

## Chapter 2

### General Rules and Regulations

#### 5.0 PROGRAMME OF EVENTS

#### 5.4 Competition variables.

The variables for each event will be given after a mandatory draw at the General briefing and they are as follows:

- Navigation - define the course flown between A-Line and F-Line.
- Precision - determination of the direction of the 360° turns
- ~~Fender – the position of containers 1,2 and 3 within each 40m x 40m square of the competition area~~
- ~~Fender – direction of flight through the entrance gates~~
- ~~Slalom – position of gates 5 and 6~~
- ~~Slalom – direction of flight through gates 5.4 Competition variables~~

**New:** Fender – the position of containers A, B and C within the 50m x 50m square of the competition area.

Slalom – position and numbers of gates in the course.

Slalom – sequence of gates in the course

Slalom - direction of flight through the gates

Commented [DM1]: Understood

## Chapter 5

### Event Rules and Regulations

#### 5.1 Navigation

#### 5.1.0 Event Description

The event is Navigation with Timed Arrival and Load Drop Off. ~~The event will include a navigation course; en-route search zone on second or third leg; aerial and a drop zone between departure line and MFO 1 or on the first leg of manoeuvring box;~~

The event will include a navigation course, en-route search zone; timed arrival at the A line; and 2 drop points **behind** the A-line. manoeuvring box between the A line and the F line; a load drop off at the C Line and "end of event" landing zone.

Commented [DM2]: Does this mean after you pass the A line?

Commented [MS3R2]: correct

#### 5.1.5 Preparation Line

Delete:

2 ~~numbered~~ fabric bags (filled with ~~rice or~~ sand, .....)

### 5.1.8 Search zone

Delete:

~~The search zone will include ten (10) 3x2 metre orange panels....~~

Additional:

the search zone will include between ~~six (6) and ten (10)~~ 3x2 metre orange panels....

### 5.1.13 Manoeuvring Box A-Line to F-Line

After crossing the A line, the helicopter will fly ~~a given Course~~ ~~course of up to~~ ~~three turns.~~

~~All competitors will perform turns in the direction assigned in Bulletin 1 and~~ ~~made public~~ during the pre-event briefing (see drawing, Annex 1).

### Scoring Event No 1

Delete:

~~Bags dropped in the wrong order~~

Crew not remaining seated or fastened (both hands ~~and legs~~ not visible)

### Annex 3 – Event 5.1 Search Zone Details

Details of the search Zone

Example of a schematic given to the competitors

Additional:

Six (6) to ten (10) panels

### 5.2 Precision

#### 5.2.5 Departure Line

The helicopter will land on the D line. Upon an indication of ready from the pilot or crew member and when the course is clear of the previous competitors, the judge will signal the start by dropping a flag ~~or the use of a suitable indication system, which must be demonstrated to the competitors at the event briefing.~~ ~~The time starts.~~

#### 5.2.8 Timing:

~~The time starts when the start signal is given at the departure line and stops when the first part of the helicopter landing gear touches the ground.~~

Commented [DM4]: Understood

Commented [DM5]: What is the intention?

Currently the course flown is a square but some locations may not have the area to accommodate this so the option allows for a straight line or one turn left of right.

Commented [MS6R5]: Yes, that was my idea

Commented [DM7]: This could be a problem if the wind is not in the direction assumed when the decision on the turn direction is chosen.

Commented [MS8R7]: the decision on turns should only be made shortly before the briefing

Commented [DM9]: The text you strikeout indicates the bulletin will publish the turn direction making it public. Is there anything else you wish to achieve by removing the text.

Commented [MS10R9]: See comment before

Commented [DM11]: This text was included because in some aircraft the crew can lean out and almost lie down and hang out of the helicopter. The introduction of seated or fastened would prevent this.

Commented [MS12R11]: This point is important but you can see from the the ground only the hands not the legs.

Commented [DM13]: I would retain this text so everyone will know what to expect and not have reason to protest they did not understand the signal was given the way it was.

Commented [MS14R13]: Yes, I understand, that's right.

