

1 Learning the Standard Terminology

1.1 Use of Patter

Learning to instruct is not particularly difficult. There are many different aspects of the art and some of these can only be developed as a result of practical experience. You should first understand the methods used, and this will depend on whether it is a skill that is being taught, or the ability to make correct judgement that is being developed.

The normal framework used when teaching any new skill is to:

- brief the trainee verbally for the exercise to be undertaken
- give a demonstration, with a verbal accompaniment (patter)
- monitor the trainee's attempts, giving guidance as required (prompts)
- possible re-demonstration with reducing prompts
- debrief afterwards

How much?

When a flying skill is being demonstrated the instructor is constrained in what they can say by the rate at which the aircraft responds to the controls. Only a limited time is available, especially when winching. The patter must therefore be concise and timed accurately to coincide with what's actually happening. Conciseness may be achieved by learning the patter word for word, and this is best undertaken with an appreciation of the other critical factors - timing and emphasis.

I'm not a parrot!

The thought of learning the patter in this way may offend you. You might imagine that you will sound like a parrot perched on the trainee's shoulder. Experience has shown that learning the patter verbatim gives a base from which you can develop a more personal style, with a variety of words and phrases.

Why bother?

Developing a form of patter is fundamental to becoming an instructor. Having the patter at your command gives certain benefits - standardisation for one. The demands on your concentration are less and you will be able to give more attention to airmanship matters than otherwise.

How?

Practice the words and then attempt to match the actions to the words in flight. It is essential to fly in a two seater with an experienced instructor who is himself standardised. His role would be to stop you if you said anything wrong or used phrases in the wrong order. Once you have got it wrong it is all too easy to consolidate unsuitable patter.

Timing

In order to achieve coordination between the control movements and the patter it will normally be necessary to start with the patter before the control movement. This will allow time for the trainee to become aware of the impending action.

Rate of progress

The pattern suggested here has been arranged in sections suitable to the average trainee. You will learn to adapt to the circumstances in which you find yourself. It may, for example, be possible to run several lessons together in one flight. Or it may be necessary to re-arrange a lesson into several smaller components. The overriding principle must be that the trainee is coached at the rate which is right for them. All too often a trainee becomes confused by being pushed along too fast by a well-meaning instructor intent on giving value for money.

1.2 Jargon and Choice of Words

The dictionary defines jargon as, amongst other things, mode of speech full of unfamiliar terms. Certain words used in an aviation context may be unintelligible to a lay person. Every effort should be made to ensure that the trainee knows exactly what is meant by a particular word, term or phrase. Some examples:

Attitude

As you know, this word is used to define the relationship between the nose of the glider and the horizon, as seen from the cockpit. Hence normal gliding attitude implies a constant relationship between the nose of the glider and the horizon. Without having been told otherwise, the trainee might take it to refer to the relationship between himself and the instructor.

Altitude

Why not use height? Strictly, height is one's distance from the ground, and altitude is one's height above sea level.

Follow through

Meaning place your hand (or feet) on the controls as directed and when that control is moved do not resist (its movement). The purpose of follow through is to give the trainee a first approximation of the degree and rate of control movements as well as a sense of involvement or participation.

Pitch, Roll and Yaw

The dictionary definition of pitch is to plunge (as a ship) in a longitudinal direction. Use of terms such as the nose rises or the nose goes down are no less concise or explicit than the glider pitches nose up or down. Similarly, roll and yaw, although understood by sailing and flying enthusiasts, may not be clear in their meaning to the average ab-initio trainee.

Elevator, Aileron and Rudder

The names of the control surfaces are a part of your every-day terminology but are these words clearly understood by the trainee? He must learn them and their use in the context of their effects.

Bank

Bank, a steady state, is the condition brought about by rolling.

Move/Ease

When describing control column movements the word *move* has been used. A common alternative is *ease* - which implies the need for gentle movements. This can be over-emphasised, as in *ease the stick gently forward*, which may actively discourage positive use of the controls.

Pull/Push

In contrast, push or pull may result in over-harsh use. *Move* reinforced by a positive action during the demonstration should achieve the desired result.

Lowers/Goes Down/Drops

Description of the response of the glider to the various control inputs should also be considered. *The nose goes down* is interchangeable with *the nose lowers*. *Drops* would be a bad choice in the context of a control movement, being associated with falling or losing control. But it would be appropriate to use in the stalling exercise.

