

Age shall not weary them...

Never mind the paper qualifications, a few hard-earned grey hairs are worth looking out for in a PPL instructor, says **Pat Malone**



Worried about keeping your medical? I'm sure we all wish we had the constitution of the remarkable Philip Cardew, who recently passed his Class 1 medical, complete with exercise ECG, at the age of 80. Philip is an instructor and examiner for Cornwall Flying Club at Bodmin and teaches aerobatics in a Robin 2160, among other things. He exemplifies all that is good about a general aviation system that can make a lifetime of hard-won flying experience available to the least capable *ab initio* student for virtually nothing. He has more than 18,000 hours on dozens of types, fixed-wing and rotary, few of them straight and level. Hundreds of students, military and civilian, have passed through his hands, including Prince Michael of Kent and Mark Thatcher. He was once responsible for the Navy's entire flight training programme. Now, he can apply his skills to teaching you how to hack out a circuit at a grass field in a Cessna.

He's certainly not doing it for the money. Last year he paid something like £700 in fees to the CAA to be allowed to keep on examining; by the time he's paid his taxes and his petrol to the airfield there's very little left out of what the market dictates that he charge. He feels constrained to pass on something of what he's learned to a new generation of fliers, and he still gets a kick out of it. "There's a lot of satisfaction in sending someone solo," he says, "and I still have a lot of fun with aerobatics."

Philip's father Evelyn was an early aviation enthusiast, and Philip first flew in a rented Miles Magister from Bekesbourne airfield in Kent before the war. His father was a transmission engineer for the Central Electricity Board and was later responsible for introducing the first power line patrols by helicopter, back in the late 1940s. During the war young Philip watched the Battle of Britain, "standing on top of an air raid shelter in Canterbury, with the sky full of planes and parachutes." In the ATC he was a Flight Sergeant teaching Morse Code, had an experience flight in Winston Churchill's Avro York and remembers a disabled B-17 making a forced landing at Redhill. When his call-up papers came in 1947 he applied to join the RAF as a pilot. "Unfortunately they were chucking them out in large numbers and didn't want any new ones," he says. "So the Navy took me on as a Telegraphist with the promise of pilot training later."

He did boot camp at HMS Raleigh near Plymouth and was eventually posted to Lord Mountbatten's Depot Ship HMS Forth in Malta. "One of the senior officers said to me, 'You speak well, passed the HSCs – why don't you apply for Seaman Officer?'" Philip says. "It seemed that it might delay aircrew selection, so I declined." He progressed through Ordinary Telegraphist to Telegraphist, then Leading Telegraphist, ending up as a Petty Officer in four years. After relentless badgering he managed to get himself sent to Biggin Hill in 1951 for the pilot aptitude tests, and was found to be apt. It was another year before he was sent to HMS Siskin at Gosport for ground school – he passed out top of his course. On to RAF Syerston in Nottinghamshire for training on the piston Provost, and thence to RAF Valley to get his Wings on the Vampire. At an Operational Training Squadron at Lossiemouth he learned to fight the Sea Hawk then joined 899 Squadron at Brawdy. "Winkle Brown was Commander Air there," Philip says. "That's where I had my first flame-out, in a Sea Hawk – the engine just wound down with a sigh, no drama. I dead-sticked onto the runway, managed to start it again and taxied off. Later they put it down to flakes of paint in the barostat, but only after a slight fracas with Winkle over the cause."

Philip did his first deck landings in the Sea Hawk, flying from RNAS Ford, then went to the Mediterranean on HMS Eagle just in time for Suez. "We were doing six trips off the deck every day searching out Egyptian tanks, and it was the best time of my life," he says. "Many years later I when I was taking my first executive jet into Luxor I kept my head down, having previously been there with four 20mm cannon."

