# Jabberwock

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

No. 99
May 2020

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"
- PayPal, use **soffaam.join@gmail.com** in the 'Send money' field.

**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.**

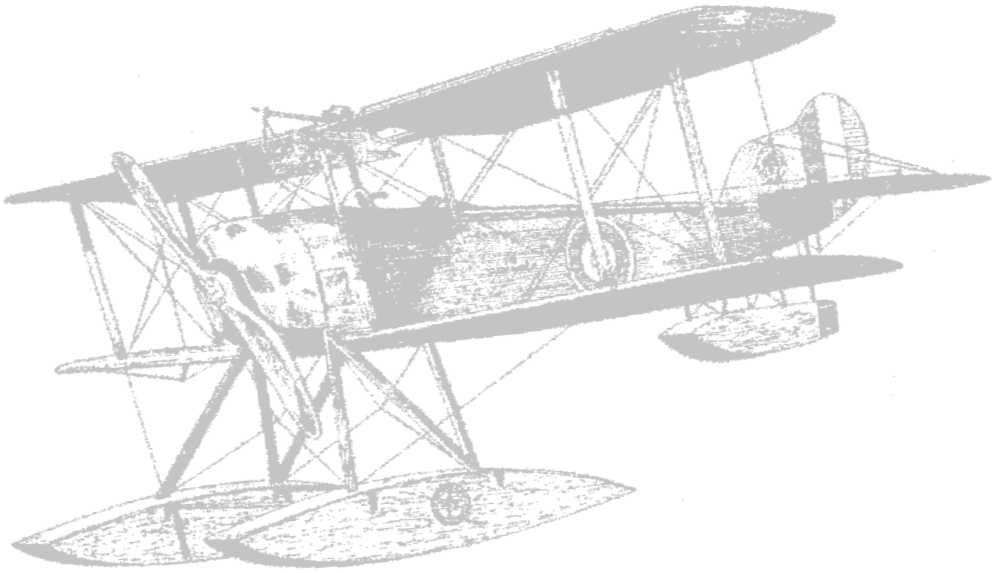
Please complete and return this form to the Membership Secretary:

**Simon Websper,**
22 Kings Yard, Bishops Lydeard, Taunton, Somerset TA4 3LE.

Tel: 01823 433448 Mob: 07527 707204

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.*



***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

*Trainee Observer, Piarco, Trinidad. P7*

*Unusual Swordfish. P6*

*826 Sqn Gannets. P21*

*Prototype Scimitar. P32*



***F35B Lightning launches from HMS* Queen Elizabeth**

COVER PICTURES:

Main picture: Grumman Hellcat MkII 800 NAS on HMS *Emperor* entering Singapore 1945.

Inset pictures: top - Grumman Hellcat in FAA colours at Chino, Ca in 2007, Bottom - Hellcats Mk I of 1840 Squadron, RNAS Eglinton Northern Ireland.

# EDITORIAL

## A MESSAGE FROM THE CHAIRMAN

*I make no apology for repeating a phrase that has been much used recently, "We live in unprecedented times". We also have no idea when things might return to normal, nor indeed what the new normal will look like.*

*Our Lecture Evenings are in abeyance until FAAM is able to reopen and allow groups to use the Conference Room, and any visits that we had planned are inevitably cancelled until new arrangements can be made.*

*On behalf of the Council, I offer my sincerest apologies for this disruption but we have no alternatives but to follow the Government's guidelines until the Covid-19 emergency is overcome. As soon as we can, we will resume our normal activities once the lockdown is over. Please keep an eye on our website which we will update when there is something valid to say.*

*I trust that you are all staying safe and well and that you will be ready and able to resume whatever engagement you have with the Society when these unprecedented times are over.*

*Graham Mottram*

# LETTERS TO THE EDITOR

**Dear Malcolm**

I was sad to hear from Derek Poulton in prevoius numbers of Jabberwock that Cyril Meek had died following his Sea Venom launch and crash into the sea in 1959 and thank you, Derek, for all your information. I am sure it is the same Cyril Meek. We used to talk the Venoms down onto the deck at night, or rather he did! I do not think he ever suspected that I used to bring a coconut on night watch ino the radar shack on the after end of the island with coconut milk mixed with rum. It made the time pass more quickly!

I was also indebted to Cyril on my 21st birthday whilst at anchor in Trincomalee for buying our small group of friends two bottles of champagne! Never having drunk it before, it when straight to my head. Next day, a Sunday, The coxswain of the Captain's motorboat, a petty officer whom I knew quite well, accused me of throwing an empty bottle at the motorboat as it passed below the quarterdeck on its way to the starboard after gangway. Somewhat taken aback, I asked if the captain was onboard at the time. Followed by a long silence, he replied no! I am not sure Percy Gick, even with his patience and sense of humour, would have tolerated being bombarded with empty champagne bottles by an acting sub lieutenant!

Finally, I do not think Percy Gick would have gone on to be the *Centaur's* Supply Officer as he was promoted later and became the Flag Officer Naval Flying Training (FONFT). A relative perhaps?

**Chris Howat**

●●●●●●●●●●●●●

**Dear Mr Editor,**

Thank you for producing once again a most enjoyable and varied issue of Jabberwock. Might I ask a question about the photograph of Jackie Moggridge sitting in a 'Spitfire', please? The cockpit canopy appears to be hinged on the right hand side, which is not expected for a Spitfire. Could it be instead an early P51 Mustang?

**Yours sincerely,**

**Robet Heath**

●●●●●●●●●●●●●

**Hello Malcolm**

Greetings from Canada! In the event that you may be looking for another picture gallery feature for

Jabberwock,I'm enclosing some photographs of 826 Squadron's re-birth in 1955. 826 was the first front line Gannet squadron of Fairey Gannet AS1s and the first to embark in HMS *Eagle*.

SOFFAAM's long time Council member the late Lr Cdr P H "Jan" Stuart RN was an observer on the Squadron and my Divisional Officer.

Thank you Malcolm for editing Jabberwock, always interesting and informative. A great magazine.

**Best regards,**

**Colin Musson**
**Ontario, Canada**
***Editor's note: See pages 20 and 21***

● ● ● ● ● ● ● ● ● ● ● ● ●

**Hello Malcolm**

Here's a great photo. Swordfish

found in Canada without an engine was adapted to take a Pratt & Whitney PT6 turbine!

The other two images were taken by my late father, Sub Lt. Frederick Websper, nicknamed "Lofty". These were with his wartime photograph

album, but I only found the negatives, so unfortunately I don't know the subjects' names. They would have been taken in Trinidad in 1944/45,

while he was based at Piarco Airfield, undergoing Observer training.

**Cheers**

**Simon Websper**
**Membership Secretary**

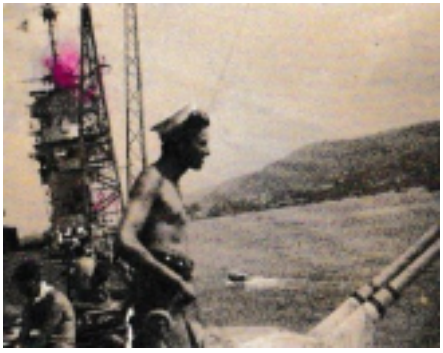
● ● ● ● ● ● ● ● ● ● ● ● ●

**Dear Malcolm,**

I don't know if you can help but I am trying to find the history of an Aircraft Carrier that was in Cape Town in the last year of WWII. My Father died last year and I have his uniform collar with a name which looks like H.M.S. Ahben inside.

***[We established that "HMS Ahben" was a misunderstanding and Pauline subsequently sent a follow-up letter enclosing numerous photographs]***

Thank you for your interest in my Dad's photos. There are enough to fill an album, as he seemed to think it was a wonderful holiday there. It was definitely Cape Town,



***Harry Barber looks out towards Cape Town from the deck of an (un-named) aircraft carrier***

he loved his time there until the end of the war when a flag went up and he was playing tennis and had to come back home! He

***Un-named figure (probably Harry,) in the cockpit of a Swordfish***

trained in Cornwall and was the youngest on board and was an aircraft engineer. His name was Harry Alfred Barber.

If you can find the name of the

***One of the "crashed planes".***

ship, I would like to know. He did tell me what the planes were, I don't remember but they weren't Spitfires.

I'm not sure if the crashed planes were in South Africa, but they were mixed in with the other photos.

