

Freedom of Choice: An ELT or Active Tracking?

I, (your KiwiFlyer Editor) recently had to spend \$2500 on a new ELT for my aircraft. For the money, I'd much rather have a monitored tracking system (which I also do have) and I'm sure I'm not alone with the thought that the opportunity must exist for a version of the latter to become an alternative to the former. Regulation and control would be required, perhaps including a compulsory automated 'watch' mode, but \$2500 would buy a lot of compulsory watch time. With the Coroner's report into the Erceg accident mentioning the use of monitored tracking systems, I asked Rachel Donald of Spidertracks what the state of play was for potential development and certification of a viable ELT alternative. Rachel's reply follows:

NEW ZEALAND led the world when it mandated the use of 406 MHz Emergency Locator Transmitters late in 2007. At the time, it was thought to be a breakthrough in aircraft location technology. Unfortunately though, ELTs have not lived up to their potential in aviation. The underlying technology is sound – Personal Locator Beacons and EPIRBs have a good record, but the ELT has a fundamental flaw; it has to survive a crash to activate and automatically transmit. Given the often violent nature of aircraft accidents it's not surprising that in New Zealand the records show that ELTs fail in 86 per cent of incidents involving injury or death. In the 82 such accidents between 1999 and 2008, 73 aircraft were carrying ELTs – but only 10 sent a signal. This is not just a local issue; US accident data puts the failure rate at about 75 per cent.

So unfortunately you can't rely on your ELT to save your life. However, modern GPS-based tracking technology might.

Tracking technology that uses GPS position data, transmitted via satellite to a second party who can locate or track the aircraft in real-time has been around for about five years. It's been significantly enhanced over that time and is now smaller, more affordable and more accessible. It has evolved from a basic tracking system to a fully automatic, emergency alerting and aircraft location solution, for example the spidertracks' spiderwatch service.

There are three key differences between active tracking systems and ELTs. The tracking system knows where you are every two minutes based on your position reports, leading up to any incident. Emergency alerts are activated automatically when the device stops transmitting. The alerts are sent by the system and aren't reliant on the device surviving the crash. Coupled with reliable communication and global coverage provided by a superior satellite network, such as Iridium, and 'pilot proof' automatic activation, active monitoring systems are clearly a viable alternative to ELTs.

However, despite a growing call from pilots (and Coroners!) the CAA appears not to be proactively moving to take advantage of this technology to improve pilot safety and to once again position New Zealand as a world leader. Although a report into the efficacy of ELTs and the feasibility of tracking systems as aircraft location tools has been produced by the CAA, the report unfortunately had a number of errors of fact. This is perhaps not surprising considering that neither tracking system manufacturer in New Zealand was contacted for information.

The CAA report included unsupportable claims about the reliability of ELTs, saying they fail only 1.2 per cent per year (suggesting they work 98.8 per cent of the time) and completely ignored that while the ELT might have operated it didn't transmit because the aircraft was upside down. The issue is not whether the

contributed by Rachel Donald

ELT worked but whether the signal was able to get out.

The report claimed tracking systems don't meet the five internationally accepted requirements defined by the US Coast Guard. Actually, they meet four out of the five – with the fifth that the device send out an alert within five minutes, being only a matter of settings. For example, our system has a two tier alerting system which allows the pilot's friends and family time to try and contact them first, before the alert is escalated to the Rescue Coordination Centre. This was implemented to help prevent false alerts (another significant problem with ELTs). According to the report, ELTs meet all requirements. The reality is it can take up to two hours for an ELT message to get out if the satellite is not overhead. As well, ELTs only meet the requirements when they actually transmit – and that's been established to be in less than 14 per cent of injury causing incidents! Another apparent 'issue' CAA has with tracking systems is that they do not meet approved performance specifications, at the same time noting that no such standards exist.

As a side issue, some pilots have expressed concern that if mandated, the CAA would be able to use track records against the pilot. (CAA's growing reputation for litigation is probably driving this concern). Tracks are owned by the client; we host your tracks on our server, but it's your information and we could only give CAA access if they presented the equivalent of a search warrant. Having said that, the Aviation Industry Association is concerned about CAA's stance and the potential it has to deter pilots from buying these superior safety systems.

The Association is talking with CAA on this very issue to try and ensure track data can't be used against a pilot.

On the positive side, CAA has stated publicly that it is engaging with the tracking industry with the aim of developing these standards, but we have yet to hear from them. We've requested two meetings with CAA to get the ball rolling – one meeting was cancelled by CAA and a second request to meet with the Director appears to have been ignored.

In his report, the Hamilton Coroner urged the CAA to "immediately engage" with industry to develop minimum criteria that would enable flight tracking systems to be accepted as alternative aircraft location systems so that the "best possible instruments for detection and location of missing aircraft can be installed as quickly as possible." CAA replied that it would follow the Coroner's recommendations but it was one of a number of things it was looking at; "It's not the top of the priority list. It's there and will continue to be worked on."

Thus, while this opportunity to improve pilot safety languishes at "not the top of their priority list", any day now another New Zealand pilot could be lost and not found because their ELT failed to operate. Is that acceptable? We think not.

So what's required to move forward on the issue? We believe that the tracking industry and its products are ready for operation as primary safety devices in aircraft and we can see several opportunities for introducing the technology progressively in partnership with the CAA. What we need next is dialogue with the CAA on the matter, if necessary with the weight of many frustrated aviators behind us.

"...the ELT has a fundamental flaw; it has to survive a crash to activate and automatically transmit ..."