



COPA

CANADIAN OWNERS AND PILOTS ASSOCIATION

The COPA Guide to Dealing with Aircraft Accidents



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Introduction

This COPA Guide is about “Unhappy Landings.” Every aircraft accident is different. This Guide is a generalized list of things to know following a survivable crash in a small aircraft. Consider it a challenge to add your ideas and/or alternative solutions to the problems presented. Also in this Guide are suggested topics for aviation group meetings. It is all about being prepared for the worst that can happen in case it does.

Flight safety information is readily available to pilots. One of the best sources is the COPA Flight magazine, as well as the TCCA Aviation Safety Letter (TP185) available on the TC website. Soak up all you can. It is harder to find information about what to do following a crash. Here is a quick look at some interesting things that pilots rarely need to know but when they do, there is no time for learning.



Part I – Practical Issues

So You Crashed

Hopefully it was a minor one. Maybe you bent a wing during a ground loop, or wiped out the landing gear on an off-airport arrival, or you were forced down in bush or water. The good news is that the damage is done and no one was badly hurt.

Don't sit there and cry over spilled milk. Get out of the aircraft. If you can, take the passengers with you. You might need a seatbelt cutter. A sharp knife will do. Imagine releasing passengers' seatbelts when they are upside-down and flailing, or passed out. A good passenger briefing before departure will help them help themselves.

You may also need a window breaker. Airplanes often flip over during off-airport landings. When a low-wing airplane rests on its roof, the canopies or doors jam. In a high-wing, the wings compress and jam the doors. It is nearly impossible to break plastic aircraft windows with a fist. The fire extinguisher works if you have room to swing it. A small hammer will do. Some seat belt cutters have both.

Burn?

Fire is the biggest concern. Are you dressed to withstand 1,000+ degrees? If not, then when the fuel ignites, your time is up. Having your pants on fire is a few seconds better than flames on bare legs. Wear long sleeves and long pants year-round when flying. Advise passengers to do the same. Fire retardant flight suits are even better.

A fire extinguisher is a good friend in a cockpit fire. Do you know where it is? Is it charged? Is it the right type? Do you know how to use it? Can it be turned on and off and on again? How long will it last? Learn the answers to these questions before the crash. Local fire departments will run demonstrations for aviation groups. If they will come to the airport for this, then you know they know where it is. Take them for an airplane ride as a thank you.

Swim?

If you crashed in water, your survival will depend on whether you have taken an underwater egress course. Swimming is the easy part after you get out. Imagine using a seat-belt cutter while holding your breath underwater. Now imagine doing it in the dark.

Do you and your passengers wear life jackets when flying over areas where water is the best or only landing area? Do you carry lifejackets in your wheelplane? Do your passengers know where they are and how to use them? What's the difference between lifejackets and personal floatation devices?

Hurt?

Are there injuries? Then call 911 if you carry a cell or satellite phone. Where is the aircraft medical kit? Hopefully it contains more than the required minimum items.

How current is your first aid training? Local units of [St. John Ambulance](#) offer courses. So does the [Canadian Red Cross Society](#).

Attend a first aid class as group. You'll learn and have fun.

ELT?

If your crash location is remote and the aircraft is not burning, access the ELT in the tail (you'll probably need a screwdriver). Turn it on and leave it on. Make sure that the antenna is attached to the airplane, is pointing up and is connected to the ELT. If not, rig something. Your local avionics technician could show your group more about ELTs at one of your monthly meetings. If you crash, you'll never know too much.

Does the communication radio work? Check to see if the aircraft battery is intact and right side up. Make sure the danger of fire has passed. If the radio works, listen on 121.50 for the ELT signal, if the ELT is that type. If it's not working, transmit a "Mayday" on 121.50. A handheld radio makes an economical backup for communications before and after the crash.

Airline pilots may hear your call and relay it to ATC or flight service specialists who will alert one of three Joint Rescue Coordination Centres in Canada staffed by military and Coast Guard personnel. They will send out the air force and/or a unit of the Civil Air Search and Rescue Association.