**Best wishes,**

**Pauline Gander**

●●●●●●●●●●●●●

# MORE MINOR MYSTERIES

What is the identity of the aircraft carrier in which Harry Barber seems to have had an enjoyable time in Cape Town in 1945? (See the picture on page 7.) The island superstructure could be that of a Light Fleet carrier,but none of that class (*Colossus* class) was there, as all four had arrived in the Far East by then. *Majestic* class Light Fleet carriers did not enter service until after the War. It could perhaps be an escort carrier, but the guns in the right foreground are of a heavier calibre than the Oerlikons usually fitted to those ships. There also appears to be a "Jumbo" heavy crane astern of the island, not usually seen on escort carriers.

Pauline also asked the identity of the aircraft in which her father is depicted. We are on firmer gound here, as it is almost certainly a Grumman F6F Hellcat, supplied to the RN under lend-Lease. There appear to be four rocket rails outboard of the guns and we know that rocket-equipped aircraft were deployed to *Ruler* class carriers as well as the Fleet carriers deployed in the British Fleet (BPF).

Unfortunately, it is not clear that this picture is contemporaneous with the Cape Town picture, which would give us a clue as to the identity of the carrier. Readers are welcome to add suggestions!

# SNIPPETS FROM COUNCIL MEETINGS

**From the March Meeting:**

• *Introduction*

The Chairman welcomed the attendees. He mentioned that he had attended the memorial service in Westminster Abbey for Sir Donald Gosling, a most generous contributor to the Museum. He also mentioned the death of naval aviator Captain "Spiv" Leahy, who had been responsible for bringing the Buccaneer into service

• *The General Manager provided the following report:*

**Staffing:** The Museum has seen some changes to onsite staffing in recent months, with two new key posts being created. Dave Morris is also currently recruiting for a new full time 'Engineer'within his department, bringing much needed extra support and expertise to the collections team. FAAM will shortly advertise an 'Events Executive' role to help the Food and Beverage team.

**Events:** Tours to Cobham Hall continue to be popular and continue to sell well. Tickets are £15 and available now from the Museum website and Ticket Desk. The next confirmed dates 5/6 March 2020.

The Museum also welcomes Threshold Aero for the first time for an evening of photography on the Flight Deck, 1 April 2020. The well-known "Carrier Experience" exhibit in Hall 3 will be cleared of all its moveable museum furniture and replaced with Aero's Professional Auto White Balanced floodlighting, to bring the closest you'll get to night time photography of historic Royal Navy aircraft in an Aircraft Carrier scene. Tickets are available from https://www.threshold.aero. The start of the season marks a busy period for the Museum as we also host the annual Big Band event under Concorde on (20 June) and Paul Beaver for a Battle of Britain themed lecture in July. Please visit the Museum website at www.fleetairarm.com for more information unless otherwise stated.

**Ask the Archives:** The Museum has had a degree of success hosting 'Ask the Archive' type sessions within the galleries over the last year. Further feedback has seen us 'theme' future events around upcoming anniversaries etc. and also encourage members of the public to submit questions in advance. All *Ask the Archives* sessions are free with a valid Museum ticket (which includes SoFFAAM membership).

**Museum Opening Hours:** The Museum will commence summer hours this year from Wednesday 1 April.

• *The Visits Organiser gave the following report:*

Rosanne proposed various possible locations for a visit and the Council selected the Military Aviation Museum at Tangmere for a visit on 18 June. The National Air Traffic System (NATS) organization at Swanwick was noted as a possible site for a visit later in the year.

• *The Treasurer gave the following report:*

The Treasurer once again raised the issue of catering at talks nights. The Museum provided food for 80 people, leading to inevitable waste if fewer people attended. There was also the risk that some attendees would go hungry if there was a large turnout as in the recent talk. Marc agreed to discuss the matter with the Catering Manager.

• *Publicity and Recruitment:*

Chris Penney confirmed with Marc that the Society would be offered the use of a table in the FAAM marquee on Air Day. Marc said that the Air Station decided which would be the main entrance for visitors on the day; usually they use the FAAM gate.

• T*he Membership Secretary gave the following report:*

**Membership numbers** – Despite new memberships increasing almost threefold in the past quarter and currently running at just over one per week, deaths and non-renewals from September to January inclusive have reduced overall membership. Of the 17 new applications received since the December meeting: - 3 have been downloaded from the web-site - 8 are from 'Join' leaflets picked up in the FAAM - 3 came about via Facebook - 2 were sold by the Memsec to friends (another 2 pending) – easily done folks! - One was a new member referring a friend – to be encouraged! I have thanked him. Facebook continues to create awareness of SOFFAAM, now with almost 400 followers and is proving a very good means of message communication with both existing and potential members.

We are planning to introduce a new member referral reward scheme and, crucially, a big push for members to take up e-Jabberwock. The vast majority of new members still want a paper Jabberwock, but this, including printing, postage and stationery eats up almost £7 of the £12 membership fee, even before postage goes up again this month.

# MONTHLY TALKS REVIEW

***Summarised by Robert Heath***

**January 2020 TALK**

**"Protecting Our Nation's Interests" by the Royal Naval Presentation Team (Cdr M. Hammond, Sub Lt J. Stalley and L/Cpl Z. Weller, RM)**

On first reading the title to this talk I thought uh, oh, is this a euphemism for being press-ganged, inveigled into "Taking the shilling", or otherwise forcibly encouraged to be recruited into today's navy? Not a bit of it: it was one of the opening statements of the Team that their primary function is to inform people generally why we have the Royal Navy, what it does, and an indication of where it is going, i.e. its future, or direction of travel. Recruitment is still a key function of course.

Each member of the team introduced himself and I was tickled by L/Cpl Zac Weller asking if we knew what 'Marine' stood for? His answer: Muscles Are Required Intelligence Not Essential. A good opening to make sure we were all in listening mode, because the facts came thick and fast. Judging by the sheer number and type of questions at the end, the audience was definitely listening and wanted to know more. Why do we need a navy with a global reach? Britain has long been a trading nation and it continues to do so. 95% of our trade is transported by sea, because it is still the most cost-effective way to transport goods. 490m tonnes of goods are delivered by sea through our ports. In addition to this an incredible volume of data is transferred via underwater cables which also need protection. Although over 70% of the earth's surface is covered by water, there is no international

*Carrier Strike Capabiity. An F35 aircraft takes off from the Queen Elizabeth during the 2019 trials*

maritime police force, so the need to protect our trade and to ensure its continuity is as important now as it ever has been to our island nation. Collectively 350,000 jobs are associated with our sea trade and ports. So, in brief the RN protects the UK people, its economic security and its infrastructure. To demonstrate this we were given a short, very fast moving film full of 'big' action and 'big' sounds, showing all aspects of life in the RN: work; leisure; pleasure; home and overseas. In a few short minutes we were able to visualise very graphically how and where the RN operates. It was good.

Over the last 12 months there has been an awful lot going on throughout the world and it became very clear that the UK, in the shape of the RN, works closely with international partners to deliver operational effect, with major exercises on every continent, but in particular the North Atlantic, Baltic and the Black Sea. Overall, the UK spends 2% of its Gross Domestic Product (GDP) - income in simplistic terms - on defence, which represents around £50bn, of which £6.6bn is allocated to the RN. The 2% figure is a target set by the North Atlantic Treaty Organisation (NATO) for all its 29 member states. The UK is one of just seven countries to actually achieve that 2% target, which clearly indicates that the majority of members are leaning on the few to 'bail them out' if trouble occurs on their doorstep. By comparison with the £50bn defence budget, the UK spends £162bn on health and £92bn on education.

The RN comprises five fighting arms: the Surface Fleet; the Submarine Service; the Fleet Air Arm; the Royal Marines; and the Royal Fleet Auxiliary (RFA) - supply ships and tankers. This combination provides the flexibility to deliver three key capabilities:

- Continuous at Sea Deterrent;
- Carrier Strike Capability;
- Littoral Strike Capability (coastal/ shoreline).

In 2020 the UK has a naval presence just about everywhere on the globe, for example:

**Middle East** - we have five ships operating out of the UK Naval Support Facility in Bahrain.

**Asia-Pacific** - three ships work in conjunction with the Japanese navy and conduct exercises to enhance inter-operability.

**South Atlantic** - The RN Patrol Ship presence operates out of the Falkland Islands.

**North Atlantic** - at least two ships are on permanent station to assist with counter-narcotics operations, plus delivering special aid and personnel for disaster relief.

**Europe** - Patrol Boats operate out of Gibraltar and in the North Sea to ensure freedom of movement for submarines and for fishery protection.

Having said where the RN operates, what it actually does in each of these regions can be summed up as: Military; Constabulary; and Defence Diplomacy.

