

The Gap Guide

An brief explanation of the Gap Scoring system
Nigel Leigh, Oct 2000

The GAP scoring system has been evolving over the past few years. The system was developed primarily by Gerolf Heinrichs, Angelo Crapazano, and Paul Mollison (their first initials are the systems name), but has had input from many top pilots and meet directors. It is quite a complex system, but has proved to perform very well. The CIVL scoring system committee has been the one of the driving forces behind the development and adoption of a standardized scoring system for meets world wide (CIVL is the international hang gliding and paragliding part of the FAI).

The Basics

Each task is worth a MAXIMUM of 1000pts (and a minimum of 0), split between:

- Distance Points
- Speed Points
- Departure Points (Early bird bonus)
- Arrival Points (Order into goal)

The scoring is based on four values chosen by the organisers:

- "Nominal Distance" - the distance a good task is expected to be
- "Nominal Time" - the time it should take to complete a 'good' task
- "Goal Percentage" - the number of pilots expected in goal
- "Minimum Distance" - the minimum distance you score just for taking off

For a task to be worth a 1000 points

- All the pilots on the hill must launch
- The time taken to complete the task must be at least the "Nominal Time"
- The average distance flown must be greater than half the "Nominal distance" (approx.)

Distance Points are really complicated to calculate (and explain!). The more people you fly over that have landed out the more distance points you will get.

- Half the distance points are related to how **far** you fly
- Half the distance points are related to how **many pilots you fly over** (by more than a few km)

Speed Points are pretty similar to our old scoring system. The more pilots that reach goal, the more speed points there are, and surprise surprise, the fast pilots get more of them.

Departure Points encourage pilots to take off early and get to goal first, instead of starting late and following other pilots through the task. Note that you do need to reach goal to get these points though!

Arrival Points are awarded on the order of arrival in the goal field. Its doesn't matter when you set off and when you arrive, how long you took, whether you arrive 5 seconds or 15 minutes ahead of the next pilot. Arrival Points are awarded on the basis of first, second, third (etc) into the goal.

The winner of a '1000 point' task should expect around 900-950 points. To get a thousand points the winning pilot needs to be both the first pilot to start (of those that get to goal), and also the first to reach goal.

Task Validity

Is GAP's estimate of whether the task was a good test of pilot skill. This value is between 0 and 1, and is calculated from a combination of the following factors:

Launch Validity is 0 if nobody launches, and 1 if everybody launches. If half launch then its 0.5, but its not actually a straight line, but rather an 'S' curve (e.g. if 20% launch, its 0.1; if 80% launch its 0.9).

Distance Validity depends on how far the whole field flies. Ideally everyone will fly further than the 'Minimum distance' and atleast 'Goal Percentage' pilots will fly further than 'Nominal Distance'. If the field is evenly distributed between these two points, then the Distance Validity is 1. If pilots tend to fall short, then the validity decreases. This is a very good system, however the three parameters must be set correctly!

Time Validity if a task is too quick to complete, then it wasn't such a good test of pilot skill. It is approximately the Winners time divided by the 'Nominal Time' (and limited to 1).

Subtle points

The system does not give big spreads between pilots that land in a group, with only a small distance between them. This is designed to avoid pilots trying to fly 100 meters past another into dangerous landing areas, and takes into account that the same difficult area on the task brought the pilots down.

Conversely, If you make it past the glide distance from the difficult area, you will get a larger number of points per kilometer flown. The system does this automatically by calculating the percentage of pilots that went down in each area.

All pilots landing inside the minimum distance will be given points for the minimum distance. This to avoid having pilots trying to out glide each other past the bomb out field. This is much safer, and avoids large numbers of pilots passing up the primary landing field and landing in alternate, possibly sensitive fields near the launch.

The GAP system rewards pilots who lead the task, and take the risks of being out front, rather than those that launch late and gaggle fly to a fast time. This is done with the bonuses for launching early, and for arriving at goal early.

When considering how many pilots launched, it is the number on pilots on the hill that day NOT the number of pilots in the competition that counts.

If nearly all the pilots get to goal there will be nearly 600 speeds points against 200 distance points. (ie pilots who don't make goal when 'every one else does' pay a huge penalty)

If you start after one third of the nominal time after the first pilot that leaves who gets to goal you get no departure points.

If you fly half the course but are the first person to go down you only get a quarter of the distance points

If you fly half the course and every body who doesn't make goal has landed before you, you get 75% of the distance points.