



Transport
Canada

Transports
Canada



TP 185E
Issue 1/2017

AVIATION SAFETY LETTER

In this issue...

Emergency Locator Transmitter (ELT): Using
Hook-and-Loop Fasteners

Using Repaired Parts—Making the Right Decision

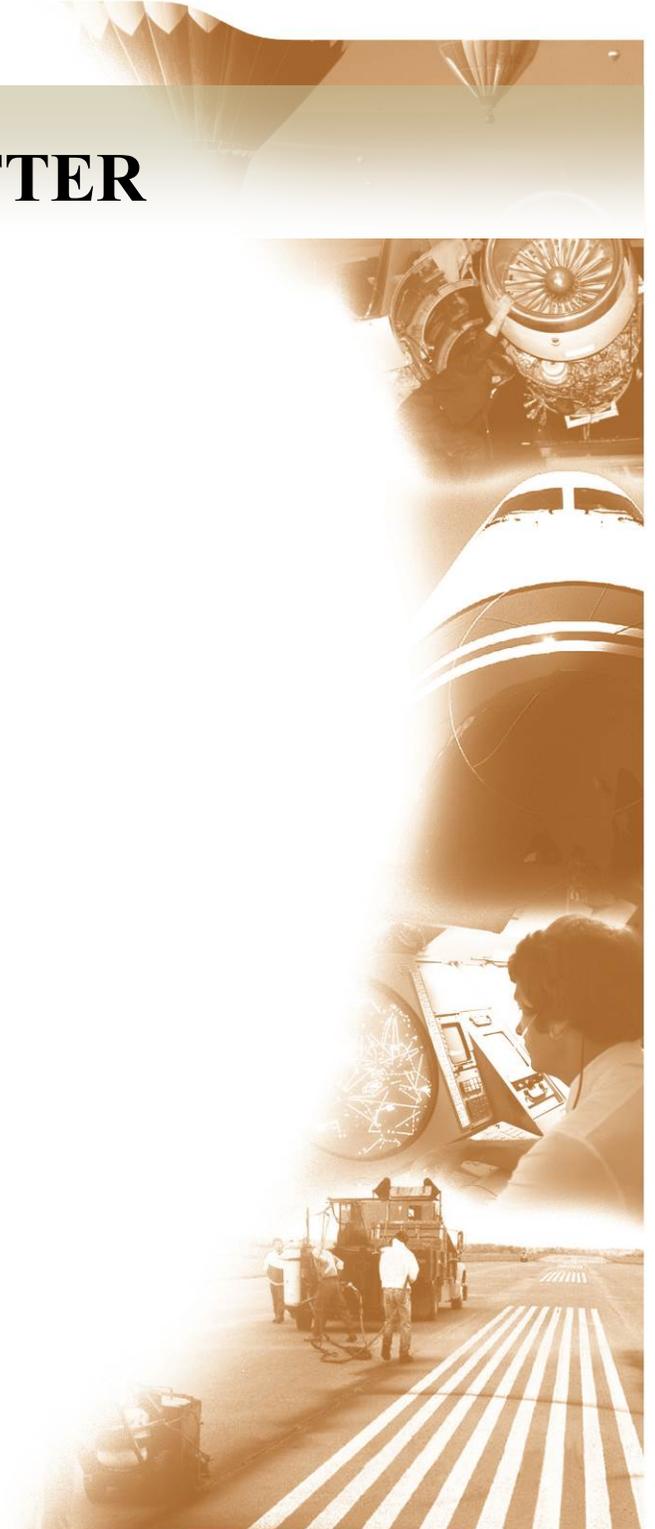
Snow Landing and Take-off Techniques

TSB Final Report Summaries

Flying With Skis

Take Five—Me the Hero?

*Learn from the mistakes of others;
You'll not live long enough to make them all yourself...*



Canada 

The *Aviation Safety Letter* is published by Transport Canada, Civil Aviation. The contents do not necessarily reflect official government policy and, unless stated, should not be construed as regulations or directives.

Letters with comments and suggestions are invited. All correspondence should include the author's name, address and telephone number. The editor reserves the right to edit all published articles. The author's name and address will be withheld from publication upon request.

Please address your correspondence to:

Jim Mulligan, Editor
Aviation Safety Letter
Transport Canada (AARTT)
330 Sparks Street, Ottawa ON K1A 0N8
E-mail: TC.ASL-SAN.TC@tc.gc.ca
Tel.: 613-957-9914 / Fax: 613-952-3298
Internet: www.tc.gc.ca/ASL

Copyright:

Some of the articles, photographs and graphics that appear in the *Aviation Safety Letter* are subject to copyrights held by other individuals and organizations. In such cases, some restrictions on the reproduction of the material may apply, and it may be necessary to seek permission from the rights holder prior to reproducing it. To obtain information concerning copyright ownership and restrictions on reproduction of the material, please contact the *Aviation Safety Letter* editor.

Note: Reprints of original *Aviation Safety Letter* material are encouraged, but credit must be given to Transport Canada's *Aviation Safety Letter*. Please forward one copy of the reprinted article to the editor.

Electronic distribution:

To subscribe to the *Aviation Safety Letter* e-Bulletin notification service, visit: www.tc.gc.ca/ASL.

