NMRN | FLEET AIR ARM MUSEUM SERVICE NARRATIVE









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THE NATIONAL MUSEUM ROYAL NAVY

Fleet Air Arm Museum ~ Service Narrative

THE FLEET AIR ARM MUSEUM tells the story of British naval aviation from its earliest incarnations to the present day – its triumphs and failures, its ingenuity and innovation, its impact and importance.

NARRATIVE

In 1909, the Royal Navy (RN) ordered its first airship, the Mayfly. Two years later, four officers of the RN, one a Royal Marine, became the first Navy pilots using aircraft borrowed from a civilian, Frank McClean. They and those who quickly followed them were the pioneers tasked with developing the cutting-edge and embryonic concept of operating aircraft at sea. From that time on, British naval aviation has continued to demonstrate and enhance those qualities and capabilities that make it unique – the innovation, self-reliance and adaptability necessary for operating aircraft far from the supplies and support available at land-based air stations; the ability to navigate over vast expanses of open, featureless ocean to reach a target and return to a ship; the development of aircraft robust and durable enough to withstand the rigours and challenges of carrier operations.

Fleet Air Arm (FAA) personnel have demonstrated their ability to operate effectively in diverse roles and extreme conditions around the world. From the treacherous waters of the Battle of the Atlantic to the deserts of Iraq, from the jungles of Borneo to the unforgiving terrain of Afghanistan, from the perils of airborne search and rescue to the delivery of humanitarian aid, they have provided vital and powerful air support to troops on the ground, to those at sea and to those in need. These roles they will continue to fulfil in the uncharted territory of the 21st century.

The four themes of the Fleet Air Museum's Service Narrative overlap and interconnect with the narratives of the other museums in the NMRN Group.

People

The Fleet Air Arm Museum tells the story of the flying branch of the RN, its men and women and its technology. We explore the qualities needed for aircrews, flight deck crews and ground crews – courage, loyalty, determination and innovation – whilst recognising that some may have fallen short of these expectations. We trace the development of naval aviation from the embryonic days of early flight through times of war and peace to the highly skilled, manifestly professional, technologically sophisticated and

multi-functional service it is today. We explore the on-going threads of change and continuity in a service which has evolved over time to meet the growing demands placed on it in an uncertain and volatile world. We acknowledge, interrogate and celebrate the courage, sacrifice and resilience of the people who ensure the FAA's narrative is not simply one about the weaponry, the aircraft and the ships that carry them but also one that demonstrates the triumph of the human spirit over adversity and at its best.

Power

Aircraft carriers have come to symbolise a nation's power, prestige and standing in the world. We look at the way in which the aircraft carrier and the aircraft embarked in it have enabled Britain's RN not only to wage war but also enforce the peace. Since the first air raids launched from the the First World War, naval aviation has capitalised on the fact that it can quickly provide air power from sea-based platforms without the need for ground bases from which to operate. From protecting the convoys in World War 2 to providing a nuclear strike capability in the Cold War, from the re-taking of the Falkland Islands to supporting United Nations-led (UN) operations in Eastern Europe and around the world, naval aviation developed and evolved throughout the 20th century. It now continues to doso to meet the demands of the 21st century, maintaining its ability to project air power from the sea in defence of the UK's national interests and also, when called upon, in support of our allies.

Purpose

We tell the story of the origins of naval aviation, its development over time and its purpose today. We trace its evolution from the Royal Naval Air Service (RNAS) and its original 'Eyes in the Sky' role to the multi-role operations of naval aircraft flying from the sea and ashore. We examine the process by which aircraft developed from airships and flimsy, fabric covered machines to the high tech, multi-tasking, lethal pieces of hardware that they are today. We follow the way in which the concept of naval aviation led to the design of ships capable of operating aircraft at sea effectively and how this, in turn, saw the role of the capital ship in fleet actions passing from 'big-gun' battleships to the aircraft carrier. We also acknowledge the fact that although the FAA's role may primarily be one of demonstrating military strength and enforcing the rule of law, it is also often called upon to be the bringer of hope, comfort and assistance, carrying out humanitarian operations around the globe.