If all this fails, you'll need to signal. There is good emergency information in the back of the Canada Flight Supplement including ground distress signals.

Invite a CASARA officer to talk to your aviation group and learn more. Better yet, join or form a [CASARA group](#).

GPS Satellite Tracking Devices

Technology has improved since the introduction of ELT and affordable personal tracking devices are being used in aviation. Ensure you pressed the Emergency, 911, SOS button to alert alerting services. Check out COPA members' discounts and deals at www.copanational.org.

Cellphones

Many aircraft crashes have been reported by the pilot using a cellphone. Cellphone towers have proliferated across our country, give it a try! Many pilots traveling in sparsely settled areas often carry

a satellite phone, something to consider.

Camping?

If you don't fly along highways or near civilization all the time, in much of Canada you'll need survival gear after a crash. Does everyone have the right clothing for a few nights' stay? Check at local colleges and outdoor stores for weekend survival courses. Attend with your aviation group. You'll have fun and learn more about each other.

Is Anyone Looking?

The length of your sudden camping trip will be proportional to the remoteness of your crash location, the operation of your ELT and the accuracy of your flight compared to your flight plan. Did you file a flight plan with flight service? At least you should have left a useful itinerary with someone who knows what to do when you are overdue.

When Help Arrives

In populated areas, if you radioed a Mayday or called 911, emergency services should arrive soon. The response may be overwhelming. Firemen and paramedics called to an airplane crash are thinking big and bloody. Cooperate and be specific about injuries or the lack of them. I once told a paramedic at a crash scene that the only blood loss was to mosquitoes. He misunderstood and wheeled out the gurneys.

Once found, turn off the ELT.

Incident Or Accident?

1. in the case of an accident
 1. a person is killed or sustains a serious injury as a result of
 1. being on board the aircraft,
 2. coming into direct contact with any part of the aircraft, including parts that have become detached from the aircraft, or
 3. being directly exposed to jet blast, rotor down wash or propeller wash,
 2. the aircraft sustains structural failure or damage that adversely affects the aircraft's structural strength, performance or flight characteristics and would normally require major repair or replacement of any affected component, except for
 1. engine failure or damage, when the damage is limited to the engine, its cowlings or accessories, or
 2. damage limited to propellers, wing tips, antennae, tires, brakes, fairings or small dents or puncture holes in the aircraft's skin, or
 3. the aircraft is missing or inaccessible; and

2. in the case of an incident involving an aircraft having a maximum certificated take-off weight greater than 2 250 kg, or of an aircraft being operated under an air operator certificate issued under Part VII of the [*Canadian Aviation Regulations*](#)
 1. an engine fails or is shut down as a precautionary measure,
 2. a power train transmission gearbox malfunction occurs,
 3. smoke is detected or a fire occurs on board,
 4. difficulties in controlling the aircraft are encountered owing to any aircraft system malfunction, weather phenomena, wake turbulence, uncontrolled vibrations or operations outside the flight envelope,
 5. the aircraft fails to remain within the intended landing or take-off area, lands with all or part of the landing gear retracted or drags a wing tip, an engine pod or any other part of the aircraft,
 6. a crew member whose duties are directly related to the safe operation of the aircraft is unable to perform their duties as a result of a physical incapacitation which poses a threat to the safety of persons, property or the environment,
 7. depressurization of the aircraft occurs that requires an emergency descent,
 8. a fuel shortage occurs that requires a diversion or requires approach and landing priority at the destination of the aircraft,
 9. the aircraft is refuelled with the incorrect type of fuel or contaminated fuel,
 10. a collision, a risk of collision or a loss of separation occurs,
 11. a crew member declares an emergency or indicates an emergency that requires priority handling by air traffic services or the standing by of emergency response services,
 12. a slung load is released unintentionally or as a precautionary or emergency measure from the aircraft, or
 13. any dangerous goods are released in or from the aircraft.

Source: [*Transportation Safety Board Regulations Section 2\(1\)*](#)

If you wish to report—in complete confidence—another kind of act or condition in the Canadian transportation system that is potentially unsafe, use [*Securitas*](#).

