

TASK CATALOGUE for MICROLIGHT CHAMPIONSHIPS

AUTHORITY

This Task Catalogue is to be used in conjunction with the Local Regulations. The General Section and Section 10 of the FAI Sporting Code takes precedence over the Local Regulation and Task Catalogue wording if there is ambiguity.

CLARIFICATION

Note: Microlight classes AL1, AL2, WL1 and WL2 are "Classic classes". Microlight class PF1 is PPG.

CONTENTS

1. Part One - for All classes

- 1.1. Introduction
- 1.2. Task types

2. Part Two - Tasks for AL1, AL2, WL1, and WL2 (Classic classes)

- 2.1. General remarks
- 2.2. Flight control
- 2.3. Scoring
- 2.4. Generic tasks
 - 2.4.1. Flight planning, navigation tasks
 - 2.4.2. Fuel economy, speed range, duration tasks
 - 2.4.3. Precision tasks
 - 2.4.4. Composite or sequential tasks
- 2.5. Example tasks
 - 2.5.1. Flight planning, navigation tasks
 - 2.5.2. Fuel economy, speed range, duration tasks
 - 2.5.3. Precision tasks

3. Part Three - Tasks for PF1 (PPG)

Part One - for All classes

1.1 INTRODUCTION

This catalogue describes tasks which may be set in FAI World and Continental championships. It does not preclude new tasks provided they have been tried out satisfactorily in national competitions and are clearly described and accepted when the FAI Microlight Commission (CIMA) approves the Local regulations.

Good tasks make for good championships, but tasks also drive the design direction for the aircraft. For example, microlights in the Classic-classes would soon lose their short field capability if no more precision landing tasks into a 100m deck were given.

Flight planning and navigation tasks develop good pilot skills but they, too, affect the characteristics of competition aircraft so a Director must try to set a reasonable balance between tasks where ultimately speed is the advantage or economy is the advantage. These tasks should be as long as possible, so that pilot skills are tested by having to fly over new and different country.

Competition Directors are cautioned against setting a few complicated tasks in favour of lots of simple ones. It is all too easy for a Championship to end with the minimum of tasks required (S10 Chapter4, 4.3.3) and there is nothing more likely to upset pilots than if they think they have not flown enough in a championship to properly demonstrate their skills.

1.2 TASK TYPES

1.2.1 GENERAL

Tasks fall into Three Categories:

- A** Flight planning, navigation estimated time and speed, with no fuel limitation.
- B** Fuel economy, speed range, duration, with fuel limited to 15 kg or less.
- C** Precision

The proportion of each task to be used is stated in S10, 4.24.3 Any task may be set more than once, either identically or with variations. Distances should be as long as possible referring to the recommended still air range of the competing aircraft stated in S10 Chapter 4, 4.13.7 .

In any task requiring pre-declaration of speed or elapsed time the Director may set up hidden gates through which the pilot would fly if on the correct flight path. Pilots failing to be checked through such gates or who are observed flying a devious path to adjust timing/speed errors may be penalised. No information will be given at briefing on the existence or whereabouts of hidden gates, or the method by which they are controlled.

The Director may set a time period for completion of a task in addition to the last landing time.

Part Two – Applies to Classes AL1, AL2, WL1, WL2 (Classic Classes)

2.1 GENERAL REMARKS

2.1.1 RANGE

All aircraft will be expected to have a still air range of 250 km.

2.1.2 THE SECURE AREA

This is a clearly marked area where aircraft must be placed from time to time as instructed by the director. Once in the Secure Area and without the express permission of the director, no aircraft may be touched for any reason other than to remove it from the Secure Area. Competitors who do not respect the rules of the Secure Area may be liable to penalty.

2.1.3 QUARANTINE

This is a clearly marked area to which aircraft and crew must go from time to time as instructed by the director, usually for the purposes of scoring, fuel measurement and scrutineering of fuel tank seals, fuel systems, telephone seals etc. Once in the Quarantine and without the express permission of the Quarantine Marshal, the crew may not communicate with anyone else in Quarantine and may not modify or otherwise change the configuration of their aircraft and items carried. Competitors who do not respect the rules of the Secure Area may be liable to penalty.

2.1.4 TAKE-OFF AND LANDING

Unless it is stated differently in the task description - all competition take-offs and landings must be completed within a deck 100m x 25m. The penalty for failing to take off or land entirely within the deck will be 20% of pilot score, as briefed. Unless otherwise briefed, the penalty for any outlanding not required as part of the task will 100% of the pilot score.

2.1.5 CONTROL OF CLASS CONFORMITY:

All aircraft will be weighed before the event with pilots in the clothing and equipment and with the aircraft carrying the equipment in which they will compete. Any aircraft may be weighed again at any time in the championships. The take-off weight is the weight of the aircraft ready to fly including pilot(s), fuel, and any supplementary equipment. The take-off weight must not exceed the FAI definition of a microlight for the class in which it is flown.

2.1.6 CONTEST NUMBERS

The numbers or letters supplied by the organisers shall be displayed on a suitable space on the underside of the wing with their top towards the leading edge. The underside wing number shall be of a colour contrasting to the background. Identification may also be required on other parts of each microlight (e.g. fin, cockpit side or pilot's helmet).

2.1.7 PROTECTIVE EQUIPMENT

A protective helmet must be worn on all flights unless this restricts vision from within an enclosed cockpit canopy with supine seating. An emergency parachute system is highly recommended. (S10 Chapter 4, 4.20.1)

2.2 FLIGHT CONTROL

2.2.1 FUEL

Prior to fuelling for economy tasks competitors must be able to demonstrate that their aircraft tanks are empty and that the engine cannot run in either the ground or in-flight attitude of the microlight. This will be done by running engine until it stops before filling the tank with the specified or required amount of fuel. The engine will then be run for 60 seconds to ensure all fuel systems are free of air. Where possible this process will take place immediately prior to the task to enable engines to be warmed up. When tanks are required to be sealed before a task the penalty for returning to the Quarantine area with a broken or missing seal will 100% of the pilot score

2.2.2 DISTANCE MEASUREMENTS

Distance will be measured for all competitors on the same official map, of a scale of 1:250 000. Measurement will be made to the nearest 0,5 km.

2.2.3 KNOWN GATES

When competitors are informed of the location of a timing gate prior to takeoff the approach to that gate must be between 500 feet and 1,000 feet and in a straight line for the final 1 mile. Any deviation from this approach may incur a penalty.

2.3 SCORING

2.3.1 CROSS COUNTRY TASKS

The maximum score may be up to 1000 points per task and is calculated as follows:

$$P = Q/Q_{\max} \times 1000$$

2.3.2 PRECISION TASKS

Maximum score 250 points per task element

2.4 GENERIC TASKS

2.4.1 FLIGHT PLANNING, NAVIGATION TASKS

2.4.1.1 OBJECTIVES

The objectives of a flight planning, navigation task include testing the competitors' ability to:

- plan a flight from information provided
- follow an accurate course in the prevailing conditions
- maintain a given or predicted ground speed

2.4.1.2 SUMMARY

Competitors are required to fly accurately along a course provided by means of:

- a straight line, an arc, a circle, a polygon, an irregular line or any combination of these drawn on a map
- a line beginning and end points marked on a map or provided as map references with geometric instructions specifying the line between them
- a line start point marked on a map or provided as a map reference with a true or magnetic heading or geometric instructions specifying the route to be followed
- a start point located on the ground with a true or magnetic heading or geometric instructions specifying the route to be followed.

The task may consist of one or more legs, each using any of the above. In addition competitors may be required to fly all or part of the course at a given or predicted ground speed.

2.4.1.3 EVIDENCE

Evidence of the accuracy with which the competitors have flown may be provided by means of:

- photographs taken by competitors of on-track ground features
- marks made by competitors on a map indicating the location of on-track ground features identified from photographs provided
- successful navigation by competitors to the next waypoint or turnpoint
- marshals observing and recording the time that aircraft pass through on-track gates or pass over waypoints or turnpoints

- a GPS record of the flight

Competitors may be required to provide a pre-flight declaration which may include:

- a list of waypoints or turnpoints to be visited
- the order in which waypoints or turnpoints are to be visited
- the time a waypoints or turnpoints is to be visited
- the predicted groundspeed over any part or parts of the course

2.4.2 FUEL ECONOMY, SPEED RANGE, DURATION TASKS

2.4.2.1 OBJECTIVES

The objectives of a fuel economy task include testing the competitors' ability to:

- maximise aircraft fuel performance
- predict aircraft fuel consumption
- use prevailing weather conditions to supplement fuel

2.4.2.2 SUMMARY

Competitors are required to fuel their aircraft with a measured volume or weight of fuel, or with the amount of fuel they predict they will need to fly a given task in the prevailing conditions, to seal their fuel tanks and then:

- fly as far as possible before landing at a designated landing area
- fly for as long as possible before landing at a designated landing area
- fly a multi-leg task in which each leg may have different performance objectives, or
- fly a planned task before landing in a designated landing area

or any combination of these. Competitors may be permitted to fly to empty tanks or may be required to return with a specified safety quantity of fuel.

2.4.2.3 EVIDENCE

Evidence of competitors' performance may be provided by means of:

- photographs taken by competitors of ground features
- marks made by competitors on a map indicating the location of ground features identified from photographs provided to prove distance traveled
- marshals observing and recording the time that aircraft pass through gates on or off the airfield to prove distance or time traveled
- a GPS record of the flight

Evidence of fuel consumption may be provided by:

- verifying that the competitors' fuel tanks and systems are empty before fueling
- measuring the fuel with which the tank is filled
- sealing the fuel tank before the flight
- verifying after the flight that seals on the fuel tank are intact

2.4.3 PRECISION TASKS

2.4.3.1 OBJECTIVES

The objectives of a precision task involve testing the competitors' ability to handle their aircraft, where possible in circumstances similar to those that may be encountered during normal or emergency flying activity.

2.4.3.2 SUMMARY

Competitors are required to demonstrate:

- normal takeoffs
- short takeoffs
- powered landings
- engine-off landings
- short landings

2.4.3.3 EVIDENCE

Evidence of competitors' skill may be provided by means of:

- observation recorded by marshals with reference to marks or measurements on or near the ground
- tapes, ribbons, balloons or other items that may be cut or broken by an aircraft without causing damage to the aircraft or injury to the crew or observers
- electrical or electronic equipment that records the passage of the aircraft using a pressure detector, photo cell or similar device

2.4.4 COMPOSITE OR SEQUENTIAL TASKS

2.4.4.1 OBJECTIVES

The objective of a composite task, which may combine any of the above, is to make the competition more demanding and more interesting for the competitors. The objective of a sequential task, in which any of the above tasks may follow another without a break, is to enable a competition director to run two tasks in a shorter time than would otherwise be possible.

