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A Beginner's Guide to the Atlantic Crossing (Pilot Magazine)

Flying the Atlantic in a single is not to be taken lightly. It requires careful planning and a well-maintained, well-equipped aircraft. It also requires an instrument rating and sufficient experience of weather flying to make sensible judgements. On the other hand, it is not impossibly daunting or dangerous. Some months ago, I planned a quick trip to Iceland in June 1998 as a way of accumulating experience for an Atlantic crossing I had hoped to do in the summer of 1999. In the event, as my planned departure grew nearer, I found I had two weeks free and the resources needed to stretch the trip. I therefore planned the legs beyond Iceland to Greenland, across the ice cap and eventually to Frobisher and Goose Bay in Canada. I would return to Iceland via Narsarsuaq. If you've ever thought of doing such a trip, what follows might be of interest.

Before the Trip

Let's start with the charts. Jeppesen do an Atlantic crossing kit which includes both the northern and southern (Azores) routes; minimally, the Iceland and Greenland tripkit is required. Sporty's will have the Canadian low charts and approach plates; the latter like their NOS counterparts for the US come in foldover booklets organised by region. Minimally, you will need the charts for the Maritime provinces (LO7-8), Quebec (LO5-6) and the Northern Territories and Greenland (LO9-10) and well as CAPs 1, 5 and 7 which contain the plates. These will take you to the US border using, say, Bangor as the airport of entry. Additionally, I found two very useful charts to be the RAF's EU(L)7 which takes you from Scotland to Iceland, and RFC-52 used by SAS and Greenland Air which incorporates an excellent safe sector altitude grid for Greenland.

Next comes the survival kit. (Pilots who fly twins tend to skip this bit.) I own a helicopter-type vest and an immersion suit. I rented the raft and EPIRB beacon from SEMS of Basildon---the EPIRB is essential as is a good self-inflating, canopied raft with a sea anchor. SEMS will rent you the lot by the week. If you've not been on a ditching course, this is a real must---if only to put the fear of God in you! Wear your immersion suit permanently with the EPIRB in it and your vest on, learn how to use the raft and keep it strapped to the passenger seat. If you loose power even flying high, trying to diagnose the problem while raising help on the radio will keep you so busy that there will be no time to don a life vest. If you're well organised, though, ditching is survivable even at these latitudes. Not a few ferry pilots have lived to tell the tale.

My aircraft is normally aspirated and doesn't have built-in oxygen so I carry an oxygen bottle and 'oxymiser' cannula. Admittedly, a normally aspirated M20J-201 (pulled along by a mere Lycoming IO-360) at less than MTOW has a service ceiling of 17,000, considerably higher than a C-182 or a comparable normally aspirated Piper single. But the MEA for the airways crossing Greenland is FL120 and, if there's cloud about, your choice is between getting above it or going back.

For navigation, GPS is an absolute necessity. Because of poor satellite coverage---particularly over parts of Greenland---your trusty hand-held will simply not suffice unless connected to an external aerial. It is highly advisable to have an IFR-certified (TSO C129a) panel-mounted set, or else like many ferry pilots to carry a 'portable' panel-mount. I used a panel mounted GPS and carried my hand-held G-90 (with its 18 hour

battery life) as a backup. If you lose your electrics or even your vacuum DG, a backup navaid is another lifesaver. In addition, I have a backup electric horizon. Equally, you need at least a single-axis autopilot with a bug; hand-flying the Atlantic is not on.

The two expensive items are HF radio and a ferry tank. Both are required for the Azores crossing and HF is required for some routes which take you into the Shanwick Oceanic Crossing Area. In truth, if your aircraft has a range of 1000 nm or more you can dispense with both HF and a tank by routing Scotland-Vagar-Reykjavik-Kulusuk-Sondrestrom-Frobisher which is what I did. This keeps you outside the Shanwick OCA. The three longest legs are each roughly 500 nm; between Reykjavik and Kulusuk on the east coast of Greenland; between Kulusuk and Sondrestrom in Western Greenland and between Sondrestrom and Frobisher in the Northern Territories of Canada. What ferry tanks give you is the option of flying longer legs and of diverting; alternates in Greenland are few and far between. Without that option, you must calculate a point-of-no-return (PNR), keep a running score of groundspeed and weather and be prepared to turn back. The M20J's range on 64 US gallons at economy cruise is over 1100 nm. Even so, I did the calculations religiously.

