom on the 20th October 1941, he was posted to 61 OTU. On completion of twin engine conversion, he was assigned to 137 Squadron RAF, to fly Westland Whirlwinds on the 13th January 1942.

His Unit, 137 Squadron (RAF), had been reformed at Charny Down on 20th September 1941 and equipped with the then brand new two-engined Westland Whirlwind four-cannon fighter.

The squadron became operational with them on 20th October 1941 and flew its first mission (a mandolin) four days afterwards. Unfortunately the new CO, Sqn Ldr Sample, was killed four days after this in a mid-air collision with a new pilot. Two days later another pilot crashed into the sea.

After this bad start, No. 137 Squadron became non-operational for a period before resuming with coastal missions on 11th November 1941. On one such mission on 12th February 1942, to escort some destroyers, they met by accident the fighter screen around the Scharnhorst and the Gneisenau, losing four pilots in the event.

On the 25th March 1942, Musgrave was promoted to Flying Officer.

Sadly, only two months later, Flying Officer Edward Lancelot Musgrave Serv#403528, from Bankstown, NSW, took off from RAF Manston at 01.10hrs, vectored under "Swingate Control" to attack enemy shipping off Graveslines, France. He made his first attack with bombs.

At 01.32hrs, he was about to make his second attack with cannons, but nothing was further heard from the pilot. Nor was there any further plot received by operations.

German Totenliste No 155, stated he was killed in action 0135hrs on the 18th May 1943 whilst during the operation when his aircraft, Westland Whirlwind P7063, was damaged by Anti Aircraft Fire which then later crashed within the north area of Pas de Calais, France. He was buried in the military cemetery, Pihen-les-guines, France in Grave No 54. In June 1943, the limited number of surviving and, by now worn-out, Whirlwinds, it was decided to replace the type in operational service with Hurricane Mk.IV fighter-bombers. <sup>59</sup>

## **Another sad RAAF story: Westland Whirlwind P7062, No 263 Squadron RAF**

One further RAAF Pilot would meet his death in a Westland Whirlwind. Francis Leslie Hicks, a Carpenter by trade and married from Tasmania, joined the RAAF on ANZAC Day, 25th April 1941. <sup>60</sup>After initial training, he was posted



to Canada under the EAT Scheme on the 18th September 1941. On completion, promoted to Sergeant, he was posted to the United Kingdom and arrived there 26th February 1942 to 5(Pilot)AFU. After completion of conversion at 59 OTU, he was posted to 87 Squadron (RAF) flying Hurricanes for night interceptions, on the 14th April 1942. Below: Hurricane IIC BE500 LK-A of 87Sqn RAF early 1942.



Promoted to temporary Flight Sergeant on the 17th July 1942,(confirmed 21st January 1943). He was then posted to 263 Squadron (RAF), arriving on the 30th July 1942. Sadly, like many other young men of the time, not all were killed on operations. He met his fate in P7062 during a training flight.

Whilst flying Westland Whirlwind P7062 HE-L as part of a two section flight performing a Army Co-operation Exercise whereupon they were attacking Army Units on the Wroughton-Swindon Road , Wiltshire, repeatedly from five hundred feet, on the 19th February 1943.



*The actual Westland Whirlwind 1A P7062 HE-L: showing in flight above, and on the ground with the large full wing flap show, below.*



At 1550Hrs following diving from five hundred feet , on recovery from his attack, Francis had hit a tree, causing him to lose control of the aircraft. The aircraft crashed in a nearby field, just a few miles away from Wroughton Aerodrome, Wiltshire. F/Sgt Francis L Hicks Serv#408207 was killed instantly.

He was buried with full honours at 1000hrs 25th February 1943 after a ceremony at the Wroughton Parish Church accident on the 19th February 1943.

#### **The connection of these two RAAF Pilots?**

Both are the only RAAF Airman killed in Westland Whirlwinds; the former; F/O Musgrave with 137Sqn RAF, whilst on operations, and sadly the later, F/Sgt Hicks, accidental, when flying with 263Sqn RAF. Pictured below are both pilots: on the left during his early RAAF Training in 1940, F/O Musgrave as a AC2, and on the right, Hicks as a F/Sgt.





Possible picture of F/Sgt Hicks centre beneath nose. Seemingly a repaired 263Sqn RAF aircraft.

## Whirlwind Survivors ?

After retirement in December 1943, all but one of the surviving Whirlwinds were sent to 18 Maintenance Unit at Dumfries, Scotland, where they were scrapped. The sole exception, P7048 was retained by Westland, and was granted a civil certificate of airworthiness on 10 October 1946, with the registration G-AGOI.



It was used as a company hack for a short time before being withdrawn in 1947 and scrapped.

## Last one left, but the first built and first crashed?

On 12th October 1979, the remains of the first production Westland Whirlwind, P6966, and the first Whirlwind to be lost, were recovered near Grangemouth by enthusiasts in a dig group.

On this day, Steve Vizard, Terry Parsons, Tony Graves, Andy Saunders, Bill Hamblin, John Ellis, and Peter Foote motored to Scotland. Although the party arrived late in the evening, an immediate search of the field was made by



torchlight for a stake the farmer had promised he would place at the impact point. When it was found, it turned out to be 15cm (6 inches) high!

The next morning everyone assembled at the site at 8am. Digging commenced. At the depth of 2.5m (8 feet), some engine parts, wing panels and cowlings were discovered and soon after, one of the two Rolls-Royce 885hp Peregrine engines was found together with propeller blades.

The tanks, an oil cooler, a fire extinguisher were uncovered and a complete undercarriage leg and tyre. The other engine was found soon afterward in superb condition.

The final excavation was 9m square by 7.6m deep (30 feet square by 25 feet deep). Apart from the fact the digger continually broke down, the dig was highly successful and the party retired weary but triumphant.

(The Peregrine engines were transferred subsequently to Rolls-Royce Heritage Trust for future restoration and display.)

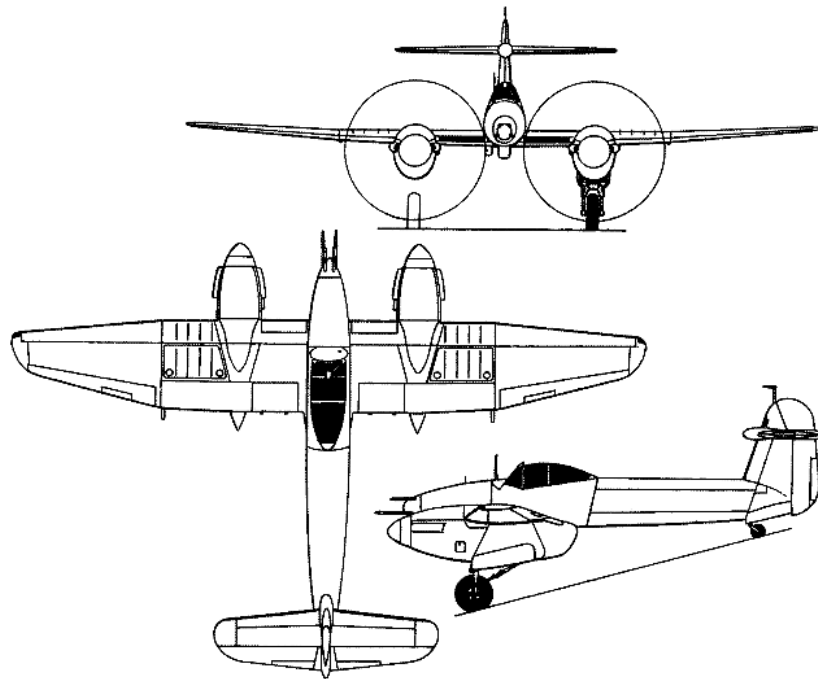
The P6966 accident had occurred on the 7th August 1940. Piloted by P/O I F McDermott, was taking off, the aircraft suffered a burst tyre. However, McDermott managed to prevent the wing touching the ground and was able to get the aircraft airborne.

Once in the air, the watch office informed McDermott that his undercarriage was visibly damaged and they advised him to climb to a safe height and then bale out, rather than attempt a landing with the damaged landing gear. McDermott accordingly decided to bale out, parting company with P6966 just north of Stirling.

The aircraft crashed into a large field at Lanton Farm, Stenhousemuir, then owned by a Mr Adam. During his descent by parachute McDermott was circled by a Spitfire and on landing, he sprained his ankle and was captured by a local Home Guard who mistook him for a German!

The Whirlwind Fighter Project began building a full-scale replica Whirlwind in 2011, with the intention to have it ground running in approximately four years.<sup>61</sup>





**Serial Blocks for P9 Whirlwind Prototypes and 200 Westland Whirlwind I Ordered:**

L6844 to L6845 Westland P.9 Whirlwind  
 P6966 to P7015 Westland Whirlwind I 50 a/c  
 P7035 to P7064 Westland Whirlwind I 30 a/c  
 P7089 to P7128 Westland Whirlwind I 40 a/c Deliveries stopped at P7122 or P7124  
 P7158 to P7177 Westland Whirlwind I 20 a/c Canc  
 P7192 to P7221 Westland Whirlwind I 30 a/c Canc  
 P7240 to P7269 Westland Whirlwind I 30 a/c Canc

**Want more? See a Pathe Movie Film? See:**

<http://www.britishpathe.com/video/whirlwind-fighter-squadron>

**Specifications:**

General characteristics

Crew: One pilot

Length: 32 ft 3 in (9.83 m)

Wingspan: 45 ft 0 in (13.72 m)

Height: 11 ft 0 in (3.35 m)

Wing area: 250 ft<sup>2</sup> (23.2 m<sup>2</sup>)

Airfoil: NACA 23017-08

Empty weight: 8,310 lb (3,777 kg)

Loaded weight: 10,356 lb (4,707 kg)

Max. takeoff weight: 11,445 lb (5,202 kg)

Power plant: 2 × Rolls-Royce Peregrine I liquid-cooled V12 engine, 885 hp (660 kW) at 10,000 ft (3,050 m) with 100 octane fuel each

Propellers: de Havilland constant speed propeller diameter: 10 ft (3.28 m)

**Performance**

Maximum speed: 360 mph (313 knots, 580 km/h) at 15,000 ft (4,570 m)

Stall speed: 95 mph (83 knots, 153 km/h) (flaps down)

Range: 800 mi[53] (696 nmi, 1,288 km)

Combat radius: 150 mi (130 nmi, 240 km) as low altitude fighter, with normal reserves[38]

## RAAF Longest Operational Missions: to China's Shores 1945 Gordon R Birkett @2017

*On the twenty-sixth of May 1945, four Catalina RAAF aircraft from 76 Wing RAAF, flew perhaps the RAAF's Deepest Mission of World War Two. Duty ZEA6; Mine the approaches of Wenchow (Wenzhou) Harbour, Mainland China, .....but before that, some background*

### **The Australian Coastline Merchant War Experience: Submarines, Surface raiders and mines**

Some fifty-four German and Japanese warships and submarines entered Australian waters between 1940 and 1945 and attacked ships, ports and other targets. In all, some thirty merchant ships, with a combined tonnage of 151,000 long tons were lost by enemy attack in Australian waters, with 654 deaths. About 200 were Australian merchant seamen were killed <sup>62</sup>

All but two of the ships attacked were sunk by torpedoes or shells from submarines. The other two were blown up by mines. The impact of the war on merchant seamen was little known except to people in the towns along the coast where it happened, and to the families and friends of the men whose lives were so imperilled.

