



ADF Serials Telegraph News

News for those interested in Australian Military Aircraft History and Serials

Volume 2: Issue4: Summer 2012 Editor Gordon R Birkett

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- **Message Traffic Selections:** Sadly this function ceased to operate due to technical issues. It will be replaced soon with a new system. Please address any questions to: question@adf-serials.com.au in the meantime

Message Board – Current hot topics

These boards can be accessed at: www.adf-messageboard.com.au/invboard/

News Briefs

- Defence Minister Stephen Smith and Minister for Defence Materiel Jason Clare have signed a new agreement with the United States Navy to participate in the third P-8A development stage, contributing \$73.9 million towards the project. The signing, in October 2012, formalises Australia's participation in the development of the Increment 3 P-8A Aircraft and marks Australia's continued commitment to the \$5 billion project to acquire a new manned Maritime Patrol Aircraft in 2019.
- Following the removal of the 105mm Gun /Howitzer from both Regular and Reserve Units this year and replacing them with M777 155mm Gun Howitzers and F2 81mm Mortars respectively (Yes, only Mortars in use with the Army Reserve) the Army's firepower is to be updated now that First Pass approval has been given by the Government for Defence to investigate replacement of the Army's aged F2 81mm mortar system under LAND 136 Phase 1 (Land Force Mortar Replacement), cost-capped at \$100 million.
- Australia will acquire the Growler electronic warfare system for Super Hornet which will give the Australian Defence Force the ability to jam the electronics systems of aircraft and land-based radars and communications systems. It will provide options for the Air Force to undertake electronic threat suppression operations in support of Australian Defence Force operations, including land and sea forces. Order is for 12 complete kits, with only 6 in use. Meanwhile RAAF Base Amberley is playing host to

three United States Navy (USN) EA-18G Growler aircraft visiting Australia for the first time. The Growler aircraft, from the USN's Electronic Attack Squadron (VAQ) 132 (known as the 'Scorpions') based at Oak Harbor in Washington, arrived on 28th September to participate in Exercise Growler 12 which will end on the 20th October 2012.



EA-18G Growler touch down 28/09/2012 Amberley

- An Australian government audit warns that delays in the Lockheed Martin F-35 Joint Strike Fighter programme could keep the Royal Australian Air Force's (RAAF) Boeing F/A-18A/B Hornet aircraft in service beyond 2020. "[The Department of Defence's] capacity to accommodate any further delays in the production and/or acquisition of the F-35s through a further extension of the life of the F/A-18A/B fleet, beyond the limited extension currently being considered has limits, is likely to be costly, and has implications for capability," says the Australian National Audit Office (ANAO). In a 160-page report, the ANAO addresses Australia's fighter situation and sustainment issues concerning the RAAF's 71 F/A-18A/Bs and 24 F/A-18F Super Hornets. There was also a 192-page report that dealt with Australia's management of the F-35A acquisition. Although the RAAF's A/B-model Hornets are not likely to surpass 6,000 flight hours until after 2020, the ANAO notes that all but nine of 71 aircraft "have experienced structural fatigue above that expected for the airframe hours flown, leading the [RAAF] to take steps to conserve the remaining fatigue life of its F/A-18A/Bs to ensure they remain operable up to the safe life limit of 6,000 airframe hours." In May 2012, Australian minister for defence Stephen Smith said the nation will delay its acquisition of an initial batch of 12 F-35As by two years to save costs. *Canberra has so far only committed to two F-35As*, which will be delivered in the USA and used for ground and aircrew training from 2014. It has plans to buy an additional 12 under Project Air 6000 Phase 2A and a subsequent 58 under Phase 2B.

"On the timetable, we have been making sure that we don't end up with a capability gap," Smith said when announcing the delay. "We'll make that decision formally by the end of this year in terms of the capability gap, but my current advice is that the life of our 71 F-18 Classic Hornets and our 24 Super Hornets are sufficient for our air combat capability, but we'll make an advised judgement before the end of this year."

- **That's a worry!!!** for images of a new fighter aircraft resembling the Lockheed Martin F-22 Raptor and F-35 Joint Strike Fighter have appeared on Chinese defence sites. The images were reportedly taken at the Shenyang Aircraft Corporation airfield and appeared over the weekend of 15-16 September 2012. A possible designation for the aircraft is J-21. Chinese defence sites, however, variously give the designation as the J-21, J-31 or F-60. As with the F-22 and F-35, the J-21 features canted twin tails, a key design feature of low observable aircraft. A single grainy head-on shot shows widely-spaced intakes, similar in appearance to the F-35. One clear difference of the F-60 from the F-35, is the presence of two engines and a carrier dual nose gear.



De Havilland DH.115 Vampire T33, 35 & 35A in RAAF Service - 76 (F) Squadron: by Steve Mackenzie



Vampire A79-658 of 76 Squadron photographed presumably at Williamtown. Photo: via Peter Malone.

In RAAF Service, 76 Squadron is one of the lesser known users of the 2 Seat Vampires, in their case the later T.35 and T.35A marks.

In January 1960 with the reformation of 76 Sqn, they were initially allocated Vampires while awaiting their allocation of Sabres. Reportedly they were allocated 19 airframes (at this stage I can confirm 10 serials from photos - A79-615, 621, 658, 659, 660, 661, 802, 813, 830 & 832.

In addition the H/Cs confirms that A79-819 and 826 were also allocated). In May 1961 a number of the 76 Sqn pilots undertook No 7 Sabre Conversion Course with 2 (F) OCU. The remaining Pilots were assigned to 2 (F) OCU in July 1961, the Vampire airframes themselves largely having been transferred to the control of 81 Wing at Williamtown on 28 Feb 1951 (mostly going to the control of 2 OCU).

Colour Schemes and Markings: 76 Sqn Vampires were mostly very similar to each other, all being T.35 or T.35A airframes (with the modified canopy and ejection seat) painted overall Aluminium Lacquer (i.e. 'Silver').



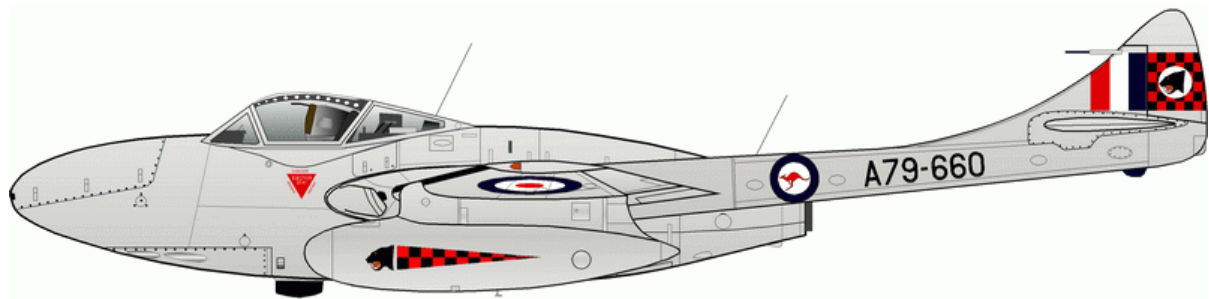
Vampire T.35A A79-802 of 76 Sqn at Williamtown on 30 July 1960. Photo: via Peter Malone & Dick Hourigan



Vampire T.35A A79-802 at Williamtown on 16 Sep 1962. Although by this stage it was officially with 2 OCU, it still carries 76 Sqn markings. Photo: via Dick Hourigan.

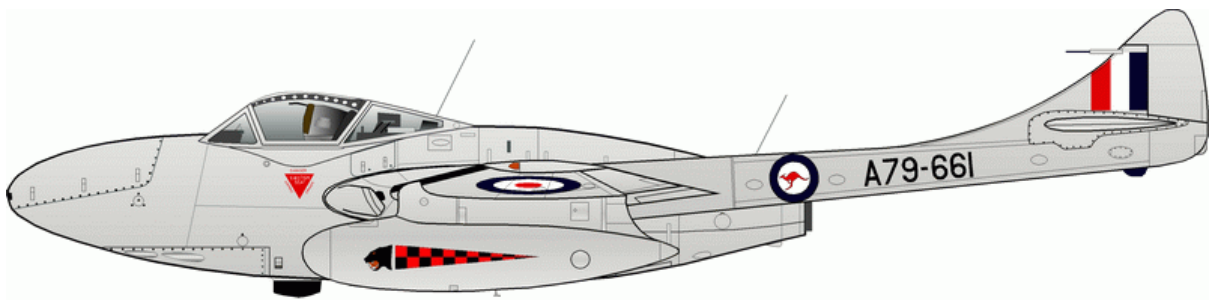
The Squadron's unit markings were painted on the inner and outer faces of both rudders of most airframes, being Red/Black checks, with the Panther head superimposed on a White circle (see the photos and drawing for details).

