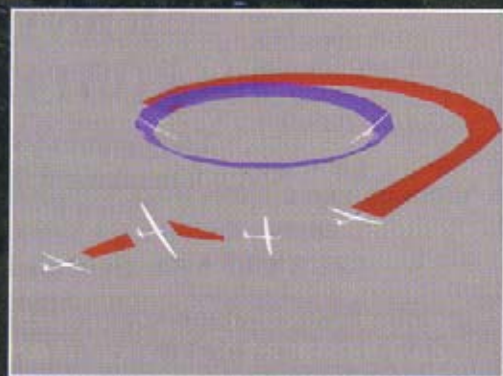
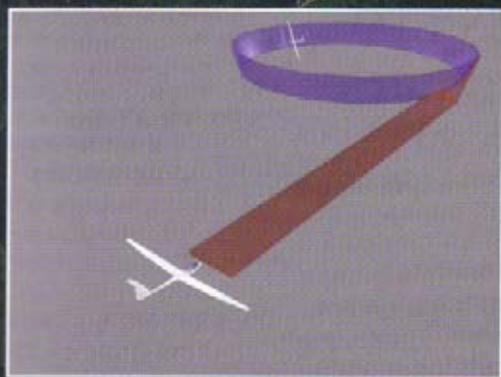


How to join thermals

National Coach Simon Adlard explains why and how to get your thermal entry right



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Above: be aware of these two blind spots for the glider pilot. Left: Neil Lawson and (front) Al Greensmith in Lasham's Grob Twin Acro III (the **White Planes** picture co.)



Note the position of the thermalling glider's tail against a point on the horizon; this should be the extent of its turn (all diagrams by Simon Adlard)

FOR SOME years now, soaring pilots have found it beneficial to fly in pairs, and the recent results of our gliding teams have proved this to be a highly effective tactic. There are several reasons for this, one of which is the fact that two gliders flying in a co-operative manner will almost always centre a thermal faster and subsequently outclimb an individual.

Gliding, as a sport, offers us the chance to vent our competitive nature. Unfortunately, this often comes out in a thermal where two pilots have their own idea of where the core is and how to centre it in an attempt to outclimb the other. This in itself is not a bad thing-- except that both gliders tend to get in each other's way, and so the overall climb rate deteriorates to below what would have been expected if either pilot had been alone.

As well as this, the risk of collision may become unacceptably high if the climb is conducted without regard for the other pilot.

This series of articles is intended to look at how we can maximise our climb rate by using other gliders while still minimising the risk, of a mid-air collision. In order to do this, we need to obey a few basic rules (see box, below) and make some initial assumptions.

If we are going to be seen by the other glider and keep the other glider in sight, we must first understand the blind spots that

The rules (1)

Assume that the other pilot has not seen you and that - even if they have - they will manoeuvre towards you

An aircraft that remains stationary in the canopy and is growing larger IS going to hit you

Always keep gliders in the near area in view and make sure they can see you

gliders have and - more importantly - the situations that might lead to both gliders being in each other's blind spots.

Before we consider sharing a thermal we will have to think about how we are going to join a thermalling glider. This is where we will need to make certain assumptions.

The first assumption is that the circling glider has found a good climb and is already centred on it. This means that no time will be wasted trying to centre the thermal once we join. In order for this to work it is vital that the other pilot stays in the core and can concentrate on centring it without having to worry about avoiding you.

If we join the thermal in such a manner as to alarm the other pilot then they may move their turn to give them greater separation or comfort; this means that they lose the thermal core and you have to waste time recentring the thermal. In other words: you've blown it.

Apart from the obvious disadvantages of a lower overall climb rate, the consequences of joining a thermal badly can be that we conflict with the other glider, increasing the risk of collision. Remember rule 1.

This risk can once again be minimised by a few basic rules (see box, top right).

The perfect join is one that places you exactly opposite the other glider, sufficiently far away so that you can remain opposite them with a comfortable angle of bank and speed (see diagram, above right). Before we can do this we must first assess the extremities of the other glider's turn. This is easy to do but rarely explained. Simply watch the other glider's turn until you can see it rear-end on, then mark a point on the horizon, which will then mark the boundary of its turn. Provided we fly towards this point we will end up intercepting their turn at a tangent (assuming they don't alter their turn).

If it looks likely there will be no conflict then continue on into the turn (see above page, left) keeping the other glider opposite you.

The rules (2)

The first glider has right of way

Join the thermal so that you turn in the same direction

Join in such a manner that the other glider does not have to manoeuvre in order to avoid you

If there is more than one glider and they are thermalling in different directions then turn in the same direction as the one closest to your height

This method of joining another glider sounds simple enough but is in fact rather difficult to do, and the chances of entering the thermal when the other glider is not opposite you are high. If this looks like the case then we will need to enter the thermal in a spiral fashion (see above page right).

The first thing we need to do is to reassure the other pilot that we have seen him and are doing something about it: remember, it is important to us that he remains in the thermal core. The best way to do this is while we are flying towards the thermal and the other pilot is in a position to see us, we should positively turn away from them so as to position our glider some way outside their turn. Exactly how far away you place yourself is up to you, however, put yourself in the other pilot's frame of mind and decide how close you would want somebody else to you. As you now fly around the outside of their thermal you will eventually find yourself opposite them, at this point move in closer until you can hold position with a comfortable angle of bank and speed. *Next issue: thermalling together*