INTERNATIONAL GLIDING COMMISSION (IGC) - PROPOSAL FORM

Submit the proposal via email to IGC Secretary.

Date: *10th January 2024*

Proposal submitted by: *Aero Club of Poland*

This proposal is a:

Year-1		Year-2	✗	Other	

mark the boxes with ✗ as appropriate

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

The following are rules implementing idea accepted as a Year 1 proposal and are introducing Cylinder Start and Maximum Loss of Height concepts to Annex A to Sporting Code Section 3 – Gliding. In order to preserve existing features like Start Line and introducing new ones in a clear and understandable way at the same time restructuring of whole sections of Annex A is required. Therefore, for sake of clarity of the proposal the following provisions aren't structured (i.e. don't have numbers of paragraphs and subparagraphs). Final structure of the amended sections of Annex A shall be developed by Annex A Committee and as a reference appendix to this proposal contains proposal of such final structure which was consulted with Annex A Committee.

Definitions:

Start Cylinder - a cylinder, consisting of all points within defined radius, which shouldn't be less than 10km.

Credited Start Point - the fix inside the Start Cylinder chosen by a pilot and marked by activating PEV. Individual marking distance for each competitor is applied even in Racing Task.

Start Time - the time of the fix marked by PEV. The fix should be inside the Start Cylinder.

PEV Interval Time - minimum time interval between two consecutive PEV activation inside Star Cylinder.

Maximum Loss of Height - the maximum altitude difference between Start and Finish altitude of the glider allowed for the task.

Start Altitude - the altitude recorded at the Start Time.

Finish Altitude - the altitude recorded at the Finish Time.

Ground Speed at the Start - The glider's ground speed at the start will be determined by the straight line distance between the PEV fix and the nearest fix to 8 seconds before the PEV fix, divided by the elapsed time between those fixes.

Validity of Start.

A Start is valid if the flight log shows a valid fix inside the Start Cylinder, after the opening of the Start. To make the Start, competitor has to mark a fix by activation of PEV function. Any activation of PEV inside the Start Cylinder makes previous PEV invalid.

Minimum PEV Interval Time between two consecutive starts is 10 min.

Valid Start before the penalty-free interval will be penalized.

Last fix inside Start Cylinder can be considered as a valid Start with penalties (example: when no PEV has been recorded or in case secondary GNSS logger flight log has to be used).

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Multiple PEVs recorded within 30 seconds will be treated as a single PEV at the time of the first PEV of the cluster.

Note: unlike the Line Start in which the best scoring start is used, the Cylinder Start requires the last start to be used. Reason is, to avoid tactical multiple PEV Starts jugglery and choosing best score after the flight is finished.

Maximum Loss of Height:

The Organizer specifies in the Task Sheet the Maximum Loss of Height (MLH) between the Start and the Finish and a ground speed limit at the Start. A Start at a ground speed greater than the ground speed limit will be penalized.

Loss of Height is the difference between Start Altitude and Finish Altitude. If the actual loss of height of the glider exceeds Maximum Loss of Height set for the task the Finish is valid, but a penalty shall be applied. The sum of the penalty points so applied may not be greater than the number of speed points achieved by the competitor in the given task.

Maximum Loss of Height should be adjusted to the expected cloud base/thermal height at task Start Opening time.

Distance calculation:

The Marking Distance is calculated from Credited Start Point.

Summary of the penalties for Cylinder Start:

TYPE OF OFFENCE	**FIRST OFFENCE**	**SUBSEQUENT**	**MAX PENALTY**
Incorrect Start			
No fix inside Start Cylinder	No valid start	No valid start	No valid start
From 0 to 50 kph above max start groundspeed at Start	2 pt/kph	2 pt/kph	2 pt/kph
More than 50 kph above max start groundspeed for at Start	100 pts	100 pts	100 pts
No PEV or start outside PEV interval: Competitor task time plus (note 1)	5 min	10 min	10 min
Incorrect Finish			
Maximum Loss of Height greater than specified. *not exceeding achieved speed points	1 pt/3m	1 pt/3m	15% of points achieved by the winner of the day.