**Military**

Under this heading we were given examples, e.g., in 2019 the RN responded to 53 instances where Russian ships approached UK territorial waters. This sounds disconcerting, but in truth they were simply transiting in international waters, albeit with every antenna on the alert no doubt (which I like to believe the UK does keenly in similar circumstances). However, by having all of our units at a high state of readiness we are able to react effectively at short notice.

The Royal Marines meanwhile have teams visiting and training in all seven continents of the world, which as you can picture spans not only some delightful locations but also some pretty ghastly and extreme conditions from freezing -30C temperatures inside the Arctic Circle, to unrelenting scorching heat in the tropics.

While all this is going on visibly, out of sight deep down under the oceans of the world one of our strategic submarines is quietly carrying out its work. Over the last 50 years, there has not been a single day when a RN strategic missile submarine has not been at sea.

**Constabulary**

These operations are also world-wide in support of international law by protecting trade and countering drug, people and arms smuggling. Over the past year, the RN seized narcotics worth over £300 million. This is more than the volume seized by the UK Police and Border Force combined in the same period.

**Diplomacy**

Referred to as 'Soft Power', this provides support in humanitarian, regional security or natural disaster situations. The RN deploys sailors and marines across the globe, including the UK of course. A good example - as you are probably aware the RN Bomb Disposal teams provide 24 hour support in dealing with ordinance on behalf of civil authorities. Last year they took on 400 or so tasks requiring the making safe and removal of about 6,000 devices, making them one of the busiest units across the whole of Defence. One high profile event recently was when London City Airport had to be closed to enable the removal of a WW2 bomb.

As ever, patrol boats continue to provide fishery protection and counter-terrorism within our national waters. Meanwhile, the hydrographic fleet continues charting the world's oceans, inshore waters and the seabed to update data and charts continuously to ensure safe navigation. Following the Novichok poison attack in Salisbury a year or two ago, a specialised team of Royal Marines has been established now to

provide rapid reaction to chemical and nuclear warfare incidents.

But who are the people involved? To achieve all of the tasks identified above requires highly trained, dedicated and high performing individuals. The RN regards the people involved as the most important factor. The priority is not only to train and empower individuals, but having done so, to retain them. Lifestyles have changed over the years and the idea of sending a person off for several months, or even years, as in the past, is no longer sustainable. Maintaining the balance between home and family life and service overseas is now fully recognised and constantly under review. To attract new people the RN has 3,000 apprentices under training annually, with an option of 26 apprenticeship schemes to choose from.

What next?

To remain a world leading Navy, the RN has set out five priorities:

***The RN's Carrier Strike Force off the North American coast. Left to right: Type 45 HMS Dragon, Royal Fleet Auxiliary RFA Tideforce, HMS Queen Elizabeth, Type 23 HMS Northumberland. Embarked aircraft include Mk 4 ASW Merlin on the carrier and Lynx Wildcat on the Type 23.*** ***Photo: LPhot Kyle Heller***

- **North Atlantic** - investment to ensure the RN can fulfill its commitment to freedom of movement, particularly in the face of increasing pressure from Russia.
- **Carrier Strike** - a shift of emphasis for the service to be a Carrier Task Group Navy. The aviation element of this will usually be a joint force with the

RAF.

• **Future Commando Force** - a transformational step towards a greater littoral strike force using "new platforms".

*Artist's impression of the new Type 26, being built by BAE Systems and due to enter service in 2023*

• **Forward Presence** - having ships based in other areas where the UK has strategic interests.

• **Technology and Innovation** - developments in these areas are both vast and fast moving and the RN is positioning itself to ensure that it maintains a competitive edge.

Unmistakably the RN Presentation Team has a very positive attitude to the future of the RN. To list the future naval ships and their capabilities would be like turning the pages of a future issue of 'Jane's Fighting Ships'. The team described the Type 26, a replacement for the Type 23, due to enter service in 2023. Derivatives of this design are also being procured by the Australian and Canadian navies.

The question and answer session brought out many very down to earth points and concerns, some of which should be best answered by politicians. Meanwhile, it was interesting to learn that the Dutch and Danish wish to be part of the RN Carrier Task Force. Similarly the RN has a close working relationship with France, developed over many years and that the relationship will survive and continue, whatever comes out of the Brexit deals. As we were reminded in a brilliant talk by Adrian Orchard a couple of years ago, Commander Hammond confirmed that the US Marine Corps is keenly looking forward to cross-operating their F35 aircraft in our carriers.

Currently, the RN has around 75 commissioned ships. By comparison, China has 300, the USA 290 (but of greater tonnage than the Chinese). Within my lifespan (not living memory) Great Britain could claim to have the most powerful navy in the world, with around 290 ships. The advent of WW2 most definitely changed the status quo. Nothing was ever the same again. Sleeping giants were woken.

Thank you to the RN Presentation Team for a well illustrated and informative talk. Very thought provoking, particularly for our younger generation.

**February 2020 TALK**

**"Thunderchief, Lightning and a Mirage - Three Airforces at Mach 2" by Group Captain (Rtd) Jock Heron OBE - Trustee Aerospace Bristol**

Like a school boy, I like to think that we British are the bees-knees and well up to our competitors at most things, if not better even. The talk this evening was a good opportunity to hear first hand how prominent front line aircraft of three nations compared in the 1960s. To our speaker, Group Captain Jock Heron, he was simply doing a job - albeit, he recognised that this was a rare opportunity. Not only was it a most enviable task, but he was paid to do it - and I do not begrudge him one penny of my taxes. Jock gained these experiences and insights through exchange postings, some short, some longer, while serving in the RAF. The period covered: 1963-65 English Electric Lightning at RAF Binbrook; 1963-64, Dassault Mirage at Armee de l' air, Mont-de-Marsan, France; and 1965-67 the Republic F105 Thunderchief at Nellis Air Force Base, USA. In those balmy days, I remember the sun always shone and Jock reminded us that the aircraft flew on analogue instruments. Each aircraft had its own distinctive characteristics and each was fun to fly.

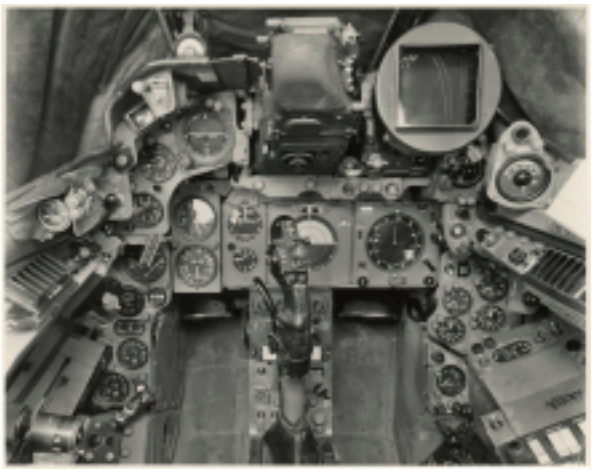
My inclination was to stop making notes at this point, because Jock then said that the Lightning was not really up to the job, whereas the Mirage was a very capable aircraft and the Thunderchief was a delight to fly. Good heavens. To set the scene,

*English Electric Lightning. This is a Mk6, with two Red Top infra-red homing missiles*

Jock gave a brief history of the origins of each type before describing his impressions of the aircraft itself. In the beginning, so to speak, at the close of WW2, jet aircraft were already in service with the RAF and the need to develop a supersonic fighter aircraft was high on the priority list of aircraft designer "Teddy" Petter. By 1945

Petter had moved from Westland Aircraft to English Electric and his proposal to the Ministry of Supply (as the authority was then known) resulted in the issue of Specification ER100 for a single seat research aircraft. From the outset, Petter's design envisaged a stacked twin-engine layout, with a highly swept wing to achieve Mach 2. However, the RAE (Royal Aircraft Establishment) was unsure about the very acute angle of sweep. As a result the Short SB5 research aircraft was commissioned to evaluate the low speed handling characteristics of various wing sweep angles and the positioning of the tailplane - whether to be set high on the top of the fin, or low on the fuselage. The outcome of the trials resulted in the wings ultimately being set at 69° sweep and the tailplane set below the level of the wings. The aircraft was known initially as the P1, then the P1A, which first flew in 1954 in the hands of Roland Beamont and shortly afterwards exceeded the speed of sound. It then evolved into the P1B, once the RR Avon re-heated engine became available. On the first flight of the P1B, Beamont exceeded Mach 1 and a few months later it went above Mach 2 - the first time for any British aircraft. Around this time also, the Ferranti radar was rather cleverly shoe-horned into the distinctive bullet nose cone within the air intake.

