

They're coming to get you

*You may one day have
cause to be thankful for
our SAR men and
women, whose work
is explained by
Paul Smiddy*



*Expect the winchman to
be 'brusque and rude'
and don't grab the
earthing cable*

fly across the English Channel several times each year in a SEP, and generally over the wider stretches. My cruise speed of 110 knots gives me plenty of time to look at shipping and ponder my fate if Mr. Lycoming's horses became tired all of a sudden. Having visited RAF Valley and RAF Wattisham for other reasons over the last two years, my interest in the country's Search & Rescue (SAR) system was stimulated. So I have sought to outline the UK's SAR assets, and how they will be brought to the aid of a downed civil pilot.

SAR as a skill was of course originated by the RAF in order to rescue its own aircrew in World War II. That remains their primary task, but they are also available to help the 'civil powers'. The RAF operates six flights from two squadrons. These are located at Chivenor, Wattisham, and Valley, (22 Sqn), and Boulmer, Lossimouth and Leconfield (202 Sqn). Even having only two airframes apiece, they achieve a standby rate of 99%.

The Coastguard (now more properly known as the Maritime & Coastguard Agency) runs four flights at Lee-on-Solent, Portland, Stornoway and Sumburgh. Finally, the Royal Navy operates units at Prestwick and Culdrose.

All receive demands for their services in the same way. The area of operations of each unit overlap so that there is always cover in the event of tech problems or a surge in demand for services. Wattisham, for example, covers from the Wash down to Dover, and east to the FIR boundary.

SAR assets are called upon for a wide range of tasks: not only the often-filmed mountain or cliff rescues, but ship to ship transfers, medevacs, winch lifts from places that are too dangerous for inshore rescue boats, mountain rescues and so on. True military SAR jobs are only a minuscule amount of their workload – say one percent of call-outs. The balance of work varies widely between the flights. The flight I visited, (B Flt, 22 Sqn, at Wattisham) for example does a lot of medevac work (Cambridgeshire having one of the best hospitals in the country). It is also called out to the North Sea oil rigs quite frequently. Unsurprisingly, based in the flatlands of Suffolk, its crews find it difficult to maintain currency in mountain flying techniques. Temporary deployments to Valley and Chivenor are the answer, together with twice-yearly visits to the Lake District.

What happens when you send out a Mayday – particularly over the sea?

Your call on 121.5 (or referred by which ever agency you are speaking to) is heard by the Distress and Diversion cell in the London Area Control Centre at Swanwick. Their auto-triangulation services confirm your position. D&D staff immediately phone the Aeronautical Rescue Co-ordination centre (ARCC) at Kinloss. ARCC has direct dial phone links to all the units noted above. ARCC obviously already knows the

availability state of all these flights. The decision as to which flight to task for a given call-out is not as straightforward as it seems: for example, the stronger the wind, the more likely the job is to be given to the unit that lies upwind of the casualty – so as to speed arrival times.

Military flights always have to retain cover of their military requirements – activity on the ranges in the Wash and off the Suffolk/Essex coastline in the case of Wattisham. ARCC is also responsible for tasking the five Mountain Rescue Teams around the country.

ARCC calls its chosen unit, which is on 15 minutes' response time during the day and 45 minutes after 2200 hours, as the crew work 24-hour shifts. The RAF's Sea Kings are typically fuelled with enough for a sortie duration of 3 hours 15 minutes, which covers most jobs. Obviously tasks further offshore will require a top-up. Squadron Leader Holly Steel (OC, B Flight) points out the Wattisham flight is fortunate in that there is an abundance of refuelling locations in East Anglia if the sortie does



**Above: a 22 Squadron Sea King practising winching and lifeboat co-operation off Chivenor
Below: working close in to the cliffs – intake air filters combat sand, sea spray and FOD**



Coastguard co-ordination centre at Dover looks out over the UK's busiest shipping lanes

not go as planned. Endurance on full tanks is six hours. The location or search area of the emergency is passed to the duty crew, and this is tapped into the front seater's nav kit. The heading required is displayed on the Sea King's flight director, as is a heading indication if the victim is using a personal locator beacon on 121.5.

In the back the winchman is also kept busy in the transit. He sits in front of an array of displays from the aircraft's radar and FLIR camera. The camera is swivelled rearwards for protection when not in operation. Using this kit during the search period he provides directions for the handling pilot. Both front seaters will use autopilot as much as possible during a search as this enables them to maximise their ability to search visually. The RAF flights use Mk3 or Mk3a Sea Kings, the Navy the Mk 5, the main difference being

Right: business end of a Sea King – two-screen box at left-seater's knee is the nav system



the autopilot capability. The SAR flight in Akrotiri (Cyprus) somewhat arbitrarily uses the Griffin, a choice not popular with crews due to its lack of cabin space for dealing with casualties.

The Coastguard flights are operated by CHC, a private Canadian company. Its two Scottish bases operate the Sikorsky S92, whilst Lee-on-Solent and Portland fly the AW139.

Coastguard perspective

I visited the Coastguard's Maritime Rescue & Co-Ordination Centre at Dover for their perspective. This centre has an area of operations from Reculver down to Beachy Head, so includes the UK's busiest shipping lanes. The Solent MRCC takes responsibility for the next sector westwards to Highcliffe (off Bournemouth airport).

On hearing of an aviation incident the MRCC will call for a helicopter if one is not already on its way. They will broadcast a PAN to shipping in the vicinity. (Whilst the presence of shipping underneath you may be reassuring when you fly the Channel, ponder the difficulty of being raised 100' or so from the sea to the deck of some of these bulk carrier monsters). A lifeboat will be summoned if necessary. Search patterns, whether by air or sea, are determined by a computer programme which factors in tides, wind speed and other variables.