Print-on-Demand:

To purchase a Print-on-Demand (POD) version (black and white), please contact:

The Order Desk

Transport Canada
Toll-free number (North America): 1-888-830-4911
Local number: 613-991-4071
E-mail: MPS1@tc.gc.ca
Fax: 613-991-2081

Sécurité aérienne — Nouvelles est la version française de cette publication.

© Her Majesty the Queen in Right of Canada, as represented by the Minister of Transport (2017).
ISSN: 0709-8103
TP 185E

Table of Contents

<i>section</i>	<i>page</i>
Guest Editorial	3
Emergency Locator Transmitter (ELT): Using Hook-and-Loop Fasteners	4
Using Repaired Parts—Making the Right Decision	5
Snow Landing and Take-off Techniques	6
TSB Final Report Summaries	8
Mental Health and Well-Being in Aviation	10
2016-2017 Ground Icing Operations Update	10
Flying With Skis	12
Me The Hero?	Tear-off
Unnecessary Search and Rescue (UN SAR) Alerts	Tear-off

Guest Editorial

I am pleased to have this opportunity to introduce myself as the new director of the Standards Branch of Transport Canada Civil Aviation (TCCA).

This is my second go-around in TCCA. I started at Transport Canada (TC) as an airworthiness engineer after I left the private sector, where I worked as a design and structures engineer in both the nuclear and aeronautic industries. Following a rewarding experience in the Aircraft Certification Branch, I took on the roles of chief, Regulatory Affairs, where I formed the Canadian Aviation Regulation Advisory Council (CARAC), and chief, Aviation Enforcement. After establishing an internal quality assurance system in Civil Aviation, I took on the challenge of establishing a similar framework for all of TC. And now, I am excited to be working to advance the way we engage with the civil aviation industry, provide guidance, and take action to protect the tremendous safety record that Canadians deserve and enjoy.



*Robert Sincennes
Director, Standards*

There is no question in my mind that the safety record is largely achieved by industry. I also believe that this is due in part to the collaborative efforts of industry, TC and other authorities to raise the safety bar.

I often get asked what my top priorities are and it really boils down to two areas of improvement. The obvious one is to continue to mature the regulatory framework—that is the regulations, standards, processes and guidance material. For me, however, this also means steering the development so that it is clear and simple to understand. I fully appreciate that aviation and aerospace are complex sectors, but I still think we can simplify our approach to regulatory development. I believe that the majority of the industry want to comply with or exceed regulatory requirements; going forward, I want to make TC's expectations crystal clear so that industry can comply more easily.

My second focus area is more inward looking. I want to do all that I can to ensure that our front-line staff are well supported with training, procedures, interpretations and all of the ingredients needed to achieve greater national standardization. I am privileged to work with dedicated and intelligent people across the national program—some of whom I have not yet had the opportunity to meet. It is my responsibility to ensure that I provide them with effective and clear direction. Therefore, the Standards Branch will be increasingly engaged with our operational colleagues to understand their views, needs, and questions and to work with them to fill gaps in our program in a planned and standardized manner.

The bottom line is that we must be consistent, allowing stakeholders to work to the same standards across our organization. We must be more efficient, directing our resources to the demand. We must be more agile; ready to keep pace with industry change.

To meet these challenges, Standards Branch needs to make both cultural and structural changes. Culture change is the most important. For our inspectors and other staff, we are developing interdependence and critical thinking to support consistency. At the managerial level, we are providing training in change management, mutual learning, and leadership in a technical environment.

TCCA already demonstrates regulatory excellence, so my focus areas are designed to continually raise the bar. I hope that we will all benefit from this effort. △

Robert Sincennes
Director, Standards
Civil Aviation

Emergency Locator Transmitter (ELT): Using Hook-and-Loop Fasteners

by Craig Bloch-Hansen, Senior Engineer, Aircraft Design Standards, Transport Canada

The purpose of this article is to bring awareness to issues surrounding fabric hook-and-loop fasteners when used to install emergency locator transmitters (ELTs) and to reinforce the importance of performing proper maintenance and using proper attachment methods.

While there is no guarantee that an ELT will transmit a signal, an ELT is installed into an aircraft to increase the probability of signal detection and dispatch of search and rescue in the event of an accident.

Of course, this is only effective if the ELT can detect a crash and its installation is robust enough to withstand the impact. To that effect, Transport Canada (TC) has defined a set of minimum performance and installation requirements for ELTs. These standards are published in [Airworthiness Manual \(AWM\) 551.104](#). In addition to the installation requirements, required maintenance must be performed at specific intervals. The maintenance requirements are currently included in [CAR Standard 571.13, Appendix G](#).

There are a number of ways manufacturers can attach an ELT to an airframe, including thumbscrews, metal latches, and hook-and-loop fasteners. Over the past several years, hook-and-loop fasteners have been of particular interest.

What is the big deal with hook-and-loop fasteners?

