15 - CIRCUIT PLANNING (PART TWO)

Trainee Practice

Once circuit planning has been demonstrated to the trainee, it is time to let him attempt it for himself. Expect a deterioration in handling accuracy as he takes on the extra workload. The trainee's attempts should include as many circuits that need to be substantially modified as those that do not.

BRIEFING NOTES

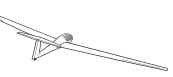
☑ Revise the trainee's knowledge of the previous lesson. Emphasise the basic premise that the purpose of a circuit is:
- to arrive at the final turn in the right place
- at a safe height and speed
- with safe alternatives always available.

☑ Make clear to the trainee that, from now on, he is doing the planning and making the judgements and decisions.

☑ Give a flight specific brief.

☑ Remind the trainee to stay flexible in his planning of the circuit.

The Flying



Initially, develop the trainee's judgement of angle and distance to the landing area using an indirect prompt, such as *What do you think of your angle and distance in relation to the landing area?* Compare the trainee's perception with your own.

☑ Introduce the decision making by following the previous question with *What are you going to do about it?*, even if there's nothing wrong with it at all.

☑ Once the trainee is getting the right answers to these questions, stop prompting and let him get on with it.

☑ To check that his judgement and decision making ability is developing, engineer various unusual or awkward circuit situations including running out of height and being too close in the circuit:
- arrive at the high key area lower than usual
- arrive at the high key area higher than usual
- drift back towards the landing area at 500' practising thermal turns
- drift away from the downwind leg too low to reach the high key area.

☑ To check that the trainee is not using the altimeter too much, cover it up or wind it off when descending below 1,000' - 800'.

These checks help you find out whether the trainee is really planning the circuit or merely following a learned routine and relying on ground features.

DE-BRIEFING

☑ By question and answer.

☑ Check his **planning, judgement and decision making** by asking for his assessment of what he did, why he did it, and any alternatives that he considered.

☑ Over a number of circuits, the following points should be covered:
- judgement of angle and distance to the landing area during the circuit
- decisions taken and the alternatives available
- choice of speed on the downwind leg
- selection of the approach speed and why
- position of the RP and the factors involved in its selection
- awareness of other aircraft, and the situation in the landing area
- height of the final turn
- speed with which RP movement in relation to the canopy needs recognising
- approach path flown compared to one with two-thirds air-brake
- regularity of monitoring the approach speed
- straightness of the approach.

ADVICE TO INSTRUCTORS

Directly prompting a trainee's decision making devalues the lesson by denying him the opportunity to make it himself, and, more importantly, to see the results. Even an indirect prompt, or nervously clearing your throat, may interfere with their thought processes, perhaps causing them to take a course of action sooner than otherwise. Additionally, you deny yourself the opportunity to assess the trainee's decision.

By prompting, you have taken over as surely as if your hands and feet were on the controls. The confidence trainees gain from successful decision making is a very important part of their development as pilots. If the trainee's decisions are safe, he should be allowed to carry them through, even if they aren't quite what you would have done in the same circumstances. Praise sound decisions. 'Different' doesn't necessarily mean 'wrong'. There will be times when you can't do anything else but prompt or take-over.

Before starting the de-briefing, ask yourself if the trainee achieved a safe final turn, approach and landing. If the answer to the question is *Yes*, don't let its importance be overshadowed by any mistakes or difficulties covered during the de-briefing. This part of the training is bound to be operationally inefficient because you will need to allow mistakes that result in landings some way from the launch point. As a rule, early trainees who always 'spot land' are very likely to be with an instructor who is 'physically assisting' them, or at least over-prompting them. Interfering with the controls without the trainee being aware of what's happening is a serious hazard to their future health. Quite simply, you should not do it unless there is an emergency.

Whether the trainee is having difficulty judging the angles and distances, or in deciding a course of action, the results may well be identical. For example, carrying on downwind when he should be turning in early. You must correctly identify the cause of the difficulty so that you can then provide the right help. After every circuit flown by the trainee, debrief by Question and Answer to find out what he thought about it. This will help you to decide whether it is judgement or decision making which

needs most improvement. If it was a perfect circuit, for example, was it by luck or judgement?!

In teaching and analysing judgment and decision making, your role in the air should eventually become that of virtually mute safety-pilot and observer. If you think anything the trainee is doing needs detailed discussion, keep it until after the flight.

Taking control

In common with all exercises, you must take control in time to avoid going beyond either the glider's limits or your own. The trainee may be doing the flying but YOU are responsible for the safety of the flight. Don't allow trainees to blunder into situations which reduce your safety margins; for example, forcing you to make a very low final turn or land in an unsuitable or overcrowded area. When a trainee has had sufficient time to recognise an error, but failed to do so, take over before things get any worse. Of course, how can you tell if the trainee recognised the error or not? Perhaps he saw the problem, but reacted to it slowly, as most trainees do initially. Alternatively, perhaps he noticed but didn't see it as a problem.

