

Changing the Norms — Controlled Flight Into Terrain

On September 27, 1995, a DHC-3 Otter was inbound on a special VFR (SVFR) clearance to Campbell River, British Columbia. On an intercept heading for the final approach, in straight-and-level flight, the aircraft hit a mountain. The pilot and seven passengers died at the scene; two passengers survived with serious injuries.

According to the Transportation Safety Board (TSB) report:

The Board determined that the pilot progressive lost situational awareness while attempting to navigate in low visibility or in cloud and was unaware of the high terrain in his flight path. Contributing to the accident were the existing visual flight regulations and the prevailing industry attitudes and practices which did not provide adequate safety margins.

The TSB also found inadequate supervision by management in the operations and maintenance areas, which is typical of companies offering similar services.

From 1984 to 1994, 106 people died and another 23 were seriously injured in 70 accidents involving commercially operated aircraft that were flown into terrain, under control, while the crew had no awareness of the impending disaster. More than half of these controlled flight into terrain (CFIT) accidents occurred in marginal VFR weather conditions.

Recognizing deteriorating visibility can be virtually impossible for a pilot flying in minimum VFR or SVFR weather, especially when combined with a high workload, variable conditions or limited visual cues.



The TSB believes that:

There is inadequate understanding throughout the aviation community of the risks and consequences of operating in marginal weather conditions. A false sense of security develops when pilots repeatedly succeed in getting through marginal weather conditions without incident. Many CFIT accidents could be prevented if dangerous situations were recognized as conditions deteriorate.

The flight-recorder tapes reveal how events unfolded in the few minutes preceding the accident:

- At impact minus 8:24, the Otter pilot contacts the FSS, reporting 7 mi. northwest, inbound for landing (the post-accident radar plot shows that he is actually 11 mi. out).
- At impact minus 7:45, the FSS passes the latest weather as being 300 ft. overcast, with 2 mi. visibility in rain and fog. The pilot requests SVFR



After impact.

clearance into the zone.

Clearance is delayed until an IFR arrival flying the ILS approach has landed.

- At impact minus 6:31, the IFR arrival reports breaking cloud at 900 ft. ASL (550 ft. AGL). The Otter pilot acknowledges.
- At impact minus 5:40, air traffic control clears the Otter into the zone SVFR. Radar shows him 1 mi. northwest of his alternate landing site at Tyee Spit.
- At impact minus 4:15, the Otter passes the Spit and turns south, heading directly for the airport.
- At impact minus 2:45, the aircraft is 2.5 mi. from the airport, but has turned to a northwesterly heading away from the airport. Evidently, the weather prevents him from continuing SVFR to the airport. His track is parallel to and about 1 mi. east of the ILS localizer for Runway 11. He passes abeam the Campbell River nondirectional beacon, which serves as the ILS final approach fix, and continues outbound.

The Otter pilot holds a valid instrument rating. He is the

company's chief pilot. His primary flying duty is as captain of a Ring Air 200 flying a scheduled IFR run between Campbell River and Vancouver.

The pilot has previously discussed with the company's operations manager the option of doing an IFR approach when weather conditions preclude VFR or SVFR flight. He feels that the aircraft is adequately equipped. The company's operating certificate does not permit IFR flight for this type of operation, but the TSB investigators found indications that the pilot had previously conducted such IFR arrivals in the Otter.

The radar track indicates that the pilot is conducting an unauthorized IFR procedure at a very low level. His receiver is tuned to the ILS Rwy 11 frequency; his LORAN C, set to navigate directly to the final approach fix; his automatic direction finder, tuned to Comox with a standby of Campbell River.

- At impact minus 0:45, he turns left to intercept the localizer.
- At impact minus 0:17, he reports being 7 mi. northwest — the same position he reported more than eight min. earlier.

- At impact, he is in straight-and-level flight; there is no indication that he attempts evasive action before the aircraft slams into the mountain. Either he is in cloud or forward visibility is so poor that he has no time to react as the trees and rocks of the steep mountainside suddenly fill the windshield. One of the two survivors later reports that there was heavy fog in the area at the time of the crash.

A SAR aircraft training in the same area has already picked up the ELT when the FSS raises the alarm. Weather prevents both the aircraft and a SAR helicopter from reaching the crash site. Ground searchers using flood lights finally reach the wreckage nearly 4.5 h later.

Knowing that the weather was bad, the Otter pilot had two options when he arrived at Campbell River: he could land on the water at Tyee Spit or he could attempt to continue to the airport. In trying to fly VFR to the airport, he ignored the minimum altitude order requiring him to be at least 500 ft. above populated areas. When the VFR attempt failed, he tried an unauthorized, low-level, high-risk IFR procedure that provided no protection from obstacles.

The fact that the aircraft was overloaded and over the centre-of-gravity limits and had a number of overdue maintenance checks did not affect this flight, but those facts are indicative of the "industry attitude."

The TSB considered that the decisions the pilot made in trying to get to the airport were "consistent with both his past practice and industry-accepted norms for this type of operation."