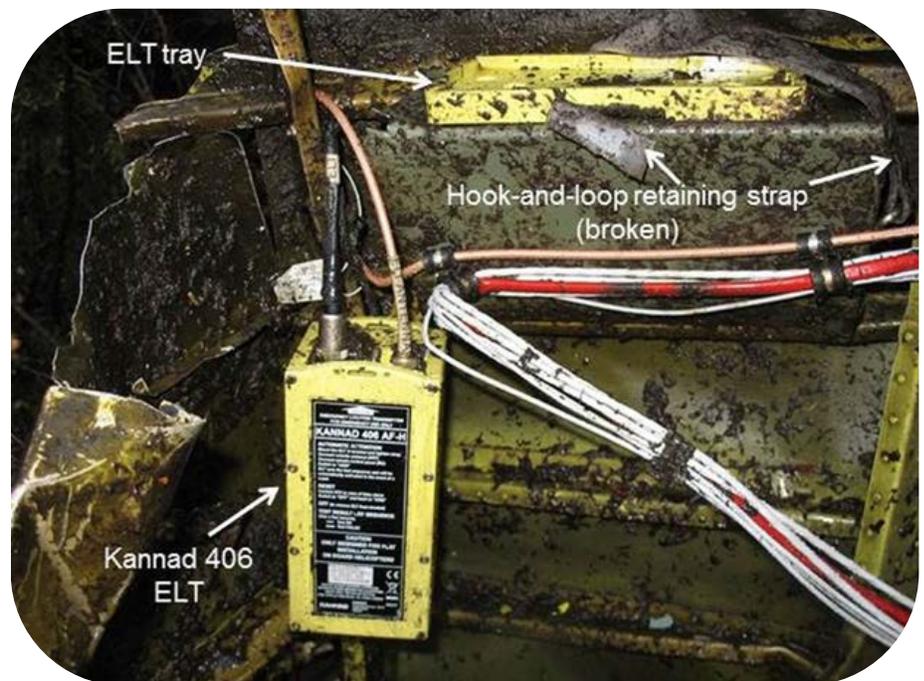
TC has raised concerns about hook-and-loop fasteners in [Aviation Safety Letter, issue 2/2013](#), but it is worth revisiting the subject.

In 1992, when TSO-C126 (which defined the standard for ELT performance) was initially published, international civil aviation authorities recognized the industry's desire for a performance-based specification with regard to ELT crashworthiness requirements. In this version of the standard, there were no proscriptions on the methods of installation; instead, the Minimum Operational Performance Standards (MOPS) defined an acceptable installation as remaining intact after a minimum force threshold. A number of manufacturers opted to meet this standard by using hook-and-loop fasteners.

By the end of 2010, there were dozens of ELTs that had been approved to these standards. At the start of 2011, as a result of an accident that occurred in Alaska in 2010, the U.S. National Transportation Safety Board (NTSB) issued Safety Recommendation [A-10-170](#) to the Federal Aviation Administration (FAA); the recommendation outlined concerns with respect to the standards defined in Technical Standard Orders (TSOs). The FAA's response was to issue TSO-C126b, which prohibited the use of hook-and-loop fasteners. They stopped short, however, of modifying installation requirements. TC responded in kind, adopting TSO-C126b as the only applicable design standard for new ELTs.

What about the existing hook-and-loop ELT installations?

In 2013, when a rotor-wing helicopter collided with terrain near Moosonee, Ont., hook-and-loop installations were brought up again. In the Transportation Safety Board of Canada (TSB) [report](#), it was noted that the hook-and-loop strap was broken during impact (see [photo](#)).



406 MHz automatic fixed helicopter emergency locator transmitter (ELT) hanging by its wires

As a result, the TSB, echoing their American counterparts, determined that hook-and-loop fasteners were insufficient to withstand real world crash scenarios. The TSB recommended that TC prohibit the use of hook-and-loop fasteners as a means of securing an ELT to an airframe.

What does this mean for the future of hook-and-loop installations on aircraft?

First and foremost, TC recommends that hook-and-loop fasteners not be used to secure ELTs to airframes. While they can be shown to meet the initial certification requirements for ELT installation, degradation of the strap over time does not ensure the ELT will remain secure during and after a crash. In addition, maintenance activities need to be current and performed correctly, as they will help ensure that the ELT remains secure after an impact (as discussed in [issue 2/2013](#) of the *Aviation Safety Letter*).

Finally, TC is revisiting the installation requirements included in AWM 551.104. The history of hook-and-loop fasteners is being kept very much in mind as the new requirements are being developed. These requirements will be available and the updated regulations will be published in the *Canada Gazette, Part I* in the very near future. For more information about the upcoming changes, readers may consult the following notices of proposed amendment (NPAs): 2015-013 and 2015-014.△

Using Repaired Parts—Making the Right Decision

by Jean-Marc Caron, Associate Director (interim), Operations, Transport Canada

As an aircraft owner or person in charge of commercial or recreational aircraft maintenance, finances are at the heart of your everyday concerns. The aeronautical sector is not immune to the rising cost of living. In this context, it seems logical to consider a repaired part as a money saving alternative to using a new part; however, it is important to remain vigilant so that monetary considerations do not put safety at risk.

