

## ***Instrument flying in Denmark***

*Danish member Henrik Vaero gives an enticing overview of flying in Denmark ahead of the PPLIR tour there in September.*

When you go from the European mainland to the Scandinavian peninsula, there is a small stepping stone for those of you with short legs. The stepping stone is called Denmark, and it is composed of a surprisingly large number of small, and some even smaller, "stones". Although often used this way by pilots, for refueling and rest stops, Denmark is not without merits as a destination in itself.

The mainland part of Denmark is Jylland (Jutland); to me resembling a pixy with a big nose and a tall pixy hat, the tip of which tilting to the East at the top, towards Sweden. The rest of Denmark is all islands. The main Danish island is Sjælland (Zealand) with the capital København (Copenhagen) and the nearby Roskilde, which, apart from being the center of ancient Viking power, also has the busiest GA airport (EKRK) in the country. The Kingdom also include the Faeroe Islands and Greenland, but these are usually exempted from GA insurance coverage, are quite some distance away, and as I have no experience of flying there, those thrilling regions are not described in this article. Instead, I shall focus on the flat part of the Kingdom that belongs to Scandinavia.

How many Danish pilots are instrument rated? A CAA estimate 10 years ago was 5% of the PPL population. In my flying club, we have IR flight schools and ILSs all around us. That may explain why our IR proportion of pilots is higher, at 10-15%. Denmark has no dedicated GA guide available for foreign visitors. Although strictly aimed at VFR operators, I recommend the official VFR Flight Guide available in paper or on the internet: <http://tinyurl.com/denmark-vfg>. It is a very good supplement to IFR-Jeppesen and includes extracts of the General and En-route parts of AIP, and, even more useful, VFR information on all public aerodromes in Denmark. Contact information on a number of private airfields is also provided. The full AIP Denmark is also available on the internet.

Even if you prefer going IFR, you should consider getting a copy of the ICAO Denmark 1:500.000 VFR map. It is updated yearly, and it includes specific as well as general information about airspace structure and VFR weather minima. I myself prefer always to be VFR "equipped," even when planning IFR trips as it provides more opportunities. By way of example, at one time I gave up flying a particular trip IFR due to embedded CBs, but because the country is so flat, I could comfortably go VFR below the general cloud base, visually avoiding the worst showers. Icing in clouds above MSA could mean the same. Then there was an incident several years ago with a light twin on approach to Roskilde in slush. Although certified for flight in icing conditions, due to compacted slush in the engines' induction systems, the airplane temporarily lost power on both engines and descended below MSA. The terrain below was flat, as it is everywhere in Denmark, but the IFR maps had no information of the 1086' television mast close to the flight path. The mast is clearly marked on the VFR map of course. Another reason to have VFR information when flying IFR in Denmark is that it often makes sense to go IFR, even when going to and from VFR-only airfields, especially so in single-engine airplanes. Take a look at the island of Anholt in the middle of Kattegat. It is mostly green desert (exotic in Northern Europe), has endless sandy beaches, lots of seals, a small Klondike-like village, about one hundred cottages and very few facilities. However, there is a licensed airfield, which, to me, makes the island one of the very reasons for flying GA. Back when I was a VFR-only pilot, when all flying was below cloud base, and with typical broken clouds at 1500 ft, that meant crossing at least 25 NM of open sea flying at 1400 feet in a single engine piston aircraft. I almost got used to that, but going IFR brought peace to mind, because I could then climb on top of the clouds to a comfortable altitude, with land within gliding distance for most of the trip.

Danish weather is rather like British weather; changeable, low clouds, wet- perhaps not quite as wet. It is a little colder in winter, with more snow. Structural icing is a very real possibility in clouds most of the year, but sometimes the low MSAs come to rescue. I believe Denmark is generally a little windier than the rest of Europe.

