TASK CATALOGUE FOR THE 13TH FAI WMC 2012

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

The term “Microlights” refers to classes AL1, AL2, WL1, WL2, GL1 and GL2.

Contents

1 Introduction

This catalogue describes tasks which may be set during the 13th FAI World Microlight Championships 2012. All tasks are approved by the FAI Microlight Commission (CIMA) along with the Local Regulations.

1.1 Principles

Good tasks make for good championships, but tasks also drive the design direction for the aircraft. For example, Microlights 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 and 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 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.

This task catalogue contains a reduced set of well known tasks that have been tested in at least one previous FAI-CIMA Cat I event It is intended to provide a solid competition framework where both competitors and organisers can perform their jobs in a simple way while enjoying the competition. Another goal of this task catalogue is to be compatible with an automated scoring system.

Therefore, a number of design decisions have been taken.

- Ground pictures or markers will never be used for scoring. However, they can still be used to define parts of the circuit that pilots are expected to discover once in flight.
- Pilot declarations will be as simple as possible and always before take-off. No declarations will be required after landing.
- Individual planning will be mandatory in tasks involving navigation, including some economy tasks, so flight planning will be done in quarantine in those cases.
- There are no pure speed tasks, as long as speed is always combined with other goals. However, a modest speed bonus will be scored in most navigation tasks. Also, timing may start at the moment when the pilot receives last minute task details, so the speed score bonus may include planning time.
- Homogeneous scoring criteria have been applied across tasks. This allows for better understanding by pilots and simplifies the job of implementing the scoring system.

Task descriptions are written as the task sheets that will be used during a championship. Each task is written in a single page so that it can be individually printed for the convenience of competitors. They will not be modified before or during the championship, with the only exceptions of the addition of figures or further clarifications.

1.2 Task types

Tasks fall into three categories:

A Flight planning, navigation estimated time and speed. No fuel limitation.

B Fuel economy, speed range, duration. Fuel limited to maximum 15 kg for aircraft flown solo and 22 kg for aircraft flown with two people.

C Precision

The proportion of each task to be used is stated in S10, 4.29.3

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 4.17.7.

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.

2 Navigation Tasks

2.1 Precision Navigation

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

Planning

A circuit will be defined by a start (SP) and finish (FP) points, with a small number of intermediate turn points (TP). All turn points will be known before take-off. Legs between consecutive points will normally be straight segments, but some of them may also be well defined arcs of circumference. As an additional aid, the organiser may also give the length of each leg.

Pilots will receive the collection of turn points at a specified start-of-planning time (PT) and will plan their flight individually. PT for each pilot will be published in advance.

Pilots will fill in a declaration sheet indicating their estimated times of arrival to every turn point in the circuit, including the finish point. Estimated times will be given in seconds counted from SP. Pilots will hand their declaration to a marshal before take-off.

Take-off

The director may choose to tun the task with take off at a designated time or allow pilots to take off immediately after handing their declaration to the marshal.

Unless otherwise briefed, pilots will perform a standard deck take-off from their designated deck.

Flight

After take-off, pilots will fly to the start point (SP) where the clock starts. 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 each leg.

There will be an undetermined number of hidden time gates along the legs.

There will be a small bonus for speed along the whole course, that may include planning time if briefed..

Navigation ends at the finish point (FP).

SP	→	AA	→	BB	→	CC	→	DD	→	FP
T = 0	Hidden gates	Ta	Hidden gates	Tb	Hidden gates	Tc	Hidden gates	Td	Hidden gates	T

Landing

After crossing FP, pilots will proceed to land. Unless otherwise briefed, they will perform a standard deck landing at their designated decks.

After landing they will secure their aircraft and take their loggers to the download office.

Scoring

Hidden time-gate score: The difference between the time of arrival estimated by the pilot and the real crossing is the time error for a gate.

Ei = Absolute error in seconds in gate i with a tolerance of 5 seconds and a maximum of 180.
Hi = 180 – Ei (Points obtained in gate i). Time gates not crossed score zero.
Qt = ∑ Hi (Sum of all gate points)

Speed score

Tstart = Time of crossing SP or time when the pilot starts planning (according to briefing)
Tfin = Time of crossing FP
T = Tfin – Tstart
Tmin = Minimum time in the class
Qv = 200 * Tmin / T

Total

Q = Qt * (1 + Qv / 1000)
P = 1000 * Q / Qmax

Task-specific penalties

100% penalty for backtracking or making 360º turns.

