



TASK CATALOGUE

FOR THE

14th FAI EUROPEAN MICROLIGHT CHAMPIONSHIPS

Nagykanizsa Airfield
Hungary
9 – 19 August 2017

ORGANISED BY : Kanizsa Repülő Klub

ON BEHALF OF THE FÉDÉRATION AÉRONAUTIQUE INTERNATIONALE













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









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Key to symbols used in the 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 or controlled by FR evidence.
	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
 	Marker identity given before takeoff
	Home airfield
	Outlanding airstrSP
	Direction of landing
	Left hand circuit
	Right hand circuit
	Circuit height above ground in feet
	Windssock
	Landing direction indicator
	Road or track

Marker Symbols

**H
I
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1. CURVE NAVIGATION WITH TIME ESTIMATION

Precisely fly the course defined by an arbitrary line drawn on the map, with time estimations and a time limit.

Description

Pilots will receive a course drawn on a map. There will also be a number of known time gates where pilots will estimate their crossing time, counted from the start point.

Before take-off, pilots will hand their declarations to a marshal.

They will take off from their designated deck and fly to the start point, where time will start. Then they will precisely fly the course trying to cross the time gates in order at their estimated times.

Navigation and timing end at the finish point.

There will be an undetermined number of hidden gates to validate the course. Gates must be crossed in order and proper direction. Crossing the same gate more than once in any direction invalidates the gate. Example: The sequence 1-2-4-3-5-6-5-7 will be evaluated as 1-2-4-6-7, a total of five correct gates.

Time will be measured at the known time gates and checked against pilot declarations. If a time gate is crossed more than once, time will be extracted from the first crossing.

There will be a maximum flight time – T_{max} – between crossing the start and finish points. No pilot may declare an estimated time beyond this limit.

Scoring

Spatial precision

N_h = Number of hidden gates in the task

H = Number of hidden gates correctly crossed (crossed once, in order and proper direction)

Q_h = 1000 x H / N_h

Time precision

N_t = Number of time gates.

E_{max} = Maximum error (in seconds) in each time gate (typically 180).

E_t = Sum of absolute errors in time gates.

Maximum error of E_{max} seconds in each point.

E_{max} seconds error is applied if point not flown.

Q_t = E_{max} * N_t – E_t

Total: Q = Q_h + Q_t P = 1000 x Q / Q_{max}

Comments

An additional penalty may be established for an excessive delay to cross SP since take-off.

An additional penalty may be established for an excessive delay to cross FP since crossing SP.

The task can also be run without the time precision part (no known time gates). Then Q_t is dropped from the scoring formula.

2. PRECISION NAVIGATION

Fly a circuit at a constant speed in each straight leg, estimating arrival times to known turn points.

Description

A circuit will be defined by a start and finish points, with a number of intermediate turn points. All points will be known before take-off.

Before take-off, competitors will hand a declaration of their estimated times of arrival to every turn point in the circuit, including the finish point.

Competitors will take-off from their designated decks and fly to the START point where navigation and timing start. They will fly each leg at a constant speed that should be consistent with their declarations. The speed in each leg may be different, but it must be constant along the leg.

There will be hidden time gates along the corridors.

Navigation and timing end at the FINISH point. Then they will proceed to land at their designated decks.

Scoring

Each hidden gate crossed scores 180 points. A gate crossed twice or crossed in the opposite direction will be invalidated.

An estimated time for crossing each gate will be calculated by the organization. Crossing time will be checked against this estimation. Each second of error will score one negative point. If a gate is crossed twice, time will be extracted from the first crossing.

Spatial precision:

E_{max} = Maximum error (in seconds) in each time gate (typically 180).

N_g = Number of gates correctly crossed

$Q_p = E_{max} * N_g$

Time precision:

E_i = Absolute error in seconds in gate i .

Maximum error is E_{max} . Time gates not crossed score E_{max} seconds error.

$Q_t = \sum E_i$ (sum of errors in all time gates)

Total: $Q = Q_p + Q_t$ $P = 1000 * Q / Q_{max}$

Penalties

An additional penalty may be established for a delayed crossing of SP from the take-off time.

3. CONTRACT NAVIGATION WITH TIME CONTROLS

Fly a course between a combination of declared turn points, flying over some of them at a specified time.

Description

Pilots will receive a catalogue of turn points. Three of them, the start point SP, a middle point MP and the finish point FP, are mandatory and will be crossed at designated times.

Before take-off, pilots will declare the sequence of turn points they will fly.

They will take off and fly to the START point where navigation begins. Then they will fly the sequence of declared points in order, including the mandatory MIDDLE POINT and FINISH POINT. These two points will be flown at the specified time. Upon reaching the finish point, navigation ends.

