FlyBy

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Patron: RADM N. Ralph AO, DSC, RAN Ret'd

See our website here

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Firefly Heritage Article Now on the FAAA Website

The latest addition to the "Heritage" series now on our website is the Fairey Firefly.

The Firefly, along with the Hawker Sea Fury, transformed the RAN's air fighting capability. These were the first aircraft bought for the newly commissioned Fleet Air Arm, and were high performance machines quite unlike the Seagull/Walrus amphibians operated up to then. They also heralded the introduction of our first true aircraft carriers. In short, they changed the game in every way.

The Firefly was a rugged, two-seater, carrier-borne aircraft ordered by the British Air Ministry. At the time our navies were closely aligned, therefore it was logical the British would support the development of the RAN's FAA. By the end of 1947 RAN aircrew and maintainers were being trained on RN aircraft, prior to the delivery of our own Fireflies in 1948. Early in the following year HMAS Sydney – our first flat-top carrier – sailed for Australia, arriving at Jervis Bay on 25 May 1949 where she disembarked aircraft and naval stores. The RAN FAA had its footprint on home shores for the very first time.

Loved by those who flew them, the Fairey Firefly provided outstanding service in peace and in war. They were finally paid off in 1956 to be replaced by the Gannet.

The story of the RAN's Fireflies can be found on our website. It gives an account of the aircraft, a full image library, a list of every airframe and its history (courtesy of ADF Serials) and a few anecdotes (we need more!). You can also read a pilot's impression of flying a Firefly and Norman Lee's tips and tricks for landing on a straight-deck carrier before mirror landing sights were available, and you can read about the those few aircraft that have survived. You can access the website article by clicking on the button above.

Don't forget that our website is a living document: additional images, stories or anecdotes can and will be added to it, so empty out those shoe boxes of old photos (about anything!) and send them to the webmaster, together with your recollections of working on or flying Fleet Air Arm aircraft. This is our history and if we don't preserve it, nobody will.

December Slipstream

Our hard-working Slipstream Editor, **Ron Batchelor**, has recently undergone major heart surgery which required a post-operative month in hospital to recover. I'm pleased to report he's making good progress but it will take a while before he's back to his usual self. Ron is working on December's Slipstream magazine but it will be a bit shorter than last quarter's record number of pages.

So This Is…?

While compiling the Firefly article I rediscovered the photograph above, given to me a while ago by **Jeff Charter**. It shows a truck carrying what appears to be a Firefly…or bits of one. Maybe heading to a scrapyard? Does anybody have any information on it?

And while we're on the subject of Fireflies, the emblem opposite was on the side of at least one *Sydney* aircraft, just fwd of the pilot's cockpit on the starboard side. Can anybody tell me what the design is?

Which Detachment?

Enough with the questions! In last month's edition I asked if anyone had information on a photograph showing RAN personnel aboard the USS Ticonderoga. A small image is shown to the right.

Joe Kruger remembered VS816 Squadron did S2 Tracker cross deck ops with the Ticonderoga over the period 11-12th November '71, whilst participating in that year's RIMPAC exercise. It is possible the A4 folk shown in the photo were there at the same time. The S2 crew was **LEUT R. Dunhill, LEUT R. Williams, POACM J. Kroeger and SBLT B. Bromfield.** Sadly, both Dunhill and Bromfield have since passed on.

In regard to the photo above, Joe thought he recognised '**Cridge' Collingridge** on the bottom left (who denies it is him), and **Bill Sonsee** recognised **LREM Richard Hooper** standing on the right.

Feature Article: What Happened to the R101?

When I attended the memorial service for **Carl Daley** a year or so back I could not help but notice an airship circling above - Carl used to fly them of course, and it was a truly fitting memorial on the day. It prompted me, however, to reflect that I know very little about them, which in turn encouraged me to spend a little time correcting that deficiency.