Progress

It took well over 2000 years to get from the invention of the wheelbarrow (around 6th century BC) to development of what would now be recognisable as a true automobile (late 19th century). In a little over 100 years, naval aviation has progressed from elementary aircraft flying at 50mph to the high tech F35 Lightening II stealth fighter-bombers with a top speed of 1200mph, from rudimentary airships to the multi-talented Merlin helicopters. In that same time frame, aircraft carriers have advanced from cross-channel steamers converted into seaplane carriers hoisting aircraft on and off to the new Queen Elizabeth class carriers bristling with state-of-the art systems and equipment. We trace those developments and the impact they have had on Britain's naval role around the world. We demonstrate the way in which the FAA continuously evolves so as to be a versatile, flexible force vital to effective RN operations with highly skilled personnel capable of fulfilling the many and varied demands made on it.

1 *The Royal Navy's new, state-of-the-art aircraft carrier, HMS Queen Elizabeth, 2017.*

2 *Mechanics, Riggers, Pilot and Observer, around 1916.*

3 *Landing Royal Marines in Sierra Leone, Operation Silkman, 2000.*

HISTORICAL NARRATIVE

This historical narrative outlines in more detail our story within different periods; we will bring it to life through our museum galleries, collections, historic aircraft, special exhibitions, programmes, publications and partnerships.

Our story will be told using our museum collections, aircraft, buildings and affiliate organisations.

This matrix is designed to be an active tool for internal use which will help inform the decisions we need to make to bring this story to life – from collecting strategy, to updates of permanent galleries, to more detailed site development plans. The matrix divides our subject matter into four periods and reflects the weighting we believe they should receive.

FIGURE 1 *Narrative Sections*

Time Period	Title	Characterisation
1900-1918	The Dawn of Air Warfare	Pioneers in Royal Navy Aviation
1919-1945	War from the Air Comes of Age	Rise of the Carrier
1945-1989	Delivering Strategic Military Power	Cold War Warriors
1990 onwards	A Changing World	Professionals

1 *Short S27: A replica of the aircraft type that made the first take-off from a Royal Navy ship.*

2 *The iconic Harrier saw service with the Fleet Air Arm for 30 years.*

3 *Flat top aircraft carriers created an operational airfield at sea, HMS Argus, 1918.*

The following sections sets out the key events/developments which have been identified as a focus within our four themes.

1900~1918 THE DAWN OF AIR WARFARE

People

In 1903 the Admiralty recognised the potential advantages of viewing the ground from the air and began investigating Cody's kites for use in reconnaissance. Their first airship, the Mayfly, was ordered in 1909 and two years later the RN's first four pilots trained using borrowed aircraft and Lt Charles Samson made the first take off from an RN ship. Growth of this new service was rapid. In 1914, the newly formed RNAS had about 700 men, 90 aircraft and no aircraft carriers. By 1918 it boasted some 55,000 men, 3,000 aircraft, 8 seaplane carriers and 3 aircraft carriers (the rest of the world had none).

The RNAS recruited men such as motor engineers, carpenters and coach builders, matching their existing skills to its needs. Men were attracted by good wages that included accommodation, food and uniform. Living conditions were basic although rations were always said to be better in the RN than the Army. Lower ranks were accommodated in huts and tents or in cramped quarters below deck and officers fared only marginally better. A good sense of humour was a major asset and there was great camaraderie. Naval aviation was in its infancy and flying early aircraft was a hazardous undertaking. The outstanding courage of men like Flt Sub-Lt Reginald Warneford, Sqn Cdr Richard Bell-Davies and Sqn Cdr Edwin Dunning raised naval aviation's profile; others such as Captain Murray Sueter and Commander Charles Samson championed its development and drove it forward.

RNAS personnel were innovative in military operations that went far beyond flying aircraft. The use of armoured cars was developed by the RNAS and Samson's 'Motor Bandits' pioneered air-ground operations in France and Belgium (1914-15). The British Armoured Car Expeditionary Force, commanded by Commander Oliver Locker-Lampson, were deployed to Russia to assist Britain's allies there (1916). Sueter took the armoured car concept a stage further by seeking to give the vehicles a cross-country capability by fitting caterpillar tracks, an idea which influenced the development of tanks.

