

Task setting step by step

by DHV German League

The task committee process

There should be three experts on the task committee to ensure diversity of options, risk analysis and a compromise framework for discussion. The meet director should be available in an advising role but should not be a member of the committee. Together with a Safety Committee, consisting of another two pilots, the Meet Director reviews the task prepared by the Task Committee. They return tips, ideas and concerns to the Task Committee for evaluation. The Task Committee adjusts the task and releases it for another check. This process continues until agreement is reached.



Set the important task parameters:

Minimum Distance

From which shortest distance onwards, differentiated scoring takes place. This distance should correspond to a straight down glide from the highest used take-off point with headwind. Standard is 7 km.

Nominal Distance

Is the average task distance in this area, at this pilot level. If it is too small, there will be too little point difference in the ranking. Devaluation of the task takes place if half of the field flies less than half of the nominal distance. In this way, tasks that are too short and too easy can be devalued in sporting terms.

Nominal Time

The minimum time that should be flown to have a sporting task. It has nothing to do with the 'Nominal Distance'. If the fastest pilot needs less time than the nominal time for a task, the task was too easy and is devaluated sportingly.

FTV

The discard is given in %. In a competition of 4 tasks or more, FTV 25% can result in a complete discard if each task gives 1000 points to the first one. Therefore, the use of FTV with 25% is only recommended for competitions of 5 days or more. From 10 days onwards 20% FTV is recommended. Not using FTV rewards consistent flying and is also an option.

Setting the task:

Define the task length!

tS: Define earliest race airstart due to weather forecast and/or organisational reasons (take-off site, transport).

tE: Define latest landing at goal due to weather forecast and/or organisational reasons (retrieval, evening event, rescue mission (2h) before dark).

vL: Define slowest average speed to reach the goal for the last person you want to finish, depending on weather and pilot level. (between 15 km/h and 40 km/h is typical)

Task time [h] = tE - tS

Task length [km] = (tE - tS) * vL

Define the Race Format!

Race to Goal: If a safe wait for all pilots in the air is possible between Window Open (ground departure possible) and Airstart. Should always be preferred if possible.

Elapsed Time: Waiting until Airstart is not possible in the air.

Race with Gates: Waiting is possible for individuals until the Airstart in the air.

For Elapsed Time and Race with Gates, it is recommended to reduce the Leading Points or replace them with Departure Points.

Define the rough route!

A rough route is defined based on the calculated task distance and the weather forecast. The safety of the pilots is a primary concern. Rough leeward areas, high wind areas, airspaces and non-landable areas should be avoided. Retrieval must be considered. Variety for the pilots and unusual routes, away from standard XC routes, increase the fun factor. Difficulties should only be incorporated between 30% and 60% of the task distance. Attention should be paid to manageability for the slowest pilots. They may fly alone and with less powerful gliders. In order not to diminish the motivation of the weaker ones, difficulties should not be right at the beginning of the task. For the purpose of sportsmanship, difficulties should also not be located shortly before the goal, otherwise the best can no longer compensate a small mistake.

Define all turnpoints!

A variety of options is welcome, but care should be taken to ensure a common race course. If options are so divided that they cannot be changed for the most part of the race, different races will quickly be flown. Ideally, there are many route options that cross each other regularly so that the route options can be changed.

Large radiuses create opportunities. Small radiuses concentrate pilots in one area. This makes it possible to avoid areas in the lee but increases the risk of collision. Also, the route is more fixed and pilots are less able to react to changes in the weather. The more changeable and difficult the weather, the more safe options there should be at the turnpoints for the pilots.

Long glide distances over areas without thermals reduce the sportiness. If these distances cannot be avoided, at least several thermal options at the end of the glide path should be made interesting in order to spread out the field more.

Every turn and route between cylinders must be checked for the following points:

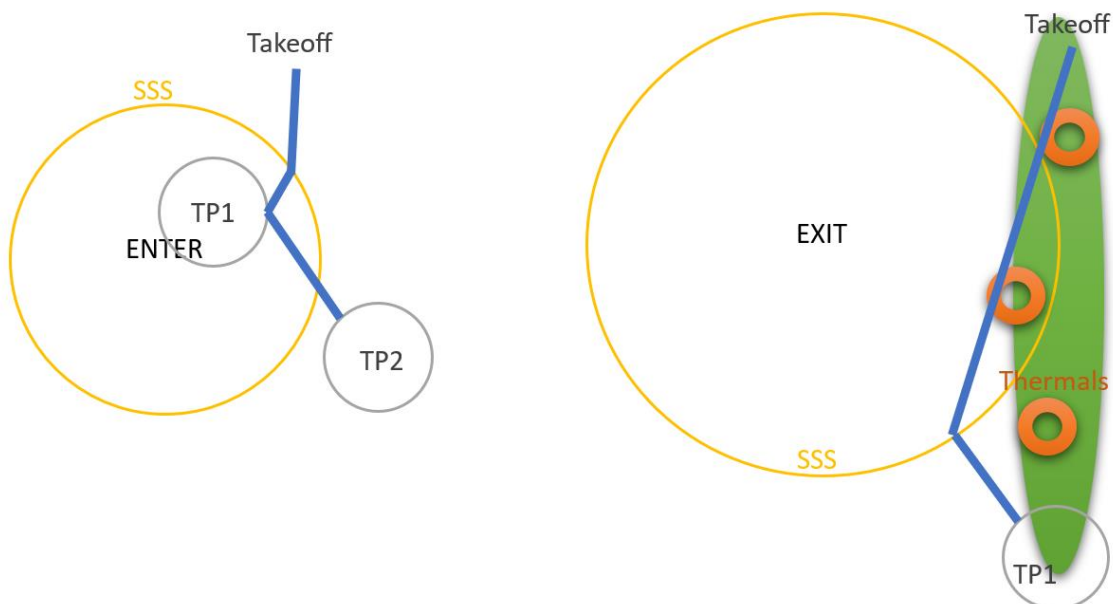
- What happens if the valley wind reaches higher than currently thought?
- What happens if the wind is +/- 30° different than currently expected?
- What happens if the wind is weaker/stronger than expected?
- What time will the pilots be there, what does the position of the sun do?
- What happens to the leeward situation when everything is shaded?
- Is the turnpoint reachable when everything is shaded?
- What happens if the base is lower than currently thought?
- Can the cylinder be reached when the pilots are all just gliding out?
- Are there obstacles on the way there and back (cable cars, power lines, air spaces, lee edges)?

