INTERNATIONAL GLIDING COMMISSION (IGC) - PROPOSAL FORM

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Date: 21 December 2020

Version: 2

Title: Energy Control at the Start

Proposal submitted by: FRANCE

This proposal is a:

Year-1		Year-2	✗

Mark the boxes with ✗ as appropriate

Type the text changes in the space below *(show deletions as ~~strike-through~~ and additions as* **bold underlined***):*

1. Delete SC3A 7.4.5b and renumber paragraphs
2. Insert new rule 7.4.6 (see below)
3. Renumber existing rule 7.4.6 as 7.4.7
4. Add new penalties to SC3A 8.7 (see below)
5. Add a Local Procedure (see below)

Type the reasons in the space below:

As discussed in the Year 1 proposal, there was an unsafe situation near the start at EGC 2019 (Poland). The situation was avoided at EGC 2019 (Slovakia) and (for several years) at Hahnweide by imposing a maximum start altitude and maximum start groundspeed.

This is a proposal to control the total energy at the Start in World and Continental Championships, for safety reasons.

The motivation for this proposal is to relieve pressure on the competition pilots during the pre-start phase, when they try to be best positioned for the Start (highest, fastest). That leads to long periods of intense stress in the cockpit, circling together at the top of blue thermals, or right below cloud base. During this pre-start phase there is considerable potential for dangerous or hazardous flying.

This proposal imposes both an altitude limit and a speed limit:

a. The altitude limit will force pilots to descend from the top of the thermal/cloud base to make a Start, thus removing the need to be the highest in the thermal.

b. The speed limit will remove high speed diving to reach the altitude limit before crossing the Start Line.

To reduce pressure on pilots and consequently their workload, this proposal creates graduated penalties for exceeding the maximum altitude or speed at the Start:

1. If the excess height above the altitude limit is 50 metres or less, the pilot may avoid a penalty by finishing above the Minimum Finish Altitude by at least the same margin. Otherwise the penalty is 0.5 points per metre.

2. If the excess height above the altitude limit is between 51 and 100 metres, the penalty is 25 points plus 1 point per metre, regardless of finish altitude.

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3. More than 100 metres above the altitude limit: no valid start.

4. From 0 to 20 kph above the groundspeed limit: 1 point per kph

5. From 21 to 50 kph above the groundspeed limit: 20 points plus 5 times the excess kph over 20 kph.

6. More than 50 kph above the groundspeed limit: no valid start

This is Version 2 of the proposal.

We thank the delegates for their response to our original proposal and present our replies to selected comments:

1. The procedure should be optional and/or tested before being tried at a WGC.

   Combined height and speed limits have been tested in large competitions in Europe (Hahnweide, German Nationals, French Nationals, as well as at the FAI Sailplane Grand Prix. At all of these competitions, the procedure was motivated by safety considerations. Because of this, it should not be optional.

2. This energy management system increases the workload when passing the start line.

   The graduated penalties (and the possibility of avoiding a penalty by finishing higher) address this comment. The workload is less when the consequence of getting it wrong by a small amount is not severe.

3. Multiple comments were received about how to communicate altitude and speed limits to the Teams.

   The procedure for communicating altitude limits have been moved to the Local Procedures to accommodate the local organisation environment. The communication of the speed limit has been moved to the Task Sheet, only.

4. Miscellaneous comments: different penalty scheme; different method of calculating groundspeed; prohibited airspace near the Start Line, deletion of “at least 170 kph” from the rule; deletion of “integral multiples” from the rule.

   Whilst recognising the value of these comments we do not believe these comments/suggestions will improve the procedure proposed.

