



# International *Moth* Class

## Championship Race Management Guidelines

These guidelines replace the guidelines from 2003. Since then, the International Moth has been through the foil revolution. This has not only made it more challenging to sail the Moth, but also more challenging to conduct Moth regattas. The guidelines are concentrating on topics that are Moth-specific, in particular courses and the Grand Prix finish. For race officers without experience of Moth regattas, the Grand Prix finish is probably one of the most challenging parts of the race management.

The aim of these guidelines is to help to conduct regattas that are fair and enjoyable for both the top sailor and the average weekend warrior. Hopefully the guidelines can also help to reduce the risk of collisions, which must be considered when boats are racing close with speeds of 20 – 25 knots.

Experienced Moth sailors from several countries have been involved in the work with these guidelines. In particular I wish to thank David Campbell-James, Rick Tagg and Scott Babbage; their words have been used throughout the document.

January 2017, Hans Rasmussen

*These guidelines are published for sailors, coaches and race officers as guidelines on how racing will be conducted, they are not rules. Failure to follow these guidelines is not grounds for redress.*

### **General Principles**

- Races will not be started in winds of less than 4 knots but this may be increased to 6 knots in rougher sea conditions
- Races once started should only be abandoned if racing becomes unfair through lack of wind or large changes in wind direction
- Moths should not race in winds averaging more than 25 knots, or with gusts over 30 knots, but this average may be reduced to 22 knots in rough sea conditions
- No more than 80 boats should race in any fleet and only one fleet should race on the same course at the same time.
- The Race Committee should try, where possible, to avoid long waiting periods on the water particularly in heavier winds, preferring to wait on the shore rather than on the water
- Bow numbers may be used.

### **Race duration**

The target time for each race should normally be 30 minutes. The Moth class aims to run multiple races per day, typically 3. This can be increased to max 4 races, if required. The time between finishing one race and starting the next should be kept to a minimum. The target time should be 5 minutes from the last boat finishing to the orange attention signal for the next start, with not less than 2 minutes to the warning signal.

### **Effect of weather conditions**

A Moth is challenging to sail and this significantly increases with wind strength and sea state. Whilst wind strength is a factor in deciding whether to race or not, the sea conditions

significantly impact on this and is often the key factor. Racing in higher winds and flatter water can be easier than less wind and short steep chop. The fleet's ability to deal with the conditions is very significantly with the influencing factors being ability and equipment. In general, Moths should not race in winds averaging more than 25 knots, or with gusts over 30 knots, but this average may be reduced to 22 knots in rough sea conditions.

Skill and equipment is also a key factor for the ability to get on foils at low wind speeds. But starting in marginal conditions should be avoided. A few boats will be able to foil away from the starting line, the rest of the fleet will struggle to get on foils because of wind disturbance. Moths can foil in a breeze with an average of 6 knots provided there are gusts above in order to initiate foiling. Therefore, races should not be started in winds of less than 6 knots.

### Courses

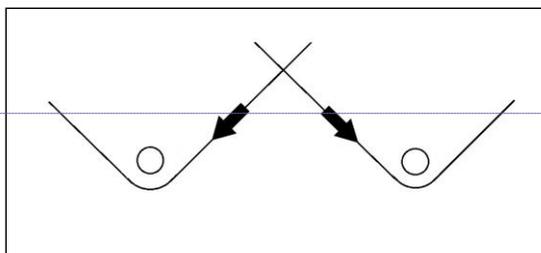
The recommended courses (see attachments):

- Windward / leeward with offset mark and leeward mark (LA)
- Windward / leeward with offset mark and leeward gate (LA)
- Windward / leeward with windward and leeward gates (L)

The courses can have 2 or 3 laps, depending on available space, weather conditions and the regatta teams experience with the lap counting procedure (see under "Grand Prix finishing"). An indication of course length is that in foiling conditions a Moth will sail a ONE mile windward/leeward course in approximately TEN minutes.

The advantage of gate courses is that the boats will use both sides of the course. Without gates, the left hand side looking upwind will be favoured. Another advantage of the windward gate is that a boat that fails to stand up to the chosen windward mark, can go for the other mark in the gate. This means that only one tack instead of two is required.

In windy conditions the gates should be avoided, especially the leeward gate. In such conditions, a Moth will sail approx. 25 knots. The course sailed will vary considerably, depending on the shape of the waves. The resulting course towards the marks will be around 135° TWA. Most Moth sailors will avoid gybing close to the gate. This means the boats will cross each other. To reduce the risk of collisions, gate courses should not be used in more than 18 knots of wind.



