# HEART TROUBLES

The BGA Safety Team discusses heart attacks and cardiac arrest

Historically, according to our accident records, the principal causes of gliding fatalities have been inadvertent stalls and spins, winch launch accidents, mid-air collisions, rigging errors and aerotow upsets. All of these accidents are avoidable, and with increased vigilance, technical advances, revised training and a dose of luck, most categories have seen improvements over the years. The sixth cause, however, has nothing to do with flying activities: it is heart attacks and cardiac arrests.

In general, the BGA Safety Team only hears of heart problems when they cause a pilot to be incapacitated in the air – and even then, the subsequent diagnosis can be elusive or uncertain. We believe that, over the past 50 years, about a dozen pilots have suffered debilitating heart problems while at the controls of a glider or tug, resulting in roughly the same number of fatalities as rigging errors and aerotow upsets. Apart from one cardiac event during pre-flight checks and one just after landing, all have occurred while airborne, when little could be done.

We don't usually hear from gliding clubs about heart troubles beyond the cockpit, but a somewhat unscientific survey suggests that such events significantly outnumber those while piloting – which should be no surprise given the fraction of the time we spend in the air. We estimate that, across the UK, there is on average about one cardiac event at or airborne from a gliding club each year. If so, this would make cardiac events the largest cause of gliding fatalities. Unlike heart problems that happen aloft, those on the ground occur within reach of help.


## CARDIAC FIRST AID

Heart attacks (myocardial infarctions) are typically caused when blood flow to the heart muscles is obstructed. Symptoms include pain in or radiating from the chest; shortness of breath, coughing or wheezing; indigestion-type pain or burning in the chest or stomach; light-headedness; nausea; and anxiety [1]. The person may look unwell, pale or sweaty.

The key recommended actions are to

- dial 999/112 for emergency help
- sit the victim on the floor, with knees bent and head and shoulders supported
- give the victim (unless allergic or under 16) an aspirin tablet to chew slowly.

Emergency treatments include medication and interventions to widen blood vessels and break down clots. If these are given promptly, the prospects are good: over 90% of those treated within an hour of symptoms occurring will survive a year or more.

Cardiac arrest in contrast occurs when the heart develops an abnormal rhythm that affects its ability to pump blood around the body. It can follow a heart attack, or stem from heart disease or congenital defects. Non-experts are not good at telling whether a pulse is present, so if a victim is unconscious and not breathing, or breathing abnormally, cardiac arrest may be assumed [2]. Chest compressions (cardiopulmonary resuscitation or CPR) should be performed to keep a


**‘ THIS WOULD MAKE CARDIAC EVENTS THE LARGEST CAUSE OF GLIDING FATALITIES ’**

little blood flowing until the heart rhythm can be stabilised by using a defibrillator to provide an electric shock to the heart. Trained resuscitators may also perform the ‘kiss of life’ to replenish blood oxygen.

The key recommended actions [3] are to

- shout for help; then,

*if you have helpers:*

- ask them to (a) dial 999/112 stating cardiac arrest, and (b) fetch a defibrillator
- start cardiopulmonary resuscitation (CPR)
- perform CPR until a defibrillator arrives.

*If you’re alone:*

- if you’re far from help, and can get a defibrillator to the victim quickly, do so
- call 999/112, switching your phone to ‘speaker’ so that you can use it hands-free

in each case:

- once you have a defibrillator, use it; if none is available, perform CPR until emergency services arrive.

## DEFIBRILLATORS

Automated External Defibrillators (AEDs) are modern, automated devices designed for public use. They are portable and battery operated, and there are over 50,000 of them in public places across the UK [4]. The 999/112 operator can direct you to the nearest registered defibrillator.

However, a swift response is crucial. It’s reckoned that if treatment is given within five minutes of collapse, the survival rate for cardiac arrest is 50-70%, but that this is reduced by around 10% for each further minute of delay. Unfortunately, five minutes is probably about as long as it would take to respond and drive to the clubhouse and back. And gliding clubs are usually in remote places: if your helper needs to leave the airfield to find a defibrillator, it’ll be too late.

Many gliding clubs already have their own defibrillator. Comparable in price with a parachute, they cost around £1,000, plus £200-300 every few years for new pads and batteries – it’s worth checking parts costs as well as purchase price before choosing. It makes sense to keep them near where people are likely to be, so some clubs have several, including one at the launch point. If public access is feasible, consider registering them with The Circuit [4].

## TRAINING

Anyone can use an AED: no training is necessary, and it can’t make the victim any worse. It will give audible instructions to the user, monitor the victim, and deliver a shock only if it determines it to be necessary. Nonetheless, familiarity can be helpful, partly by reducing fumbling, but crucially by giving the user the confidence to use it. Too many people die from cardiac arrest because bystanders don’t intervene.

Organisations such as Red Cross and St John Ambulance offer combined training in CPR and use of AEDs. We can attend as individuals, but a half-day or evening session at the gliding club could be a welcome event in gloomy midwinter. You could also contact your local air ambulance group: many provide public training sessions, and advice from local emergency services can help fine-tune clubs’ emergency response plans too.

## HEART HEALTH

Heart troubles can affect any of us, regardless of our apparent fitness: of the dozen victims that we know of, two had Class 2 medicals, and another had passed an aviation medical just months earlier. Nonetheless, check-ups and blood pressure monitoring can catch some early symptoms.

As individuals, the best thing we can do is adopt a healthy lifestyle: quit smoking, exercise regularly, cut down on alcohol, salt and sugar, and keep our weight under control. This might not be popular advice as we approach the festive season, but it could mean we don’t have to test that defibrillator.

**Tim Freegarde and the BGA safety team, with advice from the BGA Medical Adviser**

- The BGA website [5] has a wealth of information about pilot health and medical requirements.

[1] BHF, 11 Signs You Might Have Heart Disease
*https://tinyurl.com/flyright2326*
[2] Resuscitation Council UK, CPR Information
*https://tinyurl.com/flyright2327*
[3] St John Ambulance, Cardiac Arrest
*https://tinyurl.com/flyright2328*
[4] St John Ambulance, The Circuit
*https://tinyurl.com/flyright2329*
[5] BGA, Medical Information
*https://tinyurl.com/flyright2330*

**PREVIOUS ‘FLY RIGHT’ ARTICLES**

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- Keeping safe in thermals (June/July 19)
- Why it is good to think ahead (Aug/Sep 19)
- The effects of wind gradient (Oct/Nov 19)
- A fun but safe introduction (Dec 19/Jan 20)
- Stop the drop (Feb/Mar 20)
- Avoiding upset (Apr/May 20)
- Backroom boys (June/July 20)
- Cockpit muddle (Aug/Sep 20)
- Safe rotation (Oct/Nov 20)
- Cockpit remedies (Dec 20/Jan 21)
- COVID currency (Feb/Mar 21)
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- Time to solve a knotty problem (Feb/Mar 22)
- RTFM: Read the flight manual (Apr/May 22)
- Startling events (June/July 22)
- Collision risks (Aug/Sep 22)
- Winter hazards (Oct/Nov 22)
- Swiss cheese (Dec 22/Jan 23)
- An expensive mistake (Feb/Mar 23)
- What’s changed? (Apr/May 23)
- Aerotow eventualities (June/July 23)
- Problems with probabilities (Aug/Sept 23)
- Winch nuances (Oct/Nov 23)