Due to the sporadic nature of the Axis attacks and the relatively small number of ships and submarines committed, Germany and Japan were not successful in disrupting Australian or allied shipping around the ports of Australia.

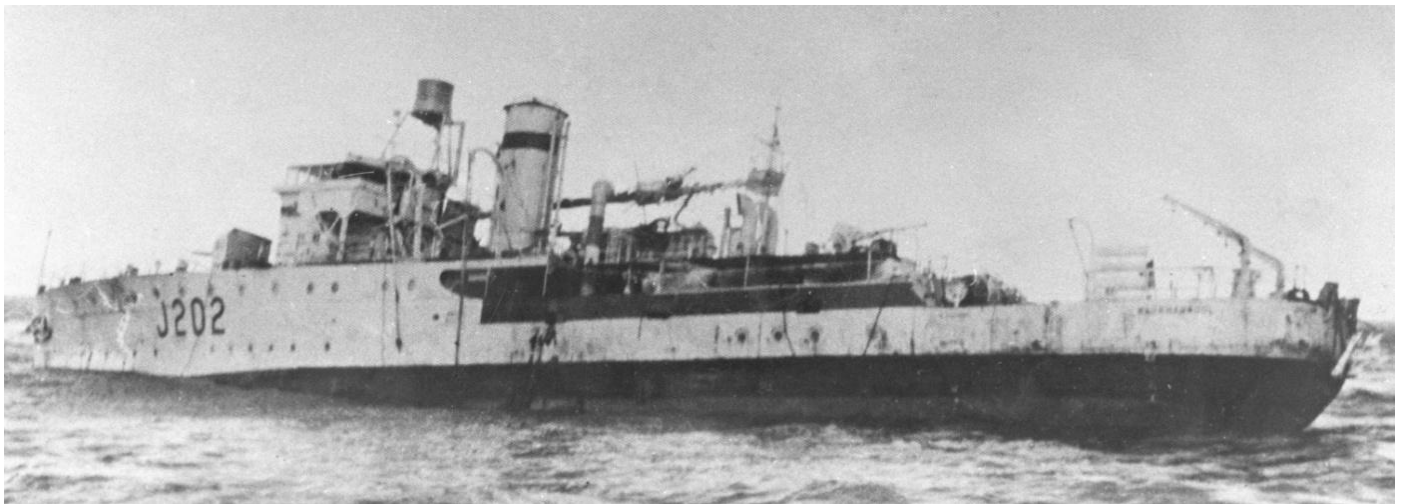
Our allied effort, mining alone, on the other hand would prove decisive.....

***Last ship sunk in Australian Waters by a mine:*** It must be mention that the last ship sunk in Australian Waters was in 1947 and a blue on blue incident.

*On the 13th September 1947 minesweeping operations were in progress by the Australian built Corvette HMAS Warrnambool, in the Great Barrier Reef area to clear the defensive minefield laid by HMAS Bungaree during 1941-43 to protect entrances to the reef, when it struck a mine at 1556hrs.*

*Four listed as killed or died of injuries, with a further twenty-nine injured.*

*Despite efforts, and an attempt made to tow HMAS Warrnambool clear of the minefield by HDML 1326. However because of the strong tidal stream, the corvette drifted back towards the line of mines and was therefore abandoned at 1654Hrs. She later sank.*



### **The Japanese Merchant Fleet War Experience**

Japan entered the war with some 6,000,000 tons of merchant shipping of over 500 tons gross weight and an additional 4,100,000 tons of ships were constructed, captured or requisitioned.

The Joint US Army and Navy Assessment Committee evaluated that some eight million nine hundred thousand tons of this shipping were sunk or so seriously damaged as to be out of action at the end of the war. Some 54.7 percent of this total was attributable to submarines, 16.3 percent to carrier based planes, 10.2 percent to Army land-based planes and 4.3 percent to Navy and Marine land-based planes, 9.3 percent to mines (largely dropped by B-29s), less than 1 percent to surface gunfire, and the balance of 4 percent to marine accidents. <sup>63</sup>



After April, 1945, when Japanese shipping was restricted to the Korean and Manchurian runs and to shallow inland waters, mines dropped by B-29s in Japanese harbours and inland waterways accounted for 50 percent of all ships sunk or damaged. In the Survey's opinion those air units which had anti-shipping attacks as their prime mission and employed the required specialized techniques, equipment and training achieved against ships the best results for the effort expended.

The Japanese originally allocated two-thirds of their shipping fleet to the logistic support of their military forces in the field. They expected that after their original advance had been completed they would be able to return increasing numbers of ships to the movement of raw materials for their basic economy.

Attacks by submarines, long-range search and attack planes, mines, and carrier and land-based planes were mutually supporting and complicated the Japanese defences. Long-range air search found targets for the submarines; convoying which offered some protection against submarines increased the vulnerability to air attack; ships driven into congested harbours in fear of submarines were easy prey for carrier strikes; and mines helped to drive ships out of shallow water into waters where submarines could operate.<sup>64</sup>

In March 1945, Operation Starvation began in earnest, using 160 of LeMay's B-29 Super fortress bombers to attack Japan's inner zone. Twelve thousand aerial mines were laid, a significant barrier to Japan's access to outside resources. Prince Fumimaro Konoe said after the war that the aerial mining by B-29s had been "equally as effective as the B-29 attacks on Japanese industry at the closing stages of the war when all food supplies and critical material were prevented from reaching the Japanese home islands."<sup>65</sup>

It seems that Le May's B-29 groups did the lion's share of dropping mines,..or did they?

***Aerial mine laying operations in fact involved a coalition of British, Australian and American aircrews, with the RAF and the Royal Australian Air Force (RAAF) carrying out 60% of the sorties and the USAAF and US Navy covering 40%. Both British and American mines were used. Japanese merchant shipping suffered tremendous losses because the Japanese mine sweeping forces were spread too thin attending to far-flung ports and extensive coastlines from Burma to NEI and onwards China and Japan.***

B-24 Liberators, PBY Catalina's and other available aircraft types took part in localized mining operations in the Southwest Pacific and the China Burma India (CBI) theatres, beginning with a very successful attack on the Yangon River, Burma by the RAF in February 1943.

### **The RAAF 's own Mine laying effort**

Prior from December 1941, and until the RAAF got its own B-24J/M long range Bombers, the Catalina was the sole RAAF long range type (nearly 1000 mile radius range with 2000lbs of bombs or mines) used in the bombing of distant targets in SWPAC , *even at a speedy 95 knots and at a altitude of just 1000feet when fully loaded*, in the theatre. During this time, only two RAAF Squadrons (No 11 and No 20), each with a seldom held on hand their official strength of 9 aircraft (6IE/3IR), were initially involved in operations ranging from convoy protection, general reconnaissance, bombing, Air Sea Rescue, and supply dropping.

*The Catalina, in its PBY-5 model initially, then with later P2B1 and P2B2 models in 1944-45, were the only RAAF aircraft that could perform mining missions, using initially American Mk12-1 Mines for the first few missions.*

Our first used of Aerial sown mines was at Kavieng Harbour, New Ireland, as part of Operation Popsy No 1, when nineteen American Magnetic Mines ( Mk12-1)were sown from eight RAAF Catalina's on the night of twenty-second and twenty-third of April, 1943.

Mine laying after April 1943 accounted some fifteen mine laying missions on average each month up to April 1944. Targets included Kavieng in New Britain, Admiralty Islands, Surabaya in Java, Kokas in Dutch New Guinea, Kendari in Celebes, Woleai and Palau Atolls in the Caroline Islands, Luzon Philippines, to name but a few.

A review in 1944 after some twelve months of mining operations; involving some 230 sorties made during seventy-six nights, laying 474 Mines in twenty-two harbours of the Netherland East Indies, and Bismarck Archipelago , that some eight ships had been sunk, twelve ships damaged and a probable further two sunk and another two damaged.

An example of how effective this was, with just one mine laid in Balikpapan, the harbour was closed between the 20th - 24th April 1944.

*A few days later, on the 28th April, 1944 a Japanese Mine Sweeper was sunk by another mine dropped.*<sup>66</sup> In April 1944, a third Catalina Squadron ( No 43) was made available for full time Mine laying missions.

With the fraction of the sorties flown by the three RAAF Squadrons in mine laying and their success, it equalled the employment of only one half of a squadron. It was concluded that mine laying was forty times more effective than using them to bomb land targets.

From August 1944, a fourth Catalina Squadron (No 42) was formed , and which was, along with No 20 Squadron, assigned for full time mine laying operations, under No 76 Wing based at Darwin, Northern Territory. No 11 Squadron was withdrawn from operations for rest and re-equipment.

With the seizure of Morotai, the basing of the Sea Plane Tender USS Tangier and USS Currituck in the harbour, RAAF Catalina aircraft could fly the 900 nautical miles from East Arm, Darwin, refuel there, then proceed to mine Balikpapan and now the new target of the oil Port of Tarakan, previously out of range.

This target was some 800 nautical miles away and was visited by five No 20 Sqn RAAF Catalina's who laid ten 1500lb mines between the 11th and 15th October 1944.

Each of these 76 Wing Squadrons would average some 830 hours of operational flying each month for 100 sorties, including mine laying, up to March 1945.

USS Currituck AV-7 put to sea from Philadelphia on 31st August 1944 bound for duty with the Pacific Fleet. At Balboa, Panama, she embarked passengers for transportation to Manus Island, then continued on to Mios Woendi, located just off Biak, to unload cargo.

She carried men and airplane spare parts and supplies for USS Tangier (AV-8) from Manus Island to Morotai, then returned to Mios Woendi briefly before arriving in San Pedro Bay, Leyte, 6th November 1944 to begin tending seaplanes flying missions in the Leyte operations.