The Lightning's primary role was defence of the V bomber bases and it was given an all missile weapon system. This was happening around the time of the Duncan Sandys Defence Review and along with the Blackburn Buccaneer, it was one of the few projects to survive. However, hydraulic failures blighted its early days and caused many problems. Nevertheless, in 1962 it joined the Air Fighting Defence Squadron (AFDS) to demonstrate its range of operational capabilities. These extended from successfully intercepting a Spitfire (similar performance to P51 Mustangs which were still in service with some air forces), through to successfully intercepting a Lockheed U2 spy plane at 70,000ft in October 1962. In all, the AFDS judged the Lightning to



***"... the [Lightning's] cockpit was cramped and it was also cluttered."***

be super to fly, it accelerated easily to Mach 2 demonstrating its Quick Reaction Alert (QRA) capability, the hand controlled radar was good, as was the auto-pilot. Unfortunately, it also had poor range, no guns, poor manoeuvrability, poor reliability and it was hard to maintain. Jock kindly rubbed it in by saying that it also had poor external vision, the cockpit was cramped and it was also cluttered.

In due course the F6 was introduced with improved manoeuvrability, a greater fuel capacity and two 30mm cannon mounted in the front of the ventral fuel tank (yes, really). In the QRA role the Lightning could go from a cold start, be airborne in 2 minutes and achieve a high supersonic speed within 5 minutes, enabling it to easily intercept probing Russian aircraft at high altitude. Jock also told us that 330 Lightnings were built and 'most' crashed.

Meanwhile, in 1952 Dassault Aviation responded to a French Government specification for a light, all-weather interceptor. Jock was quick to point out that in his view, the French aircraft manufacturers spent more time assessing and thinking through a strategic requirement before putting pen to paper than did UK manufacturers. The Mirage I appeared in 1955 as a multi-role delta wing aircraft, but in its original specification it lacked power and substance and was soon superseded by the more 'beefy' Mirage 3 in 1956. Rather like the Lightning, it went through several iterations and emerged as the Mirage 3C in 1961. In 1963 Jock was sent on his detachment to Mont-de-Marsan and was very quickly taken for one flight in a two-seat Mirage 3B, before being sent off on his own to enable him to familiarise himself and evaluate its wide range of operational capabilities. These included ground attack, high altitude (50,000ft), high speed (Mach 2) flight, long range reconnaissance and gunnery.. The Mirage has been a very successful aircraft capable of a wide range of roles including nuclear bomber, all-weather strike and attack, plus a string of other capabilities. It was so successful that it was widely exported and Pakistan is still operating its Mirage aircraft, having first bought the type in 1961. Is it perfect? No, but it is good according to Jock. It is multi-role, has excellent handling, easy to maintain, has variants tailored to customer needs, and was built with development potential. Not so good is its limited range, cramped untidy cockpit, poor airfield performance, and poor slow-speed performance. Nonetheless, Jock does regard it as a jolly good all round aircraft.

Follow that. Well needless to say, Jock did, with a vivid description of the Republic F105 Thunderchief, or 'Thud' as it was otherwise known. Republic had a reputation for building big tough aircraft such as the P47 Thunderbolt during WW2. In 1946 the company dipped its toes into the world of jet fighters with the straight winged F84 Thunderjet, followed by the F84F Thunderstreak, which was essentially a swept wing evolution of its predecessor. The US Air Force had

Mach 1 capability, but in its search for Mach 2 performance, the F105 was born and first flew in 1955. It was redesigned many times over to reach the definitive F105D in 1959 and the F105F in 1964. In doing so, it reached a weight twice that of the Hawker Hunter. However, the Thunderchief was superb to fly. At very high speeds, the ailerons locked at 500kts and spoilers deployed to provide control and manoeuvrability above that. Even though single engined, it could carry 14,000lbs of bombs and missiles and achieve Mach 2 at high altitude. The bomb bay could hold either a nuclear weapon or a 380 gallon fuel tank for extra range.

It was in 1965 that Jock Heron went on an exchange to Nellis Air Force base, which at that time was quite a simple facility, not the enormous complex that it is now, complete with 10,500ft runways. Despite the 24,000lb thrust of the Thunderchief in reheat, one thing a pilot learned quickly was to use and retain energy in combat. Jock's abilities in this respect led to him becoming an instructor and gaining more than average familiarity with the aircraft. Its airframe was so slick that it actually gained speed when the reheat was turned off. In Jock's eyes, it was big, elegant, purposeful delight to fly and being American, naturally had a big cockpit. For in-flight refuelling, so important on operations in Vietnam, unusually it could use either the boom or the probe and drogue method. From Jock's perspective the Thunderchief was a very fine multi-role aircraft with good high speed performance, it could carry a heavy payload, had excellent handling and a logical cockpit layout. Its shortcomings included poor manoeuvrability, it was not at its best as a fighter due to the high wing loading, and due to moisture ingression its reliability was questionable and it gave maintenance problems in consequence. What is the origin of the nickname 'Thud'? As always there are a variety of possible answers, but one answer was 'that is the sound it made when it hit the ground'[1]. Jock quoted the figure of 780 built, half of which were lost over Vietnam.

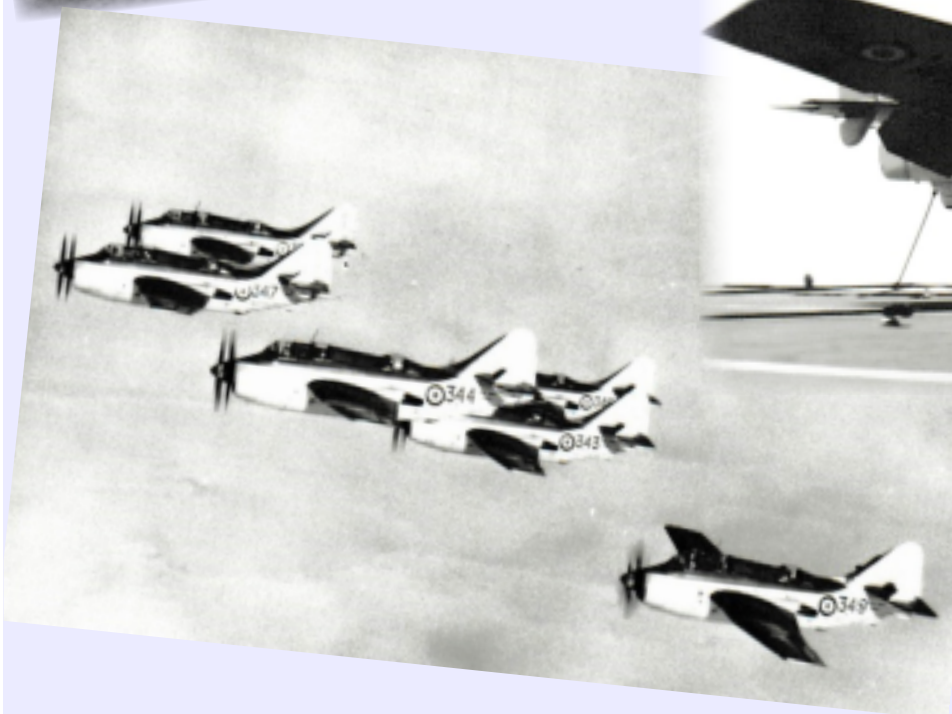
Apart from evaluating these different aircraft during his exchange programmes, Jock was very pleased and satisfied with evaluating the co-operation and trust between the nations at working level. On each occasion he was accepted unreservedly as a pilot, regardless of the fact that he was from outside of the country. It is at the political level that national competitiveness overrides the desire for co-operation and trust. What a splendid evening talk and it drew a full capacity 100+ audience. Well done Group Captain Jock Heron, and thank you. I hear that you have many more talks up your sleeve.