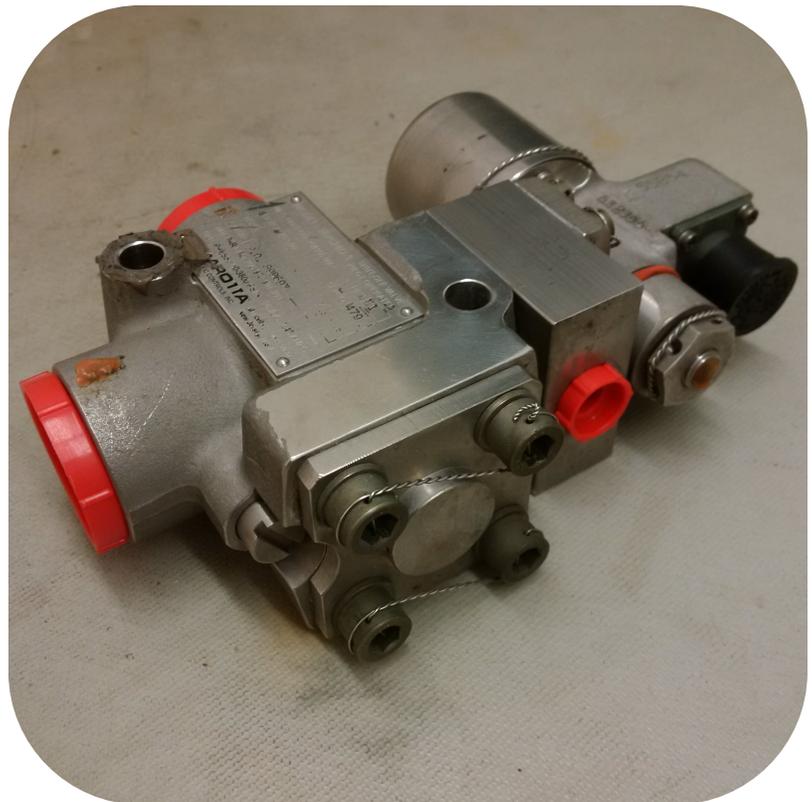
Price variation can be substantial depending on the source of the bid. Still, it can be surprising to see such a difference in price for the same work on a part. For many, the lowest bid is the winning one; especially if the part comes with a maintenance release, such as a Transport Canada (TC) Form One release certificate or a Federal Aviation Administration (FAA) 8130-03 certificate or a similar document issued by a country with whom Canada has an agreement.

From the perspective of the aircraft owner or the person in charge of maintenance, a part that comes with a completed release certificate may appear to meet the requirements set out in Part V, subpart 571 of the *Canadian Aviation Regulations* (CARs) since the certificate is required for installation. Even if the

organization that repaired the part is approved and the accompanying documentation appears to be complete,

the fact remains that the aircraft maintenance engineer (AME) or approved maintenance organization (AMO) must inspect the part and ensure that it conforms to its type design in accordance with CAR 571.13(1)(a).

Is the cheapest bid the best one? Have you done due diligence by remaining unaware of the reason for the price gap? Before ordering this part or permitting installation, would it not be more prudent to demand a list of the work that will be performed and the parts that



Air selenoid valve

will need to be replaced? What about ensuring that the manufacturer’s instructions—mandatory for continuing airworthiness—were followed during the repair? Is it possible that, to keep costs down, the instructions were only partly followed?

CAR 571.02 sets out the minimum requirements relating to maintenance work conducted on an aeronautical product. It is essential for AMOs to follow the manufacturer’s instructions when repairing components, parts, engines, etc. Each manufacturer has its own specific instructions. A repair may require the costly replacement of parts or subassemblies. AMOs cannot decide unilaterally to remain unaware of these requirements.

As an aircraft owner or person responsible for maintenance, it is your responsibility to ensure technical dispatch. While it is understandable to have confidence in the AMO or the AME, do not hesitate to ask questions. The safety of Canada’s transportation network is renowned and approved organizations and individuals are subject to oversight by the Department of Transport. The fact remains, however, that aircraft owners must stay vigilant for their own safety as well as for the safety of their clients. △

Snow Landing and Take-off Techniques

*by Rob Laporte, Regional Aviation Safety Officer—Helicopters, Ontario Region, Civil Aviation, Transport Canada.
Reprinted from Vortex 1/2003.*

Throughout the course of winter operations, helicopters face a significant hazard associated with takeoff, landing and hovering when the ground is covered with fresh or light snow. The rotor downwash can produce a flurry of recirculating snow, reducing local visibility and causing white-out conditions. There seems to be limited reference material available on the subject, but the following techniques are used by the industry as standard practice.

The towering takeoff

When conducting takeoffs in conditions conducive to recirculating snow, apply enough power to get the snow blowing while keeping enough weight on the aircraft to prevent it from moving. Leave the power on as long as necessary to get good visual references. This could take up to a minute to accomplish.



Once good references are established, use a towering take-off technique (altitude over airspeed) to stay out of the recirculating snow during the remainder of the departure procedure.

If the aircraft is equipped with a wheeled undercarriage and a runway is available, a rolling takeoff could be another option.

The rolling takeoff

Prior to starting the take-off roll, apply power to clear the runway in the vicinity of the aircraft; this will give you some reference for the start of the take-off roll. When ready for takeoff, apply enough power to get the aircraft accelerating ahead of the recirculating snow. When ahead of the snow, lift the aircraft into the air, accelerate to the aircraft’s normal climb speed and follow the normal climb profile. Use this technique when the snow cover is light (less than approximately 5 cm) and relatively dry. Deep or heavy snow could impose excessive load on the landing gear.

