The Fleet Air Arm and British Naval Operations over Norway and Sweden: Part I — Autumn of 1940

Peter Hore

In this two-part article, the author sets out briefly the origins and history of the British Navy's Fleet Air Arm. It describes how in 1940 British aircraft invaded Swedish airspace and three planes from the aircraft carrier *HMS Furious* crash-landed in Sweden. In the second part, the author will outline British plans for a much larger and deliberate violation of Swedish neutrality in order to prevent the export of iron ore to Nazi Germany.

The Fleet Air Arm

As widely known, the Fleet Air Arm (FAA) is an entirely separate organisation to the Royal Air Force and it celebrated its centenary in 2009. In 1909, the Royal Navy had commissioned Airship No. 1, and the Navy, then the world's leading sea power, quickly led the world in the development of air power,

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including the use of heavier-than-air machines. The Navy had warmly embraced the concept of naval aviation, sending the first pilots for training in 1910, and developments in naval air were surprisingly quick. The first official flight was by Lieutenant Charles Samson from the forecastle of the stationary *HMS Africa* on 10 January 1912.[1] Samson, in a Short biplane, used 100 ft of specially constructed decking: within a year, runs of only 25 ft were needed if the ship *HMS London* was underway. The first dedicated aircraft carrier, the appropriately named *HMS Hermes*, was converted to carry seaplanes in the same year. By January 1914, when the Naval Wing of the Royal Flying Corps had 135 aircraft of more than a score of types, anti-submarine tactics were being tested, and in 1915, the Naval Wing was rechristened the Royal Naval Air Service or RNAS. The RNAS officers were recruited from the Navy; they used naval-style ranks and wore naval uniform but with bastardised naval cap badges on which eagles replaced anchors. The RNAS had several roles: the air defence of London, photoreconnaissance, gunnery spotting, anti-submarine warfare and attacks on airship and airplane bases, and many squadrons were deployed on the Western Front in support of the Allied armies, all roles in which they distinguished themselves.

The concept of strategic bombing was also developed by the Royal Navy, the first raid being by a single naval aircraft on airship sheds at Düsseldorf on 22 September and again on 3 October 1914, when the pilot, Lieutenant Reggie Marix, force-landed and had to return to his base on a borrowed bicycle.[2] However, the Cuxhaven Raid on Christmas Day 1914 stands out as a seminal event in naval and air warfare when aircraft, surface ships and submarines were combined in what may be called the first carrier battle group. The technology was relatively new since the aircraft were two years old, the submarines ten and the destroyers scarcely twenty. The objective was, first, the airship sheds and then shipping in the Schillig Roads. The aircraft were towed into position on sleds towed behind the destroyers. Seven aircraft were launched successfully, but as they crossed the German coast, they encountered dense fog, which made the location of targets nigh impossible. However, in the Schillig Roads were seven German battleships and three battlecruisers, and more cruisers and destroyers, which took alarm and weighed anchor so hurriedly that the battle cruiser *Von der Tann* fouled another cruiser and both were severely damaged.

The aircraft fared rather badly on their return, suffering as they often did at this stage of their development as fighting machines from fuel shortages, oil leaks and mechanical failure, and only two returned to their parent ships. The others dropped short into the sea and their crew rescued by waiting submarines. One aircraft and crew were briefly interned in Holland. The results of the raid were meagre, but, in the words of the official historian, "the experience was as valuable as it was encouraging". The fact that British forces had been able to operate with impunity so close to the German coast was a victory for British morale, and the raid was a precedent for the raids and battles that were to come in the Second World War.[3]

By 1916, an independent bombing wing of the RNAS was stationed in France to conduct strategic bombing deep into Germany against targets, such as steelworks, munitions factories, chemical works and, of course, Zeppelin bases. By 1917, the Royal Navy had built the world's first recognisable aircraft carrier, and by early 1918, the RNAS was the largest air force in the world with 67,000 officers and men, 2,949 aircraft, 103 airships and 126 air stations. However, on April Fool's Day (1 April) 1918, the RNAS, which had performed so gallantly and devised many innovative operations and techniques during the war, was amalgamated with the British Army's Royal Flying Corps to become the Royal Air Force or RAF. A severe and most deleterious effect was the loss of nearly every experienced aviator in the Royal Navy to the RAF, which seriously impinged on the Navy's readiness for the next war.