It's about time that we changed those norms.



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Into the Snow and Rain — Controlled Flight Into Terrain



Put yourself in this position:

You're a very experienced pilot, with a very experienced co-pilot along for the ride. However, neither you nor your co-pilot has much mountain-flying experience. Your aircraft has just been completely rebuilt and is fresh off a successful test flight. You've had an extensive weather briefing, and the forecast is "good VFR" with occasional reduced visibility in snow.

The FSS specialist recommends the Skeena Valley VFR route because of lower altitude requirements should you run into adverse weather, but you have a pilot report (only 2.5 hold) from the Telkwa Pass, indicating a 3500-ft. ceiling, with visibility occasionally down to 10 mi. in light snow. You select the Telkwa Pass because it's so much shorter.

You're now penetrating the British Columbia coastal mountains from Terrace to

Smithers, flying towards the Telkwa Pass through occasional snow showers. Thirty miles further along the route at Smithers, the reported weather includes nine-tenths towering cumulus, virga and rain in all quadrants. Do you continue? If you do, are you spring-loaded to perform a 180° turn in a very tight mountain pass?

One 10,000-h pilot continued, and wasn't prepared.

The wreckage was located in an avalanche area at the bottom of a recent slide. The engine was at the 7000-ft. level, and parts had slid down more than 3000 ft. Neither pilot had survived. Because of the treacherous area, a detailed investigation could not be completed. However, it is more than likely that the pilot turned a corner and flew into instrument conditions — and into the towering mountain.

New Web Site for the ASL

To access the English text, type:

<http://www.tc.gc.ca/aviation/syssafe/index.htm>

To read the French version, type:

<http://www.tc.gc.ca/aviation/syssafe/index-f.htm>

But I Could Hit a Hill...



GPS direct? Check terrain clearance.

Almost from the day that Doug McCurdy lifted the Silver Dart off the frozen surface of Bras d'Or Lake, pilots have sought a reliable way to stay on track while traversing the vast wilderness that makes up so much of Canada.

In the bad old days, they used maps. Often, the maps were inaccurate. But as time wore on, the maps got better. In many areas of the country, that wasn't much help. One little lake looked much like another. So did the valleys and what-not. On a clear day, it didn't matter too much. Pilots could see for miles, and generally stayed somewhere near the intended track.

Some of the time, it wasn't clear. Oh, there was generally enough visibility to remain in visual meteorological conditions (VMC) in VFR flight if one was flexible about how one interpreted one/two mi., but map-reading became much more difficult under those conditions.

Over the years, maps and NAVAIDs improved. Still, for most pilots, the only time they were on track was when they unknowingly crossed it. As a result, many aviators spent

considerable time being momentarily unaware of their position. For some, that moment stretched to eternity.

To get around such unhappy accidents, many incredibly talented people developed a navigation system so accurate that it could be and is used in some cities to deliver pizzas to specific residences. Aviators soon found that this system, known as the Global Positioning System (GPS), could be used to supplement the map-reading skills that were the bedrock of their VFR navigation over remote terrain. As a result, pilots flocked to buy GPS receivers that would keep them right on track.

As more and more pilots began using GPS, they started developing a great degree of confidence that it would always lead them to their destination. Confidence is one thing, over confidence another. We've had a lot of reports that pilots with GPS sets are setting out on VFR flights that they would have cancelled in the past because the weather was marginal or because it was dark. This attitude has a lot of accident potential. First of all, GPS is not

infallible. As we've said many times in the past, GPS satellites can transmit faulty signals and, unless you have an installation certified for IFR flight, you won't be warned. Faulty satellites have caused 80-mi. position errors in the past. Even if you have an IFR box, there will be times when there just won't be enough satellites to navigate. What if this happens at a critical point in your flight when the visibility is too poor to map-read?

Even if there are lots of satellites and they're all working properly, all that GPS can do is take you to the waypoints that you've programmed into the box. What if you've entered the wrong coordinates? Even experienced airline crews flying 747s have made this mistake, so what makes you immune? If you can't see the ground well enough to confirm that you're on track, how will you know if your mistake is leading you into the side of a hill?

On the subject of CFIT, let's suppose that GPS is working flawlessly and you've entered the correct waypoints. You'd still better have plotted your track on a map and checked for obstacles. Not just along the track, but to either side as well, and don't forget to look for obstacles below the altitude at which you intend to fly.

If the weather is already bad, it could get worse, and you might have to descend or deviate. The course you've plotted may not give you these options, and so now you're betting your life on the weather not changing. Does this sound like a good idea to you? Suppose you can deviate and find some better conditions. Now you'll likely use the "direct-to" feature on the box to continue to destination. You'd better have another look at the map at this point. Plot your new track to destination and follow all of the advice that we've given above.

For years, pilots have wanted

a navigation system to keep them precisely on track all the time. Now that we have it, some are replacing the risk of getting lost with the risk of flying into an obstacle. VFR navigation means being able to see the ground well enough to navigate safely.

