Microlights:
'Not-So-Smooth' Air

Karen Weiner at Benalla airport, March 99. A light 55kg she always flies with ballast in 'Judy's Kites' saddle bags – this keeps her flight smoother. Photo: Tony Dennis

from swinging by holding on firmly to the bar, it would not take very long for you to get very tired. Likewise in a microlight, it's a lot of hard work if you're holding on to the bar too tight trying to stop the movement. Really, this is not necessary.

Remember: Fly the wing not the pod, especially if there's some turbulence. The pod is after all just a pendulum swinging under the wing. If the wing is out of line you may need to correct it, but if the pod is wobbling around, try to forget it. If we grip too tight we transfer the movement of the wing onto the pod:

1. ***making the pod move more, and***
2. ***making our arms and bodies be energy transfer points from the wing to the pod.***

The question arises of how to relax in your microlight. One of my students came up to me recently and said: *"I've got 20 hours now, I enjoy the flying, but I wish I could relax more when there's turbulence."* I think the best way to reply to that is to wait until you've got 50 hours. It just takes time to be familiar with the turbulence, and perhaps it's a good idea (if you have the opportunity) to fly as a passenger again with an experienced pilot to see how they handle the aircraft. Or go for a fly again with your instructor, so he or she can demonstrate some techniques for the rough air. Just like learning to drive your car: you can learn to drive on a dark, rainy night and that skill becomes second nature. It's the same when learning to fly. Another technique that my students get reminded of all the time is to 'play the piano'. What I mean by that is relax your grip, and keep your fingers nimble.

The next consideration is how to vary our technique for the three different types of turbulence. Firstly, let's look at wake turbulence from another aircraft taking off or landing. This turbulence is the easiest to avoid. All we need to do is give ourselves some time behind another aircraft and anticipate where the other aircraft's turbulence will drift.

Turbulence from a fixed object like a mountain or a line of trees also requires that we anticipate where that turbulence may be and fly accordingly. It is mainly velocity related, so if the wind has picked up when you're flying just take that into account and know the turbulence will be there.

Don't fly faster and faster in turbulence. Because we tend to hang on tighter and tighter, and thus pull the control bar in, we tend to fly faster in turbulence than we need to. Only 3-4 knots above trim speed is required when cruising in turbulence. Keep your turns shallow which will minimise any exaggeration from a wing drop or the effects of a thermal. In thermal turbulence use your pitch, then, if required, a power setting change to compensate for the wing pitching up and down.

Take some time to talk to hang glider pilots about picking wind direction when landing. They are the most experienced at flying and landing in thermal conditions as they often fly when there are thermals and don't have the luxury of wheels to land on. Picking wind direction on the ground from smoke, dams, etc, makes it so much more predictable to land in thermal conditions.

When flying in wind shear, the easiest way to counteract its effects is to change altitude. It is usually only a small, vertical band of turbulence and often can be travelled through quickly and easily.

"Ship"

Let's look, finally, at the 'ship'. Weightshift microlights (trikes) do not have a history of being flipped upside down in turbulence. Just by virtue of their design – and the fact that the pod is around six times heavier than the wing – a microlight will right itself even in severe turbulence. The controls will not be instantly knocked out of your hands. Often the pod may rock around a lot more than the wing, as will be seen when looking from the ground. Fly the wing, not the pod. Passengers don't experience the turbulence the same as the pilot, as they are not hanging onto the control bar (which is a good point for not hanging on too tight).

Pilots have different tolerance to air that has some turbulence. Just remember that we are, after all, flying for fun! At the end of the day it is only experience that will help you acclimatise to the different conditions of the air and, most importantly, understand what makes the air do what it does. For students, flying in air which is not 'smooth as silk' does take some time to get used to.

Remember a few basic points:

1. ***Relax your grip on the control bar (the pod may be swinging, but the wing's OK);***
2. ***Fly the wing, not the pod;***
3. ***Anticipate where there is likely to be some turbulence in the air;***
4. ***'Play the piano' (relax your grip, keep your fingers nimble);***
5. ***Keep your turns shallow for comfort.***

I hope these thoughts help students learning to fly microlights. Enjoy your flying!

Tony Dennis has been teaching people to fly trikes since 1991, and is currently Chief Flying Instructor at The Right Altitude Microlights.