Note 1: If PEV will be recorded before Minimum PEV Interval Time elapses or will not be recorded, then the penalty will be an additional time added to the time on course: first offense - plus 5 minutes, subsequent - plus 10 minutes.

Note 2 : A pilot finishing below the Minimum Finish Height may receive two finish altitude penalties, one for being too low (1pt per meter, up to loss of all speed points), and another for exceeding the Maximum Loss of Height (1pt/3m, up to loss of all speed points or 15% of winner's score, whichever is less).

The sum of those penalties cannot exceed the lowest of achieved speed points or 15% of winner's score.

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Type the reasons in the space below:

The proposal to introduce a starting cylinder along with a maximum height loss is an attempt to create safety-focused solutions. Current rules do not prioritize safety; on the contrary, they promote risky behaviours. An example is the current Line Start, where it pays off to be as high as possible at the moment of task start and as low as possible on the finish ring. If a pilot tries to be safer by maintaining a greater distance from clouds or approaching the finish line at a higher altitude, they automatically lose out. Assuming that they will descend 100m below the track at start and arrive at the finish line 100m higher than they could and result in a loss of around 15 points - multiplied by 7 tasks, totalling about 100 points at the end of the event. The current altitude limit at the start doesn't improve much; while pilots avoid flying in clouds, all gliders are at the same maximum altitude when they depart on the task. The minimum altitude limit at the finish means that pilots focus on the altimeter readings rather than external observations.

In the case of the Starting Cylinder, the goal is to spread out gliders over a large area by allowing start from any point in a cylindrical airspace of ample volume. The Maximum Height Loss gives pilots the option to choose a different start altitude for each. This means that gliders are separated both laterally and vertically. One never knows if another pilot has already started the task, reducing leeching and gaggle forming risk. An additional advantage is if someone wants to arrive at the airfield at a higher, safer altitude, they won't be penalized for it. With this method, it doesn't matter for sporting result whether a pilot departs 100m higher or lower on the task.

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

Preserving the existing Line Start required rearranging the paragraphs of SC3A 7.4. The Annex A Committee cooperated with this rearrangement. The proposed new paragraph structure is attached as an appendix to this proposal.

The proposal should be applicable from: October 2024

Sporting Code Volume: Annex A to Section 3 – Gliding

Version/Edition: 2023

Heading of section: PART 7 COMPETITION PROCEDURES, PART 8 SCORING AND PENALTIES

Number & heading of the paragraph:

7.4 STARTING, 8.7 LIST OF APPROVED PENALTIES

Page number(s) if appropriate:

See the next page!

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7.4 STARTING

7.4.1 **Types of Start** There are two types of Start, the Line Start, and the Cylinder Start. The type of Start to be used each day shall be announced at Briefing and printed on the Task Sheet.

7.4.2 **Common Procedures** There are common procedures used by both types of Start.

7.4.2.1 Opening and Closing of the Start The start shall normally be opened 30 minutes after a launch has been offered to the last sailplane in the class that is currently being launched. This time period may be reduced, if in the judgment of the Director, an opportunity for a fair Start is available to all pilots in the class. The minimum time period is 20 minutes.

The factors contributing to the Director's decision include the soaring conditions, the size of the class, the distance from the release area to the Start Point, and the efficiency of the launch operation.

a. The time of opening of the Start shall be specified to a whole minute, and announced by radio. The radio procedures for announcing the Start are in Appendix 4. At the announced opening time, the Start Gate will open.

If a delay is needed, the new opening time should be announced at least 3 minutes before the superseded opening time. An interval of at least 15 minutes between the announcement of the new opening time and the and the new opening time is recommended.

b. The Start Gate shall normally be closed at the end of legal daylight, or when all competitors are accounted for. Conditions for closing the start at other times must be described in detail in the Local Procedures. After the closing of the start, no starts will be valid.

7.4.2.2 Pre-start procedure A pre-start altitude (MSL) may be imposed. After the start gate is opened and before making a valid start, the pilot must ensure at least one fix below the specified pre-start altitude. Failure to do so will be penalized. The Local Procedures will state whether this procedure will be used.

