Jabberwock

The Magazine of The Society of Friends of the Fleet Air Arm Museum

No. 97
December 2019

SOCIETY OF FRIENDS
FLEET AIR ARM
MUSEUM

In this issue

Plus all the usual features: Readers' letters, Snippets from Council meetings, monthly talks programme, Talks Reviews, latest membership numbers etc.

THE NATIONAL MUSEUM ROYAL NAVY

Membership Application

I hereby apply for membership of SOFFAAM (the Society) and will pay via:

- Standing Order (A Standing Order Form can be supplied if required)
- Cheque, made payable to SOFFAAM
- BACS transfer, bank details on standing order form, payment ref. "(your surname) MEMBS"

Annual Membership at £12.00 ☐

Junior Membership (age 5-15) **at £8.00** ☐
(must be accompanied by an adult)

Family Membership at £32.00 ☐

Life Membership (single payment) **at £180.00** ☐

Life Membership (over 60, single payment) **at £90.00** ☐

Individual Membership

Name .....

Family Membership

(Two adults and up to 3 children)

Adult 1 .....

Adult 2 .....

Child 1 .....

Child 2 .....

Child 3 .....

Address .....

.....

..... Post Code .....

Telephone No .....

Email address .....

How would you like to receive your copy of Jabberwock?

By Royal Mail ☐ As a PDF to my email address ☐

Gift Aid Declaration *Boost your donation by 25p in Gift Aid for every £1 you donate! Gift Aid is reclaimed by the Charity from the tax you pay for the current year.*

I want to Gift Aid my donation shown above and any donations I make in the future or have made in the past four years. Please answer YES or NO in this box:

I am a UK taxpayer and understand that if I pay less income tax and/or Capital Gains Tax than the amount of Gift Aid claimed on all my donations in that tax year it is my responsibility to pay any difference

Member No.*

.....

Card Issued*

.....

*Office use only

Signature .....

Date .....

Please notify us if you want to cancel this declaration, change your name or home address or no longer pay sufficient tax on your income and/or capital gains. If you pay Income Tax at the higher or additional rate and want to receive the additional tax relief due to you, you must include all your Gift Aid donations in your self-assessment tax return or ask HMRC to adjust your tax code.

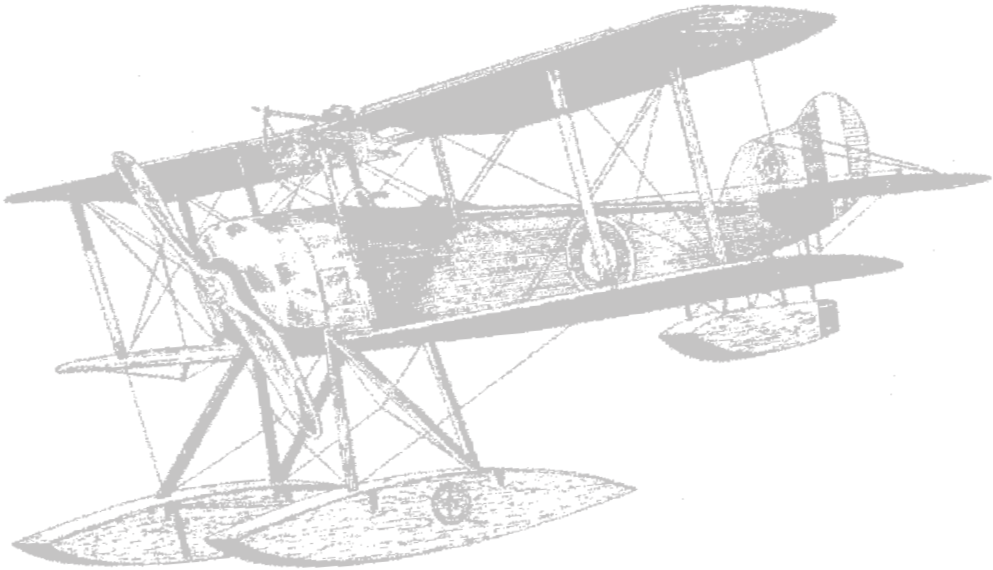
We have a robust data protection policy. The details can be seen on our website.

Please complete and return this form to the Membership Secretary:

Robert Heath
30 Royal Sands,
Weston-super-Mare, Somerset
BS23 4NH.

Tel: 07811 254955.
Email: soffaam.mem@gmail.com

SOCIETY OF FRIENDS
FLEET AIR ARM MUSEUM



Patron: Rear Admiral A R Rawbone CB, AFC, RN
President: Rear Admiral Tom Cunningham CBE
FLEET AIR ARM MUSEUM
RNAS Yeovilton
Somerset BA22 8HT
Telephone: 01935 840565
SOFFAAM email: fleetairarm.sof@nmrn.org.uk
SOFFAAM website: fleetairarmfriends.org.uk
Facebook @SOFFAAM

Registered Charity No. 280725

The Society of Friends of the Fleet Air Arm Museum

Printed by: Remous Limited, Milborne Port

Admission
Members are admitted to the Museum free of charge, on production of a valid membership card. Members may be accompanied by up to three guests (one guest only for junior members) on any one visit, each at a reduced entrance fee, currently 50% of the standard price. Members are also allowed a 10% discount on goods purchased from the shop.

Note: *These concessions are provided at the discretion of the General Manager of the Museum and could be removed at any time.*

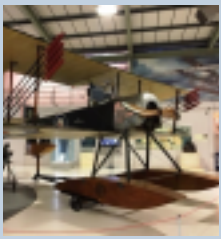
Copyright
Jabberwock is a privately-circulated publication and, in general, we retain copyright in any material that we publish, whilst always acknowledging the original author. From time to time, the Editor may contribute extracts from Jabberwock articles to other commercial publications. If you or your estate wish to retain copyright, kindly make this plain at the time of submission.

Contributions
We are extremely grateful to all those who contribute articles and material to the magazine, even though it is not always possible to use every item!

Visit us on Facebook @SOFFAAM

CONTENTS

Barracuda pilot, p5



"Jabberwock" p7

Minor mystery, p24

Navy Wings, p25

Navalised Merin HC4 in sea-grey camouflage

COVER PICTURE:
Sea Harrier FA2 in 801 Naval Air Squadron markings taken at a Navy Wings night photographic shoot. It carries the serial ZH801 but is alleged to be airframe ZH800.

EDITORIAL

This issue of Jabberwock marks the end of a successful year for the Society, with two well-attended visits and a variety of talks on very disparate subjects. In this issue, you will see that we are continuing to schedule more talks into the New Year and ensuring that these maintain the generally very high level of interest.

Also in this issue (on page 8) you will see the notice of the New Year luncheon, to be held on 11 January. You are advised to book early for this popular event.

In "Snippets from Council Meetings" we record the steady improvements being made in the Museum - some of which, such as repairs to the roof in Hall Two, will mean that the rain will be kept out well into the future! The General Manager commented that the repairs will provide: "a safe environment for our visitors to enjoy the displays in Hall Two, while also providing much better conditions to safeguard our collections ". A new and extended WRNS Exhibition, entitled "Pioneers to Professionals - Women in the Royal Navy", recently opened in this Hall and SOFFAAM is proud to have been able to contribute to this celebration of women's role in the RN.

The Sopwith Baby, after which your magazine is named, has recently been refurbished and we carry a couple of pictures of this WW1 aircraft. Although largely a replica, it contains original material, including the float bearing the name "Jabberwock".

You will also read that we plan a special one hundredth issue of this magazine, to be published next August. This will be in a larger format and is intended to celebrate its publication history, which started with a Newsletter, dated 20 December 1979. We hope that this will prove to be a collector's item and to this end would welcome suggestions from our readers of material that might be included.

We also report that our membership has fallen below 1,000 for the first time for many years. However, we note that the first Newsletter included the information that: "Our membership has reached 78", so it is obvious that numbers have waxed and waned in the intervening years. We call on all members to continue efforts to recruit new members and you will see various initiatives in advertising, including an active presence on Facebook.

LETTERS TO THE EDITOR

Hello Malcolm

Thank you for putting my last letter in the Jabberwock No.95 about Lt. Meek - hope it was of some use to Chris Howat.

With the 75th Anniversary of D-Day and mentions of Nijmegen Battalion it took me back to my doing the Nijmegen Marches in 1965. The marches originally started in 1909 as a test for young people, changing later to be the Dutch Memorial to those who died in the two World Wars. I was one of five Matelots who took part.

We were a mixed team of RAF and Navy led by an RAF Officer. On the Naval side we were the first official Naval team to take part in the Nijmegen Marches and have been officially recorded as same.

Derek Poulton

Derek's article on the Nijmegen March is on page 17.

