

**G**reat Britain made a bad start in the Alps. At Samedan in 1948, during the first post-war World Championships, we lost two fine pilots in accidents directly related to mountain flying. Nearly 50 years later we have pilots who have demonstrated ability to exploit the Alps by placing well in competitions but we certainly lack Alpine instructors, and the only text we have been able to find which attempts to give some basic instruction is an excellent but short chapter by Lorne Welch in **New Soaring Pilot** (1968).

Nevertheless British pilots in increasing numbers arrive in Austria, Italy and France where, apart from short briefings and hurried introductory flights by busy locals, they usually have to fend for themselves. This may mean local soaring, although even with this restriction Alpine flying can be very satisfying; with high cloudbases modern sailplanes can go a long way without being out of gliding distance of an airfield.

The two previous articles in this series (April 1988, p66 and April 1989, p79) have tried to widen their possibilities by introducing English-speaking pilots to thermodynamic lift, the key to cross-country flying. Lorne Welch recognised that "Flights in among the mountains are much more difficult than those made higher up, and considerable cunning and courage is needed to do such things as creeping over a pass from one valley to the next." He also pointed to some of the hazards and related how he lost 6000ft in covering eight miles (achieved glide-angle: 7:1).

This article is devoted to safety when Alpine flying.

### Not the place for beginners

Despite glowing articles on how to do 5hrs or a Silver badge in the Alps, this is definitely not the place for beginners unless you live there, in which case you have the advantage of absorbing mountain lore right from the start. It is not possible to stipulate a certain number of hours, or badges, neither are relevant. What is required, even for local flying, is complete control of the machine in all circumstances, including short field landings, crowded ridges and extreme turbulence. If you have any doubts, your CFI is probably the best person to decide if you have these skills. You will know yourself if you have the humility to learn new techniques.

### Natural progression

Having arrived at your chosen Alpine field the next step is to fly as much as you can with an experienced (Alpine) pilot in a two-seater. Don't waste valuable instructor time on tourist trips into the high mountains. Time will be better spent perfecting mountain techniques closer to base with thorough briefings both before and after flying. Don't waste time either in the two-seater climbing to the tops of thermals or going up in wave - most British pilots do those things very well indeed and better than most in weak thermals.

Insist on working thermodynamic lift low down on the ridges and turbulent rotors below the waves. Learn when and how to run for safety when things go bad. Sooner or later, if you are bitten by the Alpine bug, you will discover why. (Probably sooner rather than later.) Leave your glider at home and join a course at St Auban, Fayence, Vinon, Sisteron, Gap, Challes-les-Eaux or La

# LOW-DOWN ON THE ALPS

## Part 3

**William Malpas collaborates with two French pilots for the third article in this series on mountain flying, this time concentrating on safety when gliding in the Alps**



**William Malpas with Jacques Noel (centre), CFI at La Motte du Caire, and Jean-Renaud Falieu, who teaches English in Paris, flies a Ventus and instructs at Buno Bonnevaux and La Motte. Photo: Dickie Feakes.**

Motte de Caire (or in Austria if such courses exist). If you can master thermodynamic lift, the badges will come without even trying. The natural progression from here on is:

1. Local flying;
2. Flying in gliding distance (20:1) of airfields;
3. Flying in gliding distance of landable fields. But no cross-country until you feel at ease climbing the local ridges in weak conditions.

From there the Alps are all yours and like Lorne Welch you will discover that "mountain flying at its best is flying in the supreme form."

### Preparing for cross-country

Having marked your map with landable areas and key landable fields you have already taken the first step in preparing for cross-country flying. In addition:

1. Dress warmly - even if it is 25-30° on the ground. Put on warm dry socks, insulated boots and a hat.
2. Take something to eat and drink - dehydration is rapid in the dry Alpine air. Stress plus hunger equal poor performance when you most need it.
3. Plan your route and mark your map with the critical altitudes needed to cross valleys and gaps. These altitudes will change from one flight to the next in differing wind conditions.

4. Decide in advance where you will pass from the locality of one landable area to another, and having passed that Rubicon think only in terms of the new safety field. Think positively about these fields; not primarily as somewhere to land but as beacons which enable you to progress safely.

5. The Rubicon will not be half-way between one landable field and the next. Study your map carefully before you discuss with your instructor the relative possibilities of a low save in the proximity of these fields. Some are remote from mountains and have virtually no hope of recovery, others have multiple possibilities. So if you have a choice it may pay to back-track a long way to the previous field rather than to press on to the next.

6. If you have doubts about any of these fields, visit them on the ground. You will be surprised how good some of them are.

7. If there are dangerous cables on your route, mark them on the map. (Forestry cables are usually invisible.) Fortunately, there are very few in the French southern Alps.

8. Also discuss with the local pundits the standard routes home and the altitudes required at critical checkpoints. Simulate these arrivals during the period of local flying. We all have difficulty in believing that a modern glider can arrive safely at the low glide angle of which it is capable. Com-



pound your disbelief with the menace of high mountains with sinister valleys already in shadow and the practical problem of deploying map, ruler and calculator while flying close to a mountain. You will be glad you have already done this exercise in easier conditions.

9. Above all, study carefully the Met forecasts, in particular the forecast winds. Once in the air you must continually update your information by radio calls to airfields or other gliders. Winds can change radically from one valley to the next and from hour to hour. Many accidents result from misreading winds.

10. Mark your map with all the radio frequencies you may need - including those for special zones where permission is required. Arrange to keep in touch with someone experienced.