Three final points: first, the aircraft and its equipment must be in top condition. Before crossing in her Piper Dakota (Pilot: May, 1998), Polly Vacher wisely took oil samples every 10-15 hours and had them analysed. I am indebted to William v. Steenoven on the technical side; as a commercial pilot, he knows the value of good maintenance. Secondly, it's a good idea to spend several evenings printing out PLOGs under a variety of critical assumptions. Thirdly, elicit the advice of any pilot you can find who has done the crossing. My main sources were Mike Dunkerly, Flemming Pedersen (a fellow Mooney driver) and Polly Vacher all of whom provided invaluable information---and I do mean invaluable!

Westbound

You can jump off from Stornoway if you wish, but there's less hassle and better service at Wick from Far North Aviation which is run by a doughty Scotsman named Andrew Bruce. Andrew will sort out all the routing and filing; he'll even drive you to the local B&B. I had thought the Rotterdam-Wick leg would be the easy part. In fact, I battled a 30 kt headwind component much of the way and just as I neared Aberdeen, Wick's weather went below its VOR-DME minima so I diverted to RAF Kinloss and went into Wick early the next morning.

Wick to Reykjavik seems a dawdle unless the wind is blowing from the West, but since on this leg you are often flying on the north side of a low pressure area, the effect is to sling you towards Iceland. Otherwise, you can land mid-way at Vagar in the Faeroes for fuel. If in doubt, check the weather at Vagar carefully since the preferred routing along G3 passes practically overhead the field. The natural alternate for Reykjavik (BIRK) is Keflavik (BIKF), where most of the heavy metal lands. Still, Reykjavik has good ILS and VOR-DME approaches so you'll not be in trouble unless both unexpectedly go below minima. Not much of a problem there. You should be aware, though, that shortly after landfall at the ING VOR, the MEA rises to 7100 feet---ice at FL80 is a danger, so temperatures aloft are as important as winds aloft. If the problem of ice does arise as you near ING, you may be able to get a direct routing from Iceland radio from ING to ALDAN which is entirely over water and enables you to descend. The handling at Reykjavik is good---and like the Loftleidir hotel a stone's throw away, it's not cheap. Nor

for that matter is fuel, food or anything else in Iceland. A rental car costs USD 250 per day! But the scenery is marvellous; Iceland is quite unlike anywhere else in Europe.

The problem with flying to Greenland---as Flemming Pedersen put it in an exchange of invaluable e-mail messages---is that on a good day the airports are fog-bound and the alternates too far, while on a bad day there's ice. Reykjavik is where you study the low level Significant Weather charts, the forecast winds aloft, temperatures and TAFs very carefully. One option is to fly from Reykjavik south-west to Narsarsuaq on the southern tip of Greenland. That's tempting but it's 700 nm and the further south you go, the more likely it is that you'll encounter westerlies; equally important, the alternate at Gothab is 200 nm further on. The other alternative is to fly 400 nm due west to Kulusuk (BGKK) and---if the wind is neutral and weather reasonable---continue directly to Sondrestrom (BGSF) over the ice cap, a distance of 750 nm. Sondrestrom is a favoured destination because, since it lies inland from the west coast, it is less susceptible to fog. (One might just add that fuel at Kulusuk is USD 3.00 a litre with a minimum purchase of 200 litres!) But the route over the ice cap has a MEA of 11,000 feet---so unless you can climb very high, you should make sure the prognosis shows clear skies. Ice accrual in IMC over the cap at FL120 in an aircraft that won't climb is bad for the nerves. In the Mooney, I can cruise on oxygen at FL160; in my previous aircraft, an Arrow, I would have not attempted crossing the ice cap unless the sunshine came with an ironclad guarantee.

Here is my first cautionary tale. I knew from the forecast that a 100-mile wide band of stratus was moving up the coast of Greenland from the south-east, the tops forecast to lie between 12 and 16,000. I crossed towards Greenland at FL100 planning to climb above the stratus. But the clearance took time to come through and I began the climb late. In consequence, I soon found myself taking on rime ice at FL130 in IMC. At FL160 I was still in cloud and the leading edges were still frosting, even at -12C. The unmistakable buzz saw sound of prop ice began. I could still maintain altitude---but I couldn't climb further without compromising airspeed, and my stall speed had increased. The situation persisted for about 20 minutes until the first patches of blue appeared above. Presently I emerged from the downward slope of the cloud into the bright sunshine where the ice sublimates. Once into cloud, I hadn't turned back on the assumption that the worst of the ice was being produced by the lifting effect of the east coast mountains. But I should have foreseen the dangers of the situation more clearly and climbed earlier.