USS Tangier AV8. This ship had survived Pearl Harbour, 7th December 1941.



USS Currituck AV-7 after launch 1944. Note Cranes, able to lift large aircraft. She also had the distinction of being the last active seaplane tender in the US Navy.

She then sailed from Leyte on 6th January 1945 for the initial landings at Lingayen Gulf, Luzon, three days later, and remained there, at Cabalitan Bay, and at Mindoro tending seaplanes and directing seaplane search operations.

She returned to Leyte 5th February 1945, then sailed for Manila on 3rd March 1945. Upon her arrival three days later she sent boarding parties to inspect abandoned Japanese vessels in the harbour. Her tender duties at this port included maintenance of the Rotational eight aircraft flights from 76th Wing RAAF flown up from Darwin, from 27th April 1945 to 6th May 1945.

Two crews, A24-96 and A24-100, were thankfully rescued by RAAF. From March 1945, the RAAF was involved in the China Seas, as a result of a US Navy request and the recent loss of the 14th Air Force (USAAF) Chinese bases, where previous mining operations had been flown from, had ceased in 1944 following a Japanese Army Advance.

The China Based B-29 force would be transferred to the Pacific later.

All targets were about to become a strategic target; to cause the maximum disruption to Japanese shipping and to impose a maximum burden on all available Japanese Mine Counter warfare forces between Netherlands East Indies ports (including the Banka Strait Sumatra), and to as far as Hainan island to Hong Kong Surrounds).

In the previous past few months, Two of the three Squadrons were in the process of replacing most of their PBV-5s (a few left in 43Sqn RAAF in 1945) for P2B1/2s fitted with a improved radar.

### **Operation Chlorine; Purifying the China Sea.**

From March to June 1945, operations would be extended to Tainan (Formosa, later known as Taiwan) and Japanese Territories within this area, *so as to force all merchant traffic into deep water so that Allied Submarines can attack with plenty of depth under their keels.*

*At the same time, it was also a way to ensure any Japanese Army reinforcements from China would not be able to be landed at Okinawa, which was invaded in April 1945.*

These sorties would reduce each Squadrons monthly sortie tally to an average of 70 sorties, mainly due to the distances involved by operating from Jinamoc Island, Leyte in the Philippines to far away targets (some 1500 miles distance).

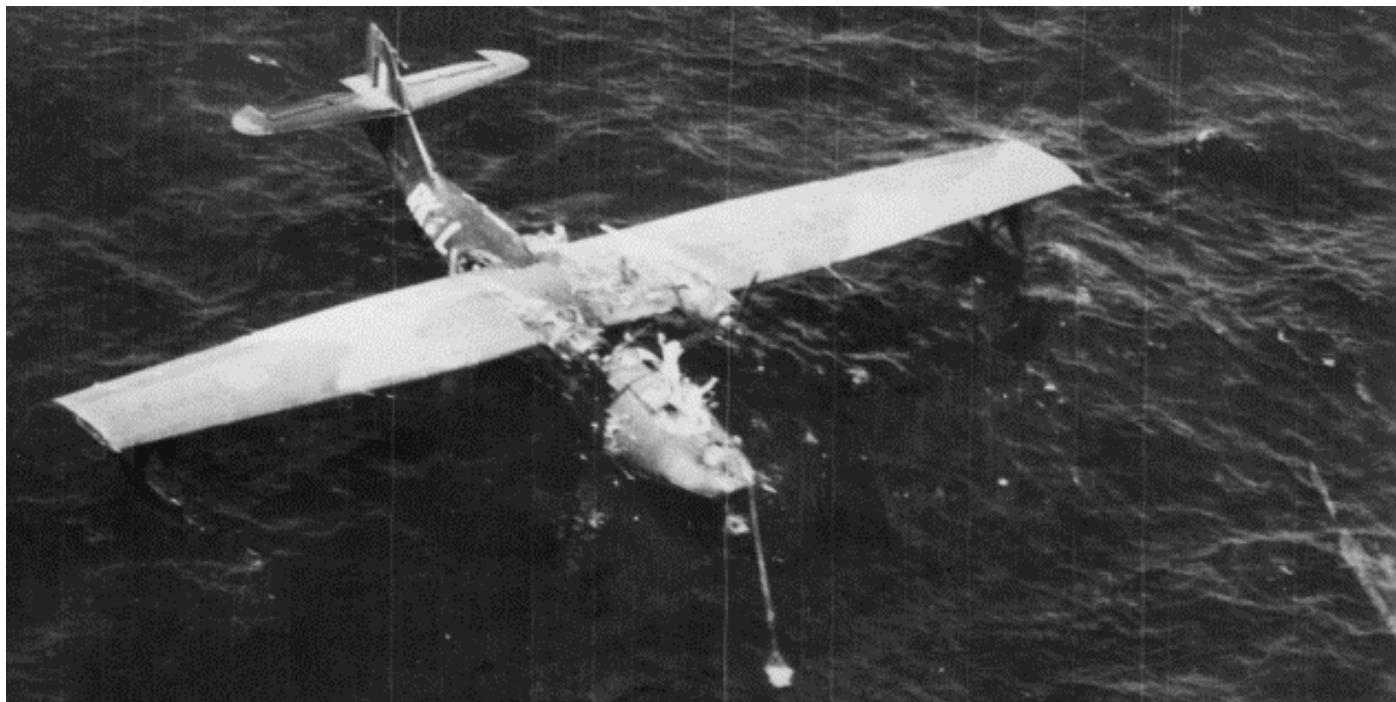
Construction on the Jinamoc Island base commenced in December 1944 with grading for a seaplane ramp, a pontoon barge was then floated into position and submerged. While construction was not completed until May 1945, the base began operation on 14th January 1944. In May 1945 construction was started on a more permanent 200-foot steel and concrete ramp. Taxiways and hardstands were graded and surfaced and 1.5 miles of access roads constructed. Facilities at the base included 75 Quonset huts for accommodation, a 200-bed dispensary, water supply and utilities.



### The Lucky two aircraft crews:

Some six aircraft (A24-53 OX-J/A24-64 OX-D\* / A24-73 RB-T /A24-90 RK-? /A24-96 RK-E /A24-100 RK-L) were lost from 1944 to early 1945, whilst engaged in mine laying.

*(\* this Catalina and crew was apparently s/d in Manila Bay in the Philippines somewhere near the eastern coast of Bataan. (See inset Fig Map) Two preceding Catalina's, one a US Navy Catalina from Detachment 22, with RCM equipment and another spare 42 Sqn Catalina dropping window and rope, used in tying down and jamming some 17 Radar Stations located around. Also two B-24s were involved in harassing the AA defences of Corregidor in the bay) Catalina.*



With sea anchor out, the happy waving crew of A24-100 RK-L wait for the circling ASR Catalina to pick them up, 24/10/44



Happy Crew of A24-96 making their way from their stricken aircraft to another Catalina, A24-60 RB-N; 15/01/45.

A total of 120 Sorties were planned during their stay there, with an additional 20 sorties planned by other 76 Wing aircraft from North Western Australia. Supplies of US Navy Mines were held within the US Navy's landed inventory there, however, no British Mines were held in location.

Therefore all British Mines, with a limit of 2000lbs per aircraft, were required to be ferried up by the flight until a supply was arranged.

All ferrying flights would carry four British mines up, then store them, pending used in a mixed load using those and locally supplied US Navy Mines. All aircraft were stripped of Blister Guns and tunnel Gun and ammunition before being ferried up.

A US Sea Plane Tender was based forward for refuelling, further up at Lingayen Gulf on Luzon. The deployed 76 Wing Flight would spend up to ten days on a rotational roster from their Darwin Base at East Arm Inlet.

The general briefing, given first, consisted of intelligence, navigation, radar briefings and meteorology. The later was perhaps a big concern, considering this period would see some of the severest weather conditions ( Head Winds/ Low Cloud, fog and weather fronts) experienced by Catalina Crews.

Positions and surrounds were seldom previously seen or photographed by Reconnaissance Assets, therefore known Admiralty Charts and topographical Maps were used in most cases.

The Mining Briefing followed with each mining aircraft given a datum point to drop their mines.

The attached Mine Warfare Officer would prepare a detailed chart of each Minefield, determining the datum point to be used from any intelligence sources available.

In the planning of all minefields, an error rate of 10% was allowed for all mine drops.

The average length of a mine laying run from datum point to the first mine dropped was approximately 5000 yards, with some only 300yards and others as high as 40000yards depending on datum point.

*It was impressed upon that if the datum point could not be located or the mission aborted due to weather, that they return with the mines to Jinamoc Island where possible.*

These datum points would be an identifiable landmark such as a Cape, Lighthouse, pier, mouth of a river, or a small island from which the aircraft was to commence its mining run using a stop watch and given track.

This choice was influenced by the direction in which it was desired to lay a stick of mines, coupled with the standard of defence to be expected from the Japanese.

On the 3rd March 1945, six of the most experienced crews in 76 Wing, under command of Wg Cdr Wearne<sup>67</sup>, flew the first missions over a twenty-four hour period.

The aircraft had made a mid-morning take-off from Jinamoc, then refuelled at Lingayen Gulf in the afternoon and then took off in the late afternoon at staggered times and arriving on their individual aircraft Mining Datum Point, by night, to mine Yu Lin Kan Bay and surrounds (of Hainan island).

Though the crews were unmolested by Japanese aircraft or AAA, they were operating in a strange area with inaccurate or dated charts did not lead to the best of mine laying. *Weather at the target was a dismal 8/10 clouds, scattered fog and winds at 10 knots.*

The missions durations, (as timed from take-off from Lingayen Gulf which was one third of the distance out to mining datum point) averaged between 15 hours and 18 Hours and at an average of 95 knots depending on target and all aircraft returned via the Mindoro Straits to their moorings at Jinamoc.