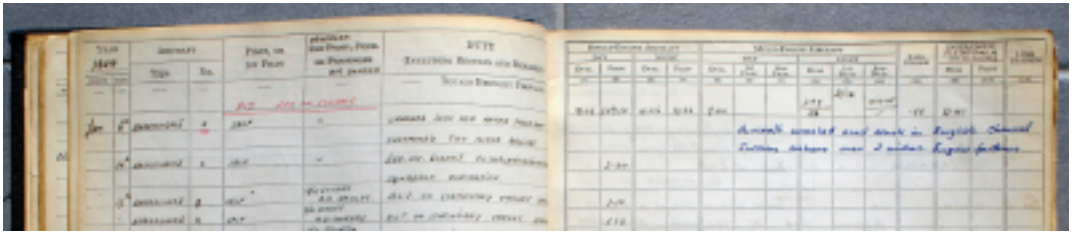
●●●●●●●●●●●●●

Malcolm

Just to update the Barracuda salvage article reported in the Eastleigh Evening News. The text below and the attached images are what I put on our Facebook Page on Saturday.

S/Lt Michael Sandes with the windscreen of a Barracuda visible under his right arm and holding an oxygen mask.

We (the FAAM) initially thought that the Solent wreck was likely to be BV739, a Blackburn built Mk II, that suffered engine failure on take-off on 29 September 1943 whilst being flown by S/Lt DJ Williams. A later candidate was identified and this was LS473, a Fairey built Mk II that was delivered to 15 MU from the manufacturer on 24 November 1943, only 13 days



Pilot's log book entry for the day of the crash. The entry on the right hand page reads:
"Aircraft crashed and sank in English Channel. Swam ashore over 2 miles. Engine failure."

before the accident, that failed to obtain climbing speed on 6 January 1944. We have not yet been able to identify the Solent wreck but all indications are that it is a Fairey built example. Of course, it could be another undocumented example. Lee Howard, publisher Air-Britain's FAA expert and author of numerous authoritative FAA titles and Haynes

Oxygen mask recovered from the Solent wreck

manuals on British helicopters, had access to the Pilot's Flying Log of Temporary Acting Sub Lieutenant Michael Hume Sandes and made the connection with an entry on 6 January 1944 with the loss of a Barracuda of 817 Squadron coded 'A'. The museum has now been granted access to the log book by Sandes' grandson Richard and the first two photos are images from the log book, posted with Richard's kind permission. One covers the accident on 6 January 1944 with later comments on the right-hand page and the second shows S/Lt Michael Sandes with the windscreen of a Barracuda visible under his right arm and wearing an oxygen mask. The third image shows an oxygen mask recovered from the Solent wreck. Could the Solent wreck be LS473? Could the recovered oxygen mask be the one visible in the photo of Michael Sandes? The log book entry raises a question or two in my mind that we'll never know the answers to.

On 28 August we received a response from the Rolls-Royce Heritage Flight at East Midlands Airport regarding an enquiry about the Merlin 32 engine serial number 71231 fitted to the wreck. This engine was built on 8 October

1943 and despatched to Fairey Heaton Chapel, Stockport, on 13 October 1943. It was one of 280 engines in a batch built at Derby as part of Air Ministry Order C/ENG/426/ C.28(a) that were all delivered between 11 September 1943 and 17 December 1943.
This new information confirms our belief that the Solent wreck is a Fairey built example and definitely rules out BV739 as a candidate as this crashed before the engine 71231 was built. The time between delivery of the engine to Fairey and the delivery of LS473 to 15MU if fitted with engine 71231 seems reasonable. Our endeavours to positively identify the Solent wreck continue.

Tony Jupp

The newly-refurbished "Jabberwock", with thanks to Godfrey Dymes

Hello Malcolm,

The Museum's Jabberwock has had a dust and wash. As we're named after it, I think it's perhaps appropriate that some pictures appear in the next issue.

Photos by FAAM volunteer Godfrey Dymes.

Regards,
Chris Penney

SOFFAAM NEW YEAR LUNCH
11 JANUARY 2020

SOFFAAM Members and Guests are invited to attend our New Year Lunch on Saturday 11th January 2020.
Please complete the application form and forward it to me (Gil. Johnston) by Saturday 7th December 2019 with a cheque made payable to SOFFAAM to the value of £25.50 per person.
Your application will be acknowledged and, should the demand exceed the Restaurant's maximum seating capacity, you will be advised accordingly.(Kindly note that refunds for non-attendance will not be offered unless agreed by the SOFFAAM Chairman).
Please arrive at the Warneford Restaurant by 12:00 for lunch at 12:30
We are delighted to announce that our new President Rear Admiral Tom Cunningham CBE will present a talk in the Auditorium after lunch and members and guests are very welcome to attend.

Please send to: Mr. Gil. Johnston
Seawynds, Martinhoe, Parracombe, Barnstaple, Devon EX31 4QT

Name.....

Guest(s) Name(s).....

Telephone Number.....E-mail.....

Main Course Preference:

Roast Beef Spinach Wellington Roast Salmon

Sweet Preference:

Traditional Christmas Pudding Fruit Salad

SNIPPETS FROM COUNCIL MEETINGS

From the September Meeting:

• *The General Manager gave the following report:*

Capital Works. I am pleased to announce that the Museum Roof Project within Hall Two is now coming to a conclusion. The roof structure itself is now complete and the various plant contained above it have been re-positioned. This has enabled us to remove the internal scaffolding and allow visitors to enjoy exploring this Hall as normal.

Remaining works to re-connect the plant and heating systems above the roof will be completed in the coming days. As overall project lead, it has been great to see how works have developed and that in conclusion we now have a safe environment for our visitors to enjoy the displays in Hall Two, while also providing much better conditions to safeguard our collections for future generations.

This is not the only capital project we have been progressing, as we have also been delivering the installation of a new passenger lift in Hall Three (Carrier), which will provide much needed access to the Island Tour for young families and our disabled visitors in wheelchairs. We have encountered some minor difficulties in taking elements of the lift installation forward – although this should still conclude by the end of September.

Pioneers to Professionals: Collections colleagues have been finalising works on our new exhibition entitled "Pioneers to Professionals: Women and the Royal Navy". This traces remarkable stories of naval women and the role of women in the Royal Navy from the mid-17th century through to the present day, highlighting the dramatic changes that have taken place over more than 250 years. The Museum hosted an advance preview with NMRN trustees and local stakeholders in July 2019, with a formal launch planned on 24 September. We encourage all those within the NMRN community to visit the Pioneers to Professionals exhibition in the coming months.

SOFFAAM have made a significant contribution to these works and the Museum would like to formally thank the society for yet another contribution which will greatly aid the Museum to enhance its offer. All council members have been invited to the launch on 24 September.

We are also grateful to SOFFAAM for assistance in buying a new shot blast cabinet for the Museum which will greatly enhance our ability to work on the components and include them as part of the ongoing re-build.

Events. The next Cobham Tours of the Aero Hall are scheduled for the 5th of December. Tickets are £15

and available now from the Museum website and Ticket Desk. Tickets are already on sale for dates in 2020 including the usual March tours.

Tickets are on sale now for traditional favourites, such as the Christmas Concerts under Concorde (12/13 Dec). The Museum sees the return of 'Top Gun' and our Cinema Experience to the Flight Deck on the 28th. Visit http://www.starlight-cinema.co.uk/ for more information.

Please visit the Museum website at www.fleetairarm.com for more information unless otherwise stated.

• *The Chairman gave the following report:*

He briefly discussed the role of President, currently vacant following the retirement of Gordon Johnson. He has probably identified a suitable volunteer and would inform Council members by email as soon as this will have been confirmed.

• *Publicity and Recruitment*

Richard Macauley mentioned the recent sub-committee meeting and the need to establish a more "corporate" feel for the Society. He circulated draft examples of business cards, letterheads and with-compliments slips, all incorporating the Society's logo. Richard discussed training for volunteers to manage the proposed Facebook page. He quoted various rates for setting up the page, and for ongoing support. There was also the possibility of a two hour social media training course.

• *The Talks and Visits Organiser gave the following report:*

The visit to Navy Wings last week was truly first class. I have received several e-mails of thanks and all saying what a magnificent day it was. I have also sent a letter of thanks to Katie. The two visits must have raised £375 for the Navy Wings Society.

• *The Membership Secretary gave the following report:*

Membership numbers - Our non-stop decline in membership numbers continues to be alarming. Since the last meeting membership has fallen by 21 We are now below the "magic" 1000. In August, we received zero applications to join. In August 2018, we received 18 applications and 14 on average for August in earlier years. I believe that SOFFAAM needs to encourage the new energy being created by the promotional group.

• *The Publications Editor gave the following report:*

The 100th issue of *Jabberwock* will be due in August next year and I propose to make this a special A4-sized commemorative issue. This proposal was well received by the Council. It will have implications in the cost of printing and delivery, which will need to be discussed in more detail as the delivery date approaches

●●●●●●●●●●●●●

MONTHLY TALKS REVIEW

Summarised by Robert Heath

July 2019 TALK. "The Trinity House" by Captain Rory Smith

As I walked into the auditorium a SOFFAAM colleague said "I am intrigued to know the origin of the name Trinity House". Oddly enough that point was not really dwelt on in the talk, so where better to start these notes. According to Wikipedia 'The Corporation came into being in 1514 by Royal Charter granted by Henry VIII under the name: "The Master, Warden and Assistants of the Guild, Fraternity, or Brotherhood of the most glorious and undivided Trinity, and of St.Clement in the Parish of Deptford-Strond in the County of Kent"'.