Turn points may only be visited once.

Time starts counting at the start point (SP). Competitors will fly over the middle point (MP) exactly T seconds after SP and will fly over the finish point (FP) exactly $2T$ seconds after SP.

Pilot's declaration will include MP. Points declared to be flown after MP can't be flown before the established time for MP. Otherwise those points will be invalid.

Scoring

Turn-points

N = Number of turn-points declared and flown in order (different from SP, MP and FP).

Ep = Number of declared points that were not flown (or not in order), including SP, MP and FP.

$V = N - E_p$

$Q_p = 1000 * (V / V_{max})$

Time estimation:

E_{max} = Maximum error (in seconds) in each time gate (typically 180).

E_t = Sum of absolute errors in SP, MP and FP.

Maximum error of E_{max} seconds in each point.

E_{max} seconds error is applied if point not flown.

$Q_t = E_{max} * 3 - E_t$

Total: $Q = Q_p + Q_t$ $P = 1000 * Q / Q_{max}$

Comments

An additional penalty may be established for a delayed crossing of SP from the take-off time.

4. NAVIGATION OVER A KNOWN CIRCUIT

Follow a known circuit, finding markers or identifying ground features from photographs and locating their positions on a map or crossing hidden gates. 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 evaluated for time precision or for speed. The task may finish with an outlanding.

Summary

Competitors will be given:

A series of headings to follow or lines drawn on a map or a description of the procedure to draw them. The location of a start point (SP) before which no markers, ground features or gates will be found. The time at which they must overfly 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 or description of canvas markers 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, or Declare crossing times at certain turn points. After completing the landing the competitor will be required to enter a Quarantine area for scoring.

Scoring

Spatial precision:

V_h = Value assigned to crossing a hidden gate or properly placing a mark on the map (e.g. 100)

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

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

More than 5 mm score zero.

Out of track marks score zero.

$Q_h = V_h * N_h$

Time precision (when included in the task):

V_t = Gate value (e.g. 180)

E_i = Absolute error in seconds in gate i.

Maximum error is Vt .

Time gates not crossed do not add error.

$Q_t = \sum (Vt - E_i)$ (sum of gate value minus time error each gate crossed)

Speed (when included in the task):

V_s = Relative value for the speed term

S = Pilot's speed in the speed section

$Q_v = V_s * S / S_{max}$

Total: $Q = Q_h + Q_t + Q_v$ $P = 1000 * Q / Q_{max}$

Penalties

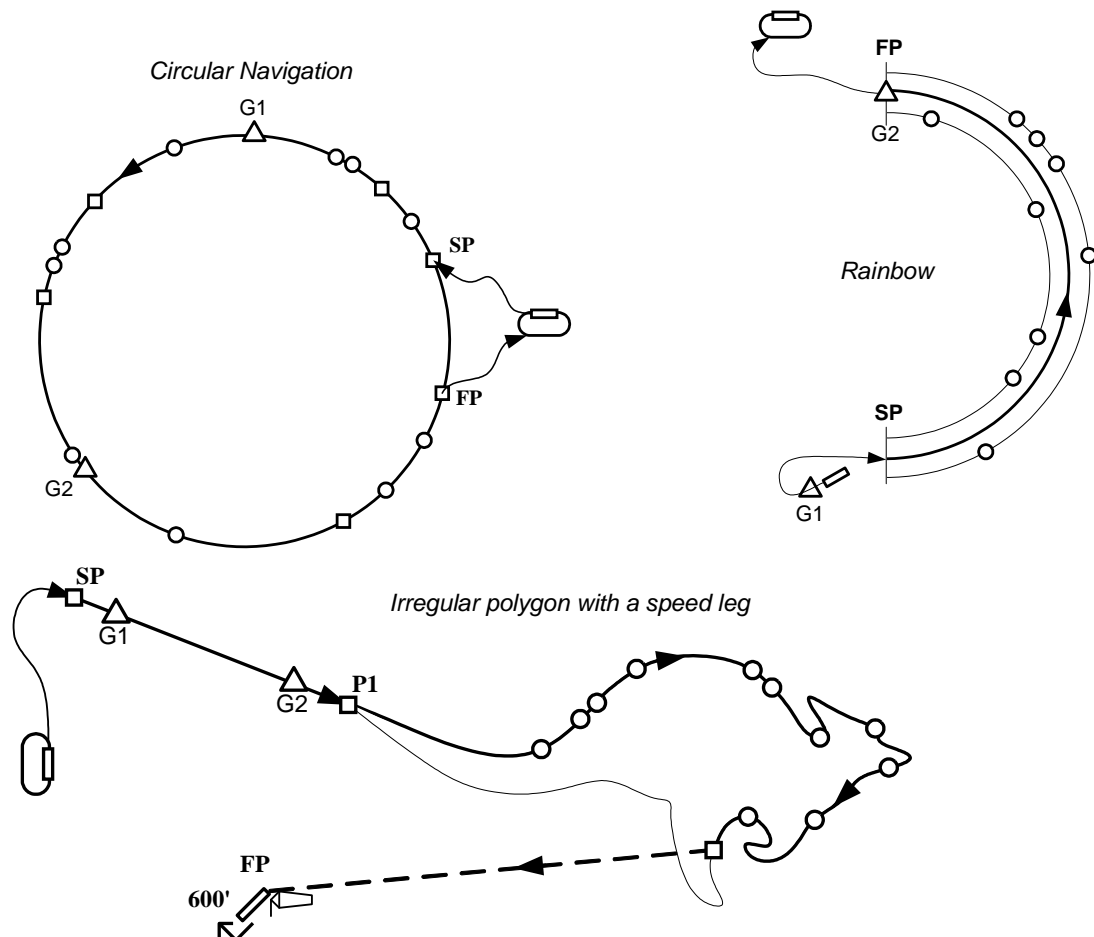
Each photo or marker correctly identified and located on the map to within 2mm and any ground speed element will score as briefed. The following penalties will apply:

Backtracking against the task direction or crossing a hidden gate backwards: 100%

Breach of Quarantine: 100%

Crossing a hidden gate twice invalidates the gate.

Examples



5. NAVIGATION WITH UNKNOWN LEGS

Follow a series of headings or known lines, finding markers and identifying ground features from photographs, and locating their positions on a map or crossing hidden gates. 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 or the start of a leg to another point. There may be timing gates to take times if part of the task must be evaluated for time precision or for speed. The task may finish with an outlanding.

Summary

Competitors will be given: A series of headings to follow or lines drawn on a map or a description of the procedure to draw them. The location of a start point (SP) before which no markers, ground features or gates will be found. 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

Depending on the specific task design, competitors may be given: Sealed instructions giving the location of next turn points or outlanding sites. The time at which they must overfly the start point. Photos of any ground features or description of canvas markers 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. Declare crossing times at certain turn points.

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 (e.g. 100)

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

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

More than 5 mm score zero.

Out of track marks score zero.

$Q_h = V_h * N_h$

Time precision (when included in the task):

Vt = Gate value (e.g. 180)

Ei = Absolute error in seconds in gate i.

Maximum error is Vt.

Time gates not crossed do not add error.

$Q_t = \sum (V_t - E_i)$ (sum of gate value minus time error each gate crossed)

Speed (when included in the task):

Vs = Relative value for the speed term

S = Pilot's speed in the speed section

$Q_v = V_s * S / S_{max}$

Total: $Q = Q_h + Q_t + Q_v$ $P = 1000 * Q / Q_{max}$

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:

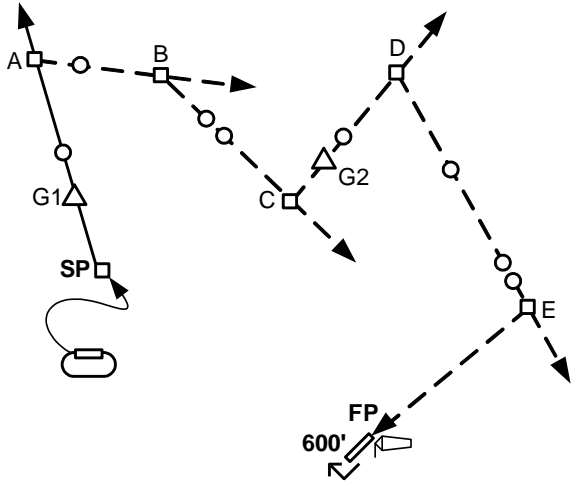
Backtracking against the task direction or crossing a hidden gate backwards: 100%

Breach of quarantine: 100%

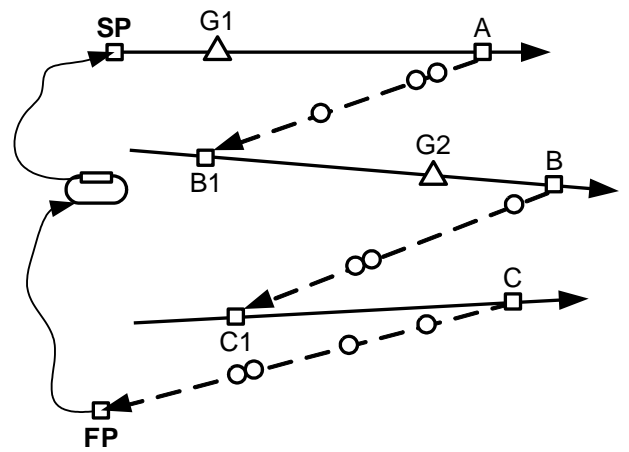
Crossing a hidden gate twice invalidates the gate.