RAF units serving with the fleet were given the ungainly titles of Air Force contingents, which in 1924 were rechristened the Fleet Air Arm, and naval officers flying with the RAF were forced to hold dual rank in the RAF, which was not always in kilter. The Navy was not to regain full control of its own aircraft until 1939; a decision reluctantly taken after much lobbying and threats to resign by Admiral Chatfield.[4] Meanwhile, the development of aircraft for the Navy was neglected in the interwar years. For example, though the British could claim to have been the first to experiment with the tactic of dive-bombing, the RAF was the only major force not to develop a dedicated dive-bomber, and the Navy's ambition to acquire such an aircraft was thwarted by the RAF. The German and the Swedish air forces were ahead of the RAF in the development of a fully automatic dive-bombing sight.[5]

FAA Skuas attack the German Königsberg *in Bergen harbour, 10 April 1940 (picture courtesy of John Bell).*

The Skua and the Roc

Nevertheless, one of the aircraft which was brought into service onboard the Navy's carriers was the Blackburn Skua,[6] a low-wing monoplane dive-bomber with a distinctive greenhouse canopy for its pilot and observer, as air navigators were called in the FAA.[7] The Skua, specified in 1934, was the first all-metal aircraft for the Navy, and the first aircraft to have flaps (useful both in dive-bombing and landing-on at sea), retractable landing gear, and a variable-pitch propeller. A version with a rear-mounted turret, the Roc, was supposed to double as a fighter. The first prototypes flew in early 1937, and 190 aircraft were ordered for the fleet. The first production aircraft flew in August 1938.

The Skua was compromised by its size and lack of power. By comparison, the Messerschmitt 109 was nearly a third faster at sea level (290 mph against the Skua's 225 mph), but it carried a large payload, either a hefty 500 lb bomb or a combination of 250 lb, 40 lb and 20 lb bombs, and had a long range and endurance. In the hands of the FAA, the Skua was also surprisingly effective. The first kill by any British aircraft during the Second World War was a Dornier 18 flying boat shot down over the North Sea on 26 September 1939 by three Skuas of 803 Naval Air Squadron (NAS), flying from the aircraft carrier *HMS Ark Royal*. Then on 10 April 1940, Skuas of 800 and 803 NASs, flying from the Orkney Islands, sank the German cruiser *Königsberg* whilst moored in Bergen, the first major warship to be sunk in war by air attack.

However, on 13 June 1940, when fifteen Skuas attempted to bomb the German battleship *Scharnhorst* anchored at Trondheim, eight were shot down and the crews killed or taken prisoner. The Skua was withdrawn from front-line service in 1941 and replaced by the Fairey Barracuda[8] and successive makes of American aircraft.

The 'Stringbag'

The Fairey Swordfish,[9] often referred to as "vintage", "obsolete" or "antiquated", was a contemporary of the Skua.[10] Based on a private-venture design by Fairey for an aircraft to observe the fall of shot of the fleet's battleships, other duties were assigned to it under its Air Ministry specification. In fact, the Swordfish became known as the 'Stringbag', not for the struts and wires which held it together, but by reference to string shopping bags, which could assume any shape and hold any object. The Swordfish first flew in 1934 and began front-line service in 1936. Eventually, some 2 391 Swordfish were built for the British, Canadian and Dutch navies, and even for the RAF, and it remained in service throughout the war.