Most people know of the Hindenberg, which burst into flames during its attempt to dock in Lakehurst, New Jersey, on May 6 1937 with the loss of 36 lives. But not so many would know the tragic story of the R101 that crashed on its maiden flight some seven years earlier. It is the story of an accident that should never have happened, for the R101 was deeply flawed. If ever there was a case of 'press-on-itis', this was it.

It was 87 years ago and the story is worth telling again.

The R101 was one of a pair of British rigid airships completed in 11929 as part of a Government program to develop civil airships capable of service on long distance routes within the British Empire. It was designed and built by an Air Ministry appointed team in completion with the government funded but privately designed and built R100. When built it was the world's largest flying craft at 223m in length, a record not surpassed until the Hindenburg flew seven years later.

The R101 was to carry 100 passengers with an endurance of 57 hours at a cruise speed of 63 knots. In wartime, the airships were expected to carry 200 troops or possibly five deployable fighter aircraft.

The R100 team was designed and built by a Vickers team led by **Barnes Wallis**, who was to achieve fame years later for the Wellington bomber and the 'bouncing bomb.' His principal assistant was **Nevil Shute Norway**, later known as the novelist Nevil Shute. He later published a book on his experiences, which characterised the R100 as a pragmatic and conservative design and the R101 as extravagant and over-ambitious. In one passage he noted: *"The design seemed to us almost unbelievably complicated; she seemed to be a ship in which imagination had run riot regardless of the virtue of simplicity and utterly regardless of expense."* Shute later admitted his criticisms of the R101 team were unjustified – although history would ultimately be the judge.

The R101 had an extremely ambitious timetable, with construction to be started in July 1925 and completion just one year later. The first trial flight to India, was planned for January 1927. In the event, construction of both airships was delayed, but the initial seeds of haste had been sown.

An early decision was made to use stainless steel for the structure, rather than lighter alloys. The design was innovative: it did not use internal bracing wires, as previous airships had, as the frames were rigid enough in themselves – but this resulted in a wider structure and smaller gas bags.

The process of inflating the R101's gasbags with hydrogen was complete by 21 Sept 1929 and lift and trim trials were

started. These were disappointing, with the gross weight greater than expected and correspondingly less capacity to lift. Moreover, the airship proved to be tail heavy, due to tail surfaces being considerably overweight. A flight to India was out of the question, so modifications were approved. One of these was to let the gasbags out (to gain extra lift), which involved wrapping them in strips of cloth to protect against chaffing on the thousands of exposed fittings in the frame.

The outer cover was also of serious concern, as inspection revealed significant deterioration of the fabric on the top of the airship where rainwater had accumulated. Reinforcing bands were therefore added along the entire length of the envelope but further inspection revealed many small tears, so the entire cover had to be replaced.

Confirmation of continued problems with the cover came on the morning of 23 June when R101 was walked out of the shed. It had been at the mast for less than an hour when an alarming rippling was observed, and a 43 metre tear appeared on the right-hand side of the airship. More reinforcing bands were added, but by the end of the day a second, smaller split was observed. This too was repaired by further bands.

R101 made test flights in June totaling 29 hours, but these resulted in several problems with lift, requiring the jettison of considerable ballast. Inspection of the gasbags revealed a large number of holes from chaffing: the result of letting them out during the earlier modification. The holes were patched.

R101 had been operating under a temporary permit to fly, under the responsibility of the Air Inspectorate Department inspector. On 3 July he bypassed his immediate superior and wrote to the Director of Aeronautical Inspection expressing his unwillingness to either extend the permit, or grant a full Certificate of Airworthiness. His concern was the padding of the gasbags was inadequate to prevent chaffing as they were hard up against the longitudinal girders, and that any surging of the gasbags in turbulence would further loosen the padding.

Despite these concerns a full certificate of Airworthiness was issued on 2 Oct, with the Inspectorate expressing their complete satisfaction with the condition of R101 and the standards to which remedial work had been done. The actual certificate was handed to the Captain only on the day of her maiden flight to India.

