Proposal for
Sporting Code Section 7D
- Records and Badges –
Edition 2018

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2018.12.03

5.2.5 Validation Using Start, Turn or Finish Cylinders (page 22)

I. Quotation of the old wording

"... 5.2.5 Validation Using Start, Turn or Finish Cylinders
The record or badge distance shall be calculated as the minimum distance it is possible to fly by entering the cylinder observation zones. See 1.5.13.3.1. The minimum distance is defined as the straight-line distance between each pair of turn points, ***less 400m for each observation zone radius.*** ..."

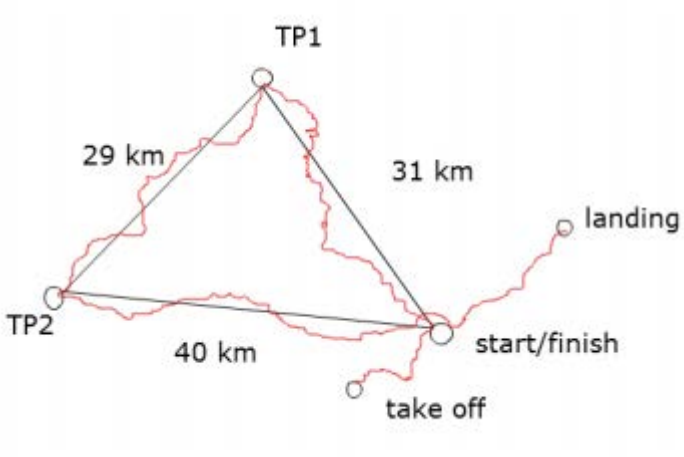
II. My explanation of the problem and justification of the proposed solution

This wording is not clear how to interpret it. Two interpretations see below

A, method: "... **less 400m for each observation zone radius**." this applies to the whole task
B, method: "... **less 400m for each observation zone radius**." this applies to pair of turn points

Turn point correction should be understood like method B. ("The record or badge distance will be the minimum distance it is possible to fly by entering the specified observation zones")

Example with this declared FAI triangle:



A, method:
"... **less 400m for each observation zone radius**." this applies to the whole task
31,0 + 29,0 **+** 40,0 - (3*0,4) = **98,8 km**

B, method:
"... **less 400m for each observation zone radius**." this applies to pair of turn points
31,0 - (2*0,4) + 29,0 - (2*0,4) **+** 40,0 - (2*0,4) = **97,6 km**

III. The new version of the wording to be put to Section 7D 5.2.5

5.2.5 Validation Using Start, Turn or Finish Cylinders
The record or badge distance shall be calculated as the minimum distance it is possible to fly by entering the cylinder observation zones. See 1.5.13.3.1. The minimum distance is defined as the straight-line distance between each pair of turn points, decreased by 800 meters for each **turn point** and 400 meters for each **Start/Finish point**.

1.5.5.9 Claims and records publication (page: 12)

I. Quotation of the old wording

1.5.1 Types of flight
- **1.5.1.1** Distance flight:
  ….
- **1.5.1.2** Goal flight:
  …
- **1.5.1.3** Duration flight:
  …
- **1.5.1.4** Height flight:
  …
- **1.5.1.5** Altitude flight:
  …
- **1.5.1.6** Gain of height flight:
  …
- **1.5.1.7** Speed flight:
  …
- **1.5.1.8** Free Distance Flight
  - ….
- **1.5.1.9** Claims and records publication

  3D track-logs in IGC format must be submitted with all claims. They will be published on the FAI/CIVL website along with the claims. All records will be published along with their track-logs.

II. My explanation of the problem and justification of the proposed solution

" 1.5.1.1 Claims and records publication" paragraph is not part of the "type of flight" section. Put this section under **1.5.14**

1.5.7.2 Take-off place: (page: 13)

I. Quotation of the old wording

1.5.7.2 Take-off place:

The point from which the take-off is made. If operating from an airfield, the point may be taken as the **centr** of the airfield.

II. New version of the wording:

1.5.7.2 Take-off place:

The point from which the take-off is made. If operating from an airfield, the point may be taken as the **center** of the airfield.

