

Mind over matter

A review of airline pilots discovers eight core behavioural attributes that make a good captain. And they are just as relevant to light aircraft pilots.

Dr Graham Edkins

WHAT makes one pilot safe and another a candidate for a serious accident?

In 1995 Qantas developed a profile of pilot attributes based on a detailed review of the job of an airline captain. The review surveyed a group of company pilots to find out what makes a good captain and what are the key tasks for success in the job. In other words, were there key behaviours which distinguished low performing captains from high performing ones?

The result was a profile of eight core behavioural attributes (which Qantas refers to as command competencies) that define and influence airmanship. How can general aviation pilots develop command competencies based on those developed for future Qantas captains? Let's examine each of these Qantas command competencies in detail and see how relevant they are to single-pilot operations. **Deciding:** This competency is concerned with efficient decision making and the willingness to evaluate whether the actual decision was the right one, given the circumstances. Good decision makers are measured by their ability to consider all the available options and remain flexible to fluctuating demands.

Good decision making is just as important in light aircraft operations as it is for

airline pilots. A few years ago the pilot of a Cherokee Six became lost on a flight from Ayers Rock to Alice Springs. He decided to land on a gravel road to ascertain his whereabouts from passing traffic. On final approach, it became evident that the area of road selected was unsuitable, but the pilot persisted with the landing.

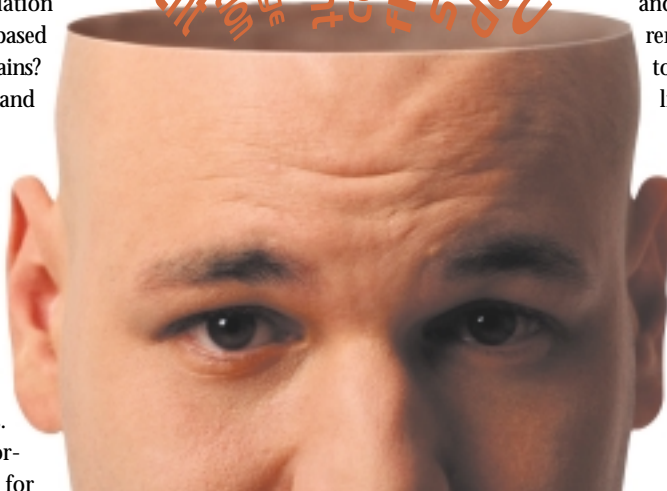
After touching down the aircraft struck trees on the side of the road and crashed. The aircraft was damaged beyond repair but the six occupants escaped unhurt.

There was no pressing reason why the pilot had to land so hastily – the weather was good, the day was young and he had at least three hours of fuel remaining. He also could have climbed to a higher altitude to help him establish his position or follow the road and use it as a navigation aid.

A-GRADE decision making:

How can you enhance your decision making skills? One useful tool is a decision making model called A-GRADE that is taught to Qantas pilots early in their career. Imagine you are a single pilot operating a light twin on an IFR flight and discover that the actual weather at your destination is different to that forecasted. Should

COMMUNICATION
 KNOWLEDGE
 MANAGEMENT
 EQUIPMENT
 FLEXIBILITY
 SELF CONTROL
 DECISIONS
 ABILITY



you divert? The following steps will help you decide:

Aviate. Your first and most important priority is to fly the aircraft. Don't become so consumed with the problem that you allow the speed to deteriorate, or accidentally deviate from course, or forget to extend or retract the gear or neglect your checklists. If you are A-grade material you won't forget to fly the aircraft.

Gather information. You might study the cloud formation, obtain the TAF/METAR, consider your divert options, ascertain how much fuel you have remaining, evaluate the height of the terrain in the area, and if you work for an air operator consider what the company alternates are. At this initial stage it is important to use more than one source of information to ensure you are as informed as possible about your situation.

Review what you know. The next step is to break down all the information you have into two to three manageable chunks, and then ask yourself, what else do I need? For example, you may need to contact ATC to obtain a weather update.

Analyse your options. After reviewing all the relevant information, you can now weigh everything up and consider your options according to fuel, weather, and company requirements.

Decide. The next step is to avoid procrastination and make your decision. So you decide to divert. At this point you also need to think about how you are going to implement your decision. What heading do you need? What airspace considerations to you need to take into account? Do you need to switch tanks?

Evaluate. The final and the most frequently forgotten step is to evaluate your decision for its wisdom. Have you forgotten something? What about the NOTAMS? If you are operating a twin and at your chosen destination the NOTAMS specify that the main runway is closed, leaving only a wet grass strip available, this may not be optimal.

Commanding: This competency is about how well you manage and encourage people to maintain high work standards. Good commanding is also about understanding and following the regulations to ensure safe compliance. One of the key aspects of this behaviour is responding appropriately to emergencies. For Qantas pilots this may be managing operational problems on the flight deck, such as traffic collision avoidance, or responding to emergencies in the cabin, such as medical problems or disruptive passengers.