Other markings often included a triangular Red/Black set of checks on the drop tanks, along with the Panther's head. Standard roundels for the day were carried in six positions, being 'Kangaroo' type on the tail booms and 'D' type on the wings (upper & lower).



DH.115 Vampire T.35, A79-660, 76 Squadron, based at Williamtown, 1960.

A79-660 was painted in overall aluminium dope with roundels in six positions (Kangaroos on the fuselage and standard roundels on the wings). Serials are in Black along with a small amount of stencilling on the airframe. 76 Sqn tail markings consisting of Red/Black checks, with the Panther head superimposed on a White circle are carried on both the inner and outer faces of the rudders. The drop tanks carry a triangular version of the Red/Black checks and the Panther head.



DH.115 Vampire T.35, A79-661, 76 Squadron, based at Williamtown, 1960.

Reference the of time at markings rudder have not did one this that except above, A79-660 to colours identical

Note - Some of the profiles are drawn from some photos that we are still awaiting clearance to use at this stage. They will hopefully be able to be presented in a future issue.



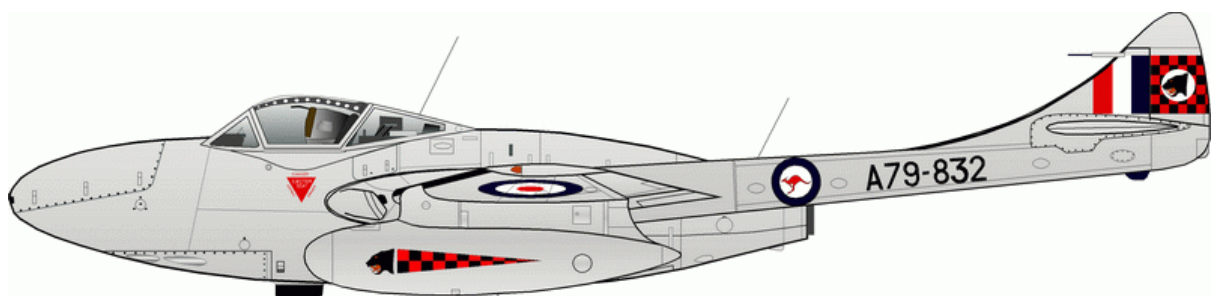
Two 76 Squadron Vampires photographed refuelling (probably) at Williamtown, with lots of interesting detail. Photo RAAF Official



Pictured here is A79-813 on taking off at Williamtown. Photo: via Peter Malone.



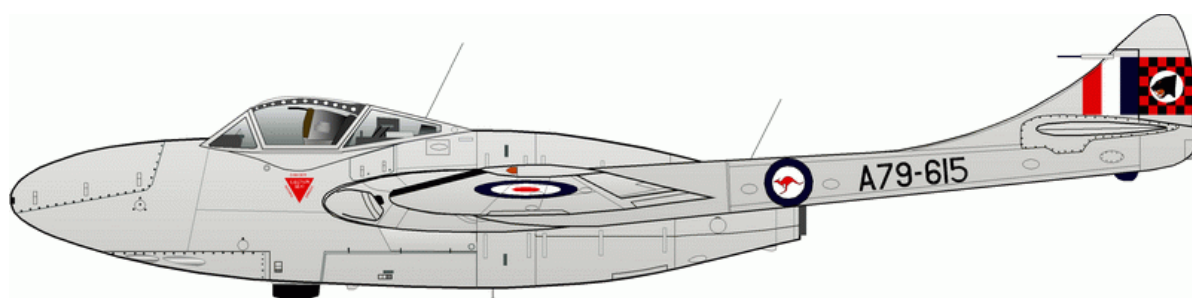
Close-up photo of the 76 Squadron RAAF tail markings as carried on the Vampires and an enlarged version of my tail drawing Photo: RAAF Official, Drawing S.Mackenzie.



de Havilland DH.115 Vampire T.35A, A79-832, 76 Squadron, Williamtown, 1960.
Same colour scheme as on the previous page. The only slight variation is that it carries the Black protective tape on the leading edge of the vertical fins which is absent on the others.



*RAAF Williamtown 19 Sep 1961 during Air Force week display of Vampire T.35 A79-615, still carrying 76 Squadron markings and a pulled apart Sabre Mk.32 with Avon engine.
Photo AHMWA P019837 via Mick Mirkovic.*



de Havilland DH.115 Vampire T.35, A79-615, 76 Squadron, Williamtown, 1961.
A79-915 was painted in overall aluminium dope with roundels in six positions (Kangaroos on the fuselage and standard roundels on the wings). Other details as per the previous drawings
Ref: AHMWA photo above.

I hope to have the pleasure of being able to add more of Steve's research and work in the future:
Editor

Grand Slam: by Rod Farquhar

Known officially as the Bomb, Medium Capacity, 22,000lb and operationally as the Grand Slam or even Ten Ton Tess it was the largest bomb carried and released by an aircraft at that time. Developed by the brilliant inventor Barnes Wallace from its' predecessor the 12,000lb Tallboy it was also a deep penetration bomb.



The 22,000lb Grand Slam Bomb

Both of these weapons had to be dropped close to but not on the target and then exploding deep underground they created a camouflet (cavern) that on collapsing would cause the structure to topple. This was perhaps their greatest weakness; even with the great skill and determination of the 617 Squadron crews the Lancaster's could not achieve the desired accuracy. Notwithstanding this they did have some spectacular successes.

The bomb was 8.08m (26ft 6in) long of which the tail was 4.11m (13ft 6in) and had a diameter of 1.17m (3ft 10in). Vickers machined the casing from alloy steel supplied by the Clyde Alloy/Steel Company of Glasgow Scotland. The explosive used was 4,144 kg (9,140 lb) of Torpex D1, the equivalent of 6.5 tons of TNT, this filling was poured in as a liquid and took one month to cool down and set. A slight offset on the tail fins imparted spin to maintain accuracy during descent. With a terminal velocity near supersonic the bombs could penetrate 40m (130ft) into the earth. For use on underground targets, the bomb was fitted with three separate inertia pistols (firing mechanisms). These triggered detonation after a pre-set delay, which gave the bomb sufficient time to penetrate the target before exploding. Depending on mission requirements, the time delay could be set to 30 seconds or 30 minutes after impact.

To guarantee detonation, a total of three separate Type 47 long delay fuses were fitted inside the rear of the bomb. This dramatically improved reliability of the weapon: even if two of the fuses failed to function, the third would trigger detonation.

The first live test drop of a Grand Slam took place on 13 March 1945 and next day 617 Sqn took the weapon on its first operational mission against the Bielefeld viaduct.

Because of its late entry into the war of a total 99 bombs produced only 41 were actually dropped on operations, the low production rate and high cost also meant that any bomb not able to be dropped on target had to be brought back to base.



A 617 Squadron Lancaster dropping a Grand Slam Bomb

To enable the bomb to be carried the Lancaster had to be especially modified with the removal of most of the armour and armament and anything else not essential for the mission, they also had the engines replaced with Merlin 24s and paddle bladed props, and these gave better performance at low level. The bomb bay doors were removed and the rear fuselage was cut away to fit the tail fin.

In early 1945 32 new Lancaster aircraft were built to carry the bombs, they were Lancaster B1 (specials); as usual they would be operated by 617 Squadron. Adapted to take first the super-heavy "Tallboy" and then "Grand Slam" bombs.

Upgraded engines with broad-bladed propellers gave more power, and the removal of gun turrets reduced weight and gave smoother lines. For the Tallboy, the bomb bay doors were bulged — for the Grand Slam, they were removed completely and the area faired over.

Two airframes (HK541 and SW244) were modified to carry a dorsal "saddle tank" with 1,200 gallons mounted aft of a modified canopy. No. 1577 SD Flight tested the aircraft in India and Australia in 1945 for possible use in the Pacific.

A list of Tallboy and Grand Slam Operations 1945

Bielefeld 14 March 1945 The No 617 Squadron Avro Lancaster of Squadron Leader CC Calder dropped the first Grand Slam bomb from 11,965 ft (3,647 m) on the Schildesche viaduct. More than 100 yards of the Bielefeld viaduct collapsed through the earthquake bomb effect of the Grand Slam and Tallboy bomb of No. 617 Squadron. No aircraft were lost.

Arnsberg, 15 March 1945 Two aircraft of No 617 Squadron RAF each carried a Grand Slam and 14 aircraft of No 9 Squadron RAF carried Tallboy bombs to attack the railway viaduct in poor weather. One Grand Slam and 10 Tallboys were dropped, while one Lancaster was forced to bring its bomb back. The viaduct was not cut and no aircraft were lost.

