

VECTOR

Pointing to Safer Aviation

Pilot Decision-Making 1 • Aviation Safety Coordinator Courses 3 • Aircraft Technical Log 4
• Itinerant Pilot Aerodrome Procedures 6 • Safety Videos 7 • Mount Cook and Westland 7

Pilot Decision-Making

On the morning of Friday, 9 January 1998, the pilot flew a Cessna 172 from Queenstown to Te Anau to pick up two passengers who needed to catch a connecting flight north from Queenstown later in the day. The aircraft took off for the return flight at about 0830 hours but did not arrive at Queenstown.

Emergency location transmitter signals led to the discovery of the wreckage later in the morning. The aircraft had struck a beech-forested slope in a steeply banked attitude at an elevation of about 3300 feet, some 200 feet below a saddle between two tussock-covered peaks. All on board were dead.

A cold unstable southwesterly flow, including vigorous cumulonimbus activity and snow showers, was affecting the area at the time of the accident.

The remoteness of the site, and the absence of witnesses or survivor information, precluded the finding of a conclusive reason for the accident. The available evidence suggested that, as a result of severely reduced visibility from heavy rain, snow, or low cloud, the pilot may have inadvertently approached the forested slope, attempted an evasive manoeuvre, and collided with trees.

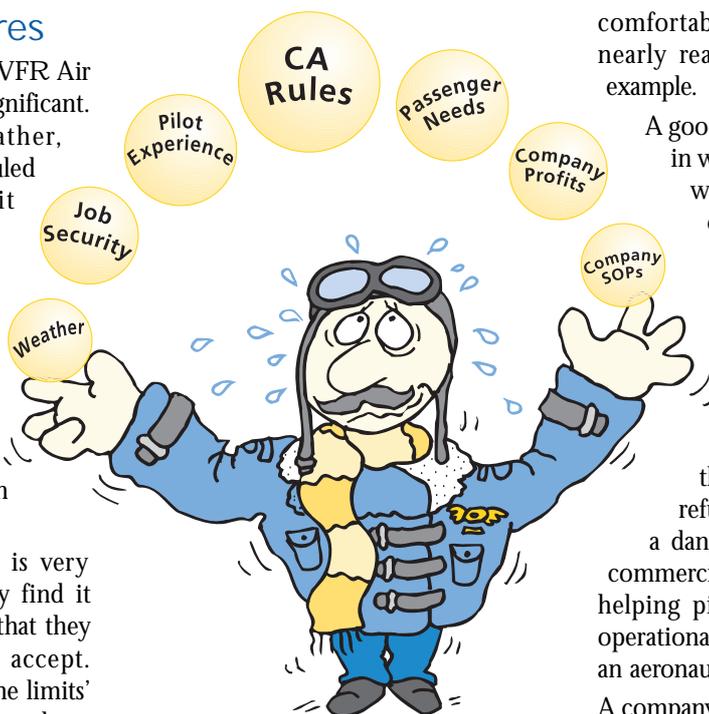
Operational Pressures

The pressures associated with a VFR Air Transport Operation can be significant. The demands that the weather, passengers, maintaining a scheduled service, and company profit margins can place on an operator often make difficult the decision on whether to proceed with a particular flight. Pilots and managers frequently find themselves having to weigh up these variables against the risks associated with a particular flight – a decision that can become even more difficult once in the air.

Today's aviation environment is very competitive, and operators may find it difficult to turn down business that they feel their competitors might accept. But the reality is that 'pushing the limits' may result in an accident that exacts a large financial toll on a business (even to the extent of destroying it), and in the process it is likely to damage its reputation, possibly cost lives, and cause great emotional upset. How best can we deal with these pressures?

Company Safety Culture

Safety starts with company safety culture. Management's commitment to safe operating procedures plays a major role



in reducing pilot decision-making pressures. Companies that openly support their pilots with well documented procedures generally have a safer operation. A pilot must be confident that there will not be any repercussions for them if they decline a flight because they perceive it is unsafe. This becomes even more important if they are to feel

comfortable about turning back after nearly reaching their destination, for example.

