

Stay or Go? Lessons From

Pilots can be natural seekers of excitement, taking pride in flying skilfully in challenging conditions. Throw in altruism, and external pressures to fly, and you have air ambulance flying. It could be a toxic combination.

But the air ambulance sector doesn't figure highly in the accident stats.

Vector asked air ambulance pilots what they could share with other aviators.

For a high risk sector, New Zealand's air ambulance field has had relatively few accidents.

Despite the inherent dangers in night flying, human winching, remote locations, single pilot operations, IFR, tight constraints, and pressure to fly, the New Zealand air ambulance sector has experienced just two accidents since 2006.

Granted, air ambulance pilots are recruited from the pool of more experienced pilots, and they receive continual training as part of the job.

But they also employ a robust process to subdue any 'mission mentality' – thoughts about how critical it is that they fly – that helps them come to a rational go, no-go decision.

Here, air ambulance pilots with almost 60 years of emergency medical flying between them, share some tips about that process.

"Despite the pressure of knowing that someone, somewhere, needs our help," says Barry Vincent, Chief VFR Pilot with Search and Rescue Services, "the number one principle is the pilot doesn't risk the lives of an entire crew trying to help."

So the pilots keep a constant watch on the weather throughout their duty period. Long before they get a call, they've gathered all the weather information they can – area and terminal aerodrome forecasts, rain radar charts, and MetService predictions.

Neil Moore, 3,250 air ambulance operations – and now CAA Safety Information Technical Specialist – says the key is to gather as much information as possible, building a picture of the conditions.

He says local knowledge is important for building that picture as well.

"If I was headed to the Chathams for instance, I might get the Met man there out of bed, talk to the island police officer, talk to the local operator.

"It was good building a relationship with local people – someone to confirm what you might be thinking anyway. And relationships with the locals benefitted me in other ways. Flying to the Chathams at night in the early days – before permanent runway lighting – someone always laid out battery lanterns to light the runway for us."

The pilots say if the forecast weather is terrible the decision to stay on the ground is easy. It becomes more difficult if the weather is marginal.

"For instance the conditions might be okay to fly in," says Neil, "but they could make for an uncomfortable flight for the patient.

"You're constantly reading cloud to provide the smoothest ride possible but sometimes, however you fly, it's not going to be pleasant.

"So you tend to put it on the medical crew to make the decision, in the interests of the patient's needs."

"Sometimes, you know you can get in somewhere," agrees Peter Turnbull of Northland Emergency Services Trust (NEST), "but maybe not out again. So you give the medical team a percentage chance of returning, and leave the final decision to them."

Air Ambulance Ops

Acknowledging Limitations

The air ambulance pilots, despite what they do for a living, are no gung-ho heroes.

"We're always mindful of the limit of our abilities," says Neil Moore.

"If you're not, deep down, happy about what you're planning to do," he advises, "stay on the ground."

"You do have to recognise, yourself, what your limitations are," says Peter Turnbull. "There's no external meter to tell you where they lie. And you have to be disciplined about not going beyond them."

"It takes maturity and self-awareness to make the appropriate decision."

"If you're questioning 'should I be here, should I not be here?' you've already made your decision. You just need to acknowledge that."

But Peter says technology is certainly helping with that decision.

"MetFlight is improving all the time, the information we have access to now is tremendous compared with a few years ago. There's really no excuse for getting into a weather situation these days."

Something else being increasingly used in the sector is a formal risk assessment tool (see "In Support of the FRAT" on the following page).

The tool gives a score based on answers to questions about personal preflight, and other forms of preparation. Those scores are tallied to result in a go, no-go recommendation.

The operators who use it say it takes the heat out of having to make a possibly more subjective decision.

The Role of Not Knowing

One thing pilots don't tend to factor into their decision is the detail about the patient, which defuses the pressure they may otherwise feel to fly.

Barry Vincent is given only a colour code, reflecting the severity of the patient's condition, but no details.

"We do know a code red is a fairly serious injury or medical event. There's always underlying pressure, because we're never going to get called unless the person needs help. But the safety of everyone on board is paramount."

Even if Neil Moore did know the state of the patient, it never really influenced him.

"By that time I'd made a decision and that was that."

Peter Turnbull of NEST says he's never told.

"We just know where they are. I think it's important we focus on the aviation side of things, and not get involved in the patient's needs."

Taking the Time

In a sector you'd think would be focussed on speed, the pilots agree they take the time they need for proper preparation.