Determine whether you are the right person to report

You may report the occurrence if you are the owner, operator, pilot-in-command, any crew member of the aircraft or, where the accident or incident involves a loss of separation or a risk of collision, any air traffic controller having direct knowledge of the accident or incident.

See [*Transportation Safety Board Regulations Section 2\(1\)*](#)

Call with your initial report as soon as possible after the occurrence

A standby investigator is ready to take your call 24 hours a day, 7 days a week.

- Direct or collect: 819-994-3741 or toll-free: 1-800-387-3557

See [Transportation Safety Board Regulations Section 2\(1\)](#)

Submit a full report within 30 days of the occurrence

[Complete](#) and submit the form.

If your “occurrence” is an “accident,” then the aircraft cannot be moved without permission from the [Transportation Safety Board of Canada](#).

Who Do You Call?

If you talked to flight service specialists or air traffic controllers during the course of your accident, they will report it to one of the Joint Rescue Coordination Centres or to local emergency services if they know where you are.

It’s the pilot’s responsibility to make sure that both the TSB and Transport Canada are notified. The easiest way is to ask a flight service specialist to call for you. You will be asked for a written report later.

There are TSB staffers located across Canada on standby to handle aircraft accident investigations. They may choose to investigate the accident or not.

When the police arrive, whether local, provincial or RCMP, they may be trained to acting as agents of the TSB. Their initial responsibilities are to ensure the safety of persons and then property. They will secure the site and in some cases, begin to document evidence by taking notes and photos.

If the accident is easily explained, involves a small aircraft and injuries were minor, the TSB investigator is most likely to talk to the pilot and the on-scene authorities via telephone and then authorize the release of the aircraft, but that is the investigator’s decision to make. Otherwise he or she will visit the scene as soon as possible.

Call Home Too

Call your kin so the first they hear about your abnormal arrival is not on the news.
Close your flight plan so you aren’t searched for twice.

If you don’t own the airplane, call the owner. An advantage of renting flying school airplanes is the management should know what to do after a crash. If you own the aircraft, a flying school manager can still be a good resource. So is COPA.

Insurance?

Once a release is obtained from the TSB, control of the wrecked or damage aircraft reverts back to the owner. Law enforcement officers may then leave. If the wrecked or damaged aircraft cannot be moved on the same day, hire a security guard for the night if there is anything left to guard.

The minimum TC required third party liability insurance covers property damage other than to the aircraft, or injury to persons on the ground not involved with the flight. This does not insure the pilot, passengers or the aircraft. Read your policy for more details. An off-airport landing can easily involve significant property damage in the form of fuel spills and gaining access to the aircraft. Call your insurance company if it appears the coverage is needed. The phone number should appear on the insurance certificate that you are required to carry with you.

If you have insurance that covers passengers and aircraft (hull) call the company unless the repairs will be below your deductible (rarely). Please don't think your insurance company is now responsible for the airplane. An insurance adjuster will be assigned to work with you regarding your claim. The insurance company may end up owning the wreck following a settlement, but in the meantime, it's yours.

Insurance adjusters make interesting speakers for aviation group meetings. You don't know what you don't know.

Fly It Or Truck It?

[CARs 605.88](#): "(1) No person shall conduct a take-off in an aircraft that has been subjected to any abnormal occurrence unless the aircraft has been inspected for damage in accordance with Appendix G of the Aircraft Equipment and Maintenance Standards.

(2) Where the inspection referred to in subsection (1) does not involve disassembly, it may be performed by the pilot-in-command."

"[Appendix G](#)" contains details of what should be inspected following different types of "abnormal occurrences." It doesn't take much of an accident to cause significant damage to an aircraft. For anything more than a flat tire on a certified airplane, an aircraft maintenance engineer should be involved. Aircraft mechanics will either have the equipment to remove your wreck or know where to get it.

You're A Star

Depending on where you went down, the media will arrive. A reporter may be the first to the scene after you and your passengers. If you have ever been involved with something reported in a newspaper, you know the crash coverage can be inaccurate. If you refuse to talk to reporters, it will be worse. All they need is a brief description of what happened including a few quotable quotes and a couple of photographs. Don't speculate on why the accident occurred, but use this opportunity to

show how aviation is organized.