### 5.2.8 Timing:

The time starts after the start signal is given and the nose of Helicopter crosses the departure line and stops when the first part of the helicopter landing gear touches the ground.

**Commented [DM15]:** This is problematic for scoring easily and affects other penalties such as leaving the departure line within a certain time. The control is the companions timing not the competitor timing.

**Commented [MS16R15]:** It means, time starts wenn the nose of helicopter crosses the departure line.

## 5.3 Fender Rigging

### 5.3.0. Event Description

Delete:

.....in a sequence of 4,6 and 8 metres ~~and a flying time of 45 seconds. The direction of flight through each entrance gate~~

Additional:

The exact flying time for this event is made public by the Event Director at the general briefing.

**Commented [DM17]:** Understood.

### 5.3.1 General Requirements

Delete:

~~Special window bubbles in cockpit doors are not permitted. Outside mirrors and technical aid such as radio altimeters are not permitted and such use will result in disqualification.~~ (see

**Commented [DM18]:** This text can be added to 13.7

Chapter 2, Competition rules 13.7)

### 5.3.3 Manoeuvring through the course

Delete:

The pilot will take off and after passing the D Gate (marked by flags), fly to the entrance gate. The crew member must manoeuvre the fender through the D Gate and the entrance gate and into the containers. The rope must be fully extended and free of knots prior to crossing the departure line (D line). ~~The pilot will fly to the first area~~ The crew member will place the fender into the first container. The rope will remain held at the handling aid above the relevant red flag by the crew member, who must have both hands visible. Manoeuvring of the rope is allowed provided the rope is not lengthened or shortened. After placing the fender into the first container, the crew member will deploy the rope to the appropriate length for the second container and lift up the fender again from the container.

~~The pilot must proceed to the next container area.~~ The crew member must manoeuvre the fender ~~through the entrance gate and~~ into the second container.

**Commented [DM19]:** This is stated in the last paragraph of 5.3.3. "After the third container and letting go of the rope,"

**Commented [MS20R19]:** ok

Additional:

As soon the fender is dropped into the third container the crewmember should let go off the rope.

**Commented [DM21]:** Three considerations. The potion of the Dog House and if it can be sited to suit both Fender and navigation event. And secondly another item in the cockpit is weight and will need to be managed along with the fender rope. The smaller helicopter operator will find this more problematic than a larger helicopter. Thirdly additional text will be required in 5.3.2

After setting the fender into the last container, the crewmember then deploys the seven (7) metre rope with a skittle attached at the end and has to manoeuvre it through the exit gate

and put it into the doghouse (Annex 3, - Event 5.3 - Doghouse). The rope must be held at the grip at its end by the crewmember, both hands must be visible to the judges. Manoeuvring of the rope is allowed, providing the rope is not shortened by any part of the body below the red flag. The area has to be left by passing the exit gate.

**Commented [MS22R21]:** The skittle weighs less than 2 kg that should not be a problem. We have done it this way. The doghouse is identical to navigation

#### 5.3.4 Timing

**Commented [DM23]:** Understood.

The time starts when the fender crosses the departure line and ~~overall time for each crew~~ is stopped when the crew member has let go of the rope with the skittle.

~~The total time for this event is a maximum of 45 seconds.~~

#### 5.3.5 Variables

There will be a mandatory draw at the general briefing for the position of containers 1, 2 and 3. ~~The position of each container can vary within each 40m x 40m square.~~

**Commented [DM24]:** Would this be better to change the 40x40 to 50x50. Or do you not want to have variable container portions?

**Commented [MS25R24]:** Yes, the square should be 50x50 as it used to be in the rulebook before

#### 5.3.6 Tie breaker.

If there is a tie for a place, the winning crew is determined **with the most accurate flight time.**

**Commented [DM26]:** Define the most "accurate" flight time? Is it the quickest? If so what if there are two with the same time?