A penalty will be specified for braking an envelope seal.

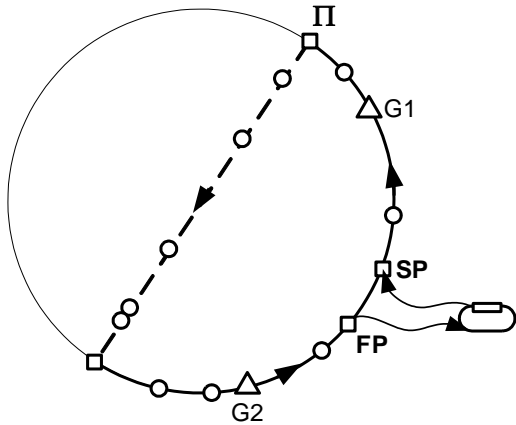
Examples



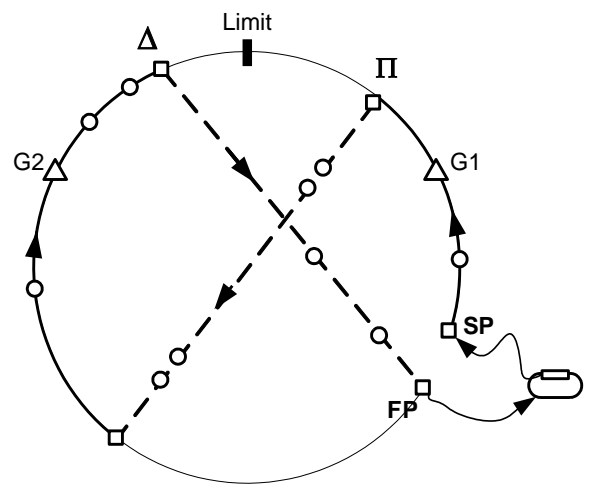
Sequential navigation



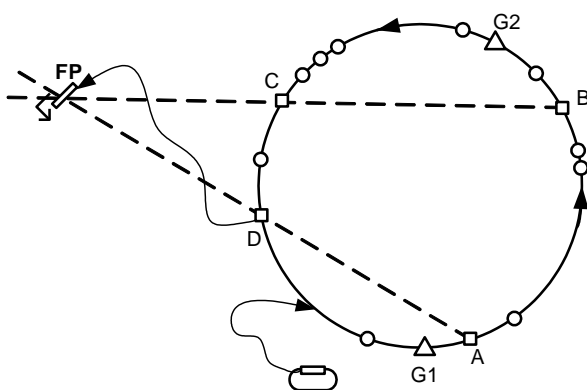
Linear navigation



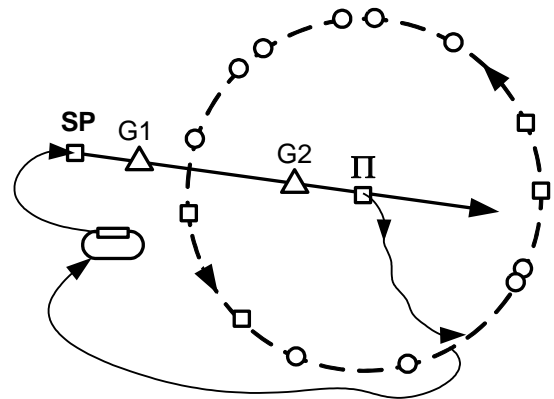
Circular navigation and diameter



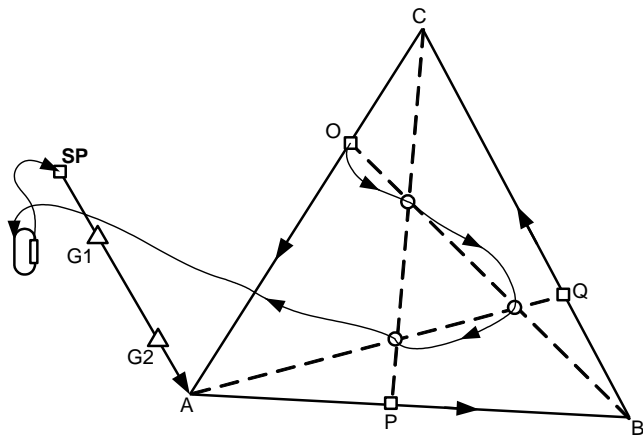
Circular navigation, diameter and reverse.



