

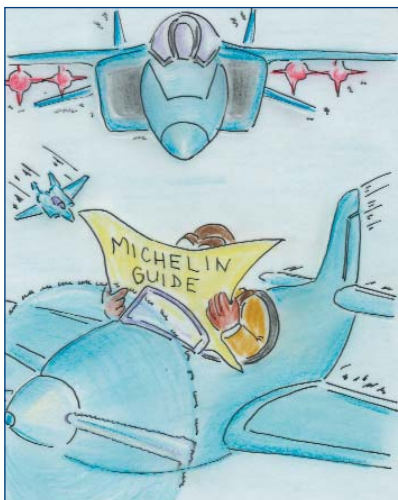
EUROCONTROL guidance notes for pilots

2. Flight Preparation



AIRSPACE INFRINGEMENT

Controlled and restricted airspace is established to protect all aviators, not only those who are entitled to be inside it. Aircraft which stray into such airspace without complying with the requirements can cause serious disruption and possible danger. Such infringements are unfortunately too common in the busiest areas of European airspace.



This is one of a series of Guidance Notes (GN) intended to help pilots keep out of trouble. A major cause of airspace infringement is navigational error. Good navigation relies on good and thorough planning, which in turn requires knowledge and preparation.

THE CHART

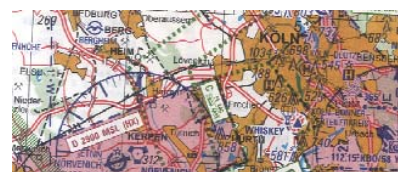
You may wish to just stay in the local area of an aerodrome to make a sight-seeing trip or practise some general handling, or

you may wish to travel across country to a distant destination. Whatever you intend, you need to know details of what you can use to find your way and what airspace restrictions you will have to avoid. You need a suitable chart which covers all of your intended and alternate routes, with some extra in case of problems. Pilot shops keep a stock of local charts.

If you intend remaining in sight of the ground your chart must contain information about what you will see. If you wish, and are qualified, to fly out of sight of the ground, you will need to use radio navigation aids, even if you have a GPS set which you trust. Radio aids are also useful to back up visual navigation, so should be marked on any chart you use. Of course, so must all the controlled and restricted airspace which may affect you, certainly at the heights you expect to fly. And naturally the information on your chart must be up-to-date!

Charts for VFR, as well as IFR flights, are produced by state and commercial organisations. However, individual States publish (or recommend) particular charts for visual navigation which conform to international (ICAO) standards at a scale of 1: 500,000 and are amended regularly to reduce the need for the pilot to mark changes himself. As can be seen in the examples, these may look different, so learn how to interpret them. Some pilots prefer to use charts produced by commercial organisations when flying in different countries. It saves them the efforts

to obtain the needed charts and the extra time to study the differences and get familiar with these charts. Pilots of slow aircraft may find larger scale charts useful, but these usually have limitations, for example only showing airspace at low altitude.



LOOKING FOR DANGER

Having selected your chart, you need to plan how to get to your destination without endangering yourself or others. You must understand what the symbols on your chart mean; most are described at the edges or on the back. You may only fly in airspace in which you are permitted, and if that permission needs ATC clearance, you must not only know how to obtain that, but plan how to avoid the airspace if you cannot get it. Make sure all airspace restrictions are marked on your

map with their vertical limits and times of activity - not just the airways, control zones and terminal control areas, but prohibited, danger and restricted areas too.

Any changes since the chart was published that might affect your flight must be added, and GN 3 gives guidance. Temporary restrictions caused by, for example, a military exercise, parachute dropping, or a flying display must also be checked, and marked on your map too if they will be active while you are in the air. This information may be available, together with other assistance, in a briefing room at your departure aerodrome (learn what is available and how to use it), or can be obtained by telephone from the nearest AIS office, or can be accessed online from your AIS provider or perhaps a membership organisation.

Further guidance on the use of the charts during flight is provided in GN 6 "Visual navigation".

AVOIDING DANGER

Your route must not only avoid hazards, but be easy to navigate along. If using visual features, make sure your turning points, and check features along the route, are unique and obvious. You will be looking downwards at a shallow angle, so aim to choose features that are less likely to be hidden by high ground or trees. It is better to plan several short legs between obvious features than attempt to travel in a straight line with no way to check you are in the right place! Line features such as valleys, rivers, canals, railways and

motorways are usually easily seen when looking along them, but if following them stay to the right. Junctions of these make good fix points.

If following GPS between listed waypoints, plan to keep the direct track on your left by half a mile or so. If using radio aids, it is simplest to fly from station to station, or at least along radials towards or away from a station. Pre-plan cross-track radials or DME ranges at your turning points, and at suitable check points every 10 minutes or so.

The next thing to think about is the weather. Obtain and study an aviation forecast for your route and possible diversions. If the information you need is not available at a briefing room at the airport, you must find a route or area forecast as well as aerodrome forecasts and reports from another source. GN 4 (Getting Meteorological Information Before Flight) has advice on this. If you don't have an instrument rating, don't take any chances. Always consider your level of experience and the terrain you are going to fly over. Establish your own limits, set them even higher than those defined by flight regulations. Make a careful note of areas of expected low cloud, bad visibility, thunderstorms, turbulence, icing, etc.

Make out a flight plan, with tracks and distances marked on it. Use the wind information from your weather forecast to calculate headings and times to each check point, as well as the fuel required. If you plan to enter or cross controlled airspace, plan to do so at a navigation aid or visual

reference point if practical, but in any case include these as navigation check points with calculated ETAs. Aim to cross airways at right angles so that you spend the minimum time in controlled airspace. Mark the time to the edge of controlled airspace from fixes on your chart. Also mark the point where you will turn back if you haven't got clearance. Do this even if you plan to go under the airspace, for you may be forced higher than you planned. The turn back point must not be located at the border of controlled airspace; you will infringe it starting your turn overhead.

HAVE A SAFE FLIGHT

We hope you have found this useful. Please tell us if you have any suggestions for improvement.

OTHER GUIDANCE NOTES

1. Rules for VFR Flight
2. Flight preparation
3. Getting Aeronautical Information Before Flight
4. Getting Meteorological Information Before Flight
5. Using Meteorological Information for Planning
6. Visual Navigation
7. VOR / DME / ADF Navigation
8. GPS Navigation
9. Getting Aeronautical & Met Information In Flight
10. Entering Controlled Airspace
11. Getting the Most out of your Transponder

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