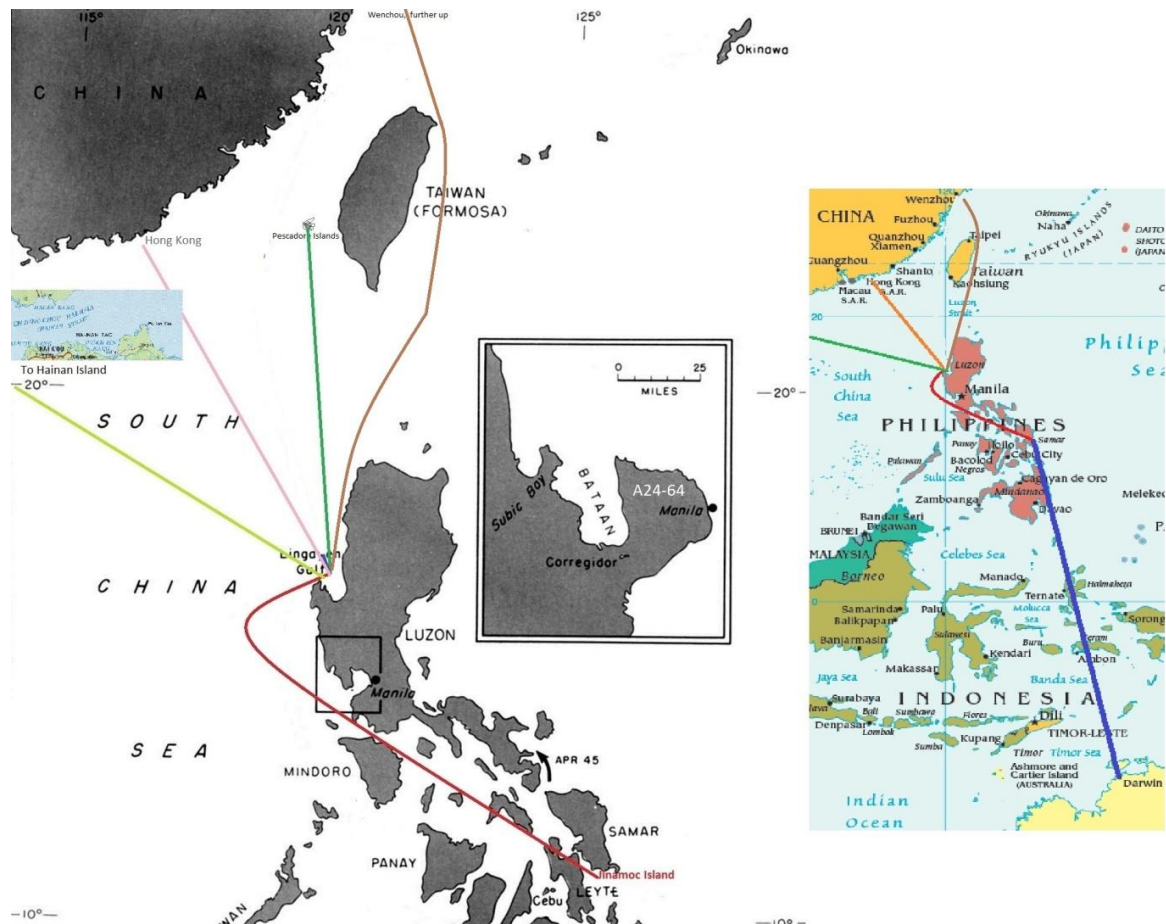
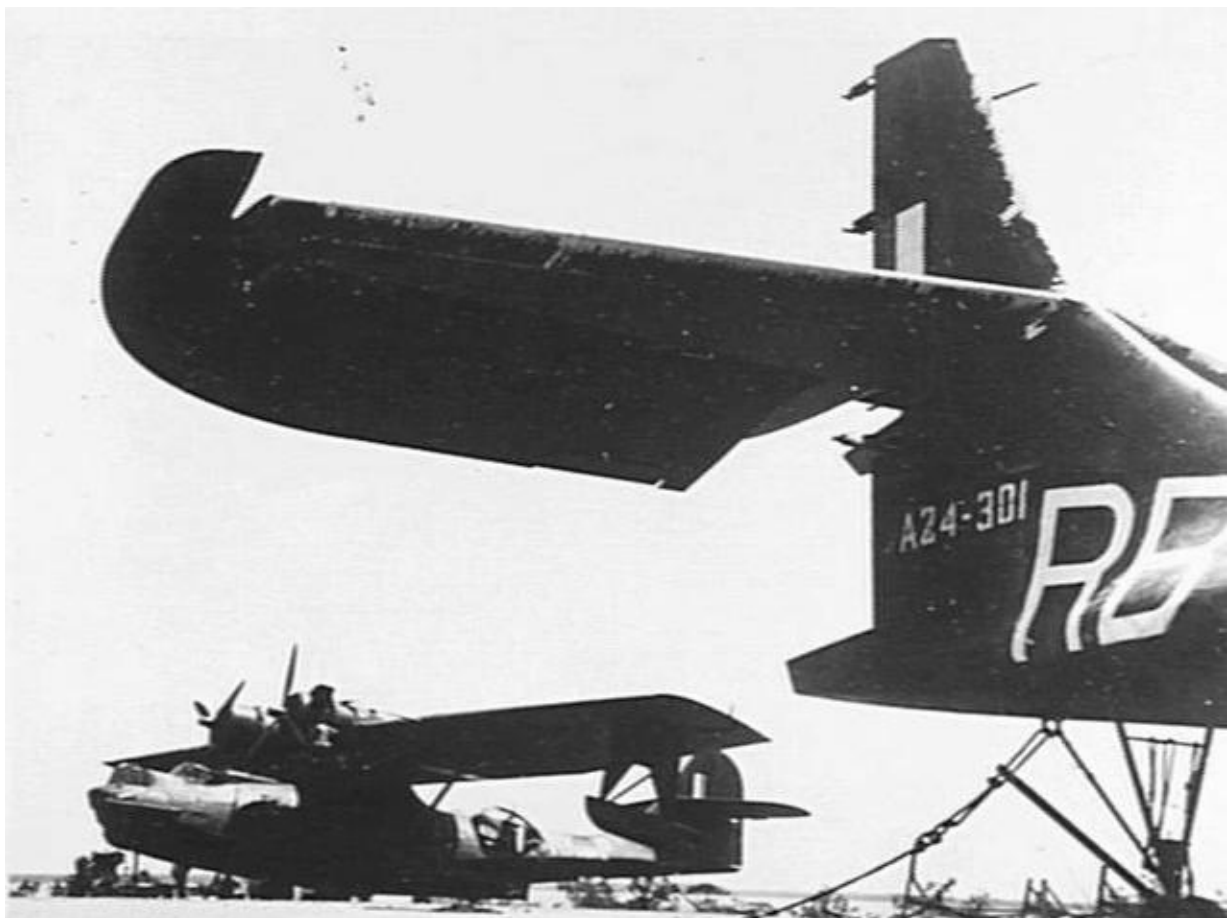


Fig Map: An idea of the distances flown from Darwin, then onto the target datum point.



A24-301 RB-T and A24-82 RB-P undergoing maintenance in early 1945. Sadly the former would be damaged and holed on take-off on a uncharted reef near Jinamoc island at 1630hrs on the 11th March 1945. On landing it sank, but the crew would survive. In fact the Captain of this aircraft, F/Lt Ben Titshall will be well noted on a future mission.



## The Missions continued..as did the rotations of flights and targets.....

The first operational loss during *Chlorine*, happened only a few days later on the 7th March 1945 when one of three 20 Squadron Catalina's, **A24-203 RB-V**, failed to return after taking off from Lingayen Gulf at 0830Hr Zulu (1630hrs Local), on a mine laying mission to Takao and Mako in the Pescadores Islands near Tainan. The two other 20 Sqn Crews reported bad weather conditions near target.

On the 9th March 1945, an US Navy Air Sea Rescue Mariner with fighter cover, conducted a search of the area south east of the intended Datum Point, with a further three US Navy Mariners searching the route to and from the target datum point, the following day. No trace was ever found.

On the 16th March 1945, two aircraft returned to complete the mine field through gales and strong headwinds, but only one got through due to the second aircraft finding their datum point enshrouded with fog.

On advice of the 7th Fleet intelligence on the 19th March 1945, mining of the target area was abandoned due to the low shipping traffic in that area. The area of focus was returned to Hainan Island, with those allotted mines to be used there. The first Japanese victim of this Hainan Island campaign was the 4000 ton Japanese Vessel, "Hario" .

*For May and June 1945, targets selected would be expanded to Amoy, Hon Kong, Yu Lin Kan Bay, Surabaya and Laoet Strait (near South Eastern Borneo) in Netherlands East Indies , and Wenchow(Wenzhou, China).*

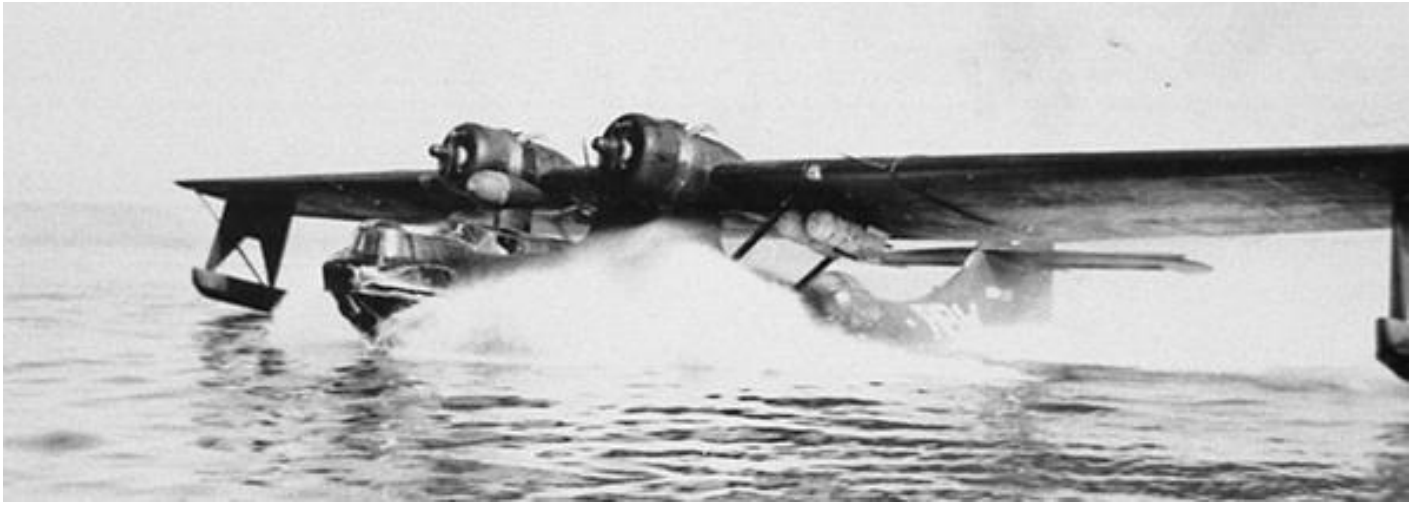
Another flight of eight<sup>68</sup> and 130 personnel was drawn from No 20 and 43Sqns RAAF and deployed there on the 1st May 1945. Supplies of US Navy Mines were held within the US Navy's landed inventory there, however, no British Mines were held in location. Therefore all British Mines, with a limit of 2000lbs per aircraft, were required to be ferried up by the flight until a supply was arranged.