Arnsberg, 19 March 1945 19 Lancaster aircraft of No. 617 Squadron, six carrying Grand Slams, the remainder Tallboys, attacked the railway viaduct at Arnsberg. All Grand Slams were dropped and blew a 40-foot (12 m) gap in the viaduct. The standing structure was severely damaged.

Arbergen, 21 March 1945 20 Lancaster aircraft of No. 617 Squadron, two carrying Grand Slams, the remainder Tallboys, attacked the railway bridge at Arbergen. The Grand Slams landed off target due to heavy flak and aiming problems; 2 Tallboy hits caused sufficient damage to the approaches to the bridge to put it out of use. One 617 Lancaster was lost.

Nienburg, 22 March 1945 20 Lancaster aircraft of No. 617 Squadron, six carrying Grand Slams, the remainder Tallboys, attacked the railway bridge at Nienburg, between Bremen and Hanover. 5 Grand Slams made direct hits and the bridge was completely destroyed. Another 5 bombs were brought home by the squadron.

Bremen, 23 March 1945 20 Lancaster aircraft of No. 617 Squadron, six carrying Grand Slams, the remainder Tallboys, attacked a railway bridge near Bremen. The Grand Slams appear to have landed too far from the target, which was brought down by a Tallboy. Author Jon Lake claims instead that two Grand Slams struck the bridge.

Farge, 27 March 1945 20 Lancaster aircraft of No. 617 Squadron attacked the Valentin submarine pens, a huge, nearly-ready structure with a concrete roof up to 23 ft (7.2 m) thick. Two Grand Slam bombs penetrated in parts of the pen with a 14 ft 5 inches (4.5 m) thick roof, which rendered the shelter unusable. No aircraft were lost.

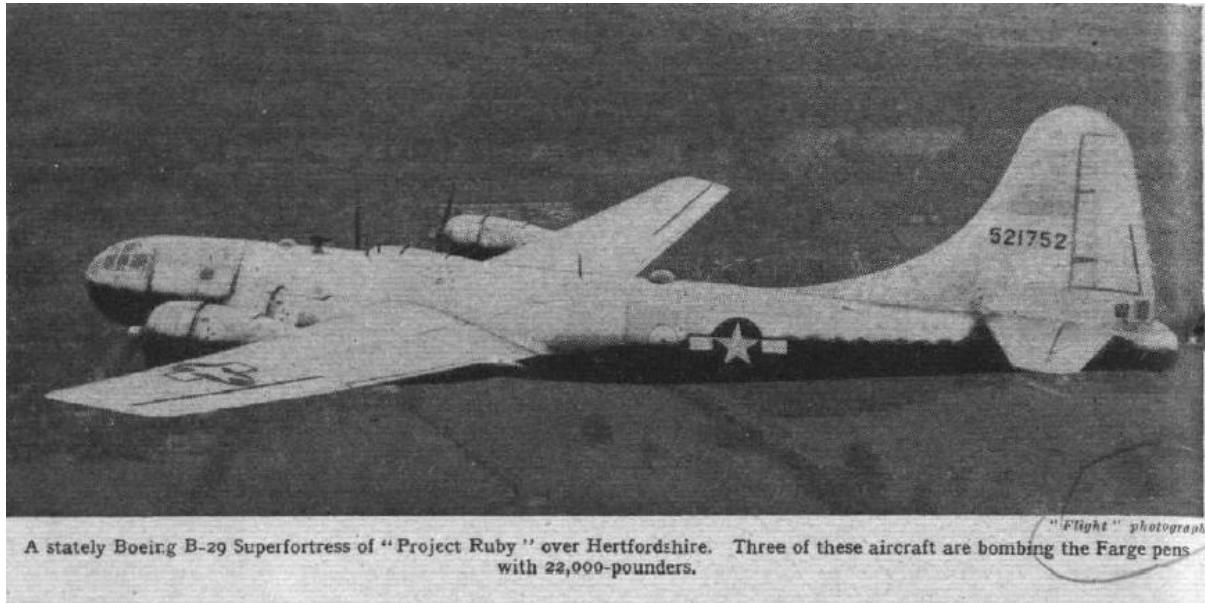
Hamburg, 9 April 1945 17 aircraft of No. 617 Squadron, two with Grand Slams and the remainder with Tallboy bombs successfully attacked the U-boat shelters. The Grand Slams appear to have missed, but six Tallboy hits caused considerable damage. No aircraft were lost.

Heligoland, 19 April 1945 20 Lancaster aircraft of No. 617 Squadron, six with Grand Slams and the remainder with Tallboy bombs, along with 16 aircraft from No. 9 Squadron, attacked coastal gun-batteries. No aircraft were lost.

Post War

Project "Ruby"

Beginning in March 1946, Project Ruby was a joint, Anglo-American project to investigate the use of penetration bombs against heavily-protected, concrete targets.



B-29A 45-21752, one of three used by the USAAF in Project Ruby

The target selected was the Valentin submarine pens that had been rendered unusable and abandoned since 617 Squadron's attack on 27 March 1945. Grand Slams were carried by Lancaster aircraft from No 15 Squadron RAF and US Boeing B-29 Super Fortress. Around 140 sorties were flown, testing a range of different bombs.



One of 15 Squadron (RAF) B1 Lancaster aircraft used in Operation Ruby tests (Serial PD137?)

Torpex D1, the explosive.

Torpex is 50% more powerful than TNT and is a mixture of RDX 42% TNT 40% and powdered aluminium 18%, developed in late 1942 it was initially used as the filling for torpedoes, hence the name, it was found to be particularly useful in underwater munitions and was used in the Upkeep (bouncing bomb) Tallboy and Grand Slam bombs because of the explosive power it possessed.

RDX (Research Department Explosive) was first developed in 1899 as an alternative to TNT, it has a high Brisance (the ability to cut or shatter hard objects) is very stable and insensitive to shock and although more powerful than TNT it's high cost made it prohibitive except in use for high value targets.

TNT (trinitrotoluene) was first developed as a yellow die in 1863 by a German chemist, it was several years before the explosive power it possessed became known, this was largely due to the fact it is highly insensitive to both shock and friction and requires a powerful detonator to set it off.

In 1902 the Germans began using it as the filling for naval and artillery shells, the British soon followed suit.

Because it can be melted at a relatively low temperature it is ideal for filling in shells and bombs, it can also be mixed with other explosives to form more powerful compounds.

The chemical breakdown created during the detonation process produces a lot of carbon (hence the black smoke) adding an oxygen rich explosive utilises this carbon for a greater effect, ammonium nitrate is one such mixer and is called Amatol, widely used in aircraft bombs.

Powdered Aluminium although not an explosive in itself is consumed by the heat generated during the detonation producing large volumes of gas, which enhances the pushing effect of the explosion.

TNT is still commonly used today in both the military and civilian environment; it is the yardstick by which all explosives are measured. RF

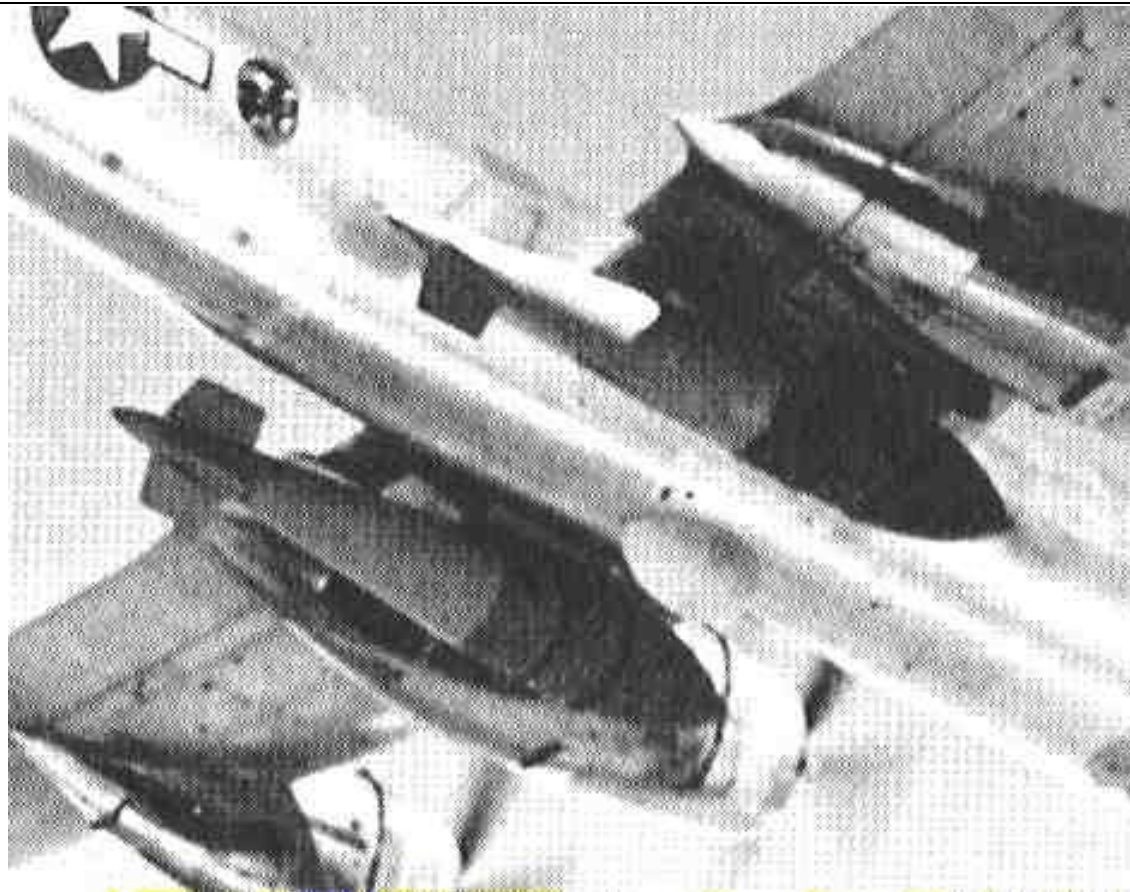
Further USAF Grand Slam User notes:

