

*A diabetic pilot with an FAA ticket flies to the North Pole to prove that diabetics are safe in the air. **Pat Malone** reports*



Diabetes no bar to safe flight

The UK-based group Pilots with Diabetes is once again in the news having pulled off another record-breaking flight, this time taking a light twin to the North Pole and back. The hope is that those who are writing EASA's rules on FCL medical matters are reading the news because it reinforces the fact that in 14 years of flying on FAA PPLs – and more recently on UK NPPLs – there hasn't been a single incident attributable to a pilot flying with Type 1 diabetes, and there is no justification for withdrawing their right to fly in Europe.

There are some 540 pilots in the United States flying with Type 1 diabetes. They are given special third-class medical certificates and are required to take hourly blood sugar level tests in flight. Over four decades they have created a substantial body of medical evidence on the effects of Type 1 diabetes on pilots, and none of it suggests they should be grounded. One of the great advances of the NPPL in Britain was the fact that the CAA recognised this evidence and allowed diabetics to fly. There is no guarantee, however, that EASA will do the same with its sub-ICAO NPPL equivalent, the Light Aircraft Pilot's Licence, and with the change to EASA FCL looming, the Polar flight was designed to get their attention.

Pilot Douglas Cairns flew an N-registered Beech Baron from Point Barrow in Alaska to the North Pole before landing at a Russian ice base 30 miles from the Pole. A former RAF pilot, Douglas was diagnosed as having Type 1 diabetes at the age of 25. His military flying career prematurely ended, he obtained an FAA PPL and has

spent much of his time since then proving that Type 1 diabetes should be no bar to flight. He had flown around the world in the Baron – the first Type 1 diabetic to do so – and holds many speed records including the fastest flight around America touching down in all 50 states, and for the 48 contiguous states.

Douglas is one of the founders of Pilots with Diabetes; another is Karl Beeton, who flew solo on his 16th birthday and was planning a professional career when at the age of 17 he was diagnosed as having Type 1 diabetes. Both men retain a passion for aviation, and Karl, who has an aerospace engineering degree, has not given up hope of becoming a professional pilot. But first, the authorities have to accept that controlled Type 1 diabetes is not a safety threat. Karl flew with Douglas on many of his record flights, and functioned as Technical Support on the Polar flight.

The Polar flight began on April 19th when Douglas left Point Barrow on a day

of uncharacteristically clear skies for the 1,130-mile flight to the geographic North Pole, with just a single band of low cloud 100 miles wide in his path. Headwind was 25 knots at 7,500 feet and temperatures averaged minus 18 celsius. Every hour Doug changed tanks – he had installed an extra 250-gallon fuel tank in the Baron – and at the same time he attended to an extra item on his checklist – a blood sugar test. The rules for flying with Type 1 diabetes call for a blood sugar check half an hour before take-off and every hour during flight. Doug made the check with an instrument called an Accu-Chek Mobile, a battery-operated device about the size of a mobile phone that gives a near-instantaneous read-out.

Doug says: "The regulations prescribe limits for blood sugar levels, but they are very generous and I've never gone outside the upper limit in 2,400 hours. During the Polar flight I was delighted to see blood sugars remaining in a tight and good range for flying.

Canada shows the way

In Canada, private pilots with Type 1 diabetes can only fly with a Recreational Pilots Licence, but pilots who have already attained professional qualifications and who are then diagnosed as having Type 1 diabetes can continue to fly commercially in multi-crew environments, as long as they can demonstrate good control of their condition. As of November last year there were 31 Canadian pilots holding professional qualifications with Type 1 diabetes, of whom 25 were current. Four were flying with Air Canada, including one captain, one relief pilot and two first officers. The number included a military SAR helicopter pilot, four air traffic controllers, an airways test pilot for Nav Canada and a Transport Canada Inspector. There have been no reportable accidents or incidents involving any of these people, nor have any of the 82 recreational pilots with diabetes come to the attention of the authorities.

**Left: Douglas Cairns' Beech Baron with a local ski-equipper Twotter on the ice
This photo: the Baron has featured in all of Cairns American and global record flights
Below: Douglas in formation with his shadow at 50 feet over the Polar ice cap**



"If you go below the lower limit, which is set at a limit well above a level where a person would be hypoglycemic, you resolve the situation by ingesting 20 grams of readily-absorbable carbohydrate to bring blood sugars back within the required range – something like fruit juice or sweets. I find it to be a safe and effective system."

Although it is not required by the aviation authorities, Douglas also used a continuous glucose monitoring system that gives a reading of blood sugars every five minutes, allowing trends to be monitored and levels adjusted if necessary. "So far this system, the Dexcom Seven Plus, has not been acknowledged by the aviation authorities," Doug says, "but it is an extremely powerful tool with which to help manage blood sugar control within a tight and normal range."

Stability is the key – the controllability of Type 1 diabetes is the foundation of safe flying for affected pilots. The medical rules for the UK NPPL were laid down by AOPA's medical consultant Dr Ian Perry, who took the decision to allow pilots with Type 1 diabetes to fly following a review of evidence springing from the FAA's experiences. Dr Perry served for 15 years on the JAA Medical Board, where the situation pertaining to diabetes has often been discussed, but the situation remains unresolved as EASA prepares to take over. "I have written to the Chief Medical Officer of EASA asking for an update," Dr Perry says. "EASA takes over responsibility for FCL on April 8th next year, so time is short. I have read the transition documents carefully, and there will be a three-year



period after that in which pilots with diabetes will be able to continue flying under grandfather rights. During that time we will have to work hard to ensure people see the light."