2.4.4.2 SUMMARY

Composite tasks may combine any or all of the Navigation, Economy & Precision tasks, although such tasks must be carefully designed in order to ensure that one aspect of the task does not compromise another. For example, precision tasks may usefully be combined sequentially with Navigation or Economy or other Precision tasks. Care must be taken to ensure that a problem in the first task does not invalidate the next task in sequence. A timed economy task that ends with an engine off precision landing may be compromised by congestion around the landing deck

2.5 EXAMPLE TASKS

The following tasks are examples of the tasks described above. Their purpose is to show the way in which real tasks have been designed using the generic principles outlined earlier. However, this is not an exhaustive set of tasks and others may be designed using these principles.

Certain aspects of the scoring have been included in the task descriptions, in particular a schedule of penalties. However, the specific scoring for photos, markers and turnpoints etc to be used in the competition will be briefed prior to the task being flown.

Below is a key to the symbols used in this task catalogue.

KEY TO SYMBOLS USED IN CLASSIC CLASSES TASK CATALOGUE

	Line drawn before takeoff
	Line drawn after takeoff
	Free flight
	Direction of travel
	Marker selected from list of Marker Symbols
	Ground feature to be identified from photograph
	Turnpoint
	Turnpoint to be identified from photograph
	Ground feature to be photographed
	Timing point or gate
SP 	Initial or Start point
SP 	Initial or Start point with time gate
FP 	Finish point
FP 	Finish point with time gate
 II	Marker identity given before takeoff
	Home airfield
	Outlanding airstrip
	Direction of landing
	Left hand circuit
	Right hand circuit
 600'	Circuit height above ground in feet
	Windsock
	Landing direction indicator
	Road or track

Marker Symbols

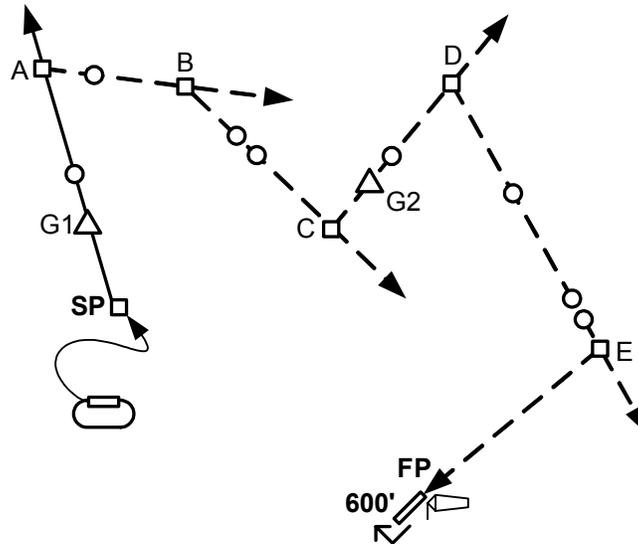
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2.5.1 FLIGHT PLANNING, NAVIGATION TASKS

2. A1 SEQUENTIAL NAVIGATION

Objectives

To follow a series of headings, finding markers and identifying ground features from photographs, and locating their positions on a map. It may be required to distinguish between on-track and off-track markers and ground features. Certain of the ground features or markers will indicate a change of heading. There may be timing gates if part of the task must be flown at a predicted ground speed. The task may finish with an outlanding.



Summary

Competitors will be given:

- the location of a start point (SP) before which no markers, ground features or time gates will be found
- the time at which they must overfly the start point
- a heading to follow from the start point or a line drawn on a map
- details of any new heading to follow if a particular turnpoint marker or ground feature is found
- the location of a finish point (FP) after which no markers or ground features will be found
- photos of any ground features to be identified

If the task is to contain a speed prediction element before takeoff the competitor must either:

- declare the ground speed at which he plans to fly, or;
- select a ground speed from those specified at the briefing

The task will normally start and finish with a Deck Takeoff and Deck Landing and after completing the landing the competitor will be required to enter a Quarantine area for scoring.

Sealed Instructions

If an outlanding is required at the Finish Point the location of FP will be provided in a sealed envelope. If the competitor is unable to navigate to FP this envelope may be opened. In the event that this envelope is not returned properly sealed a penalty will be imposed.

Safety

During the task competitors must not back track along the track line against the direction of the task. If there is a need to backtrack competitors must leave the track line and fly back well clear of it before rejoining the track line at an earlier point.

Penalties

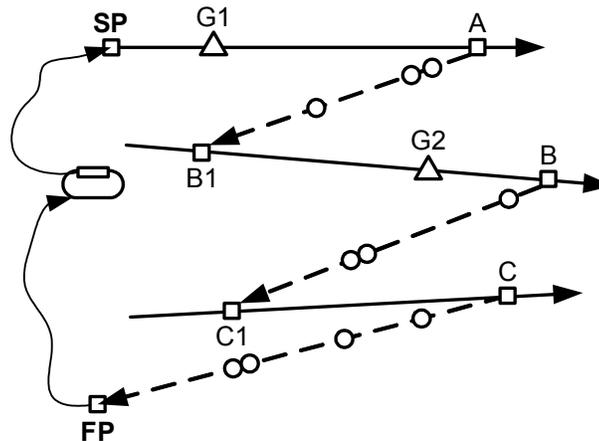
Each ground feature or marker correctly identified and located on the map to within 2mm and any ground speed element will score as briefed. The following penalties will apply:

Takeoff deck penalty	20%
Landing deck penalty	20%
Backtracking against the task direction	100%
Breach of Quarantine	100%
Photo or marker misplaced on map > 2mm but < 5mm	no photo/marker score
Photo or marker misplaced on map > 5mm	50% of photo/marker score
Sealed envelope not returned sealed	Penalty to be specified

2. A2 LINEAR NAVIGATION

Objectives

To follow a series of given lines, finding markers or identifying ground features from photographs and locating their positions on a map. It may be required to distinguish between on-track and off-track markers and ground features. Certain of the ground features or markers may indicate the point from which a new track line to be drawn to a given point from which the next given line is to start. There may be timing gates if part of the task must be flown at a predicted ground speed.



Summary

Competitors will be given:

- a series of headings to follow or lines drawn on a map
- the location of a start point (SP) before which no markers, ground features or time gates will be found
- the time at which they must overfly the start point
- details of which markers or ground features indicate a point from which a new line must be drawn
- the location of a finish point (FP) after which no markers or ground features will be found
- photos of any ground features to be identified

If the task is to contain a speed prediction element before takeoff the competitor must either:

- declare the ground speed at which he plans to fly, or;
- select a ground speed from those specified at the briefing

The task will normally start and finish with a Deck Takeoff and Deck Landing and after completing the landing the competitor will be required to enter a Quarantine area for scoring.

Safety

During the task competitors must not back track along the track line against the direction of the task. If there is a need to backtrack competitors must leave the track line and fly back well clear of it before rejoining the track line at an earlier point.

Penalties

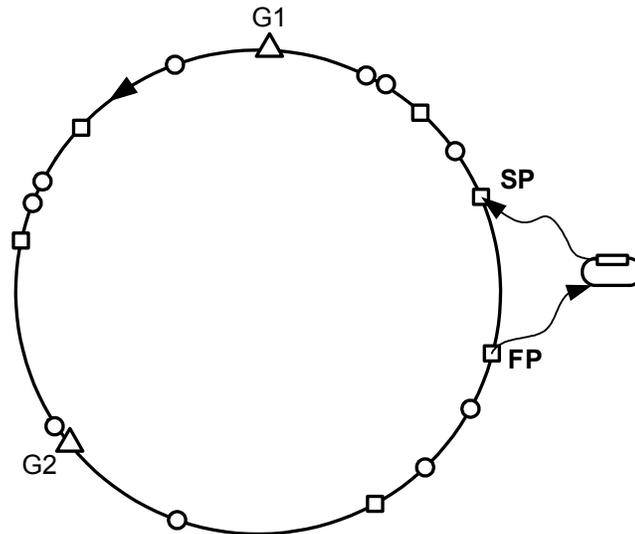
Each photo or marker correctly identified and located on the map to within 2mm and any ground speed element will score as briefed. The following penalties will apply:

Takeoff deck penalty	20%
Landing deck penalty	20%
Backtracking against the task direction	100%
Breach of Quarantine	100%
Photo or marker misplaced on map > 2mm but < 5mm	no photo/marker score
Photo or marker misplaced on map > 5mm	50% of photo/marker score

2. A3 CIRCULAR NAVIGATION

Objectives

To follow a circular track, finding markers or identifying ground features from photographs and locating their positions on a map. It may be required to distinguish between on-track and off-track markers and ground features. There may be timing gates to take times if part of the task must be flown at a predicted ground speed.



Summary

Competitors will be given:

- the centre and radius of the circle or a circle drawn on a map
- the location of a start point (SP) before which no markers, ground features or time gates will be found
- the time at which they must overfly the start point
- direction to fly the circle from the start point
- the location of a finish point (FP) after which no markers or ground features will be found
- photos of any ground features to be identified

If the task is to contain a speed prediction element before takeoff the competitor must either:

- declare the ground speed at which he plans to fly, or;
- select a ground speed from those specified at the briefing

The task will normally start and finish with a Deck Takeoff and Deck Landing and after completing the landing the competitor will be required to enter a Quarantine area for scoring.

Safety

During the task competitors must not backtrack along the track line against the direction of the task. If there is a need to backtrack competitors must leave the track line and fly back well clear of it before rejoining the track line at an earlier point.

Penalties

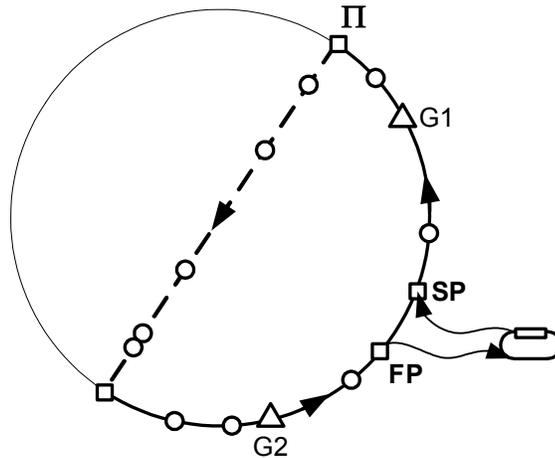
Each ground feature or marker correctly identified and located on the map to within 2mm and any ground speed element will score as briefed. The following penalties will apply:

Takeoff deck penalty	20%
Landing deck penalty	20%
Backtracking against the task direction	100%
Breach of Quarantine	100%
Photo or marker misplaced on map > 2mm but < 5mm	no photo/marker score
Photo or marker misplaced on map > 5mm	50% of photo/marker score

2. A4 CIRCULAR NAVIGATION & DIAMETER

Objectives

To follow a circular track in the direction briefed, finding markers or identifying ground features from photographs and locating their positions on a map. It may be required to distinguish between on-track and off-track markers and ground features. A certain ground feature or marker will indicate a point from which a diameter of the circle must be drawn and flown before continuing around the circle. There may be timing gates to take times if part of the task must be flown at a predicted ground speed.