11. If you can find 1:250 000 relief maps of the area, study them carefully. This will give you much more confidence in passing cols from one valley into another.

12. Keep a survival blanket in the glider.

### Vigilance

During your flight you will share well-known ridges with many other gliders. Remember the rules:

1. All turns towards the valley with a sharp look-out at **each turn**. The best mountains are always crowded.

2. When two gliders approach head on, the glider with the ridge on his **right** has the **right of way**. The other glider turns to the **right** to give way.

3. A glider making beats or eights has priority over a glider circling below the top of the ridge.

You may find that some experienced pilots prefer to fly further out from a ridge than you would expect, especially if there are trees, because the lift may be better, there are less control movements to make and it is less tiring.



Study your map before you go.

Be alert. Keep your speed up to have a lively ship. Be ready at all times for the occasional "air pocket". It's all very well to tell old ladies that such phenomena do not exist. If you are obliged to approach a ridge from the "wrong" side the bottom can drop out of your world. Heavy sink, no airspeed and the trees coming up fast, you need to act fast. If your old lady is in the front seat, she will say "I told you so".

In a previous article (April 1989, p79) William mentioned the tendency of pilots to veer away from the mountainside with either rudder or

ailerons. Inefficient flying can also result from an optical illusion produced by sloping rock strata which the eye wants to accept as the horizon. As with cloud flying you have to overcome what your senses are trying to tell you.

### Masochistic delights

Be ready for sudden turbulence at all times. In rotors and in zones of dynamic or thermodynamic lift which are in conflict with rotors from upwind mountains, the turbulence can be extreme with airspeed continually varying from rough air maximum to stall. In such conditions great care must be taken not to overstress the glider. If you don't enjoy such masochistic

#### FEAR!

In the first article William discussed fear of the mountains and suggested it might even be a positive factor for safety. In this article we wish to underline the negative aspects. Fear must be overcome to be safe in the Alps, because it leads to inefficient flying just when you most need to be efficient. It also leads to bad decisions. The classic case is the heavy sink which is sometimes encountered just before plunging into a favourable zone, eg, in the sink downwind of a ridge which you know is going to work on the upwind side. Unfortunately, fear sometimes induces pilots to turn back and submit themselves to a double dose of sink, instead of pressing on to the lift. Fear is real, it's natural and it is an instinct for self-preservation. It can be mastered.

delights, stay on the ground in high winds, but if you fly, keep in gliding distance of airfields. Even landing on certain airfields in strong winds is quite difficult without a briefing. If you land on an airfield in strong winds, stay in the glider with the airbrakes extended and wait to be rescued.

### Field landings in the Alps

This brings us naturally to special safety considerations in field landings in the Alps. All the elements which contribute to safe field landings elsewhere apply to the Alps but there may be additional complications, summarised in three words: **wind/slope/approach**. Let us imagine that your options have been whittled down to one only: a 20:1 glide into a certain field. You start to move towards it. Naturally, you attack every favourable piece of rock *en route* and if you can find a rock face or a line parallel which gives reduced sink, use it. Don't despise  $-0.5\text{m/s}$  (1kt down). For as long as it holds, your glide angle is 60:1 at 110km/h.

At the same time you recall all you have learned so far that day about the winds and you look for confirmation at smoke, ripples on lakes, ripples on crops and drift in weak thermals. On arrival at your field you look carefully at the slope of the field, and decide on the approach. The standard rectangular downwind and crosswind legs may have to give way to something improvised on the spot which takes into account mounds, trees and wires which abound in Alpine valleys.

If it is a recognised field described in the handy catalogues, there may be only one feasible approach indicated in the booklet. If so, it is useful



Remember the rules. Both drawings by Nicholas Clement.

to have marked this by an arrow on your map together with the altitude of the field. Put 10km radius circles around the critical fields and you will know that at only 500m above the field near its circumference you must switch to survival mode, if you haven't already done so.

If you are desperately low in the upper reaches of a mountain valley, do not be tempted by a pocket handkerchief-size piece of flat ground. The glide angle of your machine is better than the slope of the river valley, so if you follow the river it will open out into more hospitable surroundings lower down.

### Pair flying

Do not press on if lost, as you may do over flat country waiting to find something you recognise. Retrace your steps to the point where you last had a positive fix. If you are pair flying remember only 100m difference in altitude can sometimes result in the higher glider climbing while the lower glider sinks. Team flying is possible only if a definite agreement has been made previously. One loses sight of the other glider quite easily in such changing surroundings, therefore the pilot who is following a more experienced pilot must not stop in lift, even if it is apparently very strong, if the leader continues. Before embarking on such a flight the leader should think carefully about his responsibility which should include opening his airbrakes if necessary to aid his comrade, even if this leads to both landing out.

Distrust information broadcast by a pilot who flies high over the mountains. If he announces that a well-known rock is not working, it may be because he is too high to know.

Keep reports to three items only: **position, altitude and vario**.

### Trustworthy friends

Readers who have followed us this far may have concluded that Alpine flying is all trouble. It can't be, or we wouldn't do it. In fact, as many have already discovered, in good conditions it is easy. Rocks, sun and wind are trustworthy friends. Only when it gets difficult do pilots wish they had prepared themselves more thoroughly.

There is a special exhilaration in completing a task, even a self-imposed task, in the mountains. Proximity to the rock faces give you visual proof that you are actually climbing or burning up the course at high speed. If, in addition, you are doing all this safely it's great sport!