Landing: high-hover technique

Before using this technique, ensure that the aircraft is at a weight that will allow hover out of ground effect performance. If the aircraft is flying in clear air prior to the approach, activate the aircraft's anti-ice systems (if equipped) prior to entering the recirculating snow.

Plan your approach to arrive in a high hover above the landing site. This hover could be several rotor diameters above ground depending on snow conditions, aircraft weight, rotor diameter, and aircraft type.

When in a high hover, the recirculating snow will form beneath the helicopter, obscuring the landing site. This recirculating snow will also rise; stay above the rising snow and wait until solid references appear beneath the aircraft. This could take up to a minute. These references are directly under the aircraft and within the diameter of the rotor disc. Once solid references have been obtained, a slow vertical descent to touchdown is all that is required.

Landing: no-hover technique

This technique is generally used when aircraft do not have hover out of ground effect performance. The idea is to fly the approach fast enough to keep ahead of the recirculating snow and to complete a no-hover landing before the recirculating snow engulfs the aircraft, causing local white-out conditions.

Some of the negative aspects of this technique include the following.

- It requires excellent timing as there is usually only one chance to get it right.
- You may not be able to get a detailed look at the touchdown area prior to landing.
- It is not recommended for use at night because of darkness, which, along with weather, lowers the pilot's ability to obtain the proper visual references needed for depth perception when landing.

The run-on landing

A run-on landing could be another option, if your aircraft is equipped with a wheeled undercarriage and you are landing on a runway.

The technique is to fly the approach fast enough to keep well ahead of the recirculating snow. On touch down, the aircraft has to have enough forward speed to stay ahead of the recirculating snow and allow the collective to be fully lowered (lowering the collective reduces the recirculating snow). The aircraft should be brought to a full stop and the pilot should then taxi with caution.

NOTE: Use this technique when the snow cover is light (less than approximately 5 cm) and relatively dry. Deep or heavy snow could impose excessive load on the landing gear.

Safety first

Landings and takeoffs in recirculating snow require skill, training, and adherence to the following safety points.

- Be certain that you have sufficient power available to manoeuvre.
- To prevent dynamic rollover, ensure that the skids or wheels are not frozen to the ground prior to lift off.
- Observe the flight manual and company operations manual limitations. In the transport category, the height-velocity diagram is a limitation that must be respected. In other helicopters, it should be considered in your planning.
- When using the towering takeoff or high-hover landing technique, be patient. Wait for solid references to appear before proceeding.
- Practice landings and takeoffs using references that are inside the diameter of the rotor disc.
- Training should be obtained from a qualified training pilot or flight instructor before attempting the techniques described here. △

TSB Final Report Summaries

The following summaries are extracted from final reports issued by the Transportation Safety Board of Canada (TSB). They have been de-identified and include the TSB's synopsis and selected findings. Some excerpts from the analysis section may be included, where needed, to better understand the findings. Unless otherwise specified, all photos and illustrations were provided by the TSB. For the benefit of our readers, all the occurrence titles are hyperlinked to the full TSB report on the TSB Web site. —Ed.

TSB Final Report A94Q0182—Visual Flight Rules (VFR) Flight Into Adverse Flight Conditions

The pilot of the helicopter had taken off from a fishing camp on George River, Que., on a night visual flight to Kuujuaq, Que., located 94 SM to the west-southwest. The flight was an emergency medical evacuation (MEDEVAC) to transport a seriously injured woman. When the aircraft did not arrive at its destination at the expected time, a search was begun. The helicopter was found five days later; it had struck the ground in a steep dive. The four occupants were killed instantly.

The TSB determined that, while on the night MEDEVAC flight, the pilot likely lost his spatial orientation when he continued the flight in adverse flight conditions which he was not able to recognize in time because of the low light level. Contributing factors to the accident were that the pilot was not qualified for night flight or for instrument flight, and that the patient's condition likely influenced the pilot's decision to undertake the return night flight to Kuujuaq.

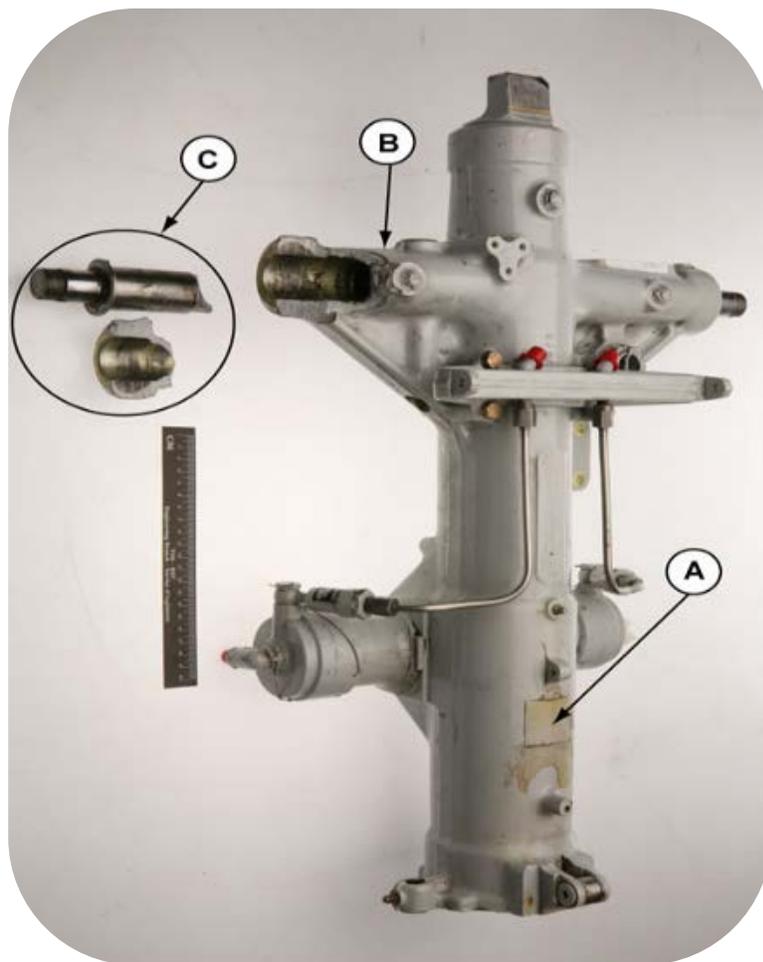
TSB Final Report A08O0235—Nose Landing Gear Failure During Landing