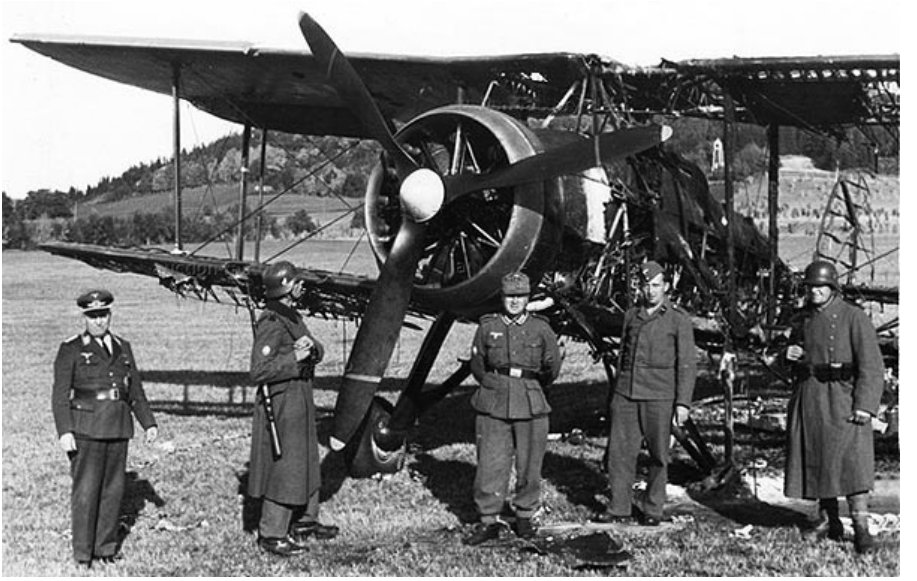
Swordfish aircraft achieved some spectacular successes. One Swordfish floatplane from the battleship *HMS Warspite* sank the German submarine *U-64* by dive-bombing during the battle for Narvik in April 1940. At Taranto in November 1940, a score of Swordfish inflicted more damage on the Italian fleet than the entire British Grand Fleet had achieved against the Ger-

man High Seas Fleet at Jutland in 1916, and Swordfish aircraft crippled the German battleship *Bismarck* in May 1941. The Swordfish began life as a fleet attack aircraft, but was adapted for anti-submarine warfare and using rocket-assisted take-off. It was successfully flown from small escort carriers. One of its great merits was its low stalling speed, and in high winds, its speed over the deck during landing was minimal, and with an extra internal fuel tank could remain airborne for over five hours. However, it was with these aircraft, the Skua and the Swordfish, that the Royal Navy and its FAA resumed operations in 1939, and with the same degree of aggression and initiative as it had left off in 1918. One of the few references to missions over Norway and Sweden is in Ralph Wegmann's *Brittiska nödlandare 1940–1945*.[11]

Operation DT – September 1940

Of interest to the reader in Sweden, a series of little-known operations were flown against German targets in Norway. In the autumn of 1940, the elderly aircraft carrier *Furious* had embarked an air group consisting of nine Swordfish of 816 and 825 NASs and nine Skuas of 801 NAS. *Furious'* task was to strike shipping in Norwegian waters and the seaplane base at Tromsø, though "[n]o noteworthy results were obtained and several aircraft were lost."[12] One of these, called DT, was flown against both Tromsø and Trondheim on 22 September by twelve Swordfish and six Skuas. Little was achieved due to bad weather and losses were high. 801 NAS lost one Skua (interned in Sweden); 816 NAS lost two Swordfish and 825 NAS lost three Swordfish (one interned in Sweden). The weather was so bad that the aircraft never found Trondheim, and several, as set out below, could not find *Furious* on their attempted return.

Two Swordfish, L7656 and L9756, landed in a cornfield on the island of Leka on the Norwegian coast. There were no Germans on the island and the crew of six, after setting their aircraft on fire, were helped by the islanders to man a fishing boat and set sail for Shetland. After two days' rough weather, the engine failed and they drifted towards the coast of Norway. Their landfall was made at Halten lighthouse, where they were captured by some Kriegsmarine sailors based there. All six of them spent the rest of the war as prisoners of war at camps in Poland and Germany. They were Sub Lieutenant Hugh N.



Swordfish L9731, after being set alight at Ekne by her crew, with German troops in the foreground (picture courtesy of Tore Greiner Eggan).

C. Hearn,[13] observer Sub Lieutenant H. Alan Cheatham and torpedo air gunner C. D. Jago of Swordfish L7656,[14] and Sub Lieutenant Henry Deterding,[15] observer Sub Lieutenant Douglas A. Poynter[16] and torpedo air gunner A. G. H. W. Brown of Swordfish L9756.

Swordfish L9731 of 816 NAS made a forced landing in heavy fog in a field at Ekne, north of Vaernes airfield, near Trondheimsfjorden; the crew removed some instruments and set the aircraft alight, but they were captured by German occupying forces and made prisoners of war. They were Sub Lieutenant M. A. J. J. Hanrahan, Midshipman A. O. Atkins and Naval Airman A. R. Purchase.

