

Target approaches in hill airflows

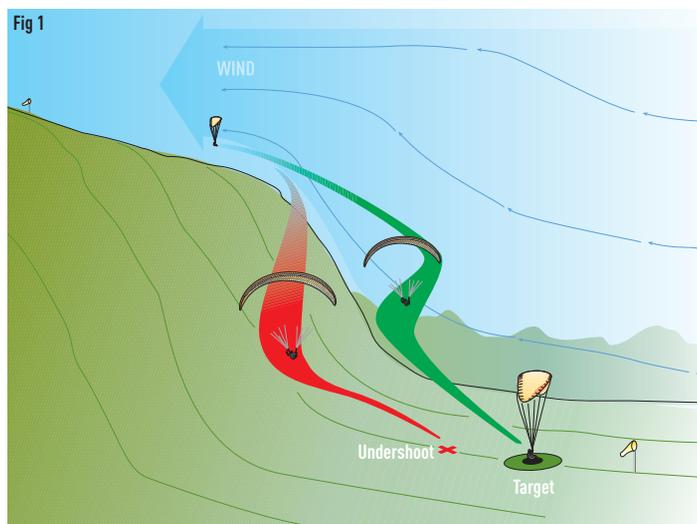
Part 1: Andy Webster looks at how airflows around hills can affect target approaches

One important aspect of accuracy flying is to understand how air is flowing over a hill and how this can affect your flight path to a target. In this series of two articles I will assess four situations where the resulting airflows can scupper accuracy approaches.

Landing on flat ground upwind of a hill

When flying through ridge lift pilots can be given a false sense that they have a lot of glide and will easily make a target in front of a hill. Therefore pilots tend to lose height too close to the hill to line up for a target approach. It is only when a pilot starts to leave the hill and the ridge lift diminishes that a steeper glide angle becomes apparent, eventually causing him or her to fall short of the target.

In this situation it is best to leave the ridge as high and as early as possible, and get into an area slightly downwind of the target out of any ridge lift. At this stage a penetration check can be performed and an assessment of glide angle made, for a final approach in similar airflow to what will be experienced over the target. Carrying out a penetration check to one side of the target allows an easy manoeuvre on to the wind line for a final approach.



The red line in Fig. 1 shows a pilot who has chosen to lose height close to a hill and eventually falls short of the target. The green line shows a pilot getting away from the hill as early as possible to perform a penetration check in a similar air flow to what will be experienced at the target.

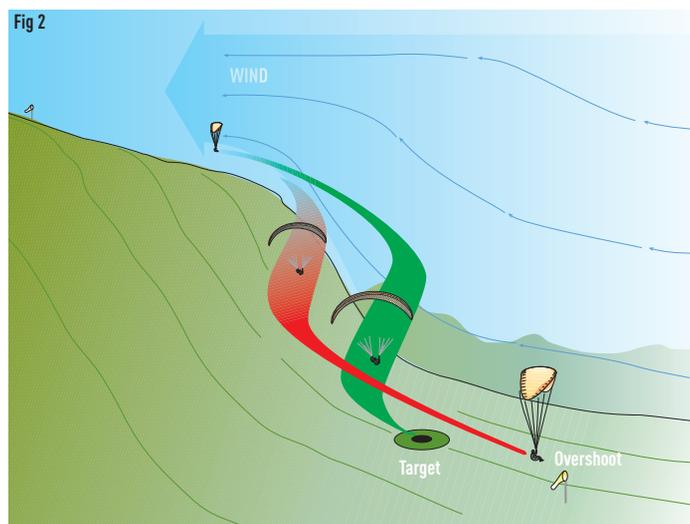
Landing on sloping ground upwind of a hill

In strong winds, say above 8mph, approaching a target on a sloping field is relatively straightforward as pilots have a broad Cone of Possibility* to

fly in and there tends to be little or no wind gradient. However in low winds, say less than 4mph, landing down a shallow slope can be very difficult as pilots are faced not only with a narrow cone of possibility but also ground that is falling away - and some ridge lift.

This all adds up to lots of glide relative to the ground with pilots tending to overshoot the target. I have experienced this many times at the landing zones of the Long Mynd and Gyrn Moelfre flying sites. To get on the correct glide, a set-up on finals a long way back from the target and close to the higher ground is required. This can be deceptive and may feel quite wrong; a pilot may initially feel that they are too cold for a target approach.

There are two ways around this problem. The first is to just accept that you will get close to the ground prior to finals, and with practice you will appreciate the glide you have from that position. The second way is to approach the target off the wind line. By doing this setting up on finals will be higher relative to the ground, which feels more comfortable. If you are still too hot, height can be lost by initially turning towards the downwind side of the target and then turning more on to the wind line to burn off some height.



The red line in Fig. 2 shows a pilot who has turned in too early on to finals by judging height above the ground, only to find lots of glide relative to the ground and overshooting the target. The green line shows a pilot who has opted to approach the target off the wind line. In this case it's important to avoid turning onto finals too close to the ground, to ensure a good approach.

* *The Cone of Possibility is an area of air between a glider's maximum glide (no brakes) and minimum glide (brake position just before stall) that a glider can fly in to reach a target.*

2010 Accuracy Calendar

May

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|---------|--------------------------------------|-------------------------|----------------|---------------------------|
| 22 - 23 | European Classic Accuracy Grand Prix | Persan Beaumont, France | Arthur Bentley | arthur.bentley@virgin.net |
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June

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|-------|--------------------------------|------------------------|--------------|-----------------------------|
| 4 - 7 | Paragliding Accuracy World Cup | Kuala Lumpur, Malaysia | Basir Rahman | www.paraglidingmalaysia.com |
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| 5 - 6 | National Paragliding Accuracy Championships | Shropshire/Wales | Chris Haynes | www.beyondextreme.co.uk |
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July

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| 24 - 31 | FAI European Paragliding Accuracy Champs | Inonu, Turkey | Hakan Cici | www.pgeuropean2010turkiye.com |
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August

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|-------|--------------------------------|---------------------|---------------|------------|
| 6 - 8 | Paragliding Accuracy World Cup | Ravna Gora, Croatia | Zdravko Jakop | www.let.hr |
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|---------|---------------------------------------|----------------|---------------|-----------------------|
| 14 - 15 | Paragliding Accuracy Pre-World Champs | Czech Republic | Kamil Konecny | kamil.konecny@post.cz |
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|---------|--------------------------------|--------------------|--|---------------|
| 20 - 22 | Paragliding Accuracy World Cup | Bosnia-Herzegovina | | www.pgawc.org |
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|---------|-----------------------------------------|--------------------|-----------|-------------------------|
| 28 - 30 | National Classic Accuracy Championships | Warlingham, Surrey | Andy Shaw | andy@greendragons.co.uk |
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September

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|-------|--------------------------------------|----------------------|----------------|---------------------------|
| 4 - 5 | European Classic Accuracy Grand Prix | Neumansdorp, Holland | Arthur Bentley | arthur.bentley@virgin.net |
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October

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|-------|--------------------------------|--------------------|--------------------------|----------------------------------------|
| 1 - 3 | Paragliding Accuracy World Cup | Stubaital, Austria | Alpen Paragliding Center | www.alpen-paragliding-center-stubai.at |
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