



SAFETY

Get your act together, Buster

Use a GPS and stop the rise in infringements, says Safety Officer **John Teesdale**



I LAST wrote about infringements into controlled airspace in April *MF*, but someone out there isn't paying attention, because they're still on the increase, despite the efforts of the CAA, GASCo and others.

Microlights are no exception, and a recent incident by one involved a vertical infringement of 4000ft into a CTA.

Events like this cause chaos at major airports, with diverted and delayed flights, and the cost to the airline industry is huge. Not surprisingly, the CAA takes a dim view, and some hefty fines have been applied in the past.

Recently, GASCo has been running courses on behalf of the CAA for groups of pilots who have infringed, much like the speed awareness courses for drivers. These have been very successful, but it's still much better not to have to go on one. Preliminary analysis by a CAA working group indicated that about 80% of airspace infringements studied could have been avoided if the pilot had used a GPS-enabled device with a moving map and airspace warning facility.

Included in that figure are a number of occurrences involving incorrect use of settings, or failure to know how to use the equipment effectively.

The purpose of this article, therefore, is to promote the correct use of moving-map GPS devices with airspace warning, together with proper planning and good cockpit management, as essential tools that will help you avoid an infringement.

I have to confess to being something of a Luddite with modern technology, but sometimes an invention just stands out as being so blindingly good that it would be crazy not to have it.

Such was my reaction when the Airspace Aware units came out, so I fitted one in my training school aircraft straight away. Since then, its warning beep and flashing airspace borders have saved many an embarrassing moment.

Believe it or not, one in seven infringements has an instructor on board!

GPS devices are, of course, improving all the time. Like computers and phones, they are getting faster and more reliable. They have more features, are easier to use and have bigger, clearer, intuitive touchscreens instead of rows of buttons.

Rather than buy a standalone GPS, you can, of course, download a software package onto your phone or tablet and use that.

Being able to see your route in a vertical section as well as in plan form is extremely useful for spotting potential vertical infringements.

Microlight training has been slow to embrace the use of GPS, but this all changes in December with the issue of the new revised training syllabus which you can read about in the *News* section of this edition of *MF*.

The BMAA Training Committee has now included the use of GPS in navigation training, and the one-in-60 rule has been consigned to the round filing cabinet. Hooray!

The committee's new view is that during training, you should use both map and GPS, where fitted, together.

Enclosed with this magazine you will find a booklet entitled *Infringement Avoidance*, written by the Royal Institute of Navigation. This booklet describes the RIN's approved and recommended method of in-

Above
A flight from the Isle of Wight heading towards the Solent CTA on SkyDemon, with the vertical profile highlighting an infringement

tegrating GPS (which it calls GNSS) with conventional mapwork.

I'll try to summarise, in my own words, the essential parts.

Planning

Preparation is everything. There is no substitute for good preflight planning. You've heard the old adage: "To fail to prepare is to prepare to fail". Look for possible infringements en route and allow sensible margins both horizontally and vertically. Remember "Take 2".

Sort out the cockpit before you set off. Make sure everything you need is in the right place, within reach and sight, and works. Check that nothing will come loose, fall on the floor or interfere with the controls.

In flight, stick rigidly to a cyclic routine as described by the RIN. Maintain situational awareness and stay ahead of the aircraft. Don't get distracted; this is another major cause of infringements.

If you have to divert, be aware the workload goes up dramatically and this increases the potential for infringements.

If you get lost, *do something positive*. Don't just plod on in denial. Follow the "Lost" procedures in the booklet. Remember, if all else fails, there are trained professionals sitting in front of millions of pounds worth of equipment, just waiting for your radio call – use them.

To this I would add, if you think you are near controlled airspace, plot a track from where you think you are away from it.

Your electronic friend in the cockpit, used correctly, can make life much easier for you. But as you will read in the booklet, even duplicated GPS systems can fail, so don't just chuck an old map into the back of the cockpit "just in case"; use it as an effective back-up.

A little story to finish. Years ago, before moving maps and screens appeared, the early GPS devices just had a horizontal scale, with a moving cursor which represented your track. If you deviated off your planned track, the cursor moved left or right of the centre of the scale. You then adjusted your heading to keep it in the middle.

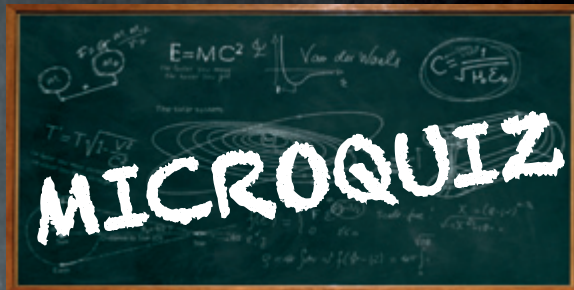
It was unbelievably basic by modern standards, but it did have Distance to Go and Groundspeed, which was a huge help. I flew a little Jodel 112 across the Med using one, and out of sight of land, it was a godsend.

However, they did rely on correct programming. You remember the saying "garbage in, garbage out? Well, a club pilot wanted to fly from Rufforth near York to Fenland in Lincs, but he put in an "i" instead of the "e".

He didn't bother using a map, so after crossing the coast and heading out to sea near Flamborough Head en route to Finland, he thought perhaps things didn't look right, and turned back...

Safe flying.

• Thanks to Pooleys for sponsoring the production of the RIN booklet for the BMAA in the interests of safety, and to Fiona Luckhurst of the BMAA panel of examiners for finding the RIN booklet.



JUST when you thought *MF* couldn't get any better, we bring you a new monthly quiz for students and qualified pilots alike. Ladies and gentlemen, start your brains...

- 1 **The vertical definitions of a MATZ are based on...**
 - a Local QNH
 - b QFE of MATZ
 - c Regional QNH
- 2 **A light aircraft departing behind a heavy aircraft, from the beginning of the runway, should wait how many minutes for wake turbulence to clear?**
 - a Two minutes
 - b Four minutes
 - c Eight minutes
- 3 **Thunderstorms are associated with...**
 - a Lenticularis cloud
 - b Alto-cumulus cloud
 - c Cumulonimbus cloud
- 4 **With your back to the wind in the Northern Hemisphere, low pressure is...**
 - a Behind you
 - b To your left
 - c To your right
- 5 **Vx refers to the speed at which...**
 - a The best angle of climb can be achieved
 - b The best rate of climb can be achieved
 - c The aircraft is at the best cruise speed
- 6 **A propeller blade will often have a twist along its length to...**
 - a Ensure optimum angles of attack through its span
 - b Create minimum drag
 - c Help in the event of airframe icing
- 7 **Flying in icing conditions could freeze over the pitot tube. This would primarily affect...**
 - a The airspeed indicator
 - b The altimeter
 - c The vertical speed indicator
- 8 **What is VOLMET?**
 - a A radio broadcast of weather conditions at aerodromes
 - b A chart showing pressure systems and weather fronts
 - c A telephone-based weather service
- 9 **A healthy person should not experience hypoxic effects below...**
 - a 10,000ft
 - b 20,000ft
 - c 30,000ft
- 10 **The shortest track between two points on the earth is called...**
 - a A Great Circle
 - b A Rhumb Line
 - c A direct meridian

• *MF's* quizmaster Lawrence Bell is the developer of QuizAero, the online groundschool for microlight student pilots, quizaero.co.uk. Answers overleaf.