A good company safety culture is one in which pilots feel that their peers will value and respect the operational decisions that they make. Pilots should never feel reluctant to make what they know to be a safe decision for fear of embarrassment or loss of professional credibility amongst their peers. A goal-oriented company atmosphere that does not tolerate pilots who refuse to do or complete flights is a dangerous one. The reduction of commercial pressures is a key factor in helping pilots to focus on day-to-day operational decision-making purely from an aeronautical point of view.

A company with a proactive safety culture is also careful about the way it advertises its services to the public. Advertising slogans that promise to always get the passenger to their destination should be avoided. It is important that the staff handling customer inquiries emphasise that all flights are subject to weather conditions being suitable on the day. If it transpires that the weather is marginal on the day, then the pilot concerned has an out, and the decision on whether to fly becomes

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Next Issue

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continued from previous page...

less pressurised. If the situation is carefully explained to them, most customers will accept that a flight is not possible. It is also likely that they will bring their business back at a later date.

VFR Meteorological Minima

Rule 91.301 *VFR Meteorological Minima* prescribes the minimum standard for all VFR operations (refer to the Civil Aviation Rule Part that is applicable to your type of operation for relevant air transport meteorological minimums).

Many commercial operators, however, set standards that are greater than these legal minimums. These standards should be outlined in the company's Operations Manual and should be known to all pilots. It is important to adhere strictly to these, and to resist the temptation to fly when the conditions are marginal.

If you are a relatively new or inexperienced pilot, who does not feel comfortable with your company's meteorological minimums (although most companies usually set higher operational minimums for new pilots), then set your own. Your company should respect you taking such a safe approach until you gain more familiarity with the operation. Personal minimums should, however, be reviewed from time to time as more experience is gained. This will ensure that a realistic balance is struck between a safe operation and an economic one.

Pilot Preparation

Rule 91.217 *Preflight actions* requires that a pilot must obtain, and become familiar with, all information that is relevant to the route to be flown before the flight is commenced.

Rule 91.221 *Flying equipment and operating information* requires all pilots to carry a set of up-to-date maps and a current *Visual Flight Guide* (note that air transport operations require additional documents to be carried – check what is applicable to your type of operation). A copy of the area weather, a flight-log card, and a cellular telephone will aid in-flight decision-making, particularly if weather conditions deteriorate. Even if the route chosen is very familiar, reference to this information may still be necessary.

A reduction in visibility while en route over high ground, for example, may necessitate a safer alternative route. Fuel remaining, elapsed flight time, civil evening twilight (CET), forecast weather conditions, and a map of the area then

become essential pieces of decision-making information that should be to hand in the cockpit.

Having a number of pre-planned alternative routes in mind before a flight is commenced will further reduce pilot workload if a diversion is necessary. Pre-planning also helps to make the decision to divert early a safer and more viable one – especially when the options may not be straightforward at the time.



Being familiar with the FISCOM chart in the *Visual Flight Guide* and the local cellular coverage area is important too. Ensuring that you have advised Flight Information about your intentions to divert (or decision to return to the departure aerodrome), before going out of RTF or cellphone coverage, is critical for search and rescue reasons. It may also be your last chance to obtain the most up-to-date weather information and to notify your company base of your intentions. Note that carrying a cellphone also gives you the flexibility to discuss the conditions of the day with other pilots while on the ground at an airstrip that has no landline telephone.

Decision Factors

The decision not to proceed with a flight because of marginal weather preferably should be made on the ground, not after becoming airborne.

Some operators have been known to employ the 'suck it and see' approach when it comes to deciding if they can get to a particular destination. The further you progress into a flight, the greater become the psychological pressures to get to the destination. By setting off in marginal conditions that are likely to necessitate a

return, not only have you cost your company money, but also you have wasted your passengers' time.

Your credibility as a professional pilot can also be a factor that influences the decision-making process in such a situation. "What will the others think of me when I arrive back at the aerodrome after having got within several miles of the destination?" is an example of such peer pressure.