That answers the origin of the name Trinity House, but why the Royal Charter? Our speaker, Captain Rory Smith, is a member of the Brotherhood and is of course steeped in its history. Most people have heard of Trinity House and possibly think of lighthouses, but generally it is a little-known and a low profile organisation. Nevertheless, it is still very important and influential in the world of developing maritime trade. As your keen eyes will have spotted, the year 2014 was the 500th anniversary of Trinity House, and it is still going strong.

Up until relatively recent times, the only practical way to transport goods was by sea. The roads that we are so familiar with simply did not exist and were, at best, tracks running across the landscape and consequently deeply rutted and unusable in inclement weather. At its very best, road travel was slow. Consequently, most goods made their way by river to sea ports for onward transmission. Additionally, ships traded world-wide exporting goods from Britain and in exchange, importing foreign goods. The economy depended upon it, so did the fortunes of the merchants and land-owners that invested in and commissioned the ships.

More often than not, the final destination for the ships was London and the final few miles on gaining entry to the River Thames were ridiculously hazardous and the cause of many ships foundering on the final leg. The Thames was (and probably still is) abounding with sandbanks, shifting sands and rocks. Pilots were hired to guide shipping, but they were freelance and unregulated and you only discovered their knowledge and skills, or total lack of them, as the vessels progressed. The losses became so heavy that a Guild of Mariners petitioned King Henry VIII to license all pilots on all ships

up and down the river, hence the Royal Charter. It was a generous charter and gave a monopoly to Trinity House to charge fees for the provision of pilots, not only on the Thames, but for most of the coastline of England and Wales.

That was a real step forward, but sadly it was not the end of the problems. Between Newcastle and London many shipwrecks still occurred, caused by hidden sandbanks, rocks and other hazards along the coast. Further action had to be taken and this came in the form of the Seamarks Act, put in place by Queen Elizabeth I, which enabled buoys and 'marks' to be installed to guide shipping away from hazards. To remain stable, ships needed to carry ballast to one degree or another depending on the weight of the cargo. The Act also awarded Trinity House the monopoly on ballastage, for which they simply dug gravel from the Thames and sold it to ship operators. In 200 years they sold 400 million tons of ballast. On the subject of ballast, Trinity House proudly displays a painting of the 37 early Elder Brothers. A close look at the painting reveals that 37 ballast workers with broad shoulders and hands like spades sat for the painting, until finally the worthies themselves visited the painter to enable him to put their portrait on the shoulders of figures already painted in.

Ships were now able to make much safer transits, but when darkness fell and bad weather obscured reliable navigation, the need for more aids became a necessity. In response, in 1609 the first light tower was built in Lowestoft, illuminated by candles with reflectors. Two wooden towers were built and every passing ship had to pay a light-due of 4d every time, until six payments had been made. In 1698 the first lighthouse to be built in Europe in the open ocean was erected on Eddystone rock, off the coast of Devon and Cornwall. It was built as a private venture by Henry Winstanley, a violin maker, but also a member of Trinity House and a merchant. Sadly it lasted just five years before a storm destroyed it and, unfortunately, Winstanley himself in 1705. Its successor, built by John Rudyard, looked like a lighthouse as we know it, but was still of timber construction. It was also destroyed 50 years later when the lantern caught fire. In 1759, pioneering engineer John Smeaton built the third Eddystone lighthouse, using dovetailed Cornish granite stone blocks laid in the shape of an oak tree. Smeaton was the first to use the distinctive red and white bands, now so familiar to us. The lighthouse stood 59ft (18m) high with a 26ft (8m) diameter base. In 1810, the ownership devolved to Trinity House, who then installed 24 Argand lamps (a type of oil lamp) and parabolic reflectors. This lighthouse remained in use until

1877 when it was observed that the rocks on which it was sited were eroding and shaking from side to side whenever large waves hit. After decommissioning it was rebuilt as a memorial on Plymouth Hoe, where it still stands today. If you ever venture up to the Lake District and find yourself in Ulverston, you will also see a replica of Smeaton's lighthouse standing as a memorial on the Hoad above the town.
The current, fourth, Eddystone lighthouse was commissioned in 1882 and is still in use, although much updated. Electrification was first introduced to lighthouses in 1858, but for Eddystone it happened in 1959. Its original fog-warning system was provided by two, two-ton bells suspended from the gallery. Later these were supplanted by explosive fog signals and then followed a 'Supertyfon' fog horn powered by air compressors. Nowadays, sound is provided by an electric fog signal. Since 1999 the lighthouse has run on solar power and it was the first lighthouse to be automated. Maintenance crews arrive by helicopter, landing on the helipad at the very top of the tower.

Let me just stop there for a minute so that we can consider just what it was like in the early days. Rory Smith told us that a chandelier of 24 tallow candles with a reflector was used in Eddystone lighthouse; all glittering and sputtering away. Maintenance of the light was a full time task. Later, Argand oil lamps were installed, requiring less maintenance and wick trimming. Nevertheless, it still required teams of keepers working around the clock in shifts. Later, improved oil lamps had storage of 2,660 tons (note tons not gallons) of oil to provide 9 months lamp fuel. With the coming of electricity, Rory told us that early light bulbs stood 6/7ft (2m) high. How did they handle them? By comparison, lighthouses now use an equivalent of a 60 watt LED bulb about the size of a 5p coin, capable of projecting light over a 30 mile range (48km), due to the refined optics.

It was in 1838 that Grace Darling, daughter of the keeper of Longstone lighthouse off the Northumberland coast, spotted the wreck and survivors of the ship *Forfarshire* offshore. She very pluckily joined her father in a 21ft rowing boat in the really terrible storm, to undertake a rescue and become a legend.

Not all locations were suitable for a positioning a lighthouse, so in 1732, the first lightship in the world was moored near More Sands at the mouth of the Thames. A crew of six manned the vessel, which could be moved if the sandbank itself shifted. In WW1, the lightships were treated as neutral and kept their lights on, however, by WW2 the lights were turned off, although in fact a very narrow beam was retained for merchant ship guidance.

In addition to the lighthouses and

lightships, Trinity House operates cutters, primarily intended for maintaining and positioning buoys and other sea markers, also as fast response vessels in the event of shipwreck. Within six hours of a wreck, the location is fully marked as a sea hazard. Following WW2 the cutters made an enormous contribution towards the clearance and marking of 81 wrecks that littered the shipping lanes, many of them dangerous because of their munitions cargoes. This task took decades to complete.

From the beginning, pilotage and buoy positioning was a key function of Trinity House, but in 1979 Margaret Thatcher overturned the monopoly and passed responsibility to Harbour Masters instead. However, pilotage and positioning buoys is a much specialised business and few Harbour Masters were equipped to handle it, so the work was put out to contract with ….. yes, Trinity House!

Transferring pilots to a ship via a launch was a long-winded, time-consuming task. In 1969 launches started to be replaced by helicopters, which could deliver a pilot in just 20 minutes, once being notified.

One way or another Trinity House earns a considerable income. However, it is a maritime charity and no general taxpayers' money is used to fund any of its activities, which in addition to buoys, lighthouses and lightships include education and the welfare of mariners, from cadetships to almshouses. I could not write quickly enough to put it all in numbers, but Trinity House is also deeply involved with the Differential Global Positioning System (DGPS) which provides accurate ship location, plus the Automatic Identification System (AIS), which does as it says.

Finally, if you are looking for a different holiday, you can book passage on one of the cutters when it journeys off to position or maintain buoys, or you can rent accommodation in one of the now unmanned lighthouses - but be warned, the tower light stays on and the fog horn is frighteningly loud; but what an adventure and all in modern comfort. Thank you Captain Rory Stewart for an excellent evening.

●●●●●●●●●●●●●

September 2019 TALK. "KC135 Operations, 1969 - 73" by Jack Froelich.

Regular attendees at SOFFAAM talks will remember Jack Froelich's entertaining talk on Caribou operations in Vietnam, so would have expected an enjoyable evening. We were not disappointed - the in-flight refuelling tankers of the USAF do not have a glamorous profile, but Jack's lively delivery and copious illustrations brought these long-lived jets to life.

He started with a brief description of the evolution of the tanker

requirement to provide support to the long range strategic bombers being developed after the Korean War. Early tanker aircraft included the KB50 (a modified B29) and the KC97 - a modified Stratofreighter that first introduced the flying refuelling boom. The limitations of these propeller-driven aircraft in support of the early jet fighters and high-flying B-52 bombers led to the search for a jet tanker. The KC135 was it, a fast sleek jet developed from Boeing's remarkable Dash-70 prototype that also led to the widely used 707 airliner. Jack showed us a brief video of the Dash 70 being barrel-rolled at an air display by the renowned test pilot "Tex" Johnson.