The first mission, of that deployed 76 Wing flight was flown on the 2nd May 1945 by a No 20 Sqn RAAF Catalina, A24-201 RB-K, captained by F/Lt Jenson. Despite being held in a searchlight during it mining run, the crew completed the successful solo mine laying mission in Yu-lin-kan Bay on the south coast of Hainan.



Yu-lin-kan Bay, Hainan Island China, marked in red

The first 43 Sqn RAAF Catalina mission; to mine approaches to Hong Kong Harbour, was flown by all four aircraft deployed on the 6th May 1945. However two of the aircraft failed to locate their datum points and returned to base with their mines after flying some 24-25 hours in flight.



A24-201 RB-K, carrying four mines from Darwin during the ferry flight up



A24-355 OX-H

A24-355 OX-H, captained by F/Lt Mackie, completed the 6th May 1945 mission, some 20 hours and 40 minutes in the air. One further Catalina was damaged, PBV-5 A24-71 captained by F/Lt Donlan, when attempting in taking off from the advanced refueling base located at Lingayen Bay. It did not participate in the mission.

During the next week and onwards to the end of April 1945, weather conditions in the China Sea proved difficult for operations, with a number of missions cancelled or aborted due to the severe conditions.....but other nights were otherwise successful.

#### **The deepest Northern Deep penetrations RAAF Mission of the war.....**

On the night, 25th May 1945, 42 Sqn RAAF undertook a Mining Mission ZMY29 to the approaches of Hong Kong Harbour, with A24-86/A24-97/A24-88<sup>69</sup> and A24-78.

When the last PBV-5, A24-86, had touched down at 260445Hrs at Jinamoc Island, the next 76 Wing Mine Laying Mission, Duty ZEA6 the most northern mining mission so far, to Wenchow, were in flight to Lingayen Bay, two and a half hours to refuel before heading off.

**Duty ZEA6: Mining of Wenchow** (Wenchou or Wenzhou) Harbour, 26th May 1945: 20 Sqn RAAF Duty 1-4.

Four No 20 Squadron Catalina's, led by F/Lt Benjamin Alfred Titshall 409457<sup>70</sup> flew on a operation to mine the sea approaches to Wenchow (Wenchou or Wenzhou) Harbour, China Coast.

First up was Duty 2 at 0725Hrs Zulu and after navigating via Cape Bojeador (located on the north western tip of the island of Luzon in the Philippines) they approached the North Eastern Tip of Formosa, before being beaten to the target Datum Point by Duty 1 at 261502Hrs Zulu.





Possible Area where the mines were laid via Data supplied. The two Blue dots are light Houses. Wenchou Target Mine Datum Point

It was noted that the Lighthouses on Hua-Chien-Shan and Tung-Kua Yu Islands\*\* were in operation, making navigation and position fixing easier.

\*\* These islands are actually Chung Yuan Shan and Tung T'ou Shan respectively i cross referencing locations.

After a successful laying of all mines carried, two American Mk13 Mod 0, four Mk13 Mod 5 Mines and two British "A" Mk VIIIB Group Mines, they headed home with the last down at Jinamoc being Duty 4. Along with Duty 2, both were in flight for the longest at 17 hours and 45 minutes duration.

**Of note**, the Latitude position placed this target some 150 nautical miles above the meridian of Okinawa Island. US Forces landings on Okinawa Island had commenced on the 1st April 1945, continuing at the time, until it was finally secured on the 21st June 1945.



This Duty Flight of four Catalina's would without doubt have to be considered the most deepest northern penetration of Japanese Territory by any RAAF Aircraft on a mission during wartime.



	Duty 1 A24-307 F/Lt Titshall	Duty 2 A24-201 F/Lt Clarke	Duty 3 A24-309 F/Lt Granger	Duty 4 A24-306 F/Lt Whitworth
Times are Zulu, prefix with date: In Philippines time zone, it is 8 hours ahead of Zulu. 0805Hrs Z equals 1605Hrs (04.05pm Local)	F/LT TITSHALL 409457 Captain P/O HENRY 439609 2nd Pilot P/O KIRKVILLE 439608 2nd Pilot P/O MAHER 400033 Navigator P/O PATTERSON 400034 1st Eng. P/O REID 439608 2nd Eng. P/O SMITH 439608 W.O.Air P/O TAYLOR 439608 W.O.Air P/O WATSON 439608 1st Crew P/O WILSON 439608 2nd Crew	F/LT CLARKE 401430 Captain P/O BROWN 434532 2nd Pilot P/O McLEOD 434530 Navigator P/O PAUL 404486 1st Eng. P/O COLE 404487 2nd Eng. P/O KEMP 414890 W.O.Air P/O QUINN 414890 W.O.Air P/O SMART 439608 1st Crew P/O McDONALD 439774 2nd Crew	F/LT GRANGER 414813 Captain P/O BUCHER 437477 2nd Pilot P/O BAUFELD 439472 Navigator P/O COOK 414848 1st Eng. P/O ARCHIBALD 404444 2nd Eng. P/O TERRY 439444 W.O.Air P/O GOGGIN 440180 W.O.Air P/O THOMAS 439711 1st Crew P/O BURGER 434143 2nd Crew	F/LT WHITWORTH 3614 Captain P/O MANUEL 437899 2nd Pilot P/O FRANKFILL 414848 Navigator P/O DEER 414848 1st Eng. P/O ALEXANDER 414847 2nd Eng. P/O HACKETT 439608 W.O.Air P/O FRETWELL 439608 W.O.Air P/O BUCK 439608 1st Crew P/O McDONALD 439608 2nd Crew
Slipped Lingayen	260805Hrs	260725Hrs	260735Hrs	260730Hrs
Time on Target	261502Hrs	261512Hrs	261507Hrs	261506Hrs
Moored Jinamoc	270040Hrs	270110Hrs	270035Hrs	270115Hrs
Duration of Flight	16Hrs35M	17Hrs45M	17Hrs00M	17Hrs45M

Interestingly and somewhat shocking, there seems to be a lack of proper intelligence...

**Wenchow (Wenzhou)** between 1937 and 1942, had achieved importance as one of the few ports still under Chinese Nationalist control. It declined in the later years of the war, but it was never captured. The idea of sowing mines was mainly due to the increase of US Navy Submarine patrols and attacks, forcing the Japanese shipping to hug the coasts and islands along China to avoid their torpedoes.

#### Target Listing Inclusion per the US Strategic Bombing Survey Pacific Japanese Air Target Analyses Objective: Sept 1944

CONFIDENTIAL			
CHINA			
Place	Objective Folder	Important Objectives	Comment
Woosung	83.1	Port facilities; ship concentrations	Important military trans-shipment point.
Shanghai	83.1	Shipbuilding and repair yards Municipal Power Plant	Important repair facilities, some building.
Nanking	83.1	RR Ferry and Shops	Capital of Occupied China.
Wuhu	83.1	Ship concentrations	Shipping point for iron ore.
Shih-hwei-yao	83.1	Ship concentration.	Shipping point for iron ore.
Hankow	83.1	Port facilities; ware-houses Shipping concentrations	Military shipping point.
Wenchow	83.2	Ship concentrations	Convoy control point.
Foochow	83.3	Ship concentrations	Convoy control point.
Amoy	83.3	Ship concentrations	Convoy control point.
Swatow	83.3	Ship concentrations	Convoy control point.
Canton	83.4	Military depots and airbases	Japanese military base.
HAINAN IS.			
Hoihow	83.6	Military stores and headquarters	No port facilities except at new port four miles west. Kiungshan Airbase one mile S.
Yulinkan Bay	83.6	Port facilities; ship concentrations Naval Supply Depot; fuel stores	Hainan's best port; secondary naval station and convoy control point. Shipping port for iron ore.
Sama Bay	83.6	Military depots; minor port facilities Sama Airbase	Military storage area.
PESCADORES IS.			
Mako	91.7	Mako Naval Station	Minor naval base, with large oil storage facilities, air-port, etc. Convoy control point.

After these operations were finished, post June 1945, RAAF Operations were by agreement, limited to 11 degrees latitude North thereafter, with Borneo and Surrounds being the targets .

## The End Results

When the Pacific War finished, a total of 1130 Sorties over 281 nights, were completed involving some 2512 Aerial Mines laid from RAAF Catalina's. Some 400 Sorties were flown along the China Coast from the forward Operating base in the Philippines during the worst period of weather experienced there

### RAAF Mines in use 1943-1945:



*Loading British Type Mine port, and American type mine starboard on a RAAF Catalina.*

Initially two types( American Mk12 Mod 1 and Mk13 Mod 0)were used, then in September 1943, the British "A" Mk1-IV were delivered, followed by the "A" Mk V Mines in April 1944.

Mine release was made between 500 feet and 100 feet, from this period with Radio Altimeters fitted to PB2B-1s. In June 1944, the American Mk 26 Mod 1 was introduced to the RAAF, followed in August 1944 of the British "A" Mk1-IV "G" Group with combination Magnetic and Acoustic fuses.

In October 1944, the first American Mk 25 Mod 0 mines were obtained. These could be sown in depths up to 300 feet, thereby expanding the operational areas. Finally in May 1945, the American Mk 36 Mod 1 and the British "A" Mk VII Mines were introduced. However British Mines were always in short supply .

As all Mines were carried on external racks only, for the Catalina had no stowage for mines internally. British Mines had to be therefore fitted with streamline nose fairings manufactured for the purpose of external carriage. Further to this, fuses were fitted to about 45 % of mines, with delay mechanisms or delayed arming for up to 30 days.