R101 departed from Cardington on the evening of 4 October for Karachi. The weather forecast was generally favourable, so a course was plotted to take the airship over London, Paris and Toulouse by way of a public relations exercise.

The airship cast off just after nightfall, and after jettisoning ballast it climbed slowly away. About an hour later the duty engineer in the aft engine car reported an apparent oil pressure problem, but it was decided it was the gauge rather than the engine. By that point the weather had deteriorated and it was raining heavily. Flying at about 800 feet it passed over the Royal Naval College at Greenwich at 20:28. The airship's path, with her nose pointing about 30 degrees right of track, was watched by many on the ground.

An updated weather forecast was received about ten minutes later, which showed severe deterioration: SW winds up to 40 knots with low cloud and rain. Despite this, she pressed on to cross the French coast at 23:26. Realising he was east of the intended track, the navigator changed course to a heading that would take her directly over Beauvais Ridge – an area notorious for turbulent wind conditions.

At 02:00 the watch was changed. The R101 was by this time flying heavy, relying on dynamic lift generated by forward airspeed. About seven minutes later the ship made a long and rather steep dive, sufficient to make the engineers lose balance and cause furniture in the smoking room to slide. Calculations by the University of Bristol in 1995 provided evidence that the maximum downward angle was 18 degrees in this first dive through a time span of 90 seconds.

In the next 30 seconds, the ship pulled out of the forced dive and the crew steadied the ship. Flying at a nose-up angle of three degrees enabled the ship to regain some aerodynamic stability, but with the elevator "hard up" the nose was only three degrees above the horizon. This meant that the nose was now extremely heavy and a serious loss of gas from the forward bags must have occurred.

LOST SHIPMATES

We have become aware of the loss of **Max (Tug) Wilson, Bill Cregan** & **John Berry** since the last edition of FlyBy. You can read of these sad events on our Obituary page here.

Just after this point the ship moved into a second dive. It is calculated that R101 was now at a height of about 530 feet, which for a vessel of 777 feet long was precarious. Rapid oscillation of the ship had already occurred and there was concern that any further oscillation might cause it to fail. Rigger Church was ordered to release the emergency ballast from the nose of the ship and was on his way to the mooring platform when he felt the angle of the ship begin to dip once more from an even keel. The ship began to drop again through a downward angle and at this point the nose hit the ground.

The impact of R101 with the ground was very gentle, and it was noted that the forward speed of the ship was only 13.8 mph. The ship bounced slightly, moving forward some 60 feet and then settled down to the ground. The survivors recall that a "crunch" was heard and the ship leveled. There was no violent jarring from the impact. Evidence from the

crash site confirmed this as the only impact mark in the ground was a two-foot-deep by nine-foot-long groove cut by the nose cone, in which soil was later found. Witness marks from the revolving propeller of the starboard forward engine were also visible. The engine car had been twisted completely around on its struts.

After the impact, fire broke out. The most likely cause was the starboard engine car igniting gas escaping from the rents in the forward gas bags. The fire instantly consumed the ship, causing each gasbag from the forward to after part of the ship to explode. The force of the explosions was noted by the position of the gas valves and the damage to the framework of the ship. The outer cover was immediately consumed in the ensuing inferno.

A total of 46 of the 54 passengers were killed instantly, including The Right Hon. Lord Thomson of Cardington who was the Secretary of State for Air. Two others died later in hospital, leaving only 6 survivors. A memorial service was held at St Paul's cathedral on 10 October where nearly 90,000 people queued to pay their respects. The dead were then taken to Cardington for burial in a common grave in the cemetery of St Mary's church. A monument was later erected and the scorched Royal Air Force Ensign, which R101 had flown at its tail, is in the church's nave.