Power

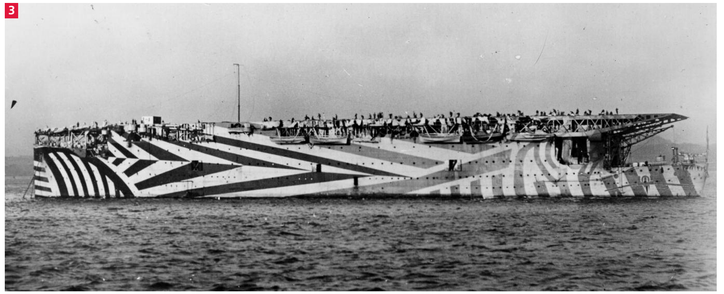
The ability to attack from the air enabled the fight to be taken to the enemy. Airborne reconnaissance gave commanders on the ground or in ships a clearer understanding of what was happening far behind enemy lines. Airships established the advantages of using aerial means to drop bombs and ordnance on targets and aircraft were quickly developed to do the same. Strikes against the Zeppelin sheds at Dusseldorf, Friedrichshafen and Cuxhaven were part of the first strategic bombing campaign and demonstrated the capability of naval aviation to attack the enemy in its own back yard. With new weaponry such as airborne torpedoes, surface shipping was now more vulnerable to attack from the air. As the outcome of the war became dangerously balanced, several different types of airship were developed and used for anti-submarine patrols in the Western Approaches and the English Channel. They helped protect convoys against attack by German U-boats and so ensure the flow of supplies vital to the war effort.

The RNAS was deployed in far flung theatres of war such as the Dardanelles, the Middle East and East Africa as well as around the British coast and on the Western Front. Over time, ships better equipped for operating aircraft at sea were developed reinforcing the fact that British naval aviation could operate effectively anywhere in the world and not only in European countries with relatively close proximity to home shores.

Purpose

The role of aircraft in the RN developed quickly from small beginnings. By the end of the First World War, the principles of operating aircraft at sea in the way we see today had been well established. RNAS aircraft were initially used for spotting for the guns and reconnaissance but the ability to strike from above at targets on the ground, at sea or under the sea and in air-to-air combat was soon developed. The RNAS led the way in developing strategic bombing and air raids against enemy targets, anti-submarine and anti-shipping patrols and countering the Zeppelin threat, demonstrating the versatility and capability of this pioneering force.

As naval aviation's remit expanded, aircraft and aircraft carriers were designed specifically for the purpose of operating aircraft at sea effectively. They evolved from seaplane carriers that hoisted aircraft on and off to flat top carriers that allowed aircraft to take off and land on. Aircraft quickly transformed into machines that were stronger, faster and better to meet the demands placed upon them.



Progress

Naval aviation operations at sea progressed from seaplane carriers requiring aircraft to be hoisted on and off via Lighters, gun turret platforms and ramps mounted on the ship's bow and stern to flat top carriers, purpose built for take-off and landing. Sqn Cdr Edwin Dunning's first successful deck landing (1917, HMS Furious) embedded the principle of the aircraft carrier as an all-round, floating airfield.

The first four naval pilots trained on the Short S27 aircraft. It had a top speed of about 48mph (77kph) and a maximum height of some 2000 ft (360m). Lt Charles Samson made the first take off from an RN ship in an improved version of this aircraft (1911, HMS Africa). By 1918, aircraft such as the Sopwith Camel were capable of doing 124 mph (199kph), could reach a height of some 19000ft (5791m) and could take off from, and land on, the deck of a purpose built aircraft carrier. Single seater designs were soon augmented by those accommodating an observer/gunner as well as the pilot.

Weaponry developed rapidly to meet the needs of aircraft required to fulfil a variety of roles such as fighters, bombers and anti-submarine. Air combat evolved from pilots firing side arms at the enemy and dropping hand-held bombs to airborne torpedoes, mounted machine guns, bombsights and bomb release mechanisms. Improvements in radio communications and cameras made aerial reconnaissance and photography an increasingly effective tool for commanders at sea or on the ground. By the end of the First World War, the principles of naval aviation as a means of attack and defence were well-established.

