PROPOSAL TO IGC PLENARY 2018

Year 1*

From USA

PROPOSAL

to change the calculation of speed points and distance points.

*SUMMARY

This proposal was submitted and approved as a Year 1 proposal in 2017. It is submitted again as a Year 1 proposal this year, because:

1. Last year's proposal made the case that the current scoring system has several notable disadvantages, including:

    - Promotion of gaggling
    - Promotion of long delays before starting
    - Suppression of bold tactics
    - Predictable results
    - Failure to recognize outstanding achievement
    - Reversal of incentives from what is logical

    The Plenary accepted these facts by a vote with zero opposed.

2. Last year's proposal introduced an alternative scoring philosophy: to award speed points OR distance points, rather than speed points AND distance points, to each competitor.

    While this new philosophy was generally accepted, two important questions were raised at the Plenary last year.

    The first was the choice of 750 as maximum distance points. This choice is defended in the current proposal.

    The second question was on the topic of the lone finisher. It was pointed out that under certain circumstances, a single day with a lone finisher could determine the outcome of a competition. This objection is addressed in the current proposal.

    Because this year's proposal contains ideas that have not been presented before, we do not feel that "Year 2 status" of this proposal is justified.

Our intention is to present a Year 2 proposal in 2019 that will compare the application of the old and new scoring systems to historical competitions, and it will also contain the specific changes to Annex A.

This year's proposal is divided into 7 sections.

1.   Summary of the proposed new scoring system

The proposal is to give each pilot distance points or speed points, but not both. There are two steps:

1. Calculate each pilot's distance points and speed points as follows:

$$\text{Distance points} = 750 \text{ x } \frac{\text{Competitor's Credited Distance}}{\text{Best Distance}}$$

$$\text{Speed points} = 1000 \text{ x } \frac{\text{Competitor's Credited Speed}}{\text{Best Speed}}$$

2. Give the pilot a score equal to his distance points or his speed points, whichever is greater.

We justify the choice of 750 for maximum speed points as follows:

In the current system, the boundary between speed points and distance points depends on the number of outlandings. This creates the undesirable effects on tactics and the nonsensical reverse incentives that were described in last year's proposal.

In addition to those undesirable effects, the doubling of the slope of the points/performance curve on a good day (from 10 points per percent of the winner's speed to 20 points per percent) creates a doubling of point spreads that has <u>no effect</u> on the placings. The pilots would be ranked the same if the points/performance curve had a constant slope from the bottom to the top of the scoresheet. In effect, finishers receive 666 distance points and share 333 speed points. On days with outlandings, the number of distance points can be much higher than 666.

Thus, in the current system, if we ignore the artificial doubling of speed points, pilots get something between 666 and 1000 "effective distance points," depending on the difficulty of the day.

So, in a system that uses a points-performance curve of constant slope, a maximum value of 750 distance points is not out of line with the current system.

2.   Review of the advantages of the new system

The advantages of the new system are described in last year's proposal. Principally, they are due to the fact that the pilot's results do not depend on the average performance of the entire group, and that taking a sporting risk can be judged based on observable things (weather, placings) and not on unknowable things (number of outlandings, etc.)

The advantages can be summarized:

- Reduced reward for staying with the gaggle
- Increased reward for finishing
- Removal of nonsensical incentives

3.   Defending the large reward for finishers

The new system rewards finishers. It was suggested last year that the reward is too great, and the example given was the lone pilot who gets home when everyone else lands halfway down the course.

The following table compares the two systems:

Table 1				
	Proposed Rules		**Current Rules**	
	Pilot	Others	Pilot	Others
Pilot only finisher, others land halfway	1000	375	1000	500
Others finish, pilot lands halfway	375	1000	167	1000

In both systems, it is very bad news to land far short of the goal. Note that the proposed rules are symmetrical, while the current rules are punitive for the unsuccessful risk taker.

The proposed rules reward the lone finisher, who probably started early (not with the gaggle), deviated more than the gaggle, and accepted weaker lift at the end of the flight (instead of sticking with the gaggle). The new system rewards this "lone wolf" behavior over the herd mentality, and that is the point of this proposal. We want to reward initiative, reading the weather, and flying solo, over playing the tactical game.

Furthermore, the reward must be substantial. The lone wolf will fail four out of five times, with the gaggle catching him. We should expect lone wolves to appear unexpectedly and not to fly with the pack. So for the overall strategy of lone wolves to pay, it must pay well when it works.

The more drastic difference between the two systems shows up when the landouts make it much farther than halfway. The extreme case is when the landouts occur near the finish line:

Table 2				
	Proposed Rules		**Current Rules**	
	Pilot	Others	Pilot	Others
Pilot only finisher, others 1 m short	1000	749	1000	999
Others finish, Pilot is 1 m short	749	1000	332	1000

Table 2 illustrates one of the reasons it is so important to stick with the gaggle under the current rules. It also shows that crossing the finish line can sometimes not matter at all.

Under the proposed rules, the outcome is again symmetric, as it should be. However, the case can be made that the lone finisher does not deserve such a large point spread when everyone else was so close.

The lone finisher's reward should be devalued.

4.   Devaluation

In last year's proposal, it was stated that devaluation was outside the scope of the proposal. This year we propose to handle devaluation in two steps, the second one of which is new.

The first step is the same as in the current system: the winner must fly a class-dependent minimum distance, and be on course for at least three hours. Otherwise, the day will be devalued; the point spreads will be reduced; and the reward for finishing will be less. This takes care of the problem of luck on a too-short task.

Devaluation is expressed as a factor:

$$F_d = \min[\ \max(D_h/250 \text{ km}, 1),\ \max(T_o/3 \text{ hours}, 1)]$$

We propose to drop the F_{cr} devaluation for two reasons – a) we don't want to count outlandings any more, for reasons already given, and b) the day is automatically devalued to 750 points when nobody gets home.

The second step is to compress the scores on days when the distribution of scores is far from normal, due to luck. This is a new idea.

5.   Compression of scores

On 1000-point days (days on which the winner flew far enough and long enough), there still may be a reason to devalue the day. The example often cited is WGC2014 05.08.2014 in the Standard Class. On this day the winner was the only finisher and the only pilot to exceed 250 km. The difference between his score and the average score was high, and it would have been even higher in the proposed new system. Whether this result was due to luck or skill is debatable, but in any event, it is a rare occurrence that can spoil a contest.

Compressing the scores, independent of times and distances, is another way to devalue the day. On days when the winner's score is far above the median score, we conclude that too much luck was involved, and we perform the compression. We do this by scaling the scores upwards until the winner's score exceeds the median score by 200 points.

Details:

Score = F_d x max(750 x Distance/Max distance, 1000 x Speed/Max speed)

if median score < 800, then,

Adjusted score = 1000 + 200/(1000-median score) x (score - 1000).

This formula reduces the point spreads when there is an unusually large discrepancy between the top pilot(s) and the rest of the pack.

It may seem strange to devalue a day by adjusting scores upwards, but compressing the scores devalues the day, regardless of whether we adjust the scores up or down.

6.   Summary of this Year 1 proposal

The proposal, finally complete, is:

- Give the pilot speed points or distance points, but not both,
- Devalue according to the minimum distances and 3 hours,
- Eliminate the Fcr devaluation factor,
- Devalue further if the distribution of scores is extreme.

7.   Reasons to support the proposal

Please see last year's proposal!