In 1956 he went to Central Flying School to learn to instruct on the Provost, Vampire and Meteor, latterly at Little Rissington; then after a tour instructing he became one of three Naval Flight Standards Examiners going about the country picking pilots, two or three in a squadron, for random testing. He was required to keep current on many types, including the Hunter, Vampire, Balliol, Fairey Gannett and Sea Devon. Selected for a permanent commission, he was sent to Dartmouth to learn to drive a ship, a very happy time during which he flew Tiger Moths at the weekends with the Naval Grading Squadron at Plymouth giving experience flights to cadets intent of pursuing a naval career. From



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Left: As well as examining, Philip teaches aerobatics in Cornwall Flying Club's Robin 2160 at Bodmin
Top: Philip did his first deck landings in a Sea Hawk
Above: the Scimitar – 'a fabulous aircraft, Vne was 625 knots at low level, but at 45,000 feet it was akin to balancing on an egg'
Below: Philip was required to keep current on the Fairey Gannet
Bottom: as a commercial pilot Philip flew BEA Viscounts, which he found rather tame after a Navy flying career



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there he went to 803 Squadron, flying Scimitars from HMS Hermes in the Mediterranean and the Far East. "The Scimitar was a fabulous aircraft – Vne was 625 knots at low level," he says. "But at 45,000ft it was akin to balancing on an egg. Mach numbers were achievable but only in a slight dive."

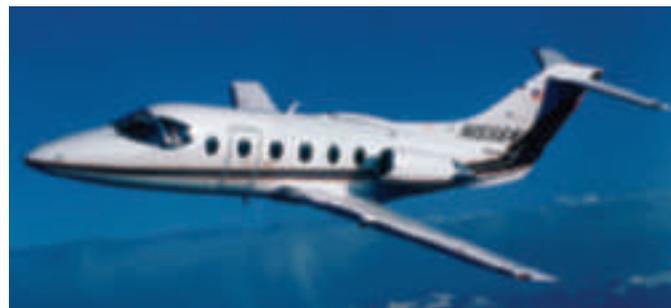
By 1963 he was Senior Pilot of 736 Squadron at Lossiemouth, teaching pilots how to fly and fight the Scimitar, then he was appointed as a Staff Officer to Admiral Don Gibson, and as a Lieutenant Commander he was in charge of pilot training for the Royal Navy. He moved on to take command of an RAF squadron at Linton-on-Ouse when they were carrying out ab initio flight training in the Jet Provost. Then came a major blow – the cancellation of a new Navy carrier by Labour Chancellor Denis Healey. "As a result, in 1967 and 68 it was decided that all Lieutenant Commanders of pensionable age could apply to BEA, BOAC or BUA for civilian jobs," Philip says. "I chose BEA and flew the Viscount, which I found fairly tame. You had a lot of time off, so I started instructing on light aircraft and doing air taxi work at Blackbushe in Aztecs, 310s and Navajos, then resigned from BEA to be chief pilot for David Wickens' British Car Auctions, flying King Airs."

Wickens was a ducker and diver who built up British Car Auctions from small beginnings. "One day he watched Peter Cadbury arrive in a JetRanger," says Philip, "and he turned around and told me to get rated on that, because he wanted one. So I did 30 hours on helicopters with Air Hanson at Brooklands and flew David Wickens around, but BCA was bought out by Lord Ashcroft who didn't approve of the aviation arm, so I moved to Air Hanson, who sent me to do the Beechjet course at Houston. I was employed as a flying salesman of Beechjets and King Airs and flew all over the world on charter or sales trips, while at the same time flying charters in Hanson's helicopters – eventually I was rated on the 206L, the Agusta 109 and Sikorsky S76."