1

1919~1945 WAR FROM THE AIR COMES OF AGE

The inter-war years were challenging ones for the FAA. Between 1918 and 1937 control of British naval aviation lay with the RAF. Following the rapid advances made in naval air operations during the First World War, this change of leadership is often viewed as a major reason for the slowdown in developments during this period. However, the way in which the FAA developed between the wars has to be seen in the broader context of a range of factors that influenced decisions.

Massive borrowing to fund the war effort led to an extended period of economic depression and decline including mass unemployment. There was little public support for high spending on the Navy or indeed any arm of the military. Thus, political pressures and instability saw the Navy's building programme reduced and Britain could no longer afford to sustain the world's most powerful fleet. Fears over a new naval arms race led to the Washington Naval Conference (1922) at which Britain, the USA, Japan, France and Italy signed the Five Power Naval Limitation Treaty. Under this agreement, the signatories committed to limiting the numbers and tonnage of capital ships. This included aircraft carriers and, with a moratorium on new ship building also part of the agreement, impacted to some extent the development of carrier forces and their ships. A new era in carrier aviation was ushered in when in 1937, with the Second World War looming, control of naval flying was returned to the Admiralty once more.

People

After the RNAS merged with the RFC in April 1918, RN pilots continued to fly from carriers and to develop naval aviation capability. Men were still drawn from all walks of life and from 1942, WRNS personnel were trained as Air Mechanics. During the Second World War, FAA squadrons provided air cover for troop landings and flew many vital and dangerous missions. Between July and October 1940, 58 FAA pilots were seconded to Fighter Command and served alongside RAF and overseas aircrews in the Battle of Britain; nine FAA personnel were killed. In February 1942, Lt Cdr Eugene Esmonde led his squadron of six Swordfish aircraft against a German Battle Group trying to escape through the English Channel ('the Channel Dash'); only five of the eighteen aircrew survived.

2

Esmonde was posthumously awarded the VC having already been awarded the DSO for his part in the attack on the Bismarck. His squadron members received gallantry awards or a Mention in Despatches. Convoy protection duties across the Atlantic, on the Arctic route to north Russia and in the Mediterranean were arduous and stressful. Lt Eric 'Winkle' Brown was awarded the DSC for protection duties in the Atlantic after his escort carrier, HMS Audacity, was torpedoed and sank in 1941.In 1944 Lt Gordon Bennett received the same award for operations to protect the convoys to north Russia. Lt Robert 'Hammy' Gray RCNVR, a Canadian pilot flying with the FAA in the Pacific campaign, was awarded the VC after being shot down just days before the Japanese surrender.

FAA personnel, drawn from the UK and the British Empire and Commonwealth, operated in all theatres of war and demonstrated courage, determination and loyalty in the most testing and demanding of circumstances.

Power

At the start of the Second World War, the Navy had seven carriers with another five under construction. By 1945, the FAA had 59 assorted carriers, 74 frontline squadrons, about 3,700 aircraft, some 72,000 personnel and 56 naval air stations at home and around the world. Aircraft carriers and their aircraft proved their worth in operations such as the attack on the Italian navy at Taranto (November 1940), the Palembang raids in the Pacific (January 1945) and the successful protection of vital convoys across the Atlantic, in the Mediterranean and the Arctic. They helped counter the power of the German Navy'ssurface raiders such as Bismarck and Tirpitz, and provided air cover and air strike for amphibious operations such as Operation Torch (North Africa, November 1942) and Salerno (September 1943). In the Pacific campaign, the fighting skills of battle-hardened allied naval pilots were a major advantage against the idealistic but young, inexperienced Japanese airmen. The United States Navy (USN) also quickly recognized the value of the armoured decks in RN carriers which protected against kamikaze attacks far better than their American counterparts. They were impressed by the resilience of British carriers and the speed with which they returned to operational readiness following a Japanese suicide attack.