#### Scoring Event no.3

For each tenth of a second flown ~~over total times limits:~~ above or below given flight time

~~45 to 60 sec 0.1 point for each second~~

~~> 60 sec — 0.1 point for each~~

0.1point/0.1 sec

**Commented [MS27R26]:** If both have the same time then they have the same score. Accurate means a precisely defined time that should neither be overflowed nor underflowed otherwise they will get penaltypoints

**Commented [DM28]:** I appreciate the intention to slow things down but a proficient crew will be just waiting to drop the skittle and will also encourage hovering over the dog house for more time than is necessary. To me that could be a safety issue.

**Commented [MS29R28]:** Should we give a fixed, short time? it should be a decision of the organizer. But good crews will reach the time and hover for about 5 seconds. Bad crews will exceed the time.

Touching the ground with the fender between D line and containers, for each touch	10
Fender not put down into the container	50
Fender touching the external sides and top to the container (for each infringement)	3
(no penalty when fender touches container top followed by placing in the container)	
Fender lost en route	300
Fender put into container with wrong rope length, rope shortened or lengthened (for each infringement)	20
Crew not staying seated or harnessed	50
Rope not deployed to full metres or has knots when flying over the	

D-line or lifting off from containers (for each infringement) 20

~~Overfly of the exit gate— helicopter nose is not first part of helicopter  
to pass the marked gate or the helicopter does not pass the gate at all  
for each infringement~~ 10

Fender not passing the D Gate 10

Missing the Entrance-Gate by missing or fender over poles  
(for each infringement) 15 \*

\* Disqualification (black flag) if the specified time is exceeded by more than 3 minutes

#### Measurements of competition area and equipment (see attached sketch):

The competition area is composed of one course.

The competition course consists of:

Preparation line P line: two flags with 5 metres space between the two flags.

Departure line D line: two flags with 3 metres between the two flags, to be positioned 30 metres after the P lines.

~~Three~~ Entrance Gate: Internal width 1 m, composed each of two 2 m high poles.

~~Three container squares: 40 x 40 metre square, clearly marked, the first to be positioned 20 metres after the D line.~~

Three containers ~~each to be positioned in a container squares and~~ filled with water or other heavy material to prevent moving.

Measurement of each container:

Height: less than 1.20 metre

Diameter of container opening: 48 cm +/- 2 cm

Measurement of fender:

Diameter of the fender is 30 centimetres

Height: 0.8 metres – 1 metre

Weight of fender (to be achieved by filling with sand or water): 5.5 - 6.5 kg

Length of rope 8.20 metres from the top of the fender to the grip.

Red flags at distances of 4, 6 and 8 metres from the top of the fender.

Wooden balls, 20 cm above the red flags at 4 and 6 metres.

The containers and fenders can be made of any material or colour, but must be uniform.

Commented [DM30]: With no penalties why have an exit gate.

Commented [MS31R30]: Yes I understand. It's a mistake. We need penalties for missing the gate. It is not a 3-meter exit gate, but a 1-meter gate through which the skittle must be maneuvered. 10 P

Commented [DM32]: These rules are used for national competitions and therefore this could be restricting.

