

Automation versus airmanship

...or, when is a pilot not a pilot?
Captain Ian Marshall* asks the vital questions

Tell me what makes a person a pilot. We happily accept the accolade of the term but many of us earning our living through the act of aerial pilotage are not actually achieving this state of grace. Okay, so where am I coming from? Modern aircraft, particularly commercial ones, are infested with automatic systems designed to improve safety and de-skill the role of the pilot. I'm sure the latter was an unexpected consequence, but the effect is oh, so obvious. Am I a Luddite? Well, perhaps – but I am proud to be a pilot, and one with at least a spiritual bond with the Wright Brothers, Tommy Sopwith, and perhaps a certain Capt James Bigglesworth. You see, I fly one of the most sophisticated airliners going, the Airbus A320 family, but time and time again I use skills learnt and practiced at the controls of a Piper Cub.

Let's have a look at the available technology. The Airbus has dual autopilots, auto thrust, auto land, auto brakes, and a full command flight management system. So how does this all work? Well, the autopilots can fly the aircraft from 50 feet above the ground on take-off until walking pace during the landing run. The auto thrust will produce the right power to sustain a given airspeed, rate of climb, and descent profile. The auto land system will take you to the runway, assuming a suitably-equipped airport, in visibility of 75 metres and with no decision height. It can perform this miracle even with one engine failed! Auto brakes will work out a rate of deceleration depending on such factors as weight and use of reverse thrust, and then give it to you. Flight management systems take all the data from external sensors, combine them with virtual inertial platforms and GPS and provide an accurate position, ground speed, attitude and height. Add to that a route database and navigation is not exactly dead reckoning.

All this technology is pretty impressive and it does make my working day easier, you bet. The training of pilots is moving more and more towards competency in the management of these systems. Airlines love conformity. Flight data recorders, those black boxes which are really orange, are daily downloaded so the airline flight safety department can comment on a crew's performance. I have to say that this is to identify systemic training deficiencies rather than nutcase pilots. However, it does

not exactly encourage individual flair and skill development.

Now all this regimentation is fine, but there is a fly in the ointment. The virtual world is fine and dandy, but the real one is a little less predictable. How about some disgusting weather, or systems failure, or heaven forbid, a country that does not provide the wherewithal at its airports to facilitate a computer-generated approach and landing. The other day I was doing a charter to Dalaman. This southern Turkish airfield provides holidaymakers to the lovely beaches of the Dalmatian coast. The airfield is located within a quite impressive valley with one end of the runway pointing towards the sea. The other end,

re-read the brief and desperately tried to programme the approach into the flight management computer. My views were solicited on many occasions and my reassuring attitude was, I'm sure, taken as flippancy. The reason for all this concern was that we had to approach a VOR, go outbound for about four miles over the sea, turn right downwind over a hill then do a half-circuit to land – admittedly, avoiding the aforementioned mountain.

Any GA pilot with an IMC rating would not have to think twice about this procedure.

How about another example. You are strapped to eighty two tonnes of aircraft and due to wicked capitalism the into-wind runway has been sold off for a new shopping opportunity. The cross wind is 32 knots! I know, I'll use my lovely auto land, you think. No you won't, because it only works up to 10 knots. Just to add to the fun the computer programmers have given you a maximum rate of roll and then advised you not to use crossed controls. Well, that's not going to get the beast down without frightening yourself and the passengers. So forget years of systems management training, lay off into wind, wait for your moment kick off the drift, and control the secondary effect of rudder. Sound familiar?

The final scary blow came the other day when I was doing the first renewal of a young man's SEP rating. He had been trained by a commercial flight school and had gone straight into the left hand seat of an Airbus. Lucky him, I hear you say. He had not flown a light type for some five years. After ejaculating (I got that from W.E. Johns) that 'this light aircraft flying was heavenly fun' he said that at his school it was considered to be very un-cool to be interested in small aircraft and the majority of students hated flying them.

So where is this leading to? Are we going to have professional, and indeed a few amateur, pilots who can't fly? You bet! You can nowadays be only one heartbeat away from landing a jumbo jet with just over 160 hours of airborne time. If you go for a multi-crew licence this may be even less. We are selling the travelling public short if we allow this situation to continue. But heck, let's not worry about them – let's think about ourselves. Are we pilots with the ability to control an aircraft under all non-automated conditions, or are we terrified to switch the stuff off? I once had a flight management and autopilot failure while in Tenerife. The look on the co-pilot's face when I said we were going to go home by team flying half-hour manual legs each and using celestial navigation and VORs! Yes, I lied about the celestial bit.

We must take pride in the title 'pilot', we must be able to manoeuvre and navigate our machines wherever we want them to go. Of course we will use all available technology, but the basic skills are ours to be proud of. If the GPS packs up or the autopilot goes berserk then this is an inconvenience, not a life-threatening situation. Be proud of your skills, enjoy flying your aircraft, sod technology, and have fun.

**Ian Marshall is an Airbus captain with bmi and Head of Training for the West London Aero Club.*



unfortunately, points in the general direction of a mountain. The approach plate looks awful! The winds are diurnal, meaning sea or land breezes depending on the time of day. Arriving by day causes a bit of a problem as the wind comes off the sea and there is no instrument approach on the inland runway. Heavens above, we may have to do some flying!

My first officer, an excellent fellow and truly a product of the system, was to fly the approach. While I happily read my newspaper for the four-hour en-route sector he read and

Above: how this magazine first analysed the MPL issues in 2005
 Below: airliners like the Airbus A320 can do almost everything for you