Dr Perry said there are eight pilots with Type 1 diabetes flying on the NPPL. "There are also 38 insulin-dependent HGV drivers," he said. "The DVLA accepts that a Type 1 diabetic may drive a 40-tonne lorry on the roads, and there has never been a single problem in aviation either here, in America, or in Canada where diabetics can obtain professional licenses.

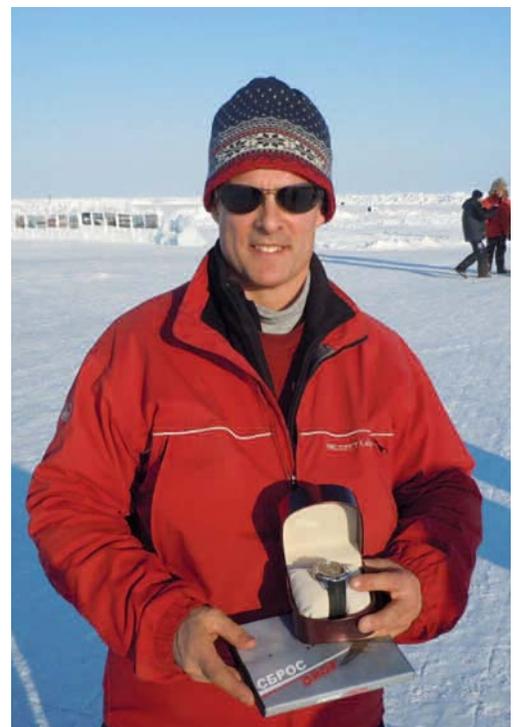
"Where diabetes can be perfectly well controlled there is no medical reason why

a pilot should not fly."

Douglas Cairns's flight to the Pole took 8hr 20 mins, and he passed over the estimated position of the Magnetic North Pole six hours into the flight. "Flying over the ice caused me less concern than when I was flying over the open ocean between Hawaii and California on the 50-state flight," he says. "I passed over the geographic North Pole at 01:03:47 hours Zulu on 20th April, and circled around the Pole, a maneuver that passes through 24 time zones within a couple of minutes. It was quite surreal, and extremely exhilarating, flying where the sun shines 24 hours a day, right at the crown of the



Above: friendly Russian ice camp team turned out to welcome Cairns at 04:30 local
Right: Russian gifts for the diabetic pilot at their base 30 miles from the Pole
Below: the Baron circled the Pole in a two-minute circumnavigation of the globe
Bottom right: Cairns' out and back track from Point Barrow to the North Pole



planet. Very shortly afterwards two of my three GPS systems failed – they cannot cope with proximity to the Pole – and with one GPS only reading my own position, I weaved my way down the E134.39 line of longitude, with the sun at an angle to my left, and found Barneo Ice Camp, a Russian ice base, 30 miles to the south.

“The 900 meter bulldozed ice strip was bumpy but I slowed up in good time and after shutting the engines down, it was a truly exhilarating moment to be standing on the polar ice. I can only say good things about Russian hospitality. It was the equivalent of 4.30am at the ice camp but 20 people came out to watch the Baron land in minus 26°C. I was taken to a warm tent and fed with a hearty soup and sandwiches, which after 8.5 hours flying were most welcome.

“On climbing back into the Baron, I had the nastiest scare of the whole mission when the door absolutely refused to close. Part of the locking mechanism had probably contracted in the intense cold, and I had nightmarish visions of abandoning the Baron on the ice, but

thankfully some engineering lubricant and brute force (helping push the door closed from the outside) saved the day after 40 minutes of quite frantic work. The return journey to Barrow took just 6 hr 20 mins with strong tailwinds at around 8,000 feet. The first hour though, I stayed low, around fifty feet above the ice, lapping up the amazing icescape.”

“Overall Diabetes Polar Flight has been an amazing experience. By carrying out such an endurance-related flight and landing at the Pole, we very much want to convey the message that diabetes need not limit the scope of people’s dreams and ambitions.”

Pilots with Diabetes wants aviation authorities to look at medical evidence

which reflects modern diabetes control, and evidence of successful systems for flying with diabetes such as the USA for private flying and Canada for commercial flying in multi-crew environments. If you want to register your support for the diabetes campaign, you can go online and make a donation to the Juvenile Diabetes Research Foundation (www.jdrf.org.uk) which aims to find a cure for type 1 diabetes.

The Polar flight could not have been attempted without support from a huge number of supporters, chief among whom was Ronald Sheardown, an experienced Arctic pilot who has landed at the Pole eight times, beginning in 1957. His advice and help were invaluable.

* Douglas Cairns is based in London as an investment specialist with Threadneedle Investment Management, covering Asia and Global Emerging Markets equities. After completing his world flight he wrote a book on his experiences ‘Dare to Dream: Flying Solo With Diabetes’. ■