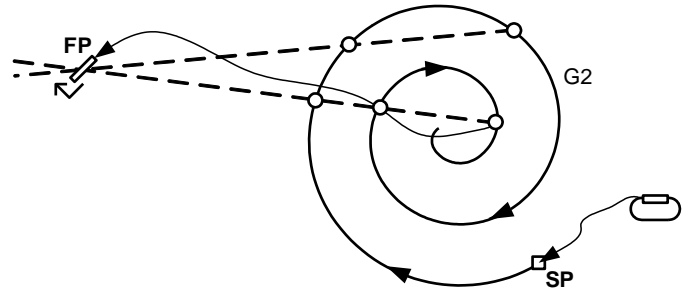
Circle and two lines



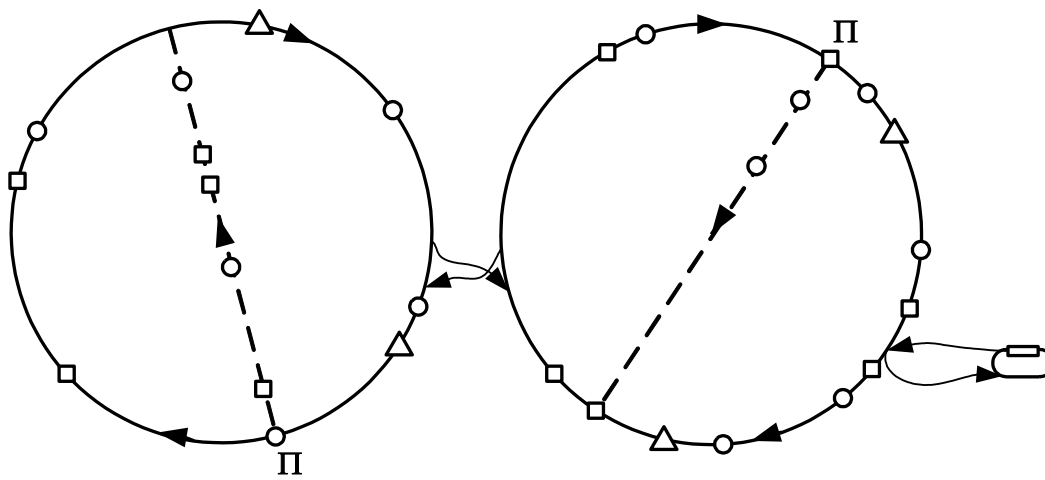
Drawn circular navigation



Triangle and three lines



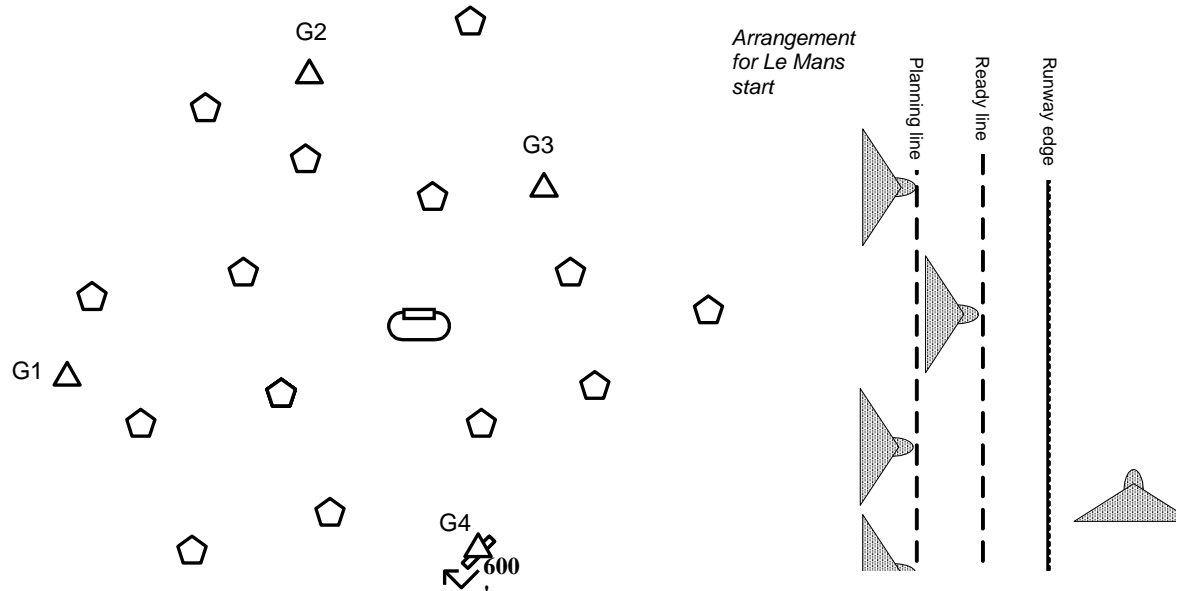
Speed spiral and two lines



Double circular navigation

6. 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 overflowed 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.