Purpose

In 1918 the RNAS merged with the Royal Flying Corps to form the RAF. The Admiralty lost control of naval aviation but continued to provide the seaborne platforms. There were four areas of operation or flights – fighter, spotter, reconnaissance and torpedo – but all the Navy's aircraft, 30% of its aircrews and 100% of its ground crews were provided by the RAF. Now operating as the Fleet Air Arm of the Royal Air Force (quickly shortened to the Fleet Air Arm), the RN continued to develop its carrier capability in spite of a reduction in resources. It operated in support of other branches of the military in places such as Turkey (1922), China (1927), Palestine (1929) and the Middle East during the Italy/Abyssinia confrontation (1935) as well as carrying out trade protection and anti-piracy duties.

After the Inskip Award (1937), the Admiralty was once again in control of the FAA's destiny and recognised the important contribution it could make to the RN's role. The aircraft carrier took over from the huge battleships as the Navy's capital ship. Its versatility saw it being used to protect the Atlantic, Malta and Russian convoys, chase down German surface raiders, attack enemy installations and support the landings of Allied ground forces both in Europe and in the war in the Pacific.

1 *Squadron Commander Edwin Dunning made the first deck landing onto HMS Furious, August 1917.*

2 *The interwar years saw the Royal Navy fly aircraft supplied and maintained by the RAF.*

3 *British naval air squadrons from Royal Navy carriers carried out vital attacks during the Second World War in the Pacific.*

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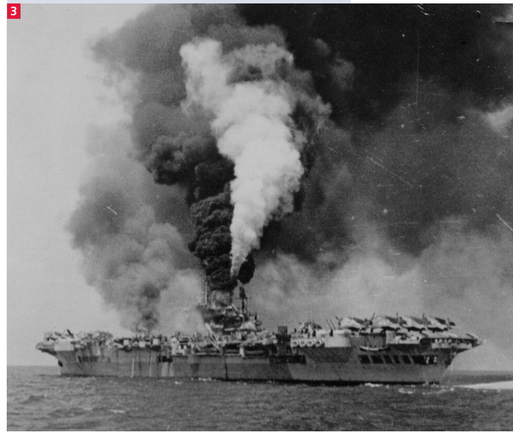
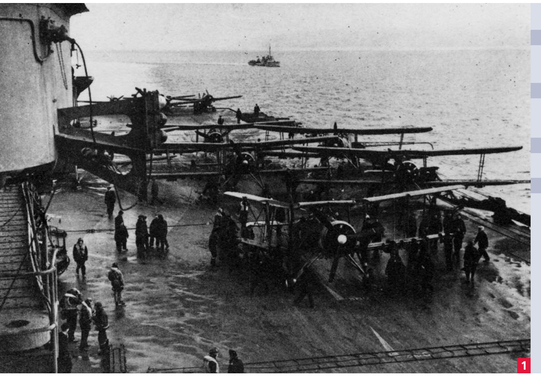


Progress

Between the wars, though limited by a lack of resources after 1918, navy carriers and pilots continued to operate with aircraft supplied and maintained by the RAF. Naval aviation was returned to Admiralty control by the Inskip Award (1937) and came of age when another great conflict engulfed the world in 1939. In 1925, the Navy had four carriers (Argus, Eagle, Hermes & Furious) with two more (Courageous & Glorious) commissioned before 1930. HMS Eagle had the island situated on the starboard side setting a design which continues to the present day. HMS Hermes was the first ship designed specifically as an aircraft carrier and Courageous was the first to be fitted with transverse arrester wires (1933). The new HMS Ark Royal and then the Illustrious class carriers, both in the vanguard of carrier development at the time, followed from the mid-1930s. The first night deck landing (1926) was made by Flt Lt Gerald Boyce, Deck Landing Control Officers ('Batsmen') were introduced (1937) and from 1942, WRNS trained as Air Mechanics. Ship-mounted catapults allowed some battleships and cruisers to carry reconnaissance and air-sea rescue aircraft.

Development of aircraft suitable for operations at sea was somewhat sporadic. Nor was it always hugely successful with the tendency being to use adaptations of biplanes designed for shore-based flying which did not always demonstrate the robustness or effectiveness required for operating aircraft at sea. Some biplanes such as the iconic Swordfish (1936) continued to be used throughout the Second World War. However, as the conflict progressed, and assisted by lend-lease arrangements with the USA, the FAA took delivery of a range of faster, more advanced aircraft better suited to its operational requirements.