Another topic to consider is the lap counting procedure. It is imperative that the position of each boat is registered each time it passes the leeward mark or gate (see paragraph "Grand Prix finishing"). This is normally done by the staff on the race committee boat. This is of course more challenging on a gate course, where two or more boats can be passing the gate marks more or less simultaneously, than on a course with only one leeward mark.

The gate marks should be laid square to the wind, the distance between them should be 80 meters. This distance should be increased in rough sea conditions, or with large fleets.

If no windward gate is used, the distance between the windward mark and the offset mark should be 60 meters. The offset mark should be smaller than the windward mark.

To summarize:

- Gate courses are tactically more interesting because the fleet will be more spread out on both sides of the course.

**Commented [SB1]:** Perhaps a comment on the effect of tide on wind/race schedule and sea state.

**Commented [HR2]:** Svar til Scott Babbage (02-12-2016, 12:30): "..."  
Done.

**Commented [SB3]:** We should explain this lower limit more.

Moths can foil in a breeze with an average of 6 knots provided there are gusts above in order to initiate foiling.

Any boat will struggle to complete a course set for foiling in displacement mode within the time limit.

The line between having any capability to sail in any mode, and foiling around the course is very thin.

At the lower limit, a few boats will foil away from the start line, and the presence of the fleet will reduce the amount of wind for everyone. There can be very large distances open up within the fleet.

Rule 42 compliance becomes a problem in marginal foiling conditions.

**Commented [HR4]:** Svar til Scott Babbage (02-12-2016, 09:39): "..."  
I have now divided into 2 paragraphs, one describing upper wind limits, one describing lower wind limits. New text with yellow.

**Commented [SB5]:** Do you mean 135 degrees TWA? I.e. crossing boats at 90 degrees.

We also need to consider boats approaching on starboard having both buoy room and starboard rights. There is no requirement for them to gybe to round the left gate (looking downwind).

**Commented [HR6]:** Svar til Scott Babbage (02-12-2016, 09:30): "..."  
45° modified to 135° TWA

I don't understand your sentence about boats approaching on starboard ?

- The lap counting procedure is more challenging on gate courses.
- To avoid collisions, gate courses should be avoided in more than 18 knots of wind.
- 3 laps are more challenging for the fleet than 2 laps because of more mark roundings.
- 3 laps makes the lap counting procedure harder for the race committee team than 2 laps.
- To reduce the risk of collisions, 3 laps should be avoided in rough conditions.

### Starting

The U flag should be used as the initial starting flag. If the line is good with the fleet spread on the line, and there is a general recall, then the restart can be on the black flag. If the line is not good and there is bunching at one end of the line, then the start line should be adjusted and the restart should again be on the U flag. If a black flag is used and the line is still biased, or there is a wind shift, then the AP should be used rather than a general recall. The first start should never be black even if the time to get racing completed is short.

Commented [SB7]: I'm not a big fan of U, but if you insist.

Commented [HR8]: Svar til Scott Babbage (02-12-2016, 09:35): "..."  
I was not either, but David has convinced me :-)

### The starting line

Because of the high speed, a Moth will sail a lower course upwind than most other boats. If the starting line is biased towards the pin end, as it might be seen in other boat classes, the Moths will have difficulties getting over the starting line on starboard tack. This will mean that some of the boats will make port tack starts, thus increasing the collision risk. Therefore pin end biased starting lines should be avoided. The starting line should be square, or even slightly starboard end biased. The bias should be larger in light winds, where the benefit of foiling at the start are greater. Local conditions might also influence the size of the bias that is required to avoid port tack starters.

Commented [SB9]: More so in light winds, where the benefit of foiling at start are greater. Also more important in courses where the right hand side is dominant (ie. Campione) where being on port first is important.

Commented [HR10]: Svar til Scott Babbage (02-12-2016, 09:36): "..."  
Done.

The length of the starting line should be 2 times the length of the boat (4.4 metres x 2) times the number of boats, so for 25 boats the line should be 220 metres, but this may be increased slightly in heavier winds. There should be a pin end committee boat with good anchors, plenty of warp and with a large orange flag close to the bow of the boat. There should be no possibility of a boat's foils catching the anchor warp of the pin end boat, so a counter weight should be used on the warp.