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 overflowed
- The predicted turnpoints and gates that will be visited and their sequence in the flight

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:

- Breach of Quarantine: 100%
- Photo wrongly identified on the map: Penalty 50% of photo score
- Timing gate error >10 seconds from prediction: 10 points/second
- Time over maximum task duration: 10 points/second

7. 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 overflown 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 overflown

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

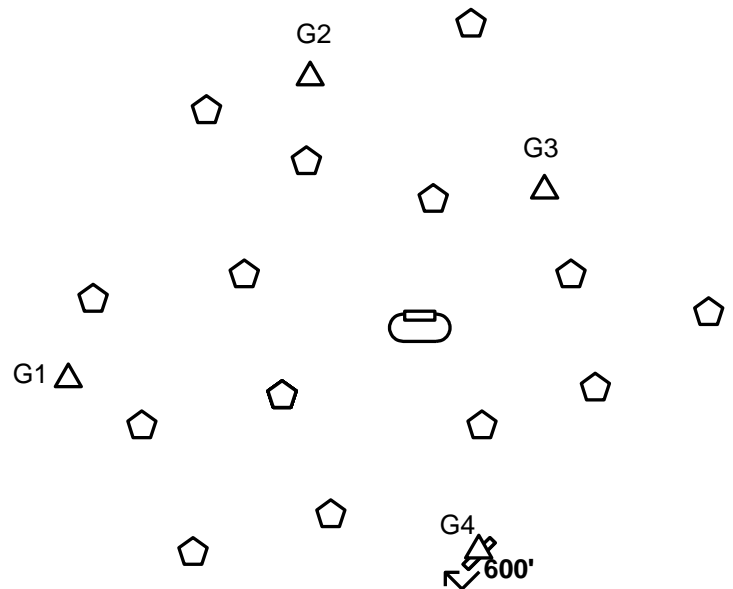
Safety

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:

- Breach of Quarantine: 100%
- Photo wrongly identified on the map: Penalty 50% of photo score
- Timing gate error >10 seconds from prediction: 10 points/second
- Time over maximum task duration: 10 points/second



8. 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

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:

- Breach of Quarantine: 100%
- Flight in a prohibited area: 100%
- Landing outside the specified area but within the airfield boundary: To be briefed

9. AREA RECTANGLE AND SPEED

Objectives

With limited fuel fly a rectangle course with the objective of creating a rectangle of maximum possible area. The first leg will be score for speed.

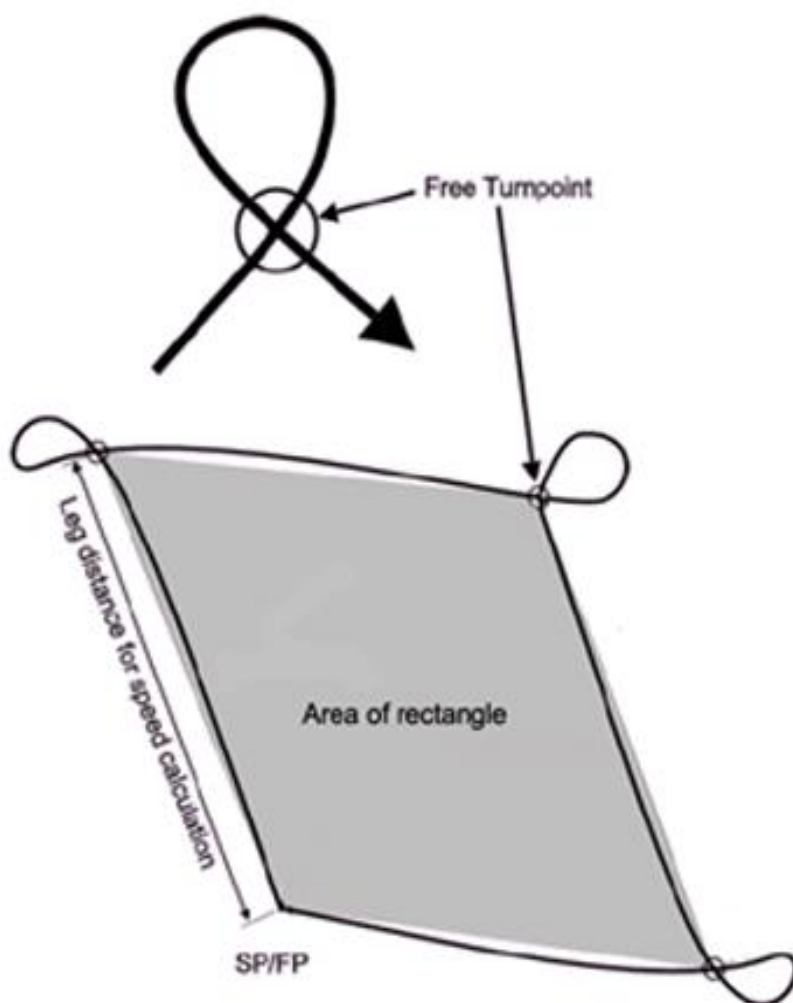
A standard fuelling operation will be performed. Each class will have a designated amount of fuel. A single start and finish point (SP/FP) will be given at the briefing.