Note that this is a pre-start procedure, not a start procedure. This procedure places no restrictions on the start altitude.

7.4.3 **The Line Start** When the Line Start is in use, the glider must cross a finite length line in the direction of the first Turn Point or Assigned Area.

7.4.3.1 Definitions

Start Line — A line, of defined length, perpendicular to the course to the first Turn Point, or the center of first Assigned Area.

Start Point — the midpoint of the Start Line.

Start Time — the time the competitor crosses the Start Line, interpolated to the nearest second.

7.4.3.2 Start Options On each competition day, one of the following Start Options must

be used. The option chosen must be specified on the Task Sheet, with relevant parameters, if any.

a. The Normal Start No parameters.

b. The PEV Start Two parameters must be published on the Task Sheet: the PEV Wait Time and the PEV Start Window. The value for each parameter must be 5, 6, 7, 8, 9, or 10 minutes.

7.4.3.3 Validity of Starts

a. A Start is valid if the Flight Log shows that the glider crossed the Start Line in the direction specified on the task sheet, after the opening of the Start.

b. If there is no proof that the competitor had a valid start after the opening of the Start in his class, the start may nevertheless be validated if the Flight Log shows a valid fix within 500 metres of the Start Line after the opening of the Start. The time of crossing shall be taken from that fix, but a penalty that depends on the distance from that fix to the Start Line shall be applied. If no such event is detected the competitor shall be deemed not to have a valid start.

7.4.3.4 PEV Start Procedures

When the PEV Start Option is in use, pilots must record a Pilot Event in the Primary Flight Recorder ("press the PEV") before crossing the Start Line. Pressing the PEV creates an interval in which a penalty-free start may be made. The interval begins PEV Wait Time minutes after pressing PEV, and it ends PEV Start Window minutes after it begins.

PEV may be pressed at any time, up to a total of three times per launch (the Scorer will ignore PEVs after the third one). Each press of PEV closes the previous Start window and restarts the Wait Time timer. Pressing PEV has no effect on previous starts, which retain their validity and any associated penalties.

For the purpose of the "three times per launch" rule, a re-start of a motorglider MoP (if allowed) counts as a new launch.

Multiple PEVs recorded within 30 seconds will be treated as a single PEV at the time of the first PEV of the cluster.

Failure to record a PEV, or a valid start outside the penalty-free interval will be penalized.

Notes: Only the Primary Flight Recorder may be used for PEV. The validity of a start is defined in 7.4.4 and is not affected by this section. Pressing PEV before the opening of the start gate is allowed.

7.4.3.5 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 will be penalized.

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).

7.4.3.5 Multiple Starts In the case of multiple valid Starts, the competitor has the right to be scored using the Start that yields the best score. A Start made after a properly completed Task will not be considered valid.

A competitor may claim only the first task completion each day.

7.4.4 **The Cylinder Start** When the Cylinder Start is in use, the pilot makes a start by pressing PEV while inside a defined cylinder. The time and place of the start is normally taken as the time and place the pilot pressed PEV. Also, when the Cylinder Start is in use, the minimum penalty-free finish altitude is determined by the start altitude.

7.4.4.1 Definitions

(For the definitions of Start Cylinder, Start Time, Start Altitude, Maximum Loss of Height, etc., see the main body of the Proposal)

7.4.4.2 Normal Cylinder Start Procedures

On each competition day on which the Cylinder Start is in use, the Maximum Loss of Height will be announced at Briefing and printed on the Task Sheet.

(See the main body of the Proposal for further description of the normal procedures)

7.4.4.3 Validity of Starts

(See the main body of the Proposal)

7.4.4.4 Maximum Loss of Height

(See the main body of the Proposal for a description of the determination of the minimum penalty-free finish height.)

7.4.4.5 Energy Control at the Start

(See the main body of the Proposal)

7.4.4.6 Marking Distance

(See the main body of the Proposal)

7.4.4.7 Finish Criteria

(See the main body of the proposal for a description of the consequences of exceeding the Maximum Loss of Height or finishing below the minimum finish height).

Approved Amendment (if applicable):

Final Wording of Proposal:

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

ADOPTED: Yes: ☐ No: ☐