



REASSESSMENT OF THE RESPONSE TO AIR TRANSPORTATION SAFETY RECOMMENDATION A16-01

406 MHZ ELT requirement

Background

On 31 May 2013, at approximately 0011 Eastern Daylight Time, the Sikorsky S-76A helicopter (registration C-GIMY, serial number 760055), operated as Lifeflight 8, departed at night from Runway 06 at the Moosonee Airport, Ontario, on a visual flight rules flight to the Attawapiskat Airport, Ontario, with 2 pilots and 2 paramedics on board. As the helicopter climbed through 300 feet above the ground toward its planned cruising altitude of 1000 feet above sea level, the pilot flying commenced a left-hand turn toward the Attawapiskat Airport, approximately 119 nautical miles to the northwest of the Moosonee Airport. Twenty-three seconds later, the helicopter impacted trees and then struck the ground in an area of dense bush and swampy terrain. The aircraft was destroyed by impact forces and the ensuing post-crash fire. The helicopter's satellite tracking system reported a takeoff message and then went inactive. The search-and-rescue satellite system did not detect a signal from the emergency locator transmitter. At approximately 0543, a search-and-rescue aircraft located the crash site approximately 1 nautical mile northeast of Runway 06, and deployed search-and-rescue technicians. However, there were no survivors.

The Board concluded its investigation and released report A13H0001 on 15 June 2016.

TSB Recommendation A16-01 (June 2016)

According to the International Civil Aviation Organization (ICAO) ELT Standards, there is no longer a requirement for ELTs to transmit on 121.5 MHz. Since 1 February 2009, Cospas-Sarsat no longer monitors 121.5 MHz. Cospas-Sarsat is capable of detecting and locating only 406 MHz signals, and is Canada's primary means for search and rescue (SAR) alerting, detection and response. Despite this, currently only 121.5 MHz ELTs are required by regulation in Canada. Canada is not abiding by the ICAO ELT Standards, which came into effect in 2005 and require aircraft to be equipped with a 406 MHz ELT. As a result, Canadian-registered aircraft are permitted to operate in Canada with ELTs whose distress signals cannot be detected by the international Cospas-Sarsat system.

According to TC, approximately 27 000 Canadian-registered aircraft require an ELT. However, in March 2016, there were only 10 086 Canadian-registered aircraft in TC's Aircraft Registry database equipped with at least one active 406 MHz ELT registered through the Canadian Beacon Registry. Of those aircraft, 5256 were private, 4604 were commercial, and the remaining 226 were state-owned. Therefore, more than half of all Canadian-registered aircraft that require

an ELT are being operated with an ELT whose signal is not detectable by the Cospas-Sarsat system.

Previously, TC advocated for and promoted the benefits of 406 MHz ELTs, and initiated the formal rule-change process to make them a regulatory requirement. However, in the face of opposition from segments of the aviation community, TC discontinued those efforts. In June 2015, 10 years after the ICAO 406 MHz ELT requirement came into effect, TC published a Notice of Proposed Amendment (NPA) on the Canadian Aviation Regulation Advisory Council (CARAC) Activity website proposing mandatory installation of dual 121.5/406 MHz-capable ELTs. According to TC, the intent of the proposed regulation can be met with a stand-alone 406 MHz ELT in addition to an existing 121.5/243.0 MHz ELT; however, TC has indicated that virtually all 406 MHz ELTs are now dual frequency.

If the regulations are not amended to reflect the ICAO standards, it is highly likely that non-406 MHz ELTs will continue to be used on Canadian-registered aircraft and foreign aircraft flying in Canada. As a result, flight crews and passengers will continue to be exposed to potentially life-threatening delays in SAR services following an occurrence.

Therefore the Board recommends that:

the Department of Transport require all Canadian-registered aircraft and foreign aircraft operating in Canada that require installation of an emergency locator transmitter (ELT) to be equipped with a 406 MHz ELT in accordance with International Civil Aviation Organization standards.

TSB Recommendation A16-01

Transport Canada's response to Recommendation A16-01 (September 2016)

Transport Canada agrees with this recommendation and is continuing on the regulatory path to mandate the carriage of 406 MHz capable emergency beacons for Canadian registered aircraft and foreign aircraft operating in Canada. Transport Canada anticipates these regulations to be published in 2017.

TSB assessment of Transport Canada's response to Recommendation A16-01 (December 2016)

In its response, Transport Canada indicated that it has begun the regulatory process to mandate the carriage of 406 MHz-capable emergency locator transmitters. This could substantially reduce or eliminate the safety deficiency. However, at this time and until the new regulations are implemented, the action is not sufficiently advanced to reduce the risks to transportation safety.

Therefore, the response to Recommendation A16-01 is assessed as **Satisfactory Intent**.

Transport Canada's response to Recommendation A16-01 (March 2018)

TC agrees with the recommendation.