20% penalty for an excessive delay between effective take-off and crossing the start point.

2.1.1 Precision Navigation – Declaration Sheet

Turn-point	Estimated time of arrival in seconds counted from the start point (SP)
SP	**0 s**
FP	

Pilot _____

Comp. No. _____ **Team** _____ **Class** _____

Task No. _____ **Date** _____ **Time** _____

Pilot's Signature

Marshal _____

Marshal's Signature:

2.2 Curve Navigation

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

Planning

Pilots will receive a course drawn on a map.

If the course shows a number of known time gates, then the pilots will estimate their crossing time, counted from the start point.

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

Take-off

The director may choose to tun the task with take off at a designated time or allow pilots to take off immediately after handing their declaration to the marshal.

Unless otherwise briefed, pilots will perform a standard deck take-off from their designated deck.

Flight

Time will start when the aircraft crosses the start point. Then pilots 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 (TG) 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 small bonus for speed along the whole course, that may include planning time if briefed.

SP	→	TG1	→	TG2	→	TG3	→	FP
T = 0	Hidden gates	T1	Hidden gates	T2	Hidden gates	T3	Hidden gates	T

Landing

After crossing FP, pilots will proceed to land. Unless otherwise briefed, they will perform a standard deck landing at their designated decks.

After landing they will secure their aircraft and take their loggers to the download office.

Scoring

Hidden gate score

Nh = Number of hidden gates in the task
H = Number of hidden gates correctly crossed (crossed once, in order and proper direction)
Qh = 1000 x H / Nh

Known time-gate score (when the course includes known time gates). An expected time of arrival (ETA) to each gate will be calculated based on the pilot's declaration. The difference between the ETA and the real crossing is the time error for a gate.

Ei = Absolute error in seconds in gate i with a tolerance of 5 seconds and a maximum of 180.
Hi = 180 – Ei (Points obtained in gate i). Time gates not crossed score zero.
Qt = ∑ Hi (Sum of all gate points)

Speed score

Tstart = Time of crossing SP or time when the pilot starts planning (according to briefing)
Tfin = Time of crossing FP
T = Tfin – Tstart
Tmin = Minimum time in the class
Qv = 200 * Tmin / T

Total

Q = (Qh + Qt) * (1 + Qv / 1000)
P = 1000 x Q / Qmax

Task-specific penalties

100% penalty for backtracking or making 360º turns.

20% penalty for an excessive delay between effective take-off and crossing the start point.

2.2.1 Curve Navigation – Declaration Sheet

Time gate	Estimated time of arrival in seconds counted from the start point (SP)
SP	**0 s**
FP	

Pilot _____

Comp. No. _____ **Team** _____ **Class** _____

Task No. _____ **Date** _____ **Time** _____

Pilot's Signature

Marshal _____

Marshal's Signature:

2.3 Navigation with Unknown Legs

Fly a circuit discovering one or more legs while in flight.

Planning

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 start point (SP) and finish point (FP) will always be known.

They will also receive photos of ground features or description of canvas markers: each one indicates the start of a leg. There will be no out-of-track (false) photos or markers.

Planning will be done in quarantine and pilots will declare their planned speed along each known leg.

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

Take-off

The director may choose to tun the task with take off at a designated time or allow pilots to take off immediately after handing their declaration to the marshal.

Unless otherwise briefed, pilots will perform a standard deck take-off from their designated deck.

Flight

After take-off, pilots will fly to the start point (SP) where navigation starts. They will fly the circuit discovering legs as they fly. They will fly known legs at their declared speed.

There will be an undetermined number of hidden gates along the legs.

There will be a small bonus for speed along the whole course, that may include planning time if briefed..

Navigation ends at the finish point (FP).

Landing

After crossing FP, pilots will proceed to land. Unless otherwise briefed, they will perform a standard deck landing at their designated decks.

After landing they will secure their aircraft and take their loggers to the download office.

Scoring

Hidden gate score

Nh = Number of hidden gates in the task
H = Number of hidden gates correctly crossed (crossed once, in order and proper direction)
Qh = 1000 x H / Nh

Hidden time-gate score (when briefed). An expected time of arrival (ETA) from the start of each leg to the hidden gate will be calculated based on the pilot's declaration. The difference between the ETA and the real crossing is the time error for a gate.