Summary

Competitors will be given:

- the centre and radius of the circle or a circle drawn on a map
- the location of a start point (SP) before which no markers, ground features or time gates will be found
- the time at which they must overfly the start point
- direction to fly the circle from the start point
- the identity of the marker from which to fly the diameter
- the location of a finish point (FP) after which no markers or ground features will be found
- photos of any ground features to be identified

If the task is to contain a speed prediction element before takeoff the competitor must either:

- declare the ground speed at which he plans to fly, or;
- select a ground speed from those specified at the briefing

The task will normally start and finish with a Deck Takeoff and Deck Landing and after completing the landing the competitor will be required to enter a Quarantine area for scoring.

Safety

During the task competitors must not back track along the track line against the direction of the task. If there is a need to backtrack competitors must leave the track line and fly back well clear of it before rejoining the track line at an earlier point.

Penalties

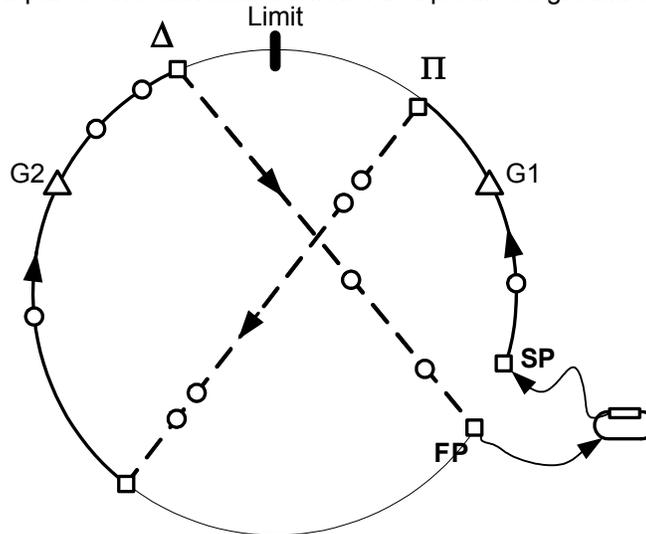
Each ground feature or marker correctly identified and located on the map to within 2mm and any ground speed element will score as briefed. The following penalties will apply:

Takeoff deck penalty	20%
Landing deck penalty	20%
Backtracking against the task direction	100%
Breach of Quarantine	100%
Photo or marker misplaced on map > 2mm but < 5mm	no photo/marker score
Photo or marker misplaced on map > 5mm	50% of photo/marker score

2. A5 CIRCULAR NAVIGATION, DIAMETER & REVERSE

Objectives

To follow a circular track, finding markers or identifying ground features from photographs and locating their positions on a map. It may be required to distinguish between on-track and off-track markers and ground features. Certain ground features or markers will indicate a point from which a diameter of the circle must be drawn and flown before continuing around the circle in the reverse direction. There may be timing gates to take times if part of the task must be flown at a predicted ground speed.



Summary

Competitors will be given:

- the centre and radius of the circle or a circle drawn on a map
- the location of a start point (SP) before which no markers, ground features or time gates will be found
- the time at which they must overfly the start point
- direction to fly the circle from the start point
- the location of a safety Limit
- the identity of the marker from which to fly the diameter
- the location of a finish point (FP) after which no markers or ground features will be found
- photos of any ground features to be identified

If the task is to contain a speed prediction element before takeoff the competitor must either:

- declare the ground speed at which he plans to fly, or;
- select a ground speed from those specified at the briefing

The task will normally start and finish with a Deck Takeoff and Deck Landing and after completing the landing the competitor will be required to enter a Quarantine area for scoring.

Safety

During the task competitors must not backtrack along the track line against the direction of the task. If there is a need to backtrack competitors must leave the track line and fly back well clear of it before rejoining the track line at an earlier point. An safety Limit which must not be passed will be specified to prevent aircraft flying on opposing tracks.

Penalties

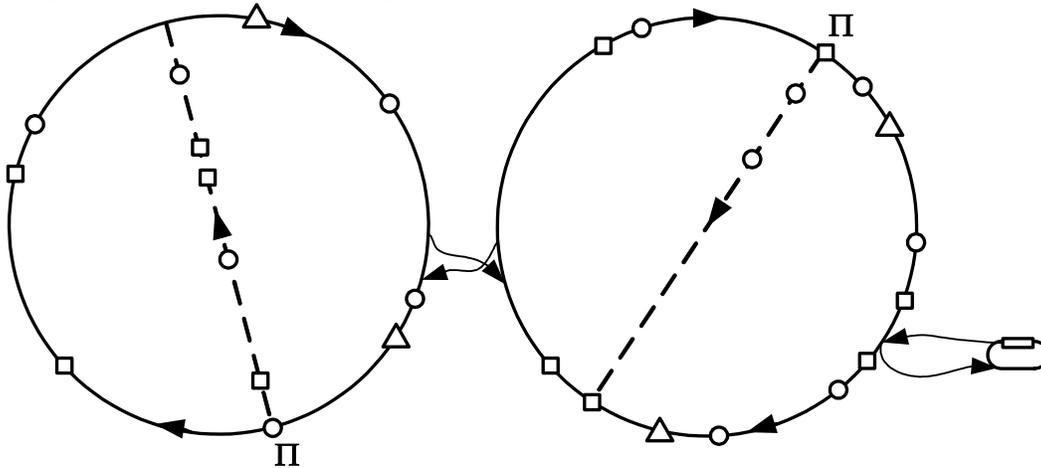
Each ground feature or marker correctly identified and located on the map to within 2mm and any ground speed element will score as briefed. The following penalties will apply:

Takeoff deck penalty	20%
Landing deck penalty	20%
Backtracking against the task direction	100%
Breach of Quarantine	100%
Photo or marker misplaced on map > 2mm but < 5mm	no photo/marker score
Photo or marker misplaced on map > 5mm	50% of photo/marker score

2. A6 DOUBLE CIRCULAR NAVIGATION

Objectives

To follow two or more circular tracks in the direction briefed, finding markers or identifying ground features from photographs and locating their positions on a map. Certain of the ground features or markers will indicate a point from which a diameter of the circle must be drawn and flown. Further markers or ground features may be found on these diameters. There may be timing gates if part of the task must be flown at a predicted ground speed. Any route may be chosen for transit to, from and between the circles.



Summary

Competitors will be given:

- the centre and radius of the circles or a circles drawn on a map
- direction to fly the circle from the start point
- details of which markers or ground features indicate a point from which a diameter must be drawn
- photos of any ground features to be identified

If the task is to contain a speed prediction element before takeoff the competitor must either:

- declare the ground speed at which he plans to fly, or;
- select a ground speed from those specified at the briefing

The task will normally start and finish with a Deck Takeoff and Deck Landing and after completing the landing the competitor will be required to enter a Quarantine area for scoring.

Safety

During the task competitors must not backtrack along the track line against the direction of the task. If there is a need to backtrack competitors must leave the track line and fly back well clear of it before rejoining the track line at an earlier point.

Penalties

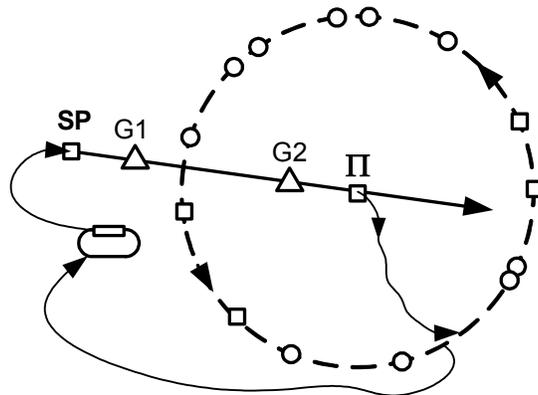
Each ground feature or marker correctly identified and located on the map to within 2mm and any ground speed element will score as briefed. The following penalties will apply:

Takeoff deck penalty	20%
Landing deck penalty	20%
Backtracking against the task direction	100%
Breach of Quarantine	100%
Photo or marker misplaced on map > 2mm but < 5mm	no photo/marker score
Photo or marker misplaced on map > 5mm	50% of photo/marker score
Flying through a gate twice	penalty to be briefed

2. A7 DRAWN CIRCULAR NAVIGATION

Objectives

To follow a line, finding markers or identifying ground features from photographs and locating their positions on a map. A particular marker will identify the centre of a circle of a given radius that the competitor must draw and then fly to that circle and fly in a specified direction looking for further markers and ground features. It may be required to distinguish between on-track and off-track markers and ground features. There may be timing gates if part of the task must be flown at a predicted ground speed. Any route may be chosen for return from the circle to the airfield.



Summary

Competitors will be given:

- a heading to follow or a line drawn on a map
- the location of a start point (SP) before which no markers, ground features or time gates will be found
- the identity of the marker which will form the centre of the circle and identify its length of radius
- direction to fly the circle
- photos of any ground features to be identified

If the task is to contain a speed prediction element before takeoff the competitor must either:

- declare the ground speed at which he plans to fly, or;
- select a ground speed from those specified at the briefing

The task will normally start and finish with a Deck Takeoff and Deck Landing and after completing the landing the competitor will be required to enter a Quarantine area for scoring.

Safety

During the task competitors must not back track along the track line against the direction of the task. If there is a need to backtrack competitors must leave the track line and fly back well clear of it before rejoining the track line at an earlier point. Once the centre of the circle has been identified the competitor must move away to a safe distance or height to plot the circle.