*It was always RAAF practice to mix the American and British Mines during each mission to ensure that the Japanese had a difficult time in sweeping.*



**The crew of Missing A24-203 RB-V:** Identified, left to right, back row: 410296 Warrant Officer (WO) William Voss 'Snow' Bates, of Redcliffe, Qld, aged 34 years; 73252 Sergeant (Sgt) Walter Douglas 'Scottie' Scott, of Rozelle, NSW, aged 20 years; 68674 Flight Sergeant (Flt Sgt) William Alan (Bill) Rowe, of Merewether, NSW, aged 32 years; 67893 Sergeant (Sgt) Alfred Russel (Rus) Jones, of South Murwillumbah, NSW, aged 21 years; 19805 Sergeant (Sgt) Donald Kelway (Don) Storrie, of Wagga Wagga, NSW, aged 25 years. Front row: 419457 Warrant Officer (WO) James Reginald (Reg) Cleworth, of Sandringham, Vic, aged 22 years; 412995 Warrant Officer (later Pilot Officer [PO]) Malcolm Oswald 'Ron' Merrett, of Cremorne, NSW, aged 24 years; 417318 Warrant Officer (WO, later Pilot Officer [PO]) Ross William Schulz, of Meadows, SA, aged 21 years; Aircraft Captain, and 405902 Flying Officer (FO) Keith McClement Cautley, of Gympie, Qld, aged 22 years. None of the above crew have any known grave and are all listed on the Labuan Memorial in Saba, Malaysia. AWM. Donor J R Cleworth. AWM





The Map says it all,..basically all over. Top Left, Wenzhou, China: Darwin Museum

#### References:

1. Title[No 20 Squadron - General Reconnaissance/Flying Boat Squadron] - Operation Orders Contents range 1945 - 1945 Series number A11287 Control symbol Z1 Access status Open Barcode3491704
2. Title: RAAF Unit History sheets (Form A50) [Operations Record Book - Forms A50 and A51] Number 20 Squadron Aug 41 - Mar 46
3. Title: RAAF Unit History sheets (Form A50) [Operations Record Book - Forms A50 and A51] Number 42 Squadron Jun 44 - Oct 45



## Curtiss Corner: P-40E-1 -CU: A29-90



Straight out of the Crate:  
ET447 April 1942, Geelong.

Rec 1AD ex USAAC 20/04/42. Rec 76 Sqn RAAF 02/05/42 and coded H. Recoded IH Milne Bay. Named "WINGedNEMISIS" on Starboard Cowl. Damaged combat 04/08/42. Pilot: F/O P H Ash not injured. Repaired. Damaged on landing when taxiing, Undercarriage and props 11/08/42. Pilot: Pilot Officer H A Kerr not injured. Rec RSU Milne Bay 11/08/42. Held 15RSU 03/09/42. Held 76 Sqn RAAF at Batchelor Strip 07/10/42. In service 76 Sqn RAAF 02/11/42. Accident 11/11/42 Straus Strip when taxiing, struck tree damaging Port Mainplane. NFDs. Allotted to 43rd Material Sqn (USAAF Maintenance Sqn under 49th FG) Adelaide River for repair 12/11/42. Canc. Issued 4RSU ex 76 Sqn RAAF 15/12/42. Rec 76 Sqn RAAF ex 4RSU 05/01/43. Rec 2OTU ex 76 Sqn RAAF 11/05/43. Accident 02/07/43 at Mildura when forced landed. Repaired. Accident 0920hrs 04/01/44 when aircraft crashed some 12 miles north west of Mildura. Pilot; F/Sgt G N C Sayce Serv#410263 died of injuries in Hospital. Written off per AMSE File#9/16/1320, 22/01/44.

The 348th P-40E-1 of the production contract, (CW#908/ FY41-25123/ET447), A29-90 came out of Curtiss Wright Factory at Buffalo New York during the second week of February 1942. Test flown and crated, shipped on to Australia as part of Defence Aid (DA3) on the SS Banton, which left on the 9th March 1942. It was part of a diversion of 125 (Actually 141) P-40E-1 Airframes promised ex United Kingdom, from RAF Kittyhawk Mk1A Contract's.

These first ten redirect RAF DA3 Defence Aid Aircraft from RAF Orders, arrived at the Geelong Erection Depot (USAAF 4h Air Depot) following the arrival of the ship in Geelong on the 3rd April 1942.

*One aircraft, P-40E-1 41-25119 (A29-87#1 which ended up in the USAAF's 49th FG as #99 "Eaglebeak" ) went directly to 1AD for repair of damage it received in sea transit.*

As one of a first batch of ten P-40E-1s destined for the RAAF, the model incorporated several changes from the previous redirected Stocks in Australia ex 49th Fighter Group. These included colour scheme (RAF Air Ministry Green and brown Pattern) and fitment of Sutton four strap system. Also included in these aircraft was a ex Curtiss Wright Factory Linen Bag containing a set of parts for mixture controls etc on Throttle control unit. These were specified for delivery of RAF Contract aircraft (DA3), but were not fitted to RAAF Aircraft as it was deemed necessary to maintain control standards of previously issued ex USAAF P-40E/E-1s.

Received by 76 Sqn RAAF on the 2nd May 1942 and coded "H", later "IH" when at Milne Bay.

On the 4th August 1942, when flown by F/O P H Ash as part of a six aircraft flight on a interception patrol above the strip at 4000 feet, engaged two enemy aircraft in a stern attack\*\*. These were identified with fixed undercarriages. A further four Zeros joined in. F/o Ash expended between 500-600 rounds and saw the aircraft he was firing upon emitted heavy smoke. In return, enemy fighters placed 8 x 7.7mm rounds into his port elevator, starboard and port wing, and port fuselage. He broke off the engagement because of temporary engine failure and landed safely at Gurney Strip. *These two kills were 76 Sqn RAAF's first kills.*

*Gurney Strip was named after and in memory of Squadron Leader Robert(Bob) Gurney AFC who was killed in a air crash after returning from a raid over Rabaul. He was a very well known QANTAS Pilot in pre-war years and entered into the RAAF when war was declared on Germany in late 1939.*

Pilot Officer H A Kerr Serv#411789, A Flight, flew her on 1138Hrs 11th August 1942 along with five other P-40Es in unsuccessful interception of zeros at 1200 feet, whereupon in his second engagement, a zero dived out of a cloud and on to his tail. He received a two second burst. His engine became rough and he left combat to return to Gurney.

After landing and then turning at the end of the strip, his brakes jammed, damaging his undercarriage which became stuck, causing the aircraft to nose over damaging the props. \*

From the 22nd September to the 5th October 1942, 76 Squadron aircraft moved by air from Gurney to Straus Strip in the Northern Territory, with the ground echelon moving by sea on the SS Van Heutsz to Darwin on the 24th September 1942. The aircraft, flown by a unidentified pilot, when taxiing, struck a tree damaging the port mainplane. *During that time, two bombing raids were mounted by the Japanese on the 25th and 26th November 1942.*



Being trucked off to 4RSU after Wings were removed, November 1942.

The aircraft was repaired by 4RSU and returned to 76 Squadron on the 5th January 1943.

From January 1943, the Squadron moved to Yanrey Station Strip(Exmouth Gulf), coded "Potshot" (Near Onslow) WA , established as a secret Air base. *(Order dated 26/12/1942, per Australian-American Projects - Department of Air - Provision of operational base at Yanrey, Western Australia)*

2nd May 1943, flown by P/O Dohrmann from Potshot/Geraldton to Perth leg. (09.05hrs to 15.05hrs.) There it had a mechanical problem that required it to be left behind. P/O Dohrmann flew A29-138 from there to Mildura.

The aircraft arrived at 2OTU Mildura on the 11th May 1943. On the 2nd July 1943, the aircraft suffered a accident with damage to the airscrew, radiator, cowls, forward fuselage and starboard wing. No details are on hand regarding the incident or the pilot's name, except the damage suggests a starboard main gear collapse, followed by a ground loop. The aircraft was repaired.





Photograph shows a RAAF Ground Crew working on the cockpit wiring, after the removal of the canopy and cockpit seat (with Sutton Harness) Location appears to be the coded secret base near Yanrey Station WA (Potshot).

On the 4th January 1944, at 0815Hrs, A29-90 as Red 3, piloted by F/Sgt G N C Sayce Serv#410263 flew in company with A29-58 Red 1 (Sgt G K Eames Serv#416837) and A29-97 Red 2 (F/Sgt W J Martin Serv#416888) on a 1 hour strafing exercise at Lake Victoria Range (Flight Minimum was 500 feet).

At the conclusion of the exercise, they formed up in a Vic Formation at 500 feet and were returning to Mildura when at 09.20hrs, it was noticed that A29-90 was lagging behind in formation. and dropping down to 100 feet. No radio message was heard regarding his reasons, when a cloud of dust was raised. The pilot of A29-90 perhaps due to engine problems, had attempted to make a forced landing 12 miles north west of Mildura Aerodrome. F/Sgt Sayce was rescued and conveyed to hospital, whereupon later during an operation, died of his injuries.

He was buried in the Mildura War Cemetery on the 5th January 1944, with his Father, Mr M W Sayce in attendance. *Lest we Forget*

The aircraft was written off per AMSE File#9/16/1320 on the 22nd January 1944.



**Where is A29-90 now????....** The airframe known as A29-28 was acquired by a farmer in Mildura and stored on his property until 1968. During 1968 it was recovered and displayed at Warbirds Air Museum 1968-1985 by Pearce Dunn? During 1988 It was bought by Mr Jack McDonald of Essendon Victoria, and supposedly use the rear fuselage of A29-1210, plus cowl and parts from A29-87. Interestingly some of the fuselage components was at Point Cook and had been used in the Reconstruction of A29-28 by Jack McDonald at Caboolture Qld in the preceding years (most of the forward fuselage is A29-90 basically from the Firewall to the hatch - having looked at the photos of early A29-28 (SIC) rebuilt, the rear fuselage is almost new compared to the forward fuselage.

It was later sold to the RAAF Museum at Point Cook. But saying that will cause issues, as the RAAF Museum bought it as A29-28, which has more Historical value because it'd be a Port Moresby Aircraft not "just" a Milne Bay aircraft.

You have to remember that A29-28 was used as a Range target at Werribee, where most of these targets tended to end up burn. Funnily enough it was stated that the wreckage came from Mildura area (guess where A29-90 crashed) not Werribee, nor was it burnt or full of holes.

File 9/86/ 157

DISPOSITION OF KITTYHAWK AIRCRAFT.

UNIT	SERIAL NO.
1 C.U.	2 A.29, 1144, 1153 ✓
4 Sqn.	2 A.29 - 1154 ✓, 1155 ✓
13 A.R.D.	2 A.29 - 333, 489 ✓ <i>to long</i>
Pt Cook Storage	4 A.29, 1193 ✓, 1196 ✓, 1204 ✓, 1215 ✓
1 C.R.D.	49 A.29 - 28, 31, 33, 45, 49, 52, 55, 58, 65, 67, 75, 79, 96, 103, 104, 105, 107, 111, 129, 135, 144, 151, 157, 159, 161, 162, 164, 174, 175, 177, 178, 179, 180, 182, 184, 187, 189, 193, 194, 196, 198, 200, 202, 203, 310, 313, 358, 473. ✓

*Destroyed by School of Land/Air Warfare*

*Granted to airport*

1 CRD based at Laverton, A29-28 was on their Disposal List to School of Land/Air Warfare as a target at Werribee

In the Assembly of parts known as P-40E A29-28 in the RAAF Museum's Care, has the Curtiss Wright stamping of #908 (confirmed number from the RAAF Museum in a Phone call between fellow P-40 researcher and friend, Buz, and the Museum Curator at the time in 2004, but he was not sure if the number quoted was from the rear bulkhead or left lower longeron). Buz states "**Kittyhawk (in fact all P-40's) can actually be identified by 3 different numbers from the airframes. These are the USAAF serial number (on a plate in the cockpit area), from the Curtiss C/N (on a plate in the cockpit) and also by the Customer Sequence number(CW#)(which is stamped on the left lower longeron, and on numerous plates throughout the airframe). I understand that during the service life of the airframe that some components, such as wings, tail units etc can be replaced thus meaning that some of the numbers will not match, but the left lower longeron number is very unlikely to change**"

As Curtiss Wright used this number stamping to identify their "built" aircraft, its pseudo A29-28's identification, should have a Curtiss Wright's stamping #356, which does not correspond what's on their Museum aircraft.