Commented [MS33R32]: 3 minutes above given flight time

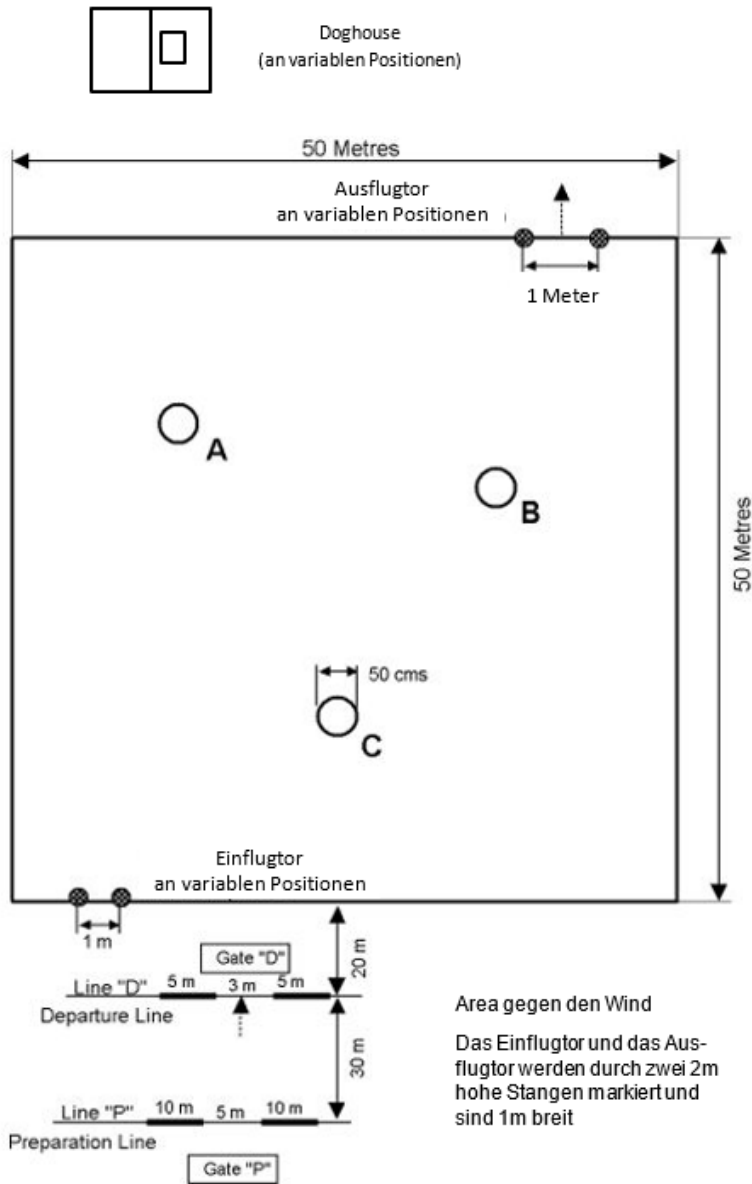
Commented [DM34]: Suggest including a reference to the single 50X50 squar.

Commented [MS35R34]: It's only one square with 50x50

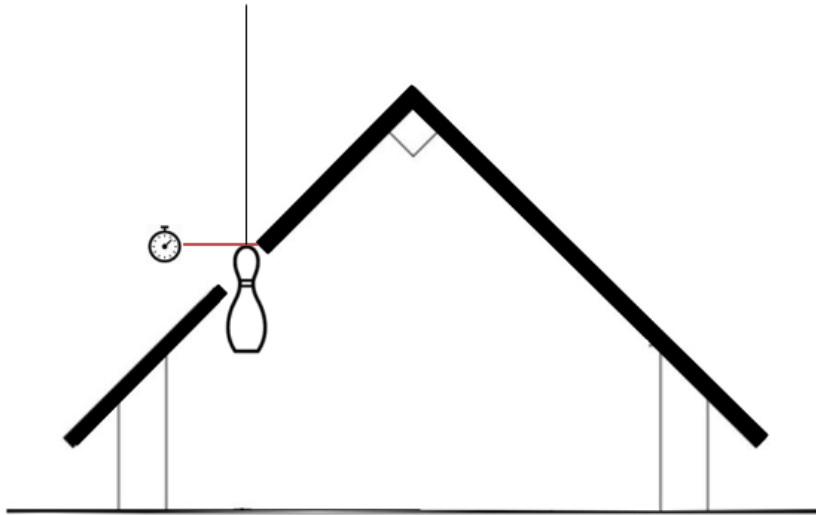
Commented [DM36]: Suggest to keep the reference to position and change "squares" to square.

Commented [MS37R36]: yes

Fender Rigging Parcours



## Doghouse



Skizze zur Zeitmessung beim Doghouse (Fenderrigging)

## Event 5.4 Slalom

### 5.4.0 Event Description

The Event will be flown by one helicopter at a time on the course. The Event requires precise flying to manoeuvre a bucket filled with water, attached to a rope, twice through 6 numbered gates and setting it down finally on a table target. The helicopter will be configured with the pilot's door on and closed.

The flying time is limited to 2 minutes and 15 seconds (135 seconds).