In 1944 a helicopter was used for the first time and in December 1945 Lt Cdr Eric Brown made the first jet deck landing. The Second World War saw the carrier become the new capital ship, providing the platform for attack and defensive roles. As the war ended, a massive carrier-building programme was underway (although subsequently much of this was cancelled) and the number of RN aircraft carriers in service has never been matched since.



1 *During the Second World War, the Fleet Air Arm carried out strategic attacks including that on the Italian Fleet at Taranto.*

2 *During the Cold War, Fleet Air Arm Buccaneers could attack using both nuclear and conventional weapons.*

3 *Suez 1956: Royal Marines were put ashore in the first ever large scale helicopter-borne assault.*

4 *Falklands Conflict 1982: Carrier-borne Sea Harriers and helicopters were crucial to retaking the Islands.*

1945~1989 DELIVERING STRATEGIC MILITARY POWER

People

Post-war re-evaluations led to an inevitable run down in defence spending, a trend that has continued with only occasional respite ever since. Naval aviation was not immune from this and between 1945 and 1989 its operational capacity was reduced from 74 front line squadrons to 21 first and second line squadrons. Nevertheless, FAA personnel were deployed in numerous theatres of conflict around the world (e.g. Korea, Malaysia), in support of NATO and UN operations and in providing humanitarian assistance (e.g. North Sea floods 1953). The development of faster, more powerful, aircraft, multi-tasking helicopters and increasingly complex and lethal weaponry demanded personnel with new skill sets and greater technological ability. To meet these requirements entry criteria gradually became higher and embraced a more egalitarian recruiting process. For men joining the service there were new career-path options and WRNS continued to have the opportunity to train as Air Mechanics working on a wide range of aircraft. RN personnel such as Lt Cdr H.C.N Goodhart (mirror landing sight 1954), Cdr C.C. Mitchell (steam catapult 1954), Capt. D.R.F. Campbell (angled flight deck 1955) and Lt Cdr D Taylor (ski ramp around 1978) contributed innovative ideas that enhanced the Navy's ability to operate aircraft at sea more effectively.

Power

As the Cold War began, the British Empire came to an end and the USN replaced the RN as the world's largest naval force. Post-war austerity led to cuts in defence spending and the RN had to find ways of meeting its commitments both worldwide and, after 1949, to NATO. Nevertheless, until the 1960s Britain's carrier fleet remained the most powerful apart from that of the USA. Its capability was soon demonstrated when RN carriers joined the UN force, led by the United States, in defence of South Korea (1950-53). Five British carriers were involved with their aircraft flying thousands of missions. Although politically the Suez Campaign (1956) did not end well, it was a successful operation for the RN. The FAA deployed 500 Royal Marines ashore in the first ever assault landing by helicopter and its strike aircraft carried out two-thirds of the combat sorties. Demonstrations of carrier diplomacy continued (e.g.

Lebanon, 1958; Kuwait, 1961; Malaysia, 1963-66; British Honduras, 1972) as well as confirmations of combat capability (e.g. Borneo 1962-66) and the readiness to undertake humanitarian operations where necessary (e.g. evacuation of British citizens, Cyprus 1974). During the 1960s and 70s Cold War tensions increased and NATO members followed a policy of deterrence towards Russia and the eastern bloc. Naval aviation operated long-range strike and fighter aircraft with a nuclear capability as well as playing a key role in anti-submarine warfare. In 1982, in a remarkable show of force, the RN despatched a task force to liberate the Falkland Islands from Argentinean occupation. Aircraft carriers and their embarked Sea Harriers were vital elements in the successful outcome of the Falklands Conflict. The forgotten lessons of the effectiveness of embarked naval air power had been re-learned the hard way. The FAA demonstrated its diverse capabilities with its Sea Harriers providing vital air cover for the fleet as well as carrying out ground attacks and Sea King and Wessex helicopters providing the battlefield support so critical to success. The end of the Falklands Conflict coincided with the entry into service of HMS Illustrious and she provided air defence for the islands for a year until an airfield could be built for the RAF.

