Competition Rules 2003

FSR-O

OFFSHORE

Issued by the FSR Section of Naviga
Februar 2003

NAVIGA
World Organisation for Model shipbuilding and Model ship sport
Weltorganisation für Schiffsmodellbau und Schiffsmodellsport
Organisation Mondaile de Navimodelisme et de Sport Nautique

NAVIGA

World Organisation for Model Ship Building and Model Ship Sport
Weltorganisation für Schiffsmodellbau und Schiffsmodellsport
Organisation Mondaile de Navimodelisme et de Sport Nautique

NAVIGA - Competition Rules 2003

Categories FSR - O

Amendments,additions and proposals for improvements are to be directed to the NAVIGA Section Management via the representative of the country.

This version is copied from the FSR-H and FSR-V rulebook. The paragraphs that are valid from that book are blanked in this version. Just to get it easier to copy this version into that book when this is ready.

The NAVIGA Executive Committee

Amended 02-02-2005

CONTENTS: **Page:**

1 Definition of models

Models in the FSR categories are controlled by the competitor using radio control. These are model boats of free design, which conform to the race requirements, however should in form and design look like a boat.

Offshore boats are deep vee or tunnel hull with surface or semi-surface drive. Hydro-plane or other three or more planning surface are not allowed.

2 Classes

The category FSR can be divided into the following groups and classes:

Class FSR-H3.5 Free build HYDRO - planes* with internal combustion motor up to 3.5 cm^3 and with surface drive propulsion.

Class FSR-H7.5 Free build HYDRO - planes* with internal combustion motor above3.5 cm^3 up to 7.5 cm^3 and with surface drive propulsion.

Class FSR-H15 Free build HYDRO - planes* with internal combustion motor above 7.5 cm^3 up to 15. cm^3 and with surface drive propulsion.

Class FSR-V3.5 Free build racing models for endurance races (20 – 30 min) with internal combustion motors up to 3.5 cm^3 and below waterline propulsion.

Class FSR-V7.5 Free build racing models for endurance races (20 – 30 min) with internal combustion motors above 3.5 up to 7.5 cm^3 and below waterline propulsion.

Class FSR-V15 Free build racing models for endurance races (20 – 30 min) with internal combustion motors above 7.5 up to 15.0 cm^3 and below waterline propulsion

Class FSR-V35 Free build racing models for endurance races (20 – 30 min) with internal combustion motors (petrol-motor with spark plug ignition) above 15.0 up to 35.0 cm^3 and below waterline propulsion.

Class FSR-O3.5 Free build offshore boats with internal combustion motors up to 3.5 cm^3. and with surface drive propulsion.

Class FSR-O7.5 Free build offshore boats with internal combustion motors above 3.5 up to 7.5.cc.and with surface drive propulsion.

Class FSR-O15 Free build offshore boats with internal combustion motors above 7.5 up to 15.0 cm^3. and with surface drive propulsion.

Class FSR-O35 Free build offshore boats with internal combustion motors (petrol-motor with spark plug ignition) above 15.0 up to 35.0 cm^3. and with surface drive propulsion.

Remark:* HYDRO-planes (A free build model with two or more planing surfaces).Amend 01-01-2007

3 Principal and General Rules

3.1 Principal Rules

3.1.1 Competitions where the rules apply

3.1.2 Entry Fee

3.1.3 Protest Fees

3.2 Personal Rules

3.2.1 Age Groups

3.2.2 Competitor registration

3.2.3 Maximum Allowed Competitors

(1) At the world championships each country is allowed to enter the following number of competitors in seniors and juniors:

In the FSR-O classes 3 competitors and the title defendant.
In the FSR-O classes it can be more,if one country have a competitor in the final the country have the richt for 1 extra place in the next worldchampionship.If they have 2 in the final than they have 2 extra place's for the next worlchampionship,in this case they have the richt for 5 competitors.The maximum is 5 competitors and the title defendant.

(2) In continental championships
In the FSR-O classes each 5 competitors and the title defendant

3.2.4 Assistants and substitution of the competitor

3.3 Technical rules

3.3.1 Propulsion of models and fuels

3.3.2 Fuel

(1) Free fuel is allowed except in the FSR-V35 and FSR-O35 class.

(2) Fuel in the FSR-V35 and FSR-O35 class must be a petrol-oil mixture.
Petrol can be of any octane level.
The use of Methanol mixtures is prohibited.