**Author's Comment.....**Given the historical fact that this is quoted per its CW#908 aircraft stamping, was on a Milne Bay Veteran, credited with 76 Sqn RAAF first Japanese aircraft kill, its perhaps more appropriate for it to be painted as **A29-90 "IH" WINGed NEMISIS** OF 76 Sqn RAAF in line with its Curtiss Wright Stamping.

\* Note: During the layup of November 1942 whilst under repair, this particular aircraft was used in ground tests regarding damage to 0.50 Cal Gun wing installations due to the high number of rounds used in repelling the Japanese invasion at Milne Bay and the associated wear and tear stresses on Blast tubes that encased the barrels of the six 0.50Cal Guns in damaging ribs within the wings.



An increasing number of Blast tube failures led to an increase of unserviceability of aircraft. Having been damaged in its last landing, it was noted that there were some cracks in the port former ribs in and outside the inboard/centre and out board guns positions on the leading edge.

A butt test was carried out of port guns without Blast tubs fitted with a single round fire on all three guns. The former rib near the inboard gun fractured in four places. The other two guns showed signs of fractured. When a burst of eight rounds were fired from the inboard gun, the fractures spread from a 1/2 inch to 7/8 inch.

As the inboard Gun muzzle is approximately 10 inches from the leading edge of wing, a pressure wave is created, placing pressure on the ribs which then fracture.

This resulted in Kittyhawk Order #9 to be introduced in February 1943. Use of larger rivets and in some places, bolts replacing the use of rivets would reduce, though not eradicate, this issue throughout the service life of the P-40 Series in the RAAF.

**\*\* Combat Report on 76 Sqn's RAAF's first kill: Flying Officer P H Ash.**

FORM C.F.		R.A.A.F. Form A.100(A).
COMBAT (FIGHTER) REPORT		
UNIT: <b>A. Flight A29-90</b>		
Report No. _____	Pilot: <b>F/O. P.H. ASH</b>	Squadron: <b>76</b>
	Duty: <b>Interception Patrol</b>	Place: <b>FALL RIVER.</b>
		Date: <b>4 / 8 / 42</b>
		Time: <b>0300</b> hrs. <b>Z.</b>
(1) Number, type and formation of our own aircraft taking part in attack: <b>6</b>		(2) Height when first sighting enemy: <b>4000 ft.</b>
(3) Position of enemy (relative to own aircraft) when first sighted: <b>4,000 ft. above strip</b>		(4) Type of enemy aircraft: <b>Possibly SS5 Fixed U/Car.</b>
(5) Number and formation of enemy aircraft: <b>2 E. Fighters.</b>		(6) Was own approach observed or unobserved: <b>Observed.</b>
(7) Type of attack delivered on enemy: <b>Stern</b>		
(8) Action taken by enemy: <b>Steep climbing turn to left.</b>		
(9) Result of engagement, including own and enemy casualties: <b>Own. 8 7.7 m. bullet holes in Port Elevator, starboard wing Port wing, Port Side fuselage. Enemy. Heavy smoke seen emitting from enemy aircraft.</b>		
(10) Special comments: (See Instructions paras. 3 and 4.) <b>5/600 rounds. Was attacked from behind by another enemy aircraft Engaged after ground strafing run by E/A.</b>		
IN THE CASE OF ESCORTED ENEMY FORMATIONS THE FOLLOWING ADDITIONAL INFORMATION:—		
(11) Number, type and formation of escorting aircraft: <b>Engagement broke off because of temporary engine failure.</b>		(12) Position of escort relative to main force:
(13) Was attack directed against escort or main force:		
(14) Action taken by escort:		
(15) Action taken by main force:		
(16) Special comments: (See Instructions, para. 5.)		
Signature <i>L. E. ...</i>		

**Final Photographs of A29-90 (Marked as #90 with 20TU, now sans Name and pre 76Sqn RAAF Markings of "IH")**





## Odd Shots Special: Winter 2017: Vengeances in Stripes and el Natural



A27-419, Maylands, c.1945 with 7 Communications Unit as a Target Tower. Note all over Markings, rear of cockpit



A shot of another Vengeance TT, 27-14, but only with underneath TT markings.



A27-2 in TT Markings.



6 Communication Unit's A27-421 TT photographed at Batchelor 31/10/1942.





**A27-417 Vengeance TT of 3 Communications Unit.**



**Not a TT, but a rare natural metal Vengeance of the Central Flying School at Point Cook.**

## 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

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## End Notes :

### RAAF AIRCRAFT MARKINGS SINCE 1950 SQUADRON MARKINGS – PART 3 – THE METEOR John Bennett 2017

<sup>1</sup> G Ashley, *Meteor in Action*, Signal Publications No.152, Carrollton TX, USA, 1995, p.17.

<sup>2</sup> N Parnell and T Boughton, *Flypast - A Record of Aviation in Australia*, AGPS, Canberra, 1988, p.237.

<sup>3</sup> B Cull and D Newton, *With The Yanks in Korea*, Vol.1, Grub Street, London, 2000, p.92. D Hurst, *The Forgotten Few*, Allen & Unwin, Sydney, 2008, p.111.

<sup>4</sup> The AN/ARN-6 radio compass was US equipment made by Bendix. This was RAAF Modification 163, NAA CRS A705 9/84/413.

<sup>5</sup> Air Publication RAF A.P.2210, Sect 1, RAF Modification 1175 of 23 OCT 1951. "A subtle change was the provision of new wider-diameter intakes that allowed greater mass flow and were colloquially known as 'deep breathers'. The new intakes provided 240 lb more thrust per engine and were fitted to most WK and WL serialled Mk.8s on the production line", *Wings of Fame*, Volume 15.

<sup>6</sup> RAF A.P.2210, Sect1, RAF Modification 1516 of 10 JUN 1952.

<sup>7</sup> Air Publication RAF A.P.1086, "Vocabulary of RAF Equipment" Part 13B Sect 33B, in 1948 provided stores reference numbers to colours, which previously only had been identified by names. Colours included *Ocean Grey* 33B/681, *Medium Sea Grey* 33B/679, *Dark Sea Grey* 33B/691, *Dark Green* 33B/677. P Lucas, *Scale Aircraft Monographs Camouflage and Markings, RAF Fighters 1945-1950 UK Based*, Guideline Publications Ltd, Luton UK, pp.23, 70.

<sup>8</sup> UK Air Ministry Directorate of Technical Development (DTD) specification 772 (DTD772) standardised aluminium finish processes in 1949, and A.P.1086 stores reference 33B/865 was *Glossy Aluminium*, which became known as 'High Speed Silver'. Lucas, p.70.

<sup>9</sup> The RAF Type-D 3:2:1 roundel was promulgated in MAY 1947 by RAF Air Maintenance Order AMO A.413/47, Lucas p.52.

<sup>10</sup> T Buttler, *Gloster Meteor*, Warpaint Book Series No.22, Hall Park Books, Milton Keynes, Bucks, UK, pp.63, 77. Type-D roundel sizes: 54" diameter upper wing, 32" diameter undersides for RAF aircraft.

<sup>11</sup> 1947-48 RAAF policy had stated that day fighters and day/night bombers would be finished in "aluminium and with the smoothest possible finish (K3/162 or K3/168)." *Standard Finishes and Markings of Aircraft – Policy*, RAAF HQ 9/1/1755 enclosure 5A, 30 SEP 1947; RAAF HQ 9/1/1595 DTS Special Instruction Gen/96, 14 JAN 1948. See *ADF Serials Telegraph* Vol.6 Issue 6, Summer 2016.

<http://www.adf-gallery.com.au/newsletter/ADF%20Telegraph%202016%20Summer.pdf>

<sup>12</sup> Roundel sizes for 'Medium' sized aircraft (which included single-seat fighters) was normally 36" diameter 3:2:1 roundels in all positions, except for aircraft with a large wing chord. Hence the Meteor upper roundel was 54", and for the Canberra the mainplane roundel was 84" diameter. Lucas, p.66.

<sup>13</sup> Air Publication RAF A.P.119A-0601-1E Table 1, pg.2.

<sup>14</sup> Re 'scrambled', 'consecutive', and 'century' block serials, see *ADF Serials Telegraph* Vol.5 Issue 3, Spring 2015.

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

<sup>15</sup> *Gloster Meteor Pt.2*, in *Wings of Fame* Vol.15, Aerospace Pubs Ltd, 1999; other sources state 108 were converted, Ashley, p.48; Butler, pp.7-8, 25.

<sup>16</sup> Buttler, p.74.

<sup>17</sup> The 15 Australian modified U.21As were: A77-157, -193, -207, -422, -510, -802, -851, -855, -863, -872, -873, -876, -882, -884, and -885. RAAF Form E/E.88 aircraft status cards, A77 aircraft.

<sup>18</sup> Lucas, pp.1, 8.

<sup>19</sup> J Goulding and R Jones, *Camouflage and Markings RAF Fighter Command Northern Europe 1936-1945*, Doubleday, New York, 1971, Meteor F.3 p.247; Butler p.63.

<sup>20</sup> UK A.P.2656A Vol.1, Sec.6, Chap.1 *Camouflage Schemes*, para.13, OCT 1944, specifies these three colours by name. The MAP Standard Aircraft Colours 1939-1945 are provided by *British Aircraft Colours of WWII*, RAF Museum series Vol.3, Arms & Armour Press, London, 1976 (colour chips at frontpiece, facsimile A.P.2656, p.35).

<sup>21</sup> BS381C colours were not listed in the A.P.1086 "Vocabulary of RAF Equipment", Sect.33B *Aircraft Finishes and Paints*, until 1966. Lucas, p.92.