An Embraer EMB-110P1 aircraft was on a training flight with two pilots on board. At approximately 11:30 EDT, while landing on Runway 13 at Cochrane, Ont., the nose landing gear partially collapsed during the landing roll. The aircraft veered to the right and briefly exited the edge of the runway. The left brake was applied to prevent a complete runway excursion and directional control was regained; the aircraft was manoeuvred back onto the runway where it was brought to a stop. The aircraft received substantial damage to the nose section, and the right propeller was damaged when it struck a runway edge light. There were no injuries to either of the pilots.

Service History of the Nose Gear Assembly:

The nose landing gear was overhauled in Australia on January 11, 2007. The time since new on the Authorized Release Certificate from the maintenance organization was marked "Unknown," which indicated that the maintenance organization may not have been provided with this information when the nose gear was shipped to them for overhaul.

From the time the nose landing gear was overhauled to this date, there were no maintenance arrangements between Transport Canada and the Australian civil aviation authority. Therefore, the Authorized Release Certificate that the maintenance organization used to certify the work performed on the nose landing gear did not meet the requirements of subsections 571.11(3) and 571.08(1) of the *Canadian Aviation Regulations* (CARs). The nose landing gear should not have been installed on the aircraft.



A—Oleo strut housing assembly

B—Strut housing trunnion link arm

C—Damaged right steel trunnion assembly with bushing

Top nose gear assembly

TSB Final Report A09C0028—Gear-Up Landing

The Swearingen SA226-TC Metro II was inbound for Winnipeg/James Armstrong Richardson International Airport from St. Theresa Point, Man., with two crew members and eight passengers on board. On final approach into Winnipeg, the landing gear was selected down, but the right main gear did not extend. The crew carried out a missed approach, declared an emergency, and entered a holding pattern to attempt gear extension. The right main gear could not be extended by either the normal or emergency methods. The crew elected to conduct a gear-up landing into wind on Runway 18 with aircraft rescue and firefighting (ARFF) personnel standing by. Over the threshold of Runway 18, prior to touchdown, the crew shut down both engines and feathered both propellers. The aircraft came to a gradual stop on its belly on the centreline of the runway at 12:09 CST. The aircraft was evacuated with no injuries reported. The aircraft sustained substantial damage to its propellers, flaps, and aft belly area.



Area of tire-to-gear-door interference

TSB Final Report A13F0011—Controlled Flight Into Terrain

The Twin Otter de Havilland DHC-6-300 departed South Pole Station, Antarctica, at 0523Z on January 23, 2013, for a visual flight rules (VFR) repositioning flight to Terra Nova Bay, Antarctica, with a crew of three on board. The aircraft failed to make its last radio check-in scheduled at 0827Z, and the flight was considered overdue. An emergency locator transmitter (ELT) signal was detected in the vicinity of Mount Elizabeth, Antarctica, and a search and rescue (SAR) effort was initiated. Extreme weather conditions hampered the SAR operation, preventing the SAR team from accessing the site for two days. Once on site, it was determined that the aircraft had impacted terrain and that the crew members had not survived. Adverse weather, high altitude and the condition of the aircraft prevented the recovery of the crew and comprehensive examination of the aircraft. There were no indications of fire on the limited portions of the aircraft that were visible. The accident occurred during daylight hours.



Photo credit: Alasdair Turner Photography www.alasdairturner.com

Wreckage of the occurrence site, looking southeast

TSB Final Report A13H0001—Controlled Flight Into Terrain

On May 31, 2013, at approximately 00:11 EDT, a Sikorsky S-76A helicopter departed at night from Runway 06 at Moosonee Airport, Ont., on a visual flight rules (VFR) flight to Attawapiskat Airport, Ont., with two pilots and two paramedics on board. As the helicopter climbed through 300 ft above ground level (AGL) toward its planned cruising altitude of 1000 ft above sea level (ASL), the pilot flying commenced a left-hand turn toward Attawapiskat Airport, approximately 119 NM northwest of 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 (SAR) satellite system did not detect a signal from the emergency locator transmitter (ELT). At approximately 05:43, a SAR aircraft located the crash site approximately 1 NM northeast of Runway 06 and deployed SAR technicians. There were no survivors. △



Approximate flight path of the occurrence helicopter

Mental Health and Well-Being in Aviation

It is proven that healthy and happy employees lead to productivity and a more engaged workforce. Transport Canada sees the value in industry embracing this philosophy and taking action to facilitate mental health wellness, such as establishing employee assistance programs and other well-being initiatives. In addition to the safety benefits, there is a return on investment. To that end, Transport Canada will be supporting industry to achieve the goals of wellness in the workplace. One of the first things we are doing is organizing a Mental Health in Aviation Workshop this spring.