There's no category between VFR and IFR. Make a choice, and follow the common-sense rules that go with your choice!

Struck by Lightning

At 7:19 p.m., a Dash 8 on a 4-mi. final for Runway 26R at Vancouver was struck by lightning. The aircraft landed safely.

Fifteen minutes later, a Boeing 767 on an 8-mi. final for the same runway was also struck by lightning. This aircraft also landed safely.

Ten minutes later, yet another aircraft, a Boeing 737 4 mi. back from the same runway threshold, was struck by lightning, but it too landed safely.

So, over a 25-min. period, there were three approaches and three lightning strikes.

How many other aircraft pressed on, unscathed, through the thunderstorms during the evening rush hour?

The three unfortunates who were struck were all equipped with weather radar. It is hard to believe that, flying through an area of active cumulonimbus clouds (CBs), the pilots did not have the scopes lit up; that pilots would deliberately push through active CBs on the approach path; that the first pilot did not report the strike immediately; that the controller did not warn off the other arriving aircraft; and that the following pilots chose not to hold until the storm had passed.

The lightning could easily have fried the aircraft's electronics, and the potential hazards of hail, severe turbulence and windshear were all there.

Is meeting the schedule worth the risks? △

A Little Skill Can Be Dangerous — Controlled Flight Into Terrain



Practice instrument flying ended here (arrow).

The Cessna 172 pilot was flying one of four aircraft rented by a group of tourists intent on a flying vacation in eastern Canada. He had over 1300 h flight time. Although he did not have an instrument rating, he had received extensive instrument-flight training in the past year. His co-pilot told friends that, on previous occasions, the pilot had deliberately entered cloud to demonstrate aircraft control with reference to the instruments only. The co-pilot had enjoyed the experience, and expressed confidence in the pilot's abilities.

The group planned to fly from Sept-Îles to Stephenville, with an en route stop in Natashquan. Each pilot had VFR maps and a global positioning system for navigation. Before departure, the leader had phoned the Sept-Îles FSS for a detailed weather briefing, and he later talked to the briefer in person at the airport. Weather in the area was generally VFR, but there was a low moving in from the south, bringing lower ceilings, rain and fog. The specialist

advised that they recheck the weather during the refuelling stop at Natashquan. They filed a group flight plan and thoroughly discussed the weather.

After a pleasant flight, they refuelled in Natashquan as planned. The weather was clear and sunny; they could see for miles. Unfamiliar with the potential for maritime weather conditions to change rapidly, they did not bother to recheck the weather.

As they cruised along, approaching the Newfoundland coast, increasing cloud made it difficult to maintain contact with the ground and each other. They discussed the changing weather, but nobody called an FSS for the latest report.

Within sight of the west coast, the lead aircraft announced his position and his intent to descend. The group leader, who was flying in the number three position, could clearly see the west coast mountains in St. Pauls Inlet as he descended through 1000 ft. The steep terrain of the coastal inlet could be seen rising into the clouds. As he

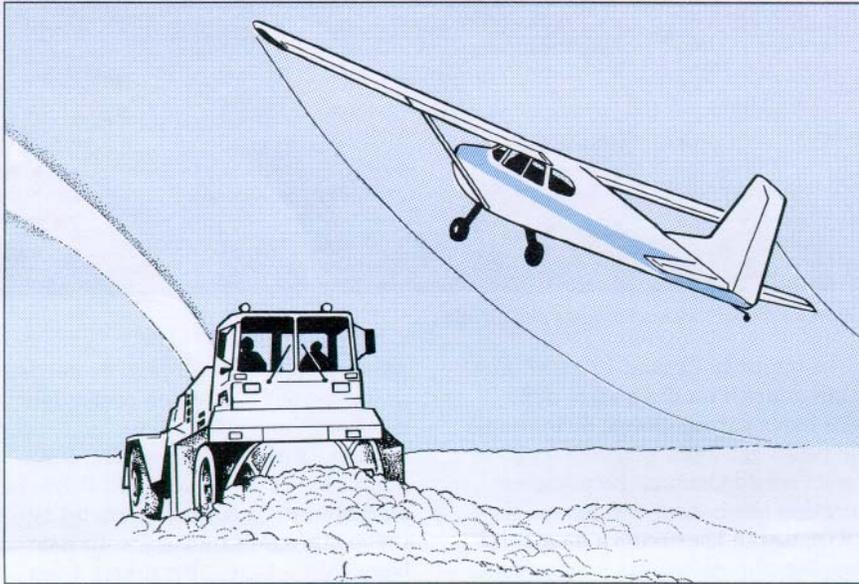
turned south to follow the two lead aircraft, he saw the trail aircraft enter cloud about 500 ft. higher up, still on the en route heading. He called the pilot, instructing him to turn right. His repeated calls got no response. The three remaining aircraft continued to within

33 mi. of their destination before being forced by the weather to return to Natashquan.