●●●●●●●●●●●●●

*1. Although Jack Froelich gave an alternative explanation, see p16 of Jabberwock 97*

# FAIREY GANNETS OF S

## Photographs by




Clock

January 1955: 826 S
(AS)1 aircraft arrivin
Demonstrating the
June 1955: On the
August 1955: The
4..
Another view of the s
Centre: Firs

# F 826 SQUADRON, 1955

*s by Colin Musson*



*lockwise from top left:*

*826 Squadron Gannet Anti-Submarine*
*rriving at Lee-on-Solent for the first time.*
*ng their unique wing-fold mechanism.*
*n their way to their first embarkation.*
*: Their parent carrier. Note the twin 4.5in gun turrets.*
*f the squadron on its way to HMS* Eagle.
*: First squadron deck landing.*

# THE ORIGINS OF THE HARRIER

**By Jim Humberstone**

The origins of the Harrier can be traced back to the Folland Gnat, designed as a lightweight fighter by the talented designer W E W "Teddy" Petter. He had been responsible for the design of the Canberra and, before that, the Westland Whirlwind and Welkin twin-engined fighters. In the 1950s, Petter believed that military aircraft were growing ever more heavy and expensive, a view shared by Stanley (later Sir Stanley) Hooker at Bristol Engines. The potential of the Gnat would only be realised if it could be powered by a lightweight engine and Hooker was certain that he could produce one capable of providing a thrust of 5,000 lb but weighing only 800 lb. Hooker was able to develop the initial concept with private venture (PV) funding, producing a neat and simple design that promised to meet the requirement. The potential of the Gnat and the Orpheus engine attracted the attention of Colonel Johnnie Driscoll USAF, head of the Mutual Weapons Development Program (MWDP) in Paris. MWDP was a US organisation set up to organise projects within NATO, one of whose projects was a competition to develop a lightweight fighter, initiated in 1953. There were three entrants to the competition (sadly the Gnat was not among them) and all three were designed around the Orpheus as their powerplant. The competition was won by the Fiat G91 in June 1955 and MWDP money ensured that Hooker had sufficient funding to bring the Orpheus design into production.

*The Folland Gnat, in the colours of the RAF's Aerobatic Team, the Red Arrows*

At the same time, plane makers and designers in the US and the UK were toying with the idea of making conventional fixed wing aircraft capable of vertical

take-off. Rolls Royce with their gantry-like “Flying Bedstead” and Short Bros with their dainty little SC1 were groping towards a solution, while in the United States the Ryan Vertijet had a short but spectacular development career. It fell to a French engineer, Michel Wibault, to point the way forward. His design was based on a Bristol Orion with shaft-driven compressors inside four rotatable nozzles in addition to a conventional jet efflux. This inspired Hooker to develop the lightweight Orpheus into the BS53 Pegasus with its familiar swivelling nozzles. So far, it was an engine without an airframe, but in his autobiography “Not much of an Engineer”, Hooker relates that the brilliant designer Sir Sydney Camm at Hawkers took a keen interest in the Pegasus development. He sent Hooker a brusque message, saying “When the devil are you coming to see me? Hooker replied “As soon as you like, but what is the subject?” He said “It’s the vertical take-off, I’ve got an aeroplane for your BE 53”.


***Hawker Siddeley P.1127 in flight at NASA Langley 1968***

The aeroplane was a sketch design of a V/STOL fighter, which with close collaboration between engine and airframe manufacturers emerged as the Hawker P1127, which first flew in December 1960. As ever with the very best of British designs, the manufacturers carried out early development work at their

own expense. Another aspect of Harrier development was the extent of US funding and encouragement through the MWDP, which contributed to an initial batch of prototypes in conjunction with the British and German governments, who formed a Tripartite Evaluation Squadron. This was equipped with a development of the P1127 with swept wing and a more powerful engine, known as the Kestrel.

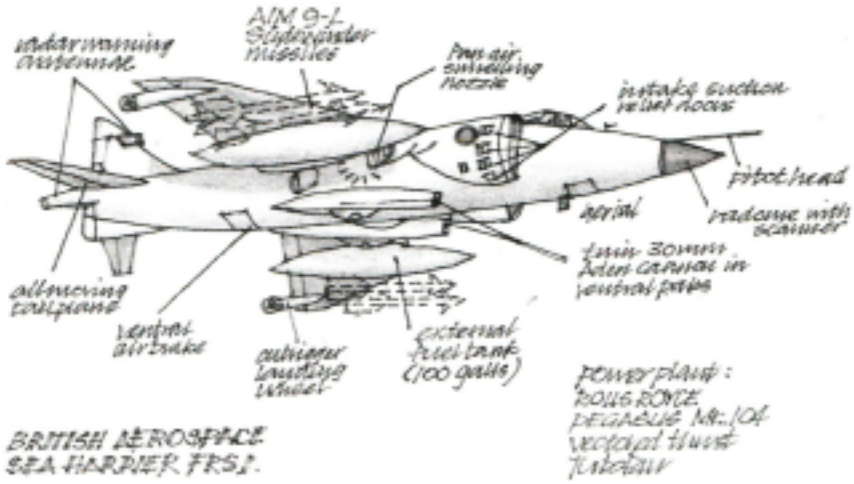
***Harrier GR1 in a typical Forward Operating Base.***
***Photo Jack Poelstra***

So far as naval aviation and the Fleet Air Arm were concerned, the next big step was a carrier landing. This was carried out on HMS *Ark Royal,* by Hawkers' redoubtable Test Pilot Bill Bedford, in early 1963. Early Harriers gave some spectacular demonstrations, often with an eye to sales prospects. Memorable among these was a VTO performance from HMS *Fearless* when moored off Greenwich in 1975.

The first production Harriers entered service with the RAF in 1969. These were the GR1 version, which equipped No. 1 Squadron at RAF Wittering. Participation in the Daily Mail Transatlantic Race in May 1969 fortuitously displayed the aircraft's capabilities to the US military on the other side of the Atlantic. The machine's spectacular performance already established, the Harrier's presence resulted in a lot of interest from the US Marine Corps leading to a substantial order. Sale of a British design to the Americans was an accolade rarely achieved by British plane-makers, a notable exception being the English Electric Canberra. As with that aircraft, this order for the US armed forces was followed by fruitful co-operation on further development of the type with an American manufacturer, in this case, McDonnell Douglas. This led to the development of over 100 examples of a modified and improved version of the Harrier, the AV8A, to equip the USMC.

Meanwhile the day of the large fixed wing embarked aircraft carrier, exemplified by HMS Ark Royal, was drawing to a close. With that in prospect and aware of the type's capabilities through

the RAF's experience, the Fleet Air Arm stepped in to secure their own version of the aircraft.




This move coincided with the development of three new so-called Through Deck Cruisers of the *Invincible* class, which it was known would provide a suitable platform for the VSTOL aircraft once in service. The primary purpose of these ships, however, was Anti-Submarine Warfare (ASW) and to this end they had been designed to have a very low underwater signature and use Sea King and (later) Merlin helicopters as their primary offensive ASW weapon. As a result, the space available to accommodate Sea Harriers with their aircrew and maintainers was exceedingly limited.

The first tranche of 24 navalised machines was ordered in 1975. This naval version was designated Sea Harrier FRS 1, which entered service in 1978 soon to be deployed operationally in the Falklands conflict. Meanwhile two-seater versions had been developed for both services and these were ordered in small quantities in its T2 and T4 versions for training purposes. As would have been expected with such an excellent design and concept, overseas navies notably Spain and India formed their own VSTOL squadrons. With operational experience gained on both sides of the Atlantic, an improved version was developed. This, the FRS 2 (later known as FA2) featured improved more versatile radar, a lengthened fuselage and increased Air-to-Air capability.

●●●●●●●●●●●●●

# MONTHLY TALKS PROGRAMME

**We greatly regret that monthly talks are suspended for the time being. We will attempt to keep you informed of a possible date when they will re-commence via our website at www.fleetairarmfriends.org.uk.**

***All the pictures on this page have appeared in recent issues of Jabberwock. Can you identify them all? answers in Jabberwock 100.***










# MEMBERSHIP

***Please note - Standing Order membership cards for May, June and July will be sent out at a later date, due to the current Covid-19 situation. As the museum is currently closed, this should not cause any issues (please note that receipt of a membership card does not confirm receipt of payment).***

***Welcome to the new Members who have joined us since the last magazine issue:***

| | |
|---|---|
| 3668 Mr J Warnes | Somerset |
| 3669 Mr M Wonnacott | Somerset |
| 3670 Mr J Bransgrove | West Sussex |
| 3671 Mr W Curry | North Somerset |
| 3672 Mr N Owen | Somerset |
| 3673 Mr A Roberts | Bristol |
| 3674 Mr T Macmahon | Wiltshire |
| 3675 Mr C Cripps | Berkshire |
| 3676 Mr D Humphrey | Somerset |
| 3677 Mr L Odgers | Australia |
| 3678 Mr R Colbeck | Oxfordshire |

**Total members: 979**
**Members who have made a Gift Aid declaration: 698**

**PAYMENT can be made by: PayPal, standing order; cheque or BACS.**
**Cheques to be made payable to SOFFAAM and sent to:**
**Membership Secretary, 22 Kings Yard, Bishops Lydeard, Taunton, Somerset TA4 3LE**

*Visit us on Facebook @SOFFAAM*

***Annual membership £12***
***Family membership (Up to two adults and three children) £32***
***(Children reaching the age of 16 are liable to pay adult membership fees.) 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. You will save the Society the cost of postage!***

# VISIT TO TANGMERE MILITARY AVIATION MUSEUM - 18 JUNE 2020


**At the time of producing this issue, it seems unlikely that this visit will go ahead. Keep an eye on our website at www.fleetairarmfriends.org.uk for further information**

## Jabberwock Magazine – Go Green!

Does your quarterly paper Jabberwock magazine end up in the paper recycling? Consider switching to an electronic version, via email? No more dog-eared copies taking up space…

You can retain every copy on your PC and read or print any section, whenever you feel the need to…

In money terms, the value to the Society is every two members switching to an electronic version is worth the cost of one new standard membership!