Having pondered the weather charts, winds, freezing levels and TAFs, sensible scepticism requires calculating PNRs. I do two sets of calculations. One is the conventional calculation of total fuel required to return to the airport of departure (plus diversion and reserve) given the forecast wind. Remember, if you have a tailwind, its going to take longer to get back, so your PNR will be closer to the point of departure if the your weather at destination goes down. The other calculation is one of target times at each enroute waypoint at the slowest groundspeed required for getting to the destination and alternate with reserves. Unless I am ahead of target times all the way to the PNR and the destination weather looks good, I go back. That's why the continuously updated waypoint estimates provided by a GPS is so handy---you simply compare them to the target estimates on the kneeboard.

Waypoints over the water, incidentally, are reported as co-ordinates; eg, "X-Ray Juliet was six five north, two five west at one one two zero, flight level one two zero, estimating

six five north, three zero west at one one five zero, Delta Alpha next". You are required to give these waypoint estimates since you are outside of radar coverage for most of the flight, and you can add the weather if you like; "level one two zero, wind one one zero diagonal two five, minus five." It sounds all very professional but, in practice, you will find at times that nobody can hear you. With luck, the occasional jet passing above will relay a message, particularly on the inter-aircraft oceanic frequency of 131.8. From my experience, if there's heavy weather on top of you not even relays are reliable. The remaining trick is to speak to Sondrestrom via Kulusuk when approaching the east coast and get their weather, plus that of the destination and alternate. If everything has gone down and you've passed your PNR, you're out of luck. It's unlikely----but not impossible.

Once past Kulusuk, Sondrestrom radio covers this sector well so you'll not lose VHF reception. You can chat to the controller occasionally just to relieve the boredom since there's not much radio traffic in these parts. Sondrestrom itself has a LOC-DME approach which you pick up from the base turn having gone 11 nm outbound from the NDB at 5300 ft descending to 3000 ft---CAAUFU's obsession with NDB tracking can be useful! Once localiser established, one flies down the fjord between the surrounding mountains in four step-downs. Like everywhere up here, the airport has an on-site hotel. Everything is made out of Nordic pine or heavy steel sections, which suggests that in mid-winter the whole place lies buried deep under the snow. The surrounding hills are barren and creased by rockfalls. The next morning, having refuelled and made the mandatory phone call to Canadian customs, I hurry to begin the short leg to Frobisher (CYFB), a mere 500 nm.

The leg to Canada crosses the sea to the Baffin peninsula and the bay beyond, just south of the Arctic Circle. Far below, the ice floes below shimmer in the morning sunshine punctuated by iceberg tips; even to the south the sea is white. Soon I am past FIR boundary listening to the New World twang of Canadian controllers. The descent starts sixty miles out and the approach to Frobisher is a DME arc followed by another LOC-DME approach. Frobisher---now called by its Inuit name, Iqaluit----is more desolate than Sondrestrom and seems little more than an ice station. I've flown only 3 ½ hours today. Since it's only noon local time, I clear customs, refuel and head towards Goose Bay, 900 nm to the south.

Frobisher is where you begin to understand what the north of Canada is about. From 11,000 feet, there is nothing below but rocky hills and murky, pond-size lakes. There are two airports enroute between Frobisher and Goose Bay so if the wind shifts adversely, one can easily make a fuelling stop. Southeast of Goose a depression is forming; as I continue south, the tailwind subsides and gradually becomes a headwind. But enroute time is of little concern compared to the thought of losing an engine. Where would one land? The water looks safer than the ground. And who would hear a distress call? For hours there is no radio traffic and my radio checks elicit no response. Only an occasional voice of some far-away bush pilot confirms the radio is still working. There is far less radio contact here than over the ocean, yet this is Quebec Province. The wisp of low cloud ahead widens and soon envelops the ground beneath. One can only wonder at what it must be like in winter; a desolate snowscape into which one would disappear without trace. Ernest Gann wrote a classic tale about going down here in a DC-3. Kuujuaq airport lies beneath the cloud three hours after takeoff, then Schefferville two hours later. A hundred miles out I manage to raise Goose Bay, broken at first, then intelligible. It is perhaps the third time I have made proper radio contact since

departure. There are thundershowers at Goose so I am vectored onto the ILS for Runway 08. Seven hours and five minutes after leaving Frobisher, a follow-me van marshals the Mooney towards the safety of Woodward Aviation's huge Esso sign. The fuel tanks top off at 190 litres.