Too often, our better judgement is clouded by how we think others will view our decisions, and the fact that we are reluctant to inconvenience others. This pattern of thought makes it increasingly difficult to turn back or divert, and the temptation to push the boundaries just that little bit further to get to the destination can become even greater.

If you do find yourself in a situation where the weather has deteriorated, then make an early decision to turn back or divert. Usually your instincts will be correct. Don't fall into the trap of pushing on because you know a particular route well – the risks of becoming spatially disorientated are too great. Even the most prominent geographical features can look

quite different in poor visibility – and when viewed from a lower level. Do not let passengers pressure you into continuing. You must assert your authority as pilot in command and explain the situation in no uncertain terms if they become insistent. Dealing with a disgruntled passenger is far easier than dealing with angry relatives after an accident. In most cases, passengers will respect your decision to turn back if you explain that the weather conditions have deteriorated and that you feel it is unsafe to continue.

Lost Procedure

If you do become situationally unaware, the first thing that you should do is admit to yourself that you are **lost**. Slow the aircraft down into the bad visibility configuration to give yourself more time to determine your position. Orbit overhead, or near, a prominent feature while using an area map to determine your location relative to your last known position. Make a radio call to let Flight Information, or other aircraft, know about your predicament. Drawing a 'circle of uncertainty' on your map is an effective method of narrowing down your location. Do not proceed in the hope that you will

recognise a geographical feature – it will only take you further from your last known position.

Summary

Company safety culture is at the root of commercial aviation safety. A safe operation is one that allows its pilots to make decisions that are almost totally free from commercial pressure. The reduction of these pressures is a key factor in safe operational decision-making.

Where possible, make the decision about whether to proceed with a particular flight while still on the ground – not in the air. If conditions do change while en route, it is imperative that an early decision is made to turn back or divert. The temptation to continue because the route is familiar should be resisted, so too should the pressures that passengers may exert.

At the end of the day, the lost revenue through not making a flight or having to divert somewhere is a very small price to pay when you consider the costs of having an accident. When the conditions ahead are looking doubtful, it is worth saying to yourself, "**Pressing on is not worth the risk!**" ■

Aviation Safety Coordinator Courses

Attention Chief Executives!

Two Aviation Safety Coordinator training courses originally planned for late 1998 have been rescheduled in March 1999. These two-day courses will be held in Christchurch on 18–19 March and Auckland on 25–26 March.

An Aviation Safety Coordinator runs the safety programme in an organisation. Does your organisation have a properly administered and active safety programme?

If you are involved in commuter services, general aviation scenic operations, flight training, or sport aviation, this course is relevant for your organisation.

For further information and enrolment forms contact:

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Apply now for an enrolment form!

What Is an Aviation Safety Programme?

An aviation safety programme is a formalised and documented plan that focuses on creating safety awareness and reducing accidents. It achieves this through two primary functions, risk management and safety awareness.

The safety programme includes all activities carried out within an organisation in order to maintain and promote safe practices. Such activities will usually include a hazard identification system, an occurrence reporting system, and safety surveys. Awareness will be raised by seminars, videos, magazines, meetings, posters, etc. A good safety programme will stimulate good communication.

A safety programme is a very important part of sound professional work practices. Safety should be very much a part of all aspects of your organisation's activities.

A Safety Coordinator can advise and make recommendations – the authority and instructions for implementation must come

from a management level. The success or failure of any aviation safety programme rests at that level.

The first step must be commitment by the top management to a safety programme.

The CAA can provide formal training for your Aviation Safety Coordinator.

Why Have a Safety Programme?

The short answer is, "If you think safety is expensive, try having an accident!"

You may be insured for direct costs, but the indirect costs of an accident are many times greater (latest figures suggest 4:1). A safe operation could be critical to staying in business.

The benefits are many and include a safer operating environment for employees and passengers, a more cost-efficient operation, and a positive image leading to public confidence and business opportunities.