The trailing aircraft had impacted the coastal mountains in controlled flight. The pilot, his wife and the confident co-pilot were killed instantly. It is suspected that the pilot

deliberately penetrated cloud to "practise his instrument skills." However, he had forgotten his navigation skills; he was obviously unaware of the deadly "cumulo-granite" clouds directly in his path.

Invitations to Disaster



See That Snowblower!

Three separate incidents recorded in a two-day period involved aircraft taking off knowing that vehicles were on the runway. Imagine having an engine failure just before liftoff — a few hundred feet before meeting the rotating jaws of the snowblower facing you!

One PA-31 took off from Stoney Rapids while a grader was working on the gravel runway.

Another PA-31 departed Red Lake with a vehicle on the runway. The flight service specialist was in the middle of passing the traffic advisory when the pilot reported that he was airborne. The specialist had yet to pass the vehicle traffic when the PA-31 zoomed overhead the surprised driver. The pilot said that he had been aware of the vehicle.

In a second Red Lake incident, a Cessna A185 pilot acknowledged the vehicle traffic and then took off in the face of the snowblower cleaning the runway. He neither transmitted his intent to depart nor gave the FSS specialist a chance to get the vehicle clear.

Care for a Little Formation Flying? Or, Sorry, I Thought That I Knew You!

A West Coast pilot was on a routine day VFR commercial flight when he heard another commercial aircraft depart the same airport about 15 min. after him on the same route. Knowing that the other aircraft was faster, he fully expected to be passed some time later. Imagine his surprise when that pass came so close that he could clearly see the faces of the other crew! He quickly

established communications and separation.

Later, at their common destination, the second crew apologised, "We mistook you for someone else."

Our surprised pilot was not amused. He left little doubt in the minds of the offending crew that to fly that close to another aircraft without the knowledge of the other pilot, acquaintance or not, was an invitation to disaster. If the lead pilot made a decision to turn, a midair collision would almost certainly result.

More Formation ... Just Wanted to See Who Was Flying!

A crew of a military CH113A Labrador helicopter was on a VFR search and rescue (SAR) training flight. They were making occasional diversions around rain showers in the area when they were surprised by a Beech 18 on floats making a pass down their right side, 75 ft. away, at the same altitude.

When the SAR crew made radio contact, the float pilot stated that he "just wanted to see if [he knew] who was flying." When the crew asked who he was, the intrepid formation pilot had a sudden radio failure, but it was too late: from only 75 ft. away, his identity was easily established. (One wonders if he is still working for the same company.)

SAR crews are always on the lookout and tend to manoeuvre very abruptly for reasons that would not be apparent to others, but that make them particularly dangerous to get close to:

there is no reason for them to warn you of sudden attitude changes if they do not know that you are there.

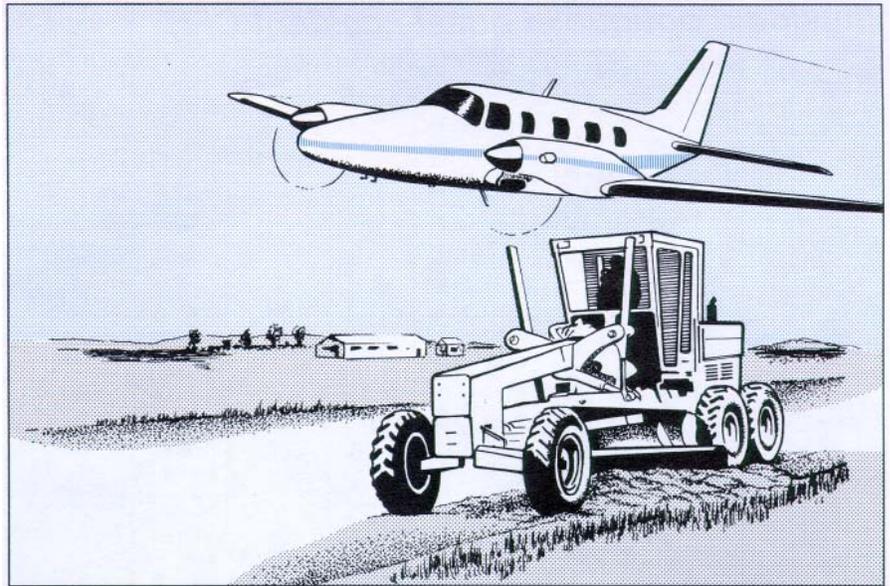
Turn on That Localizer!

The FSS specialist passed the advisory to the inbound Boeing 737. Included in the advisory was the notice to airmen (NOTAM) that the localizer was unserviceable. The pilot asked the specialist to turn the localizer ON, and the specialist repeated that it was unserviceable. Once again, the pilot said, "I'm requesting that you turn it ON." The specialist stated a third time that the localizer was unserviceable. Ten minutes later, the 737 pilot reported in the missed approach and proceeded to his alternate. A NOTAM stating that the localizer was unserviceable had been issued more than a month earlier.

Would you attempt to fly an approach, in limits weather, using an unserviceable NAVAID?