The US military expressed significant interest in these types of weapons, designating the Tallboy as the **T39** and the Grand Slam as the **T14**.

These were standardized as the **M110** and **M123** respectively.

The US also developed an experimental weapon twice the size of Grand Slam, designated the **T12** and a small 10,000 pound weapon, designated the **T56** and standardized as the **M121**.

These weapons provided conventional alternatives to nuclear ordnance in heavy bombers such as the **B-36** in the 1950s.



B-29A carrying two 14000lb Tallboys



The USAAF went further to develop a bigger penetration bomb, the T12, weighing in at 44000lbs for the B-36 Peacemaker program. Whether this B-29A ever got off the ground with it, is a good question(Ed)

Survivors

Four complete Grand Slam bombs are preserved and displayed in the United Kingdom, at the RAF Museum London, Brooklands Museum, RAF Lossiemouth and the Battle of Britain Memorial Flight Visitors' Centre at RAF Coningsby. The main portion of a bomb, without the lightweight tail, is at the Kelham Island Museum in Sheffield.

A live Grand Slam bomb was accidentally displayed as a gate guardian at RAF Scampton for nearly fifteen years before the mistake was realized. It was gingerly removed (by crane and low-loader) to the test range at Shoeburyness, where it was detonated.

A T-14 bomb (an American-made variant of the Grand Slam) is displayed at the Air Force Armament Museum in the United States.

Two Grand Slam bombs are in Pakistan, one each in Karachi and Sargodha. The bombs were in India, probably in transit to the Pacific theatre, when the war ended and remained there to be inherited by Pakistan on its creation by partition from India in 1947.



Lancaster NX611 "Just Jane" with a Grand Slam foreground and a Tallboy background, gate guards at RAF Scampton in the 1960s. Photo: Ray Murden.

Ref: *Wikipedia: Lancaster by Nigel Cawthorne:
Boeing B-17, B29 and Lancaster by Stewart Wilson*



Curtiss Corner, P-40E A29-155



Gordon R Birkett@2012

A29-155 U 75Sqn RAAF November 1942

Indication only, as I used a P-40E-1 Cameo- shell without underwing roundels. The P-40E is different with Olive Drab extending back from nose with "Nigel" actually on earth background and light sky underneath. Refer below picture. GRB

Ordered by USAAF as P-40E; FY41-5644. Accepted on 27/12/41. Crated and sent to Project "X" and arrived and then assembled Geelong Australia by the 26/02/42. Damaged and noted as needing Depot repair at Laverton RAAF with Propeller hub and reduction gear damaged on 31/03/42.

Returned to service by 43rd Material Squadron (USAAF) Detachment and by 06/04/42, the aircraft was with 49th FG. Transferred from (49thFG Reserve Pool Adelaide River) USAAF 3/8/42 to RAAF and inducted as A29-155. Served with 75 F Sqn and, on 3/9/42, it was issued to 76 Sqn F Within days had ended up with 75 F Sqn again where it was coded "U". On 25/10/42 the a/c's undercarriage collapsed when executing a crosswind landing; on 22/12/42 it was received at 75 Sqn again.



The Aircraft had "Aboriginal Motif holding a woomera and spear, chasing Tojo on a running Ostrich".

On 17/1/43 it over shot the strip at Cairns and nosed over with F/O Bruce Duddridge Watson DFC (403084) escaping injury; on 20/9/43 it was received by 2 OTU; on 11/5/44 after completing a dive bombing practise F/O John Sims Archer (409285) was flying back to the strip when the engine cut out forcing him to make a wheels up landing straight ahead and overshoot strip.

There was minimal damage to the a/c; on 2/4/45 while with 2 OTU, A29-161 ran into it from the right quarter on the Mildura strip with A29-161 Pilot, F/O Geoffrey Abbott Cutler (413746), escaping injury; on 11/6/45 A29-155 taxied into A29-323 which had stopped on the strip due to the engine ceasing after landing from a barge strafing training exercise and P/O Ian Francis Beaurepaire (49555) was doing his cockpit checks and didn't see the stationary A29-323.

Repaired and on 17/7/45 while flying near the Mildura strip the pilot noticed smoke coming from the engine as if on fire, he made a force landing on the strip.

On inspection it was found there were 2 large holes in the sump and the engine was so hot it was bellowing white smoke; on 28/8/45 approval was given for conversion. Struck off 5thAAF (Code LEFT) officially as of 31/10/44.

Odd Shots



Pictured in UK before delivery or high over 6AD Oakey, Queensland? GRB Collection.

It's Spitfire MkVIII LF MT635 in flight. Later becoming A58-543 in the RAAF and coded "UP-?", then later recoded as "UP-N" when with 79F Sqn RAAF.

Can anyone confirm location, besides altitude? GRB.

Shots of MT635 later in RAAF Service



A58-543 pictured early in life as UP-? Pending its Unit Code allocation. GRB Collection



Pictured rather worn as UP-N: via Peter Malone Collection



Corner: A16-241



A picture shot of 2Sqn RAAF Crew in front of A16-241 circa October 1942. GRB Collection

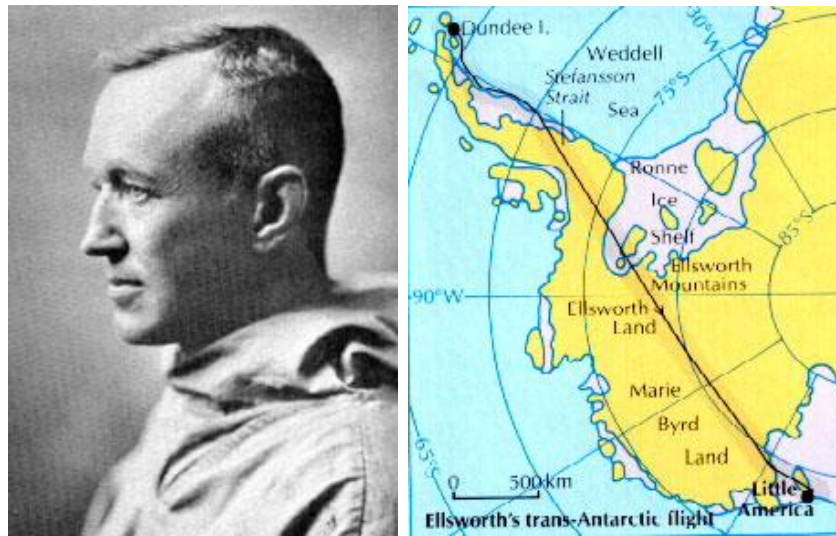
Lockheed C/N 6494. USAAF FY 41-37005. RAF Serial FH204. Arrived on MS NUOLJA on the 20/05/1942 RAAF BPC Indent 911: Rec USAAF as RA-29. Defence Aid consigned ex USAAF. Received by ship at Sydney and sent to 2AD Richmond, ex USA on the 20/05/42. Issued to 2 Sqn RAAF 03/07/42. Rec 1AD 05/07/42. Rec 2Sqn RAAF 22/07/42. Rec 1 RSU 04/08/42. Rec 2 Sqn RAAF 14/08/42. Rec 1RSU 21/09/42. Rec 2 Sqn RAAF 26/09/42.

Accident on 18/11/42 when aircraft suffering a port engine failure, overshot landing and ground looped on return to base. Damage confined to starboard undercarriage. Rec 1RSU 27/11/42. Rec 2 Sqn RAAF 13/02/43. Rec 1RSU 08/04/43. Rec 2 Sqn RAAF 24/04/43.

