

KARL BEESTON



This Dexcom unit can allow pilots to continuously monitor their blood sugar levels

Pilots With Diabetes

Douglas Cairns is leading the way to persuade aviation authorities that pilots with diabetes can fly safely... and a new piece of technology from Dexcom could well help him achieve his aim

BY Dan Tye

It's called the hidden epidemic. Largely because the symptoms of diabetes can so easily be associated with a busy lifestyle and go unseen. There's feeling tired all the time, sudden weight loss, feeling thirsty, the need to pee frequently and sometimes compulsive eating too. In Douglas Cairns' case, he tells me his symptoms were far too drastic to ignore. He experienced sudden weight loss during fast-jet training in the RAF, just as his dream was beginning. An RAF medical doctor broke the news to him in a particularly blunt way, "It's confirmed. You are a diabetic and you were a pilot."

This cruel bedside manner was only just a small part of the driving force behind Douglas' attempt to change the authority's views on pilots with diabetes though. I met him earlier this month in London, in the heart of the financial district, on the day that Tony Blair released his biography 'My Journey'. But after an hour with Douglas I felt that if anyone's journey should receive extended profile then it's his.

Since leaving the RAF in 1989, Douglas has worked so hard to keep flying and educate himself on the best way to manage his diabetes. He currently works for Threadneedle, a financial company with a strap line of "Out-think, Out-perform" which is appropriate for the 45-year-old, who

PILOTS WITH DIABETES

In November 2007 the inaugural meeting was held for "Pilots With Diabetes", a British-based group of former commercial and military pilots, existing and prospective private pilots, all of whom have Type 1 Diabetes. The aim of the group (and website) is to gather information that can help enable people with type 1 diabetes to fly professionally in the UK. The website also aims to act as a point of information contact for pilots with diabetes trying to do the same in different countries. www.pilotswithdiabetes.com

back in 2003, flew Diabetes World Flight (DWF), the first round-the-world flight by a licenced pilot with Type 1 Diabetes. The journey covered 26,300 nautical miles through 22 countries over five months in a twin-engined Baron, raising \$26,000 for diabetes research. But why did he fly in the USA and not in the UK? Well at present, the USA is the only country in the world that will issue a medical certificate to individuals with Type 1 Diabetes to exercise the full PPL privileges. This means any flying that Douglas wants to do has to be in the USA. But he wants to change that and tells me he hopes that his flying – and how he manages his blood sugar levels - can show the authorities that type 1 diabetes shouldn't prevent people from flying.

But what is the system in the USA? Simply, it means keeping tabs on where your blood sugar level it is at, but during flight. So the FAA say you have to check your level within 30 minutes of take off then an hour into the flight and 30 minutes before landing. If the test shows low blood sugar, then you have to ingest 20g of carbohydrate to get it back up again. If your sugars are high and above 300 mg/dl, or 16.5 mmol/l (British measure) then you have to land ASAP and only take off again when sugars are back within range. But it's this current testing method which is part of the issue for some aviation authorities. Pilots have to take their hands off the controls (in steps) to finger-prick for a drop of blood, put the drop on a strip then place the strip into a blood glucose meter. There are some people that assume that this is difficult to do in flight but Douglas

has proved it's no more difficult than "unravelling a map" and says it just becomes part of the cockpit checks. "This old testing method has been overtaken by this device though," says Douglas who shows me a pocket sized LCD screen called a Dexcom unit. "This lets me see exactly what my blood sugar level is doing but in a graphical format."

He then lifts up his shirt and shows me a small white plastic device (about the size of a Lego brick) taped with Micropore to his waistline just above his belt. It completely surprises me. It turns out that this unit (called a sensor pod) has an inch-long implant under his skin which 'wirelessly' transmits his blood sugar (taken from interstitial fluid) to the pocket unit.

"With the Dexcom I can see if I'm trending up or trending down," he explains. This new piece of technology means pilots will be able to manage their levels much more easily in flight; the beauty of it being it can provide continuous blood glucose monitoring.

"I Velcro this unit up on my aircraft panel," he says. "Then to see my level, I press 'refresh'. If it goes over or under the limits, it will alert me. So far I've had no formal response from the aviation authorities yet, but informally they have said they can see how it could work."

Just five minutes later, I hear a large 'beep' noise. It's from Douglas' 

PilotPlus

Douglas Cairns



Douglas Cairns (right) and Karl Beeston on their recent Diabetes Flight 50 in the USA

SPIDERTRACKS

Enabling others to keep tabs on Douglas' record-breaking flights is vital for those who have donated their money for research into diabetes. As such, 21-year-old Karl Beeston (who also has type 1 diabetes) was responsible for overseeing the GPS real-time tracking system used on Diabetes Flight 50. The pair used a system made by Spidertracks which talks to satellites and a computer server which then displays the aircraft's real-time location and past 'tracks' online. Some flying schools and business in the UK are also using these units to keep an eye on their fleets and where they have been flown. Users get a secure login to a website where they can view a current flight or histories of past flights on Google Earth or on aviation charts too.

www.spidertracks.com



Spidertracks showing the route from Hawaii into the 50 states on Diabetes Flight 50

Dexcom unit. "See it's showing my blood sugar is rising," he shows me the screen. "It's probably because of the milk in my cup of tea."

Douglas has already managed his blood sugars well with the old method, but this Dexcom unit may be enough to persuade the authorities to allow unrestricted flight on a licence like they do in the USA. He can fly on an NPPL in the UK but there is a fear that when EASA takes full control this privilege will be lost. If anything, he has already proved he can fly safely on both the round world flight and on Diabetes Flight 48 last year, which was a flight to land in all 48 contiguous USA states. He broke the existing record by 33 hours. He's now added even more weight to his case now that he has just returned from Diabetes Flight 50 which launched from Hilo, Hawaii, on 11th July attempting to break the existing record to land in all 50 states of the USA. The time to beat was 13 days 22 hours and 22 minutes. Douglas flew it in 5 days and 15 hours, cutting the existing record by more than 50%. It was on this most recent flight where he used the Dexcom unit. "I never planned to set records," he admits. "But if I can show that pilots with diabetes can set records then I can also show that they can fly safely. What I really liked about the recent 50 states challenge was the endurance aspect of it. I wanted to smash it. I flew an average of 12 hours a day over those 5 days."

Photos and videos of his most recent trip can be seen online and really gives you a taste of the type of flying he did along with (non-flying) crew members Karl Beeston as Technical Support and Daniel O'Mara who was the National Aeronautic Association official observer who had to be on board to verify the attempt. If the website leaves you wanting to know more then Douglas' book 'Dare to Dream' will boost your understanding of diabetes to a whole new level and give you an insight into a pilot for who adventure is everything. Plans are already being made for next year's flight which Douglas has hinted will possibly take in the scenery at much higher latitudes - to the North Pole, set for 25th April 2011.

If so, the cold and the polar navigation will be Douglas' only worries as he's pretty much got the diabetes taken care of. ■

www.diabetesflight50.org