Centralise

This does not describe exactly the actual movement of the controls but is used in the interests of brevity. It is replaced in the turning demonstration by the phrase *use the ailerons to stop the bank increasing*.

You have control

The new instructor may be quite nervous when letting someone else fly the glider. This is not surprising since he has been at the controls in all his previous flying experience. Any interference with the controls by the instructor may confuse the trainee and any tendency of the instructor to do this must be suppressed. For all exercises the instructor's hands and feet must be kept completely clear of the controls. Interference with the controls when the trainee is flying will at best confuse them and may well destroy their confidence. If you feel the need to interfere then it is probably appropriate to take control (and say so) and give a demonstration.

The purpose of these notes

These notes serve three purposes:

- to ensure that the patter, wherever used, is consistent. (The patter is in italics in the left hand column)
- to provide a deeper understanding of the exercise. The right-hand column contains remarks relevant to the patter and emphasises points of particular importance, such as choice of words, emphasis, airmanship and teaching techniques. They will mean more when you have had some practice at the air exercise.
- to summarise and serve as a reminder of the points to be covered in a briefing or de-briefing.

The benefits:

There is more to flying instruction than just giving demonstrations, and the patter - in an abbreviated form - is ideal to use for prompts, and as a reminder of the control movements and exercise's purpose. For example, the turning patter and prompts will serve for pilots at all levels of experience.

The additional factor which is relevant if you learn this patter properly is that even when you have not given a particular demonstration for quite some time, as is often the case, you will be able to recall the demonstration and patter once you have given a pre-flight briefing.

1.2.1 Audio File

An audio file can be down-loaded from the [BGA web site](#) (scroll to the bottom of the page). It can be transferred onto a smart-phone and played over and over until the "patter" and terminology become familiar.

1.3 The Air Exercises

The aim of the following exercises is to bring the trainee to a stage where they can use all three controls in a coordinated manner. At the same time the fundamentals of airmanship will be taught. The exercise *Lookout* is divided into several stages to make all the relevant instruction more easy to assimilate.

1.3.1 Lookout

Patter	Remarks and Teaching Points
LOOKOUT	
<i>While flying, we must always keep a good lookout. Help me with this. Scan the field of view, pausing from time to time, looking both above and below the horizon as well as on it. Whenever you see another aircraft or glider, tell me. I'll do the same . . .</i>	Introducing lookout from the outset should mean that by the time the trainee is taught turning he will be scanning effectively. You should have described the scan cycle - particularly how the field of view is divided up into segments - as part of the ground briefing before flight.

1.3.2 Effects of Controls

The following demonstration includes a stall - noted below - as a primacy exercise. The gentle stall is optional, dependent on the trainee's aspirations (whether they are likely to take up gliding or not).

Patter	Remarks and Teaching Points
ELEVATOR	
<i>Now I will show you how the controls work. First, the elevator. Follow through with me on the stick</i>	Start the demonstration with the glider in the normal attitude (best L/D speed)
<i>Look ahead over the nose and see the relationship between the nose and the horizon, or the amount of ground in view</i>	This covers conditions of both good and bad visibility, as well as the in-between case
<i>It remains constant. This is the normal gliding attitude</i>	
<i>When I move the stick forward a small amount . . .</i>	Say these words before moving the stick
<i>. . . the nose of the glider goes down. More ground comes into view. The glider takes up a new attitude . . . and the speed increases</i>	Not so much to alarm the trainee. Alter the attitude to give a speed change of about 10kt. The trainee will not be aware of the attitude / speed relationship, but the Law of Primacy suggests that this should be introduced at the earliest opportunity. In practice, as the speed increases, a further, very small elevator movement will be necessary to maintain the new attitude
<i>When I move the stick back again . .</i>	Say these words before moving the stick
<i>. . . the nose rises, there is less ground in view, and we begin to slow down. We are in another attitude.</i>	But not to the point of stalling the glider - yet!

