



## Task No 4 Version 2

### Task type #A5

### Navigation with unknown legs

#### Objectives

Follow a series of known lines, identifying ground features from photographs, and locating their positions on a map and crossing hidden gates. Certain of the ground features will indicate the start of a leg to another point (marked with black arrow). There will be hidden timing gates to take times for time precision evaluation.

#### Summary

Competitors will be given:

- The location of a start point (SP) before which no ground features or gates will be found.
- Lines drawn on a map and a description of the procedure to draw them.
- Photos (marked with letters A, B, C....) of which ground features indicate a point from which a **new line** must be drawn to the next start point, identified by black arrow.
- Photos (marked with numbers), which location needs to be **marked** on the track.
- Location of three points (TP1, TP2, TP3) and distance to them.
- The location of a finish point (FP) after which no ground features will be found.

After completing the landing the competitor will be required to enter a Quarantine area for scoring.

#### Scoring

##### Spatial precision:

Vh = Value assigned to crossing a hidden gate or properly placing a mark on the map (100)

Nh = Number of hidden gates correctly crossed or properly placed marks on the map (less than 2 mm error). Mark only once.

Markers placed between 2 and 5 mm error score ½ point.

More than 5 mm score zero.

Out of track marks score zero.

$$Qh = Vh * Nh$$

##### Time precision:

Vt = Gate value (100)

Ei = Absolute error in seconds in gate i.

Maximum error is Vt.

Time gates not crossed do not add error.

$$Qt = \sum (Vt - Ei) \text{ (sum of gate value minus time error each gate crossed)}$$

$$\text{Total: } Q = Qh + Qt$$

$$P = 1000 * Q / Qmax$$

#### Penalties

100% - breach of quarantine

100% - for using prohibited devices

100% - for outlanding



**100% - for air-space violation**

100% - for backtracking. Backtracking is defined as either re-joining the active track line at a point prior to the point where the pilot departed from it or flying with an angle of greater than 90 degrees in respect to the intended flight direction within a corridor defined by the width used to score gates in the task. The only exception to this is within the radius of a specified turn point at which the track line itself turns through more than 90 degrees.

A competitor may return to the airfield within 5 minutes of take-off for safety reasons or in the event of a FR failure. In this case a further start may in principle be made without penalty, if the competitor during the waiting time for restart returns all photos and maps to the marshal.

20% for breaking the rules of approach and landing