Penalties

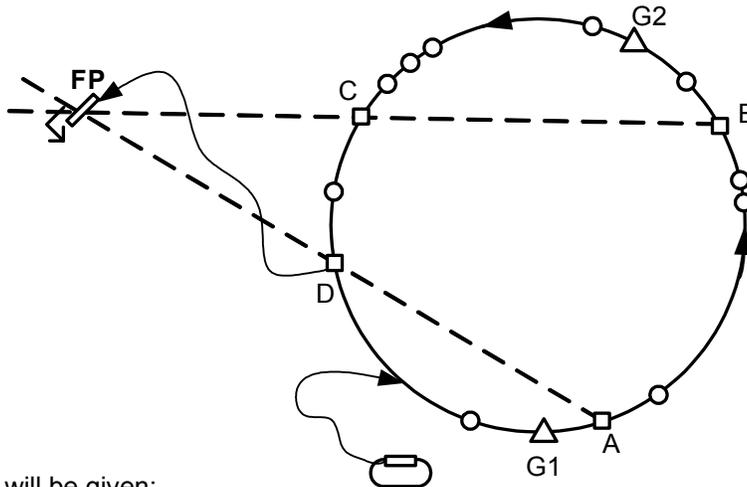
Each ground feature or marker correctly identified and located on the map to within 2mm and any ground speed element will score as briefed. The following penalties will apply:

Takeoff deck penalty	20%
Landing deck penalty	20%
Backtracking against the task direction	100%
Breach of Quarantine	100%
Photo or marker misplaced on map > 2mm but < 5mm	no photo/marker score
Photo or marker misplaced on map > 5mm	50% of photo/marker score

2. A8 CIRCLE & TWO LINES

Objectives

To follow a circular track in the direction briefed, finding markers or identifying ground features from photographs and locating their positions on a map. It may be required to distinguish between on-track and off-track markers and ground features. Four markers or ground features will identify the points from which lines must be drawn. The task ends with an outlanding at the point outside the circle where these lines intersect. Any route may be chosen from the airfield to the circle or from the circle to the outlanding site.



Summary

Competitors will be given:

- the direction to fly the circle
- the centre and radius of the circle or a circle drawn on a map
- the identity of the markers or ground features from which lines must be drawn
- sealed instructions giving the location of the outlanding site
- photos of any ground features to be identified

The task will normally start and finish with a Deck Takeoff and Deck Landing and after completing the landing the competitor will be required to enter a Quarantine area for scoring.

Sealed Instructions

The location of the Finish Point will be provided in a sealed envelope. If the competitor is unable to navigate to FP this envelope may be opened. In the event that this envelope is not returned properly sealed a penalty will be imposed.

Safety

During the task competitors must not backtrack along the track line against the direction of the task. If there is a need to backtrack competitors must leave the track line and fly back well clear of it before rejoining the track line at an earlier point.

Penalties

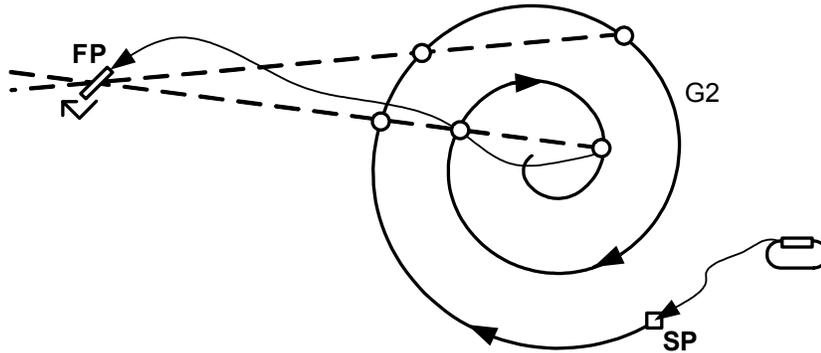
Each ground feature or marker correctly identified and located on the map to within 2mm and any ground speed element will score as briefed. The following penalties will apply:

Takeoff deck penalty	20%
Landing deck penalty	20%
Backtracking against the task direction	100%
Breach of Quarantine	100%
Photo or marker misplaced on map > 2mm but < 5mm	no photo/marker score
Photo or marker misplaced on map > 5mm	50% of photo/marker score
Sealed envelope not returned sealed	Penalty to be specified

2. A9 SPEED SPIRAL WITH TWO LINES

Objectives

To follow a spiral or irregular track in the direction briefed, identifying ground features from photographs and locating their positions on a map. All the ground features identified will be points on one or the other of two lines which must be drawn. The task ends with an outlanding at the point outside the spiral where these lines intersect. Any route may be chosen from the airfield to the spiral or from the circle to the outlanding site. The aim is to identify all the ground features and achieve the shortest total task time.



Summary

Competitors will be given:

- a spiral or other irregular line drawn on a map
- the direction to fly the line from the start point
- the location of a start point (SP) before which no ground features or time gates will be found
- sealed instructions giving the location of the outlanding site
- photos of any ground features to be identified

The task will normally start and finish with a Deck Takeoff and Precision Landing and after completing the landing the competitor will be required to enter a Quarantine area for scoring.

Sealed Instructions

The location of the Finish Point will be provided in a sealed envelope. If the competitor is unable to navigate to FP this envelope may be opened. In the event that this envelope is not returned properly sealed a penalty will be imposed.

Safety

During the task competitors must not backtrack along the track line against the direction of the task. If there is a need to backtrack competitors must leave the track line and fly back well clear of it before rejoining the track line at an earlier point.

Scores

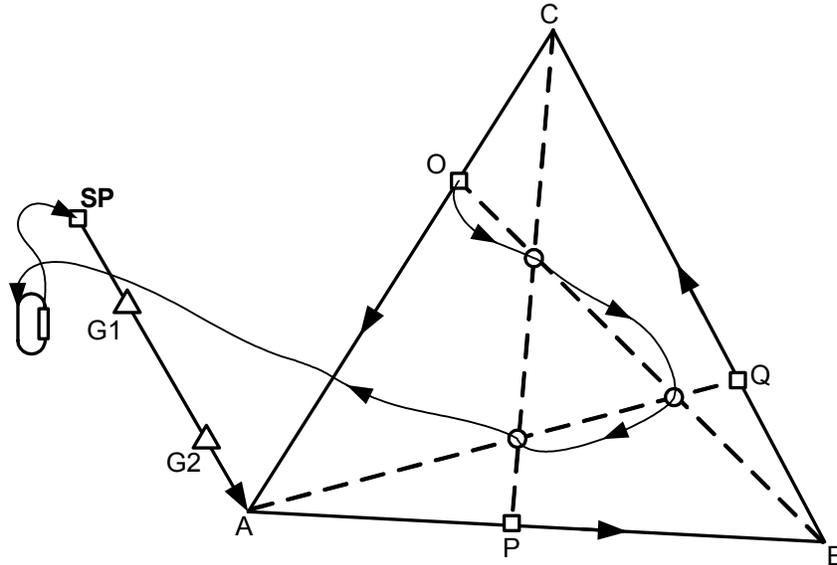
Each ground feature or marker correctly identified and located on the map to within 2mm and any ground speed element will score as briefed. The following penalties will apply:

Takeoff deck penalty	20%
Backtracking against the task direction	100%
Breach of Quarantine	100%
Photo or marker misplaced on map > 2mm but < 5mm	no photo/marker score
Photo or marker misplaced on map > 5mm	50% of photo/marker score
Sealed envelope not returned sealed	Penalty to be specified

2. A10 TRIANGLE & THREE LINES

Objectives

To follow a triangular track in the direction briefed, finding markers or identifying ground features from photographs and locating their positions on a map. It may be required to distinguish between on-track and off-track markers and ground features. Three markers or ground features will identify the points from which lines must be drawn to the opposite corner of the triangle. Further markers or ground features must be identified where these lines intersect. There may be timing gates if part of the task must be flown at a predicted ground speed. Any route may be chosen from the triangle to the airfield.



Summary

Competitors will be given:

- the location of a start point (SP) before which no markers, ground features or time gates will be found
- the location of the three corners of the triangle
- the direction to fly the triangle
- the identity of the markers or ground features from which further lines must be drawn
- photos of any ground features to be identified

If the task is to contain a speed prediction element before takeoff the competitor must either:

- declare the ground speed at which he plans to fly, or;
- select a ground speed from those specified at the briefing

The task will normally start and finish with a Deck Takeoff and Deck Landing and after completing the landing the competitor will be required to enter a Quarantine area for scoring.

Safety

During the task competitors must not backtrack along the track line against the direction of the task. If there is a need to backtrack competitors must leave the track line and fly back well clear of it before rejoining the track line at an earlier point.

Scores

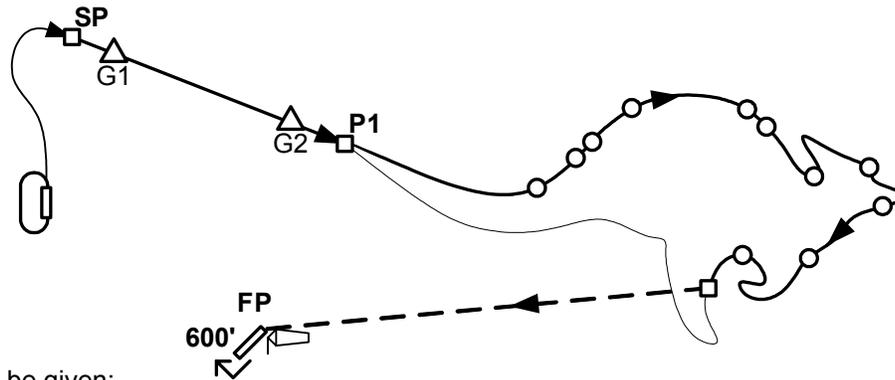
Each ground feature or marker correctly identified and located on the map to within 2mm and any ground speed element will score as briefed. The following penalties will apply:

Takeoff deck penalty	20%
Landing deck penalty	20%
Backtracking against the task direction	100%
Breach of Quarantine	100%
Photo or marker misplaced on map > 2mm but < 5mm	no photo/marker score
Photo or marker misplaced on map > 5mm	50% of photo/marker score

2. A11 IRREGULAR POLYGON

Objectives

To fly a timed leg before following an irregular track in the direction briefed, finding markers or identifying ground features from photographs and locating their positions on a map. It may be required to distinguish between on-track and off-track markers and ground features. A particular marker will indicate a point from which a line of a given heading must be drawn and flown. The distance from the start point (SP) to the finish point (FP) will be given and when that distance has been flown the task will end with an outlanding.



Summary

Competitors will be given:

- a line and an irregular shape drawn on a map
- the location of a start point (SP) before time gates will be found
- the location of a point (P1) after which markers and ground features but no time gates will be found
- the time at which they must overfly the start point
- details of the new heading to follow if a particular marker is found
- a total distance for the task
- sealed instructions giving the location of the outlanding site
- photos of any ground features to be identified

Before takeoff the competitor must either:

- declare the ground speed at which he plans to fly, or;
- select a ground speed from those specified at the briefing

The task will normally start and finish with a Deck Takeoff and Deck Landing and after completing the landing the competitor will be required to enter a Quarantine area for scoring.