Departed Hughes on recce flight HUG.21 with five other Hudson's at 2134hrs on the 27/04/43. Last contact 30 mins out from Millingimbi on 2nd flight at 0030hrs 28/04/43 some 70 miles out. The Crew of A16-241 were F/O R R James Serv#408811, Sgt R E Norris Serv#414147, Sgt R D Ryan Serv#406810, Sgt K D Krech Serv#8966, Sgt P S Reen Serv#412185 and W/O N E Cutten Serv#3403 missing. SOC 04/05/43.

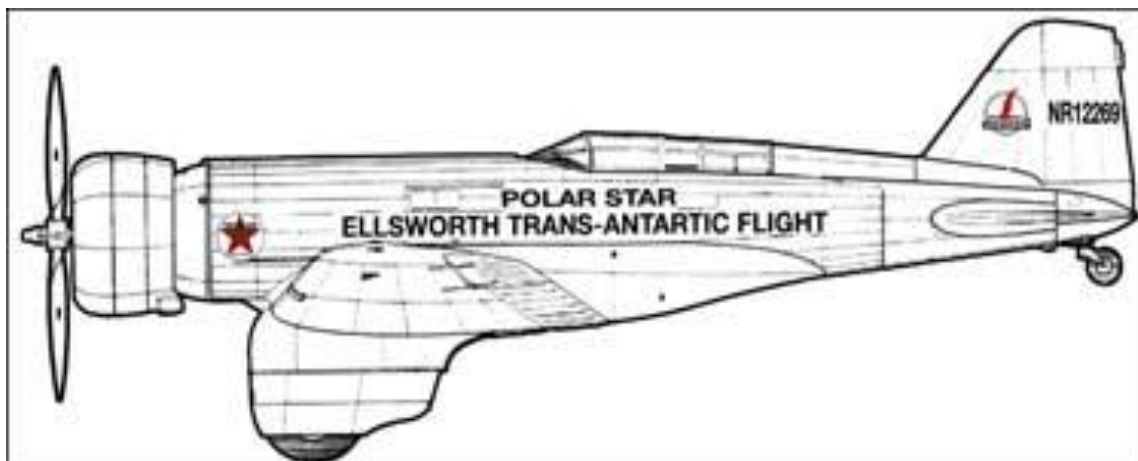
The POLAR STAR'S ADVENTURE,

Crossing the Antarctic by air: 1935-1936: Rescue from the Antarctic



American Dr Lincoln Ellsworth and the air trek

A famous explorer, Dr Lincoln Ellsworth was the pioneer of polar exploration by air, having been second in command with the late Captain Roald Amundsen's historic expedition of two planes in 1925 from Spitsbergen to 88 degrees North latitude, within two degrees of the North Pole, and also co-leader in the first trans-Polar flight, when the Amundsen-Ellsworth-Nobile expedition in the dirigible Norge crossed from Spitsbergen to Alaska in 1926.



Born in Chicago in 1888, Ellsworth began life as an axe-man on the first survey of the Canadian Grand Trunk Pacific railway, and spent some years of geographical and historical research in the far north of Canada and throughout America as railway engineer and gold prospector.

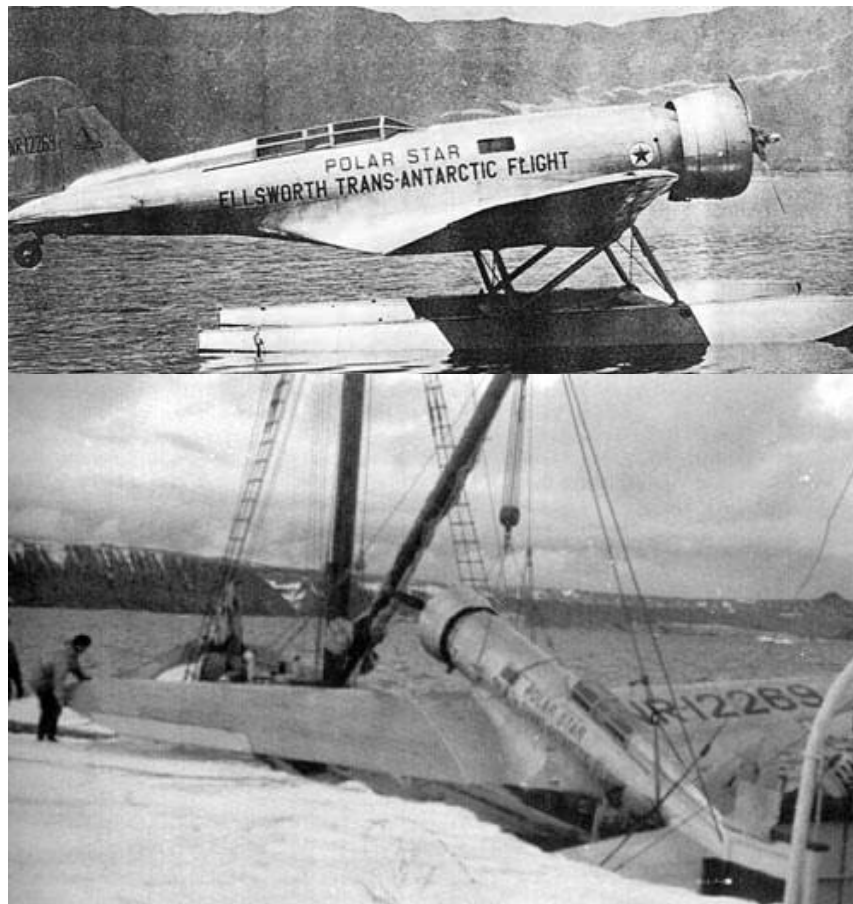
In 1924 he was chosen to lead an expedition making a geological cross-section survey across the Andes, from the Pacific to the head-waters of the Amazon. It was in the following year that he and Amundsen, in control of two planes fitted as flying boats, made a 600-mile flight in eight hours from Spitsbergen and came down in open water and ice floes only 140 miles

from the North Pole. In 1926, in the airship Norge, they crossed from Europe to America, Spitsbergen to Alaska. 3,393 miles, in 72 hours, crossing a region hitherto unexplored.

Dr Ellsworth, now a millionaire, was the son of a pioneer of the American middle-west; he lived in a villa in Florence. International honours include the First Class Order of St. Olav from Norway, Medal of the Italian Geographical Society, a special medal from United States Congress for his Arctic flights, and a gold medal awarded by the Norwegian Parliament for life saving. Apart from collaborations with Amundsen, he is the author of a book entitled "The Last Wild Buff-Jo Hunt." In 1931, he combined forces with the South Australian explorer Sir Hubert Wilkins in a daring scheme for a journey under the North Pole in the sub marine Nautilus, loaned by the US Navy.

This project, however, was abandoned, after the journey had been begun, whereupon Dr Ellsworth immediately turned his attention to the Antarctic flight.

Undeterred, the explorers set off again on the 23rd November 1935. At 4.50 p.m. (G.M.T.) they indicated their position as being about 76 degrees longitude, 79 degrees latitude, after which their sending became jumbled and finally ceased.



Dr. Ellsworth's original plan was for a flight of 3000 miles across Antarctica, and to wait on the opposite side for the MV Wyatt Earp, under command of Sir Hubert Wilkins whom, after the departure of the plane, was to start a cruise which would encircle the ice continent.

After the arrival of the MV Wyatt Earp at Dundee Island, the "Polar Star" took oil, but twice was forced to return to the ship-first because of a break in the fuel flow gauge, and on the

second occasion because the fliers encountered an unmapped chain of mountains near which the atmospheric conditions and cloud formations were such that it was considered to have continued.

Although on the 27th November 1935 H.M.S. Dunedin, in New Zealand waters, reported hearing Ellsworth's call sign, no further clue to the whereabouts of the fliers was received until the search plane from the RRS Discovery II found them some weeks later in January 1936.

Back on the 23rd November, 1935, Ellsworth and Canadian pilot Herbert Hollick-Kenyon attempted the world's first trans-Antarctic flight made four stops during their journey.

At 7,000 lb. gross weight of equipment and provisions, and a cruising speed of 170 M.P.H. the Polar Star was to maintain wireless telegraphic connection with the MV Wyatt Earp.

During one stop, a blizzard completely packed the fuselage with snow which took a day to clear out. This was when the first and last radio signal for requesting help was sent. Outside contact was lost, and it was on this basis that a rescue attempt was to be made.