Purpose

The hope that the end of the Second World War would mark a cessation in global conflict was never realised. The rise of communism and the spread of Russian influence created new

geo-political tensions and the potential for continued confrontation. The Cold War changed Britain's military strategy and with it much of the focus of the role of the RN and the FAA. It became geared towards dealing with the threat of a Warsaw Pact attack across Eastern Europe and maritime assault by the powerful Soviet Navy. At the height of this political stand-off, Buccaneer strike aircraft carried nuclear weapons and Phantom fighters protected them and the RN strike fleet from air attack. Anti-submarine capability was provided by Wessex and then Sea King helicopters and Gannet aircraft delivered vital Airborne Early Warning data. At the same time, Britain was called on to commit naval aviation resources to protect British interests (e.g. Borneo 1962-66, Aden 1963-67, the Falklands Conflict 1982) or support Allies, NATO and the UN (e.g. Korea 1950-53, Lebanon 1958) in numerous other conflicts and disputes around the world.

Progress

The period between 1945 and the end of the Cold War saw rapid advances in naval aviation. Faster, heavier jet aircraft took over strike and attack roles with the Korean War being the last conflict where propeller driven aircraft predominated. It was also the first where the RN had a clear demonstration of the operational value of helicopters. Rotary aircraft soon played crucial roles in naval operations (e.g. Suez; Borneo; anti-ship, anti-submarine, search and rescue roles) combining efficient deployment of Royal Marine troops into war zones with effective, on-going battlefield support once they were there. Weaponry capable of airborne delivery such as tactical nuclear warheads and air-to-air missiles became increasingly lethal and airborne early warning aircraft and anti-submarine helicopters provided greater protection to the fleet. Other advances such as steam catapults, mirror landing sights and angled decks made naval aviation safer and more effective. In spite of Cold War priorities, the Government Defence Review of the mid 1960s resulted in the RN concentrating on helicopters as the preferred aircraft to be carried on the naval vessels of the foreseeable future. The 1970s proved to be the final decade of the RN strike carrier as conventional carriers with fixed wing aircraft were scrapped. A new type of ship, the Invincible Class Through-Deck Cruiser, was commissioned, designed to meet the needs of operating helicopters and the Sea Harrier vertical take-off fighter at sea.By 1982 these Through-Deck Cruisers had been redesignated as aircraft carriers and the new HMS Invincible , as well as the adapted HMS Hermes, carried Sea Harrier fighter squadrons, Sea Kings and Wessex helicopters to the South Atlantic making the retaking of the Falkland Islands possible.

1990 ~ PRESENT A CHANGING WORLD

People

In spite of cuts in defence spending and reductions in personnel numbers, FAA squadrons have been involved in operations around the world almost continuously since the Falklands Conflict. On-going and rapid technological developments in the aircraft, ships, weaponry and equipment intrinsic to naval aviation operations requires FAA personnel who are highly skilled specialists and supremely professional. The service continues to recruit personnel from all walks of life with the qualities it has always required and offers a wide spectrum of career opportunities open to both men and women. These range from those needing few academic qualifications but involve intensive, on-the-job training to those that demand degree-level achievement as a minimum requirement. With its policy of continuous training and development, the FAA ensures that British naval aviation remains among the finest and most effective in the world.

Power

Cold War operations continued until the fall of the Berlin Wall and the demise of the USSR. The post-Cold War years saw an increase in deployments, especially in the Balkans, where embarked Sea Harriers helped to enforce the no-fly zone over Bosnia in 1993-5 and participated in the 1999 bombing of Yugoslavia during the Kosovo War. The FAA were also involved in the first Gulf War (1991) and in helping protect Kurdish refugees following that conflict and were part of a multi-national force imposing a no-fly zone over southern Iraq (1998). The new century saw continuing demands on the RN carrier force including operations in Sierra Leone (2000), the invasion of Iraq (2003,second Gulf War), the evacuation of British nationals during the Israel-Lebanon crisis (2006) and the Afghanistan campaign (2001-14). The helicopters of the Small Ships' flights played, and continue to play, a key role. Now deploying Wildcats and Merlins from ships such as Type 43 Destroyers and Type 26 Frigates, they can not only provide air support in combat situations but also for a range of Royal Navy actions including the delivery of humanitarian aid, trade protection, anti-drug and anti-piracy operations.