Optional Wings-Level Stall: <i>If I move the stick back more the nose rises, but then goes down again by itself</i>	Make sure to say the words before the nose goes down, to pre-warn the trainee. The stall needs to be obvious, but take particular care not to disconcert the trainee
Optional: <i>I must move the stick forward to regain speed</i>	Demonstrating that moving the stick back doesn't always raise the nose is recognising the Law of Primacy
<i>Now I'll return the glider to its normal attitude</i>	This time, avoid reference to the stick movement. From now on, prompts will be raise / lower the nose
<i>In fact, that was a stall!</i>	Establishes the nature of the stall without frightening the trainee
<i>The attitude is constant and the speed is steady. I'd like you to try that. You have control</i>	The trainee should be encouraged to respond, <i>I have control</i> . Most will need to change the attitude a few times to get the feel of it. Prompt if necessary
<i>I have control</i>	Remind the trainee to let go of the stick

Patter	Remarks and Teaching Points
AILERONS	
<i>Now I'll show you the effect of the ailerons and how we roll the glider</i>	The trainee should have been briefed on these jargon words before flight
<i>Look ahead and see that the cockpit edge is symmetrical with the horizon. The wings are level</i>	If the trainee is not convinced then have him look at each wing tip in turn but do not use this as a primary reference
<i>If the wings were not level then the view ahead would look like this</i>	Roll the glider using coordinated controls to about 30° angle of bank, but don't allow it to turn more than 20° or 30° from the original heading
<i>Follow through on the stick</i>	But not the rudder, to avoid distraction

Patter	Remarks and Teaching Points
LOOKOUT	Assume a turn to the left
<i>Look right first</i>	To make sure we aren't turning our back on anyone coming our way
<i>Make sure that it is clear to the left - look as far around to the left as you can</i>	Sufficiently far around to see the tailplane - concentrating the lookout in the critical area
<i>Remember to tell me if you see any other aircraft</i>	Reinforcing the point made earlier
<i>Now look back over the nose</i>	

Patter	Remarks and Teaching Points
AILERONS - continued	
<i>If I move the stick to the left, the left wing goes down</i>	Aim to achieve a positive angle of bank (about 30°) at a roll rate which is easily

	observable. Be ready to compromise if the trainee is especially nervous
<i>It continues going down until I centralise the stick</i>	While the word <i>centralise</i> may not be strictly correct, it is used here in the interests of brevity
<i>The glider is now banked and therefore turning</i>	
<i>To maintain the attitude I need to apply a slight backward pressure to the stick</i>	Thus introducing the requirement to coordinate elevator with aileron
<i>To raise the wing I move the stick to the right and centralise it when the wings are level</i>	In this instance <i>centralise</i> is correct
<i>As the wings come level I relax the backward pressure to maintain the correct attitude</i>	Further consolidating the need to coordinate ailerons and elevator
<i>Now you try. You have control</i>	Let the trainee try the ailerons on their own only two or three times each way. The instructor should operate the rudder to maintain balanced flight
<i>I have control</i>	

Patter	Remarks and Teaching Points
RUDDER IS NOT USED TO TURN THE GLIDER	There is little point in teaching this exercise high up or if there is no suitable line feature on the ground
<i>Now I'd like to show you that the rudder does not turn the glider</i>	This demonstration is to try and clear the trainee's mind of the possibly strong belief that it does!
<i>Follow through. Feet on the rudder pedals</i>	But, to avoid confusion, not on the stick
<i>Notice that we are flying along this road (or other line feature)</i>	Any suitable into wind line feature
<i>If I press the left pedal the nose of the glider <u>yaws</u> to the left but, as long as I keep the wings level, the glider continues to travel in the same direction</i>	Introduce the term yaw. The result of directional stability
<i>When I centralise the rudder the nose swings back to point in the original direction</i>	To rid the trainee's mind of any other idea he might have
<i>The rudder only <u>yaws</u> the glider and does not turn it</i>	Remember to keep the wings level while the trainee practices

Patter	Remarks and Teaching Points
ADVERSE YAW	
<i>Now I will show you another effect of the ailerons, and why we need to use the rudder</i>	
<i>Follow through on stick and rudder</i>	