Negotiations were advanced by the Commonwealth Government on the 5th December 1935 for sending the British whale research ship Discover 2 to the Antarctic to assist in the search for Messrs. Lincoln Ellsworth and Herbert Hollick-Kenyon, the American airmen, who left Dundee Island (Weddell Sea) on 23rd November 1935 in the plane "Polar Star" for Little America (Ross Sea) and have not been heard of since the same afternoon, when their last radio message stated they had covered half the 2,140 miles of the journey.

As soon as the British Government accepted the proposal for the Discover 2 to join in the search, preparations for an Australian expedition were made. The Commonwealth Director of Navigation (Captain J. K. Davis) organised it and his special committee obtained advice from Sir Douglas Mawson.

The Prime Minister (Mr. Lyons) received advice from the Secretary for Defence (Mr. M. L. Shepherd) that a conference had been held in Melbourne on that day between the Director of Navigation (Capt. J. K. Davis), Wing-Commander Cobby, Flight-Lieutenant Douglas and Lieutenant Commander Herries, of the Royal Australian Navy, to discuss and draw up a the proposal.

Two Royal Australian Air Force planes were to be provided, with two R.A.A.F. officers, Flight-Lieutenant Eric Douglas and Flying-Officer Murdoch, as pilots. Arrangements were made to prepare for shipment on the RRS Discovery II of a RAAF Wapiti and a Moth aeroplane. Flight-Lieutenant Douglas, having twice been to the Antarctic, would be in charge of the flying operations.

These two aircraft would be equipped with wireless, floats and skids for landing on the ice, and were fitted with extra tanking for longer-range flights. Captain Davis would get into touch with the commander of the RRS Discovery II for full particulars of his requirements for docking and supplies at Melbourne, which the vessel was expected to reach by the 9th December 1935, so that immediate action could follow the vessel's arrival there.

Captain Davis would also get into touch with Sir Douglas Mawson, the Australian explorer, regarding supplies of sledges and the necessary land gear which would be needed by the search party.

After being requisitioned after arriving in Freemantle on the 19th December 1935, then sailing and refitting in Melbourne, the RRS Discovery II, on Christmas Eve sailed on her quest, via New Zealand.

Mr. Lyons originally stated that the RRS Discovery II would go direct from Melbourne to the Bay of Wales, via Macquarie Island. It was not to call at any New Zealand port.

Consequently the Commonwealth would not be able to avail itself of an additional offer made by the New Zealander Pilot, Mr. O'Hara, to lend his machine for the search. The New Zealand Government then offered to share the expenses of the expedition.

Meanwhile it was as though the forces of the Antarctic were conspiring to defeat the MV Wyatt Earp's attempts to establish three food depots at different points, in accordance with Ellsworth's written instructions before he left. Radio Messages received from her recorded a seemingly endless battle against fog, snow, and huge ice floes. It was learned that the MV Wyatt Earp had been unable to arrive sail within 380 miles of the appointed depot owing to the formation of a solid ice-floe at the entrance to the Ross Sea.

After these weather conditions made it impossible for the second plane of the expedition, named Texaco Twenty, to be launched from the MV Wyatt Earp in order to establish a depot on Charcot Island, plans were changed, and the MV Wyatt Earp headed for the Bay of Whales to await the Polar Star.



The grounded aircraft and crew, with MV Wyatt Earp in ice

On the 5th December 1935, after travelling over 2,400 miles (3,865 km) the aircraft ran out of fuel just 25 miles (40 km) short of the goal. The crew abandoned the aircraft and walked the remaining 25 miles to their destination, "Little America", taking 6 days to arrive.

On Christmas Day 1935, the RRS Discovery II sailed from Melbourne, in the command of Lieutenant. L. C. Hill refuelled at Dunedin, South Island and then proceeded 2,000 miles south to the Bay of Whales, arriving on the 12th January 1936.

The following day, whilst flying over an American camp, to what newspapers named "Little America", a dark-coloured tent and one man, either Ellsworth or his companion, were sighted from a circling RAAF aircraft that had been launched from the MV RRS Discovery II. Unknown to the pilot at the time, Flight-Lieutenant Douglas, both men were safe and sound.

This is not Ellsworth's first experience of a polar exile, he and Amundsen having spent 25 days in the ice-floes in the vicinity of the North Pole, freeing their planes for a take-off.

The two Aviation explorers once reached, readily accepted the invitation of Lieutenant Hill to return to Australia with the RRS Discovery II

On arrival at Melbourne, the 16th February 1936, the American explorer personally to expressed his thanks to the Commonwealth Government for his liberation from the pack of the polar ice. He stated "that it draws closer the bonds of national comradeship and co-operation between Britain and her colony and the United States"

The total distance flown by the Polar Star before its forced landing was about 2,400 miles. The U.S. Congress voted Ellsworth a special gold medal for his Antarctic exploration and "for claiming on behalf of the United States approximately 350,000 square miles of land in the Antarctic representing the last unclaimed territory in the world"

Hollick-Kenyon would later return to recover the Polar Star. Ellsworth's men succeeded in getting one of Byrd's abandoned tractors running with which they set out for the POLAR STAR. After refuelling the plane, they were able to fly it to the Bay of Whales where it was loaded onto the MV Wyatt Earp. A week after arriving, the MV Wyatt Earp was on its way from the Bay of Whales. Ellsworth was in New York to greet his men as they arrived on the 19th April 1936.



Gordon R Birkett

References:

Beyond Horizons, by Lincoln Ellsworth

Americans in Antarctica 1775-1948, by Kenneth J. Bertrand Yahoo Website Search Photos

<http://ead.dartmouth.edu/html/stem63.html>

The Polar Star was one of two Northrop Gammas that were the first aircraft produced in 1933 by the newly established Northrop Corporation of Inglewood, California.

The Gamma is a low-wing, all-metal cantilever monoplane with a 710-hp 9-cylinder Pratt & Whitney Hornet engine. The one built for Ellsworth had two seats in tandem with dual controls. The other of these first two Gammas was built for Frank Hawks, who at the time was a pilot for Texaco. Hawks' Gamma was a single seat model. On the 2nd June 1933, Hawks set a west east nonstop record in his Gamma, flying from Los Angeles to Floyd Bennett Field, New York, in 13 hours, 26 minutes, 15 seconds.

Following its retrieval, shipment and repairs, in April 1936, Dr Lincoln Ellsworth donated the Polar Star to the Smithsonian.



The Polar Star (Gamma 2B C/N 2) fitted with skis, is pictured now at the Smithsonian Institute. NB: This was its second trip to Antarctica, having been damaged there in 1934. Prior, on the 3rd January 1935, Ellsworth and pilot Bernt Balchen had flown over Antarctica.

Editor's note: In Australia, there were costs borne by Australia in the production of a movie tone film presentation that went on to be a great profitable item in the US of A, that were not recovered. Ironically, further to this, later in 1939, he sold to the Australian Government, his ship; the MV Wyatt Earp!

The RAAF Rescue Team.

Extracts from Flight-Lieutenant Eric Douglas's report obtained and written by Sally Douglas, his daughter, 76 years on.

RAAF Personnel

F/Lieutenant G. Eric Douglas 1st pilot and I/C flight

F/O A. M. Murdoch Navigator and 2nd pilot

Sgt Spooner Engine fitter and emergency pilot

Sgt Easterbrook Metal rigger

Cpl Cottee Metal rigger

AC1 Gibbs Engine fitter

Sgt Reddrop Wireless operator mechanic

Eric chose the rest of the RAAF party

The aircraft

Two standard aircraft of the R.A.A.F., namely a Gipsy Moth 60X and a Westland Wapiti Mark 1A with Jupiter V111F engine were to be employed.

(a) Gipsy Moth aircraft is a float seaplane. A land u/c and Skies were carried to convert this machine if necessary for operations from the ice and snow.

This aircraft was fitted with an extra fuel tank of 12 gallons capacity which, together with the normal tankage of 19 gallons would have 4 1/2 hours safe duration at a cruising speed of 80 miles per hour.

Due to the lack of communication between the aircraft when in the air and the ship, this machine was to be primarily employed in local reconnaissance and not to proceed beyond visibility distance from the Ship.

(b) Westland Wapiti aircraft is a float seaplane having a pilot's and an observers cockpit and fitted with one 520 H.P. engine. The necessary equipment for conversion to a land plane with Ski-is for operation on the Ross Ice Barrier was included in the Aircraft stores.

The total fuel to be carried was 165 gallons giving a safe endurance of 7 hours at a cruising speed of 100 miles per hour.

For communication a long and short wave transmitter and receiver was to be carried which under normal conditions had a range of 300 miles on long wave and 2000 miles on short wave. The short wave could be operated successfully from the ice in advent of forced landing.

For navigation purposes a Sperry directional gyro steering compass was fitted on the pilot's dashboard together with the necessary blind flying instruments. The observer was to carry a sun compass, a pioneer drift indicator, an observer's magnetic compass type 03 and the necessary tables, charts etc.