Say something like, “The engine stopped, so I set up a glide to a landing according to my emergency training. This field is rough so there was some damage but the airplane did its job protecting the occupants. It will fly again and so will I. If you’d like a picture, please don’t touch anything.”

It’s really helpful if before the crash, local news reporters have visited the airport, been shown around by someone knowledgeable and taken on an introductory flying lesson. There’s another project for your group.

After The Crash

Good things to have and know how to use:

- Passenger briefings
- Seatbelt cutter or sharp knife
- Window breaker or small hammer
- Fire extinguisher
- Fire retardant flight suits
- Underwater egress training
- First aid kit,
- First aid training
- Life jackets/personal floatation devices
- Emergency Locator Transmitter
- Portable transceiver
- Signaling devices
- Cell phone/Satellite phone
- Survival equipment
- Canada Flight Supplement
- Insurance and insurance phone number
- Flight Service, Tel.: 866-WXBRIEF (866-992-7433)
- Transportation Safety Board Headquarters, Tel.: 819-994-3741.

Part II – Now What?

Pilots make mistakes. Most of the time nothing much happens. It’s very different when the errors lead to a crash. This is the second of a two-part series about such “Unhappy Landings.” Last month we covered the events immediately following a survivable aircraft accident. We pick up where the dust has settled; everyone has been notified who should have been; the emergency service personnel have left the scene; and the wreck has been released by the Transportation Safety Board representative. Now what?

What Have I Done?

A sudden, unexpected event such as an aircraft crash has a violent impact on the mind and emotions. There are stages of mental recovery for the pilot-in-command of an accident aircraft. It's useful to know them as a pilot and as a friend of pilots.

Once there is time to reflect on a crash, the realization of what has happened begins to sink in. The pilot's reactions range from an empty feeling, to anger with oneself or to uncontrollable remorse. These are natural responses but they can be damaging if the pilot is unable to work through them.

Following an accident, pilots may appear to be outwardly strong but their insides are being riddled with guilt, shame, embarrassment, loneliness and sadness. At this point they need someone to comfort them without reservation and to listen to them without judgment. They need true friends.

OK guys, we're not talking kissy, kissy here. It's about letting the pilot know, "I'm here for you." It's not what you say that's important, it's that you are listening and acknowledging that your friend is in need of a friend. Hugs are good. If you can't be there, do it on the telephone.

I worked at a flying school that operated a Piper Super Cub for spin training and banner towing. We also offered tail-wheel checkouts to licensed pilots and allowed them to rent the airplane when they became proficient at handling it.

One of these pilots ground-looped the Cub during a crosswind landing. It's easy to do and rarely causes major damage. This time the left main landing gear broke which dropped the left wing onto the runway and scraped it. No one was hurt. I didn't think it was a big deal but the pilot sure did.

He skulked into the flying school office while the airplane was being towed to the hangar, sat down in the lounge, curled into a fetal position and cried, and cried, and cried.

I thought, "Hey man, its steel tubing and fabric. Get over it." But I didn't say anything.

One of the customers present was a nursing instructor. "Someone call his family," she said. Then she led him to a private office away from strangers.

I telephoned the guy's parents and then went to tell him that they were on their way. I found the nursing instructor and the pilot. She had covered him with a blanket and was rubbing his back. The sobbing was being replaced by expressions of remorse. "They trusted me with that airplane," he wailed, "and I let them down." I found out later that this was the beginning of his recovery. The nurse kept him talking. The parents arrived an hour later. By then the pilot had recovered enough to be sitting up. They took him home. He flew again. So did the Super Cub.

If you are a pilot involved in an accident, don't bear the burden of guilt by yourself. Seek out someone to work it out with you.