<i>Because the glider will turn in this demonstration we will lookout in that direction (left or right) then over the nose again</i>	The direction of the demonstration. This further reinforces lookout and to help maintain the emphasis on looking out at all times
<i>Watch what happens when I move the stick to the left without moving the rudder</i>	Make the adverse yaw as obvious as possible, but don't cheat with the rudder
<i>Which way did the nose swing?</i>	To confirm that the trainee has seen it. Do not let the situation develop. We are not teaching turning quite yet
<i>This is adverse yaw. It is the result of aileron drag. To counteract this effect we need to use rudder in conjunction with the aileron. If we use left (right) aileron and rudder together the nose no longer yaws to the right (left)</i>	
<i>We always use aileron and rudder together, so it is stick and rudder to the left, or stick and rudder to the right</i>	Make two or three turn reversals without altering the heading by more than 20° or 30°
<i>Now you try that</i>	Note: the trainee does not try the ailerons without also using rudder
<i>You have control</i>	Make sure the trainee responds with <i>I have control</i>
	At this stage the amount of rudder to be used is a first approximation, to get aileron and rudder moving together

The trainee should learn to monitor the airspeed indicator and be required to fly within specified airspeed limits, as soon as possible. This use of the ASI must not be to the detriment of lookout. The exercise may be left until later if the trainee seems unable to cope on the day due to, say, turbulence.

Patter	Remarks and Teaching Points
ASI & AIRSPEED MONITORING	
<i>You have control</i>	A demonstration is not appropriate
<i>Fly the glider in the normal attitude and note the ASI reading . . . what is it?</i>	Better to ask the trainee to say, so that you know he can read it. There might also be a discrepancy between the instruments in the front and rear cockpits
<i>Lower the nose to an attitude you think will give you a speed of 60 kt</i>	. . . or whatever will give about a 10kt increase
<i>Glance at the ASI, while maintaining attitude, until the speed is steady. Notice that it takes some time to increase to the new value</i>	
<i>If you haven't got the speed you want make a further attitude correction. Wait, then check the ASI again</i>	

If, as a result of the above demonstration the trainee tends to watch the ASI, continue with the following and, perhaps, cover the ASI.

<i>If you try to select a new speed solely by watching the ASI then you will end up chasing the airspeed - let me show you</i>	
<i>I have control</i>	
<i>If I lower the nose until I get (say) 50kt . . . like this . . . the speed eventually goes beyond that figure</i>	
<i>If I now raise the nose until 50kt is indicated, then the speed will fall below that figure</i>	
<i>The only way to control the glider is by setting the attitude, waiting for the speed to settle and if it is not right, adjusting the attitude again</i>	Chasing the airspeed may result in a phugoid oscillation which may get worse

Patter	Remarks and Teaching Points
TRIMMING	
<i>Now I'm going to show you how to use the trimmer</i>	
<i>I have control</i>	Trim the glider correctly
<i>See that if I take my hand off the stick that the glider continues to fly itself. The glider is stable</i>	Rough air may make this difficult to show
<i>Now you take control and continue to fly in this attitude</i>	Stress <u>attitude</u>
<i>I will alter the trim</i>	Usually move the lever forwards first
	Prompt to <i>keep the attitude constant</i>
<i>You are having to apply a force to the stick. Tell me the direction</i>	Wait for the trainee's response
<i>Now you adjust the trim to reduce the stick load to zero. When you have done that, release the stick</i>	Either the trim is correct, or it is not. Use the appropriate patter as a prompt
<i>Good. The attitude hasn't changed</i>	
OR	
<i>No. That's not quite right. Put your hand back on the stick and reselect the original attitude.</i>	Possibly introduce a cross reference to the airspeed if you have not already done so
<i>Check the airspeed. Yes, 43 kt will do fine. Sense the load on the stick. Adjust the trim again. Check by releasing the stick. Good. That's fine.</i>	At no time during this exercise does the trainee follow through on the controls, or the instructor demonstrate

<i>Now increase the speed to 50kt. Trim for that speed</i>	In any phase of flight
<i>From now on, always fly the glider in trim</i>	

