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ELT Update

TC mandates 406 MHz ELTs for most private aircraft

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By Kevin Psutka of COPA

After 12 years of common sense arguments, consultation and negotiation, Transport Canada has decided to mandate new ELTs that broadcast on 406 MHz for most aircraft flying in Canadian airspace, including private aircraft (Canadian and foreign).

However, note that at the time of writing this article, the regulation has not yet been released. To be clear, the current regulation remains in place until such time as the new regulation goes into force, which happens when it is released in the Canada Gazette Part II. So, at this time, you are not required to do anything.

What we do know

COPA has known for some time about the Minister of Transport's decision to mandate 406 ELTs but we wanted to wait until it is finalized in order to provide a detailed explanation based on the exact wording of the final rule. Normally we do not proceed until things are in black and white because they can change, but in this case COPA doubts that the Minister will again change his mind.

Also, the process has dragged on for too long and we want to at least let everyone know that they will be required to purchase a new ELT so they can decide what to do when their old ELT is due for inspection.

COPA also wants to bring a promotion to your attention to help you transition to a new ELT.

The regulation will require all aircraft flying in Canadian airspace to be equipped with either an ELT that is capable of transmitting on 406 MHz and 121.5 MHz or an alternate means of compliance. **The exact wording for the alternate means is not known at this time but we do know that the wording will not change significantly from a previous draft of the regulation; wording that excludes all affordable alternatives for our sector of aviation.**

The regulation will permit a transition period of two years for commercial aircraft and three years for private aircraft. There are exceptions similar to the current regulation (balloons for example). All foreign aircraft will also have to comply, even U.S.-registered aircraft that are not required to equip in the U.S.

The regulation is with the Minister of Transport now for sign-off and then it will go to a Treasury Board hearing before being released. COPA does not know when these will occur but if they do not occur soon, it could slip further due to summer recess.

COPA also convinced the Canadian authorities that, among other issues, the industry was not prepared, in terms of supply, to equip tens of thousands of aircraft in a very short time. Incredible as it seems, the international folks who set the original schedule did not do any research on the ability of the industry to meet the schedule, and they were about to set the stage for a mass grounding of aircraft.

In the ensuing years, there has been a competitive effort to develop lower cost ELTs. There are some available now for as little as \$600 U.S. (some of these are available only in the U.S. at this point – Canadian approval pending) but you should be aware that it is very much a matter of you get what you pay for with some of these ELTs.

Although they technically meet the certification requirement, which means they have features built into them that permit them to function automatically, many aircraft owners may be tempted to go with the minimum cost to comply.

However, as with any electronic device where production costs are reduced through sourcing of low-cost components and employing low-cost manufacturing techniques, the device's performance under extreme conditions or their ability to last a reasonable time beyond the warranty period may be questionable.

Just because they "meet the spec" does not necessarily mean that they will provide good value.

The process of obtaining and installing your new ELT is more complicated

Purchasing and installing these new ELTs is a bit more complicated than the old ones, primarily because of the new capability to send a code up to the satellite to tell the rescue folks in which country the ELT is registered and in which specific aircraft it is being used.

Therefore, a distress signal from the ELT can be linked to a specific owner via a database called the beacon registry that resides at DND's Mission Control Centre, where rescues are coordinated. This feature only works if you register the ELT. This is a new requirement that did not exist with the old ELTs and it is one that is vital in improving the response time to an alert.

In the old days, there were relatively few choices (fixed or portable). Now you can choose between no GPS, internal GPS or linked to an aircraft installed GPS. There are also several concepts for testing the ELT, including self-testing and remote testing via the internet. There are also choices that are compatible with old ELT mounting trays and, to some extent, wiring to the remote switch. So, in searching for an ELT, determine if there is one that may be compatible with your current installation. It could save you some work and money.

The basic, least costly mandated requirement is to install an Automatic Fixed (AF) ELT that meets TSO C126. ELTs that meet TSO C91 or C91a do not broadcast on 406 MHz and therefore will no longer be acceptable beyond the transition period that will be specified when the regulation is released.

Whether you elect to install a more capable ELT is up to you. COPA believes that an Automatic Portable (AP) ELT has a major advantage for a relatively small additional cost because it can be removed from the aircraft and positioned for best signal strength. Also, an ELT with GPS capability is more expensive but it is nice to have because it narrows the search area down to a few hundred feet or less.