<sup>22</sup> Roundel colours 'Post Office Red' and 'Roundel Blue' addressed by RAF A.P.119A-0601-1E p.22. BS equivalents to US Federal Standard (FSS95a): BS381C-538 *Post Office Red* FS11140; BS381C-110 *Roundel Blue* FS15056, Lucas, p.92.

<sup>23</sup> RAAF Form A.180 Aircraft Accident A77-2 32/31/793 28SEP56.

<sup>24</sup> RAAF Form A.180 Aircraft Accident A77-3 32/31/706 16SEP55.

<sup>25</sup> R O'Neill, *Australia in the Korean War 1950-53*, Vol II, AGPS, Canberra, 1985, p.325.

<sup>26</sup> Ashley, p.18.

<sup>27</sup> RAAF Form E/E.88 aircraft status cards, A77 aircraft.

<sup>28</sup> UK Military Aircraft Serial Allocations website, Wolverhampton Aviation Group. WA935 was received by RAF 26JAN51 then commenced ferry UK to Singapore, but missing over Persian Gulf, and struck off charge 1MAR51. Also *Yanks in Korea Vol.1*. p.329.

<sup>29</sup> Ashley, p.2.

<sup>30</sup> Procurement and installation of the radio compass covered in NAA CRS A705 A2408 series, RAAF files 9/95/57 to 9/95/61, dated MAR-APR 1951.

<sup>31</sup> Parnell and Boughton, p.238.

<sup>32</sup> O'Neill, p.347.

<sup>33</sup> Cull & Newton, p.194.

<sup>34</sup> Cull & Newton, pp.186-193.

<sup>35</sup> O'Neill, p.368.

<sup>36</sup> O'Neill, p.374-6.

<sup>37</sup> Contract order O.I.3879 in early 1953 covered the licence fee for the manufacture of Meteor ventral tanks at Iwakuni, but it is unsure whether this proceeded. File 9/95/264, 14 APR 1953.

<sup>38</sup> It appears the first 16-rocket strike was conducted by the CO WGCDR Hubble in A77-857 on 8MAY53, 77SQN A.50 8MAY53.

<sup>39</sup> O'Neill, p.325.

<sup>40</sup> Sources: RAAF E/E.88 Aircraft Status Cards; RAAF A.50 and A.51 77SQN Unit History; RAAF A.180 Preliminary Accident Reports; NAA CRS A705 32/32 series Aircraft Casualties; *Forgotten Few*, D Hurst; *Australia in the Korean War*, R O'Neill; *With the Yanks in Korea Vol.1*, Cull & Newton.

<sup>41</sup> RAF A.P.2656A Vol.1, Sect.9, Chap.4, APR 1949

<sup>42</sup> Upper wing roundel diameter of 54" was determined in the A.P. 2656A by an aircraft's wing size – chord, etc. Hence the Canberra had a mainplane roundel of 84" diameter. Lucas, p.66.

<sup>43</sup> The Meteors had been delivered from UK with the 'Helvetica Medium' font detailed by RAF A.P.2656A Vol 1, Sect.4, Chap.2. Also A.P.119A-0601B Chap 9-0-1, para 2. When RAAF A77-serials were applied, the 'rectangular stencil' font used by the Mustangs was adopted, some characters being a 'rounded' stencil font, the stencils probably made locally by the RAAF's maintenance depot, 491SQN in Iwakuni. D Muir, *Southern Cross Mustangs*, Red Roo, Melbourne, 2009, p.108. This style was replaced by the more 'rounded' Helvetica numbers when aircraft returned to Australia.

<sup>44</sup> A.P.1086 "Vocabulary of RAF Equipment", Sect.33B *Aircraft Finishes and Paint*. Lucas, p.92.

<sup>45</sup> 77SQN A.50 Unit History 13 MAR 1953; O'Neill p.394.

<sup>46</sup> On the initial crossover from Mustangs to Meteors, a further RAAF shortcoming had been a lack of providing fighter instructors to teach tactics and manoeuvres, Hurst, p.132. This later led to WGCDR Dick Cresswell establishing the Fighter Combat Instructor (FCI) course at 2OTU at Williamtown.

<sup>47</sup> AWM Sound Collection S02783, AVM B H Collings, 28 JUN 2002, transcription p.7-9. He trained at Iwakuni over 8-29 JAN 1953, then flew his first mission in Korea on 2 FEB 1953.

<sup>48</sup> 77SQN A.50 Unit History 10 NOV 1954.

<sup>49</sup> 77SQN A.50 OCT-NOV 1954; E/E.88 Aircraft Status Cards; 2AD A50 DEC 1954, JAN 1955.

<sup>50</sup> 77SQN A.50 Unit History JAN and FEB 1955.

<sup>51</sup> 2AD A.50 Unit History DEC 1954 and JAN 1955.

<sup>52</sup> 77SQN A.50 Unit History JAN 1956.

<sup>53</sup> 75SQN A.50 Unit History AUG-DEC 1956.

**In RAAF (RAF) Service: Westland Whirlwind@** Gordon R Birkett 2016

<sup>54</sup> [www.militaryfactory.com/aircraft/detail-page-2](http://www.militaryfactory.com/aircraft/detail-page-2)

<sup>55</sup> [http://www.historyofwar.org/articles/weapons\\_westland\\_whirlwind.html](http://www.historyofwar.org/articles/weapons_westland_whirlwind.html)

<sup>56</sup> [https://en.wikipedia.org/wiki/Westland\\_Whirlwind\\_\(fighter\)](https://en.wikipedia.org/wiki/Westland_Whirlwind_(fighter))

<sup>57</sup> <http://en.academic.ru/dic.nsf/enwiki/55245>

<sup>58</sup> NAA Series: A705, 166/28/79 Item barcode 1074480 : MUSGRAVE, Edward Lancelot - (Flying Officer); Service Number - 403528; File type - Casualty - Repatriation; Place - Phieul-les-guines, France; Date - 18 May 1943: Public Relations Bulletin - flew between masts of enemy ship - Australians success in Whirlwind bombers

<sup>59</sup> [http://www.historyofwar.org/air/units/RAF/137\\_wwII.html](http://www.historyofwar.org/air/units/RAF/137_wwII.html)

<sup>60</sup> NAA Series: A705, 166/17/52 Item barcode 1069525 HICKS, Francis Leslie - (Flight Sergeant); Service Number - 408207; File type - Casualty - Repatriation; Aircraft - Whirlwind P7062; Place - Broughton Village, United Kingdom; Date - 19 February 1943.

<sup>61</sup> [http://www.aircrashsites-scotland.co.uk/whirlwind\\_lanton.htm/](http://www.aircrashsites-scotland.co.uk/whirlwind_lanton.htm/) <http://www.whirlwindfighterproject.org/>

## **RAAF Longest Operational Missions: to China's Shores 1945** Gordon R Birkett @2017

<sup>62</sup> Gill, G. Hermon, 1968, Royal Australian Navy 1942-1945 (Australia in the war of 1939-1945, series 2 [Navy], volume 2). Australian War Memorial, Canberra.

<sup>63</sup> UNITED STATES STRATEGIC BOMBING SURVEY SUMMARY REPORT (Pacific War) WASHINGTON, D.C. 1 JULY 1946

<sup>64</sup> Source: <http://www.anesi.com/ussbs01.htm#dotjmf>

<sup>65</sup> Mine Warfare At Sea. Springer. Levie, Howard S. (1992). p. 89. ISBN 0-7923-1526-X.

<sup>66</sup> RAAF Command Headquarters - 7th Fleet reports on RAAF mine-laying operations



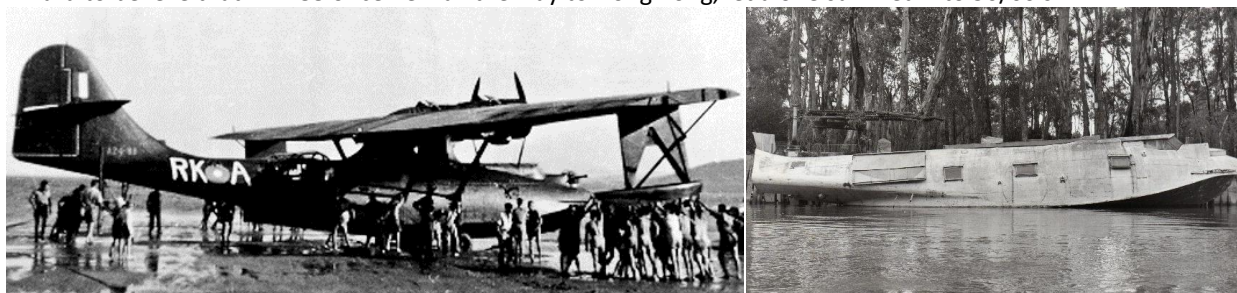
<sup>67</sup> Those six included:

- 20Sqn: Wg Cdr Wearne A24-300 RB-H/F/Lt Goulston A24-301 RB-T/ 03/03/45 (ZEA 11) both mined Yulinkan Bay during the day 1419Hrs Zulu 03/03/45
- 20 Sqn: W/O Brown A24-202 RB-W (ZEA 12) mined East Hainan Straits 1315 Hrs Zulu 03/03/45.
- 43 Sqn: F/Lt Corrie A24-55 (ZDG 6) mined East Hainan Straits with one of two Mines (Port) hung up during the mission 03/03/45.
- 43 Sqn: Wg Cdr McMahon A24-57 OX-T F/O Atkinson A24-59 (ZDG 5) both mined Yulinkan Bay night of 03-04/03/45.
- *The missions durations, (as timed from Lingayen Gulf) averaged between 15 hours and 18.25 Hours depending on target and aircraft when they returned via the Mindoro Straits to their moorings at Jinamoc. Add to this total another four - five hours pre-transit flight from Jinamoc to Lingayen Gulf.*

<sup>68</sup> The deployed Flight of eight were:

- 20 Sqn RAAF consisted of A24-201 RB-K/A24-202 RB-W/A24-300 RB-H/A24-306 RB-S,
- 43 Sqn RAAF consisted of A24-71/A24-308/A24-354/A24-355 OX-H

<sup>69</sup> Hard to believe that A24-88 once flew all the way to Hong Kong, let alone survived into 50/60's



<sup>70</sup> 26 June 1944. Squadron Leader L.M. Hurt and crew made a torpedo attack on an enemy merchant ship anchored in Bima Bay. Although the Catalina faced intense anti-aircraft fire, Hurt successfully dropped his torpedo, but was seriously injured in the process. The second pilot, Flying Officer B.A. Titshall, flew the aircraft back to base under difficult conditions. As mentioned, he landed a holed A24-301 RB-T on the 11th March 1945 at Jinamoc Island.