Soaring Achievements

Mathematical Modelling

Narrator:
Mathematical modelling has a major role here, particularly in modern racing competitions. One such competition involves mainly British pilots in an event organised at Le Blanc in France. It's known as the British Overseas Nationals and the skies of central France are favoured for their more reliable weather. These pilots are going to fly a modest task by modern competition standards. From Le Blanc they'll have to complete a 4-pointed course which will take them at least 240 kilometres before they return to the starting point. But, of course, a closed circuit like this means that some stretches of the journey are going to involve flying into any prevailing wind, and that presents problems for pilots of engineless aircraft.

Brian Spreckley: (European Soaring Club)
I think most of you will have found the turn points. We have the points for both tasks, and the first turning point on the 'A' task is Port de Piel, up the river to the north-west, the second turning point Valencay, and then Chauvigny Castle and return. The finish line will be zero five. So we'll see you guys on the grid at 12.15 for a launching at 12.30.

Narrator:
You'll be seeing that an important aim of glider design over the past forty or fifty years has been the improvement of the into-wind performance. Also, what's quite surprising is that, far from it being desirable to achieve the very lightest design, gliders can actually benefit from extra weight! This isn't fuel being poured into the wings, it's water ballast – it's the cheapest way of getting extra weight on board which can then be dumped during the flight if necessary. In today's competition a glider pilot flies a very sophisticated machine with all the latest flying instruments, including some of the most modern satellite navigation systems. Even so, some basic instruments have been common in gliders for many years.

Ian Johnston: (Academic Consultant, The Open University)
This is a fairly standard training glider and I'll go through the main instruments used in flight. First is the altimeter which measures the height of the aircraft in feet, normally above the ground point where you started. Then we have the air speed indicator which gives the speed along the direction of travel; and the variometer, an extremely sensitive instrument which gives the vertical speed of the glider to and from the ground. You can see how sensitive it is from the fact that it's moving around slightly just with a few gusts of air on the ground. Both of these are calibrated in knots, that's a nautical mile per hour, and one nautical mile per hour is roughly the same as half a meter per second.