Safety

During the task competitors must not backtrack along the track line against the direction of the task. If there is a need to backtrack competitors must leave the track line and fly back well clear of it before rejoining the track line at an earlier point.

Sealed Instructions

The location of the Finish Point will be provided in a sealed envelope. If the competitor is unable to navigate to FP this envelope may be opened. In the event that this envelope is not returned properly sealed a penalty will be imposed.

Scores

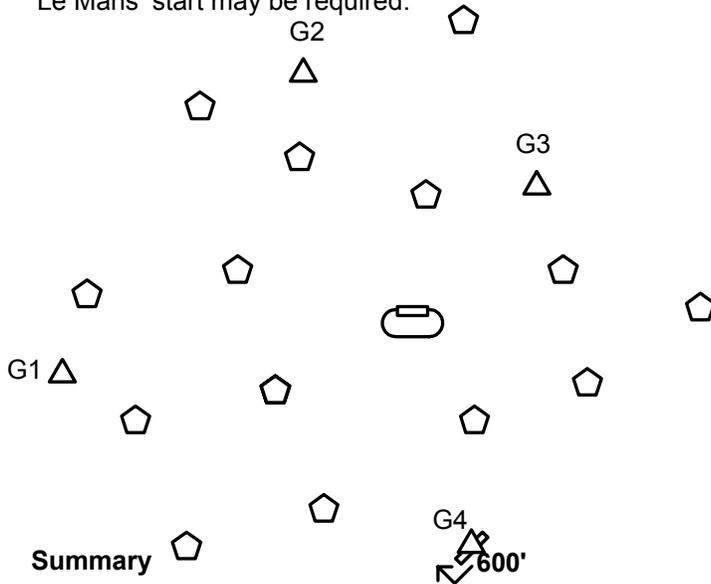
Each photo or marker correctly identified and located on the map to within 2mm and any ground speed element will score as briefed. The following penalties will apply:

Takeoff deck penalty	20%
Landing deck penalty	20%
Backtracking against the task direction	100%
Breach of Quarantine	100%
Photo or marker misplaced on map > 2mm but < 5mm	no photo/marker score
Photo or marker misplaced on map > 5mm	50% of photo/marker score
Sealed envelope not returned sealed	Penalty to be specified

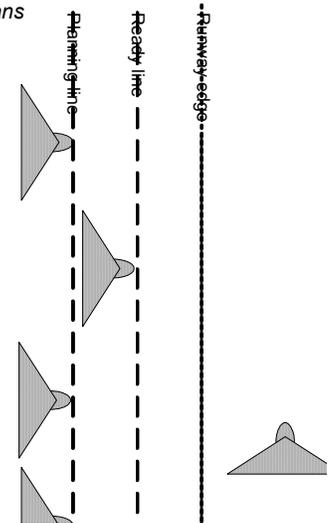
2. A12 TURNPOINT HUNT

Objectives

To fly to and identify from given photographs as many turnpoints as possible within a limited time and in the order predicted. 3 of the turnpoints will be compulsory timing gates which must be overflown within 10 seconds of a time predicted by the competitor. One of the gates may require a precision touchdown. A 'Le Mans' start may be required.



Arrangement for Le Mans start



Summary

Competitors will be given:

- the location and score of all turnpoints and gates
- photos of any ground features to be identified

Before takeoff the competitor must declare:

- the predicted time at which the gates will be overflown
- the predicted turnpoints and gates that will be visited and their sequence in the flight

The task will normally start and finish with a Deck Takeoff and Deck Landing and after completing the landing the competitor will be required to enter a Quarantine area for scoring.

Le Mans Start

If a 'Le Mans' start is required for this task the aircraft will initially be lined up alongside the runway on the Planning line, about two aircraft lengths away. Each competitor's time will start when the turnpoint information is given. Once a competitor's planning is completed he will indicate this by starting his engine and pulling forward one aircraft length to the Ready line where he will wait until the Start Marshal flags him to enter the runway and line up. Once an aircraft is on the runway it must be allowed to take off before any other aircraft may enter the runway.

Safety

During the task competitors must be aware that their paths may cross those of other aircraft. They must maintain careful observation of the sky at all times and should avoid flying at predictable heights.

Scores

Typically each photo will score 100 points, each time gate 200 points and an additional score will be awarded if the full and correct turnpoint and gate sequence is achieved. The following penalties will apply:

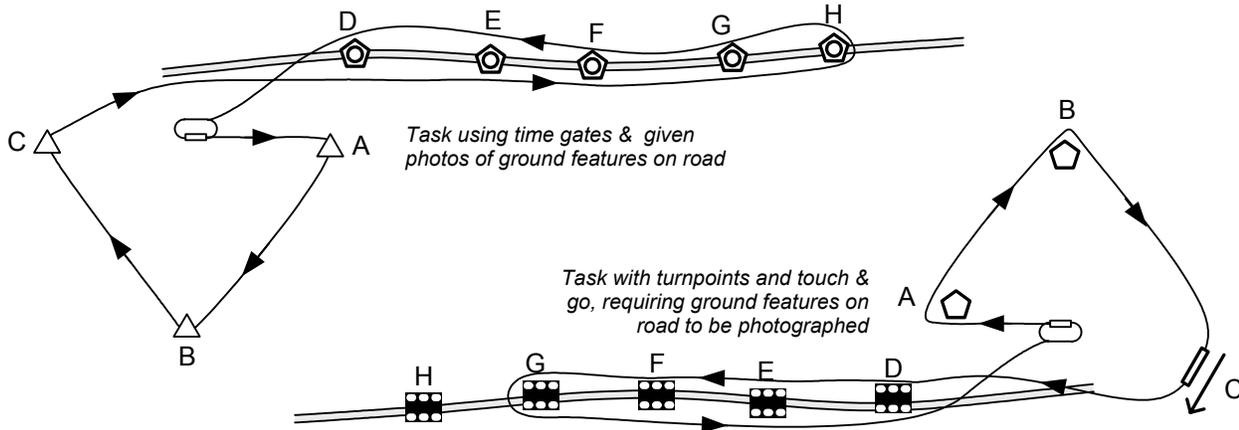
Takeoff deck penalty	20%
Landing deck penalty	20%
Breach of Quarantine	100%
Photo wrongly identified on the map	50% of photo score
Timing gate error >10 seconds from prediction	10 points/second
Time over maximum task duration	10 points/second

FUEL ECONOMY, SPEED RANGE & DURATION TASKS

2.B1 SPEED TRIANGLE OUT-AND-RETURN

Objectives

With limited fuel, to fly around a triangular circuit in the shortest possible time, then to return to the deck or pass through a gate, and finally, with the remaining fuel, to fly in a given direction as far as possible, photograph a known ground feature or identify it from a given photograph and return to the deck.



Summary

Competitors will be given:

- the location of the three turnpoints or time gates that form the triangle
- a line or linear ground feature such as a road, river, railway or power-lines to be followed
- the location of or photographs of known ground features
- a specified weight or volume of fuel

The task will normally start and finish with a Deck Takeoff and Deck Landing and, if a residual fuel requirement has been specified, after completing the landing the competitor will be required to enter a Quarantine area for fuel checking and any scoring

Scores

The following penalties will apply:

Takeoff deck penalty	20%
Landing deck penalty	20%
Backtracking against the task direction	100%
Failing to pass around the outside of the turnpoints or overfly gates	100%
Returning with less than minimum specified fuel	100%

The task score calculation will be:

$$\text{Pilot score} = \left(500 \times \frac{t_{\text{Min}}}{t_{\text{p}}} \right) + \left(500 \times \frac{d_{\text{p}}}{d_{\text{Max}}} \right) + T$$

Where:

t_{p} = the pilot's time,

t_{Min} = The best time (Part 1)

d_{p} = the pilot's distance

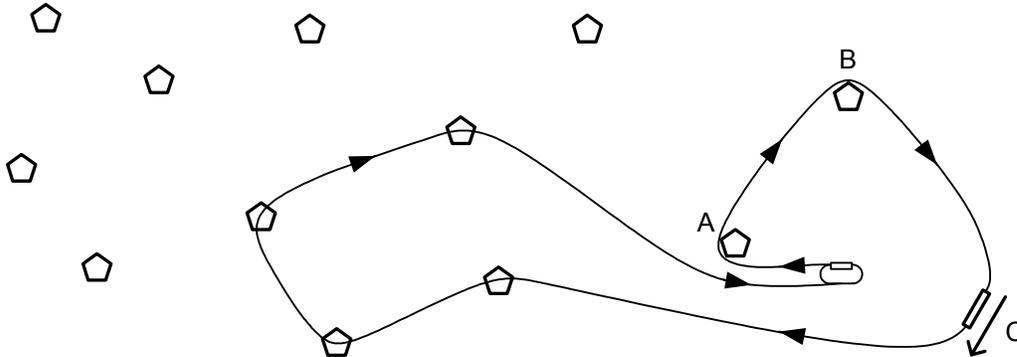
d_{Max} = the greatest distance (Part 2)

T = touch & go score

2.B2 SPEED TRIANGLE & TURNPOINT HUNT

Objectives

With limited fuel, to fly around a triangular circuit in the shortest possible time, then to complete a precision touchdown, and finally, with the remaining fuel, to fly to as many turnpoints as possible and identify ground features from a given photograph before returning to the deck.