### Grand Prix finishing

In the Moth class, there can be large differences in speed between the most experienced sailors and the least experienced sailors. It is not unusual in a race where the leader completes 3 laps, for some boats to complete only 1 lap. To avoid long waiting times for the experienced sailors, and not discourage the less experienced sailors, the Grand Prix finishing system should be used. The aim of the Grand Prix finishing system is to make sure that every sailor who finishes at least one lap, will get a score.

When the first boat has crossed the finish line, the committee boat should sound a long signal and display a chequered flag (or similar as detailed in the sailing instructions), to indicate that the finish line is "open", and the Finishing Time Window" has begun. This flag should be large, to make it easy to see for the approaching boats. A similar flag could also be displayed at the windward gate or mark. All subsequent boats should cross the finish line irrespective of whether they have completed all laps, and will be scored according to their position and the number of laps they have sailed. Boats that fail to cross the finish line within the Finishing Time Window, will get a score based on their position the last time they rounded the leeward gate/mark.

Commented [HR11]: @David: Should we modify the chequered flag, to avoid problems with the rule specialists ?

The wording in the sailing instructions could be:

*"When the leading boat completes the course and finishes, the Race Committee signal boat will immediately display a chequered flag (or similar as detailed in the sailing instructions) with a sound signal. This indicates the Finishing Time Window is now open. From this time, all boats shall cross the finishing line. All boats that cross the finishing line within 20 minutes after the leading boat has finished, shall be deemed to be finished irrespective of number of laps they have completed. Their position in the race will be noted from their finishing order*

and number of completed laps, with those having the most laps being recorded ahead of those with less completed laps. Boats that have completed 1 lap shall be ranked behind boats that have completed 2 laps. Boats that have completed 2 laps shall be ranked behind boats that have completed 3 laps. If a boat after the Finishing Time Window has opened sails one more lap, this will not count as a completed lap in the scoring. This changes RRS 28.1 and A4.

Boats failing to cross the finish line within the Finishing Time Window, will be scored after those finishing as described in the above mentioned finishing rule. They will be scored according to their position at the previous passing of the gate or bottom mark. If they have not been able to complete one lap, they will be scored Did Not Finish without a hearing. This changes RRS 35, A4 and A5.”

To operate the Grand Prix finishing system is one of the most challenging tasks of conducting Moth regattas. The effective implementation will require:

- 1 or 2 race committee members to record each finisher. Recording ideally on a digital recorder.
- Back up lap recording, either paper or 2nd digital device.
- After racing take recordings and generate “lap sheets” based upon recordings.

#### **Time limit**

If no boat has completed 1st lap within 30 minutes, the race shall be abandoned.

#### **Finishing Time Window**

The finishing time window is normally 15 or 20 minutes. If the Finishing Time Window is too short, the slower boats in the fleet might fail to sail the last lap. They will instead wait to pass the finishing line until the first boat has passed them. If the finishing time window is too long, and the course is close to the launching area, some of the fast boats might sail back for foil change. This is not desirable, as it will only be an option for a few in the fleet.

#### **Finishing line**

The finishing line should be positioned off the bow of the starting committee boat, to the leeward mark / starboard mark of the leeward gate. The length of the finishing line should be 60 metres.

#### **Size of fleets**

No more than 80 boats should race together at the same time and if necessary the fleet should be divided into groups. |

**Commented [SB12]:** In the case of multiple fleets, 80 boats per fleet should be the maximum number.

#### **Foil change**

A boat shall not change its rudder or dagger board or the T-foils on them whilst afloat. The change may only be made in the launching area. A boat wishing to change foils shall sail to the launching area and back without help. In case of breakage, assistance to get to and from the launching area is allowed. It is also allowed to get replacement equipment brought from the boat park or launching area.

**Commented [HR13]:** Svar til Scott Babbage (02-12-2016, 12:52): "..."  
Modified

#### **Equipment rule**

It is only allowed to use 2 sets of the following equipment during the regatta: Sail, mast, boom, rudder with foil, daggerboard with foil. In case of breakage, it is allowed to replace broken equipment.

**Commented [HR14]:** The equipment rule is complicated. I voted for in Japan, but I begin to realize it is difficult to handle. I think we need to discuss further. If we f.ex. want labels to be used, we need to specify in details how to do it. Should there be inspections ?  
It could end up as a administrative burden – how big is the problem - how many are carrying more than 2 sets of gear ?

Windward / leeward with windward and leeward gates