Landing Traffic — In Your Face

Two Cessna light twins were operating at the same airport, one arriving and the other departing. Both aircraft had been given the traffic advisory



indicating that 23 was the active runway. The MEDEVAC arrival had advised that he would be landing on Runway 23, following another aircraft also using Runway 23. The Cessna taxiing for departure announced that he would be using Runway 05. He was informed of the arriving aircraft; nevertheless, he departed 05 and did not acknowledge the FSS request to turn. The arriving MEDEVAC had to take evasive action to avoid a midair collision.

Inactive Storage

An RCMP Twin Otter pilot was en route home to

Whitehorse when he alertly spotted a hole in the ice of a frozen lake. Beside the hole, he saw two people waving frantically. In the snow beside the hole, the message "Send helicopter" had been stamped out. The two people were picked up before dark.

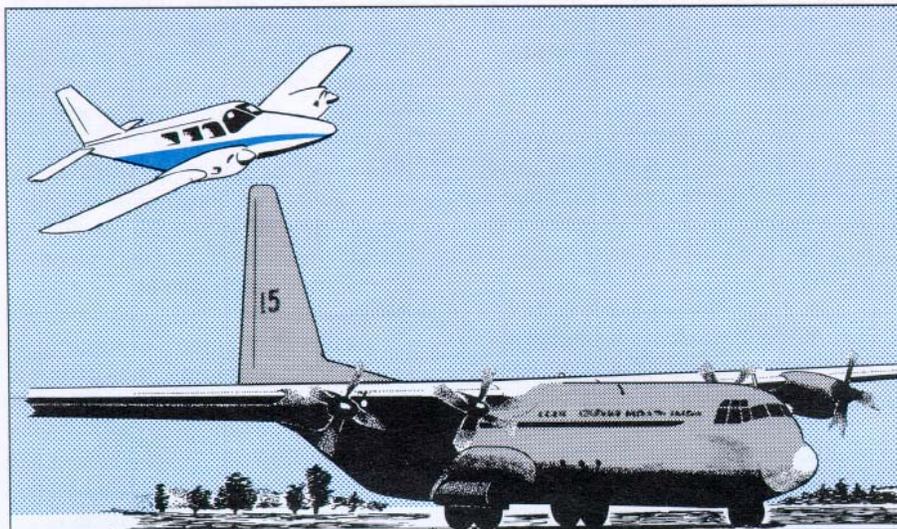
It turned out that a Stinson 108-2 had broken through the ice and sunk. It also turned out that the certificate of airworthiness for the Stinson was not in force. The aircraft was supposedly in "inactive storage." Now it is in "cold storage."

This pilot not only flew an aircraft that should have been in storage, but also failed to file a flight plan, and could have been on ice for a long time, were it not for our eagle-eyed RCMP pilot.

In a Hurry?

A military Hercules had just landed and slowed to taxi speed when a PA-34 took off from the same runway and zoomed overhead the C130 before it could clear the runway.

This random sampling of daily occurrence reports from the past winter makes us wonder why pilots are routinely accepting invitations to disaster.



Visual Illusion — Near CFIT



Loss of visual acuity in low sun.

The following letter was sent anonymously to the Transportation Safety Board of Canada (TSB). The TSB thought that the message should get wide distribution and passed it to us for publication.

To whom it may concern,

Yes, we know, we know, you've read dozens of CFIT articles and it couldn't happen to you. You work very hard to maintain situational awareness, you personally identify all approach aids, and you have learned to listen more intently to ground-proximity warnings and TCAS alerts than you do to your significant other.

We do these things, too, but it still happened to us: complacency and an unusual visual phenomenon resulted in a twin-turbine aircraft with 67 people on board flying a controlled approach to a field of snow immediately to the left of a fully operational, 10,000-ft. runway!

On that mid-March afternoon, the aircraft was being flown by a two-person flight-deck crew with more than 55 years of flying experience. It was a simple arrival from the west via radar vectors and a right turn for

Runway 24 at an eastern Canadian airfield. Visibility was advertised as being more than 20 mi., with only scattered cloud at 13,000 ft. The wind was blowing from 280° at 20 kt.

We completed a long right base leg, turned onto the final leg and picked up the runway visually — or so we thought. The pilot flying used a baseball cap to reduce the glare from the late afternoon sun.

The approach was flown on the PAPI-directed glideslope and on airspeed, with mechanical turbulence in the lower levels making several power adjustments necessary. Everything looked perfect for an “on-schedule” arrival until, at 200 ft., the pilot not flying said, “There's the runway — over there.” An immediate correction to the right was followed by a smooth touchdown, and the aircraft cleared the runway without further incident.

Both pilots were shaken and in total disbelief at what had just happened; to set up an approach to a field of snow in these or any other conditions was beyond our wildest imaginations. What had happened?

From about 10 mi. back, we had seen, quite clearly, what we thought was the runway. The

ILS/NDB information was available but was not used, since the PAPI lights were visible throughout the approach. This was a simple visual arrival on a fine day.