Remember, your purpose as an instructor is to test the trainee's:

- judgement
- decision making, not only in perfect circuits, but also in recovering from errors or misjudgments
- flexibility to switch to an alternative approach path if circumstances (previous errors or sink) call for it.

To check on this aspect of the trainee's flying you must allow the situation to develop for quite a long time.

The time when the quality of the trainee's decision making and judgement is most important is just after the low key area - exactly the place where it is also the most critical for the instructor. For every yard the glider travels past the ideal point to turn onto the diagonal leg, for example, the options available are rapidly reducing. You must be conscious on the downwind leg of where these critical points are, and when you reach them. They are:

- the correct points at which to turn onto the diagonal and base legs
- the last point at which a satisfactory height final turn would lead to a normal approach. Beyond this point you will have to switch to an alternative approach. You should allow time for your trainee to make the decision
- the last point at which a final turn at a satisfactory height can be made to approach the only remaining alternative landing area. Obviously, you must prompt or physically take over at this point.

Figure 1, below, shows an airfield with a wide landing area. As the glider travels along the downwind leg there are still plenty of alternative approach paths left, even beyond point B, but the diagonal and base legs must be shorter. Point C is where there is insufficient height for any sort of base leg at all, but just enough for a safe and almost 180° final turn directly onto the approach. The last resort!

At airfields with less spacious landing areas and limited alternative approach paths, C is much closer to B. In the worst case, when there is only a runway or narrow strip to land on, C **is** B. Strong winds or sink also bring C closer to B.

There is an inevitable delay between a prompt and the trainee's response to it, and the delay is likely to be longer than you expect, or wish. Be ready to take over in good time and fly the

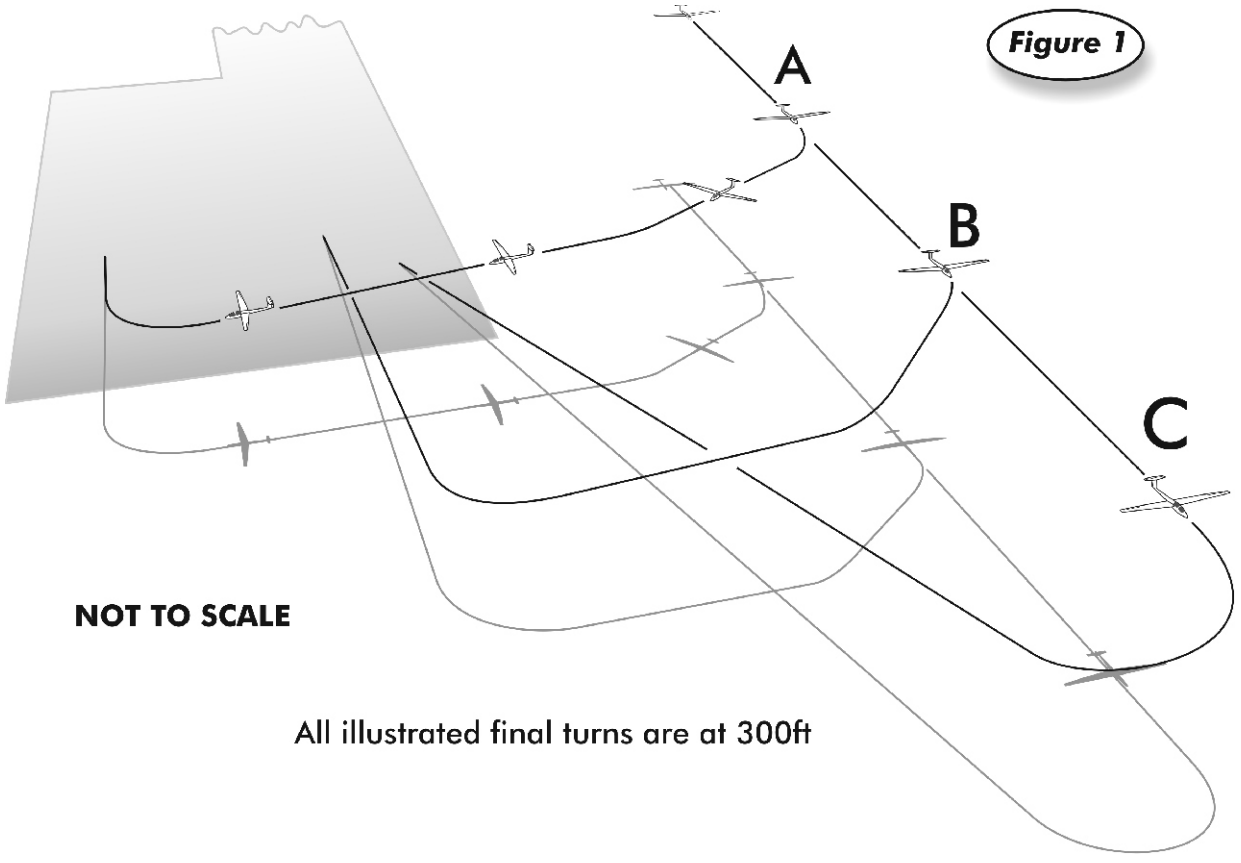


Figure 1

safe alternative. If you have physically just taken control then, because you are more skilful than your trainee, points B and C are a little further on, but not very much.