Ei = Absolute error in seconds in gate i with a tolerance of 5 seconds and a maximum of 180.
Hi = 180 – Ei (Points obtained in gate i). Time gates not crossed score zero.
Qt = ∑ Hi (Sum of all gate points)

Speed score

Tstart = Time of crossing SP or time when the pilot starts planning (according to briefing)
Tfin = Time of crossing FP
T = Tfin – Tstart
Tmin = Minimum time in the class
Qv = 200 * Tmin / T

Total

Q = (Qh + Qt) * (1 + Qv / 1000)
P = 1000 * Q / Qmax

Task-specific penalties

100% penalty for backtracking or making 360º turns.

20% penalty for an excessive delay between effective take-off and crossing the start point.

2.3.1 Navigation with Unknown Legs – Declaration Sheet

Known leg	Speed along the leg in Km/h

Pilot _____

Comp. No. _____ **Team** _____ **Class** _____

Task No. _____ **Date** _____ **Time** _____

Pilot's Signature

Marshal _____

Marshal's Signature:

3 Economy Tasks

3.1 Duration

Fly for as long as possible on a limited amount of fuel.

Fuelling

A standard fuelling operation will be performed. Each class will have a designated amount of fuel.

Planning

A start point (SP) and finish point (FP) will be given.

No formal planning is necessary for this task.

Take-off

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.

Flight

After take off pilots will proceed to the start point SP where time starts. As SP can be crossed many times, start time is taken from the first crossing.

Aircraft will try to stay airborne as long as possible.

An aircraft joining another in a thermal shall circle in the same direction as that established by the first regardless of height separation.

Before landing pilots will cross FP where time stops. As FP can be crossed many times, finish time is taken from the last crossing.

Landing

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

Time score

T	=	Time between first crossing of SP and last crossing of FP.
Tmax	=	Best time in the class
P	=	1000 * T / Tmax

Task-specific penalties

None

3.2 Turn-point Hunt

Fly the maximum number of turn points with a limited amount of fuel and return to the airfield.

Fuelling

A standard fuelling operation will be performed. Each class will have a designated amount of fuel.

Planning

Competitors will be given a list of turn-points. Planning will be done in quarantine but no declaration is needed for this task.

Take-off

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.

Flight

Pilots will fly to as many turn-points as they wish trying to maximize both number of turn-points and distance.

Landing

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

Number of turn-points:

N = Number of turn-points crossed by the pilot
Nmax = Maximum number of crossed turn-points in the class
Qn = 500 * N / Nmax

Distance

D = Distance measured in straight lines between consecutive TPs crossed by the pilot.
Dmax = Maximum distance along turn-points in the class
Qd = 500 * D / Dmax

Total

Q = Qn + Qd
P = 1000 * Q / Qmax

Task-specific penalties

None

3.3 Area Triangle and Speed

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

Fuelling

A standard fuelling operation will be performed. Each class will have a designated amount of fuel.

Planning

A single start and finish point (SP/FP) will be given at the briefing.

No quarantine planning nor declaration is required.

Take-off

A standard take-off in open window will be performed.

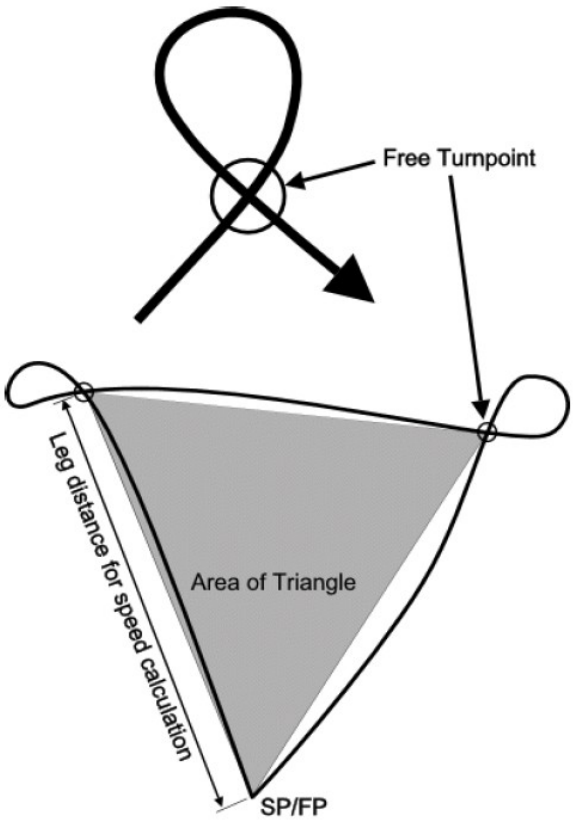
Unless otherwise briefed, pilots will perform a standard deck take-off from their designated deck.

