



The United Kingdom

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From the humble beginnings of a Royal Air Force air ambulance service in the 1920s, through to civilian operations in the 1930s, air medical and rescue provision in the UK has grown into a complex network that continues to develop

As with any nation, the range of air rescue and air medical providers in the UK is the result of its history, politics and geography. The union consists of England, Scotland and Wales (together forming Great Britain), along with Northern Ireland and numerous inhabited offshore islands. The territory's extensive coastline and mountainous areas call for the services of Royal Air Force (RAF), Royal Navy and Coastguard rescue helicopters, at times aided by police helicopters used to search for missing persons. A number of helicopter air ambulance charities provide emergency medical services in England



A CHC S-92 operated on behalf of the Coastguard

MCA

AIR AMBULANCE HELICOPTER OPERATIONS IN ENGLAND AND WALES ARE FUNDED BY CHARITABLE DONATIONS

and Wales, while a state-run service operates helicopters and fixed-wing aircraft in Scotland. Private fixed-wing air ambulance companies deal with patient transfers to and from mainland Europe. The country 'enjoys' a maritime climate, with mild, often wet, summers, meaning that forest fires are rare and no significant aerial fire-fighting provision is in place.

Search and rescue

Existing search and rescue (SAR) coverage comes principally from the Maritime and Coastguard Agency's (MCA) four S-92As and three AW139s, operated through a contract



Aircraft of the Devon Air Ambulance Trust

DAAT

with CHC, and RAF and Royal Navy Sea King Mk3, 4 and 5 helicopters, together giving a 24-hour service from 12 bases around the UK. Of the UK's emergency response aircraft, only these SAR helicopters are equipped with winches for hoisting victims from water, ships or mountainous terrain; although London's Metropolitan Police EC145s carry hoists, these are only used to deploy officers to otherwise inaccessible locations.

However, the UK is on the brink of a revolution in its state-funded SAR helicopter provision, with the current mix of providers to be replaced by a single, integrated service, in a joint Ministry of Defence (MOD) and Department of Transport project named SAR-H. The preferred bidder, the Soteria Consortium, was just recently announced (see p.59). Operations will begin in 2012 with a fleet of Sikorsky S-92s, with operations running from 2012 for up to 30 years.

The above resources are backed up by registered charity Sky Watch Civil Air Patrol (SWCAP) and police force helicopters (see below). SWCAP has around 20 units throughout the UK, with pilots and observers who donate their time and aircraft free of charge. The organisation provides three basic functions: general air observation, where pilots keep a look out in the course of their general flying; patrols, flying over areas where there is a potential for people or property to be



Police helicopters aid in searching for missing persons

Matthew Bell

THE UK IS ON THE BRINK OF A REVOLUTION IN ITS STATE-FUNDED SAR HELICOPTER PROVISION

at risk; and response, providing air observation and search capacity to supplement the resources of the emergency services.

Police aviation

By number of missions flown, the principal role of UK police helicopters is to assist ground officers in crime-fighting operations. However, the cameras and sensors used for tracking suspects are ideally suited for locating missing persons. The national fleet of mainly EC135s and MD 900/902s frequently exploit this capability both day and night, working alone or in tandem with SAR aircraft. On occasion, police units will also transport casualties to hospital, although this task is usually left to air ambulance charities.

HEMS

As far as emergency ground ambulance services and hospital care are concerned, the UK is served by the nationwide National Health Service (NHS) – transport and treatment is free to access, being funded through general taxation. But it's a different story for helicopter emergency medical services (HEMS).

Scotland is the only country in the union to boast a service fully funded by the state, arguably justified by the region's mountainous terrain, offshore islands and relatively low population density (around half that of Wales, and just a fifth of the figure for England).