### ***Airspace***

Class G uncontrolled airspace prevails below 3500 ft, with class E controlled airspace above. All CTR's are class D and have tops at 1500 ft MSL, with the TMA's (also class D) extending to 3500 ft MSL except for the Copenhagen Area, which is class C and goes all the way up to FL 195. Transition Altitude is 3000 ft generally, and 5000 ft in the Copenhagen Area. IFR in uncontrolled airspace is legal as long as you are on a flight plan and have R/T contact and mode A+C. Separation is, of course, not provided outside controlled airspace so R/T is important and IFR flight in class G should preferably be restricted to departure and approach. But it does allow for low altitude en-route IFR, or emergency descents, on days with icing higher up. MSAs are in the 2000-2400 ft range. For some reasons Minimum Vectoring Altitudes are not officially published in Denmark. Only a handful of obstructions in Denmark reach higher than 1000' MSL; if you know where they are (and where you are yourself), you can safely descend fairly low in an emergency.

## ***Gliders***

Gliding is fairly popular in Denmark, although not quite to the German level. And how does this relate to IFR? Well, the Danish gliding community has for years been very successful in negotiating liberal airspace use for gliders. A gliding club in the Copenhagen Area can request that fairly large chunks of class C airspace are effectively converted to uncontrolled airspace, with no requirements for R/T or transponders. These airspace “chunks” are then simply closed to IFR traffic. These “conversions” are not NOTAMed or published anywhere else, but they are broadcast on EKRR (Roskilde) ATIS on 123.80 or you can ask ATC. To really understand this you need the Copenhagen sectional chart, as the gliding areas are only shown there, but flying IFR you can also just forget about it and leave it to ATC to vector you clear. It usually happens only on weekends and summertime weekdays. Glider areas also exist in Jutland.

## ***Nav aids***

As in some other countries, NDBs and even some VORs are being decommissioned in the coming years. Decommissioning is usually preceded by a few months of NOTAM warnings that ~~they~~ the relevant aid(s) is temporarily unserviceable. Only a few locators/NDBs remain. During last summer (2010), the CAA finally issued a general exemption to RNAV-approved aircraft from the requirement to carry an ADF for IFR. DME is widely used both en-route and for approaches, and not having one would be a disadvantage. The number of DME ground stations is actually on the rise, I believe because of P-RNAV requirements. A small number of approaches requiring a marker receiver still exist, but it seems that markers are being phased out, and replaced by DME as far as ILSs are concerned. Radar approaches are fading out also. One VDF approach still exists (EKOD), but the equipment is there in Roskilde also. Even though radar is available, the tower controllers love it, especially when the circuit and the rest of the control zone are busy.

Although the first Danish GPS-approach dates back to 2001, it is not widespread and there is still no IFR airport served by a GPS-approach only. Denmark has no mode S requirement and there will not be one in the foreseeable future. 406 MHz ELT (or registered PLB) is compulsory.

## ***ACC and FIS***

Copenhagen Control is the first unit you call when entering Danish FIR. You will find them friendly and professional, but they do not provide weather or airfield information. There is no dedicated VHF MET service in Denmark, but there are 6 ATISs and one VOLMET, giving good coverage regarding metreports. If you need more help, why not do as Ryan Air does? Let your “copilot” use your 2<sup>nd</sup> VHF set to ask the always helpful FIS (call sign Copenhagen Information, mostly serving VFR GA traffic) about the details that ACC do not have the time or the means to provide. Radar coverage is complete to below 1500 ft everywhere except over the North Sea. Traffic is generally sparse at GA altitudes, especially west of Zealand, and once airborne, more often than not, you can expect direct routings and altitude requests to be fulfilled immediately.