Summary

Competitors will be given:

- the location of the two turnpoints or time gates and the airstrip that form the triangle
- the location and photographs of known ground features
- a specified weight or volume of fuel

The task will normally start and finish with a Deck Takeoff and Deck Landing and, if a residual fuel requirement has been specified, after completing the landing the competitor will be required to enter a Quarantine area for fuel checking and any scoring

Scores

The following penalties will apply:

Takeoff deck penalty	20%
Landing deck penalty	20%
Backtracking against the task direction	100%
Failing to pass around the outside of the triangle turnpoints or overfly gates	100%
Photo wrongly identified on the map	distance reduced as if turnpoint missed
Returning with less than minimum specified fuel	100%

The task score calculation will be:

$$\text{Pilot score} = \left(500 \times \frac{t_{\text{Min}}}{t_p} \right) + \left(500 \times \frac{d_p}{d_{\text{Max}}} \right) + T$$

Where:

t_p = the pilot's time,

t_{Min} = The best time (Part 1)

d_p = the pilot's distance

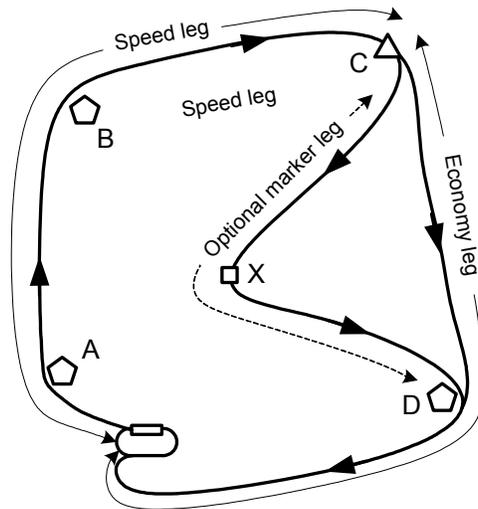
d_{Max} = the greatest distance (Part 2)

T = touch & go score

2.B3 SPLIT SQUARE

Objectives

To fly around a square circuit, divided into a speed leg and an economy leg, using the minimum amount of fuel, the competitor deciding how much fuel to take. The competitor may choose to identify an optional scoring marker or ground feature in the centre of the square.



Summary

Competitors will be given:

- the location of the four turnpoints or time gates that form the square
- the location of optional scoring ground feature or marker
- the weight or volume of fuel specified by the competitor

The task will normally start and finish with a Deck Takeoff and Deck Landing and, if a residual fuel requirement has been specified, after completing the landing the competitor will be required to enter a Quarantine area for fuel checking and scoring.

Scores

Takeoff deck penalty	20%
Landing deck penalty	20%
Failing to pass around the outside of the turnpoints or through gates	100%
Backtracking against the task direction	100%
Returning with less than minimum specified fuel	100%

The task score calculation will be:

$$\text{Pilot score} = \left(450 \times \frac{t_{\text{Min}}}{t_p} \right) + \left(450 \times \frac{f_{\text{Min}}}{f_p} \right) + X$$

Where:

t_p = the pilot's time,

t_{Min} = the best time (Part 1)

f_p = the pilot's fuel

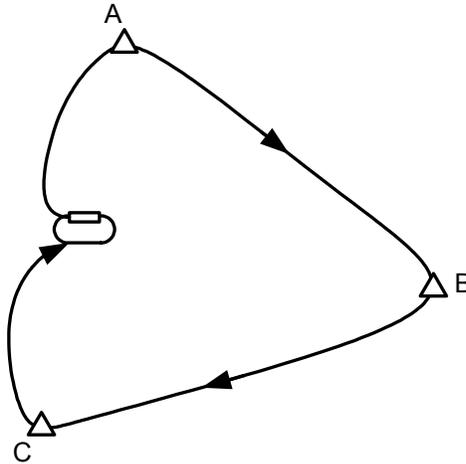
f_{Min} = the least fuel (Part 2)

X = marker score of 100 points

2.B4 FUEL & SPEED TRIANGLE

Objectives

To fly around a triangular circuit at speed on limited fuel having accurately predicted the time to each corner of the triangle.



Summary

Competitors will be given:

- the location of the three time gates that form the triangle
- the weight or volume of fuel specified by the competitor

Before takeoff the competitor must:

- declare the predicted time at which the gates will be overflowed

The task will normally start and finish with a Deck Takeoff and Deck Landing. If a residual fuel requirement has been specified, after completing the landing the competitor will be required to enter a Quarantine area for fuel checking.

Scores

Typically, each timing gate overflowed within 10 seconds of the predicted time will score 100 points. The following penalties will apply:

Takeoff deck penalty	20%
Landing deck penalty	20%
Failing to pass through the triangle timing gates	100%
Backtracking against the task direction	100%
Returning with less than minimum specified fuel	100%
Timing gate error >10 seconds from prediction	5 points/second

The typical task score calculation will be:

$$\text{Pilot score} = \left(350 \times \frac{t_{\text{Min}}}{t_p} \right) + \left(350 \times \frac{f_{\text{Min}}}{f_p} \right) + X_A + X_B + X_C$$

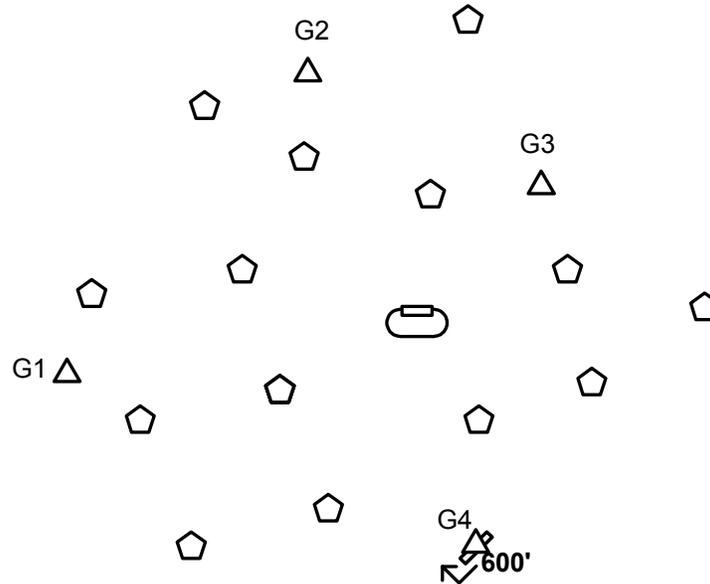
Where:

- t_p = the pilot's time,
- t_{Min} = the shortest time achieved by a scoring competitor
- f_p = the pilot's fuel
- f_{Min} = the least fuel used by a scoring competitor
- X = gate score of 100 points

2.B5 LIMITED FUEL TURNPOINT HUNT

Objectives

To fly to and identify from given photographs as many turnpoints as possible within a limited time, carrying limited fuel. Three of the turnpoints will be compulsory timing gates which must be overflowed within 10 seconds of a time predicted by the competitor. One of the gates may require a precision touchdown.



Summary

Competitors will be given:

- the location and score of all turnpoints and gates
- a specified weight or volume of fuel
- photos of any ground features to be identified

Before takeoff the competitor must:

- declare the predicted time at which the gates will be overflowed

The task will normally start and finish with a Deck Takeoff and Deck Landing and after completing the landing the competitor will be required to enter a Quarantine area for fuel checking and scoring.

Safety

During the task competitors must be aware that their paths may cross those of other aircraft. They must maintain careful observation of the sky at all times and should avoid flying at predictable heights.

Scores

Typically each photo will score 100 points and each time gate 200 points. The following penalties will apply:

Takeoff deck penalty	20%
Landing deck penalty	20%
Breach of Quarantine	100%
Photo wrongly identified on the map	50% of photo score
Timing gate error >10 seconds from prediction	10 points/second
Time over maximum task duration	10 points/second

2.B6 DURATION

Objectives

To fly for as long as possible on a limited amount of fuel.

Summary

Competitors will be given:

- a specified weight or volume of fuel

The task will normally start with a Deck Takeoff. Landing will normally be in an extended area, to be specified at the briefing. If a residual fuel requirement has been specified, after completing the landing the competitor will be required to enter a Quarantine area for fuel checking.

Safety

Particularly if the task is to be flown to empty tanks, pilots must look out for other aircraft preparing to land engine off. A proper look-out must be kept at all times. An aircraft joining another in a thermal shall circle in the same direction as that established by the first regardless of height separation

Scores

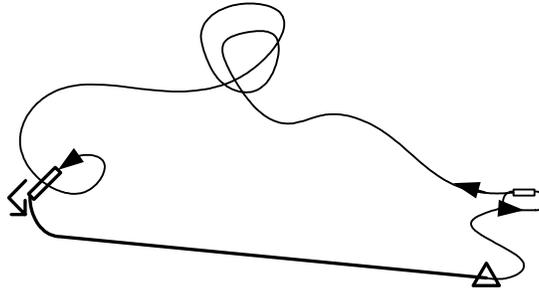
The following penalties will apply:

Takeoff deck penalty	20%
Breach of Quarantine	100%
Flight in a prohibited area	100%
Landing outside the specified area but within the airfield boundary	to be briefed

2.B7 DURATION & SPEED

Objectives

Given a limited amount of fuel, competitors must stay airborne for as long as possible, leaving enough fuel for a precision touch-and-go followed by a fast leg flown at a speed to be predicted by the competitor



Summary

Competitors will be given:

- a specified weight or volume of fuel
- the location of the airstrip for the precision touch-and-go
- the location of the gate at the end of the speed leg

Before takeoff the competitor must:

- declare the predicted time for the speed leg

The task will normally start and finish with a Deck Takeoff and Deck Landing. After completing the landing the competitor will be required to enter a Quarantine area for fuel checking.

Safety

Particularly if the task is to be flown to empty tanks, pilots must look out for other aircraft preparing to land engine off. A proper look-out must be kept at all times. An aircraft joining another in a thermal shall circle in the same direction as that established by the first regardless of height separation

Scores

The following penalties will apply:

Takeoff deck penalty	20%
Landing deck penalty	20%
Breach of Quarantine	100%
Flight in a prohibited area	100%
Predicted ground speed error	to be briefed

The typical task score calculation will be:

$$\text{Pilot score} = \left(400 \times \frac{\text{tdp}}{\text{tdMax}} \right) + \left(400 \times \frac{\text{tsMin}}{\text{tsp}} \right) + (200 - t\Delta p)$$

Where:

- tdp = the pilot's time achieved on the duration leg
- tdMax = the longest time achieved on the duration leg by a scoring competitor
- tsp = the pilot's time achieved on the speed leg
- tsMin = the shortest time achieved on the speed leg by a scoring competitor
- tΔp = the speed leg time error in excess of allowed 10 secs at 1 point/second (max 200)

2.6.1 PRECISION TASKS

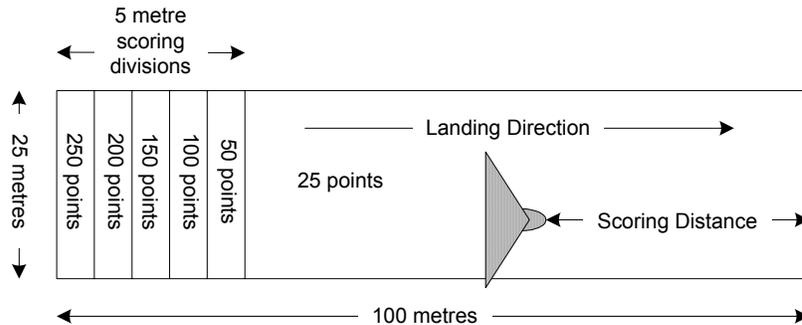
2.C1 SPOT LANDING

Objectives

The objective is for the aircraft to touch down within a marked deck, as close to the start of the deck as possible, coming to a halt in as short a distance as possible.