III. My explanation of the problem and justification of the proposed solution

mistype

1.5.5.7 Speed flight (page: 12)

I. Quotation of the old wording

Speed flight:
A flight timed for speed between a start point and a finish point, possibly around one or more turn points.

II. New version of the wording:

Speed flight:
A flight timed for speed between a start point and a finish point, possibly around one or more turn points, specified in writing before take-off.

III. My explanation of the problem and justification of the proposed solution

For example, "Free distance" also has "start point" and "finish point", but these points haven't specified in writing before take-off. (see: 1.5.5.8.)

1.5.13. Observation Zone (page: 14)

I. Quotation of the old wording

1.5.13 Observation Zone
The zone which it must be proved that the glider entered in order to validate a start point, turn point or finish point. These may be either the FAI Observation Zones (FAI sectors) specified in the General Section or:

1.5.13.1 Turn Point Cylinder
A cylinder of 400m radius around a set of GPS co-ordinates.

1.5.13.2 Start or Finish Cylinder
A cylinder of 400m radius around a set of GPS co-ordinates. Larger radii might be used in competitions; see Section 7A – Class O.

1.5.13.3 Observation Zones
If the flight performance is validated by GPS, a cylindrical observation zone shall be used. If an approved IGC flight data recorder is used, a cylindrical observation zone is preferred, but an FAI sector, as defined in Section 3 (Gliders) of the Sporting Code, as reproduced below in 1.5.13.3.3, may be used.

1.5.13.3.1 Cylindrical observation zones
A turn point cylinder may be specified by GPS coordinates and radius. The record or badge distance will be the minimum distance it is possible to fly by entering the specified observation zones. For badges and records, the radius of the turn point shall be 400m equally all around the turn point coordinates.

1.5.13.3.2 FAI sector observation zones
A sector observation zone is the airspace above a 90-degree sector of a cylinder with its apex at the waypoint. This sector is:

a) For a turn point: symmetrical to and remote from the bisector of the inbound and outbound legs of the turn point,
b) For a start point: symmetrical to and remote from the outbound leg,
c) For a finish point: symmetrical to and remote from the inbound leg.

1.5.13.3.3 Section 3 observation zone

This observation zone is the airspace above a 90-degree sector with its apex at the waypoint. This sector is:

a) For a turn point, symmetrical to and remote from the bisector of the inbound and outbound legs of the turn point,
b) For a start point, symmetrical to and remote from the outbound leg,
c) For a finish point, symmetrical to and remote from the inbound leg.

II. New version of the wording:

1.5.13 Observation Zone

The zone which it must be proved that the glider entered in order to validate a start point, turn point or finish point. These may be either the FAI Observation Zones (FAI sectors) specified in the General Section or as defined below.
If the flight performance is validated by GPS, a cylindrical observation zone shall be used. If an approved IGC flight data recorder is used, a cylindrical observation zone is preferred, but a FAI sector, as defined in Section 3 (Gliders) of the Sporting Code, as reproduced below in 1.5.13.3, may be used.

1.5.13.1 Cylindrical observation zones

A turn point cylinder may be specified by GPS coordinates and radius. The record or badge distance will be the minimum distance it is possible to fly by entering the specified observation zones. For badges and records, the radius of the turn point shall be 400m equally all around the turn point coordinates.

1.5.13.1.1 Turn Point Cylinder

A cylinder of 400m radius around a set of GPS co-ordinates.

1.5.13.1.2 Start or Finish Cylinder

A cylinder of 400m radius around a set of GPS co-ordinates. Larger radii might be used in competitions; see Section 7A – Class O.

1.5.13.2 FAI sector observation zones

A sector observation zone is the airspace above a 90-degree sector of a cylinder with its apex at the waypoint. This sector is:

a) For a turn point: symmetrical to and remote from the bisector of the inbound and outbound legs of the turn point,
b) For a start point: symmetrical to and remote from the outbound leg,
c) For a finish point: symmetrical to and remote from the inbound leg.

1.5.13.3 Section 3 observation zone

This observation zone is the airspace above a 90-degree sector with its apex at the waypoint. This sector is:

a) For a turn point, symmetrical to and remote from the bisector of the inbound and outbound legs of the turn point,
b) For a start point, symmetrical to and remote from the outbound leg,
c) For a finish point, symmetrical to and remote from the inbound leg.