**Please, have a think. It would be greener.**

To switch, simply email soffaam.mem@gmail.com

# SUPERMARINE JETS AND HURSLEY PARK

**By Christopher Penney**

*Supermarine's wartime residence, Hursley Park, Hampshire*

Supermarine produced many famous aircraft, but the story of Hursley Park is less well known. This was the stately home where the bulk of Spitfire and Seafire design was carried out and from where local production was organised and managed. Forced early in the war to find a new headquarters, the Southampton-based manufacturer relocated staff to this rural wartime residence in the village of Hursley, Hampshire. Listen to any Spitfire air display commentary and you'll hear no mention of the place, yet the design projects undertaken at Hursley from 1944 onwards proved pivotal to the Navy's future acquisition of carrier-based jets. This year marks the 80th Anniversary of the Battle of Britain's only VC being won over Southampton Water and of Southampton's blitz. The City's targeting during the battle necessitated Vickers Supermarine evacuating their water-front premises, which had served its seaplane business since 1913. The office move to the large country estate of the Cooper family at Hursley Park outside Winchester had been ordered in late 1940 by Lord Beaverbrook. Following successive Luftwaffe raids on its Woolston Spitfire manufacturing works, including one on September 15th - the future Battle of Britain Day - Supermarine was instructed to disperse to protect production. R J Mitchell, the fighter's designer, had died before his creation entered RAF service; so it was up to new Chief Designer Joseph Smith to carry on the critical work

Mitchell had begun. Under his direction the design team and associated departments set up shop at Hursley Park on 7 December 1940 where they remained until 1958.

Last December a one-off charity fundraiser on behalf of the Mayor of Winchester saw an exhibition held at Hursley to remember all those Supermariners, including my father, who had been employed there. Organised by local historian David Key, it told the story of the company's work in the 1940s and 1950s. The material displayed took over the ground floor of the now privately owned Hursley House where Joe Smith and colleagues were resident throughout most of the Second World War. The abundant grounds used by Supermarine had seen military use before. During the Great War the British 8th Division marched out of the estate embarking at Southampton Docks for France, while in the build up to D-Day wooded areas housed British army units. It was testimony to Mitchell's genius that the Spitfire was the only British fighter produced throughout the whole of the War. From this evolved the Seafire, yet Hursley's vital role in the Supermarine story remains largely ignored, especially the post War years. VJ Day didn't see the end of Supermarine fighter designs. A new era, the jet age, had dawned and the race was on to dominate


FIRST CARRIER LANDING OF SWEPT-BACK JET

Another Vickers first

On November 9th, the Supermarine 510 touched down on the flight deck of H.M.S. ILLUSTRIOUS — the first fully-swept-back jet fighter in the world to land on an aircraft carrier. Thus Vickers achieve yet another first . . . and give a glimpse of an era to come.

***Record Breaker - how Vickers corporate magazine reported on the Type 510's successful first carrier trial in 1950.***

this new market, with several British manufacturers keen to exploit the opportunities presented by both domestic consumption and renewed foreign interest. Rivals included Gloster, de Havilland and Hawker. It was against this background that my father Rex Penney was to join Supermarine at Hursley as an apprentice from Imperial College together with his great friend Edward Osborne.

As the Cold War heated up the Hursley-designed Type 398 Attacker was set to become the Royal Navy's first frontline jet. The pressures from the military to rush jets into service were compounded by a lack of knowledge in this new technology. In order that Supermarine could enter the jet era quickly, Chief Designer Joe Smith married the wings of the planned piston-engined Spitfire successor, the Spiteful, to a new fuselage built around the Rolls-Royce Nene turbojet. Although designed from a wartime RAF jet requirement, the Air Force rejected the Attacker and Supermarine turned instead to the Admiralty for future orders. Known by the designation Type 392, the first Supermarine single jet-engined pre-production experimental prototype E.10/44 (serial TS409) was built on site at Hursley Park in the Experimental Hangar. Jet engine runs were performed outside and these became legendary in the village as the hangar was adjacent to the primary school. It's said that during such test runs lessons had to be halted because of the noise. Today the ground where the hangar stood until the 1970s is unusable because of residual contamination.

After its preliminary ground trials, the aircraft was transported by road 50 miles to the Aeroplane and Armament Experimental Establishment (A&AEE) Boscombe Down near Salisbury in Wiltshire, where it first flew on 27 July 1946 with company Test Pilot Jeffrey Quill at the controls. Jet test flying was something completely new and the history of post war British test flying is a story in itself. Much has been made of preserving some of the groundbreaking prototype designs, but museums in the UK have generally failed to give the same prominence to the pilots themselves, many of whom became household names in the 1950s, with several losing their life in the process.

The type name Attacker was given to the first naval modified aircraft TS413, which was taken into the air for the first time by Chief Test Pilot Lt Commander Mike Lithgow on 17 June 1947. Attacker test flying was performed at Supermarine's nearby Chilbolton airfield but also briefly at High Post aerodrome. Finally after simulated carrier flight training, Lithgow landed TS413 on HMS *Illustrious* on October 28,

1947 - the same carrier that had launched the Taranto strike force of Swordfish biplanes only seven years earlier. To monitor in-flight data, Supermarine installed a flight recorder in the test aircraft. This was to provide valuable information for the teams working at Hursley as they grappled with the new phenomena of subsonic jet performance. The Attacker's naval career is outside the scope of this article; suffice to say that at RNAS Ford it led the way for the Fleet Air Arm in carrier jet operations.

***The Type 525 prototype making its road trip from Hursley through Winchester in 1954. No attempt appears to have been made to keep the new jet secret during its journey.***

To meet the requirements of RAF Specification E41/46, Hursley produced its next design by putting swept wings on the Attacker. The prototype was known as the Type 510, of which the development aircraft (VV106) featured the Attacker's tail wheel. Subsequently it was modified to naval specification. After a first flight at Chilbolton and trials at Farnborough VV106 made a first deck landing, again on *Illustrious*, on 8 November 1950 - the same year the Korean War broke out. It reached nearly 700mph in trials and was subsequently developed with a tricycle (nose wheel) undercarriage into the Type 541. The type was accepted into the RAF as the Swift and briefly captured the world speed record in 1953. David Lean's 1950s film "The Sound Barrier" filmed at Chilbolton featured a Swift flown by Supermarine Test Pilot David Morgan, with whom my father was later to become good friends. The new fighter's performance wasn't what the RAF hoped and the type was relegated to the tactical reconnaissance role in which it later excelled. Subsequently a prototype Super Swift, the Type 545, was built at Hursley but it never flew.