Summary

This task simulates a landing on an aircraft carrier deck, the deck being a deck 100 metres long and 25 metres wide. The first 25-metre section of the deck is divided into five 5 metre strips which are scored from 250 to 50 points as shown. The remainder of the deck scores 25 points. In order to score the main wheels must touch down and stay down in a particular strip and the aircraft must come to a complete halt within the 100-metre deck, as close to the start of the deck as possible.



Takeoff

The takeoff order will be specified at the task briefing. The pilot must position his aircraft to the satisfaction of the marshal and must not take off until instructed to do so by the marshal. The form of signal to be used by the marshal for this purpose will be specified at the briefing.

Climbing Circuit

The procedure for the climbing circuit will be specified at the task briefing.

Engine to Stop or Idle

The aircraft must approach the deck in the landing direction at a height of 1,000 ft. Before passing over the start of the deck the engine must be switched off or the throttle must be closed and the engine set to idle, as specified in the briefing. The aircraft must then fly over the full length of the deck before starting the descending circuit.

Descending Circuit

The procedure for the descending circuit will be specified at the briefing.

Landing

Once the aircraft has started its final approach no deviation of over 90 ° from the deck centreline either in the air or on the ground is permitted and the engine must remain at idle or may be switched off. The aircraft must come to a complete standstill and must not move until instructed to do so by a marshal.

Scoring

The score will be the value of the strip in which both main wheels touch down and remain in contact with the ground (P_S) plus the distance between the finish of the deck and the closest wheel, scored 1 point per whole metre (P_D). If the aircraft bounces the score will be the lowest value of the strips entered. Touching down on a dividing line scores the higher of the two strips. The pilot will be scored zero if:

The aircraft commences takeoff before instructed to do so by the marshal
The engine is not stopped or the throttle is not closed before passing over the deck
The aircraft does not pass over the entire length of the deck before turning to descend
The engine does not remain at idle once final approach has started if engine idle permitted
The aircraft turns by more than 90 degrees from the deck centreline between starting the landing approach and coming to a standstill
Any part of the aircraft touches the ground before the deck.
The aircraft does not stop within the limits of the deck.
The aircraft moves from the deck before instructed to do so by a marshal
The aircraft is unable to taxi or take off unaided following the touchdown although failure to start the engine will not incur a penalty

Thus the score calculation will be $(P_S + P_D) \times 250/350$ with a maximum score of 250

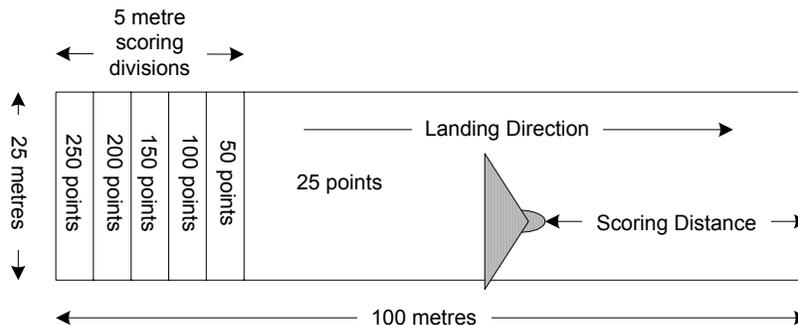
2.C2 SPOT LANDING - TIMED

Objectives

The objective is for the aircraft to touch down within a marked deck at a specific time, as close to the start of the deck as possible, coming to a halt in as short a distance as possible.

Summary

This task simulates a landing on an aircraft carrier deck, the deck being a deck 100 metres long and 25 metres wide. The first 25-metre section of the deck is divided into five 5 metre strips which are scored from 250 to 50 points as shown. The remainder of the deck scores 25 points. In order to score the main wheels must touch down and stay down in a particular strip and the aircraft must come to a complete halt within the 100-metre deck, as close to the start of the deck as possible. Additional points may be scored if the scoring touchdown takes place at or near an exact full minute as indicated by the competition clock, eg 11:31:00 hrs is a full minute, 11:31 17 hrs is not.



Takeoff

The takeoff order will be specified at the task briefing. The pilot must position his aircraft to the satisfaction of the marshal and must not take off until instructed to do so by the marshal. The form of signal to be used by the marshal for this purpose will be specified at the briefing.

Climbing Circuit

The procedure for the climbing circuit will be specified at the task briefing.

Engine to Stop or Idle

The aircraft must approach the deck in the landing direction at a height of 1,000 ft. Before passing over the start of the deck the engine must be switched off or the throttle must be closed and the engine set to idle, as specified in the briefing. The aircraft must then fly over the full length of the deck before starting the descending circuit.

Descending Circuit

The procedure for the descending circuit will be specified at the briefing.

Landing

Once the aircraft has started its final approach no deviation of over 90 ° from the deck centreline either in the air or on the ground is permitted. The aircraft must come to a complete standstill and must not move until instructed to do so by a marshal.

Scoring

The score will be the value of the strip in which both main wheels touch down and remain in contact with the ground (P_S) plus the distance between the finish of the deck and the closest wheel, scored 1 point per whole metre (P_D). If the aircraft bounces the score will be the lowest value of the strips entered. Touching down on a dividing line scores the higher of the two strips. If the aircraft touches down on a full minute, the time being taken from the official clock, ± 5 seconds a further 100 points is scored (P_T). This score will be reduced by 5 points for every second outside ± 5 seconds from a full minute. The pilot will be scored zero if:

The aircraft commences takeoff before instructed to do so by the marshal
The engine is not stopped or the throttle is not closed before passing over the deck
The aircraft does not pass over the entire length of the deck before turning to descend
The engine does not remain at idle once final approach has started if engine idle permitted
Any part of the aircraft touches the ground before the deck.
The aircraft turns by more than 90 degrees from the deck centreline between starting the landing approach and coming to a standstill
The aircraft does not stop within the limits of the deck.
The aircraft moves from the deck before instructed to do so by a marshal
The aircraft is unable to taxi or take off unaided following the touchdown although failure to start the engine will not incur a penalty

Thus the score calculation will be $(P_S + P_D + P_T) \times 250/450$ with a maximum score of 250

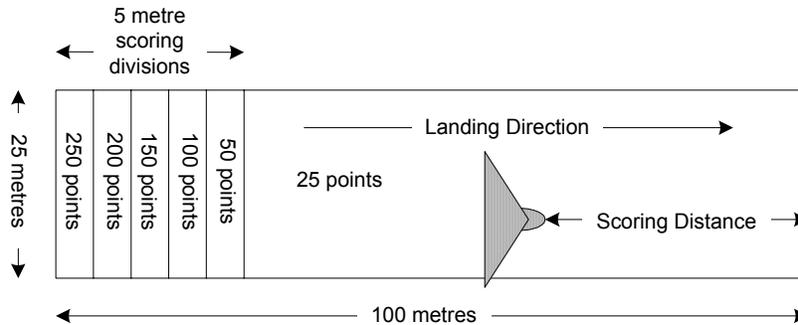
2.C3 POWERED PRECISION LANDING

Objectives

The objective is for the aircraft to touch down within a marked deck, as close to the start of the deck as possible, coming to a halt in as short a distance as possible.

Summary

This task simulates a landing on an aircraft carrier deck, the deck being a deck 100 metres long and 25 metres wide. The first 25-metre section of the deck is divided into five 5 metre strips which are scored from 250 to 50 points as shown. The remainder of the deck scores 25 points. In order to score the main wheels must touch down and stay down in a particular strip and the aircraft must come to a complete halt within the 100-metre deck, as close to the start of the deck as possible.



Joining

This task will follow the completion of a prior task in which no landing is required. Instructions for joining will be provided at the briefing or in the instructions for the prior task.

Landing

Once the aircraft has started its final approach no deviation of over 90 ° from the deck centreline either in the air or on the ground is permitted. The pilot may choose whatever engine setting he chooses or may switch off the engine unless otherwise instructed at the briefing. The aircraft must come to a complete standstill and must not move until instructed to do so by a marshal.

Scoring

The score will be the value of the strip in which both main wheels touch down and remain in contact with the ground (P_S) plus the distance between the finish of the deck and the closest wheel, scored 1 point per whole metre (P_D). If the aircraft bounces the score will be the lowest value of the strips entered. Touching down on a dividing line scores the higher of the two strips. The pilot will be scored zero if:

Any part of the aircraft touches the ground before the deck

The aircraft turns by more than 90 degrees from the deck centreline between starting the landing approach and coming to a standstill

The aircraft does not stop within the limits of the deck.

The aircraft moves from the deck before instructed to do so by a marshal

The aircraft is unable to taxi or take off unaided following the touchdown although failure to start the engine will not incur a penalty

Thus the score calculation will be $(P_S + P_D) \times 250/350$ with a maximum score of 250

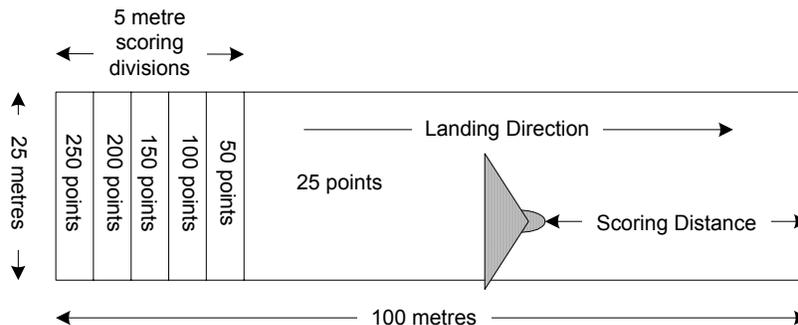
2.C4 POWERED PRECISION LANDING - TIMED

Objectives

The objective is for the aircraft to touch down within a marked deck at a specific time, as close to the start of the deck as possible, coming to a halt in as short a distance as possible.

Summary

This task simulates a landing on an aircraft carrier deck, the deck being a deck 100 metres long and 25 metres wide. The first 25-metre section of the deck is divided into five 5 metre strips which are scored from 250 to 50 points as shown. The remainder of the deck scores 25 points. In order to score the main wheels must touch down and stay down in a particular strip and the aircraft must come to a complete halt within the 100-metre deck, as close to the start of the deck as possible. Additional points may be scored if the scoring touchdown takes place at or near an exact full minute as indicated by the competition clock, eg 11:31:00 hrs is a full minute, 11:31 17 hrs is not.



