



**SPECIAL OFFER**  
Buy a Zoon XRX and a Garmin 496 GPS from Harry Mendelsohn and he'll throw in the interface cable worth £58.75 for FREE. Just mention LOOP when you order. Tel: 0131 447 7777

hollow diamond which changes to a solid yellow circle if the traffic gets close enough to be regarded as a threat.

For Mode-C or -S equipped targets, a number beside the symbol indicates the relative altitude of the target and a small arrow indicates if it is climbing or descending.

While the integral LCD in the XRX is adequate, it is small, and can sometimes be hard to read. So having traffic information displayed on the big, bright moving map of the 496 is a revelation. It provides instant awareness of where to look for detected traffic and so helps to reduce

head-in-the-cockpit time.

Furthermore, while the XRX's LCD shows bearing information in 45° increments, the unit can actually provide bearing resolution of 20°, and the 496 uses this improved resolution.

#### IN THE AIR

We let the RV take-off first then lined up behind it. Shortly after take-off, a target appeared on the Garmin at 12 o'clock, a mile ahead and 500ft above. That is exactly where the RV was.

We manoeuvred around so the RV was in different relative positions and at

different ranges, and while the bearing shown by the display wasn't always exactly correct it was easily accurate enough to help locate the traffic visually.

Several times during the test we lost visual contact with the RV but on every occasion we were able to use the XRX to find it again.

The Zoon documentation highlights a possible limitation with accurately determining the range of targets in the rear quadrant. However, we didn't experience this – most likely a benefit of testing in a wooden aeroplane with a huge bubble canopy. In fact,

we found range accuracy was within 0.5nm for traffic about 5nm away, and improved to 0.2nm as traffic came closer than 2nm.

#### CONCLUSION

We found the performance of the XRX to be first-rate. It is well thought out and impressively engineered. Like TCAS, though, its major limitation is that it can only detect transponder-equipped aircraft.

Nevertheless, particularly when combined with a Garmin 496, it provides a remarkably effective traffic awareness system at a realistic price.

## FIRST LOOK

VALVE WIZARD PRICE: \$139

# Wizard time-saver



A NEW tool for working on most Lycoming and Continental piston engines is set to cut service times.

The tool is the Valve Wizard, developed by US certified aircraft maintenance engineer Jolly Higdon. It is mounted to the cylinder on-engine and gives easier removal of the valvegear and, in turn, the removal of the cylinder from the crankcase.

Higdon says Valve Wizard's most valuable asset is time saved on removal and replacement of the cylinders.

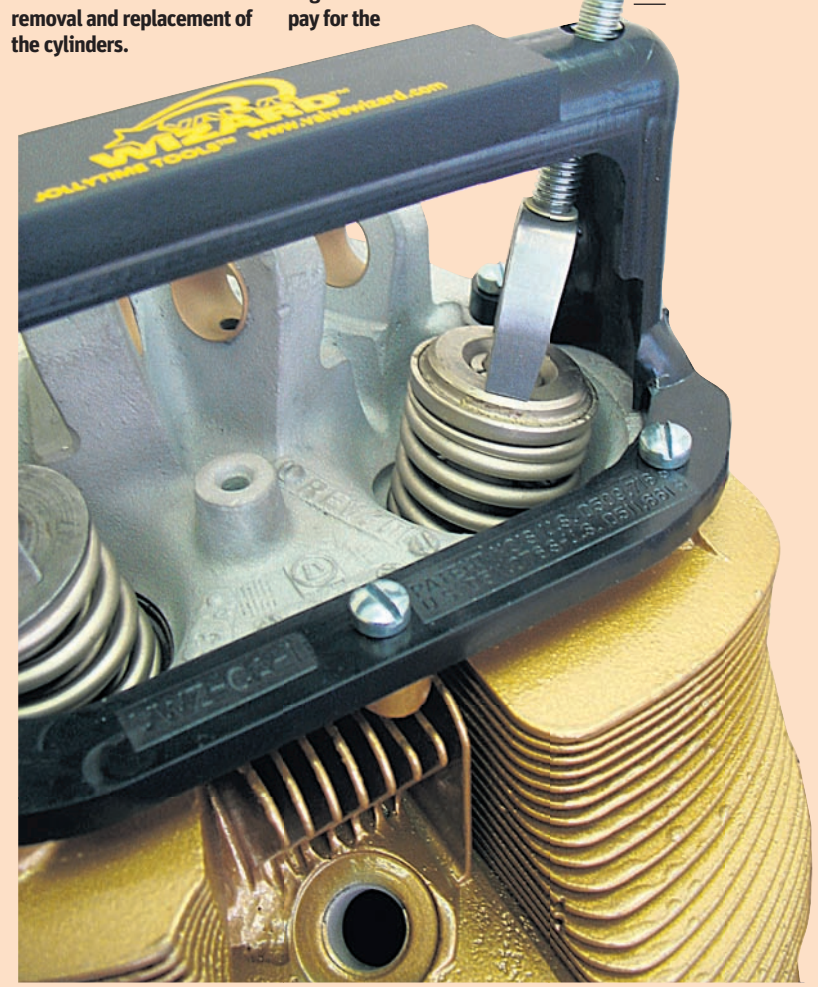
The tool was invented by Higdon after years of frustration using the typical lever bars for which constant pressure against the spring must be maintained by one hand, leaving just one hand to access the top-end parts. With Valve Wizard, the cylinders remain bolted to the crankcase while relieving the tension on the springs, saving several hours labor per engine.

