



## **Soaring by Design**

### *The Final Glide*

#### **Narrator:**

Finally in this video band let's turn to the question of the final glide in a racing competition and look at the changes in the Total Energy of a glider as it comes in to the finish fast. The television programme associated with this Unit looked at a race held in Le Blanc, France. The race was around a 250 km circuit and included three turning points. Richard Blackmore was in a very high performance ASH 25.

#### **Ian Johnston:**

Hello again. Have you had a nice flight?

#### **Richard Blackmore:**

Yes, we had a lovely flight. We had a bit of everything from absolutely hurtling along at cloud base with the Lift so great that we were actually travelling at about 110 knots at some time, then around the second turning point it suddenly started to look a lot different, and we found ourselves scrabbling around taking 1½ knots just to keep in the action for a while.

#### **Narrator:**

From the last turn, at Chauvigny Castle, back to the finish line was effectively the final glide part of the race. Gaining height in the thermals above Chauvigny increased the Total Energy through the increase in Potential Energy. The trick is to determine how long to climb in order to cross the finish line as soon as possible. The pilot has to decide whether the time lost by climbing further would be regained by being able to fly back faster. Once the final glide has been started the aim is to use the available energy as efficiently as possible. This time the pilot isn't interested in restoring the glider's height, rather in ensuring that it crosses the finish line low down with very little Potential Energy and as fast as possible.

#### **Richard Blackmore:**

Well what we did was that we kept on the 1:30 until we started being obviously above it, and then we gradually worked up the speed, increased the speed director setting on the computer. The last bit of the glide was at something about 100 knots but then for the very last bit, when we had a bit spare, we actually went up to about 130 knots. But when you can see the ground down there you just point at it and go, and the limits of the 154 knots V&E of this glider.