Joining

This task will follow the completion of a prior task in which no landing is required. Instructions for joining will be provided at the briefing or in the instructions for the prior task.

Landing

Once the aircraft has started its final approach no deviation of over 90 ° from the deck centreline either in the air or on the ground is permitted. The pilot may choose whatever engine setting he chooses or may switch off the engine unless otherwise instructed at the briefing. The aircraft must come to a complete standstill and must not move until instructed to do so by a marshal.

Scoring

The score will be the value of the strip in which both main wheels touch down and remain in contact with the ground (P_S) plus the distance between the finish of the deck and the closest wheel, scored 1 point per whole metre (P_D). If the aircraft bounces the score will be the lowest value of the strips entered. Touching down on a dividing line scores the higher of the two strips. If the aircraft touches down on a full minute, the time being taken from the official clock, ± 5 seconds a further 100 points is scored (P_T). This score will be reduced by 5 points for every second outside ± 5 seconds from a full minute. The pilot will be scored zero if:

Any part of the aircraft touches the ground before the deck

The aircraft turns by more than 90 degrees from the deck centreline between starting the landing approach and coming to a standstill

The aircraft does not stop within the limits of the deck.

The aircraft moves from the deck before instructed to do so by a marshal

The aircraft is unable to taxi or take off unaided following the touchdown although failure to start the engine will not incur a penalty

Thus the score calculation will be $(P_S + P_D + P_T) \times 250/450$ with a maximum score of 250

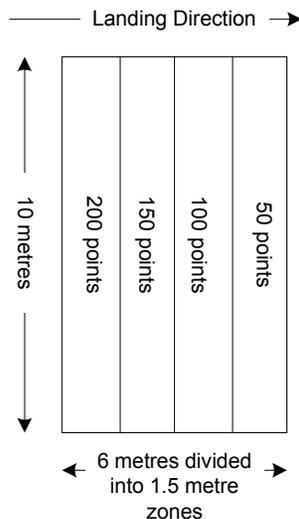
2.C5 PRECISION TOUCHDOWN - TIMED

Objectives

The objective is for the aircraft to touch down within a marked deck at a specific time, as close to the start of the deck as possible.

Summary

The deck is 6 metres long, 10 metres wide and is marked in four 1.5 metre strips which are scored from 200 to 50 points as shown. In order to score the main wheels must touch down in a particular strip as close to the start of the deck as possible. The lines will be defined by raked wet sand to ensure accurate scoring. Additional points may be scored if the scoring touchdown takes place at or near an exact full minute as indicated by the competition clock, eg 11:31:00 hrs is a full minute, 11:31 17 hrs is not.



Joining

This task will form part of another task. Instructions for joining will be provided at the briefing or in the instructions for the main task.

Landing

Once the aircraft has started its final approach no deviation of over 90 ° from the deck centreline is permitted. The pilot may choose whatever throttle setting he chooses or may switch off the engine unless otherwise instructed at the briefing. Once the touchdown is completed the pilot may immediately take off unless otherwise instructed at the task briefing.

Scoring

The score will be the value of the strip in which both main wheels touch down (P_S). Touching down on a dividing line scores the higher of the two strips. If the aircraft touches down on a full minute, the time being taken from the official clock, ± 5 seconds a further 50 points is scored (P_T). This score will be reduced by 5 points for every second outside ± 5 seconds from a full minute. The pilot will be scored zero if:

Any part of the aircraft touches the ground before the deck

The aircraft fails to touchdown within the limits of the deck

The aircraft turns by more than 90 degrees from the deck centreline between starting the landing approach and coming to a standstill

The aircraft is unable to taxi or take off unaided following the touchdown although failure to start the engine will not incur a penalty

Thus the score calculation will be $(P_S + P_T)$ with a maximum score of 250

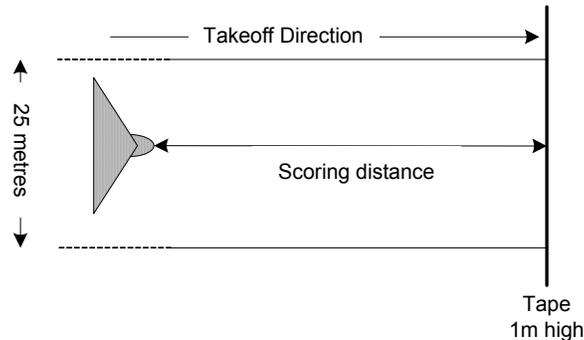
2.C6 SHORT TAKEOFF OVER AN OBSTACLE

Objectives

The objective is for the aircraft to take off over and clear an obstacle, starting the takeoff run as close to the obstacle as possible.

Summary

This task simulates a short field takeoff over a hedge, the hedge being represented by a tape stretched across the runway 1 metre above the ground. The pilot may position his aircraft on the runway as close as he wishes to the tape. This distance will be measured from the centre of the foremost wheel and rounded up to the nearest 0.1 metre. The aircraft must take off over the tape without breaking it.



Takeoff

The takeoff order will be specified at the task briefing. The pilot may position his aircraft as close to the tape as he wishes and must not take off until instructed to do so by the marshal. The form of signal to be used by the marshal for this purpose will be specified at the briefing.

Procedure after Takeoff

The procedure to be flown after takeoff will be specified at the briefing.

Scoring

The competitor in each class that starts the takeoff run closest to the tape (D_{MIN}) and clears the tape without breaking it will score 250 points. Other competitors will be awarded scores based on their distance from the tape at the start of their takeoff run (D_P) relative to D_{MIN} . The competitor will be scored zero if:

- The aircraft commences takeoff before stationary
- The aircraft commences takeoff before instructed to do so by the marshal
- The aircraft fails to fly over the tape
- Any part of the aircraft breaks the tape

Thus the score calculation will be $(250 \times D_{MIN} / D_P)$ with a maximum score of 250

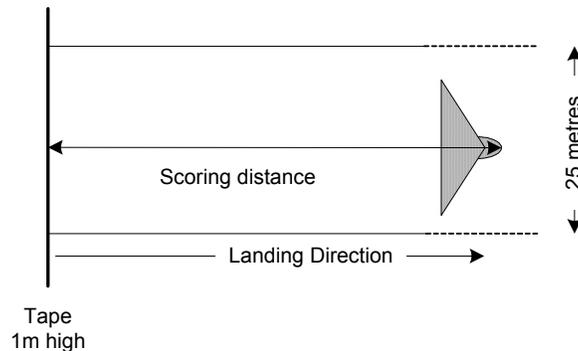
2.C7 SHORT LANDING OVER AN OBSTACLE

Objectives

The objective is for the aircraft to fly over and clear an obstacle, to land and come to a standstill as close to the obstacle as possible.

Summary

This task simulates a short field landing over a hedge, the hedge being represented by a tape stretched across the runway 1 metre above the ground. The pilot must land over the tape and stop. This distance will be measured from the centre of the foremost wheel and rounded up to the nearest 0.1 metre.



Joining

This task may form part of another task. Instructions for joining will be provided at the briefing or in the instructions for the main task.

Landing

Once the aircraft has started its final approach no deviation of over 90 ° from the centreline of the runway is permitted. The pilot may choose whatever engine setting he chooses or may switch off the engine unless otherwise instructed at the briefing. The aircraft must come to a complete standstill and must not move until instructed to do so by a marshal.

Scoring

The competitor in each class that comes to a standstill closest to the tape (D_{MIN}) having cleared the tape without breaking it will score 250 points. Other competitors will be awarded scores based on their distance from the tape when they stop (D_P) relative to D_{MIN} . The competitor will be scored zero if:

- The aircraft fails to fly over the tape
- Any part of the aircraft touches the ground before the tape
- Any part of the aircraft breaks the tape
- The aircraft turns by more than 90 degrees from the runway centreline between starting the landing approach and coming to a standstill
- The aircraft is unable to taxi or take off unaided following the touchdown although failure to start the engine will not incur a penalty

Thus the score calculation will be $(250 \times D_{MIN} / D_P)$ with a maximum score of 250

2.C8 DECK TAKEOFF

Objectives

The objective is for the aircraft to take off from a deck 100 metres long by 25 metres wide.

Summary

This task proves the short takeoff capability that is fundamental to the performance characteristics of a microlight by demonstrating that the aircraft can take off in 100 metres in still air at sea level. Where local conditions, such as airfield altitude or slope of the runway, will make a significant difference to takeoff runs the length of the deck may be adjusted accordingly.

Takeoff

This task will form the start of another task. The takeoff order will be specified at the main task briefing. The pilot must position his aircraft with its main wheels, or tail wheel in the case of a tail-dragger, immediately in front of the start line of the deck to the satisfaction of the marshal and must not take off until instructed to do so by the marshal. The form of signal to be used by the marshal for this purpose will be specified at the briefing.

Procedure after Takeoff

The procedure to be flown after takeoff will be specified in the main task at the briefing.

Scoring

There is no score for a deck takeoff but instead a 20% penalty will normally be applied to the main task if the aircraft fails to leave the ground before reaching the end of the deck. This penalty will normally apply if the aircraft:

Commences takeoff before stationary

Commences takeoff before instructed to do so by the marshal

Main wheels fail to leave the ground before reaching the end of the deck.

Touches the ground before climbing away.

2.C9 DECK LANDING

Objectives

The objective is for the aircraft to land in a deck 100 metres long by 25 metres wide.

Summary

This task proves the short landing capability that is fundamental to the performance characteristics of a microlight by demonstrating that the aircraft can land in 100 metres in still air at sea level. Where local conditions, such as airfield altitude or slope of the runway, will make a significant difference to landing runs the length of the deck may be adjusted accordingly.

Joining

This task will form the end of a task. Instructions for joining will be provided at the briefing or in the instructions for the prior task.

Landing

Once the aircraft has started its final approach no deviation of over 90 ° from the deck centreline either in the air or on the ground is permitted. The pilot may choose whatever engine setting he chooses or may switch off the engine unless otherwise instructed at the briefing. The aircraft must come to a complete standstill and must not move until instructed to do so by a marshal.

Scoring

There is no score for a deck landing but instead a 20% penalty will normally be applied to the main task if the aircraft fails to touch down and come to a halt within the deck. This penalty will normally apply if:

Any part of the aircraft touches the ground before the deck

The aircraft turns by more than 90 degrees from the deck centreline between starting the landing approach and coming to a standstill

The aircraft does not stop within the limits of the deck.

The aircraft moves from the deck before instructed to do so by a marshal

The aircraft is unable to taxi or take off unaided following the touchdown although failure to start the engine will not incur a penalty