Arrangements had been made with the Ships Commander for the D.F. wireless bearings.

In advent of a forced landing a prismatic compass was also to be employed by the aircraft crew while sledging back to base...

Flying operations (actual) (Moth Seaplane)

Eric's log...

The "Discovery II" arrived at Williamstown Port Phillip Bay, in the 2nd week of December 1935 and after extensive alterations was made to her after structure to permit the carrying of the Wapiti aeroplane, our Aircraft and stores were loaded and the Ship made ready for departure. My final briefing was given by Captain John King Davis, Director of Commonwealth Navigation who had considerable experience and knowledge of Antarctic conditions.

We said farewell on the morning of 23rd December 1935 but did not clear the Port Phillip heads until the 24th December 1935 as it was necessary for the ship to carry out Directional finding calibrations over most of the previous day. We made good progress through Bass Strait and after several days most of us had gained our "sea legs"...

The Wapiti Seaplane A5-37 was taken in case flying into the interior was necessary but Lincoln Ellsworth and Herbert Hollick-Kenyon of the 'Polar Star' were found a short distance inland from the coastline of the Ross Ice Barrier (Shelf) and as a consequence the Wapiti was not flown.



A5-37, pictured prior to fitting of floats, in service in 1935. GRB Collection

As my father wrote in regard to taking the Westland Wapiti "(Flight Plan) 1...

Three flights on prearranged courses of approximately 450 miles in length. (ie 200 miles out, 40 miles on base of triangle and 200 miles in)..."

Whereas for the Gipsy Moth Seaplane A7-55 the Flight Plans were in Eric's words

"...

1. Vicinity of pack ice for information, to Commander of Ship
2. Short reconnaissance flights in vicinity of the Bay of Whales

3. For location of Wapiti or crew should this machine have a forced landing within 130 miles from the ship."

Recce Flight Pack Ice conditions -

On the 12th January 1936 the first flight took place in a pool in the pack ice at approximately Lat 71 45 South Long 178 West, altitude was confined to 1200 feet due to low cloud. This flight lasted 30 minutes. Air temperature 30 F.



A7-55 on the foredeck in Antarctica: Eric Douglas Collection

Recce Flight Pack Ice conditions -

On the 13th January 1936 the second flight was carried out in Lat 73 South, Long 178 West, again 1200 feet was the maximum altitude, this flight lasting one hour. Air temp 30 F. Due to a fairly strong wind (18 m per hr) and a choppy sea with some ice obstructions conditions were severe for a flight in this type of machine.

Recce Flight Pack To Little America For Ellsworth and Kenyon -

At the Bay of Whales. Lat 78 30 South Long 164 West. On the 15th Jan 1936 at 2040 hours a flight to Little America was made. When over Little America at an altitude of 500 feet one

man was observed and provisions and instructions were dropped by parachute. Owing to the snow blind light and ice glare conditions for flying whilst at Little America were most difficult. This flight was of one hour duration. Another difficulty encountered was the rapid freezing of the salt water spray on the Aircraft during the take off. (Due to the low air temperature, 8 F)

Recce Flight Pack Ice conditions -

Later in the same day another flight was made in Lat 72 30 South Long 175 East. Again the altitude was in the region of 1200 feet. This flight lasted one hour and five minutes. Air temp 32 F.

Recce Flight Pack Ice conditions -

On the 28th January 1936 in approximately Lat 73 South Long 175 East, a reconnaissance flight of pack ice was made in ideal conditions, except for clouds being encountered at 1500 feet. Duration of flight was one hour. Air temp 33 F.



A7-55 being launched for first flight in Antarctica: Eric Douglas Collection

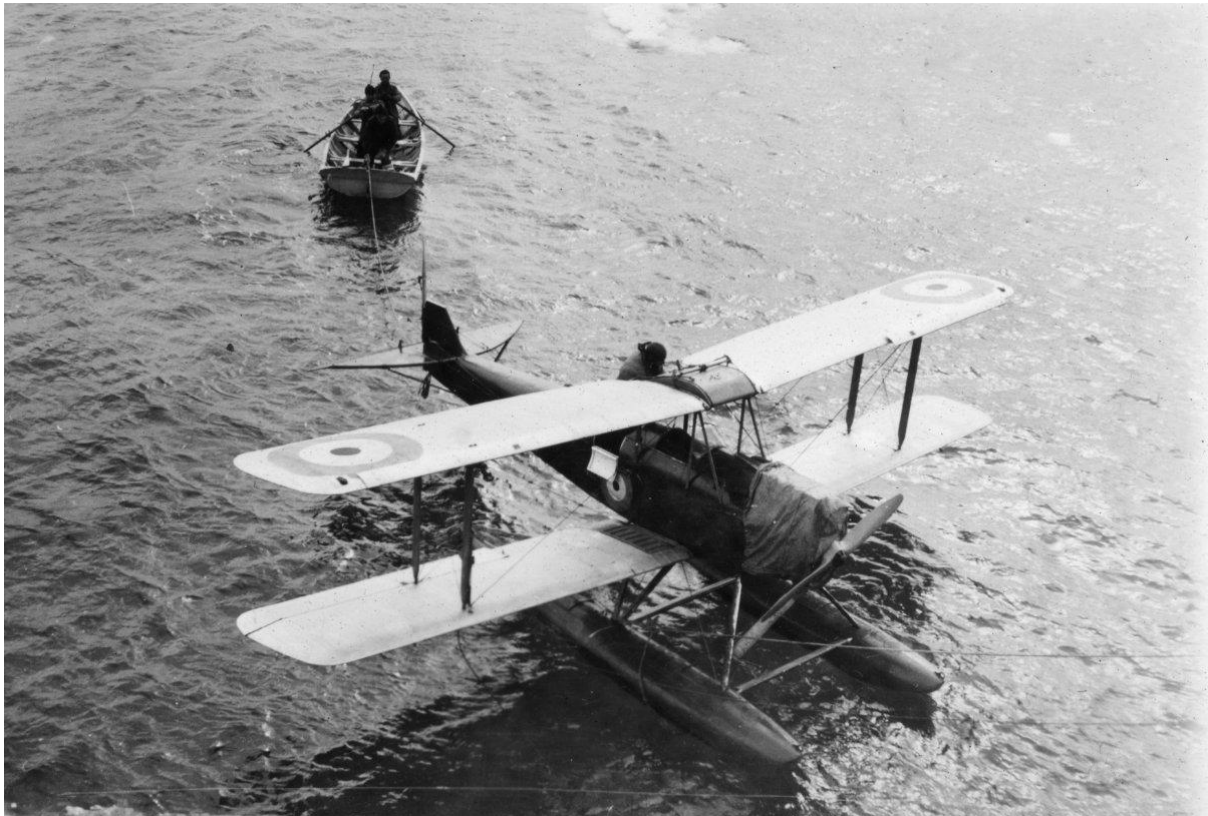
From Eric log, on finding Ellsworth and Hollick - Kenyon on 15th January, 1936

"...After the plane was hoisted onboard congratulations were passed all round and all hands joined in the toast to the happy occasion. Within ten minutes after our arrival the news was

flashed to Australia.

A land party led by the 1st mate then left in the motor boat for the fast edge of the sea ice and after landing commenced to ski towards the Barrier face. At about 11.45PM a man was observed coming down the Barrier face towards the sea ice.

Our land party met him just after midnight and they all proceeded back to the motor boat and were soon aboard the Ship.



A7-55 being towed out for a clear run from ice: Eric Douglas Collection

This person from “Little America” proved to be Hollick Kenyon and he told us that Ellsworth had a chill and frost bitten feet and was remaining at “Little America” until a party could go over to “Little America”. ” where they had been ever since.

He said that their aeroplane ran out of petrol when about 20 miles south of “Little America” so they sledged towards the Ross Sea and after a bit of trouble managed to locate “Little America

The next morning a land party left the Ship for “Little America” to bring in Ellsworth. At about 9PM the shore party was visible coming towards us over the sea ice and were hauling a sledge. About an hour later the party arrived at the Ship and we gave a welcome to Mr Ellsworth. He was a slight built man of less than average height with blue eyes and a sun darkened face. He told us that it took those 7 days tramping to find “Little America” after they abandoned their aeroplane the “Polar Star”.



A5-37 being loaded onto MV RRS Discovery II: Eric Douglas Collection

Report on Relief Flight to Mr Lincoln Ellsworth and Mr H. Hollick Kenyon per R.R.S. Discovery 2 - January 1936 - by E Douglas dated March 1936 The subject is set out under the following headings

1. Equipment (a) Moth (b) Wapiti (c) Emergency
2. Personnel
3. Flying operations (proposed)
4. Flying operations (actual) (a) Pack ice area (b) Bay of Whales
5. General Considerations

Two standard aircraft of the R.A.A.F., namely a Gipsy Moth 60X and a Westland Wapiti Mark 1A with Jupiter V111F engine were to be employed.