Unfortunately, Lieutenant John Read, Sub Lieutenant Gordon Alfred Busby and Leading Naval Airman Leslie Arthur Webber of 816 NAS were lost when their Swordfish L2745 crashed into the sea after failing to locate the aircraft carrier.

Swordfish L2860, side number G5F, of 825 NAS was part of the attack on shipping at Trondheim, but shortly after take-off neither it nor its pilot,

Swordfish G5F upended in a Swedish lake.

Sub-Lt. R. L. R. Morgan; observer, Sub-Lt. M. A. MacLeod-Rees, and the New Zealander air gunner, Leading Naval Airman B. L. Laing, were seen again by *Furious*.[17] The crew were listed as missing feared drowned, but were subsequently reported interned in Sweden, their aircraft having crash-landed and overturned in Krycktjärn, a lake in Jämtland.

Skua L2942 of 801 NAS had also taken off from *Furious* for the attack on Trondheim but was last seen entering low cloud off the Norwegian coast. The crew were Sub Lieutenant Bernard Frank Wigginton[18] and Naval Airman 1st Class Kenneth R. King.

The tactics for the mission were to fly in formation just below the cloud base until they sighted land and then

A close-up of G5F (pictures courtesy of John-Erik Johansson).

climb through the cloud until they were over the target. When L2942 broke through the cloud, there were no other aircraft to be seen, so they continued to Trondheim, dropped their bomb and turned westwards. Failing to find the carrier or the destroyer which was supposed to mark their route, and with insufficient fuel to reach the Orkneys, Wigginton reversed course to the east. He overflew the mountains into Sweden, where he "made [a] pretty smooth landing with the dive-brakes down, on a river, and neither of [them] was seriously injured." The river was Faxälven, near Ramsele. King recalled that the dinghy would not release, but a small boat was rowed up to them by two Swedes, into which he stepped without getting his feet wet.[19] For some weeks, they too were listed as missing feared drowned until they were reported as having been interned in Sweden.

The well-dressed naval aviator in 1940, Wigginton (l), and King (r) (author's collection).

Wigginton, who had already been awarded in June 1940 the Distinguished Service Cross for "daring and resource during the conduct of hazardous and successful operations by the Fleet Air Arm on the Coast of Norway", was exchanged and repatriated later that year. He returned to Norway in 1944, when he was mentioned in despatches for "undaunted courage, skill and determination in carrying out daring attacks on the German battleship *Tirpitz*" during

(Author's collection).

Operation Tungsten.[20] He retired at the end of the war as an Acting Temporary Lieutenant-Commander (Air), Royal Naval Volunteer Reserve.

King was repatriated in September 1941, when he was sent to Yarmouth, Nova Scotia, to serve as a telegraphist air gunner instructor at the Royal Canadian Air Force for the duration of the war. He was discharged from the Royal Navy in June 1950.[21]

Operation DU – October 1940

On 13 October, *Furious* left Scapa Flow for the Norwegian waters again, this time to strike against Tromsø. Operation DU was similar to the earlier Operation DT. In the early hours of 16 October, two waves, each of six Swordfish and three Skuas, were launched against German targets in Norway. Operation DU was also the first attempt by Swordfish to carry out a torpedo attack by night against a ship in Tromsø harbour. Other targets were oil tanks at Ramfjordnes and the seaplane base at Skattøra. All the Swordfish returned safely, as did five of the six Skuas.

Savage's flying logbook with the entry "landed at Gallivare & interned".

Skua L2902, the sixth aircraft, did not return. L2902 was also differently manned. While most of the other aircraft were manned by reservists and by a mixture of officers and ratings, this aircraft alone was manned by two regular officers who had learned their skills before the war. The pilot was Lieutenant Edward Graham Savage[22] and his observer was Lieutenant Harry Stanley 'Homer' Hayes. They were the senior pilot and the senior observer, respectively, of 801 NAS. Hayes had already been mentioned in despatches "for good services in an aerial attack on oil tanks in Norway", and he would be awarded the Distinguished Service Cross in the 1941 New Year's Honours List "for outstanding zeal, patience and cheerfulness, and for never failing to set an example of wholehearted devotion to duty, without which the high tradition of the Royal Navy could not have been upheld."