Jack flew the KC135 with the 99th Bomb Wing of Strategic Air Command (SAC). They spent seven days at a time on Quick Reaction Alert (QRA) and would take off with the bombers when they exercised. The initial model, entering service in 1957, was the KC-135A, powered by four Pratt and Whitney J57 turbojet engines. You needed a certain fatalism to fly these early models, said Jack, as they were always at maximum weight at take-off and had few of the aids expected by civilian pilots, such as anti-skid, thrust reversers and an autopilot. In particular, the engines used water injection at take-off to increase power. "You were out of luck if the water supply failed at under 1000 feet." Water injection cooled the burning fuel, so that some remained unburnt, giving the charateristic black smoke trail behind the jet pipes. Even with water injection, you needed all the runway to take off, which was apparenly USAF philosophy in the nuclear support mission.

During their nine year support to operations in Vietnam, the KC-135A tankers few 813,000 refuelling sorties. This compares with the 18,000 sorties flown in the Persian Gulf. The main customer for the KC-135 was the B-52D, recognisable from its black underside. These aircraft had a tail gunner as well as pilot, co-pilot, two navigators and electronic warfare officer (EWO). These crew members all had ejection seats, of which the navigators' seats ejected downwards. Additional observers often flew in the B-52, but on the rare occasion when they had to abandon the aircraft they would have to wait until the navigator had left and then drop down through the gap left by his departing seat.

The USAF is unique in using the flying refuelling boom, since all other western air forces use the British-developed "probe and drogue" system. The flying boom is operated by a crew member, who is responsible for guiding it into the refuel receptacle on the receiving aircraft. The boom is manoeuvred by two small winglets and also can be exended by up to 15 feet. Once engaged in the refuelling receptacle, the boom is locked in place, needing

an axial disengaging force of 600 lbs. The main advantage of this system is that it enables much higher fuel transfer rates compared with the probe and drogue, a key requirement for the demands of strategic bombers.

The high break-out force of the boom was an advantage when refuelling fighter aircraft, such as the Republic Thunderchief, since if the receiving aircraft was damaged and losing fuel, the tanker could "tow" it a long distance home, refuelling it constantly as required. Jack reminded us that Republic used to name all its products with the "Thunder" prefix and said that the F-105 was universally known as the "Thud" after a Native American character called Chief Thunderthud in "Howdy Doody" - a popular children's TV show at the time.

The USAF deployed the Douglas B-66 Destroyer in the Electronic Countermeasures (ECM) role in Vietnam. As this aircaft had been derived from the US Navy's A3 Skywarrior, it had retained the Navy's flight refuelling probe arrangement. KC-135 tankers had to be equipped with a drogue attachment to the flying boom to refuel these types, which precluded the use of tankers so fitted from refuelling other US fighter types. Another occasional customer for fuel was the high-flying SR-71, based in Okinawa. Jack showed us a picture of this phenomenal aircraft refuelling from a specialist variant of the tanker, named the KC-135Q. This variant was needed because the SR-71 used JP7, a specially-developed fuel with high flash point and high thermal stability to cope with the SR-71's Mach 3 cruising speed.

A completely different task for the KC-135 was its modification, known as "Luzon", to the airborne radio relay mission. These aircraft would fly in long (eight-hour) orbits over the Gulf of Tonkin, with the specific task of re-broadcasting signals from US aircrew who had ejected over the sea. This was an invaluable aid for the rescue services, since the range of the aircrew radio beacon was relatively limited.

Finally, Jack reminded us of the need for celestial navigation in those days before the satellite-provided Global Positioning System (GPS). Sun and star sights would be taken through a periscope, resulting in such accuracy that Jack was sure he was never more than 100 miles off course. It was always easy to navigate towards Hawaii, he said, as (like the Japanese in their attack on Pearl Harbour) you just had to home in on the island's radio broadcasts. Other aids to navigation were LORAN and doppler, but these were never popular with navigators. Later models of the KC-135 were equipped with GPS, so that they no longer needed specialist navigators.

Once again, Jack has delivered a fascinating talk in his inimitable style. He told us he is developing another, on his later career. We have made an advanced booking!

● ● ● ● ● ● ● ● ● ● ● ● ●

NIJMEGEN MARCHES - FIRST NAVY TEAM

By Derek Poulton

The following article appeared in the Navy News of October 1965:-

NAVY MEN TAKE PART IN NIJMEGEN MARCHES.

Five Naval Airmen from the Joint Services Trials Unit (13 JSTU) at Boscombe Down took part in an unusually hard bit of marching, but PO Grayling, LA(AE). Poulton (me) L.Wtr Parkinson, NA Childs and REM(A) Gwilliam considered the experience well worthwhile.

Each year the Dutch Army plans a series of marches, Nijmegen and back to Nijmegen, 25 miles a day with 11 hours to do the march, on four different routes. The first march is over rough roads, the second one is a smooth route, the third march on the third day is the hardest, over seven hills and on the last day the trip is a smooth one. On the last day the various contingents form up outside the town of Nijmegen to be led into the town by a band, past the saluting base and to the finish for individual and team medals.

The five Naval ratings, the first Royal Navy party to partake in the marches, accompanied an RAF contingent. They spent three days before the marches three days afterwards with the RAF in Germany, but for the four days marching they were fed and accommodated by the Dutch Army as was done for thousands of servicemen and civilians from all over the world.

The Israelis sent a team of their 'Essence women', the Americans and Canadians put on big shows and the Germans were there for the first time.

Nijmegen is only a few miles from Arnhem and the locals have a great regard for the English and the first visit of the Royal Navy was much appreciated.

Those who do not mind a bit of hard walking, have endurance and feel fit and can put up with a few blisters would do well to remember the Nijmegen Marches next July for this year's naval contingent can assure intending competitors of a really good time.

******

The march was a super experience but getting there proved quite a challenge. Boscombe Down had a Hastings aircraft as the station 'hack', which was due to fly us to RAF Bruggen for training and acclimatization. Then the Hastings was to fly the Naval Buccaneer Test Squadron to Pensacola in the USA for trials. (One of the Buccaneers

did a record breaking crossing of the Atlantic on its return journey – a record that was held until the Phantom crossing on the London to New York Air Race. The Buccaneer in question is now at the Yorkshire Air Museum. A Tornado later tried to get the record but couldn't beat the Buccaneer's time).

Before we could join our Hastings flight, a Hastings full of paratroopers crashed near Oxford, killing everyone onboard. It was found that an aileron had fallen off due to fractured hinge brackets. An immediate check of all Hastings was carried out and it was found that our Hastings would soon have suffered the same terrible end, either crashing on our flight to Germany or (even worse) over the Atlantic on the Pensacola flight. We then had to search for a replacement flight. We had an offer from the Canadian Air Force, who were flying a party of Scouts to Nijmegen, but the Government turned this down flat. We eventually got an Argosy flight from RAF Benson to RAF Bruggen. The Argosy was so underpowered and the weather was bad, we took over a hour circling Benson trying to get enough height to fly to Germany. Sitting in troop seats in a plane that was full was so uncomfortable - some even sat on the rear ramp door.

We eventually arrived at Bruggen and spent our time training before transferring to a tented camp at Nijmegen, which was for all the British troops taking part. The weather was terrible for our four days of marching, although we slept in the tents the wash and toilet facilities were in the open. Food was very basic and the sandwiches whilst marching challenging - have you tried sugar, or raw fish, or marzipan cake sandwiches? The Knorr soup firm had soup kitchens along the route and cafes had hot chocolate and brandy. Blisters were soon dealt with by a scalpel and iodine. We marched in No 8 uniform with full webbing and a rifle (about 60 lbs. in all) changing into our best uniform for the march past through Nijmegen. This was carried out at a camp set up just outside Nijmegen. Only two of the naval team finished - myself and one other (can't remember his name, I think it was the Leading Writer). We marched in the centre of 500 RAF personnel. I could see the surprised look on the face of a British Admiral on the saluting base.

The same year the German and Israeli Forces took part for the first time. The Americans had over a thousand troops who were very hard pressed, as the previous year more than half didn't finish. They had bands on trucks following them and at rest stops in villages they did precision rifle drill to music - fantastic. There were thousands of other people taking part (Scouts, Police civilians etc.) who did different routes and distances depending on their age. I finished up with a medal and many happy memories, but unfortunately no photos as my camera was stolen.

● ● ● ● ● ● ● ● ● ● ● ● ●

A POST-WAR BEQUEST TO THE MUSEUM

We were recently contacted by member Dave Perrott, of Lancing, West Sussex, on behalf of his friend Stan Richardson, also a member of the Society. Stan is approaching his 100th birthday and asked if the Museum still had a record of a presentation he had made many years ago. Stan was serving in 765 Squadron at Sandbanks Yacht Club, Poole in 1941. (This squadron's task was Seaplane Flying Training Course Part 1.) One July evening a Dornier bombed a line of moored Sunderland flying boats. The Dornier was fired on by army units on Brownsea Island, and by 765 Squadron personnel. The damaged aircraft turned out to sea but returned and crashed on Brownsea Island mud flats. One crew member was killed and two survivors taken POW. Stan, then a Leading Air Mechanic (LAM), picked up the pistol at the crash site and after the war donated it to the Museum.

The donated pistol was quickly identified by Catherine Cooper, FAAM Curator of Archives and Images, who kindly sent the photograph reproduced above.