The final report of the Court of Inquiry was presented on 27 March 1931. Various theories of the cause of the crash were tested and discounted, with the Inquiry reaching the conclusion that a catastrophic tear had probably developed in the forward cover, which in turn caused one or more of the forward gasbags to fail.

The Inquiry concluded that it was *'impossible to avoid the conclusion that the R101 would not have started for India on the evening of October 4th if it had not been that matters of public policy were considered as making it highly desirable that she should do so,'* but considered this to be the result of all concerned being eager to prove the worth of R101, rather than direct interference from above. Nobody was ever held accountable.

It was the end of British attempts to create lighter than air aircraft. The wreckage was sold to a metal recycling company which, despite a stipulation that none should be kept as souvenirs, made small metal dishes inscribed 'Metal from the R101'. The R100, despite a more successful development and satisfactory trans-Atlantic trial flight, was grounded immediately. She was sold for scrap in November 1931.

Acknowledgements: Wikipedia, The Airship Heritage Trust, Aviation Week.

R U OK?™

When this issue hits the streets, so to speak, it will be less than a month to Christmas. The festive season is generally joyous: a time to be with family and friends, to enjoy good food and good wine and to relax.

But for some it can be terribly lonely. Those who have lost a loved one or simply have nobody else to share the occasion can feel left out while others are preoccupied.

So if you have a mate who you think is in this situation please apply the RU OK principles:

ASK - LISTEN - ENCOURAGE ACTION - CHECK IN

There's a great website that will help in this regard. You can find it by clicking on the yellow RUOK image above.

From Our Readers

'I missed seeing the HUDAT question as I was overseas, but I can add a bit more info about the system.

It was a quite ingenious design even if it didn't work all that well. One of the problems with radars operating on the same frequency at close ranges is that they interfere with each other and the result is 'rabbit tracking' (like hyphens radiating out from the centre of the screen) which totally messes up the display. HUDAT sought to get around this by having a Master Aircraft and all the other aircraft as numbered slaves. The Master transmitted info to the slaves as to when to transmit a search in their turn resulting in only one aircraft transmitting for a short time meaning they didn't jam each other. Master, Slave 1, Slave 2, Master, Slave 1 etc. The tie up with the TACAN was that the HUDAT used the transmitter of the DME (Distance Measuring Equipment) function of the TACAN to transmit its command function and search pulses, somewhere around the 1000Mhz frequency.

As the USN didn't put the system into service, the whole lot was purchased in one of those planning and purchase decisions as only as can be made by complete idiots. No spares, no back up, no thought.

The AA's loved the HUDAT because the antenna provided them with a built-in seat to ensure work on the rotor head was carried out in the most comfortable manner possible. If sufficient care was not exercised the result was usually a bent and broken co-ax/waveguide connection from the rotating array to the rotary joint.

I was working in the Avionics Workshop at the time it was removed from service and all the boxes, indicators and antennae were returned there. The equipment was due to be returned to Naval Stores at Zetland and I was given the task of cataloging all the parts and noting any discrepancies or deficiencies in the equipment to be returned. Bear in mind we had been stripping out parts from complete units for years to keep the airborne units serviceable. The spares collection was not a pretty sight. I remember I had one indicator and all that was left was the chassis and

identification plate. Eventually sanity prevailed and I was instructed to put the lot in some boxes, send it up to Zetland and let the sort it out.

Happy days they were.
Cheers
Andy McCarthy'

Andy went on to point out that the Traffic Collision Avoidance System (TCAS) in use today collects no end of information (position, height, speed, direction, rate of climb/descent) from its own aircraft and in conjunction with the transponders (IFF) squirts it out to other aircraft in the vicinity. No master or slave, all the aircraft talk to each other and traffic information is relayed to the crew as symbols on their Navigation Displays. In the RA (Resolution Advisory) mode if there is danger of a mid-air, the processors on both aircraft will provide crew with avoidance advice. Big changes in 40 years.