1.3.3 Straight Flight

Patter	Remarks and Teaching Points
STRAIGHT GLIDE (& SCAN CYCLE)	
<i>Now I'm going to show you the straight glide, and how to recognise and achieve it. Follow through on the controls</i>	Select the normal gliding attitude (best L/D) with the glider in trim
<i>This is the normal gliding attitude. Look ahead over the nose and see the relationship between the nose and the horizon, or the amount of ground in view. Also notice that the wings are level</i>	If there is a significant wind then this is best done into- or down-wind to minimise drift
<i>If the 'picture' over the nose is wrong . . .</i>	Select an incorrect attitude, and have one wing down
<i>. . . we roll the wings level using the ailerons and rudder together, centralising the controls when the wings are level, and select the correct pitch attitude with the elevator</i>	At this stage ignore the fact that the glider has probably turned slightly off the original heading. Returning to a heading is covered after turning has been taught
<i>I will now put the glider into a different attitude, and I want you to return it to the normal wings level gliding attitude.</i>	Select an incorrect attitude, with one wing down, as before
<i>You have control</i>	The trainee should respond with <i>I have control</i> and return the glider to the normal gliding attitude. Do this several times varying which wing is down, and how far
<i>I have control. I will now show you how to maintain the straight glide and carry out the scan cycle</i>	Before this part of the exercise the 'clock' system must have been covered in the pre-flight briefing
<i>The sequence of events is lookout, attitude, and then instruments</i>	The scan cycle
<i>Begin by looking directly ahead. Focus on the horizon, looking above and below it</i>	
<i>Move your head to approximately the two o'clock position. Focus on the horizon and then look above and below it</i>	This is straight ahead, followed by 45° and then 90° to the left (or right). It is important to look as far behind as possible, and also overhead
<i>Move your head to the 3 o'clock position. Focus on the horizon and then look above and below it</i>	
<i>Now look as far back as possible, then look directly upwards, above the glider</i>	

<i>Look forwards again. Check the attitude. If it is not correct, level the wings with coordinated aileron and rudder and use the elevator to return the glider to the normal gliding attitude</i>	
<i>Check the trim and adjust if necessary</i>	Only if trim has been taught, otherwise it's up to you to ensure the glider is in trim
<i>Instruments. Check that the yaw string is central</i>	see note (1) below, but don't over-concentrate on the yaw string
<i>Variometer. Check the glider's rate of ascent/descent</i>	Advise trainee of the correct course of action if the sink rate is excessive (MacCready). If you are in lift, use it
<i>Altimeter. Do we have enough height to stay on this course, or should we be starting our return to the airfield?</i>	You are responsible for the glider remaining within easy gliding range of the airfield, but the trainee needs to learn what the safe gliding range looks like
<i>And now back to lookout, this time to the right (left)</i>	Repeat the scan cycle, this time to the other side (left or right)
<i>Now, you try. You have control</i>	Let the trainee practice and don't worry if the glider's heading changes. Maintaining a heading will be taught after turning

Note (1). If the wings are level but the yaw string is deflected to the right, say, the correction required is to smoothly apply left rudder until the string is central, whilst simultaneously using the ailerons to keep the wings level.

By now the trainee has, or should have a basic understanding of the two coordination skills (elevator with aileron and rudder with aileron) as well as an appreciation of how to look out. The two coordination skills and the airmanship element are brought together in this next demonstration.

1.3.4 Turning Flight

Patter	Remarks and Teaching Points
TURNING & LOOKOUT	
<i>I have control</i>	
<i>Now I will show you how to turn the glider using all three controls together</i>	
<i>There are three stages to the turn: going in, staying in and coming out</i>	This helps to break up the exercise into manageable chunks
<i>We've been maintaining a good lookout. But before turning left, we look round and behind the right wing, then scan ahead of the aircraft, above and below the horizon, then to the left and as far back as possible</i>	Reinforcing points made earlier. In some gliders the pilot(s) should be able to see the tailplane!
<i>Look ahead over the nose</i>	To monitor the attitude, rate of roll, balance and eventual angle of bank during the turn entry

<i>Roll the glider using the aileron and rudder together</i>	
<i>At the desired angle, use the aileron to stop the angle of bank increasing, and reduce the amount of rudder</i>	
<i>As the angle of bank increases, keep the attitude constant with a slight backward pressure on the stick</i>	The increase in backward pressure is proportional to the bank angle. It is difficult to coordinate this patter with the action
<i>The glider is now established in the turn</i>	Pause here before continuing
<i>Now look out again</i>	Turn through at least 40° in the horizontal plane

Patter	Remarks and Teaching Points
STAYING IN THE TURN	
<i>Notice how the nose moves steadily around the horizon</i>	
<i>Continue the scan cycle and keep a good lookout - especially in the direction of the turn</i>	
<i>Keep the angle of bank constant, making any necessary corrections with aileron and rudder together</i>	If there are no disturbances that require correction, alter the bank angle to reinforce aileron and rudder <u>together</u>