Skua L2902 was hit by flak over Tromsø, and Savage, doubting whether he could reach the carrier in poor visibility, headed inland, nursing his aircraft over the mountains into Sweden and crossing the border in a southerly direction. Over Malmberget, the aircraft was fired on by Swedish anti-aircraft batteries. Then circling low over Gällivare as dawn broke, he searched for a landing place. To avoid being hit by more Swedish artillery, he flew up a road below the rooftops of the houses. Savage recalled: "When the flak opened up on us, it came from somewhere slightly abaft the starboard beam and making use of our experience with the Germans, we went flat on the deck and up the main road just below the house-tops, my main objective being to get something solid between me and the line of sight of the gunners. You will also

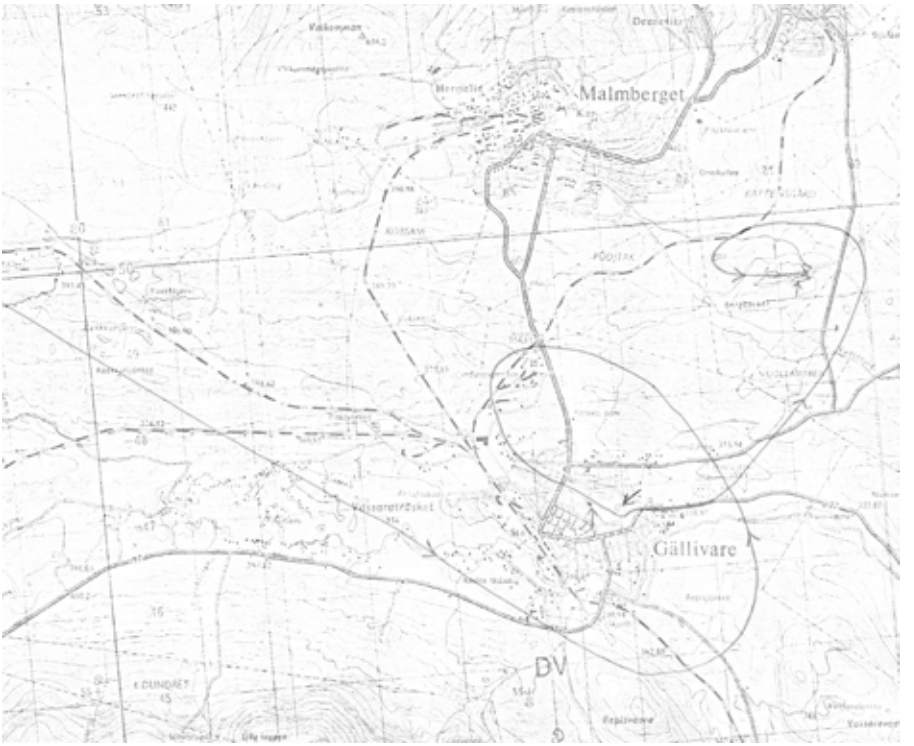
remember that as soon as we got near the houses, they ceased firing for fear of hitting their own buildings."[23]

Low on fuel, Savage flew circuits over Gällivare, the furthest east that any of these naval strays reached, looking for a likely landing site. Savage was worried about his fuel because the ". . . fuel supply which had been ten gallons in the circuit and by now was down to about five. The Skua fairly gobbled up the petrol in fine pitch and maximum revs." To a skilled naval pilot, the smooth surface of a lake was as good as a landing ground and so, Savage thought, he chose Nuottajärvi: "With about four gallons on the gauge, we climbed to about 1 500 feet so that if the motor cut at any time, we would have a reasonable chance of dropping down on to the lake", and so after a flight of more than four hours, he ditched his Skua on the water.

As the aircraft slowly sank, he and Hayes threw documents and their secret bomb-aiming sight into the water, climbed into their dinghy and rowed off to meet a Swedish army patrol which was waiting on the shore. Thirty-five years later, Savage recalled: "You will remember that in the last few moments before she sank, I took the reflector sight out of its bracket and threw it as far away from the aircraft as I could manage, being uncertain at the time as to its secret category. Later you will remember Captain Erikson [?] of the Swedish Navy took me and I believe you also out to lunch and tried to pump us on the question of our dive bombing sight. The Swedes had apparently been anxious to get hold of this and he certainly told me at the time that they had raised the aircraft and found the sight bracket empty. He also stated that someone had seen me remove the sight and throw it away. As far as I remember, he stated that they had looked diligently for it, but had failed to recover it."[24]

Comparing the chart which Savage drew from memory in the 1970s with a modern road map, it is likely that the road which Savage flew up was Luleåvägen. However, the lake he had chosen was not Nuottajärvi but it seems Savage had turned back over Vassaraträsk and ditched there. By his own account: "At this time I was far too busy dodging roofs and wrestling with the undercarriage and flap levers to pay much attention to our direction, but I do remember that the houses suddenly ceased and I turned away across country."