AIR DA

Photographs by

CLOCKWISE

• Old and new The UK's new F-35 Lightn

• A line-up of Auster Air

• One of two preserved Gazelle helicopters in the static who used the t

• Two of the Fleet Air A

• Taking pride of place in the static park was one of the

• The Westland Wessex returns to Yeovilton. The onl display. Stinson R

• All the way from Vancouver on the Canadian west c Squa

• The only airworthy Whirlwind with former Belgi

AY 2019

s by Chris Penney

ISE FROM TOP CENTRE:
Lightning hovers above a Spanish Navy AV-8 Harrier.
r Air Observation post (AOP) aircraft.
static park, painted in the colours of 32 Squadron based at Northolt
the type for VIP transport.
Air Arm's ex Danish Merlin HC.3As.
f the Navy's navalised Merlin HC.4 in the new sea grey camouflage.
e only example preserved in flying condition, it opened the flying
son Reliant in the background.
vest coast was this CP-140M Aurora anti submarine aircraft of 407
Squadron RCAF.
Belgium Navy operated Alouette III behind and Wessex above.

MONTHLY TALKS PROGRAMME

Talks are usually held in the FAAM Auditorium on the last Thursday of each month (except August and December) at 19.30. Entry price is £7. You can pay at the door, but note that these events are well-supported and total numbers are limited. To be sure of a place book your tickets on-line in advance at www.fleetairarmfriends.org.uk/monthlytalks, or buy from the Museum shop. Non members are welcome. The price includes light refreshments, including a glass of wine.

●●●●●●●●●●●●●

Thursday 28th November
David Morris
The Barracuda Restoration Progress
Plus Sale of Navy Wings Christmas cards etc

●●●●●●●●●●●●●

Thursday 30 January 2020
The Royal Navy Presentation Team
A dynamic, multi-media presentation aimed at informing and increasing knowledge of the work of the modern Royal Navy.

●●●●●●●●●●●●●

Thursday 27 February 2020
Gp Capt (Retd) Jock Heron
Flying the Lightning plus the Thunderchief and Mirage, on USAF and French AF exchange programmes.

●●●●●●●●●●●●●

Thursday 26 March 2020
The RAF Presentation Team
An exciting and informative talk about the modern Royal Air Force by serving RAF personnel

●●●●●●●●●●●●●

Thursday 30 April 2020
Col (Retd) Rich Graham
Flying the SR-71 Blackbird including its development and history.

●●●●●●●●●●●●●

Note that talks start promptly at 19.30. Entry is via the lower (wheelchair) access. Latecomers should ring the bell at the left of the gate to gain admission. *Whilst the Society makes every attempt to adhere to the published programme of lectures, there are occasionally factors such as weather or short notice unavailability of speakers which could force a change of programme. We recommend that members check our website and the booking section of the FAAM site*

MEMBERSHIP

Standing Order Membership cards enclosed for – November, December and January 2020. (Please note that receipt of a card does not confirm receipt of payment.)
Welcome to the new Members who have joined us since the last magazine issue:

3648 Mr M. Ware	**Yorkshire**
3649 Mr S. Liebert	**Somerset**
3650 Mr N. Diakidis	**Athens, Greece**
3651 Ms A. Miller	**Somerset**
3652 Mr S. Brierly	**Somerset**

Total members: 982
Members who have made a Gift Aid declaration: 698
PAYMENT can be made by: standing order; cheque or BACS.

Visit us on Facebook @SOFFAAM

Annual membership £12
Family membership (Up to two adults and three children) £32
Life membership £180 (£90 for those over 60)

All funds are donated to FAA Museum projects – none is wasted on salaries. Help SOFFAAM to grow by encouraging others to join. It makes an excellent, low cost, but highly appreciated Gift. You will deserve the thanks.
Let us know if you would prefer to receive Jabberwock via your e-mail.

ANOTHER MINOR MYSTERY

By Malcolm Smith

Regular readers will recall that we showed a photograph of a World War 1 aircraft in Jabberwock 79, under the heading of “A Minor Mystery”. That one turned out not to be mysterious at all, as several members quickly pointed out.

The photograph above, provided by member Simon Websper, dates from around the same era, probably in France at the very beginning of the War. We know that the noted naval aviator, Charles Rumney Samson, encouraged the use of private cars by RNAS people, because of the lack of aircraft at the time. These were used, to patrol behind the lines before the war descended into a static slogging match. He had two cars armoured: a Rolls Royce and a Mercedes, but the car in the picture seems to be another make. The two figures at the left are almost certainly Royal Naval officers, one of whom is wearing riding breeches. The other figures are in Army uniform but it is difficult to discern their nationality.

We are sure that a motor enthusiast would quickly identify the car, but it would be interesting to know more about the circumstances.

SOFFAAM VISIT TO NAVY WINGS

By Robert Heath

The SOFFAAM party poses in front of the two-seat Sea Fury of Navy Wings. Photo: Richard Macauley

As advertised in Jabberwock, we received an invitation from the Navy Wings Heritage Flight to visit their facility at RNAS Yeovilton on the 3rd September. It was well worth it. If you missed it, I hope you had a good reason not to be there. The event was open to SOFFAAM members only and in all there were around 35 of us, split into morning and an afternoon groups. Our hostess for the day was Katie Campbell, the so well informed Operations Officer.

I think the 3rd September must have been the first day recognisable as Autumn. It was bright, but cloudy and the wind howled with a hint of Siberia behind it. Arriving at South Dispersal on the far side of the Air Base we all scurried into the offices and then the hangar. The last time I visited the collection, it was located in a rather compact, dark hangar. Now it occupies a suite of two-storey offices, with an adjacent hangar - previously home to our Sea Harrier fixed

wing aircraft, deemed surplus to requirement by our parliamentary representatives, who refer to each other as “Honourable Friend’ - not a term that would fall readily from my lips. Navy Wings is quite chuffed though at their good fortune and I don’t blame them.

What did we see? Space, lots of space with beautiful aircraft occupying an area that allowed comfortable access to each airframe for maintenance and repair with adjacent workbenches, and still room to manoeuvre other aircraft without any disruption. That is how it should be. The aircraft were: Fairey Swordfish Mk1, W5856, now very close to flying more shows; Swordfish MkII, LS326, awaiting the return of its engine, but otherwise ready to fly; the third Swordfish, still in dismantled kit-form; Hawker Sea Fury FB 11, VR930, almost ready to join the show circuit, but halted following the wheels-up emergency landing of the Sea Fury T20, VX281 (the latter now has its new engine installed and is flying again); DH Chipmunk, WK608; and Sea Vixen

“...on view was an airworthy Westland Wasp...on loan to the Heritage Flight” *Photo: Richard Macauley*

XP924 looking in encouragingly good shape. Very briefly, the Sea Vixen suffered a double hydraulic failure (very rare indeed). There are two independent hydraulic circuits, both duplicated, one for flying controls, which were not affected and one for undercarriage, etc.. The latter failed, but due to the skill and experience of the pilot, damage was truly minimal, although nonetheless costly. Fortunately, Navy Wings is blessed with box after box of spares. That is the good news. The less good news is that in the short time that they have owned the aircraft, they have not had time to catalogue everything. They also have a mountain of MoD Air Publications telling you how to do everything conceivable on the aircraft, and a good number of manufacturer's drawings. Also on view was an airworthy Westland Wasp, a Navy Wings Associate aircraft now loaned to the Heritage Flight to operate. What a generous gift, because the owner is happy to keep paying many of the bills. But where was the Sea Hawk, WV908? It now sits at RAF Shawbury in a hangar where the 'climate' is controlled keeping her from deteriorating. She awaits her turn to progress in line with the availability of funds and management

An unusual view of Navy Wings' Sea Vixen, with both engines removed. *Photo: Ernest Lear*

programming time. What else? The hangar was divided down its centre and on the far side, the civilian side, we were taken to see two Sea Harriers and a Phantom owned by the Air Station, all looking ready to fly, but in reality 'resting' quietly in the background, and providing static displays for events at RNAS Yeovilton.

Fairey Swordfish Mk1, W5856, *Photo: Ernest Lear*

One thing very evidently in abundance is enthusiasm. Navy Wings is going through a transition incorporating the military registered aircraft of the Royal Navy Historic Flight, which stood down in March of this year, piece by piece, to their civilian based organisation for strategic, economic and logistical reasons. Among other things, it is enabling them to ally themselves to several other naval aircraft operators through their Navy Wings Associate aircraft owners membership to present a co-ordinated heritage aircraft display group.

There is so much to say, but space is limited, so at the next opportunity, make sure you join the visit and breathe the enthusiasm that fills the air. For the record and to avoid any confusion, Fly Navy Heritage Trust is the registered charity behind what is now called Navy Wings, the brand name for the organisation. You may recall that Jabberwock issue 94 in February 2019 gave a great deal more information about the organisation and its plans.

Thank you Rosanne and Katie for a splendid day feasting our little eyes on 'big boys' toys.