The Sea Harrier was replaced by the RAF ground-attack Harrier in 2006 and with that came the loss of anti-aircraft capability. In a reversion to the inter-war years, the RAF now provided the aircraft for the carriers and the assigned aircraft and naval crews formed the Naval Strike Wing as part of Joint Force Harrier. The Naval Strike Wing conducted its final fixed-wing war operations on deployments to Afghanistan. The 2010 Strategic Defence and Security Review brought a temporary end to naval fixed-wing capability and the Harriers launched for the last time from Ark Royal on 24 November 2010.

In 2008, the British Government signed the contract for the building of two new super-carriers, the Queen Elizabeth class, which will see the return of fixed wing aircraft to the FAA. These are the largest ships ever constructed for the RN and embark state-of-the art F35B Lightning II aircraft as well as Merlin and Wildcat helicopters.

Purpose

The end of the Cold War did not bring the peace dividends many had hoped for. Political tensions, increased terrorism and numerous conflicts have meant that, in a rapidly changing and often volatile world, the demands made on the FAA have not diminished. Naval aviation is tasked with providing air power from the sea and the FAA plays a key role in the RN's ability to successfully fulfil its commitments to the UK, NATO, the UN and Britain's allies. The remit is not narrowly defined and ranges from combat capability (e.g. Gulf War, Afghanistan) to delivering humanitarian aid (e.g. Haiti, Philippines, Mediterranean Migrant crisis), from peace-keeping duties (e.g. Bosnia, Sierra Leone) to enforcing the rule of law (e.g. anti-piracy, anti-drug, anti-terrorism).

Progress

As the FAA continues to embrace new technologies and the digital age, its personnel become increasingly highly skilled and specialists in their field. With the WRNS being integrated into the RN (1993), previously male-only roles (e.g. pilots; observers) became open to women as well and the FAA now has a number of female pilots, observers, engineers, etc.

In 1993 a much-improved Sea Harrier entered service, designated FA2 and carrying the AMRAAM missile. It was replaced in 2006 by the RAF ground-attack Harrier and FAA aircrews now operated with the RAF as part of Joint Force Harrier. The last Harrier took off from HMS Ark Royal in November 2010 and the FAA will see the arrival of the F35B Lightning II in 2018. The Sea King helicopter was the Fleet Air Arm's workhorse. This multi-tasking aircraft fulfilled Airborne Early Warning, Search and Rescue, Anti-submarine Warfare, Airborne Surveillance and Control and Commando Helicopter Force roles. Following its decommissioning in 2016, these roles are now undertaken by several variants of the Merlin helicopter and the Wildcat, the successor to the Lynx.

The last Invincible class carrier, HMS Illustrious, was decommissioned in 2014 but in the RN and Royal Fleet Auxiliary, most ships are capable of operating helicopters. Although HMS Ocean, a Landing Platform Helicopter (LPH) and amphibious assault ship, is due to be decommissioned in 2018, HM Ships Bulwark and Albion are Landing Platform Docks (LPD) capable of putting Royal Marines, their vehicles and their combat supplies ashore using assault helicopters and embarked specialized landing craft.

The RN is now undertaking sea trials of the first of its new Queen Elizabeth class super-carriers, HMS Queen Elizabeth, which is due to be formally commissioned in early 2018. When her air group is embarked, it will herald the return of fixed wing aviation to the FAA. The Queen Elizabeth will be joined by HMS Prince of Wales. These state-of-the-art ships will operate cutting edge aircraft, weaponry and technology enabling the RN and the FAA to continue their long-established and proud tradition of providing air power from the sea well into the 21st century.

1 *Operation Herrick 2002-2014: Naval Air Squadrons operated in support of the UN mandated, NATO-led mission in Afghanistan.*

2 *Philippines 2013: HMS Illustrious delivered humanitarian aid to the Philippines following typhoon Haiyan.*

3 *Operation Granby 1991: Royal Navy Lynx helicopters destroyed almost all of the Iraqi navy.*

4 *Queen Elizabeth Class Carriers will embark Lightning II stealth aircraft and Merlin and Wildcat helicopters.*