III. My explanation of the problem and justification of the proposed solution

„Observation Zone" section was doubled.

„Turn Point Cylinder"/ „Start or Finish Cylinder" are also part of „Cylindrical observation zones"

1.5.12.3 Finish point: (page: 14)

I. Quotation of the old wording

Either:

- The landing place
- The entry of an observation zone (or optionally a sector, if a flight data recorder is used instead of a GPS).
- For distance flights (1.5.5.1) the furthest point flown, measured from the take off or start point.
- For Closed course flight finish point is same as start point.

II. New version of the wording:

Either:

- The landing place
- The entry of an observation zone (or optionally a sector, if a flight data recorder is used instead of a GPS).
- For free distance and free distance using up to 3 position checkpoint flights (1.5.5.8) the furthest point flown, measured from the take-off or start point.
- For Closed course flight finish point is same as start point.

III. My explanation of the problem and justification of the proposed solution

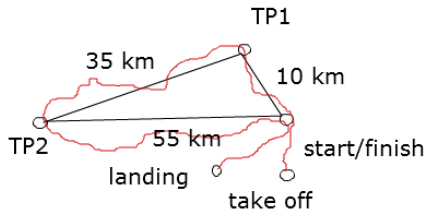
Finish point define as the furthest point flown, measured from the take-off or start point is only and exclusively relevant in two type of flights: **free distance** and free **distance using up to 3 position checkpoints**.

3.4 Triangle Courses (page: 19)

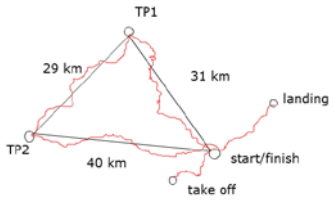
I. Quotation of the old wording

3.4 Triangle Courses

For a record no side of a triangular course may have a length of less than 28% of the total distance of the course.
invalid 100-km triangle



valid 100-km triangle



3.4.1 Remote take-off and/or landing point

A pilot may take-off from a point remote from the start point and/or land at a point remote from the finish point of the flight provided that the start and finish points are declared and the pilot is properly controlled over-flying these points. Any distance flown before the start point or after the finish point is not counted towards the course distance.

3.4.2 Altitude differential in record and badge flights

The loss of height permitted between the start altitude and the finish point, regardless of method of launch, is limited as follows:

3.4.2.1 Speed and Distance flights

Speed and/or Distance flights up to and including 125 km. The loss of height must not exceed 2% of the distance flown. No claims will be accepted for flights that do not satisfy this requirement.

3.4.2.2 Speed and Distance

Speed and distance flights exceeding 125km: no time or distance penalty is applied for height differential. Where tow-launch or powered launch of any type is used, release or engine off height must not exceed 1,000m above the ground level of the place of launch.

3.4.2.3 Aerobatics

No limitation in altitude/height at which the manoeuvre can be started. For safety reasons, the minimum height at which the manoeuvre must be completed is:

- Misty flips, Twister and Heli to SAT: 200 m AGL
- Infinity tumbling and Esfera: 400 m AGL

II. My explanation of the problem and justification of the proposed solution

Sections listed below aren't part of „3.4 Triangle Courses"! These sections should put in main section in case of these should be extended for all flights.

3.4 Triangle Courses

3.4.1 Remote take-off and/or landing point

3.4.2 Altitude differential in record and badge flights

3.4.2.1 Speed and Distance flights

3.4.2.2 Speed and Distance

3.4.2.3 Aerobatics

III. One of possible version of new version of the wording:

3.4 Additional conditions

3.4.1 Triangle Courses

3.4.2 Remote take-off and/or landing point

3.4.3 Altitude differential in record and badge flights

3.4.3.1 Speed and Distance flights

3.4.3.2 Speed and Distance

3.4.3.3 Aerobatics

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7 TASK DECLARATION FORM (page: 27)

I. My explanation of the problem and justification of the proposed solution

Insert new check-boxes under „*Fédération Aéronautique Internationale Application Form for Soaring Flight Badge & Record Claims"* paragraph about type of record: **word** or **continental**