Web: http://www.navywings.org.uk | Twitter: https://twitter.com/navywingsuk | Facebook: https://www.facebook.com/NavyWingsUK/

SHORT ADMIRALTY 184 SEAPLANE, 184

By Ian Burns

George Bentley Dacre seems to have had a soft spot for the original Short 184, serial number 184, preferring it to a new machine, 841, for the torpedo attacks. He noted his final flight on 184, 27 August 1915, in his diary: "Did a test flight on No 184 before breakfast in an exceeding bumpy condition. Compelled to land after 12 min as the muscular effort required to keep the machine right side up is too great." Dacre's comment on the control difficulties was particularly true of the first Short 184.

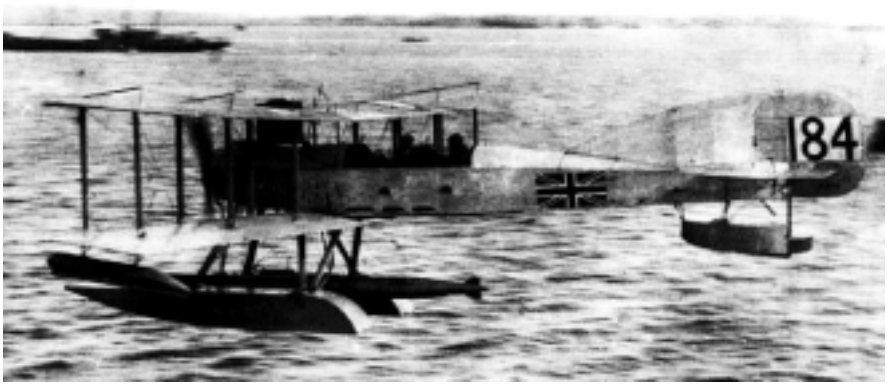
Short 184, 184, at Rochester March 1915. The original construction number S.106 can just be seen on the rudder. Note the unsupported upper wing ailerons. (FAAM JMB/GSL)

The "Short Admiralty 184 Type Tractor Seaplane" was the official designation of the aircraft we refer to today as the Short 184. The full title was largely limited to official, Admiralty originated, paperwork. To the user it was the 225 Short (or some similar variation referencing the horse power of its engine) or just simply the Short. Even the manufacturer referenced the engine on its engineering drawings, i.e., 225HP "Short" Tractor Seaplane. Post-WW1 memoirs used similar nomenclature. The use of the designation Short 184 appears to have become popular only when post-WW2 historians began using it. However, this is intended to be a brief history of the first of the

type – RNAS serial 184, Short's construction number S.106. Now, Short's construction numbers opens another can of invertebrates that I have no intention of examining. The only reason I provide it now will become evident later.

184 was built at the company's Rochester factory to an Admiralty contract dated July 1914. The contract also called for a second machine, 185. They were the first of almost 1000 examples to be built, by several manufacturers, of which over 300 remained in service at the end of the war. The basic design remained little altered throughout its long production run. The only major changes made were installation of different engines of increasing power, from 225 hp in the prototype to 275 hp at the end, and changes in armament.

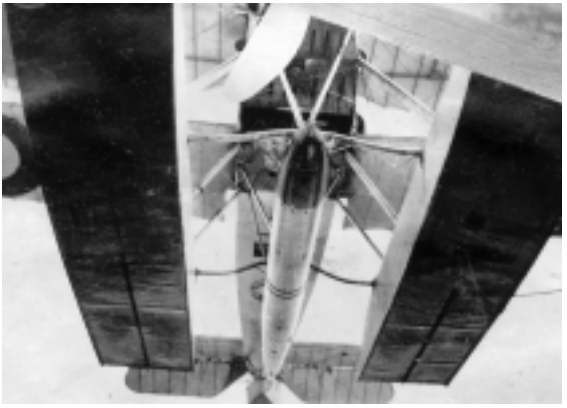
The prototype, 184, had ailerons fitted to the upper wings only. These were initially unbalanced but were soon fitted with rubber suspension springs to hold them in flying position. With these roll control was very heavy, and a second set of ailerons was added to the lower wings on 185 and subsequent production machines. The Short had a large, shapely fixed fin with a cut away ahead of the rudder hinge line to accommodate an aerodynamic balance surface on the rudder itself. A conventional tailplane with hinged, rubber sprung elevators completed the assemblage.



184 in flight carrying a dummy torpedo. The ailerons now have suspension springs fitted. *(FAAM JMB/GSL)*

Photographs of 184 at Gallipoli, during the summer of 1915, show that the balance area was removed from the rudder and the cut out in the fin then covered with fabric. The balance area ahead of the rudder hinge was quite large and may have resulted in too light rudder control forces in comparison to elevator and aileron.

This modification therefore may have been incorporated, on 184 only, in an attempt to balance out control loads. Even with these modifications 184 remained heavy on the controls and could be tiring and physically demanding, to fly. Flight Lieutenant George Bentley Dacre, its regular pilot, on one particularly hot and windy day was forced to alight on the water to rest his muscles during a reconnaissance flight over the Gallipoli Peninsula.



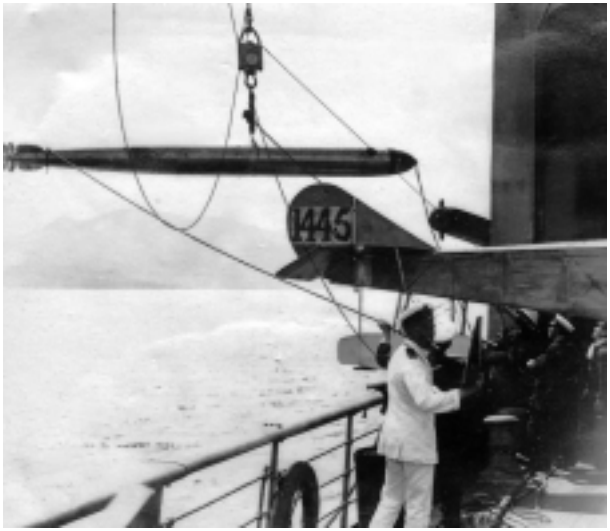
Either 184 or 842 with a torpedo between the floats. *(Author)*

We now, briefly, return to Short construction numbers. On Short built aircraft, the constructor's number was usually displayed adjacent to the company trademark. This is seen on the rudder of the Rochester photographs of 184 as being S.106. However, the Gallipoli photographs clearly show a constructor's number S.129. Allocation of the early Short construction numbers has been debated for some years. Early work assigned S.129 to a spare airframe, which would make sense in this context as a repair or replacement rudder for 184, more recent work has assigned S.129 to Short 184, 841, which was aboard HMS *Ben-my-Chree* at the time of the torpedo attacks. If this is correct, then one is left to ponder when and why 841 donated its rudder to 184? Sadly, we may never find the answer to this most intriguing question.

The Short was designed to carry a torpedo between the two main floats, but it is unclear whether it had been tested with a live torpedo before *Ben-my Chree*'s departure for Gallipoli. Photographs of 184 whilst still being tested by Short Brothers show it carrying a dummy torpedo. The torpedo used was a 14-inch Mark X (1897 model), originally developed for use by steam picket boats. A few of the torpedoes had been adapted for aviation use as it had the advantage of lightness. Weighing just 762lb it delivered a 77lb warhead over a range of 800 yards at 30 knots; its compressed air engine could be adjusted to increase range for a reduction in speed. (For comparison the torpedoes used during the Fleet Air Arm attack on Taranto in 1940 were 18-inch Royal Naval Torpedo

Factory Mark IX, weighing 1077 lbs with a 250 lb warhead and a range of 2000 yards range at 29 knots.).

Ben-my-Chree was pioneering the operational employment of the air delivered torpedo, which presented a new set of problems. The weapon was carried between the floats on arched cross-bars, to which were attached crutches to hold and support the torpedo. When the Short was at rest on the water the torpedo was almost completely immersed, increasing drag at takeoff. This led to the accidental discovery that the torpedo could be released safely with the machine taxying on the water. Upon release, a cable attached to the aircraft pulled a pin out of the torpedo, starting its engine. Early flights also demonstrated that in the high temperatures of an Aegean summer, whilst loaded with a torpedo, the 225 Short had to be flown solo, stripped of all non-essential equipment and even then could carry only half the maximum fuel load.



***Retrieving a 14-inch Mark X (1897 model) torpedo, which was light, at 762-lb, but only delivered a 77-lb warhead.* Ben-my-Chree *June or July 1915 at Gallipoli.** (Author)*

From 13 June 1915 the two Short pilots, Flt Cdr C H K Edmonds and Flt Lt George Bentley Dacre, were up daily experimenting with carrying, aiming and dropping torpedoes, trying to determine the best height and speed from which to launch the weapons. Initially, dropping heights of 45 feet were attempted but practice soon showed the best height to be between 10-15 feet. Speed largely depended on the efficiency of the Short's engine on any given day. Dacre made his first launch on 16 June: *"I carried out a successful torpedo run on the Short Seaplane. Eased off at target at 1000 yds and only missed by 40 yds, the target being a flag in a raft."*

There were two torpedo attacks, on 12 and 17 August 1915.