Eastbound

Saturday morning it's sunny and I'm tired of flying. I try to have my O2 bottle refilled but the local supplier has run out, so I hire a cheap Chevy at the terminal to do a bit of local sightseeing. Goose Bay may be closer to civilisation than Frobisher, but it's still pretty basic; perhaps 3000 people not counting the base. I am told by the rental agent that a condition of the contract is that I am not to drive on unpaved roads. As it turns out there's only one all-weather road leading to a lakeside village 46 km away called Melville. I drive there. Beyond a few dozen wood-framed houses and a country store, there is a small harbour where two cars are being loaded onto a ship. The lakes are all interconnected; the roads go nowhere. In Northern Canada people travel by boat or aeroplane. What keeps the few shops going in the twin towns of Happy Valley-Goose Bay is the NATO airbase. It takes about half an hour to see all there is to see: two motels, a Pizza Hut and more wooden houses lining the main road and side streets. In the town centre is a small Shopping Mall where the largest shop sells boats and fishing tackle. A gaggle of youths hang out at the Burger King chatting up the teenage waitresses. A posse of battered pickup trucks jockeys with a chromed-up Land Cruiser at the main intersection. Further along, a dark-skinned Inuit boy shuffles along the side of the road, the crook of his rickety legs betraying malnutrition of the sort one sees in Africa and India.

The NATO airbase is not what it once was. In front of the terminal, the RAF has parked a commemorative Vulcan bomber with a plaque beneath it recounting past glories. The Canadians, Americans and European allies used Goose Bay during the cold war to simulate sorties into Russian weather. The squaddies must have spent their spare time on simulated Russian vodka. I go back to the Labrador Inn, do my flight planning and write some postcards. I think it might be sensible to start back tomorrow, Sunday. As it turns out, Sunday morning it's raining, but the winds enroute are reasonable and the TAF for Narsarsuaq looks good. The problem is that Narsarsuaq is closed on Sundays which means paying an extra USD 250 in landing fees. Not on your life! I return to the motel where, on morning television, I watch France v Paraguay and the match analysis with Des and the lads---at least the Beeb is still in reach. I had thought to spend the rest of the day reading, but after a dozen pages I doze off and sleep for 14 hours.

Monday morning the cloud base is higher but the enroute winds less favourable. The TAF for Narsarsuaq (BGBW) says it will be clear but blowing hard on the ground. That's far better than calm winds with low visibility---the Narsarsuaq NDB-DME plates require a 6 degree missed approach gradient to avoid the surrounding peaks. Judging from the actual and predicted significant weather charts, things will get worse on Tuesday. The deepening primary and secondary depressions which lie to the south-west of Greenland are tracking northward and trailing two occluding fronts; the satellite picture shows a plume of cloud intersecting my line of flight and stretching well south, but unlikely to reach the southern tip of Greenland before early tomorrow. I've done all the calculations and can always turn back, so I decide to go. At 10:00L I am airborne, strapped again into my orange survival suit and blue helicopter life vest. I climb to "one three thousand" under Gander Control and update my estimates. There's a tailwind component and the

times are looking good though I know the tailwind will back into a headwind. The little Mooney is purring along happily again and I've leaned it carefully on the engine analyser to about 15F lean-of-peak for a TAS at -5C of 147 kts and a fuel flow of 7.3 gph, less than 30 litres. The M20J-201 incorporates a clever ram air intake device which, when open, bypasses the air filter and boosts the manifold pressure slightly. At this rate I could go eight hours, nearly 1200 nm in still air. It's only 650 nm to Narsarsuaq.