In the meantime, there are resource material already available such as [CSA Standard Psychological Health and Safety in the Workplace](#) that talks about prevention, promotion and guidance to staged implementation.

Please send us an email at TC.ASL-SAN.TC@tc.gc.ca if you would like to be added to the distribution list for the Mental Health in Aviation Workshop or information on mental health in aviation in general.

Transport Canada is looking forward to engaging with you more on this important topic. △

2016-2017 Ground Icing Operations Update

In August 2016, the winter 2016-2017 Holdover Time (HOT) Guidelines were published by Transport Canada. As per previous years, *Guidelines for Aircraft Ground Icing Operations* (TP 14052), should be used in conjunction with the HOT Guidelines. Both documents are available for download at the following Transport Canada Web site: <http://66.46.192.186/index.html>

Please note that Transport Canada recently published [Advisory Circular No. 700-040: Supplemental Holdover Timetables and Regression Information for Society of Automotive Engineers \(SAE\) Type II and IV Fluids](#). Please ensure you review this information.

To receive e-mail notifications of HOT Guidelines updates, subscribe to or update your “e-news” subscription, select “Holdover Time (HOT) Guidelines” under Publications/Air Transportation/Aviation Safety/Safety Information. △

Flying With Skis

Frozen lakes, snow and crisp clear days are the delights of the ski aircraft pilot. But before you fly, do not forget to review your operating handbook. You will also need a few extras before you go—they will help ensure a safer flight.

Preparing yourself

- Wear layers
- Bring extra clothing in case of an overnight stay

Preparing the aircraft

- Ensure that your skis are approved, installed correctly and properly maintained.
- If a stopover is planned at a remote location, carry a portable engine warm-up kit.
- When was your survival gear last inspected?
- Carry an aluminum shovel, ice chisel, snow knife, two wing lines (about 15 ft), one line (about 50 ft), a windshield frost scraper and wing covers.



*Photo credit: Mathieu Pouliot (www.flickr.com/photos/360photography)
Champion 7FC*

Flight planning

- You will probably be operating in remote areas, lakes and open country. Make your intentions known to air traffic control (ATC), the flight service station (FSS) or a responsible person.
- Assess the forecast and allow for weather changes en route, at destination and during the return trip.
- Plan for daylight visual flight rules (VFR) departures and arrivals because winter days are shorter.
- Consider alternates where food and shelter are available.

Preparing for flight

- Check your skis and rigging thoroughly. Look for frayed cables, worn-out bungees and loose connections.

Pattern for survival—Keywords

- Protection
- First aid
- Signals
- Comfort

Departure

- You will be your own manager, dispatcher and controller for most ski flights so be prepared to make decisions.
- Allow for wider turns while taxiing.
- Ski drag and wind are your only brakes.
- Check over your take-off area for snow or ice conditions and depth.

- Look for obstacles, drifts, ice hummocks, slush and cracks.
- Use flaps as recommended in the pilot operating handbook.
- Snow can be very sticky. It is possible that you may not be able to take off. It is very easy to overheat your engine, so watch your temperatures and pressures.
- Taxi back and try again, but be sure to taxi in your tracks to help pack the snow. When visibilities are restricted and you are operating from a large lake, do not take off heading out from the shoreline as it is easy to lose your horizon. It is best to land and take off along the shoreline where you can maintain ground reference. Stay away from river mouths on the shoreline. Watch out for thin ice!



*Photo credit: Michael Ladd, Civil Aviation Inspector
Twin Otter*

En route

- The terrain looks very different in winter. Keep this in mind when map reading.

Arrival

- White-out can occur on dull days over large snow covered lakes or on small lakes when landing on unbroken snow. Be prepared.
- Land close to shore, on an island or on anything that will offer you ground reference.
- Overfly the landing area at 1 000 ft above ground level (AGL) to assess:
 - the dimensions;
 - the approach path (Is it obstacle free?);
 - the departure path (Can you out climb the rocks and trees?); and
 - the other traffic (e.g. aircraft, vehicles, people and wildlife).
- It is recommended to circle a minimum of three times at 1 000 ft AGL when assessing an area.
- If you are able to manoeuvre safely, fly a standard circuit and approach to 200 ft AGL to determine:
 - the wind, by assessing drift;
 - the location of any obstacles; and
 - snow or ice conditions (e.g. drifts, slush, cracks).
 - If you are unable to manoeuvre safely, select another site.
- Climb and fly a standard circuit and approach.
 - Use flaps as recommended in the handbook.
 - If you are doubtful about surface conditions, conduct a touch-and-go, a circuit and a low approach to check for slush or water marks in the ski tracks.
 - If you are satisfied, fly the circuit and land.
 - Keep moving after touchdown until you arrive at your parking spot.
 - If you have to land where there are known slush conditions, never stop where you know there is slush. Do 360° circles on your own tracks and stop where the slush has not shown through.
 - After shutdown, put some insulating material like evergreen branches under the skis. You do not want your departure to be delayed until the spring thaw. Freeing and clearing frozen skis is a miserable chore.
 - If you are operating a heavier aircraft, lay the branches out and taxi onto them before shutting down.