Most of the preparation has already been done of course, and while target times do exist for some organisations – usually around 10 minutes between call and takeoff – Peter Turnbull, for one, deliberately does not observe any preset times.

"I observe a 'timely response commensurate with good aviation practice'," he says.

"Some jobs need unusual types of equipment, or specialist personnel. It can be difficult to predict whether you will need them, and they can take time to assemble. That's just the reality."

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The pilots say they might have to check something like the location of wires near their planned destination. Information like that cannot be rushed. If the window of opportunity to fly is missed because of longer preparations, that's just the way it goes.

While it would seem logical to find the reasons to support a 'go' decision, some operators reverse that, and base their decision on identifying possible reasons not to go.

Going through each possible reason not to take off, and finding that one by one, they don't apply, the pilots say when they run out of reasons not to go, they go.

Deciding No

The pilots agree that an organisation must back the decision of a captain to turn back, or not to take off.

"Sometimes it's physically impossible to do things, and that decision always weighs heavily on the crews," says Barry Vincent.

"But that's the nature of the work. A captain's decision should be the end of the conversation."

"Two hours after you make the decision not to go," says Peter Turnbull, of his own organisation, "no-one is even commenting on it.

"There will almost always be a Plan B. I'd say only about 10 per cent of flights can be done just by helicopter. To ships or an island perhaps, maybe in Fiordland."

"You have to respect the comfort zone of the less experienced captains," says Neil Moore. "Their seniors need to back them up. I would say as their training captain, 'would you like me to come along, and we'll just have a look?' But if they made the decision not to go, that was fine.

"As time rolls along, they will quietly get themselves up to a comfort zone that's better than what it was two years before. It's just exposure."

Being Flexible

Barry Vincent says that having made the 'go' decision, pilots are constantly reassessing that.

"Decision making is something that starts long before you get into the cockpit, but it doesn't happen just once – during planning. It happens throughout the time you're in the cockpit. You have to be really situationally aware, re-evaluating all the time, according to the changing environment as you fly."

He says Search and Rescue Services' crews are trained in Crew Resource Management. An important aspect of CRM is empowering any crew member to raise a concern and stop the operation if they feel it is unsafe.

"So while the pilot-in-command is ultimately responsible, the crew and paramedics are also contributing information about whether a flight should continue.

"Obviously there's a number of factors in that – weather and daylight, or the nature of the job changes. A beacon has gone off and you're going out to find someone. You're told they're in a clearing, but when you get there, it's a complex winch job. So you have to be ready to re-plan.

"We're never reluctant to change our original decision, if it's needed. And that includes deciding to continue, or not."

Neil Moore says night flying, especially, requires Plan B, C, and D.

"You don't always have the benefit of air traffic control, and gathering weather information at night is harder. I developed a network of people I could ring to confirm weather, but of course, I couldn't always ring them during the night."

Barry Vincent agrees about the added difficulty of flying at night.

"When the sun goes down, I begin to assess if it's a flyable night, weather-wise. As for flights during the day, forecasts are always checked against actual conditions, particularly at the rescue scene, at the time of a callout.

"But there are added complications at night. Are the conditions within the limits for flying with night vision goggles? What if the job is in a remote location? What if it's something more complicated than a straight forward medevac?

"We might be doing a hospital transfer, but the patient's condition deteriorates, so we're asked by our medics to land, for some medical reason. So we need to decide where we're going to land. Where is suitable? Where is safe? And this is at night. So this is where situational awareness is a continually evolving process."

"We are Maturing"

Peter Turnbull says one of the big drivers of safety in the sector has been the development of industry standards.

"They've calmed the industry down a lot. We're maturing as a sector, and everyone is singing from the same hymn sheet.

"It's generally accepted that, unless someone has different, or better, equipment peculiar to a certain circumstance, everyone pretty much gives the same go, no-go answer. The competition has been taken out of it."

Barry Vincent says, "We work in a team, there is always someone we can consult. But GA pilots need to avail themselves of every resource they can because they are often by themselves. They shouldn't be afraid to ask for help, get on the radio, use technology, use local knowledge, use the opinions of others if they do have passengers, and finally take notice of their gut feeling.

"If you're questioning 'should I be here, should I not be here?' you've already made your decision. You just need to acknowledge that." ■

In Support of the FRAT

The Flight Risk Analysis Tool, or FRAT, is a visual instrument designed to help pilots proactively evaluate the risks of the flight and make better go, no-go decisions.

Using a FRAT to put everything on paper allows the pilot to graphically depict risk limits, free from the pressure of an impending flight or maintenance task.