The Event requires precise flying to manoeuvre a bucket filled with water, attached to a rope, through several gates and setting it down on a table (see section 7.12). The directions of the gates to be flown will be drawn and together with the exact flight time and the exact positions of the gates announced at the event briefing.

### 5.4.1 General requirements

Both feet must be inside the booth. At the briefing, competitors will be given their estimated start time to be at line "P". During flight pilot's door must be fitted and closed. The

**Commented [DM38]:** This will prevent any training in advance. Is that the intention.?

**Commented [MS39R38]:** Yes,

**Commented [DM40]:** This is stated in partly and the reaming text could be added there. 5.4.0. This would remove the need for a new paragraph.

crewmember must stay within the helicopter on his seat in a normal seated position and both feet must be inside the aircraft.

Commented [MS41R40]: ok

#### 5.4.1 Preparation

~~The helicopter will come to the preparation line and wait for the previous helicopter to finish.~~

At a signal from the judge, the helicopter will move to land on the departure line. The judge/assistant judge will hand over the rope with the attached bucket, empty of water. The future water level is determined by 9 lateral holes. The 9 holes will each be of 1cm diameter and the centre of the holes will be 13 cm from the bottom of the bucket (see drawing Annex 3).

The rope will be held by the crew member, sitting on a seat on the side opposite to the pilot, in a normal position and wearing the safety harness correctly. The crew must remain seated. The rope will be placed on the floor of the cabin, either inside or outside the skids where fitted.

#### 5.4.2 Start

Upon an indication of ready from the pilot (or crew member), the judge will signal the start by dropping a flag ~~or use of a suitable indication system, such a system has to be demonstrated at the event briefing.~~ The helicopter will take off from the departure line with the bucket resting on the ground, the crew member holding the rope above the first red flag (3m). Time starts, when the bucket passes the departure line "D",

Commented [DM42]: See earlier comment re 5.2.5

Commented [MS43R42]: ok

Commented [DM44]: This is a repeat of 5.4.5

Commented [MS45R44]: ok

The pilot will fly to the container filled with water. The crew member will fill the bucket with water. The rope may be lengthened over the container when filling the bucket with water.

Manoeuvring of the rope is allowed, providing the rope is not shortened by any part of the body below the first red flag. After filling the bucket with water, the pilot will increase altitude and the crew member will deploy the 5 metre rope. The pilot will fly to the first through all gates and the rope will remain held by the crew member by the grip until the bucket is placed on the table. Both hands must be visible.

Commented [DM46]: The gates could be in any order? So 6 could be the first gate followed by No1 then 5 then 3 then 6 then 7? How long will this take?

#### 5.4.3 Course and Gates

~~The 6 numbered gates will be placed as per Annex 1 and the gates will be flown consecutively from 1 to 6 and back to 1 in reverse order. The gates shall be flown in the given order and back in reverse order.~~ The direction of flight through each gate and the exact position of the gates will be drawn by the Chief Judge at the general briefing. ~~The choices are listed in 5.4.7.~~ Arrows will be marked on ground.

Commented [MS47R46]: Gate 1 should always be the first gate, then it is the decision of the organizer. We want to do this without extensive training. More opportunities for crews with less training

To correctly pass a gate, the top of the bucket must pass below the top of the poles. If the bucket misses the gate it must be taken back around the outside of the poles before another attempt is made. Multiple opportunities to pass a



gate correctly will be allowed. The judge will score correct or incorrect gate passage when the bucket is flown to the next gate.

#### 5.4.4 Exit and Table

~~After passing Gate 1 the second time, the rope will remain held by the crew member at the grip at its end. Manoeuvring of the rope is allowed provided the rope is not shortened by any part of the body below the upper flag. Both crew members' hands must be visible.~~

After the last gate (gate 1) has been passed again the crew has to place the bucket on the table at the given total time. The time is stopped as soon as the bucket touches the table surface for the first time

The bucket must be put down within or as close as possible to the 20cm centre target, in one attempt, then the rope must be dropped.

**Commented [DM48]:** This contradicts previous instructions. If Gate 1 is always gate 1 it should be stated somewhere and not variable.