Good commanding is just as important in general aviation. For single pilots, good

commanding is about setting your own personal standard and sticking to it despite being confronted with situations that put you on the spot. If you feel uncomfortable about the weather and choose to divert but you are getting pressure from your passenger to fly on – ask yourself, “Who is in command?” The same goes for weather observers at remote airports who tell you that the previous light aircraft got in despite the fact that the cloud base is below the minima. Or are you sure you can really carry that extra suitcase? Next time ask yourself, “What's my standard?”

Self control: This is about keeping a cool head in an emergency, keeping your emotions in check and concentrating on getting the job done calmly and professionally, despite what might be going on around you. This competency is important regardless of what aircraft type you operate.

Self control and professionalism were demonstrated by the pilot of a Cessna 206 who had planned a short 11km journey between Usarumpia and Marawaka in the highlands of Eastern New Guinea. His departure airfield at Usarumpia was a 450m long one-way strip, with a gradient of 1:10. At the lower end, the strip drops down sharply to a mountain stream.

Once you begin a take-off there is little opportunity to abandon it, without causing a disaster. With four passengers on board the

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pilot began his take-off roll. Halfway down the strip, he found, to his amazement, that he couldn't pull the control column back. The pilot thought better of abandoning the take-off, and the aircraft rotated of its own accord.

In the face of an ugly situation he remained calm and once airborne found that he could control the aircraft's attitude by varying the



engine power and experimenting with different flap settings.

With limited control, he continued up the valley to Marawaka for a straight in approach. On landing the pilot managed to control his aircraft sufficiently to sustain only minor nose gear damage. It was later found that the elevator bell crank had failed jamming the elevator. Altogether an outstanding performance, given the circumstances.

Team managing: A good team manager recognises that individuals have various strengths and limitations. Effective team managers are measured by how well they can harness individuals to work together in a coordinated effort.

You could be forgiven for thinking that this competency only applies to airline flying. But for general aviation pilots, teamwork is also important, even though the team may be outside the aircraft.

For some, the term single pilot seems to suggest that the individual flying the plane does so in isolation. It can often be overlooked that there are many sources of assistance. For example, if you select gear down in the circuit area and discover that you don't have three greens, you shouldn't forget that there is a whole team of people a radio call away who can share their expertise. You could call on the local tower or other pilots on the ground to do a fly by. If these resources are not available, you



could seek advice from the local LAME. Faced with a gear up landing you could also ensure that local emergency services are put on stand by. Remember, you are almost never alone!

Communicating: Good communication involves tailoring your message to best fit the audience. In aviation, this is about using standard phraseology and being receptive to what others have to say. Many communication problems develop from a lack of clear or common understanding about respective roles. If you are a general aviation pilot who normally flies alone, and are planning on taking a fellow pilot with you on a long trip, be sure there is an understanding of your respective roles. To ensure understanding, consider conducting a departure and an approach brief, just like airline pilots do. This may seem like overkill but it is important for the second pilot to be in the loop.

Systems knowledge: This competency is about having a good understanding (mental model) of the aircraft you are flying, particularly its operational systems.

For the single pilot, good systems knowledge is essential given that you don't have the luxury of a co-pilot.

Flexibility: This competency involves adapting to changing circumstances and demonstrating a willingness to learn from your mistakes and those that others have made.

The nature of the aviation environment

means that often your game plan may have to change. If you are landing at an airport where the forecast weather is different from the actual – be prepared to adapt to changing circumstances. Even if you are on final approach and

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you notice the windsock indicating a 15-knot tailwind, be flexible enough to go around. It is standard practice for Qantas pilots to brief themselves on the "what ifs", given a go around situation. There is no reason why you cannot apply this same standard by mentally briefing yourself.

Overview: This competency is about being able to see the big picture and knowing what is going

on around you – commonly called situational awareness. It also means not becoming distracted by niggling problems and thereby failing to perform the two fundamental tasks of flying – aviation and navigation.

Seeing the big picture involves making the effort to stay ahead of the situation and knowing what is going on around you. To maintain good situational awareness try conducting the "mental jump seat" exercise. This is like sitting on the jump seat of your own flight so that you are an objective observer. Continually ask yourself three questions: "Where am I?", "Where am I going?" and "What will I do when I get there?" If you know the answers to these three questions at any given point in your flight – you have a good overview of your situation.

The eight command competencies developed for Qantas captains are just as relevant for single pilot flying. However, be aware that these competencies cannot be acquired overnight. Like aircraft, they require continual maintenance and nurturing throughout your flying career. All pilots, regardless of the aircraft they fly, are measured by their continued willingness to become informed. Developing command competencies is about becoming informed.

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