From Dacre's point of view 12 August must have been a very frustrating day: "*Got up at 2.45 am. Edmonds on a new Sunbeam Short [842] and myself on my old*

machine were hoisted out at 4.30, after two or three things being done on my machine which were found necessary at the last moment.

"Edmonds rose well with his torpedo, but I took 20 minutes trying to persuade my old bus to lift. After 20 mins by violent piloting and determination I got her off, which gave me much delight. However, my delight was short lived for when up 10 min the engine spluttered out and I had to land. After a quick look round nothing seems wrong so I made another attempt and after 12 min the same thing happened. So just as Edmonds was returning I was obliged to give it up. I was bitterly disappointed not to have been able to be the first to actually torpedo an enemy's ship."

To add insult to injury, whilst circling at 200 feet or less trying to gain altitude, Dacre's course took him over the Peninsula several times. Each time he came within range the Turks took pot shots at his floatplane, fortunately without hitting anything.

With his new machine and engine Edmonds had no difficulty climbing to 1500 feet before crossing the Peninsula. Once across he turned up the coast, towards the Sea of Marmara, locating a large ship, estimated 8000 tons, anchored close inshore, a little to the west of the small harbour at Injeh Burnu. Approaching from out of the early morning sun Edmonds was able to make his attack undisturbed. After releasing his torpedo he continued to the west, climbing to clear the higher land north of Bulair. Looking back he saw the torpedo strike the ship on the starboard side abreast of the mainmast sending a column of water soaring to masthead height.

Dacre's second attempt went more smoothly, though not without excitements, as described in Jabberwock 96.

Edmonds' attack on 17 August is quickly recounted. Once again, experiencing no problems with his machine he crossed the peninsula and this time turned south towards the anchorage at Ak Bashi Liman. Finding there three steamships, all anchored in line to present an almost unbroken target, he launched his torpedo into the midst of them, hitting the centre ship. Leaving his target on fire, Edmonds returned safely to *Ben-my-Chree* having experienced some rifle fire at Bulair, and some sniping after the torpedo was fired. He was away for less than an hour.

Dacre made his final flight on 184 on 27 August 1915. The following day SS *Tringa* came alongside *Ben-my-Chree* to deliver some replacement Sopwith Schneiders, receiving in return 184 and Schneider 1560 for return to the UK. Records show that the fuselage of 184 was transferred from the Central Supply Depot at White City to the Isle of Grain for experimental purposes on 15 June 1916. There the trail ends.

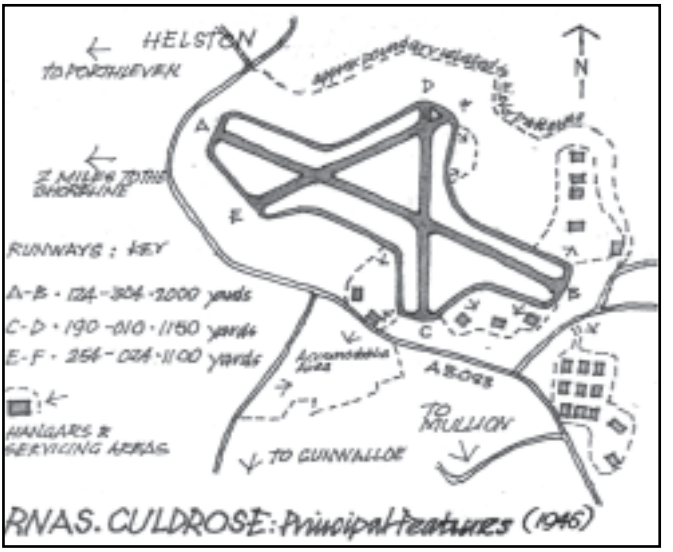
● ● ● ● ● ● ● ● ● ● ● ● ●

HMS SEAHAWK -RNAS CULDROSE

By Jim Humberstone

This naval air station is arguably unique among British military airfields in that it was wholly built after the Second World War. The station was originally designed to be a wartime airfield lasting about ten years, but has grown dramatically in importance over the last 50 years. It is now one of only two naval air bases in the UK, the other being HMS Heron at Yeovilton. The air base at Predannack, a few miles to the south outside Mullion, which opened in May1941, has served as HMS Seahawk's subsidiary or satellite down to the present day. Culdrose and Predannack are part of a cluster of air bases, together with the former RAF Station at Portreath, that are the closest airfields to the peninsula's extremity at Lands End. They reinforce a defence presence that has included the RAF bases at St Mawgan and St Eval further to the east. HMS Seahawk is well positioned at the entrance to the English Channel to receive Fleet Air Arm squadrons flying off their carriers on return from commissions.

Planning for the new station began in 1944 and it was commissioned in 1947. The airfield is located at the south-east corner of the town of Helston, famous of course for its Floral or "Furry" Dance. Construction of the airfield required some 750 acres to be requisitioned, resulting in the severance and re-routing of some local roads. A sense of scale of the station can be obtained from



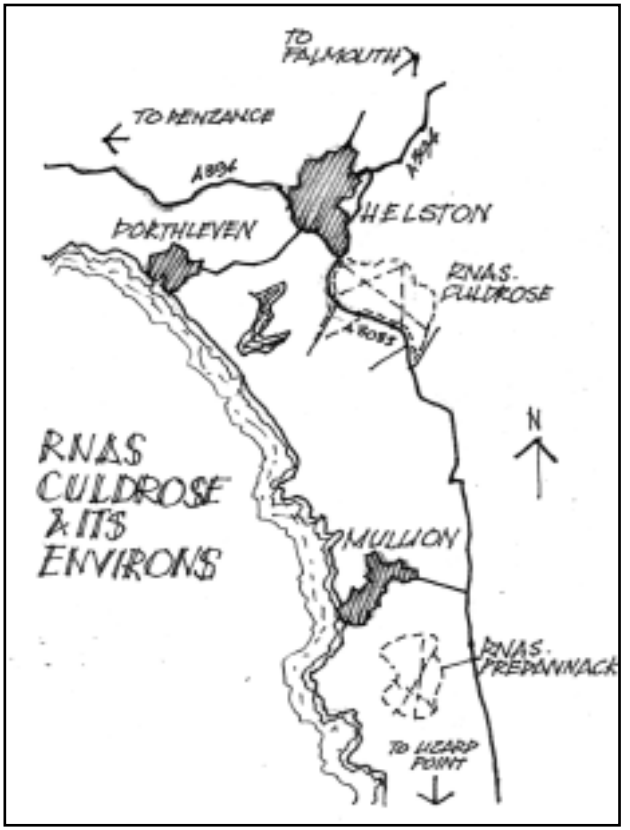
the fact that it covers a roughly similar area as the built up area of Helston. While some Fleet Air Arm airfields were characterised by their additional fourth runway, Culdrose was laid out to the more conventional three-runway RAF pattern, provided from the outset with a generous complement of hangars of the Pentad and Mainhill variety. The two dozen hangars are located to the south and east of the runways. A separate area for accommodation and technical facilities has been expanded over the years on the other side of the A3083, the spine road of the Lizard peninsula to the south.

Busy might be the one word that sums up the atmosphere of this airfield, from its very inception. It has always hosted high levels of rotary and fixed wing movements and probably vies with any other UK airfield for the most aircraft types and squadrons it has hosted during its existence. A wide spectrum of Fleet Air Arm unit formation and aircraft procurement has been covered since 1945. Early users of the station were the Oxfords of the Naval Instrument Flying School. In the Airborne Early Warning category it first supported an adapted USN type, the radar-equipped Douglas Skyraider. Having contributed to Operation Musketeer and Suez operations, these gave way in their turn to AEW Mk 3 Fairey Gannets. Short-lived, less successful FAA types, such as the penultimate RN expression of the single seat Torpedo Strike Fighter concept, the Blackburn Firebrand, came and went. The early 1950s also saw the first tentative moves by the RN to adopt the new faster jet fighters, with squadrons of Sea Vampires and Attackers taking their place on the runways at Culdrose, complemented by Meteors for training purposes.

Over the years the naval air station has played host to a myriad of specialist training units. An initial resident, the Naval Night Fighter School, installed its N/F version of the Firefly at the station in early 1948. This type was replaced by the two seat version of the Sea Hornet. This aircraft proved less than satisfactory for carrier service, not least one suspects due to a design which provided some of the tiniest accommodation ever inflicted on Observer aircrew.

Recent years have seen many changes in the Fleet Air Arm units based at HMS Seahawk. As the principal Helicopter base of the Royal Navy, RNAS Culdrose has witnessed the complete succession of the rotary wing species. From Hoverfly to Dragonfly, Whirlwind to Wessex and Sea King to Merlin. There has been a particular focus in recent years on the Merlin multi role helicopter. This, the replacement of the tireless, much honoured Sea Kings, has very much become a Culdrose machine, with dedicated Training and Engineering Facilities

concentrated to this end at the Cornish Air Station. HMS Seahawk has been the home of the Merlin Operational Conversion Unit (OCU) devoted to bringing new aircrew up to speed on the complexities of the Navy's premier state of the art machine.