In 1954 my father joined Supermarine having done holiday

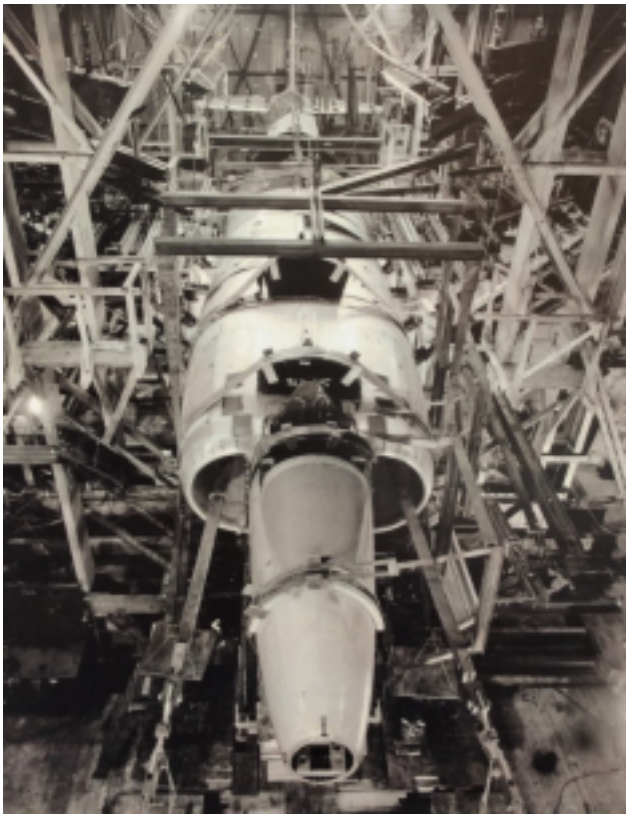
study jobs at both Handley Page's Cricklewood factory and Swedish manufacture Saab at their Linkoping facility. Saab was producing the J29 fighter and Lansen multi role aircraft and the experience provided a good background for the work he was later to encounter at Hursley. First came an induction period at South Marston, Swindon where Swifts were being completed on the company assembly line, although not (as he noted) at the impressive rates the Swedes were producing their J29s.

***Hursley designed and built, one of the Type 544 N.113 prototypes sits on the flightline at Boscombe Down in 1956.***

The main reason for this was the dispersed airframe production. This wartime legacy comprised five manufacturing sites across three counties (e.g., the Swift wings were made at a workshop in Eastleigh) before the Swindon works performed the final assembly. Initially he started in the drawing office at Hursley Park in early 1955. A month was spent in the flight test office at Chilbolton airfield and with this came his first exposure to the test pilot world. Work included studying flight test recordings and reports. Hursley had a structural test department in which he also worked briefly and its facilities included a small pressurised stratospheric chamber and a test rig for the fuel system that was to be incorporated in the future Type 544 design. The final part of his apprenticeship was a two month stay in the Stress Office, then accommodated in Hursley House's ballroom. In those days slide rules were used for mathematical calculations although Hursley had a Shorts analogue computer, one of the first in Britain. He was put to work on trying to formulate a computer program for carrier catapult launching of the nose wheeled Type 544 - the future Scimitar.

The 544 was designed to meet specification N113, which had developed from a naval staff requirement for a twin-engined fighter to operate from a carrier. As with the Swift it was to be powered by Rolls-Royce Avons. This project led to the Hursley-built experimental Type 508. Unusual in having a 'butterfly' V tail, it undertook carrier trials from HMS *Eagle* in 1952. This in turn led to the design of the Type

525, a Scimitar lookalike, which flew in 1954 and was demonstrated at Farnborough that year. The pre-production Type 544 prototypes WT854, WT859 and WW134, were constructed at Hursley and returning after Christmas in January 1956 my father found the local main road closed and traffic diverted. This was to allow the move of the first N.113 WT854 to Boscombe Down, where it was taken into the air for the first time by Mike Lithgow on January 19, 1956.



***Scimitar Stress Testing in the Experimental Hangar***

Like the earlier Attacker prototype, the N.113 had a flight recorder and during 1956-57 Hursley's considerable aerodynamics department tackled the many new phenomena evidenced during its flight test phase. Separate teams studied stability and control, performance, fluid motion and wind tunnel modification testing. Working on the first floor of Hursley House, my father's time was devoted to the study of inertia cross-coupling, aileron and rudder input and design. Studying the flight traces with the time histories of such variables as roll rate, angle of bank, aileron and rudder deflection; aileron effectiveness could be measured and analysed. Unlike the Attacker the N.113 was found to be supersonic in a dive and reports from the US showed that in subsonic flight control effectiveness increased steadily with Mach number up to about Mach 0.8 then decreased rapidly at transonic speeds. Aileron reversal had been

reported in some cases. Partly as a result of these studies, the aircraft became the Navy's first jet to have duplicated fully-powered-controls.

Throughout 1956 N.113 test pilot David Morgan was a regular visitor to Hursley's aerodynamics office. Having studied flight analysis of the N.113 from the reams of paper traces produced my father knew his work and recalled there was something different about him from Supermarine's other pilots. He was by far the foremost personality among the test pilots and possibly the most skilful; his Farnborough demonstration flying for the company became legendary. 1956 was also the year that Vickers gave notice that Supermarine would vacate Hursley and move to South Marston, where they would build the Scimitar (as the N.113 became known). In April 1956 WT854 made its first deck landing on *Ark Royal* and in due course 700X Squadron was formed to work up the new naval fighter. Test flying of production Scimitars was undertaken by company pilots at South Marston. The Scimitar was the first Fleet Air Arm jet capable of carrying a nuclear weapon. In all Hursley worked on more than a dozen future variants of the Scimitar. These included a version to rival the Sea Vixen and the Type 576, a truly supersonic interceptor.

One tragedy in the life of the Supermarine Scimitar must be recalled here as it left an emotional scar on the Hursley workforce. In 1958 HMS *Victorious* had completed her post war refit for jet operations and on what should have been a proud day for the senior service put to sea to receive its first squadron of Scimitars. In full view of the invited press the boss of 803 Squadron, Commander J D Russell, successfully landed on, only for the arrester wire to break. Everyone watched helpless as the Scimitar continued its landing roll over the bow of the ship, the sinking aircraft taking the pilot to his death. Staff at Hursley were horrified (the haunting newsreel footage can still be viewed on YouTube) and subsequently Supermarine undertook a redesign of the Scimitar's cockpit layout.

All the while numerous research projects were being carried out at Hursley including tackling the problems of airframe strength and transonic flight. Hursley also undertook some of the Swept Wing Advisory Committee studies on the wing shape eventually adopted for Concorde. Of more importance in 1955 the design team evolved a proposal for a canard, twin engined interceptor known as the Supermarine Type 559. Although the notorious 1957 defence review effectively axed military aircraft programmes in favour of missile procurement the concept was taken forward under requirement GOR339 for a low level bomber to replace the RAF's first jet bomber, the English Electric Canberra. A team led by George Henson and later Mike

Salisbury undertook the supersonic Type 571 project - Hursley's last. This team were subsequently absorbed into the multi role Tactical Strike Reconnaissance aircraft project which (as the BAC TSR2) finally flew in 1964. The last all-British bomber, TSR2 would later run up against enormous naval opposition but that is a separate story!

In 1958 the considerable aeronautical presence at Hursley wound up and with it the historic name of Supermarine, so associated with the area, passed into history. In the space of little over a decade designs initiated at the site had progressed from the piston-engined Spitfire to near supersonic jets, while the Company had built numerous jet prototypes at the premises. The Scimitar proved the end of the line for the famous company. In 1976 Hampshire celebrated the Spitfire's first flight and events were held around Southampton, including at Hursley House. The main anniversary was held at Hamble airfield beside the Solent. Our family was invited and I met famed test pilot David Morgan for the first time. Three Spitfires flew in for the Supermarine reunion on what was a bright cold March day. As part of this a Seafire was on display, which presumably had been brought by road from FAAM. This was appropriate as Hamble was where the first Spitfires had been converted to Seafires by Air Service Training Ltd in 1942. It was also where Folland Aircraft converted the unsuccessful floatplane Spitfires and the base for ATA No.15 Ferry Pool comprising all female pilots.

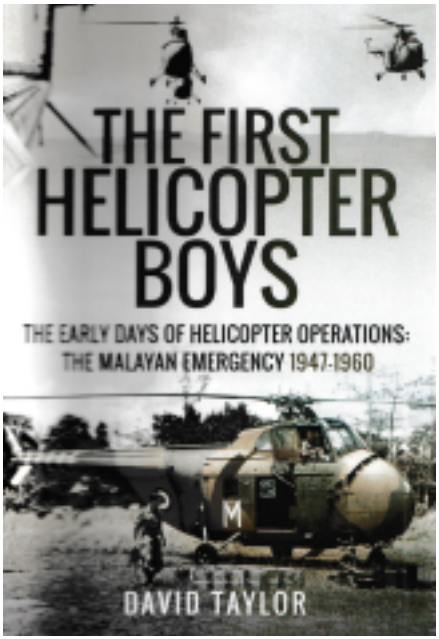
My father transferred to Vickers-Armstrongs at Weybridge where he would go on to head up the development of a terrain avoidance system for TSR2. Here he met old Hursley colleagues working on the programme as well as his friend David Morgan who was set to fly the jet. Chief Test Pilot Mike Lithgow RN was killed test flying the BAC One-Eleven airliner prototype from Wisley in 1963 when it entered a deep stall and crashed at Chicklade village just off the A303. The crash took the lives of all seven crew and a memorial today marks the spot. The life of David Morgan was celebrated in 2004 at Yeovilton's Fleet Air Arm Memorial Church. One example of a Hursley Park designed and built experimental aircraft was preserved: the groundbreaking Type 510 naval Swift prototype The VV106 is held in the FAAM reserve collection in Cobham Hall. This jet holds the distinction of having been the world's first swept-wing design to operate from an aircraft carrier.

