



Surrey's wild waters

The densely populated county of Surrey in the UK faces considerable risk from flooding thanks to numerous waterways such as the Thames. As a result, Surrey FRS has developed a highly trained water-rescue capability, write David Crease, Paul Kenny and Dr Ian Greatbatch.

Fire and rescue services that operate around waterways face a particular set of challenges. For Surrey FRS in the UK, which operates in a county that contains nearly 34km² of water, including a 35km-long stretch of the Thames, those challenges include serious flood risk as well as the dangers associated with the recreational use of England's major river.

The Thames is not Surrey's only river. The Way and the Mole are among the county's most well-known waterways, and it also has two major canal networks, several populated islands (locally referred to as 'aits'), and reservoirs serving London and the South East as well as ponds, lakes, and minor rivers. With a population of around 1.1 million in 650 square miles, Surrey is one of the most densely populated counties in the South East.

There have been fire and rescue service patrols on the river in Surrey since the 19th century, and a dedicated fire

service boat has been in operation for more than 40 years. This has seen various states of readiness, training, and usage throughout the decades until the turn of the century, where, in response to flooding in the late 1990s, a new training regime was established. This ultimately led to the current set up (via inputs of policy, training and resources via the DEFRA Flood Conops of 2010).

This tradition of water rescue is proudly maintained by Surrey FRS, and continues to be an important skillset and service, especially as widespread flooding becomes more common.

The presence of a long stretch of the Thames means that flooding is not the only concern. All rivers carry a danger of drowning, but the Thames especially has long been considered a recreational resource, and as traditional industries along the river have diminished, housing and recreation has taken its place. There are roughly 35 pubs along the river in the Surrey stretch, and hundreds more within a short walk. It is well-established that alcohol both reduces the perception of risk, as well as the physical ability to swim effectively or self-rescue.

The Thames may look benign, especially on a hot summer's day, and in conjunction with the perception of the river as a recreational area, this leads to temptation. The problem is that the river is not only very cold, it is also very powerful. This leads to a risk of 'swim failure', where the swimmer is unable to maintain a horizontal swimming position, their legs start to drop and, if the water is deep enough, they drown.

The average temperature of the Thames is around 13°C, and research shows that as water approaches 10°C, swim position typically changes, as does the effectiveness of the swimming stroke, and swim failure is likely (Tipton et al, 1999).

One of the key issues is the effective communication of these dangers to the public, especially to young males, the group most vulnerable to accidental drowning. There are fewer public information films nowadays, and there is also a

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Surrey firefighters carry out a casualty-recovery exercise.

clear communications gap between young people and the relevant authorities because of the ubiquity of social media.

As a result, safety agencies need to be aware of the changing trends in social media use – the growing popularity of Snapchat, for example – as well as adopting the kind of language in use by this demographic. There is an understanding that the fire and rescue service needs to be seen as a friendly face that offers meaningful advice, rather than as an authoritarian voice that may stimulate feelings of rebellion. It is also acknowledged that poorly targeted social media campaigns can backfire.

If these factors are combined – alcohol use, poor risk perception, and lack of understanding of the risks – the danger of an incident occurring increases, and this is a priority in strategic planning within the fire service. Surrey FRS is working hard with the local community and local government to improve awareness and is intending to launch a widespread incident prevention campaign in the near future.

Surrey FRS on a training exercise on the Solent.



When incidents do occur, Surrey has six stations offering a varied water rescue and flood response. These include four (Defra type D team) flood response stations, which offer a wide capability to assist with evacuations in flood conditions, and two (Defra type B team) swiftwater rescue and flood response stations with powered boat capability, which are based along the Thames.

To achieve this high level of response, all teams undertake considerable training to maintain their skills at locations that offer varying water conditions. There is an experienced training team in the service, with members who come from a variety of backgrounds, who bring those experiences to the training.

The brigade believes it is crucial to provide training that is as realistic as possible, ensuring that the crews have the fullest appreciation of the significant hazards posed by a flood environment. A combination of natural and man-made venues have proved to be the most effective in regards to preparation. Tidal estuaries can be used to simulate a flood with constantly changing conditions, while white-water recreational venues expose teams to powerful, fast-flowing water in a controlled environment. Some members of the teams are also trained as specialist boat handlers, which enables them to manoeuvre a craft in some of the trickiest conditions.

All personnel within the teams are provided with appropriate PPE depending on the level of response they are trained to. This includes a dry suit, a helmet (red or yellow, depending on which team they are in and their level of qualification), a buoyancy aid (equipped with a whistle, torch and knife), a throw bag and gloves as standard.

Typical additional kit for a type D team includes all of the above, plus a small craft to assist with evacuating residents; wading poles to move safely through water, and to identify any raised manholes or ditches, etc; a hose inflation kit, to provide an enhanced reach capability across a body of water; portable lighting; and communications equipment.

Typical kit for a type B team includes all of the kit provided for a D team plus a large Pioneer cathedral hull rescue boat

with 75hp outboard, typically used for larger incidents on the Thames; two small inflatable craft with 20hp outboard motors; two five-metre mud and ice rescue paths, used to move across mud and ice, commonly to rescue animals; an underwater search camera; floating stretchers for casualties; and long floating lines and technical kit to set up safe restraint systems in fast flowing water.

In addition to this, the service has trained around 20 of its senior officers as water incident managers (Mod 5s in the Defra concept of operations), as well as training in wide area search and lost person behaviour. The brigade also has a high volume pumping capability that is a vital part of any flood operation.

Surrey FRS works closely with Boatability, a private-sector training organisation based in Portsmouth. Boatability now provides all boat training and was chosen not only because of its excellent reputation, but also because it is the only training organisation to offer a City and Guilds qualification in powerboat operations, as well as standard Royal Yachting Association qualifications. This means, from a fire service perspective, that Surrey achieves greater value for money, with transferable and tangible qualifications for its crews.

References

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