Flight

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

The area within the triangle created by SP/FP and the two free turn-points points will be calculated to determine the *triangle 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

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

Triangle area

A	=	Area of the triangle created by the SP/FP point and the first two track intersections.
Amax	=	Largest area in the class
Qa	=	700 * A / Amax

Speed

V	=	Speed measured from SP/FP to the first track intersection
Vmax	=	Fastest speed in the class
Qt	=	300 * V / Vmax

Total

P	=	Qa + Qt

Task-specific penalties

None

3.4 Speed Triangle Out-and-Return

With limited fuel, fly around a triangular circuit in the shortest possible time, then fly in a given direction as far as possible and return to the airfield.

Fuelling

A standard fuelling operation will be performed. Each class will have a designated amount of fuel.

Planning

Competitors will be given three turn-points, A, B and C.

No quarantine planning nor declaration is required.

Take-off

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.

Flight

Pilots will fly to turn-points A, B and C in sequence. Time will be taken from A and C and the difference will score for speed.

After crossing C pilots will fly as far as possible from it. Then they will return to the airfield.

Landing

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

Speed

Ta	=	Time of last crossing of A
Tc	=	Time of first crossing of C
T	=	Tc – Ta
Tmin	=	Shortest time in the class
Qt	=	300 * Tmin / T

Distance

D	=	Distance measured in straight line between C and the most distant point in the track after C
Dmax	=	Maximum distance in the class
Qd	=	700 * D / Dmax

Total

P	=	Qn + Qd

Task-specific penalties

100% of the total score for failing to cross A, B and C in sequence

4 Precision Tasks

4.1 Deck Take-off

Take off from a deck 100 metres long by 25 metres wide.

This task proves the short take-off 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.

Deck length shall be adjusted according to the airfield elevation, and 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.

Take-off

This task will form the start of another task. The take-off 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 Take-off

The procedure to be flown after take-off will be specified in the main task at the briefing.

Scoring

There is no score for a deck take-off 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 take-off before stationary
- Commences take-off 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.

4.2 Deck Landing

Land in a deck 100 metres long by 25 metres wide.

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, and 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 90º 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:

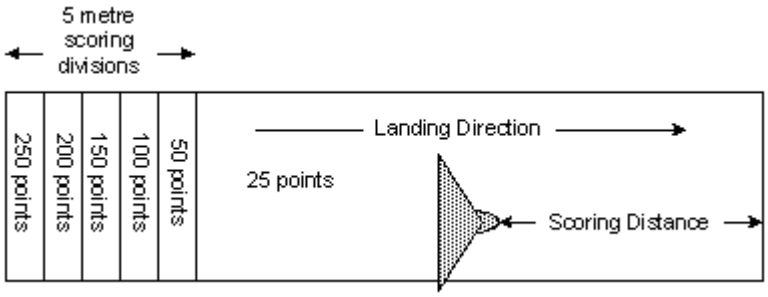
- Any part of the aircraft touches the ground before the deck.
- The aircraft turns by more than 90 degrees from the deck centreline between starting the landing approach and coming to a standstill.
- The aircraft does not stop within the limits of the deck.
- The aircraft moves from the deck before 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.

4.3 Precision Landing

Touch down within a marked deck as close to the start of the deck as possible, optionally at a specific time and coming to a halt in as short a distance as possible.

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, and 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.



Take-off

Pilots will perform a standard deck take-off from their designated deck.

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 90º 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

Landing score is the value of the strip in which both main wheels touch down. Touching down on a dividing line scores the higher of the two strips.

Ps = Valid strip value

Distance score (**optional**) from the finish of the deck and the closest wheel.