Dave Jones added to the debate by advising that the HUDAT's small screen size and resolution was the main problem with its operation. Being a 4" screen and operating on a secondary response, the gain had to be dialed down to get any sort of bearing accuracy. There were coded responses with one, two, three or four(?) 'bars' behind the return to identify the particular aircraft. Performance in the primary mode i.e. raw radar was very poor however it could be used with practice mainly with larger targets - ie ships. Dave recalls flying with **Alex Wright** and **Brian Condon** in the English Channel during the Spithead review deployment, when, in radio and TACAN silence, they did two or three approaches to HUDAT targets at night, trying to find 'mother'. A few merchant ships were surprised that night to have a Wessex approach to land! The HUDAT also had a feature that allowed a unit to respond to the request to identify themselves. The button pressed produced a secondary return on the screen from that unit. The voice patter was 'callsign this is callsign HUDAT?' The irresistible response that always brought a chuckle was 'Who dat say HUDAT?'

Wall of Service Plaque Update

Those people waiting for a WoS plaque might like to know that there are currently eight applications in the current order. The foundry requires a minimum of ten names before they will manufacture plaques, so we only need a couple more applications before the order can be submitted. You can find out about the Wall of Service here.

Increasing our Reach

The purpose of this newsletter is to keep our ex-FAA community informed and connected. If you know of anyone who is not receiving FlyBy please let the Editor know and they will be added to the distribution list. There's no cost and no obligation and people can opt out at any time.

This Newsheet is produced by the Fleet Air Arm Association of Australia. You are on the distribution because you are a member of the Association, or you have indicated you wish to be on the list. If you don't want to receive further copies, simply respond to the webmaster and you will be removed from our distribution.

Did Anyone Know Lynton Burridge?

One of the functions of the website is to capture details of shipmates who cross the bar, and paying proper respect to them by getting the details of their lives and deaths is the very least we can do. So it is with Lynton Burridge, who seems to have died a lonely death in China. The details are scant, so can anybody tell the Editor more about him? He was a member of the FAAAA back in the mid 90s (SA Division) but there is no record of what happened to him, nor of his demise.

"FlyBy" Now Archived On The FAAAA Website

A year or so back the FAAAA placed every back-copy of 'Slipstream' on our website. The first of these magazines went back to 1950 so the library gives a progressive insight into what was happening over 60 years ago.

FlyBy magazine, although the new boy on the block, is now being archived in the same way. It's a different sort of publication but nevertheless will give future researchers /readers a month-by-month snapshot of RAN FAA events. You can see the two archive libraries by clicking on the respective buttons at the top RHS of our website home page.

Subscriptions

Annual subscriptions for FAAAA members are nearly due and you can help us out by avoiding the rush and paying now. Our numbers have been dwindling year by year and as we rely on our membership to keep us going, please assist by continuing your support for the very modest renewal charge. Contact your local Secretary (or the webmaster) for payment details, or make your payment by EFT or via a bank teller (details are on page 6). Those readers who are not members might consider joining here.

Lady Nanette Smith Dies

Lady Nanette Smith has died in Canberra, aged 94. She was the widow of Admiral Sir Victor Smith, who was widely regarded as the founder of the RAN Fleet Air Arm.

She married the then LCDR Smith in in October 1944, when he was in the UK planning for Operation Overlord, the invasion of Normandy. The following year he returned to England to work on the plans for the RAN FAA – which eventually came into being two years later.

Lady Smith was a staunch supporter of the Fleet Air Arm right up to her death. She was visited periodically by **Commodore Chris Smallhorn**, and was always interested in the progress being made with the introduction of new equipment and training. She remained a gracious and vibrant personality to the end.

She is survived by her sons Mark and Piers, and their extended families, to whom we express our condolences.

The National President, Association Executive and Presidents of all FAAA Divisions wish our readers a happy, safe & enjoyable Christmas, and a healthy and prosperous 2018.

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