## ***Destinations***

Twelve airports are served by one or more ILSs, all providing Decision Heights of 200 ft or very close. There are two airports having only non-precision-approaches, about 20 VFR-only licensed airfields, and an unknown number of private strips (I know of about 90 excluding pure gliding fields.) My small country seems to be adequately covered, but, as in other countries, it is going the wrong way. Several IFR airports have been downgraded to VFR and more will likely follow; their opening hours shrink slowly but steadily; licensed airfields have been closed down or privatized; and more operational restrictions have been imposed generally. Several of the main airports in Jutland were built by the Luftwaffe during WWII. The Luftwaffe’s main strategic objective was not to serve major towns, and that, unfortunately, is all too obvious to anyone looking at a map today. It is also one of the reasons that domestic airports in general do not fare well in Denmark. In the late nineties, the Eastern and Western parts of Denmark were connected by bridges and a tunnel across the Great Belt. That meant that travel time from Copenhagen to Odense, native town of fairy tale author Hans Christian Andersen, was halved, whether going by road or by rail. Consequently, the regular air service between Copenhagen and Odense was closed immediately, but surprisingly, Odense Airport survived and is still there, with ILS and other facilities. The fixed link between east and west also hit other domestic air services hard. Most airports survived and still work well with friendly staff and reasonable prices, and most have cafeteria and even car rental. I visit these airports mostly when I have a business appointment in Jutland.

Usually, island airfields are more interesting as destinations than the IFR airports. I have already mentioned Anholt. It is in a class of its own (and has a EUR 60 landing fee), but Denmark has many islands with airfields or strips. Some are practically secret and hardly used by anyone but the land owner, whereas others are formerly licensed like Lindtorp and Haderslev, and others are just well known and popular like Endelave, Femø and Vejrø, where visitors are welcomed. At the end of the Femø runway (land from the water, take off towards the water) you will find a pub, and accommodation for the night. At Vejrø you will find nothing, it is as close to a desert island as you can get, and most of the year there is only one household active there. Landing is a little like landing on an aircraft carrier, with water immediately beyond both thresholds.

And the IFR relevance to this? As mentioned, IFR often allows you to stay comfortably high and descend overhead through clouds thus avoiding sea crossings at low altitude. In the Baltic Sea, a little closer to Sweden than to Poland (and in Swedish FIR), but not very close to the rest of Denmark, you will find the island of Bornholm. This is the only part of Scandinavian Denmark with rocks and cliffs visible in the landscape. The airport at Rønne (EKRN) has ILSs in both directions; expect runway 29 in use, and be sure you can handle the crosswind usually coming from the open sea to the immediate left. The island is quiet and very pleasant. Bring or rent bicycles!

Roskilde (EKRK – RKE) is the busiest GA airport in Denmark, and is my home airport. It is served by intersecting runways, 1500 and 1799 metres long, 2 ILSs, VDF and radar. For IFR planning into, and especially out of the airport, take a good look at Jeppesen arrival and departure plates. There are no published procedures for either arrival or departure, but having your flightplan route out of Roskilde approved is less than straightforward, and routes are different depending on whether you are jet or propeller, and whether your initial en-route altitude is FL 60 or lower, or FL 70 or higher. Once the planning is done, the flying is straightforward, usually with simpler routings than planned. A tip from pilots of (especially faster) GA flying into Roskilde: if R/T reveals that the circuit is busy with VFR traffic, don't be too eager to accept a visual. Consider flying the approach procedure and get better separation and more peace of mind.

Finally, another digression from the subject of IFR: Copenhagen Kastrup (EKCH) is the prime national commercial airport, and prohibitively expensive for most GA visitors, nevertheless, the airport has unusually GA-friendly controllers. If you visit the eastern part of Denmark by GA, you should consider going sight-seeing. Check the sectional for airspace around Copenhagen, pay attention to VFR reporting points, then take off, call EKCH Tower and request to cross the Control Zone from "Vallensbaek" to "Tuborg". On 9 out of 10 occasions you will be cleared immediately to enter and cross the CTR, mostly to follow the channel, below 1500 ft. You will find yourself at 1300 ft with the ancient town center and the Parliament Island Slotsholmen on your immediate left, and the country's main airport and its continuously landing and departing jets on your immediate right. If there is significant crosswind on the main runways, ATC might ask you to fly directly overhead the runway system for better separation! After leaving the CTR you can follow the coastline some 25 NM up to Helsingør (Elseneur) with Hamlet's prominent castle Kronborg, historically used to control naval traffic entering the narrow Øresund between Sweden and Denmark.

Happy flying! We look forward to seeing as many of you as possible on the PPL/IR trip in September.

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