However, the strong north winds were picking up light fresh snow, and this had obscured the lights on the right side of the runway. The snow had also drifted across the smooth runway surface, leaving it bright white and reflecting the sunlight. The runway appeared to be an unbroken field of snow. The dimpled surface of old snow to the left of the runway, on the other hand, cast long shadows owing to the shallow angle of the afternoon sun's rays. It was dark and looked, to both of us, unquestionably like the runway in use. When we clear the runway and passed on this information to the arrival controllers, two other air carrier operators immediately responded that they had also experienced the same visual illusion.

Thankfully, the two-pilot concept worked again, and pride and confidence were the only things damaged. At about 500 ft., the pilot not flying had time to question the texture of the landing surface. On closer examination, it just didn't look right, and peripheral vision enabled him to pick out the real runway surface. The fact that the approach was flown to a snowy field is frightening enough, but, when you realize that every fibre of our beings believed that what we saw was the runway, it is even more unbelievable and unnerving.

Fortunately, the solution to this problem is simple. Using all of the available approach aids would have prevented this incident, and tuning up our approach review of the airfield lighting and PAPI installation locations would also be most worthwhile for the future. In

addition, clear lines of communication between crew members were of key importance to this flight's successful conclusion, and the need for such communi-

cation cannot be overemphasized.

In this instance, no real damage was done, but we humbly ask that all of our fellow aviators be forewarned that, in this

business, what you see is not always what you get.

Signed,
Older and Wiser

Winter Shorts

Frozen Elevator

Heading south for fun-'n'-sun, the Aztec pilot, en route from Calgary to Cabo San Luca, landed in Salt Lake City to refuel. Heavy wet snow was falling as he taxied in to the refuelling point, and quite a lot of the wet stuff accumulated on the airplane during his pit stop. The pilot carefully cleaned all of the snow off the wings and tail before taxiing out for takeoff. Even so, his efforts did not leave the surfaces clean and dry. A lot of moisture had seeped into the control hinges.

As he climbed into the colder air aloft, the moisture froze and so did his elevators. With dauntless skill and a lot of sweat, he successfully manoeuvred the Aztec back for a safe landing.

Frozen Aileron

A Boeing 767-200 was cruising at flight level, en route from the west coast to Toronto, when the aileron control became abnormal under both autopilot and manual control. The crew diverted to the nearest suitable airport. During the approach, aileron control returned to normal, and the aircraft landed without incident.

The aircraft was inspected. No fault was found. The flight was continued to Toronto.

The aircraft had been parked outside overnight at the west-coast stop and had been exposed to heavy rain. All indications are that water had entered the aileron control system, which then froze at altitude, causing the jam. During the approach into warmer temperatures, the ice melted, leaving no evidence.



Wet on takeoff? Beware of low freezing levels.

With clean wings, we still need to be aware of moisture when the mercury dips below the freezing mark immediately after takeoff

Frozen Brake

The PA31 had had an unplanned encounter with a snowbank, damaging the nose gear. The pilot was ferrying the aircraft home, gear down, for repairs. On arrival at destination, after a smooth touchdown, the frozen right brake caused the tire to blow, and our unfortunate pilot had a second encounter with a snowbank.

Warm brakes + cold snow = moisture. If you don't dry the brakes, they are guaranteed to freeze later.

Curling Rocks

Two successive Bradley Air Services B727 arrivals at Iqaluit made the smart move last winter. The only available runway at Iqaluit is 18/36. The wind was 240° at 22 kt., gusting to 34 kt. The James Brake Index (JBI) coefficient was 0.34. Both captains decided to divert 160 mi. to Kuujjuaq, an expensive decision for the company. But had they attempted the landing, only to become curling rocks immediately after touchdown, the bent aluminum would

have been a lot more expensive.

Well done!
Beware of Hazards
off the Ice Strip

Overhead the frozen lake, the 185 pilot assessed the wind as moderate to strong and at "SO" to the ploughed ice strip. He decided to land into the wind off the prepared strip.

Blowing snow and whiteout conditions made the approach extremely difficult. During the after-landing roll, the aircraft was severely damaged when it struck a snow ridge that the pilot could not see.

Whiteout

The 185 charter pilot departed in visual conditions and climbed to 400 ft. AGL. Five miles later, he encountered whiteout conditions over a frozen lake. The instruments told him he was in a descending left turn. He didn't believe them because he could not feel the turn. When he finally realized that the instruments were telling the truth, it was too late. The aircraft struck the ice, tearing off the left wing. Fortunately, after all the parts came to a stop, he walked away unharmed.

Whiteout conditions mean IFR. Believe what your instruments tell you.



Re: Pilot Decision Making

Every time I read the *Aviation Safety Letter*, I wonder, "What can we do to improve safety in aviation?" Sometimes, I cannot believe the stories, and I think about how simple it would be to avoid accidents.

I think we would do a lot better if we got rid of the "macho" attitude. I am a woman with a private licence. I have just over 100 h flight time, and I do not think that I am God just because I can fly an aircraft.