Several hundred miles later, the wind has come 'round and a headwind component is building. Gander Radio is no longer intelligible. The ETAs for my GPS waypoints are growing longer. Although the critical no-go value for the average headwind is an unlikely 40 knots, the wind is shifting against me faster than was predicted. As my PNR comes up, I am still ahead of the game but only just. I decide to go for it. The cloud is now building and the layers are slowly closing in. I redo my sums while cruising at 13,000, the lowest altitude Gander will give me. The fuel calculations are painfully slow; a pity I couldn't refill my O2 bottle in Goose. The world outside is now uniformly grey and the purr of the engine combines with the cabin heat to induce a tranquil reverie. Suddenly the engine coughs and sputters and I come to my senses; the manifold pressure is dropping, the engine is dying and the only way to go is down.

Instinctively, I close ram air lever, enrich the mixture and do the fuel pump, tank and mag checks. What has happened, I realise later, is that the ram air intake has ducted supercooled moisture onto the air flow sensors ahead of the throttle butterfly. These sensors tell the injector unit how much fuel to deliver. As they freeze over, they sense less air and less fuel is delivered. With the ram air now shut, one way of curing the problem to close the butterfly by retarding the throttle fully; the resulting build-up of warmer air should melt any ice on the sensors. But there's not enough time to reason it through. I continue down. The warmer air below, I hope, will cure any induction icing. Fitfully, the engine surges and sputters, regaining power only to lose it. The aircraft drops through the freezing level at 10, down to 8 and then to 6,000 ft where, at last, the sputtering ceases and the engine begins to sing with confidence. There are a few breaks in the cloud here so I descent to 4,000 beneath the overcast. I have not put out a Mayday call thinking to solve the problem myself. Belatedly I realise that were the engine to quit once more, it is unlikely that anybody would hear a distress call. I have not even thought about the raft. A wing and a prayer indeed!

At 4,000 ft, in the clear and with everything set correctly, my own adrenaline flow returns to normal. But now there's a new problem. With the fuel flow set up for best endurance, the TAS at this level is only 130 kts and the wind has backed resulting in a headwind component of over 40 kts. To climb again would waste fuel. I am 120 nm West of the "SI" NDB at southern tip of Greenland which emits a powerful signal. Beyond the beacon, there's another 40 nm of fjord to negotiate before reaching Narsarsuaq---160 nm in total at a groundspeed of 90 kts. I might as well be flying a C-150! It's going to take me nearly two hours to get to destination, and more than another hour to my alternate. The fuel flow analyser shows 8.2 gph and 34 gallons remaining, enough to get to Narsarsuaq but very tight if I have to divert.

I try raising Gander without success, so switch to Narsarsuaq Information where eventually I can make out the controller's voice. On the horizon, the uniform grey resolves into a distant cardboard cut-out of mountains. The headwind diminishes, the ETA readings improve and the ceiling appears to be lifting. Soon I report beacon

inbound for the fjords. With a higher ceiling, good visibility and Polly Vacher's nine waypoints from the "SI" to runway 07 stored in my GPS, there's little chance of going wrong. Once we get into the main fjord, there's a good deal of turbulence and I throttle back to 120 kts (Va). At the bottom of the fjord, there's a fork where you bear left and descend. I call Narsarsuaq AFIS who report no traffic for runway 07 and the wind as "zero nine zero magnetic 35 knots gusting 43". It's not a comfortable approach and the runway slopes upward, but the twin PAPIs are helpful and I get it on without too much fuss. The taxiing is laboured; the Mooney shudders in the gusts as I turn for the Terminal. A marshaller's van steers me to shelter in the lee of a large hangar where the aircraft is tied-down and chocked firmly. My fuel analyser shows 9 US gallons (34 litres) but the bowser tops me off with 187 litres. There were 53 litres remaining, nearly two hour's reserve.

Tomorrow's forecast is for 55 knots on the ground with a 1000 foot base; clearly, I shall not be flying. The hotel, a stone's throw from the airport, is sensible but expensive; the equivalent of USD 120 a night. The weather next morning is truly abysmal. The walk to the Terminal takes half an hour against a pelting wind. I check the aircraft tiedowns, realign the chocks and inspect the airframe for any sign of gust damage. In the tower, the forecast is for better weather by evening and reasonable flight conditions tomorrow. Tomorrow, Wednesday, I shall leave. Walking back, I pass a rough wooden building with the sign "Bluie West One"---the Allies' name for the base during the war which explains the ICAO code, BGBW. Hewn into the base of the a steep rock face a hundred yards further is a concrete bunker still used for storage. Above the door the date of construction is still clearly legible: 1942. I was two years old then, and my own Dad was flying around in Dakotas covering the War.