Anger, Frustration And Denial

Next, the guilt, shame and remorse begin to give way to anger, frustration and denial. It doesn't feel good to be angry and frustrated but these are signs of the second level of recovery. In the accident described above, the pilot may have blamed the crosswind or the aircraft manufacturer. "Why did they build an airplane with a narrow main gear and a high centre of gravity?" The pilot becomes frustrated as he reruns the accident in his mind. He thinks it could have been avoided if the airplane had been designed better and he had been taught more about crosswinds. Soon, the accident can't be his fault.

Friends have been lost over this attitude shift. It looks bad to people who don't understand the process.

Acceptance Or Depression

Eventually accident pilots may accept that the crash happened and there is nothing they can do to change it. From there they can get on with living. This does not mean that their lives return to normal. They won't. The experience of being an accident pilot is everlasting. Hopefully they will be stronger and smarter as a result of the experience but they will never forget it.

If pilots can't put the crash behind them, they may sink into depression. They feel they have lost the respect of their peers and no longer respect themselves. They feel isolated and lonely. When they can't see an end to their anguish, they feel their life is hopeless. They need professional help. This can be arranged by a family doctor.

How To Help

Aviators can do a lot to help pilots recover from a crash, but many don't. It feels awkward and uncomfortable. It's hard to know what to say.

Call them. "I'm sorry to hear about your accident. Is there anything I can do to help?" This is all you have to say. Just making contact aids their recovery. Mentioning the crash gives them the opportunity to talk about it. Offer to get together socially or to take them flying.

Don't say things like: "I know how you feel." "Time heals all." "You need to get on with your life." "You can't stay sad forever." You can't know how they feel and time doesn't heal all but listening helps.

A young lady telephoned COPA when I was working there. She said that her pilot husband had been flying for a small air service and had crashed three days earlier. The accident left him paralyzed from the waist down. She was calling from his bedside in the hospital.

"We have two young children and no savings," she sobbed. "My husband's employer does not have medical or accident insurance for its pilots. I don't know where the money will come from for our next bag of groceries. He belongs to COPA and I thought there might be accident coverage included with his

membership. Can you help?”

There was no insurance included in a COPA membership but I told her that we could definitely help. I asked for the hospital phone number and said that someone would contact her within the hour. Then I telephoned the local flying club and explained the situation to the manager. He jumped right in and called her back. He visited the hospital with money collected around the airport. He connected the young women to the social services in the area and he arranged an airport fundraising dinner and auction to benefit the family. Several of the club members had contacts in service organizations, daycare and medicare that offered to help.

Some local aviation groups have set up aviation emergency funds. They don't have to be large. They could be used for everything from the example above to helping a young person on the path to an aviation career. One group offers money and assistance during non-aviation emergencies in the community.

Don't Stop

One of the difficulties with the do-gooder spirit is making it last. We contact someone in need and then fail to keep in touch. It can take a long time to get on with life after a crash, especially if there were injuries or fatalities. It takes longer if those involved are forgotten by friends.

Another call that I received at COPA was from a lady whose flying instructing son had died two weeks earlier in a crash. “Everyone was so nice and helpful through the funeral,” she said. “Now I'm sitting in my house with reminders and memories of my young son. He loved flying so much but now he's dead. I thought if I could talk to someone in aviation, I might understand my son's passion for flying. Then maybe I could accept that he's gone. So I called COPA.”

I talked and listened to the lady and found out more about her and her son. Then I said that someone in her area would be contacting her soon. I telephoned the COPA director representing that province and told him about the lady. He called her and arranged for her to attend a regular meeting of his local aviation group. The director introduced her as a guest at the meeting and explained why she was there. The members spent part of the evening talking about their aviation interests. Some were building airplanes, others were planning trips and most were looking forward to the fly-in and air show season. The lady was included in the coffee break where condolences and friendships were offered.

Help Yourself

There are things that accident pilots can do to help themselves through the mental strain following a crash. Eat right. Ease your brain by reducing your intake of caffeine, sugar and alcohol. Drink six to eight glasses of water a day. Eat plenty of fruits and vegetables.

Get off your duff and exercise. This is one of the best ways to fight depression. Do it with a friend.

Don't isolate yourself. Share your pain with compassionate people whether you feel like it or not.