**Commented [MS49R48]:** This should be noted in the sketch

#### 5.4.5 Time

The time starts when the bucket crosses the departure line and stops ~~when the rope is released over the table.~~ when the bucket touches the table surface for the first time. The total time announced in the briefing must be achieved as accurately as possible.

**Commented [DM50]:** Understood

#### 5.4.6 Measurements

Exiting the centre target by the outer edge of the bucket will be penalised, 0.1 point per mm.

The water left in the bucket will be measured after the competitor has completed the course. The measuring will be done on the table and the table wiped dry after the bucket is removed. Any difference of water level between departure and table will result in penalty points.

#### ~~5.4.7 Variables~~

~~There will be different gate directions determined by the Chief Judge. The reference of Up, Down, Left or Right refer to the direction of flight through each gate with reference to Annex 1 with Up being the top of the page. Gate 1 is always flown "Up" first and "Down" second time. Gate 2, 3 and 4 "Left" or "Right" for both flights through. Gate 5 and 6 "Up" or "Down" with exception of gate 6, which will be flown through only once. The position of gate 5 and 6 can vary on their lines within the 30 metres range.~~

**Commented [DM51]:** Suggest this is reviewed after earlier comment re 5.4.2

**Commented [MS52R51]:** This point should be deleted

#### 5.4.8 Tie Breaker

~~If there is a tie for a place, the winning crew is determined by the shortest flight time.~~

In the event of a tie the crew with the more accurate flight time primarily or the higher water level secondarily wins.

**Commented [DM53]:** Understood but would rephrase.

**Commented [MS54R53]:** Ok.

## Scoring Event No. 5.4 (Slalom)

INFRINGEMENT	PENALTY POINTS	
Passing a gate in the wrong order or different direction	10	20
Failing a gate by missing or bucket over poles		10
Bucket exiting the centre target of the table per mm		0.1
The bucket exiting the designated area 185 m x 50 m		10
Water level – per tenth of centimetre missing *		0.1
Each tenth of a second <del>in excess of 135 seconds</del> <b>** over or under the allocated flight time</b>		0.1
Placing the bucket outside the target table *		80
Losing the bucket during the course		300
More than one attempt to put the bucket down, per try	30	3
Crew not staying seated or fastened (both hands and legs not visible)		50
Rope <del>lengthened or</del> shortened, has knots or handled below red flag (for each infringement)		30

\* If the bucket falls from table or lands on the ground, any water left in it will be measured and will incur normal penalties.

~~\*\* Disqualification (black flag) if total time exceeds 4 minutes.~~

\* Disqualification (black flag) if the specified time is exceeded by more than 3 minutes

### Measurements of competition area and equipment (see attached Annexes)

~~185 x 50 metres rectangular competition area, (see drawing Annex 1).~~

~~Six gates, internal width 1 m, each composed of two 2 m high poles (see drawing Annex 2).~~

One round table, 1 m diameter and 1 m high. The centre circle with a diameter of 20 cms

~~The centre circle with a diameter of 22 cms, painted in black colour. Second circle with a diameter of 60 cms, painted in white colour. The remaining surface of the table is painted red. The table surface must be smooth with no holes.~~

One rope, equipped with 2 red flags, first 3 m high and the second at 5 m high. 20 cm over 5 m flag and a grip at its end (see drawing Annex 3).

One bucket (see drawing, Annex 3) of break proof material and cylindrical form, containing 4 litres +/- 2 % with a maximum total weight of 7 kg.

Commented [DM55]: See earlier comment re fender disqualification time. Generally this event takes longer than the fender.

Commented [MS56R55]: 3 minutes above given flight time

Commented [DM57]: Understood

Commented [DM58]: Suggest keeping.

Commented [MS59R58]: ok

One container, height 80cm to 100cm, approx 200 litres in volume, 55cms to 70cms in diameter filled with water up to a level of 10cms from the top of the container. ~~The container must have a marker 10cms from the top inside the container to indicate correct water level.~~

**Commented [DM60]:** This prevents arguments and suggest it remains

**Commented [MS61R60]:** ok

ANNEX 1 – EVENT 5.4 – Slalom (Example)