It is Wednesday morning and I am spiralling skyward from Narsarsuaq into a scattered layer at 9000 ft, turning to cross the mountains and cruise over the sea on a direct course for Iceland. At sea level, the Mooney will climb at nearly 1000 fpm and it still manages a respectable 500 fpm at FL100 so I get up to FL130 pretty quickly, dropping back to FL110 when over the sea. Once again, the scenery glimpsed through the broken cloud is breathtaking; snow-covered mountains rise to 11,000 feet. I can almost touch them. But as everywhere in Greenland, a single mistake can be fatal. If one fails to spiral straight up to safe sector altitude, if the rate of climb is anaemic or if conditions are solid IMC, this is not a route recommended for a normally aspirated single; one would be well advised to follow the fjord outbound to the south-west and route around the southern tip of Greenland even if this means adding an hour to the journey. Luckily, at a TAS of 147 kts and with a 20 kt tailwind component, the 750 nm leg is covered in 4 ½ hours and completed by a visual approach onto Reykjavik's humpbacked runway 20.

Thursday is the final day. Although the enroute forecast looks reasonable, the Reykjavik weather at 08:00 is miserable: 500 foot broken in light rain with layers above 8000 but the tops at infinity when I depart. The routing is via ALDAN intersection, then east-south-east to the Scottish FIR at 61N10W and south-east direct to EGPC. Once again, the forecast is for a tailwind with the FZL well above FL110. Although the gaps between layers prove elusive, 700 nm later I do the VOR-DME approach into Wick. Andrew Bruce, irrepressible as ever, welcomes me back to Britain, oversees the fuelling, sorts the flight plan and met and even provides oxygen---at last I am able to fill the cursed bottle for contingencies I am now unlikely to encounter! The wheels retract again just after 14:00. In every pilot's story about returning to Britain from faraway places, there is

an obligatory reference to the cheery warmth one feels upon hearing the familiar voices of NATS controllers. My feelings are no different; crisp, calm voices are guiding me homeward. The journey to Rotterdam includes a technical stop at Southend at 18:00 (for fuel and to leave my raft for collection by SEMS) followed by a one hour leg across the North Sea. Amsterdam radar and Rotterdam Approach/Tower provide the usual efficient service for the instrument approach to runway 06. I shut down at 19:45, almost exactly 12 hours after leaving Reykjavik.

Home

The entire trip from Rotterdam was accomplished in 10 days, six of which were spent flying, covering 5596 nm in 43 hours' flying time. While all costs are not yet in at the time of writing, my estimates in US dollars are: fuel: \$1000; handling \$600; insurance, rental and purchase of extra equipment including raft, etc. \$600 and all hotel and other living expenses \$1000, 50-hour service \$500 or a grand total of \$3800 (GBP 2300)---ie, about the same as a fortnight's holiday to an exotic destination.

What did I gain from all this? First, I learned much about long-distance flying in an unfamiliar environment. Flying always involves risk, but risk can be greatly reduced by good planning. Good planning means knowledge: of the route, of forecast conditions, of your aircraft and of your own limits. I find myself re-reading parts of some of my technical books on engine and aircraft maintenance, weather and so on with more insight and appreciation. Second, I think I feel a good deal more confident about what can and cannot be done in a single. Richard Collins in his classic book, IFR Flying, examines the FAA database on fatal accidents amongst non-remunerated pilots flying IFR. He concludes that only 2 percent of fatal accidents are attributable to mechanically induced engine failure. Equally, he rejects the hypothesis that GA twins are safer than singles; without access to the data and rigorous statistical testing---which no European aviation authority appears to have done----debates about the latter cannot be settled. However, I do think a modern, well maintained SEL can be flown for long distances, the chances of engine failure being no higher (and quite possibly lower) than, say, the chance of having a fatal car accident on the autoroute headed for the South of France. Whether your long distance flying is over water or land is of little importance; what is important is how well you plan it.

The real danger typically arises from pilot error, and above I have given examples of my own ignorance. The greatest benefit comes from analysing what you did right and what you did wrong. And of course---like climbing mountains--- the satisfaction of having crossed the Atlantic is its own reward. Flying is incurably addictive. If one is going to throw money at aeroplanes, the challenge must at least be commensurate. To coin a phrase: go West young man!

GWJ, 5 Aug 1998