TC is continuing the regulatory process to mandate the carriage of 406 MHz capable emergency beacons for Canadian registered aircraft and foreign aircraft operating in Canada. TC anticipates these regulations will be published in *Canada Gazette, Part I* in spring 2018.

Update from TC (January 2019)

TC is now aiming for Winter 2019, for a *Canada Gazette, Part I* publication date.

TSB reassessment of Transport Canada's response to Recommendation A16-01 (March 2019)

In its response, Transport Canada (TC) indicates that it continues to work towards the implementation of regulations that will mandate the carriage of 406 MHz capable emergency locator transmitters for Canadian registered aircraft, as well as foreign aircraft operating in Canada.

TC had initially anticipated the regulations to be published in the *Canada Gazette, Part I* in 2017, followed by spring 2018. It now anticipates publication in winter 2019/2020. Once implemented, the new regulations will address the safety deficiency associated with Recommendation A16-01. However, until the regulations come into effect, the risks to transportation safety remain.

Therefore, the response to Recommendation A16-01 is assessed as **Satisfactory Intent**.

Transport Canada's response to Recommendation A16-01 (December 2019)

TC agrees with the recommendation.

TC is continuing the regulatory process to mandate the carriage of 406 MHz capable emergency beacons for Canadian registered aircraft and foreign aircraft operating in Canada. Currently, TC is analyzing comments that were received following publication in the *Canada Gazette, Part I*,¹ in June 2019.

The final amendment to the regulation is expected to be published in the *Canada Gazette, Part II* in late spring 2020.

¹ Canada Gazette, Part I, Volume 153, Number 22. Available at: <http://gazette.gc.ca/rp-pr/p1/2019/2019-06-01/html/reg9-eng.html>

TSB reassessment of Transport Canada's response to Recommendation A16-01 (March 2020)

In its latest response, Transport Canada indicated that the regulatory process to mandate the carriage of 406 MHz capable emergency locator transmitters (ELTs) for Canadian registered aircraft and foreign aircraft operating in Canada continues to progress. Publication of the final amendment in the *Canada Gazette*, Part II is expected for late spring 2020.

Provided the new requirements remain as published in the *Canada Gazette*, Part I, when fully implemented, this regulatory change will substantially reduce or eliminate the safety deficiency associated with Recommendation A16-01. However, until the regulations come into effect mandating the carriage of 406 MHz capable ELTs, the risks to transportation safety remain.

Therefore, the Board considers the response to the recommendation to show **Satisfactory Intent**.

Transport Canada's response to Recommendation A16-01 (December 2020)

Transport Canada (TC) agrees with the recommendation.

Since the last update in December 2019 (RDIMS 16027871), TC finalized the amendments to the *Canada Aviation Regulations* (CARs) that address the safety deficiency associated with this recommendation.

The amendments to the CARs, announced by the Minister of Transport² and published in the *Canada Gazette*, Part II,³ in November 25, 2020, mandate that all Canadian registered aircraft and foreign aircraft operating in Canada, with the exception of gliders, balloons, airships, ultra-light airplanes and gyroplanes, be equipped with one or more ELTs capable of broadcasting simultaneously on frequencies of 406 MHz and 121.5 MHz.

The implementation period for the regulation will be, from the date the amendments are published in the *Canada Gazette*, Part II:

- One year for commercial air operators, private (604) operators and foreign aircraft operating in Canada; and
- Five years for general aviation / recreational operators

² **Transport Canada (2020)**. Minister Garneau announces strengthened requirements for emergency locator transmitters on aircraft in Canada. Available at: <https://www.newswire.ca/news-releases/minister-garneau-announces-strengthened-requirements-for-emergency-locator-transmitters-on-aircraft-in-canada-804221797.html>

³ **Canada Gazette, Part II, Volume 154 (25 November 2020)**. Regulations amending *the Canadian Aviation Regulations* (Parts I, V and VI – ELT). Available at: <http://www.gazette.gc.ca/rp-pr/p2/2020/2020-11-25/html/sor-dors238-eng.html>

TSB reassessment of Transport Canada's response to Recommendation A16-01 (March 2021)

In its latest response, Transport Canada indicates that amendments to the *Canadian Aviation Regulations* (CARs), announced by the Minister of Transport and published in the *Canada Gazette*, Part II, on 25 November 2020, mandate that all Canadian registered aircraft and foreign aircraft operating in Canada, with the exception of gliders, balloons, airships, ultra-light airplanes and gyroplanes, be equipped with one or more emergency locator transmitters capable of broadcasting simultaneously on frequencies of 406 MHz and 121.5 MHz. These recent amendments to the CARs will, once the implementation period has elapsed, eliminate the safety deficiency associated with Recommendation A16-01.

Therefore, the response to Recommendation A16-01 is assessed as **Fully Satisfactory**.

Next TSB action

This deficiency file is **Closed**.