

ELT Update – TC mandates 406 MHz ELTs for all aircraft

By Kevin Psutka

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.

What went wrong

COPA had reached a compromise with Transport Canada in 2009 that would not require privately registered aircraft to equip with 406. Several members congratulated COPA for the win but we cautioned everyone at that time that the issue would not be resolved until it was in black and white with the revised regulation coming into effect.

At the time COPA was concerned that the Department of National Defence (DND), who did not participate in the key consultation meetings, disagreed with the compromise and would work at the political level to press for a solution that best suited them.

Well, DND did take their case to the Treasury Board, last stop on the way to the regulation coming into law and at which the public has no input, and convinced the Board to overrule our agreement and force the switch to 406. The Treasury Board then sent the regulation back to Transport Canada for re-work.

The Transport Minister could have held his ground at the Treasury Board and followed the advice of his advisors, both internally and externally (COPA), but he chose not to do so.

It seems that the military knows what is best for our sector of aviation. The real shame of this development, besides the millions of dollars that our sector will have to spend to meet DND's agenda, is that this is a sign that the military can essentially control civil aviation. They overstepped the public consultation process, including years of in depth work that resulted in a practical solution.

In many countries where the military controls/influences civil aviation, general aviation is either severely curtailed or non-existent. Perhaps the unwillingness of our Transport Minister to listen to reason and stand up against the military is a sign of things to come. This is regrettable in this country that is dependent on GA as a form of transportation.

What went well

Through COPA's extensive efforts, we managed to delay the imposition of the requirement.

In 1998, when the first attempt was made to mandate new ELTs starting in 2000 and cease monitoring 121.5 MHz by

satellite in 2002, the cost to purchase and install an ELT was a minimum of about \$4,000, due in large part to a lack of competition and very little development effort to seek low-cost solutions.

At that time, COPA stated that the resistance point to being forced to install a new ELT, given their propensity to fail, was about \$1,000 installed.

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.

COPA's effort also resolved two other issues – lithium batteries and who can install ELTs

We convinced Transport Canada to catch up with the times regarding lithium batteries. At the heart of a requirement to buy new ELTs many years ago was the faulty standard for batteries that resulted in several malfunctions, including fires. The standard was revised and the battery installations were improved in the 1990s so that there was no longer a reason to ban them in Canada.

The prohibition was removed a few years ago, thereby increasing the choice and eliminating a more costly “Canada-only” solution if unique ELTs for Canada were required. This helps to drive the cost down through choice and competition.

ELTs were considered specialized maintenance. As far as we could determine, ELTs were simply captured for no good reason in a revision of the maintenance regulations. In an effort to reduce the installation costs, Transport Canada was convinced to permit installation of the new ELTs by AMEs instead of having to go to a shop that can perform specialized maintenance. This can reduce the overall cost by several hundred to several thousands of dollars because the installation can be done in place when the annual is performed and the aircraft is open for inspection anyway and the owner can help to reduce the time and therefore cost.

Things we are working on

Many of the new ELTs incorporate self-test features and even remote testing such that most of the annual certification requirements can be fulfilled without having to send the ELTs anywhere for certification, which has in the past presented significant safety (and cost) implications.

With the 406 there is no need to ship dangerous goods (lithium batteries), false alerts from ELTs activating in delivery trucks are eliminated and aircraft would not have to fly without an ELT for up to 30 days.

COPA proposed that the owner perform an annual check using the manufacturers procedures, and that formal recertification by a shop be performed coincident with the battery life (five or six years). An additional benefit is that it would save the annual cost (\$80 - \$150) plus tax plus shipping. So far, TC has not accepted this safety and cost improvement proposal.

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.

For those interested in buying Canadian, in previous articles COPA spoke about Pointer Avionics, whose ELT offers an internal GPS at a much more affordable price compared with other GPS-compatible manufacturers. Unfortunately, Pointer has not yet completed the certification process and does not expect to be able to start delivering ELTs until later this summer. If you want to buy Canadian, you will have to wait a bit longer. Keep an eye on their website www.pointeravionics.com.

COPA and Aircraft Spruce Canada have a deal for you!

With the cooperation of Aircraft Spruce Canada (www.aircraftspruce.ca), COPA is pleased to make the following offer to anyone who buys a 406 MHz ELT from Aircraft Spruce Canada. Our goal in putting this deal together is to provide one-stop-shopping for the purchase and programming of your ELT as well as renewing your COPA membership or taking out a new membership (both at no cost to you).

Contact Aircraft Spruce Canada at 877-795-2278 or visit www.aircraftspruce.ca to order a 406 MHz ELT from their large selection of available units. When your ELT arrives, it will include a buck slip from COPA. When you complete the buck slip with your contact information and send it to COPA (fax, scan and email or mail), we will verify your purchase and then do one of the following, depending on your membership type.

If you have an individual membership, we will extend it by one year, a value of \$55 (at no cost to you).

If you have a family or corporate membership, we will apply this value (\$55) to your membership account to extend your membership by one year and send you an invoice for the difference (family \$20, corporate \$205).

For non-members, we will provide a complementary one year individual membership, complete with all of the benefits of being a member.

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.

The last word

We are at the end of a long struggle for common sense. Future articles will bring new devices and services to your attention. If technology does what it usually does, ELTs will be surpassed by much better technology in the near future that will meet everyone's needs, government and aircraft owners alike.

Let's just hope the government does not leap onto new technology too soon and force yet another requirement to equip. We need time to recover from the millions that will be spent by our sector because of the mandatory ELT requirement.

Over the years COPA asked members many times to engage their Members of Parliament on this issue because in the end it would likely become a political issue. Some members did contact their MPs but there was relatively little response or support from the MPs, due largely to the reality that not enough members took the time to get involved. This was most likely viewed as acceptance of mandatory equipage, notwithstanding COPA's apparent lone voice in the wilderness, so to speak.

Perhaps the lack of action on the part of our membership meant that the majority accepted mandatory equipage. We will never know.

If members do not get politically involved in the issues that face our sector, we are doomed to whatever suits the politicians, as was the case here.

Our neighbours to the south are much more successful on issues like this one (406 is not mandated there) because their members take up the charge in large numbers, bugging their elected officials on an individual basis until they understand and become engaged in the issue. Canadians in general tend to be laid back, and that is why we sometimes get what we deserve rather than what we want or need.