So, here are the key steps that you should consider.

First step: Make sure that the ELT you want to purchase is approved for Canada. Be careful about some of the sales pitches.

There are three levels of approval that are necessary for ELTs in Canada:

- The international agency COPAS/SARSAT (managers of the satellite monitoring system) must approve.
- Transport Canada (the airworthiness authority) examines and then sign off on each make and model of ELT for its conformance with the standard (TSO C126).
- But the final authority is Industry Canada (managers of the radio frequency spectrum). The list of approved ELTs is kept on Industry Canada's website but it is difficult to search and not necessarily always up to date. If there is any doubt, ask for a copy of the Industry Canada certification sheet.

Second step: You must purchase an ELT that is coded for Canada. If it is not coded for Canada you will have to send it to the manufacturer or one of their agents to have it recoded, and there may be a charge for this service. Most, if not all, Canadian vendors sell Canadian coded ELTs. So, just beware of the "deal" at a trade show in the U.S. and ask about the country code. Speaking of deals, see the section below about a deal we have arranged with Aircraft Spruce Canada.

Third step: The ELT must be programmed for the aircraft in which it will be installed. Every registered aircraft has a unique code, a string of 0s and 1s called a 24-bit address which you can find for your aircraft by searching the registration database <http://wwwapps2.tc.gc.ca/Saf-Sec-Sur/2/ccarcs/aspscripts/en/quicksearch.asp> .

When you purchase an ELT, it must be programmed for a specific aircraft before it is installed. Depending on the make of ELT you purchase, there are varying ways to have the ELT programmed, but you cannot do so yourself. Most vendors will have the equipment to program the ELT and they can find the 24-bit address for you.

Please note that since the ELTs are programmed for a specific aircraft, you cannot simply move it from one aircraft to another.

Some manufacturers offer a dongle to reprogram the ELT (useful for flight schools and other fleet operators) but most of us will have to take the ELT to an agency that has the equipment to reprogram ELTs.

Fourth step: You are responsible for registering the ELT in the beacon registry. Only about 40% of all 406 MHz alerting devices in the world are currently registered, so this important (and mandatory) step is frequently missed.

This step involves entering data about you and your aircraft (emergency contact phone number, colour of aircraft etc.) into a registry that is maintained and used by DND's rescue folks.

There are a variety of ways (online, fax, email or mail) to register your ELT, as explained on the National Search and Rescue Secretariat site http://nss.gc.ca/site/Emergency_Beacons/canadian_beacon_registry_e.asp but this is a very important step that you must perform in order to comply with the regulation and, more important, to minimize delay in responding to an alert from your ELT.

To register your ELT, or any other beacon online, go to DND's site <http://www.canadianbeaconregistry.forces.gc.ca/>.

Fifth step: Install the ELT. Thanks to Transport Canada's agreement to remove the new ELTs from the specialized maintenance category, they can be installed by an AME with an M1 or M2 rating, provided that the ELT does not interface with an aircraft system, such as an on board GPS.

Combined with the regulation permitting you up to three years to comply, you have the flexibility to schedule the installation for a time when other work is being done, such as an annual when the aircraft is opened up anyway, and you can assist in the installation.

Is an ELT enough to protect you?

This was the million dollar question during the long debate. There is no doubt that the new ELTs, with more powerful signal, less interference and the capability to send a coded message identifying the unit and providing an optional GPS location, is an improvement over the previous ELTs. However, the primary reasons why ELTs fail to automatically activate and send a signal to monitoring agencies is not addressed by the new ELTs.

Antennas will break off, wreckage will sink or be inverted, and ELTs will be destroyed by impact forces. We can debate about how much improvement in the failure rate will occur, which in our opinion was nowhere near being acceptable with the older units, but it will take some years to gather data in order to see how the millions of dollars aircraft owners will spend has made our prospects for being rescued any better, if at all, and we will be risking lives to find out.

As with any form of insurance, each person has to assess their aversion to risk and purchase whatever satisfies their level of risk. The uncertainty with ELTs, like the uncertainty with some forms of insurance, is whether or not your investment will bring the results you expect. With this in mind, you should consider carrying something else with you (PLB, SPOT, tracking service, mobile phone, sat phone etc.), brief someone about your route and file and stick to a flight plan in order to improve your odds of being found.