Pd = 1 point per whole metre with a maximum of 100

Time score (**optional**) calculated from the number of seconds of deviation (T) between the touch down time and a full minute on the official clock outside a margin of ±5 seconds.

Pt = 100 – 5 * T

Total

P = Ps + Pd + Pt

Task-specific penalties

100% of the total score when

- The aircraft commences take-off 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

4.4 Powered Precision Landing

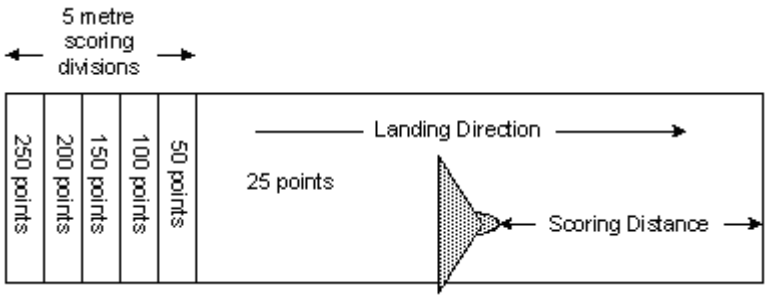
Touch down within a marked deck as close to the start of the deck as possible, optionally at a specific time and coming to a halt in as short a distance as possible.

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, and 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 90º 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

Landing score is the value of the strip in which both main wheels touch down. Touching down on a dividing line scores the higher of the two strips.

Ps = Valid strip value

Distance score (**optional**) from the finish of the deck and the closest wheel.

Pd = 1 point per whole metre

Time score (**optional**) calculated from the number of seconds of deviation (T) between the touch down time and a full minute on the official clock outside a margin of ±5 seconds.

Pt = 100 – 5 * T

Total

P = Ps + Pd + Pt

Task-specific penalties

100% of the total score when

- 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

4.5 Short Take-off over an Obstacle

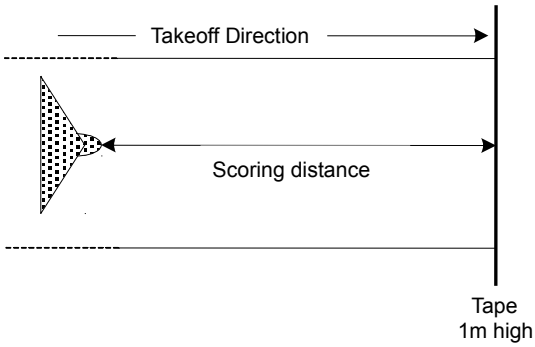
Take off over and clear an obstacle, starting the take-off run as close to the obstacle as possible.

This task simulates a short field take-off 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.

Take-off

The take-off 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 Take-off

The procedure to be flown after take-off will be specified at the briefing.

Scoring

Score is based on the distance from the point where the take-off run starts and the tape. Distance will be invalid when

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

The competitor in each class that starts the take-off run closest to the tape (Dmin) 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 take-off run (D) relative to Dmin.

D = Valid distance from the start of the take-off run to the tape
Dmin = Minimum valid distance in the class
P = 250 * Dmin / D

Task-specific penalties

None

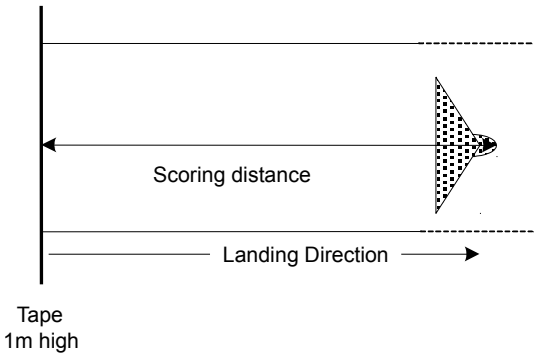
4.6 Short Landing over an Obstacle

Fly over and clear an obstacle, to land and come to a standstill as close to the obstacle as possible.

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 90º 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

Score is based on the distance from the tape to the point where the aircraft comes to a standstill. Distance will be invalid when

- 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

The competitor in each class that comes to a standstill closest to the tape (Dmin) 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) relative to Dmin.

D = Valid distance from the tape to the point where the aircraft stops
Dmin = Minimum valid distance in the class
P = 250 * Dmin / D