Patter	Remarks and Teaching Points
COMING OUT OF THE TURN	
<i>To come out of the turn we must first lookout. See that it is clear to straighten up, especially behind and below the upper wing. Other gliders may have joined you.</i>	The critical area for other gliders circling with you
<i>Roll the wings level with aileron and rudder together, relaxing the backward pressure as you do so, and centralising the controls . . .</i>	Obviously aileron and rudder!
<i>. . . when the wings are level.</i>	
<i>There are three stages to the turn: going in, staying in and coming out</i>	
<i>You try that. You have control</i>	

After turning has been taught, repeat the Straight Glide exercise but include the following *Maintaining a Heading* patter (into wind if possible, to minimise drift).

Patter	Remarks and Teaching Points
MAINTAINING A HEADING	Exercise as before, but include the following during the attitude part of the sequence

<i>If the nose has moved away from the original heading, then we roll gently back towards it. As we reach the original heading we roll the wings level and check the correct pitch attitude</i>	For small heading changes don't use too large an angle of bank
	Continue with the exercise as before

Trainees often have considerable difficulty coordinating the rudder and aileron. Whilst lack of coordination may be more obvious in straight flight, its effects while entering or maintaining turns can be more difficult to correct, given that the speed of the glider will also be affected. Good lookout must be maintained throughout this remedial exercise.

1.3.5 Slip and Skid

Patter	Remarks and Teaching Points
SLIP AND SKID	Start the demonstration with the glider in a correctly balanced turn
<i>Follow through on the controls</i>	Set up an under-ruddered turn
<i>I have used too little rudder. Notice that the yaw string is deflected towards the outside of the turn (the slip ball falls into the turn)</i>	Trainees may also feel that they are falling into the turn, a useful clue worth pointing out
	They should understand that the yaw string indicates where the relative airflow is coming from, and that correcting means yawing in that direction
<i>I need to increase the amount of rudder to bring the yaw string back to the centre. At the same time I also need to keep the angle of bank constant</i>	Return the glider to balanced flight. The pre-flight briefing should have covered how yaw changes can also produce changes in the angle of bank
<i>Have a good lookout</i>	If the slip ball is being used, lookout should be more frequent because the trainee's head will be in the cockpit more often
<i>This time I have used too much rudder. Notice that the yaw string is deflected toward the inside of the turn (the slip ball rolls to the outside of the turn)</i>	Set up an over-ruddered turn. In this case trainees may feel that they are being pushed to the outside of the turn
<i>I need to reduce the amount of rudder to bring the yaw string back to the centre. At the same time, I need to keep the angle of bank constant</i>	Return the glider to balanced flight
<i>I will set up a poorly balanced turn, and I would like you to correct it. You have control</i>	Set up either the under- or over-ruddered turn again, and allow the trainee to make the corrections
<i>I have control. Please keep your hands and feet on the controls. Notice that although we are flying straight, the yaw-string (ball) is off to one side. Also notice that the controls are crossed</i>	After a few more 'coordination in turn' exercises, fly straight with rudder applied and sufficient aileron to prevent the aircraft rolling

<i>To correct this, I use rudder to centralise the yaw string (ball), at the same time keeping the wings level with the ailerons</i>	
	Set up a crossed controls situation and allow the trainee to correct it
<i>You have control</i>	

1.3.6 Stalling

This involves identifying symptoms of an approaching stall, the stall itself, and the recovery techniques. There are important features of this demonstration which, if it is not done correctly, will substantially reduce the value of the exercise.

- the instructor must be able to stall the glider in the way that he wants ie. nose drop or not (this will be emphasised in the patter notes)
- the demonstrated stall should represent, as nearly as possible, the inadvertent stall. Raise the nose as little as possible
- having raised the nose, describe the symptoms as they occur. It is best carry out a series of stalls describing one or two symptoms on each
- for most of the symptoms the glider should be brought to the stall by gradual control movements. If, however, a harsher movement of the stick (usually the last quarter of its travel) is required to provoke a nose drop, then play down this point
- if the stick is held back after the stall, most gliders will regain flying speed rather than remain stalled, and will then stall again. For demonstration purposes it's best to initiate the recovery after the nose has dropped, but before the glider unstalls and recovers by itself
- make sure that you describe the symptoms that are actually there, not the ones you think ought to be there.
- take opportunities to teach individual stall symptoms such as changes in airflow noise - eg. *notice how much quieter it has become*
- take every opportunity to teach the stall recovery action
 - (a) stick forward
 - (b) regain flying speed
 - (c) return the glider to the normal attitude.
- teach minimum height loss during recovery. This requires the trainee to be fully aware of what the glider is doing, and is not something that can be taught by rote
- emphasise that the whole point of the exercises is stall prevention by early identification.