Having taken control, be wary about handing it back. The trainee may have relaxed and be unprepared to take control again at short notice. In any event, you now have the perfect opportunity to demonstrate what is required and to emphasise that even you, with all your experience, need to take a safe alternative. This raises two points:

- taking the safe alternative demonstrates far more than giving the trainee a few extra seconds on the controls
- the trainee is much more likely to remember what you show him, not what you tell him.

In respect of the latter item, it is important that you don't consistently advise your trainees to do one thing, and then you just as consistently do something else. What will they learn if you fly low, close circuits and always manage to land back at the launch point after excitingly low final turns? They will remember your poor example, and probably ignore your good, but apparently redundant advice *Don't do this. It's very dangerous!* Not for you, apparently! **Show the trainee what you want him to do, not what you don't** - unless it is a genuine, 'for a limited period only' demonstration, and is clearly understood to be such.

Some further points

☑ Spinning or steep turns as upper air exercises prior to joining the circuit can overload or disorientate the trainee's initial attempts at circuit planning. In the early stages of training you may need to prompt to help them with orientation. Some deterioration in the accuracy of flying is to be expected when your trainee is making his first attempts at circuit planning. Don't be too concerned about this. Deterioration to the point where you are having to give frequent prompts or take control usually indicates that circuit planning was introduced too soon. You may need to stop this exercise to reduce their workload.

☑ Although some trainees find it helpful to 'think aloud', most do not. Getting them to 'think out loud' might help the instructor work out what's going on, but can cause 'trainee overload' and create more problems than it solves, so don't insist unless there's a very good reason for doing so.

☑ If the base leg and final turn are frequently too close and too high, ie., the final turn above the full brake approach angle, the trainee will develop a tendency to open the airbrakes immediately after the final turn to avoid an overshoot. Described as the 'going-in-to-land-lever' syndrome, the risk is that the pilot will get into the habit of opening the airbrakes without thinking. In some instances - eg launch failure, running out of height etc - this can be critical. To check that the trainee is using the airbrakes only when necessary, contrive a slightly lower than normal final turn in the correct position.

☑ Trainees who do full-brake approaches in light or no-wind conditions and use either small amounts of brake or none at all in strong winds, are probably not allowing for the wind strength and appropriately adjusting the position of the final turn/base leg.

☑ Some trainees begin the turn onto finals far too early on the base leg. As a result, the turn is very flat. This not only hides poor coordination of the turn, which could be dangerous, but effectively reduces the length of the final approach because the wings are not level until part way down it. This almost inevitably leads to difficulties with controlling the approach and landing. Encourage well banked turns at all stages of flight.

☑ It is common for pilots not to appreciate the difference between a high final turn well back, and one close in and low. The latter usually results from shortening the downwind leg to correct for being a bit low, and then failing to move the planned landing area further into the field. Nearing the final turn, it becomes clear that in relation to the normal landing area the glider is above the approach path, though much closer in. The airbrakes are deployed during the turn to 'latch on' to the 'correct' approach path, and the result is a low final turn and a landing somewhere in the normal landing area. When asked why nothing seemed to work out quite right, the pilot will say that he was too high, so he used the brakes, while at the same time admitting that the final turn was, in fact, rather low! A warning to the trainee to be aware of this problem whenever the circuit is shortened, might save him a cartwheel just behind the landing area.

☑ Unusual and awkward situations can be created by asking the trainee to practice steep turns, stalling, spinning or demonstrating one or two of the exercises under Further Stalling in chapter 18, or Further Spinning in chapter 19, prior to planning the circuit. This increases the trainee's work load and simulates the sort of stress he will be under when solo, and not positioned for a normal circuit.

☑ Circuit planning is often taught in a motor glider to very good effect, but that doesn't remove the need for the trainee to deal successfully with various unusual and awkward circuit situations in a real glider.

☑ The emphasis is very much on not 'talking the trainee round the circuit'. If you do, then it's a demonstration and not trainee practice! Shut up and let your trainee exercise his judgement, right or wrong. The fact that a trainee's decision may be different from yours doesn't mean it's wrong. You're not looking to train pilots who 'fly by the numbers', even if those numbers happen to be yours! A large part of the instructional content of the flight will be a thorough de-briefing by Question and Answer. This should cover consistent errors made by the trainee. If the errors seem particularly intractable, you may have to begin again with prompts and re-demonstrations [chapter 14].

Remember, if you prompt, it is YOU and not the trainee who is planning the circuit.