(a) Gipsy Moth

This aircraft is a float seaplane. A land u/c and Ski-is were carried to convert this machine if necessary for operations from the ice and snow.

This aircraft was fitted with an extra fuel tank of 12 gallons capacity which, together with the normal tankage of 19 gallons would have 4 1/2 hours safe duration at a cruising speed of 80 miles per hour. Due to the lack of communication between the aircraft when in the air and the ship, this machine was to be primarily employed in local reconnaissance and not to proceed beyond visibility distance from the Ship.

(b) Westland Wapiti

This aircraft is a float seaplane having a pilot's and an observers cockpit and fitted with one 520 H.P. engine. The necessary equipment for conversion to a land plane with Ski-is for operation on the Ross Ice Barrier was included in the Aircraft stores.

The total fuel to be carried was 165 gallons giving a safe endurance of 7 hours at a cruising speed of 100 miles per hour.

For communication a long and short wave transmitter and receiver was to be carried which under normal conditions had a range of 300 miles on long wave and 2000 miles on short wave. The short wave could be operated successfully from the ice in advent of forced landing.

For navigation purposes a sperry directional gyro steering compass was fitted on the pilot's dashboard together with the necessary blind flying instruments. The observer was to carry a sun compass, a pioneer drift indicator, an observers magnetic compass type 03 and the necessary tables, charts etc.

Arrangements had been made with the Ships Commander for the D.F. wireless bearings.

In advent of a forced landing a prismatic compass was also to be employed by the aircraft crew while sledging back to base.

(c) Emergency Forced Landing Equipment

The following items were also to be carried by the Wapiti.

One sledge 11 feet long, with harness and rope.

One tent and small sail.

Two sleeping bags.

Sufficient food for 2 men for 30 days.

One Nansen cooker and primus stove, 3 gallons kerosene.

One small spade, one pair ski-is, one pair snow shoes.

One small kit of tools, one medical kit.

R.A.F. supply dropping parachute containers were to be carried, one under each lower main plane. Into these containers was packed 24 days food for 2 men, leaving 6 days food for dropping to the rescued party. (This latter food with medical kit was to be dropped by parachute from the observers cockpit and on the next flight out, one of the R.A.F. supply containers was to be dropped, followed up by more containers if necessary. (Six containers were included in the stores)

An adequate quantity of Aircraft stores carried in the Ship, included a spare Jupiter V111F engine, air screws for Wapiti and Moth, 2000 gallons of aviation petrol, 8 gallons of benzoline for engine priming, 200 gallons of lubricating oil and items for general maintenance.

2. Personnel R.A.A.F.

F/Lieut G.E.Douglas 1st pilot and I/C flight

F/O A.M.Murdoch Navigator and 2nd pilot

Sgt Spooner Engine fitter and emergency pilot

Sgt Easterbrook Metal rigger

Cpl Cottee Metal rigger

AC1 Gibbs Engine fitter

Sgt Reddrop Wireless operator mechanic

3. Flying operations (proposed)

(a) Moth Seaplane

1. Vicinity of pack ice for information to Commander of Ship

2. Short reconnaissance flights in vicinity of the Bay of Whales

3. For location of Wapiti or crew should this machine have a forced landing within 130 miles from the ship.

(b) Wapiti Seaplane

1. Three flights on prearranged courses of approximately 450 miles in length. (ie 200 miles out, 40 miles on base of triangle and 200 miles in)

4. Flying operations (actual) (Moth Seaplane)

(a) 1. Recco Flight Pack Ice conditions

On the 12th Jan 1936 the first flight took place in a pool in the pack ice at approximately Lat 71 45 South Long 178 West, altitude was confined to 1200 feet due to low cloud. This flight lasted 30 minutes. Air temperature 30 F.

(a) 2. Recco Flight Pack Ice conditions

On the 13th Jan 1936 the second flight was carried out in Lat 73 South, Long 178 West, again 1200 feet was the maximum altitude, this flight lasting one hour. Air temp 30 F. Due to a fairly strong wind (18 m per hr) and a choppy sea with some ice obstructions conditions were severe for a flight in this type of machine.

(b) 1. Recco Flight Pack To Little America For Ellsworth and Kenyon

At the Bay of Whales. Lat 78 30 South Long 164 West. On the 15th Jan 1936 at 2040 hours a flight to Little America was made. When over Little America at an altitude of 500 feet one man was observed and provisions and instructions were dropped by parachute. Owing to the snow blind light and ice glare conditions for flying whilst at Little America were most difficult. This flight was of one hour duration. Another difficulty encountered was the rapid freezing of the salt water spray on the Aircraft during the take off. (Due to the low air temperature, 8 F)

(a) 3. Recco Flight Pack Ice conditions

On the 28th Jan 1936 in approximately Lat 73 South Long 175 East, a reconnaissance flight of pack ice was made in ideal conditions, except for clouds being encountered at 1500 feet. Duration of flight one hour. Air temp 33 F.

(a) 4. Recco Flight Pack Ice conditions

Later in the same day another flight was made in Lat 72 30 South Long 175 East. Again the altitude was in the region of 1200 feet. This flight lasting one hour and five minutes. Air temp 32 F.

5. General Considerations

(a) Pre-heating and starting engine (Air cooled)

When the air temperature is below 34 F it is necessary to pre-heat the engine and lubricating oil prior to starting. This requires an asbestos lined engine cover having some form of flue for receiving hot air from a kerosene burner. It is necessary to continue this heating for 20 to 30 minutes.

Benzolene, a low volatile spirit is excellent for priming the cylinders.

(b) Running of engine (Gipsy engine)

It was necessary to richen the carburetion mixture, especially at medium revolutions (Larger compensating jet and richer setting on slow running adjustment) All exposed oil lines were lagged with asbestos.

The induction elbow was also lagged.

To reduce excessive cooling approximately half of the normal open engine cooling was cowed over.

Before attempting a take off the engine must be thoroughly warmed up by steady taxiing at medium revs.

In flight the engine behaved normally except slightly lacking in power. When gliding in prior to alighting it is advisable to run the engine with at least half the normal full revs in order to keep the engine sufficiently warm, should it be required in an emergency.

(c) Colour of Aircraft

When operating in these latitudes it is advisable to have at least the fuselage and floats painted a yellow colour as this is undoubtedly the most conspicuous colour to observe from ground to air and vice-versa.

(d) Lubrication of Controls

The use of an anti-freezing oil is essential for all moving controls. A low temperature grease for valve rockers etc is also necessary.

(e) Slings of Seaplanes ("Out" and "in" board)

1. The most suitable derrick boom is one of sufficient length which enables the aircraft to be hoisted out board nose first with its engine running.

2. For the take off, the best position of the Ship is one where sufficient up wind distance (at least 400 yards) exists with the aircraft lowered over on the lee side with the ship practically stationary. It is advisable to have a motor boat party standing by during the flying operations. The Aircraft is best stowed for all weather with its nose facing the bow of the ship.
(f) Weather Conditions (Pack ice regions)

Given clear sky and horizon or at least absence of cloud to eight or nine thousand feet, reconnaissance flights in an altitude of six to eight thousand feet above the ship will ascertain with accuracy pack ice conditions to at least 70 miles in all horizontal directions, which knowledge would be of immense value in helping the ice navigation of the Ship.

(Ross Ice Barrier)

From previous reports of Airmen in this region it appears that the best months for flying are October, November and early December. Late in December and from then on during the remaining Antarctic summer months, snow blind conditions are most likely to prevail. This condition is brought about by the terrific evaporation over this huge ice sheet with the summer rise in temperature.

The moisture condenses in a haze from the ice level to at least 6000 feet with the result that the sun is obscured and the ice and sky merge into a creamy void. Visibility is fair, being in the vicinity of from two to three miles but the correct estimating of distance of objects is almost impossible due to the lack of shadows.

The Airman under these conditions is flying virtually blind and a forced landing would have to be executed from a glide on instruments.

(g) Flying Comfort and efficiency

For flights of not over 2 hours duration open cock-pit machines are reasonably satisfactory, but for flights of over this time it is almost essential that the crew are enclosed in a cabin or at least sheltered by some efficient form of wind and draught break.

This is particularly necessary for the observer who is taking sun and drift observations almost continuously.

As the temperature in the Antarctic Proper is seldom above freezing point it can be readily seen, that if the crew become cold during flight the most they can hope for on landing is still this low temperature, therefore, they must be warmly clad before takeoff.

Written by Sally Douglas in 2002 - hand written from notes - by Eric Douglas

Next Issue, the Early Summer 2013 edition, will be out circa late January 2013.