He added: "I do not believe the lake is very deep. You will recall that we tried out one of our marine distress signals and amused ourselves by lobbing the stars towards the boat in which the Swedes were coming out to get us. When



The arrowed line NW to SE with two loops is the track Savage thought he had flown.

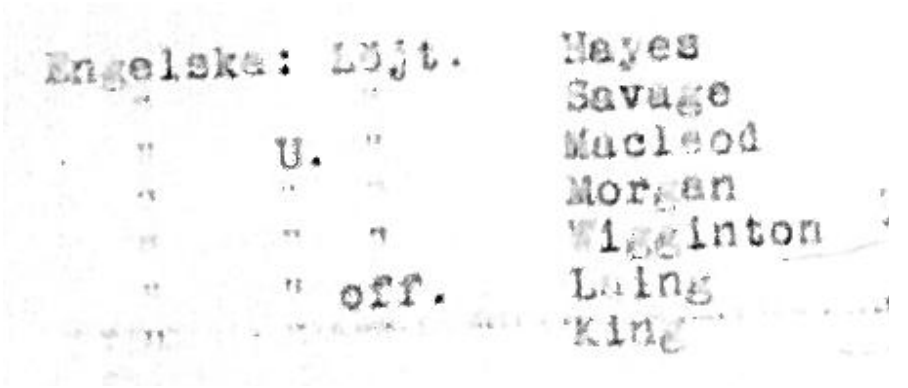
they started levelling their rifles at us, we thought that discretion was the better part of valour and threw the marine distress signal in the water, where of course it continued to burn. I am sure that it reached the bottom sometime before it went out and I certainly got the impression that the depth was not much more than 30 ft. or 40 ft."[25]

Certainly the initial Swedish reports gave the resting place of Skua L2902 as the lake to the west of Gällivare: "Planet landade på Vassaraträsk (vid Gällivare) kl 0901 . . . Observationsbok och kikare tillvaratagna. Officerarna hoppade i en gummibåt och mötte den utsända patrullen."[26]

Later, Skua L2902 was salvaged from Vassaraträsk and was put into storage at the Swedish airbase at Frösön, and in 1947, it was used for target practice.

Savage and Hayes were unhurt and they were escorted first by train to Stockholm. Savage was amazed by the city "with its streets ablaze with lights

and full of happy people going their carefree way". Only a fortnight before, he had walked from Piccadilly in London to Euston Station during the blackout while London was being bombed. Eventually, he was sent to Främby for internment, where whatever mistakes subsequent researchers have made in the



spellings of their names, at least the Swedish authorities got these ones right:

The internees were well treated. Wigginton and King, for example, spent their first night in Sweden in the parsonage at Ramsele, and then spent several days at the Grand Hotel in Östersund, though King was embarrassed that he was still wearing his blue boiler suit and seaman's jersey. At Främby, the FAA officers were messed together with other internees but were accommodated as a national group. The rating aircrew were separated from their officers, but they had no complaints when their living conditions were inspected by Major C. J. T. Lundberg on 14 November 1940. Savage, we know, visited Stockholm and was taken to lunch by a Captain Erikson [?] of the Royal Swedish Navy, though Erikson's kindness may have had an ulterior motive.[27] However, at the end of November 1940, the British naval attaché, Captain Henry Denham, asked for Savage and his officer companions to be exchanged. The ratings, Laing and King, had to wait until 1941 for their exchange.

Anyway, Savage had tired of the social opportunities in Sweden ("Officerarna sakna sysselsättning," wrote Lundberg) and welcomed a prisoner exchange, which enabled him to travel to the British lines via Finland, Russia, Turkey and Syria. In Syria, he caught diphtheria and was hospitalised for several months in

BRITISH LEGATION,
STOCKHOLM.