STALLING	Basic demonstration with wings level
<i>Before I show you the stall and recovery, we do a HASELL check</i>	The HASELL check should have been explained before take-off
<i>Height is adequate, bearing in mind the distance from the airfield and the likely height loss</i>	Use of moderate heights may emphasise the height loss involved
<i>Airframe is the limiting speeds, which are (state the figures) - eg. Max Manoeuvring (Va) 87kt. Never Exceed (Vne) 102kt. Flaps set as required. Check the limiting speed(s).</i>	Get the trainee to confirm these speeds, to be sure that they know them. If max manoeuvring speed is not placarded, then use max rough air instead.

	There may be a risk of exceeding the limiting speed in the recovery. If time is short or flaps are not fitted this item should still be included in the briefing
<i>Security. Are there any loose articles? Straps tight?</i>	
<i>Engine - n/a or set as required if motor-glider</i>	
<i>Locality - not over towns or active airfields</i>	Controlled airspace could be added to this as aerobatics are not permitted there
<i>Lookout. Make sure that it is clear, all around and below . . .</i>	All around to take account of traffic which may be below you in the next thirty seconds or so! But use S-turns, don't circle!
<i>. . . make clearing turns to the left and right</i>	The clearing turns must be steep enough to be able to see below, and each through about 180° if other gliders are not to be attracted to the area!
<i>Is it clear on your side?</i>	Ask this in side-by-side two-seaters

Remember that the airmanship points made so far could be completed before take-off, to save time in the air, especially when winching. Height may be qualified by saying, *If we get a launch above (a certain height) we will carry out the exercise.*

STALLING - basic demo continued	
<i>Now I will show you the symptoms of the approaching stall. Follow through on the controls. If the nose is raised even a little above the normal attitude . . . the airspeed reduces, the noise of the airflow changes. It is quieter</i>	Remember that you are trying to represent an inadvertent stall, so raise the nose as little as possible - compatible with causing a stall. Only say that it is quieter if it actually is!
<i>The effect of the ailerons may change . . .</i>	Know your glider. Sometimes the ailerons are more effective, sometimes not. Leave this symptom out if short of time
<i>. . . and the glider buffets</i>	The buffet may have started earlier. In which case, comment as it occurs
<i>In spite of my attempts to hold up the nose, it drops!</i>	This phrase is used to emphasise the point that the glider is not responding to the normal use of the controls
	The order of the phrases <i>In spite of my attempts to hold up the nose</i> and <i>it drops</i> may be reversed if the nose drop takes you by surprise. You should aim to say <i>the nose drops</i> as it does so
<i>To recover, ease forward on the stick . . .</i>	Emphatically! Even though the nose is down
<i>. . . regain normal flying speed and return to the normal gliding attitude</i>	
	Next, so that the nose does not drop, the glider is brought more gradually to the stall

<i>We are now flying with the stick hard against the back stop, and the glider is stalled or 'mushing'. Look at the high rate of sink</i>	Draw the trainee's attention to the variometer when the sink rate is high
	This is no less hazardous a situation than the previous stall
<i>Recover, as before. Ease the stick forward. Regain flying speed. Return to the normal gliding attitude</i>	The good instructor should be able to produce either nose drop, nose failing to drop, or wing drop at will
	Again, approach the stall, pointing out the symptoms
<i>A wing may drop</i>	If a wing has dropped, the recovery technique will still work. Afterwards, level the wings with coordinated aileron and rudder
<i>Move stick centrally forward. Regain flying speed, level the wings and return to the normal flying attitude</i>	It is very common for trainees to try and pick up the wing when the glider is still stalled. Emphasise not picking up the downgoing wing until the glider is unstalled.

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