Lifeboats operate to the same standards of readiness as the SAR flights (15 mins day, 45 mins night). With a transit speed of 25-30 knots in reasonable weather, a lifeboat is expected to reach mid-Channel (at least in the narrower part of the Straits) within 45 minutes of being called out. Nonetheless, a long time to be in the water for most months of the year.

Lifeboats track AIS transmissions (the

maritime equivalent of our transponders), and cannot home onto an EPIRB. These are tracked by the MCA station at Falmouth, which passes directions on to the lifeboat. In 2011 UK lifeboats launched 11 times for aircraft incidents.

Although a downed civil pilot is likely to call on a SAR flight via the ARCC, half of Wattisham's summer workload is initiated by the local Coastguard stations.

European coverage

European SAR is universally military. The Dutch operate Lynx and AB 412s from Leeuwarden. The Belgians have three Sea Kings at Koksijde which they will be replacing this year with the NH90. The French main rescue centres are all further South; but their coastal helicopters operate from Cap Gris Nez, Le Touquet, Cherbourg and Brest. Obviously where aircraft are

SAR in action – one man's story

A friend of mine, we will call him Brian, was travelling across the Channel a while back in his own twin. As he had not yet acquired a twin rating, he was enjoying the flight in the commodious back seats. Up front were two twin-rated pilots: one, Peter, a former owner of the type, the other, Neville, an instructor. They were flying VFR from Southampton via ORTAC, en route to the Channel Islands. Eight miles off the French coast and talking to Cherbourg, one engine lost power. They called a PAN to Cherbourg. An Aurigny airliner altered course to be near them. There was plenty of time for radio dialogue. My chum in the back spotted a Brittany Ferry and suggested they ditch near it, but the PIC wanted to try to make Cherbourg. However ten minutes later the other engine began to run only intermittently. By this time height was low, and the captain did not issue a Mayday until only 30 seconds before they hit the water. At 120 knots (the flaps had not been lowered), one wing caught a wave, cartwheeling the aircraft and ripping off the tail.

Luckily the sea state was reasonable, there was only a force 4 wind blowing, but the sea temperature was only 9 degrees. Brian managed to unlock and open the cabin door. He deployed the life raft, tying the securing tape to the door frame. But he was then knocked out. When he came to, he swam out to the raft, and climbed in. Adrenaline flowing, this did not prove a problem. He noticed that Peter and Neville were already 25 yards away, and, with the 12 knot tidal race, 25 yards apart from each other. Unfortunately someone had secured the raft's paddles to its floor with gaffer tape such that Brian, with fingers rapidly numbing, could not release and use them.

The French had not called a helicopter until a Mayday had been declared. But it arrived on the scene in ten minutes, with the Aurigny airliner all the time circling overhead. The helicopter crew understandably ignored the liferaft, making first for Peter and Neville. Picking them up quickly, the crew realised that these two needed urgent medical attention and disappeared over the horizon, although there would have been plenty of room for Brian. A French frigate soon loomed out of the mist, and launched a RIB whose crew had Brian swiftly on board. He was taken to Cherbourg's naval harbour, and thence to hospital.

Steve and Neville died in the helicopter. None of the three had been wearing immersion suits. They had donned life jackets once the engine trouble started. But Brian had noticed that this itself was not easy for his colleagues handling the aircraft, and would have presumably distracted them from handling other aspects of the emergency.

The French SAR services performed with the efficiency and professionalism that one would expect. There are many lessons in this case, but foremost would seem to be calling a Mayday in timely fashion.



near the FIR Boundary the European agency will co-ordinate with ARCC or the Coastguard. Particularly for vessels it has however been known for the master to steer back to UK waters before calling for aid, since the Europeans take a more commercial approach in charging for their services!

The Future

The Government has already had one attempt at privatising the whole of the nation's SAR resource. This failed when it was realised that CHC, a member of the Soteria consortium, had access to commercially sensitive information of the MOD project team's evaluations. In November 2011 the Department of Transport announced revised plans. SAR will be civilianised by March 2015, by which time the Sea Kings will have been retired. The bases at Portland and Boulmer will be closed.

The Transport Secretary talks of a modern fleet of "fast, reliable helicopters" that would lead to "major improvements in the capability available from the present mix of helicopters", which would also provide "a more reliable service". This would imply that the current service is unreliable – not quite my impression.

However all the SAR professionals with whom I have spoken doubt whether the structure or procedures will change much in its newly civilianised form.

Tips

● The Coastguard encourages all mariners to supply them with as complete details as possible of their journey and survival equipment. It follows that it makes sense to do the same on your flight plan form. A good idea to include the number of your EPIRB, for example. And you have



*Top left: winchman monitors the FLIR and radar returns while the pilots search visually
Above: a bit cramped in the back, but a good enough ride home in an emergency
Below: a little flag might help, but a good PLB, properly registered, is better*

registered it with the MCA, have you not?

- Mini-flares are very useful for final homing – and take up little space when in a pouch on your lifejacket belt.
- Do not grab the earthing cable that the helicopter crew will drop into the sea as soon as they approach.

● Expect the winchman to be 'abrupt and rude' in Holly's words. He will issue short, simple instructions. Wait to be told where to go.

Finally, I would suggest you read a copy of the Royal Yachting Association's Sea Survival handbook (ISBN 0-901501-69-7)