28th. November 1940

Dear Count Bernadotte,

With reference to our telephone conversation yesterday 27th, I now send you the names of British air personnel we would like to have released. They are as follows:-

Lieutenant E. G. Savage.
Lieutenant H. S. Hayes.
Sub-Lieutenant B. F. Wigginton.
Sub-Lieutenant I. H. MacLeod Rees.
Sub-Lieutenant R. L. R. Morgan.

I understand that representation is is being made to Soviet Authorities for necessary visa facilities to enable these officers to cross U. S. S. R.

Yours sincerely,

Nazareth, Palestine, but in June 1941, he surprised his messmates by walking onboard *Furious* in Gibraltar. He was awarded the Distinguished Service Cross for his accomplishments on Operation DU.[28] There would be other operations over Norway in 1940, and the ability of British naval aircraft to reach Sweden had adverted British planners to the possibilities of yet more targets in Scandinavia.

(Continuation: in part II of this article, Captain Hore studies Operation Paul, the Royal Navy's plan for an attack on Luleå in neutral Sweden. Regarding the present article, the author is grateful to reviewers in Britain and Sweden who have contributed their comments.)

Sammanfattning

Under andra världskriget angrep Royal Navy och dess Fleet Air Arm (FAA) flera gånger tyska mål i Norge. Dessa flygplan baserades i Orkneyöarna eller på hangarfartyg offshore. Deras huvudsyfte var att stoppa export av svensk järnmalm genom de norska lederna till foder åt den nazistiska krigsmaskinen. RAF flög också, i mycket större antal, över Norge, och flera hundra flygplan förlorades eller skadade och tvingade att landa i Sverige. Bara tre av de flygplan som kraschlandat i Sverige tillhörde ännu FAA. I den första delen av den tvådelade artikeln undersöker Captain Peter Hore verksamheten rörande de tre militära luftfartyg och de sju marina flygkaptener som var internerade i Sverige och han undersöker därefter deras öde under hemtransporten. I en andra del kommer Captain Hore att undersöka vad som skulle ha hänt om operationen Paul, Royal Navys plan för en attack mot Luleå i neutrala Sverige, hade ägt rum.

Notes

[1]Samson (1883–1931) entered the Royal Navy in 1898 and saw action in Somaliland, 1903–04, and the Persian Gulf, 1909–10. He learned to fly in 1911 and carried out the first seaplane experiments, the first cross-country night flights and made the first ascent from the deck of a man-of-war while underway in 1912. He commanded the seaplane tender HMS *Ben My Chree*, was promoted Wing-Captain, RNAS, in 1918 and was made Group Captain, RAF, in 1919. He retired as Air Commodore C. R. Samson, CMG, DSO,* AFC, in 1929.

[2]Peter Hore, *The Habit of Victory* (London, Sidgwick and Jackson, 2005) p. 289; and R. D. Layman, *The Cuxhaven Raid: the World's First Carrier Air Strike* (London, Conway, 1985) p. 29. Marix (1889–1966) also transferred to the RAF when it was founded in 1918 and retired in 1945 as Air Vice-Marshal R. L. G. Marix, CBE, DSO.

[3]For a balanced view of the development of British naval aviation in these early years, see R. D. Layman, *Naval Aviation in the First World War: its Impact and Influence* (London, Chatham, 1996).

[4]Admiral of the Fleet Lord (Alfred) Chatfield (1873–1967): Flag-Captain to Admiral Sir David Beatty in HMS *Lion* at the battles of Heligoland, 1914; Dogger Bank, 1915, and Jutland, 1916; Flag-Captain and Fleet Gunnery Officer to Beatty as Commander in Chief, Grand Fleet, 1917–19; and First Sea Lord, 1933–38. Better known to Swedish readers for his claim in *The Navy and Defence* (London, Heinemann, 1942) p. 153 that it was a Swedish naval officer who gave him vital wartime intelligence about the failure of British shells at Jutland.

[5]Erik Wilkenson, *Dive Bombing: a Theoretical Study* (Norrköping, 1947) quoted in Peter C Smith *Skua! The Royal Navy's Dive Bomber* (Barnsley, 2006) p. 21.

[6]The Blackburn Aeroplane & Motor Company was founded in 1914 at Brough in East Yorkshire, with Robert Blackburn having built his first aircraft in 1908.