Ninety percent of the FRAT can be completed as soon as the pilot comes on duty. It can also be used where the job does not look 'on', but it allows some disciplined thinking about what is possible, and a no-go can become a 'go'.

You can see one example of a FRAT at:
www.aeronautical-safety.com > Downloads > EHEST
– Pre-Flight Risk Management Checklist

Opposite page: Lakes District Air Rescue Trust training with the Wakatipu mountain rescue team in 'human external transport' above Lake Wakatipu in 2010.

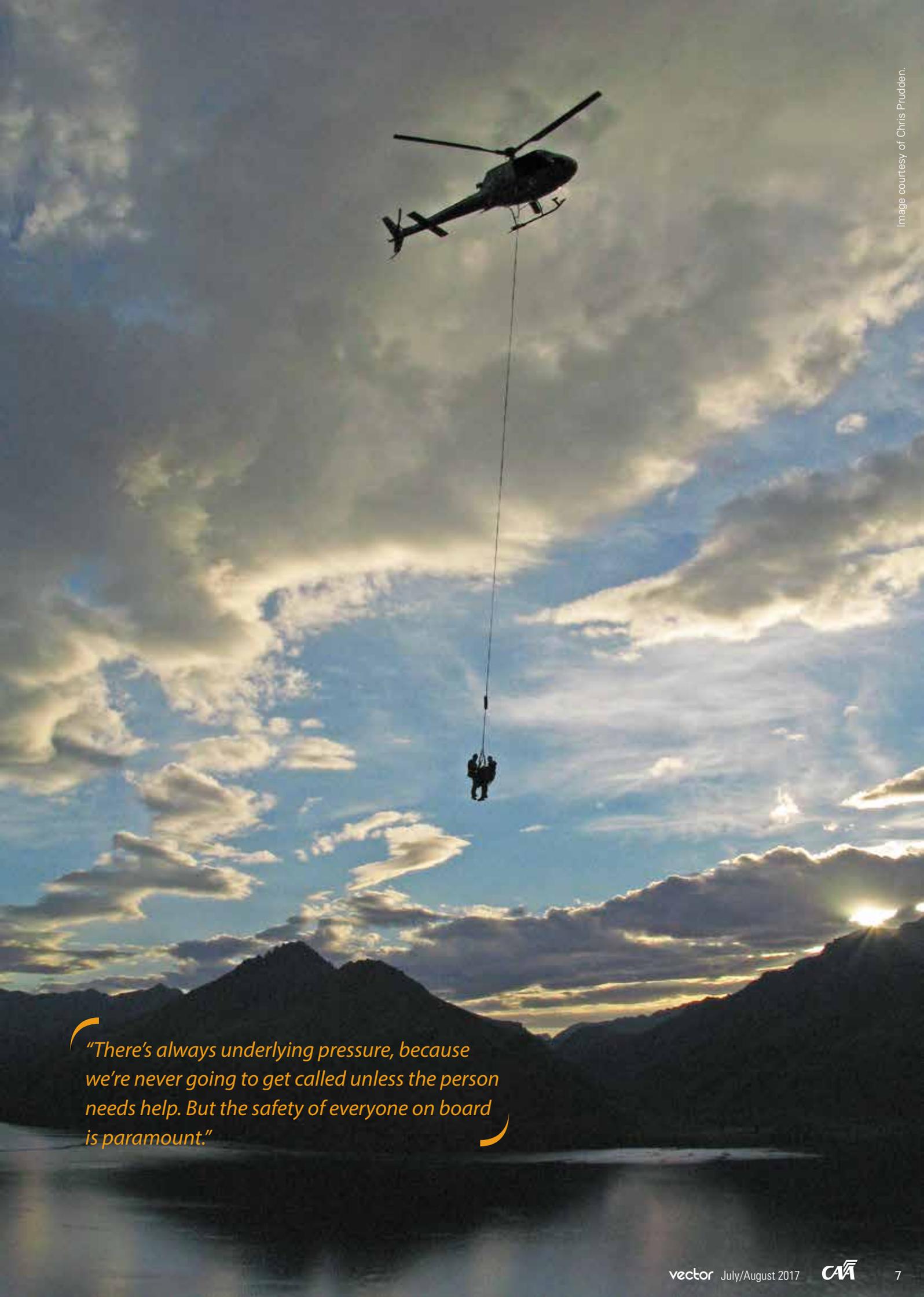


Image courtesy of Chris Prudden.

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