Provide supporting data or reference to external documents for the proposed technical amendments in the space below:

Year 1 proposal: https://is.gd/bam2J9
2019 Hahnweide Local Procedures: https://is.gd/idos6T
Annex A 2020: https://www.fai.org/sites/default/files/sc3a_2020.pdf

The proposal should be applicable from: 1 October 2021

Sporting Code Volume: SC3A

Version/Edition: 2021

Heading of section: Energy control at the Start

Number & heading of the paragraph: 7.4.6

Page number(s) if appropriate: 29

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Proposal

7.4.6 **Energy Control at the Start** The total energy of the glider as it crosses the Start Line or Ring will be controlled as follows:

a. Maximum Start Altitude The Organisers shall determine a Maximum Start Altitude (MSA) for each class. An announcement of the Maximum Start Altitude MSL shall be included with each radio announcement concerning the opening of the Start for that class.

The maximum start altitude should normally be at least 100 m below cloudbase or top of lift and chosen to allow a fair start for all competitors. The maximum start altitude should be an integral multiple of 100 in the altitude units used.

The procedures for communicating the Maximum Start Altitude to the Teams must be specified in the Local Procedures.

The MSA may be set at Briefing, on the grid before the launch begins, or before the first announcement of the opening of the Start. The Local Procedures will explain when the MSA will be announced and when it may be updated.

A Start higher than the Maximum Start Altitude may be penalized. The excess height is the difference between the actual start altitude and the MSA.

i. If the competitor is scored with distance points only, then there will be no start altitude penalty.

ii. If the excess height is 50 metres or less, and the finish altitude exceeds the Minimum Finish Altitude by at least the excess height, there will be no start altitude penalty.

iii. If the excess height is 50 metres or less, and the finish altitude is below the Minimum Finish Altitude plus the excess height, then a start altitude penalty applies, based on the shortfall or the excess height, whichever is lesser.

The shortfall is the Minimum Finish Altitude plus the excess height minus the actual finish altitude. Paragraph (i) supersedes this paragraph.

iv. If the excess height is greater than 50 metres, a start height penalty applies, regardless of finish height.

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b. Maximum Start Groundspeed For each class, the Maximum Start Groundspeed must be announced at Briefing and included on the Task Sheet.

The glider's groundspeed at the start will be determined by the straight line distance between the pair of fixes nearest to eight seconds before and after the Start, divided by the elapsed time between those fixes. A Start at a groundspeed greater than the Maximum Start Groundspeed will be penalized.

The Maximum Start Groundspeed should be an integral multiple of 10 in the speed units used. The Maximum Start Groundspeed cannot be changed after Briefing without notification of the Team Captains. The Organisers should choose a maximum groundspeed taking into account the wind component on the first leg of the Task. The "no wind" value of the Maximum Start Groundspeed should be at least 170 kph (or the equivalent in the speed units used).

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8.7 LIST OF APPROVED PENALTIES (EXCERPT)

Type of Offence	First Offence	Subsequent Offence	Max Penalty
Incorrect Start			
Between 0 and 0.50 Km from the start line or Ring	50 pts	50pts	50pts
More than 0.50 km from the start line or Ring	No valid start	No valid start	No valid start
From 0 to 50m excess height with shortfall (m)	0.5 pt/m	0.5 pt/m	0.5 pt/m
From 51 to 100m above max start altitude	25 + 1 pt/m	25 + 1 pt/m	25 + 1 pt/m
More than 100m above max start altitude	No valid start	No valid start	No valid start
From 0 to 20 kph above max start groundspeed	1 pt/kph	1 pt/kph	1 pt/kph
From 21 to 50 kph above max start groundspeed	20 + 5*(excess kph over 20) pts	20 + 5*(excess kph over 20) pts	20 + 5*(excess kph over 20) pts
More than 50 kph above max start groundspeed	No valid start	No valid start	No valid start

PART 11 LOCAL PROCEDURES (EXCERPT)

F <u>COMPETITION PROCEDURES</u>

7.4.6 a Procedures for communicating Maximum Start Altitude

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Approved Amendment (if applicable):

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Final Wording of Proposal:

Overall Votes Cast: ☐ For: ☐ Against: ☐ Abstain: ☐

ADOPTED: Yes: ☐ No: ☐

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