Write. Using a daily journal can ease the anguish. Make the journal your best friend. Pour your feelings into it. Don't worry about how well it's written. You are the only one who needs to read it.

Be good to yourself. Use art, reading, music, massage, or whatever makes you feel good.

Be your own cheerleader. Tell yourself that you have the ability to adjust and to grow through the pain.

Clubhouse Gossip

Pilots need a thick skin at the worst time, after a crash. What would an airport be without gossip? There are unhelpful people out there. If something is on their mind, it comes out their mouth without regard to who will hear about it. Accident pilots have to let such talk roll off their backs. Avoid these people when you can. The rest of the time; give them the benefit of the doubt. They don't know any better.

Aviation groups may consider inviting a pilot who has survived a crash to speak at a meeting, after an appropriate time lapse. This helps the pilot's recovery process and gives him or her a chance to set the record straight. It's also educational for the audience.

Insurance

At COPA, I read the annual lists of pay-outs made by the COPA VIP Aviation Insurance Plans. It's amazing what aviation insurance companies have paid for. Accident pay-outs are determined by an insurance adjuster working with the aircraft owner and the insurance company to reach a settlement. Accidents due to pilot error are often covered, but don't push your luck. If a pilot knowingly overloads an aircraft and then crashes trying to takeoff, this is not pilot error; it's pilot stupidity. The insurance coverage may be denied. These days it may be impossible for pilots with reckless records to obtain insurance.

To learn more about what is covered and what is not, read your policy, then talk to your insurance agent.

Enforcement

It doesn't seem fair. When pilots crash, their aircraft is damaged, wrecked or destroyed; their reputation is shot (at least in their minds); and then they must ride the mental roller-coaster of anguish that follows. It seems like enough punishment whether or not the accident was their fault.

That's not how Transport Canada sees it. Aviation accidents and incidents reported to TC are published

in the Civil Aviation Daily Occurrence Reporting System. These are circulated via e-mail. The TC Regional offices monitor the CADORS and other reporting services to identify possible violations.

(Excerpts from CADORS that are instructive to general aviation are published in *COPA Flight* as “Aviation Accident Summaries.”)

In the case of an accident, TC personnel are required to open an enforcement file and review of the validity of licences, ratings, certificates, etc., at the time of the accident. The review is done whether or not the accident was the result of a violation. Our air regulations were built on accident prevention so chances are good that somewhere in the accident chain, one was broken. This “close-the-barn-door-after-the-horse-gets-out policy” saves TC resources and taxpayer dollars. It beats the cost of fielding more inspectors to watch for violations. To its credit, TC also recognizes that the keys to aviation safety are knowledge, training, experience and attitude.

There are three courses of administrative action that may be taken by TC Aviation Enforcement when it is believed that a contravention has occurred: oral counselling, administrative monetary penalties, and/or suspension of a civil aviation document such as a pilot licence. Judicial action with criminal sanctions may be initiated in certain circumstances.

There is more to know about enforcement and it can be found in the [COPA Guide to Enforcement](#).

When There Are Fatalities

If an aircraft accident involves fatalities, a representative of the provincial or territorial coroner or a medical examiner is sent to the site. The coroner’s responsibilities include conducting autopsies where necessary and determining the cause of death. The coroner may hold an inquest into the circumstances surrounding the deaths. This inquest is normally held two to six months after the accident.

The Transportation Safety Board is more likely to investigate fatal crashes. Transport Canada may wait until the TSB report is issued before taking enforcement action.

Memorials

It’s a natural reaction for local aviators to establish a memorial fund or scholarship when a pilot from their area is killed. This makes everyone feel better, including the pilot’s family. It’s difficult to perpetuate such a legacy so make it a one-time thing or name a continuous emergency fund in honour of the victim. Another suggestion is to donate to an establish scholarship such as COPA’s [Neil Armstrong Fund](#) in memory of the deceased pilot. COPA publishes the names of the donators as well as whom they are memorializing.

Fly Safely

I hope you never need these suggestions as you fly safely into the sunrise and enjoy nothing but happy landings.