The Scottish Ambulance Service (SAS) boasts five aircraft operated under contract by Gama Aviation – two HawkerBeechcraft 200C Super King Airls, two Eurocopter EC135T2s and a Eurocopter AS322N – based at five locations throughout Scotland, offering full 24/365 coverage. The King Airls are specialist ambulance aircraft with full infection control interiors, double LifePort Plus unit stretcher systems and fully automatic loading systems, and each crew consists of two pilots and an NHS paramedic. Dave Edwards, general manager of Gama Aviation Ltd, commented: "We're carrying patients from all over Scotland to a variety of hospitals throughout the country, down into England and occasionally to international medical centres for specialist treatment." The SAS adds: "All of our aircraft operate with paramedics



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London Air Ambulance landing in a confined area

Matthew Bell

in the region of £50 million, around 14 per cent of which is spent on fundraising costs. None of the charities has a subscription or membership service; free transportation is provided to all based only on need.

And what of Northern Ireland? Although two helicopter air ambulance charities are taking donations, it remains unclear when either will get off the ground. The All Ireland Air Ambulance Trust (AIAA) aims to base aircraft in both Northern Ireland and the neighbouring Republic of Ireland (RoI), where its offices are located. Since July 2009, AIAA has said it is ready to go, with funding in place and a helicopter from Bond Air Services arranged. The final hurdle that has to be overcome is for the RoI government to give the green light to integrate AIAA into the country's 999 emergency dispatch system.



The Scottish Ambulance Service operates two EC135s

Angus McLellan

onboard and fly over 3,000 missions every year. In addition to those purpose-built aircraft, we have access to search and rescue aircraft of the Ministry of Defence and HM Coastguard to support us during periods when our aircraft are unable to operate."

In contrast to Scotland's state-run service, air ambulance helicopter operations in England and Wales are funded by charitable donations, receiving no money from either the government

or the National Lottery's allocation of funds for good causes, from which so many other charities benefit. However, the 18 HEMS charities, which according to the Association of Air Ambulances collectively undertake over 19,000 missions per year, do have access to NHS personnel, who are provided free of charge to crew the fleet of 28 helicopters. Each operator actively fundraises in its local patch through lotteries and other activities, collectively generating an annual income

Meanwhile, Ireland Air Ambulance (IAA), an entirely separate charity based in Northern Ireland, has faced heavy criticism in the national media for the percentage of donations that is spent on administration costs and currently seems further from a potential launch. Unusually for the UK, IAA says it intends to 'eventually have winch capabilities onboard, primarily so as to be able to save valuable time in locating medical staff closer to the emergency scene'. A statement on the IAA



website recently declared that the charity was hoping to take off by the end of 2009.

Fixed-wing air ambulances

The UK's main fixed-wing air ambulance players are Cega, Air Medical Ltd (AirMed), Capital/Wings, and Gama Aviation, which operates two King Airs for the Scottish Ambulance Service (see above). With a fleet of King Air turboprops based at Bournemouth Airport, assistance company CEGA says it casts a wide net: "The reach of our aircraft (comprising the largest medically-dedicated King Air turboprop fleet in the UK) extends throughout Europe, Scandinavia and North Africa, as well as the Canary Islands and Mediterranean. This covers the majority of all Britons travelling overseas on holiday." Most flights are conducted by two of



AirMed acquired its first Learjet 35A in 2009

AirMed

CEGA's in-house medical crew, who are trained in patient handling, have previous experience in critical care transfers and work in a hospital intensive care environment, says CEGA.

Based at Oxford Airport, AirMed owns and

operates a fleet of nine fixed-wing medical aircraft including one Learjet 35s, billed as the only UK-based dedicated air ambulance jet, with a second expected by the end of March 2010. The fleet consists of Piper Senecas, Piper Navajo Chieftains and Piper Cheyennes, all maintained by AirMed Engineering's maintenance facility. AirMed provides the full range of intensive care medical equipment required for complex patient transfers and highly trained medical crew on its own flights, sourced from the John Radcliffe Trust Hospitals, says the company.