No quarantine planning nor declaration is required. A standard take-off in open window will be performed. Unless otherwise briefed, pilots will perform a standard deck take-off from their designated deck.

Pilots will fly a rectangle that starts and ends in the SP/FP point. The other three turn-points will be corners of the rectangle which the competitors may choose freely. These three free turn-points will be the points where the two consecutive sides of the rectangle intersect when a precision turn is flown, so the new leg crosses the previous leg.

The area within the rectangle created by SP/FP and the three free turn-points points will be calculated to determine the rectangle *area* score. The first leg, from SP/FP to the first intersection, will be scored for speed.

Timing will start at SP/FP and finish at the intersection of the first two legs before the start of the precision turn. Time taken will, therefore, exclude the turn itself. Landing will be performed inside the briefed airfield boundaries. Immediately after landing pilots will proceed to the quarantine area where a standard fuel check in quarantine will be performed.



Scoring

A = Area of the rectangle created by the SP/FP point and the first two track intersections.

A_{max} = Largest area in the class

Q_a = $700 * A / A_{max}$

Speed

V = Speed measured from SP/FP to the first track intersection

V_{max} = Fastest speed in the class

Q_t = $300 * V / V_{max}$

Total

P = Q_a + Q_t

10. SPOT LANDING

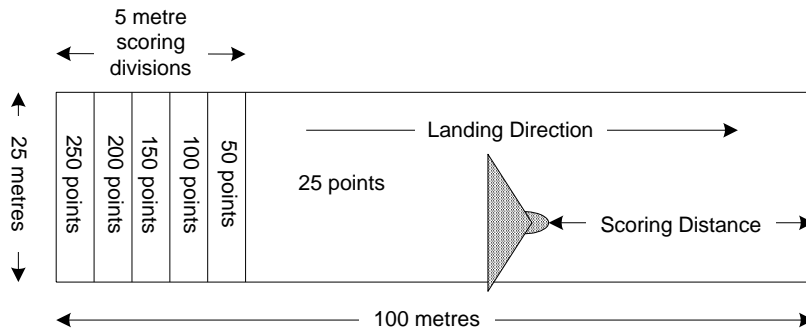
Objectives

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. Deck length shall be adjusted according to the airfield elevation (S10 4.31.5). The width of the deck may be decreased to be adjusted to the width of the existing runway (S10 4.31.5). 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 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 with the ground (PS) plus the distance between the finish of the deck and the closest wheel, scored 1 point per whole metre (PD). 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 $(P_S + P_D)$ with a hypothetical maximum score of 350

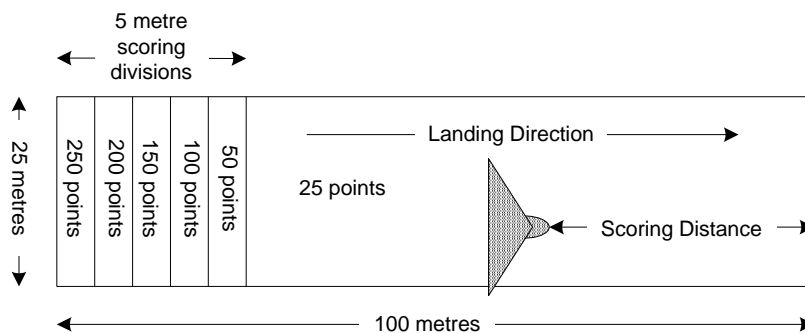
11. SPOT LANDING - TIMED

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. Deck length shall be adjusted according to the airfield elevation (S10 4.31.5). The width of the deck may be decreased to be adjusted to the width of the existing runway (S10 4.31.5). 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 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 (PS) plus the distance between the finish of the deck and the closest wheel, scored 1 point per whole metre (PD). 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 (PT). 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 (PS+PD+PT) with a maximum score of 450