Overnighting

- Use engine and wing covers.
- Dilute the oil as required.
- Remove the battery.
- Before shut down, turn the fuel off and run the carburetor dry. Preheating in the morning can cause fuel in the carburetor to boil over. Many aircraft have burned because of this oversight.



Photo credit: Mathieu Pouliot (www.flickr.com/photos/360photography)
Piper PA18-150 Super Cub

Preheating

- If you have to preheat with a blowpot or open flame, continue to move it around so that you do not overheat one spot. Never leave an open flame unattended.
- Never use an electric oil immersion type heater in your engine.

Returning to base

- Keep to your original flight plan departure time or notify a responsible person of delays as soon as possible.
- Preheat the engine if required—a warm cabin would be nice too!
- Recheck your take-off area. Conditions could have changed since landing.
- Keep alert for other traffic and wildlife

CLOSE YOUR FLIGHT PLAN when you have completed your flight.

Learn from others' mistakes. Remember, asking for advice does not show your ignorance. △





TAKE FIVE...

for safety

Five minutes reading could save your life!

Me The Hero?

There are very few eye-catching sights like the Rocky Mountains, and most people will enjoy the beauty from a safe distance. However, some daring explorers enjoy climbing such sights, whether it be for the personal challenge or simply for the thrill. The motivation behind mountain climbing, or any other extreme risk outdoor activity, is not in question here; however, we can examine the role of pilots who end up rescuing those adventurous folks when they get hurt or lost. More specifically, we should take a look at the untrained or unprepared pilot who suddenly faces a potential rescue or medical evacuation (MEDEVAC) mission.

We have all heard, at one time or another, about heroic helicopter rescue missions at famous locations in Asia, Europe and North America. Who has not dreamed of being called upon—by sheer circumstance of time and place—to save a person caught in a life or death situation? While specialized pilots, police divers and military search and rescue technicians receive training for high-risk rescue and MEDEVAC missions, odds are that the training you have received for such operations is limited at best.

If you are suddenly facing an unplanned rescue or MEDEVAC mission or are asked to participate in one, pause for a moment and consider the situation. You may suddenly realize that you do not have:

- the proper qualifications and training;
- the proper equipment (aircraft and personnel);
- sufficient fuel;
- sufficient daylight; or
- authorization from your company.

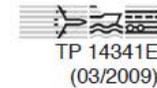
Even worse, you could be facing a pile of legal troubles should your heroic attempt go to the dogs.

While ad hoc mountain rescue requests are rare—a more common example you could face is an impromptu MEDEVAC request, which can quickly put a pilot on the spot. A real-life example of an impromptu MEDEVAC gone wrong can be found in [Transportation Safety Board of Canada \(TSB\) Final Report A94Q0182](#). On September 24, 1994, a helicopter pilot took off on a night visual flight rules (VFR) flight to Kuujuaq, Que., 94 mi. away. The purpose of the MEDEVAC flight was to transport a seriously injured woman. The aircraft never arrived; it struck the ground in a steep dive, killing the four occupants. The TSB determined that the pilot likely lost his spatial orientation when he continued the flight in adverse flight conditions, which he was not able to recognize in time because of the low light level. Contributing factors were that the pilot was not qualified for night flight or for instrument flight, and that the patient's condition likely influenced the pilot's decision to undertake the return night flight to Kuujuaq.

It is really hard for a pilot to make the right call when a formal MEDEVAC process is not available. When confronted with the unexpected, analyze the situation and make sure you go through the proper decision-making steps. Do not hesitate to discuss such scenarios with your chief pilot and peers during pre-flight briefings or training. The best decision may be to leave the hero dream to a professional rescue or MEDEVAC pilot.

Unnecessary Search and Rescue (UN SAR) Alerts

The Vancouver area control centre (ACC) called the joint rescue coordination centre (JRCC) Victoria to advise them of multiple reports of a 121.5 emergency locator transmitter (ELT) signal in the Prince George, B.C., area. A Royal Canadian Air Force (RCAF) Buffalo R462 aircraft was tasked to investigate. It was able to narrow the search to an area 25 NM south of Prince George but it was unable to descend below 9 000 ft. Civil Air Search and Rescue Association (CASARA) staff from B.C. were tasked with homing in on the ELT. The ELT was located in the back of a pickup truck belonging to an aircraft maintenance engineer who had removed it that day. The RCAF Buffalo flew 3.1 hr as part of this search. Please confirm that ELTs are in the OFF position when removing them from aircraft for service so that needless searches are not initiated. △



UN SAR costs are UNREAL...



Which one is real?

An UNSAR is an unnecessary search and rescue alert. To prevent an UNSAR, immediately report any accidental ELT activation to the NAV CANADA National Operations Centre (NOC) by calling (toll-free) 1 866 651-9053.

TC-1003088



Canada