Define the Start of Speed Section!

The SSS should spread the pilots out from the beginning to avoid collisions. This can be achieved by having several thermal sources attractive to wait for the airstart. Care should be taken to ensure that the approach direction to the SSS is very similar for all, or that groups taking the SSS from different directions do not meet. The continuation of the flight to the first turnpoint must be designed in such a way that the pilots do not have to make more than 120° course changes at the cylinder. A turn at the SSS leads to an increased risk of collision.

After the SSS, pilots should have many thermal options so that the group is spread out. It should be possible to skip the first thermals without the risk of bombing out. So some will turn and some will not. A direct approach to a ridge should be avoided so that the concentrated group doesn't have to soar close to the ground at high speed. Flying high over a ridge is fine.

The preferred choice should be an ENTER cylinder so that there are many ideal points for starting. With a classic small EXIT cylinder there is only one ideal point on which the group is concentrated. If you do not choose the same waypoint as for the SSS as the first waypoint, more options can result (Enter example). With an ENTER cylinder, care should be taken that the ideal point for the shortest optimized route is not on the other side of the turnpoint and you could wait there, but you would have to start flying very early and thus the race would already begin on the ground. By using diagonal cylinders, pilots can be attracted to non-thermal areas so that they have a shorter distance but lose more altitude to reach the SSS (Exit example).



Define the End of Speed Section!

The ESS and also the turnpoints, which must be passed in the final approach to the Goal, should never be so high that you have to soar again in the group to reach the turnpoint.

Strong thermal areas should be avoided on the final approach to the ESS, if a high entry is expected. Flying at full speed along the slope should also be avoided. It makes sense to be able to start the final approach very low but fly less fast in order to be able to fly into the goal with a higher required glide ratio.

At the ESS, a turn of almost 180° into the goal should be avoided. Otherwise there will be oncoming traffic.

The route from the ESS to the Goal should be done with a backwind. A tailwind landing in 40 km/h wind is less dangerous than an accelerated glider close to the ground, when pilots have to accelerate to improve the glide ratio in order to still reach the goal in a headwind. In addition, the distance between ESS and Goal should offer many landing options, so that pilots coming in too low have to turn away or take increased risks even though they still have some altitude left.

The distance between ESS and Goal should be kept short, so that in the event of a task stop, pilots who reached the ESS also still receive the Goal. In addition, the task distance loses if the ESS is too far away from the Goal. However, the distance should be chosen so large that the pilots still reach the ESS at least 200m above ground. This way, there is enough remaining altitude for a collapse at full speed.

Define the Goal!

A line is to be preferred, even if no physical line is laid out. The direction from the last turnpoint should be almost parallel to the optimised line so that the goalline is at the correct angle. The goalline/goal cylinder should be free of obstacles (forest, houses, fences, wires, roads) and be landable. If pilots approach from an unexpected direction, it must still be possible to do so safely.

Task setting check list!

Rough route:

_____ km Task length [km] = (tE – tS) * vL

_____ Race Format (**Race**, Elapsed, w. gates)

- No Big lee sides?
- No high wind areas?
- No landing areas?
- No hard retrieve areas?
- Main difficulties only between 30 to 60 % task distance?
- Possible for low class gliders?
- Interesting route (different, nice areas)?

Turnpoint and radius checks (each turnpoint individually and in combination!):

- Are many route options possible that cross each other regularly?
- Radius with a lot of options to take the turnpoint?
- Less long transitions without thermals?
- Many thermal trigger options after long glide transitions?
- What happens if the valley wind reaches higher than currently thought?
- What happens if the wind is +/- 30° different than currently expected?
- What happens if the wind is weaker/stronger than expected?
- What time will the pilots be there, what does the position of the sun do?
- What happens to the leeward situation when everything is shaded?
- Is the turnpoint reachable when everything is shaded?
- What happens if the base is lower than currently thought?
- Can the cylinder be reached when the pilots are all just gliding out?
- Are there obstacles on the way there and back (cable cars, power lines, air spaces, lee edges)?

Start of Speed Section:

- Several thermal trigger attractive for waiting?
- Large area on the cylinder that is similarly good as the optimised point?
- Each approval direction/bearing similar or no meeting of the different groups?
- No ground started race for reaching best point far away from the takeoff?
- No >120° turnaround at the SSS and first turnpoint?
- Many thermal options after SSS?
- No low ridge racing after SSS?

End of Speed Section:

- No soaring to reach a turnpoint on the final glide necessary?
- No strong thermal areas overflying in final glide?
- No low ridge racing in final glide?
- Is starting the final glide too low altitude possible as good air masses are expected (no fullspeed final necessary)?
- No 180° from ESS to goal?
- Backwind to goal?
- Landing options between ESS and goal?
- Short distance between ESS and goal?
- Minimum arrival altitude at ESS 200m?

Goal:

- Is a goal line possible?
- Line in 90° to optimized route?
- No trees, cables, roads, buildings, water areas or fences around?
- Are unexpected arrival directions fine too?