[7]The National Archives (formerly PRO) AIR 2/607 – Design branch specification No 027/34: fighter dive bomber.

[8]TNA (formerly PRO) AIR 2/2080 – Baracuda [*sic*] Torpedo bomber reconnaissance aeroplane: specification S24/37 for a naval torpedo- and dive-bomber which resulted in the Fairey Barracuda in 1940.

[9]The Fairey Aviation Company Limited based at Hayes, London, and Heaton Chapel, Manchester, was founded in 1915 by Richard Fairey and designed a number of important military aircraft, including the Swordfish, Firefly fighter and Gannet anti-submarine aircraft. Fairey's first production aircraft (1917) was the Fairey Campania seaplane.

[10]TNA AIR 2/839 – Fleet spotter reconnaissance aircraft replacement for Fairey 3F: type requirements: specification S9/30, which emerged as Air Ministry Specification S15/33; and AIR 10/2086 – The Swordfish Aeroplane (Torpedo-Spotting-Reconnaissance Land, Ship or Float Seaplane). Fairey proposed a reconnaissance aircraft or 'spotter', the Air Ministry added torpedo and bomber roles, hence the early designation of TSR or Torpedo Spotter Reconnaissance.

[11]The 1997 edition of Ralph Wegmann, *Brittiska nödlandare 1940–1945* (Nässjö, Air Historic Research, 2008) was translated by Bo Eidfeldt as *Making for Sweden: part 1 The RAF 1939 to 1945* (London, Crecy Publishing, 2004), and is in error because, amongst

the many RAF aircraft which diverted to Sweden during the Second World War, there were three aircraft of the FAA. The 2008 edition has not been translated.
[12]J D Brown, *Carrier Operations in World War II* (London, Seaforth, 2009) pp. 16-17
[13]In July 1985, Hugh Hearn visited Leka again and met some of the people who had helped him.
[14]Rating aircrew were drawn from the fleet and were either naval airmen (NA) or more-skilled torpedo air gunners (TAGs).
[15]The son of Sir Henri Deterding, shipping and oil magnate, head of Royal Dutch Petroleum and of Shell Transport and Trading.
[16]Poynter would take part in the 'Great Escape' from Stalagluft III on the night of 24–25 March 1944. He was recaptured but was not one of the many murdered by the Gestapo.
[17]Some records erroneously put Laing in Swordfish L9731, which crashed in Norway.
[18]Wrongly spelled 'Wigginson' (with 's') in Wegmann.
[19]Peter C Smith, *Skua! The Royal Navy's Dive Bomber* (Barnsley, Pen & Sword, 2006) pp. 184, 188-189.
[20]Operation Tungsten was a series of attacks on the German battleship *Tirpitz* by the FAA in Altenfjord in April 1944. *Tirpitz* needed extensive repairs and was put out of action for several months.
[21]And at the time of writing (2011) was a hale 90-year-old living in Canada.
[22]Wrongly given as 'E Graham' in Wegmann, a mistake repeated in other sources. He was, in fact, Edward Graham Savage, and he was the pilot, not the navigator.
[23]In an exchange of letters in the mid-1970s, Savage and Hayes contemplated going back to find their Skua, but neither man was certain as to which lake they had landed in. Copies of these letters and Savage's annotated chart have been deposited with the Swedish Military Archives (Krigsarkivet) in Stockholm.
[24]Letter, Savage to Hayes, 22 January 1975.
[25]Letter, Savage to Hayes, 7 March 1975.
[26]Krigsarkivet Dnr 422-2011-974.
[27]Op cit.
[28]Obituary, *The Daily Telegraph* 31 May 2011. In October 1941, Savage was given command of 809 Naval Air Squadron, flying the two-man Fairey Fulmar fighter from the carrier *Victorious*. After winter operations in the Arctic, *Victorious* was part of the escort for Operation Pedestal, a vital convoy regarded as a last chance to relieve Malta. Despite bomb damage to *Victorious* on 12 August, and fierce attacks by the German Fliegerkorps X, Savage's squadron shot down two enemy aircraft, but lost three of its sixteen Fulmars. Five merchant ships arrived in Malta, thus lifting the siege of the island. Savage was awarded the Distinguished Service Order "for bravery and dauntless resolution in the face of relentless attacks by day and night from enemy aircraft."