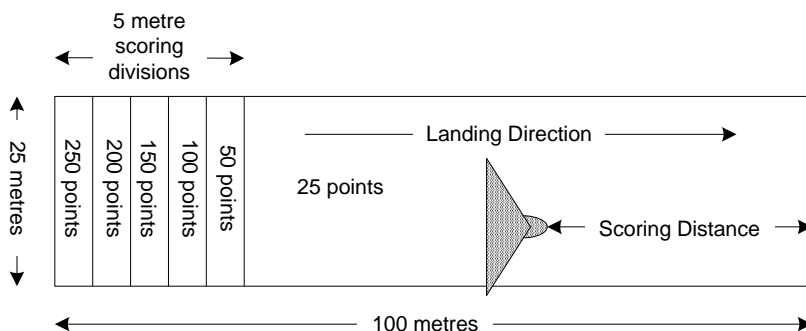
12. POWERED PRECISION LANDING

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. Deck length shall be adjusted according to the airfield elevation (S10 4.31.5). The width of the deck may be decreased to be adjusted to the width of the existing runway (S10 4.31.5). 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 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 (P_S) plus the distance between the finish of the deck and the closest wheel, scored 1 point per whole metre (P_D). 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 $(P_S + P_D)$ with a maximum hypothetical score of 350

13. POWERED PRECISION LANDING - TIMED

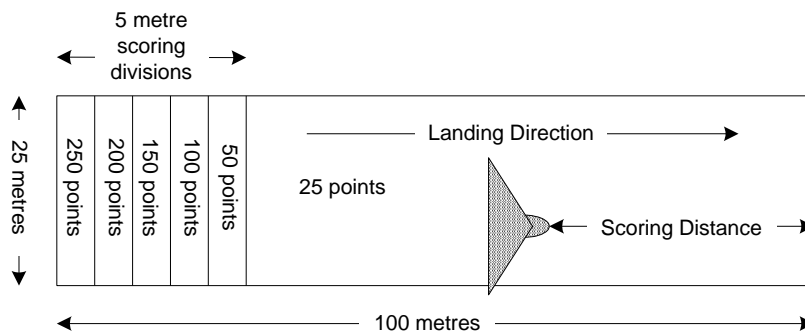
Objectives

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. Deck length shall be adjusted according to the airfield elevation (S10 4.31.5). The width of the deck may be decreased to be adjusted to the width of the existing runway (S10 4.31.5). 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 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 with the ground (PS) plus the distance between the finish of the deck and the closest wheel, scored 1 point per whole metre (PD). 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 (PT). 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 $(P_S + P_D + P_T)$ with a maximum hypothetical score of 450

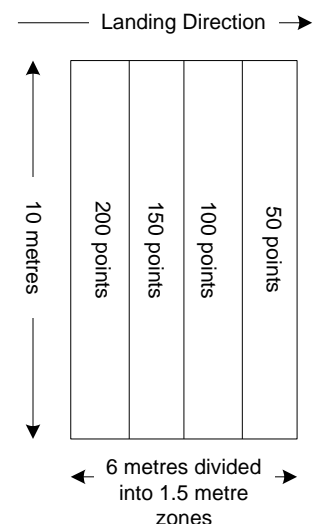
14. PRECISION TOUCHDOWN - TIMED

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

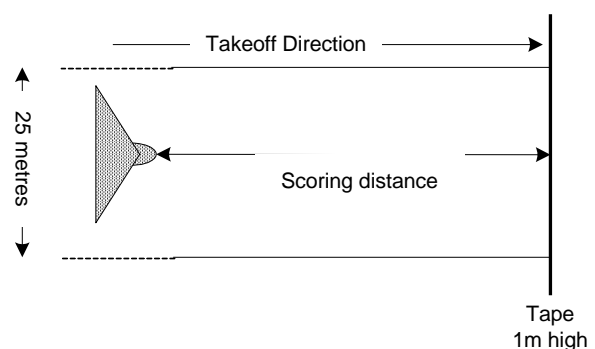
15. SHORT TAKEOFF OVER AN OBSTACLE

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 the 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

16. 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.

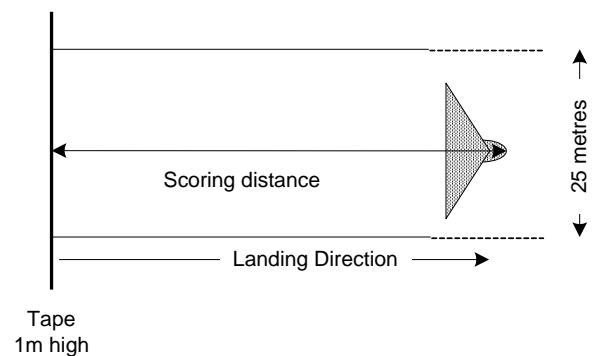
Landing

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

17. 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. Deck length shall be adjusted according to the airfield elevation (S10 4.31.5). The width of the deck may be decreased to be adjusted to the width of the existing runway (S10 4.31.5). Where other local conditions, such as 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.