In May 2009, Bristol-based Wings Aeromedical announced a new joint venture with Exeter's Capital Aviation, teaming Wings' doctors, nurses and ground transportation resources with Capital's aircraft, a Blackhawk-modified King Air. ▲

Royal Air Force – saving souls

'C' Flight of Royal Air Force (RAF) 22 Squadron is stationed at RAF Valley on the island of Anglesey, off the north coast of Wales. 'C' flight, whose motto is 'preux et audacieux' (valiant and brave) flies Sea King HAR3/BA helicopters in the search and rescue role, rescuing people from ships in the Irish Sea, from the rugged mountains of nearby Snowdonia and elsewhere. 'C' Flight is one of 22 Squadron's three detachments, the others being RAF Chivenor's



The RAF Sea King involved in the Riverdance mission

RAF

'A' Flight and RAF Wattisham's 'B' Flight.

The current incarnation of 22 Squadron was formed in 1955 as a search and rescue unit equipped with Westland Whirlwind helicopters, before receiving its yellow painted Sea Kings in the mid-1990s. The Sea Kings' standard operational crew comprises of captain, co-pilot, radio/winch operator, and winchman. The winchman uses extended paramedic skills to treat casualties en route to hospital.

'C' Flight's SAR crews are rarely out of the headlines, with mountain rescue and maritime missions receiving frequent coverage in local and national news. The crews have also won civilian and military accolades. In 2006, an RAF Valley crew were hailed as national heroes after saving the lives of five yachtsmen in a dramatic rescue after their boat began

sinking in the Irish Sea. Sergeant Andy Elwood and Flight Lieutenants Dave Kenyon, Duncan Tough and Dave Spain were winners of Vodafone Life Savers Awards. The 'C' Flight crew – call sign 'Rescue 122' – came to the rescue of yacht *Quay Three*, which was adrift in gale force winds 50 miles off the Irish coast. Because of the height of the yacht's mast, the helicopter had to maintain a higher-than-normal hover, which meant the



Flt Lt Lee Turner and Master Aircrewman Rich Taylor

RAF

pilot could not see the boat. The team made several efforts to lower a wire rope line to the stricken yacht, losing three lines in the process. With only one line left, it became clear that the only solution was to send a man down. Sgt Andy Elwood volunteered to be winched directly onto the yacht. On the third attempt, he attached a line and evacuated the crew of the yacht before it sank.

A rescue in 2008 resulted in medals for pilot Flt Lt Lee Turner and Master Aircrewman (MACR) Rich Taylor, awarded for their part in the rescue of the crew of the *MV Riverdance* roll-on, roll-off ferry in 60 mph winds and treacherous seas. Flt Lt Turner received an Air Force Cross for his 'courage, leadership and outstanding flying skills' and MACR Rich Taylor received the

Queen's Gallantry Medal for putting himself in 'grave danger, time after time to save others'. Rescue 122 went to the rescue of 23 people onboard the ferry, which had lost all power and was in severe difficulties in atrocious weather. The ferry was listing at 45 to 60 degrees, and those onboard were unable to abandon ship due to the churning seas and extreme pitching and rolling – all of which made winching down extremely hazardous for MACR Taylor. Flt Lt Turner had to maintain an accurate hover close to the rolling vessel and his quick reactions prevented disaster when the ship's mast nearly hit the aircraft. MACR Taylor was winched on and off the hazardous deck of the listing ship despite being battered by huge waves. He said: "It took some time to get the first rope down to the boat. Unfortunately, we then lost contact with that rope, just through the boat moving away from us in the big swirl, so we had another bash at it and managed to get another rope down." Eight passengers and crew were winched up two at a time to the Sea King.

RAF Valley is also home to the Search and Rescue Training Unit (SARTU), which provides training for RAF helicopter aircrew on Griffin HT I helicopters and conducts SAR Crewman pre-selection courses. Notable among students is Prince William, who is now training at RAF Valley after completing pilot training at RAF Shawbury.

Flight Lieutenant Mike Castle, pilot and second-in-command at SARTU, comments: "Pilots already know how to fly, land and navigate a helicopter when they get to us. This course takes it further and teaches them about hovering next to decks and cliffs, and gets them used to running the aircraft while being guided by the winch operator in the back." Trainee pilots are prepared for a job that Flt Lt Castle describes as 'like flying a house while looking through the letterbox'.