The Beech Avenger, the Royal Navy's version of the very successful American turboprop twin, the King Air, has provided a mount for in-flight Observer training, having taken over from Jetstreams and the earlier Sea Princes. This modern aircraft is a far cry from the Ansons that undertook this task in the earliest days of the base. A much later arrival, Hawk T1s provide realistic Airborne Threat Simulation sorties for naval units exercising in the western approaches, assisted by Falcons flown from Hurn. The Air Station provides facilities for the intensive training of aircrew, engineers, air traffic controllers, fire-fighters and flight deck crews before joining their ships and squadrons for duties at sea.

Finally, a sign of the times, the Unmanned Aerial Vehicle Operation unit actively pursues the latest technology and tactics comprised in this highly complex and constantly changing area of military and naval operation. As well as military training, Culdrose saw the formation of a helicopter display team. This exhibited the impressive agility of its Gazelle helicopters and delighted audiences at many Air Shows, appearing under the name of The

Sharks.

The RN's many years of operational experience of several versions of the versatile Sea King also enables it to support training for foreign forces. A dedicated Royal Navy Foreign Training Unit was formed at RNAS Culdrose in the early 1970s and this saw contingents from West Germany, Pakistan, Egypt, Australia and Belgium benefit from RN expertise with the Westland Helicopters product.

In its coastal location Culdrose is close to the junction of two of the busiest shipping lanes in northern Europe. The presence of the multi-national contingents at the station coincided with the period when it was called upon to provide a Search and Rescue Service for the area. This task devolved on the Navy and the RAF around the British coastline during the latter years of the 20th century. As part of these duties Culdrose built up a fine record for saving lives. One such rescue, demonstrating the benefits of the helicopter aircrew training and the effectiveness of their Sea King aircraft, occurred in January 1974, when a joint RN and German team, with the co-operation of a Russian ship, rescued 11 seamen from their ship off the coast, during the worst of conditions. During the years that Culdrose has provided an SAR service, there is little doubt of its morale boosting, PR benefits, with the brightly liveried helicopters of the Royal Navy and RAF well in evidence overhead to the holidaymakers as the aircraft winged their way along the shoreline. No longer seen as at true military task, SAR in the UK has been completely handed over to civilian contractors.

Now and again the Station has made headlines for other reasons. One occasion given such publicity was on 18 May 2012, when a British Airways 319 Airbus touched down at the naval air base. The airliner carried an important piece of cargo: the Olympic flame, due to be carried from Cornwall the length and breadth of the land as precursor to the 2012 Olympics. The three guardians who had accompanied the flame on its inward flight were HRH the Princess Royal and two famed British sportsmen, David Beckham and Sebastian Coe. Such a happening is a once in a lifetime occurrence. It was fitting that a premier Royal Navy establishment should be honoured in this way since it not only underlined the significance of one of our most important service air stations but incidentally represented recognition of a service strong in sporting prowess itself.

Finally, RNAS Culdrose is a major focus of employment in Cornwall, with a workforce of over 2000 naval and civilian staff at the base.

●●●●●●●●●●●●

BOOK REVIEW

By Malcolm Smith

The striking cover picture of two Focke-Wulf Fw 200 Condor aircraft attackiing merchant ships sets the tone for this magisterial account of German naval aviation. The author, Lawrence Paterson, has spent many years researching German naval operations and hs written several books on the Kriegsmarine. He opens with a brief summary of German naval aviation in World War 1. As did the RN in the same period, the Kriegsmarine employed both airships and fixed-wing aicraft. During the war, the airships flew more than one thousand reconnaissance missions and hundreds of bombng raids on British harbours and towns. Fixed-wing aviation was concentrated on seaplanes, some of which were capable of air-launching torpedoes, while land based aircraft were also used to protect naval bases. The Kriegsmarine converted ships as seaplane tenders and work commenced on building true aircraft carriers, capable of keeping up with capital ships. The war ended before these developments could be brought to fruition.

In a chapter headed "Renaissance", the author describes how Germany, despite being bound by the terms of the Versailles Treaty at the end of the war, accumulated a secret "Ruhr Fund" to covertly develop miltary forces. Much of this money went to aircraft manufacturers. Dornier, for example, developed the highly successful twin engined flying boat, the Do J *Wal* (Whale). This was militarised into the Do 15. The author describes how secret training was provided to potential miltary aircrew. One training establishment was set up in Russia, while at home, supposedly civilian flying clubs increased the military capability of a generation of young men. Naval aircraft design activity continued and Heinkel produced the two-set He60,

a reconnaissance float plane for shipborne use.

When Hitler assumed power in 1933, the *Küstenfliegergruppen* or Coastal Naval Air Services were established on a firm footing within the Kriegsmarine, although this status was overshadowed by the assertion of Air Force General Herman Göring, that *"everything that flies belongs to us".* The Spanish Civil War provided a fruitful operational arena for the men of the naval arm (as for the Luftwaffe). Naval units operated as part of the Condor Legion and developed anti-shipping tactics in which dive-bombing emerged as the Luftwaffe's preferred attack method. Torpedo attacks were hindered by the lack of a reliable air-dropped weapon - a shortcoming that continued throughout the War.

By the time that WW2 broke out, work was well advanced on the German Navy's aircraft carrier, the *Graf Zeppelin*, which had been launched in December 1938. This was potentially an impressive vessel, well armoured and theoretically capable of 34 knots. An Air Group had been planned, consisting of Ju 87C dive-bombers, Fi 167 torpedo bombers and Bf 109T fighters. The ship was equipped with two compressed-air catapults, capable of launching high-performance aircraft.The construction of the aircraft carrier was a stop-start affair, comments the author, that serves as an illustration of the fate of the entire naval air arm. Naval aircraft development stalled: the promising and entirely new Fieseler design did not survive beyond the pre-production phase, while only a few Ju 87 had been modified with folding wings and arrester hooks before work on the carrier was suspended and the aircraft order was cancelled.

Despite the diminution and subsequent demise of the fixed-wing aircraft carrier role, the naval air arm stepped up operations with the He 115 muti-purpose torpedo bomber, minelaying and reconnaissance aircraft. These floatplanes were used in October 1940 against a British east coast convoy in a combined operation with Luftwaffe Ju 88s. Co-ordination between the two arms was poor, so that the slower floatplanes were caught by rapidly-scrambled Spitfires and four were shot down in a matter of minutes. This disaster was discussed by Admiral Raeder with Hitler, in which the naval leader pleaded with Hitler for better co-ordination of planning. Raeder argued that it was absolutely necessary for naval aircraft to train and operate closely with naval forces. The Fuhrer declared that *"...there is no question of such measures".* He had frequently been reassured by Goring that Luftwaffe pilots were competent in navigation over the sea, notwithstanding their complete lack of any training or experience in this role.

The author describes the role of naval aviation in the German invasion

of Norway, patrolling the North Sea approaches to southern Norway. The operation marked the combat debut of the Fw 200 Condor, a remarkable aircraft that had started life as an airliner. It was used as a long range transport and in the reconnaissance and anti-shipping role. As the German forces went ashore, the naval air arm was heavily occupied in identifying and attacking RN vessels shelling the landings, also in mine-laying. Britain was forced to withdraw its land forces from Norway as the Germans consolidated their hold and allied vessels were heavily attacked by Ju 87 dive bombers. The Stuka pilots were guided to their targets by naval He 115s, because navigation over the sea in these two-seat aircaft was impossible.

In a chapter entitled "The End of the Beginning" we read that Hitler issued an order in February 1941 giving the Luftwaffe the lion's share of naval aviation and stating that there were no plans to maintain a separate naval air arm. This led to a major re-organisation of Luftwaffe forces as they took over maritime responsibilities. Late 1941 also saw the dramatic deployment of X Fliegerkorps to the Mediterranean in support of Italy's failing war in North Africa. This maritime unit was equipped with numerous Bf109, Bf 110 fighters and Ju 87 Stukas supported by Ju 52 transport aircraft. The arrival of X Fliegerkorps in the Mediterranean had a dramatic effect on allied forces, including highly-effective attacks on RN units supporting the evacuation from Crete.

In a description of German attempts to disrupt allied convoys in 1941/42, the author comments that the Luftwaffe's refusal to use Kriegsmarine data on torpedo development "*erupted in a ridiculous bout of inter-service rivalry".* Torpedo development proceeded slowly, but the author recounts how combined bombing and torpedo attacks on allied convoys took a terrible toll in loss of life and the continuing delivery of supplies. The book ends in 1942, with the Luftwaffe's maritime operations probably at their peak of effectiveness.

As well as many accounts of airborne action, Lawrence Paterson provides detailed descriptions of inter-service disputes at the highest levels. He also shows how the naval and air arms were organised (and frequently re-organised) to reflect the their changing roles. In an Appendix, he lists and briefly describes the main aircraft involved in maritime operations, several of which are rarely encountered in more popular histories.

This is an outstanding production by Seaforth and is in every respect a most useful source of reference. The author provides an extensive bibliography.and scholarly notes, together with a comprehensive index. All serious students of naval aviation should have this volume on their bookshelves

● ● ● ● ● ● ● ● ● ● ● ● ● ●