After retirement Philip and his wife Anne moved to Cornwall, but he continued to travel to London to do ad hoc charter work on fixed-wing and rotary – one of his jobs entailed teaching the Czech and Slovak CAA pilots to fly the Beechjet. He hooked up with Cornwall Flying Club but travels all over the South West as an examiner. "The certificate has



Above: After switching to helicopters Philip flew the Agusta 109
Below: Philip flew all over the world as a travelling Beechjet salesman for Air Hanson at Blackbushe



become very expensive to keep compared with what people can afford to pay in examiners' fees and expenses," Philip says. "I think it is the cost that will put an end to my examining career, rather than losing the medical. I obviously had a few qualms about passing the exercise ECG – it's called the Bruce Protocol – for the Class 1 at the age of 80, but in the event it wasn't too bad. They put you on a treadmill and keep increasing the gradient in the hope of inducing a heart blip. After nine minutes they're up to 14 percent and it gets a bit tiring, but the heart graph remained steady."

"I still have the love of flying, and it still gives me a kick to be able to pass it on, especially if people want to do aerobatics. I went up to Bristol for the AOPA Flying Instructor Refresher Seminar so I'm tooled up until 2012 or 2013, and we'll see what happens after that." ■

Britten-Norman Islander ***‘Fit for purpose’***

After 45 years this diehard twin is still in production, and still doing the multifarious jobs for which it was designed.

*By **David Ogilvy***

Ever since aviation developed into a number of specific tasks, aircraft have been produced to fulfil those roles. Sometimes industry comes up with a winner and, without doubt, in the B-N Islander we have one such machine. The prototype G-ATCT flew for the first time from Bembridge on 13th June 1965 and within a few days it



Above: prototype G-ATCT appeared at the Paris Air Show within days of its first flight

Below: the same aircraft soon acquired a more attractive paint scheme

Right: the Islander comes into its own on rough strips inaccessible to sleeker aircraft



was sent to make its debut at the Paris Air Show. Since then it has not looked back, for in modified and improved form, it remains in production today. There are three versions, with 260 or 300 hp Lycoming piston engines or with Rolls-Royce Allison propeller turbines flat-rated at 400 hp.

Islanders cover a very wide range of practical uses and more than 1,250 have been built, serving with about 500 organisations in 120 countries throughout the world. They exist in basic form with accommodation for 10 passengers, in executive style with seating for 6-8, as freighters, survey aircraft, mounts for parachutists, police surveillance machines, air ambulances and, as the Defender, for military purposes. Examples of the latter are in service with the Army Air Corps and two are on RAF

strength. The organisation behind this is B-N Group, formerly Britten-Norman, founded by John Britten and Desmond Norman, who previously had designed, built and flown two single-engine light aircraft, although the company has changed hands more than once since then; with a neat operational and administrative package it has its own airfield at Bembridge on the Isle of Wight.

I like basic, straightforward, solidly reliable aircraft that are designed and built to do difficult jobs and then set about doing them successfully. So in the early seventies I was very pleased to be introduced to the Islander and fly it for the first time, appropriately from the then small grass aerodrome at Old Warden. My first impression was that it is readily understandable, with no trend-following frills.

The cockpit is neat and reasonably roomy and following brief electric priming, there is no complication in bringing the Lycomings to life. Taxying offers the choice of nose-wheel steering or differential throttle usage; the view is good.

Even with the lowest-powered version, take-off is a memorable experience, with quick acceleration to Vr at only 45 knots, following a still-air ground roll of less than 200 yards. Optimum climb speed is 65 knots at an unexpectedly high nose-up attitude to go with it, giving a published rate of 860 fpm. I failed to measure this precisely but I am sure that it was slightly more. The maker's publications state that the 300 hp variant offers an improvement of almost 300 fpm on this figure. Any discrepancy must be related to the load; when I made this first flight on type the aircraft



Photos via Philip Jarrett

Below: colourful paint job on a BN2B-20 Islander delivered to Kyokushin Airways, Japan, in August 1995

Right: early Islander brochure stresses the aircraft's versatility



was almost empty.

Cruising is possible at a range of settings, speeds and therefore fuel consumption figures. 2,400 rpm and 24 inches (despite the passage of many years, still I measure power in pounds of boost!) offered about 130 knots (155 mph), while the handbook quotes 142 and 126 knots for maximum and economical cruising respectively. Fuel usage was in the region of 30 gallons per hour, giving a safe range of about 400 miles. Noise level in the cockpit is acceptably quiet and is noticeably different between high and low power settings.