***Hursley Park historian David Key would like to hear from anyone connected with the Supermarine story in Hampshire or the Hursley office. He can be reached via the website supermariners.wordpress.com***

*All photos via David Key*

# BOOK REVIEWS

**By Malcolm Smith**




The author, David Taylor, served ten years in the RAF, of which three years were as a crewman in Malaya. In an introductory note, he remarks that, although there have been many books about operations during the Indonesian Confrontation (1963 to 1966) there is nothing of a similar nature about the Malayan Emergency, which dates from the end of WW2 to 1960.

In 1990, Taylor was a founding member of the Helicopter Operations (Malayan Emergency) Association. This organisation included surviving RN and RAF people who flew and supported helicopters during the Emergency. Many of the anecdotes in this fascinating book are drawn from the pages of the Association's Newsletter *Lift-Off*.

In the prologue, Taylor briefly sketches in the activities of the insurgent Malayan Communist Party, whose objective was to establish a communist-controlled republic in Malaya, using methods of intimidation, demonstration, murder and sabotage. Supporting ground forces in suppressing these activities, RAF and RN helicopter units provided transportation of troops and equipment, also a valuable reconnaissance role. The author focuses primarily on the activities of the Sycamores, Dragonflies and Whirlwind (licence-built Sikorsky S55s) of 155, 110 and 194 Squadrons, although the naval contribution from the S55s of 848 Squadron receives some coverage.

Taylor first covers early rotary-wing experience at the end of the War, briefly describing the primitive Sikorsky R4 Hoverfly. These machines provided useful initial experience, but their capability was very limited and they were withdrawn from service in 1950. The RN had already placed orders for all the production run of Westland-built S51 Dragonflies, but the worsening situation in Malaya and the urgent

ned for helicopter support there led to part of the RN order being transferred to the RAF. Both services found rotary-wing flying challenging: “definitiely pioneering work”, comments Taylor, “with pilots really pushing the limits.”

The author provides preliminary information on the characteristics of helicopter flight, air transport and psychological warfare, but the majority of the book is taken up with ”Tales from the Horse’s Mouth” - lively and sometimes hair-raising stories of active operations. “The arrival in Malaya of 848 Naval Air Squadron, with their Sikorsky S55s marked the point when the helicopter really began to make its presence felt” says Taylor. Sub Lt (later Rear Admiral) Rob Woodard’s account describes the steep learning curve experienced by the operators in the jungle environment, also the abrupt contrast between these conditions and those in their parent aircraft carrier.

*“In early troop lifting operations,”* Woodard wrote, “t*he RAF often sent along observers. For the RN these days were particularly galling, as too many events were reported in UK papers is being carried out by the RAF. The Admiralty, instead of insisting on a correction, chose the “Silent Service” approach. In 1952, the Times and the Telegraph did at least give 848 publicity for their forthcoming role in Malaya as follows: “848 Naval Air Squadron successfully pioneered the parachuting of troops from a helicopter on 25 September 1953.” The SAS were the volunteers! The pilot was Lt Commander ‘Ben’ Breese DFC, flying a Sikorsky S 55”.*

However, It would be misleading to stress inter-service rivalry, as the author praises the usual spirit of co-operation. The many anecdotes are hugely varied, sometimes repetitive and probably excessive for the general reader, but there is no denying the spirit that emerges from these pages, a spirit of determination to make the best of the relatively limited equipment and to adapt to the decidedly hostile environment.

The book is profusely illustrated, with many previously-unpublished pictures that support the writers’ descriptions. A final chapter is entitled “Goodbye Emergency, Hello Confrontation”, which gives a brief overview of the undeclared war waged by Indonesia against the newly-formed Independent Federation of Malaysia. There is an Appendix that lists in some detail the individual histories of most of the RAF aircraft deployed to the theatre, also a rather slim index.

This was a largely-forgotten conflict, during which rotary-wing aircraft matured from being of mostly novelty value to the essential adjunct to a huge variety of military operations. David Taylor has provided a splendid insight into those far-off times.

***The First Helicopter Boys, by David Taylor. Published 2019 by Air World. ISBN 978 1 52675 413 4***


This is an extraordinary book, which does exactlly as the title promises. The author, Jean-Denis Lepage, was born in France and has worked for some time in the UK. He has set out to list and illustrate every aircraft produced by the major powers intended to have (and in most cases, actually possessing) torpedo-carrying capability throughout the period 1900 to 1950.

As well as describing the aircraft, he summarises the development of the air-launched torpedo and naval warfare tactics. He also identifies great names in aviation and interesting historical and technical facts.

The book proceeds in exemplary fashion, with a series of short chapters describing the history of this branch of naval warfare in strict chronological sequence. Each chapter opens with a brief factual introduction before introducing the aircraft under the headings of their country of manufacture.

The chapter on the First World War opens with a description of the development of torpedo bombers, concluding that the idea was tactically sound, but that the aircraft engines of the period were not powerful enough to give the required lifting capability.. "Torpedo bombers' sporadic actions", he concludes "were without real influence on the outcome of the war at sea." Nevertheless, this did not stop the combatant nations developing various candidates for the role. He identifies and illustrates every one of these, and it is worth mentioning that he has also drawn admirably detailed pictures of each one. The only really successful torpedo aircraft of the conflict (of any nation) was the Short 164, which famously played a minor role at the Battle of Jutland. Candidate aircraft from the other warring nations are illustrated but hardly any of them progressed beyond the prototype stage.

The author devotes a considerable section to the interwar years, during which a huge variety of designs were initiated in Britain, the United States, Italy, Japan and several other nations. Notable British aircraft that actually entered service included the Blackburn Shark, Baffin and Ripon with the superb Fairey Swordfish coming into service in 1936 and remaining in production to the end of the War. Other less well-known aircraft in this section include the

record-breaking Curtiss CS and several promising Japanese designs.

Lepage divides the descriptions of Second World War aircraft into two sections, covering the war in Europe and subsequently in Asia and the Pacific. He first identifies several promising French designs, none of which made the progression into active service. In the section on British equipment, he comments that torpedo aircraft played a significant role in the Battle of the Atlantic. As well as the Swordfish, he describes the development of the Bristol Blenheim into the sturdy torpedo-capable Beaufort. Other British designs are described, although they were little used in the torpedo role.

In the section on Italy, Lepage comments that the Italians had developed one of the better air-dropped torpedoes of the time. Discussing German aircraft, he comments that their torpedo bombers "played an unglamorous and unpublicised part in the War".

Describing the Pacific theatre, the author opens with a brief description of Australian developments, includine the ill-starred Commonwealth Aircraft Corporation (CAC) Woomera. The author's drawing depicts a handsome rwin-engined machine, but the tirst prototype was completely destroyed in a mid-air explosion, while a re-designed successor crashed on an early test flight, ending further development.

As might be expected, there is a substantial section on United States aircraft, in which the Grumman Avenger and the Douglas Dauntless are covered in detail. The latter aircraft, says Lepage "played an important role in the Pacific... delivering the fatal blows to the Japanese carriers at the Battle of Midway." Other US aircraft covered include the Douglas Devastator, the Vultee Vengeance and the Martin Mariner.

Another substantial section covers Japanese wartime developments. "Japan evolved the best way for massed torpedo bombers to achieve a hit," comments Lepage, a strategy that was to prove stunningly successful at Pearl Harbor in 1941.

The concluding section in this remarkable book is entitled "Torpedo Bombers after 1945". The opening chapter covers the decline of the type and their replacement by long-range maritime patrol aircraft and anti-submarine helicopters. The Short Sturgeon, Westland Wyvern and the Fairey Gannet all appear in this chapter. Post war developments in other nations are also covered.

The book includes an extensive bibliography and a comprehensive index. This short review hardly does justice to the sheer inclusivity of Lepage's work and artistry. This volume is a must-have for anybody with a general interest in naval aviation.

***Torpedo Bombers 1900-1950, by Jean-Denis Lepage. Published by Pen and Sword Aviation. ISBN 978 1 52676 347 1***