At an uncontrolled airport, I refused to obey one of my instructors when he wanted me to land over top of an aircraft that was holding on the runway for takeoff. Not having had any contact with the other pilot, I believed that the manoeuvre was too dangerous. Was my instructor testing me, or did he just want to get on the ground as soon as possible because his next student was waiting?

I rent aircraft from various flying clubs. I have often refused to fly planes that have worn-out tires or that produce unusual vibrations during the run-up. I inspect the aircraft before a flight and I am not afraid to consult with a more experienced pilot or the aircraft maintenance engineer when in doubt. I always brief my passengers and make sure that they know what to do and what not to do during regular flight or emergencies. If I feel that I will not be able to land the plane within a safe distance on the runway, I simply go around. I do not think about how I look as a pilot, but about how safe I am on the ground and in the air.

Some people think that I am going overboard about safety, and I have been laughed at many times, but so many simple

precautions can be taken. I still do not understand why pilots with many hours under their belts would do so many "stupid" things, thinking that they and their passengers are immortal.

Thanks for the *Aviation Safety Letter*. I hope that this letter will make some pilots think a bit more.

*France Bergeron
Saskatoon, Saskatchewan*

Re: Mountain Flying

I read with interest the article on the Hope-Princeton VFR route in Issue 2/97 of the *Aviation Safety Letter*. Flying VFR on this route is extremely dangerous unless the conditions are such that a direct flight between the two airports is possible. In fact, the route is to be avoided if there is any possibility of entering IFR conditions.

I am not a high-time pilot, but I have managed to acquire 1750 h, most of it in cross-country flying in Canada, the United States and Mexico. In 1981, after obtaining a private licence plus a night endorsement, I received some excellent advice from experienced Penticton pilots: do not use the Hope-Princeton route in inclement weather. I understand that Hope now has automated weather reporting, which compounds a bad situation.

I was advised to use one of the following routes in uncertain weather:

- Because the Fraser Canyon from Hope to Lytton turns almost 90° north at Hope, the moist systems that often affect the Hope-Princeton or Coquihalla Highway routes will not affect the canyon, and good legal VFR in the Canyon

is possible. As Lytton is at an elevation of 922 ft. and Hope, at an elevation of 128 ft., there is no precipitous rise in the elevation enroute. Lytton to Merritt (or Kamloops, if necessary) is most often open if the Canyon is open at Hope.

- If one does fly east or west from the Canyon, an excellent route can be found at Boston Bar. Fly the power lines, as this is the lowest elevation.

*W. Lawrie
Penticton, British Columbia*

Re: GPS Navigation and Collision?

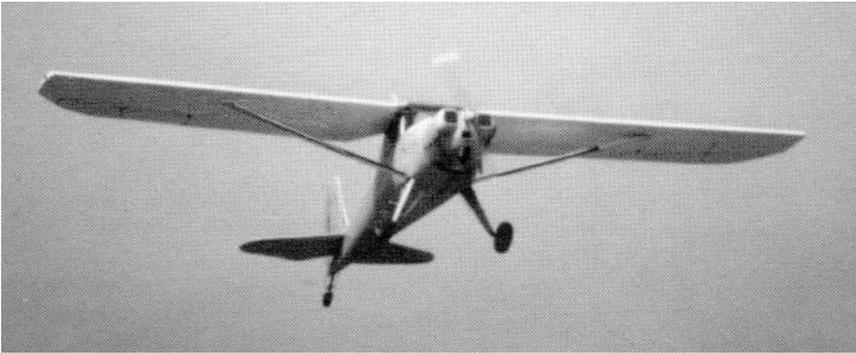
Am I the only pilot who believes there should be less fear of collision using the Global Positioning System (GPS)? First, the TSB links GPS to the Sioux Lookout collision, and now I see that a Mr. J. Tom Lockhart wrote to you that he will fly 0.1 NM to the side of GPS direct routes because he too fears a collision using GPS.

Maybe I'm blind, but I have been flying direct routes under VFR with GPS for the last four years and have experienced no increase in close calls. For collisions to occur, aircraft must be flying between the same way-points at the same altitude. IFR operations are not a problem. Air traffic controllers separate IFR flights from each other, and IFR and VFR flights are at different altitudes (except in climb or descent). GPS can't cause collisions in these situations.

Even for VFR, I believe there is less chance of a collision using GPS. Unless the departure runway heading is close to the direct course to my destination, I take up a direct course to my

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Twice Lost, Twice “Fuelish,” Twice Saved by Alert Flight Service Specialists



Luscombe in flight.

The solo Luscombe SL-8 pilot was en route VFR from Fort Nelson, British Columbia, to Watson Lake, Yukon Territory. It's barely more than 100 NM as the crow flies, and slightly longer if you're flying IFR (“I Follow the Road”). When the pilot became uncertain of his position (read “lost”), he called the Whitehorse FSS through the Watson Lake remote communications outlet. The alert specialist who took the call advised the pilot to climb and attempt to locate the highway.