As always with a strange type, low-speed handling and the stall feature early in the assessment process. Here the Islander revealed no vices, being controllable down to the break-away figure of 45 knots with the flaps raised and about 6 knots lower when they were extended, in each case with only slight and easily recoverable wing-drop tendencies. Again, these results differ from 'the book', which states 50 and 40 respectively, but again height and load must be fed into the calculations. Whichever way we look at it, the Islander's reputation for low-speed controllability – and therefore safety – is fully justified.

The feature about this aircraft that made the greatest impression on this old diehard is its ability to take off on one engine; never before had I met such a machine. In my youth it was drummed into me repeatedly that twins can be hazardous if an engine fails at low airspeed and that controllable knottage must be attained as soon as possible after unstuck. In most cases it is not just a matter of available power but one of directional controllability. After meeting some asymmetric safety speeds (or Vmca) well into three figures, the idea of

made the whole process very controllable, but considerably lower figures can be used when conditions demand and, apparently (but again hearsay!) it is possible to cross the boundary at only 45 and survive the landing.

Whilst from a purist pilot's viewpoint an aeroplane's handling qualities and its behaviour in unusual situations must be of primary interest, these qualities are of little value in the real world if it cannot do a useful job of work. Here, of course, the Islander shows its true worth. In normal circumstances the maximum take-off and landing mass (weight to me!) is 6,600 lbs, which, if the

Below: simple, rugged and practical, the Islander's cockpit matched the aircraft



tanks are fully filled with 112 Imperial gallons gives a payload of 1,700 lbs. For really short flights requiring less fuel, though, this can be increased, but for long ferry hauls four 45 gallon drums can be connected to the fuel system.

The Islander may be slow, but its very concept virtually removes this as a problem. It comes to its own in the world of short hops, often from and to short, rough sites that are inaccessible to sleeker aeroplanes, while it is less expensive both to buy and to operate than a large helicopter of equal carrying capacity. Not surprisingly, of the large number of Islanders in active service throughout the world, according to CAA figures only thirty operate on the UK register. These are joined by nine B-N Trislanders which, as the name implies, are a

three-engine development; the first flew in September 1970 and now Trislanders are used on short scheduled and charter services, with Aurigny Airlines as the main operator. Apparently the prototype departed for the SBAC display at Farnborough on the afternoon of its first flight!

During the Islander's long career it has served almost everywhere. When introduced, its first uses were on inter-island routes in the Channel Isles, based on Alderney, and among the Scottish outposts centred on Orkney at Kirkwall. By contrast, in 1969 Westward Airways conducted six daily shuttles between Heathrow and Gatwick. To cover its activities away from home would require a map of the world.

The Islander is an aeroplane with many justifiable credentials. The maker's publicity material claims that it is the world's most versatile aircraft, while a non-biased report that I read a few years ago heralds it as one of the most successful aircraft in history. The type may have been refined slightly since its introduction in 1965, yet it remains basically the original, tough, reliable piece of kit and it is available, new and fresh from Bembridge, today.

Although designed well before the current phrase of approval had been coined, without doubt the Islander qualifies for the term 'fit for purpose'. ■



**Left: turbine-engined military Islander is called the Defender
Right: Dowty Rotol tested its low-noise Ducted Propulsor on an Islander
Below: Aurigny is the main operator of Trislanders**



a standing start 'on one' opened a new line of thought. I cannot claim to have attempted this and I must rely on the experiences of others, but I am assured that given 2,000 feet of available take-off run and unobstructed airspace ahead, it can be achieved. More importantly, though, in practical terms, this means that a sudden cut of one engine at unstuck (say 45 knots) is manageable, while in-flight critical speed checks are unnecessary.

Back to more normal flight with both sides producing power, a few circuits proved enjoyable. The recommended approach speed of 65 knots, reducing to 57 at the threshold,