"On a typical 4-cylinder engine the time saved will pay for the

tool first time out of the box," says Higdon.

Valve Wizard comes as a kit of three at a price of \$339, or \$139 each if ordered individually. The three models cover Lycoming O-235, O-290, IO/O-320, IO/O-360, AEIO-360, O-435, IO-480, IO-540 series and Continental O-470, IO-470, IO-520, IO-550 and TSIO-520 series engines.

W: [www.valvewizard.com](http://www.valvewizard.com)



80mg drink-drive limit)? The rule in the ANO, (itself sounding a little woozy) states:

"A person shall not, when acting as a member of the crew of any aircraft or being carried in any aircraft for the purpose of so acting, be under the influence of drink or drugs, to such an extent as to impair his capacity so to act."

The rule remains the same but in 2004 it had fixed pass/fail levels applied. The blame for this lies not with the CAA or EASA but with Rail and Maritime authorities who recognised drink/drug problems with various crew. As fellow 'transporters,' aviation got caught up with the new limits.

So the question remains, what does 20mg mean? Technically this amount is the lowest reasonably measurable amount as the body naturally produces some small amounts of alcohol.

However, this does not answer the question: "I have to fly at 0700 on Monday. Can I have a few beers on Sunday lunchtime, or can I have half a bottle of wine with dinner?"

Get it wrong and the penalties are a £5000 fine, two years imprisonment and loss of licence. The police will react as a priority call if a third party contacts them and indicates they believe you, as a pilot, may be over the limit.

What's more, the 20mg rule applies to any UK registered aircraft anywhere in the world.

The only way to be sure is to use a quality breathalyser. I spent some months regularly using a breathalyser and, I would just like to say, researching for this article has been really, hic, wonderful, but was surprised by the results.

After two pints of beer, my reading always remained over 90mg for 3-4 hours. This completely blew the myth, "I've got the car, someone kindly bought me a second but unwanted pint, so I will stay longer but on soft drinks, then legally drive."

I could drink quite

intensively late in the evening and normally have a zero reading at 0700 but, importantly, not always.

The real surprise is the "can I top you up?" events, such as weddings or lunchtime barbecues, where it is easy to drink far more over a long period.

The amount you consume is as important as how you feel, and the time interval prior to flying. This is the classic pilot trap, drinking apparently little over a long period.

Personally, stopping drinking in the early evening, feeling as though I'd had a drink but certainly not feeling drunk, the next morning's test readings, were always over 80mg.

If you wake up aware you had a drink last night, then you will be seriously over the flying limit (probably the driving limit too).

Remember, even for non professional pilots, a criminal conviction and prison sentence doesn't look so good on your CV.

Now when you've got yourself sorted, just remember that the limit for aircraft engineers is 80mg – the same as being drunk in charge of a car.

I think I might do that A-check walk-round again!

– Tim Desbois  
The breathalyser unit we tried was the AL6000 from Discount Breathalysers.co.uk  
W: [www.discountbrethalysers.co.uk](http://www.discountbrethalysers.co.uk)



Alcohol limit for pilots is effectively zero!