Following the advice, the pilot located his position over the highway; unfortunately, at about the same time, he ran out of gas. The engine quit, and he made a successful forced landing on the Alaska Highway. Co-operative RCMP officers arranged for fuel and blocked the highway, allowing the intrepid pilot to depart again to continue to Whitehorse.

Several days later, it was the same aircraft, the same pilot and the same story. This time, the Luscombe pilot was flying from Atlin, British Columbia, to Juneau, Alaska — another 100 NM trip if you take the direct route, but longer if you're flying IFR (here, this means “I Follow the River”).

This time, the Whitehorse flight service specialist overheard a United Parcel Service courier flight attempting to assist the

Luscombe pilot, who, having flown past his intended destination, was lost somewhere south of Juneau and had only 30 min. of fuel remaining.

The specialist suggested that the pilot activate his ELT. Then he alerted the Victoria Rescue Coordination Centre, the Juneau FSS and the United States Coast Guard to the serious situation. With the aid of the ELT, the Coast Guard helicopter quickly located the crash site and the pilot, who was waving from the shoreline.

Fly IFR in the northern mountains (that's “I Follow Roads/Rivers”), have good maps, be meticulous in your map reading (a GPS wouldn't hurt), carry full fuel and, above all, listen to and bless those flight service specialists.

Bird-Strike Reporting

To maintain a database on aircraft collisions with birds and other wildlife, Transport Canada depends on a voluntary system, whereby pilots, airlines, aerodrome operators and the Department of National Defence provide data in a number of formats.

To enhance the data-collection system, Transport Canada has established two new systems for reporting bird/wildlife incidents or accidents. A toll-free number (1-888-282-BIRD) is now available so that these incidents or accidents can easily be reported.

In addition, Transport Canada has created a bird-hazard Web site (<http://www.tc.gc.ca/aviation/wildlife.htm>) that not only allows on-line reporting, but also provides access to Transport Canada's bird/wildlife database, the Wildlife Control Procedures Manual, and awareness/education material.

To manage the problem of bird and mammal hazards to aircraft, we need an accurate database. We hope that the toll-free reporting line and the Web site will make it easier to report incidents and accidents, allowing Transport Canada to focus its resources on the areas that require improvement. Please support this important program.

Measuring Safety

“It is impossible to accurately measure the results of aviation safety. No one can count the fires that never start, the aborted takeoffs that do not occur, the engine failures and the forced landings that never take place. And one can neither evaluate the lives that are not lost, nor plumb the depths of human misery [that] we have been spared. But the individuals with the flight controls, fueling hoses, wrench, radar or dispatch order can find lasting satisfaction in the knowledge [that] they have worked wisely and well, and that safety has been the prime consideration.”

Author Unknown

Transport Canada Aviation Safety Award

Donald Spruston of Ottawa is the recipient of the ninth annual Transport Canada Aviation Safety Award for his outstanding leadership and dedication to aviation safety.

Mr. Spruston, a long-time Transport Canada employee, was nominated by the aviation industry. He was presented with the award on April 22 by Ronald Jackson, Transport Canada's Assistant Deputy Minister of Safety and Security, at the ninth annual Canadian Aviation Safety Seminar in Calgary.

Currently Transport Canada's Director General of Civil Aviation, Mr. Spruston served as the Department's Director General of Aviation Regulation from 1991 to 1996. He was a key player in the federal government's consultations with the aviation community, which saw the creation of the new *Canadian*



Donald Spruston, Director General of Civil Aviation and Ronald Jackson, Assistant Deputy Minister of Safety and Security.

Aviation Regulations.

"Through his hard work, Mr. Spruston has been instrumental in setting up a consultative regulatory regime geared towards improving Canada's already excellent safety record in aviation," said Mr. Jackson. "I am very pleased to present this award to someone so deserving."

The Transport Canada

Aviation Safety Award was established in 1988 to increase awareness of aviation safety in Canada, and to recognize individuals, groups, companies, organizations, agencies or departments that have contributed, in an exceptional way, to the achievement of this goal. △

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Re: GPS Navigation and Collision?

destination at some point after takeoff. I do not often follow the direct line between my origin and destination. The point at which I take up my course is different on each flight, even to the same destination, given the different winds, temperatures, climb speeds and rates, area traffic, and so on.

It is only if you are flying directly between navigation aids, such as when you are flying an airway or route, that there is an increased chance of collision under VFR, and then only if both

aircraft are flying in the same direction, at the same altitude.

Going GPS direct will usually preclude following identical routes. In fact, there are more routes if we all fly GPS direct than if we stick to airways. The chance that another plane is flying the same route as I am is lowered, not increased, by GPS. Sure, our paths will cross from time to time, but GPS has no influence on this.

With GPS, coordination via radio with other traffic and air traffic controllers is more precise

because the pilot has current and accurate position, speed and track information. I feel confident that other traffic will find me if I can give my position accurately. I know it helps me if other pilots do the same.

The real issue is how effectively we use air traffic services, flight service stations, our eyes, our radios and our brains. I do not fear more accurate navigation!

Mike Shaw
Ottawa, Ontario