3.3.3 Noise reduction, noise level measurement and rules

(1) (2) (3) (4) (5)
(6) For the method of measuring noise levels in classes FSR-H, FSR-V and FSR-O refer to paragraph 7.

Amended 01-01-2007

3.3.4 Application and use of radio control equipment and frequency control

3.3.5 Time Measuring

3.3.6 Buoys (Dimensions, Construction, Anchorage)

3.3.7 Starting pontoon (Construction and Materials)

3.4 Sport Rules

3.4.1 The Competition Area

3.4.2 Starting area, the preparation area and access permission

3.4.3 Allowed Number, Entry Possibilities and Race Conditions of the Models

(1) .
(2) .
(3) For entry of a model in other classes the following rules apply:

An offshore boat is not allowed to start in any other FSR category in the same competition.

(4)

3.4.4 Re-run of a race

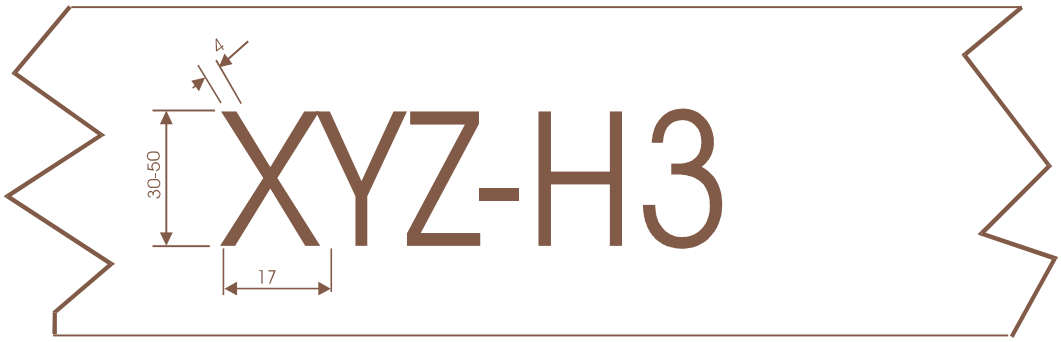
3.4.5 Registration Numbers

(1) At all NAVIGA events all models must have fixed registration numbers on the hull.

(2) The respective country gives out the registration numbers. If the nationality is not part of the registration number it must be attached to the models. Registration numbers and nationality must not be changed and must be permanently fixed on the hull.

(3) The race and spare model must show an identical registration numbers.

Boat– upper deck XYZ = Nationality
H3 = National Registration Number



Amended 01-01-2007

3.4.6 Registration of competitors and models

3.4.7 Issuing of starting permits, issuing start and competitor passes

3.4.8 Surrender of competitor passes and Assessment of Running Order

3.4.9 Calling time (Time Allowed to Get Ready)

3.4.10 Preparation times (at the Starting Point)

3.4.11 Interruption / suspensions of the competition (re 6.5.20)

3.4.12 Scoring and Announcement of the Results

3.4.13 Checking of the first three placed models during World and Continental Championships

(1)

(2) In the FSR-V and FSR-O classes, with exception of the FSR-V/O35 class, preliminary checks after the heats can be done to assess the exact capacity of the engines.

(3) In the FSR-V/O35 class the measurement of the cylinder capacity of the first three placed models is done on the basis of the construction particulars after the completion of the finals.

(4)

(5)

(6)

(7)

3.4.14 Awarding of titles at World and Continental Championships

3.4.15 Award Ceremonies at World and Continental Championships

3.4.16 Result lists

For special regulations regarding the contents of the result list refer to sections 6.8. for FSR-V, 6.15 for FSR-H and 6.20 for FSR-O.

Amended 01-01-2007

3.5 NAVIGA – Protest Policy

3.5.1 Principal Rules

3.5.2 Lodging of protests

3.5.3 Handling of Protest

3.6 The Model – Measurement Certificate

For model classes FSR-H, FSR-V and FSR-O no international model –measurement certificate is required.

3.7 General rules regarding construction for category FSR

(1) For competitions in category FSR models are of free design (see definition in section 1). The model however must be owned by the competitor.

(2)

(3)

(4)

4 General Rules regarding the set up of competition courses for the category FSR

(1) The competitions in the category FSR are performed on two different courses.

- For the FSR-H category see drawing 4
- For the FSR-V category see drawing 3
- For the FSR-O category see drawing 4 a

(2)

5 General Rules regarding start and termination of a race or heat

6 Competition requirements in FSR category

6.1 General construction rules and regulations

(1)

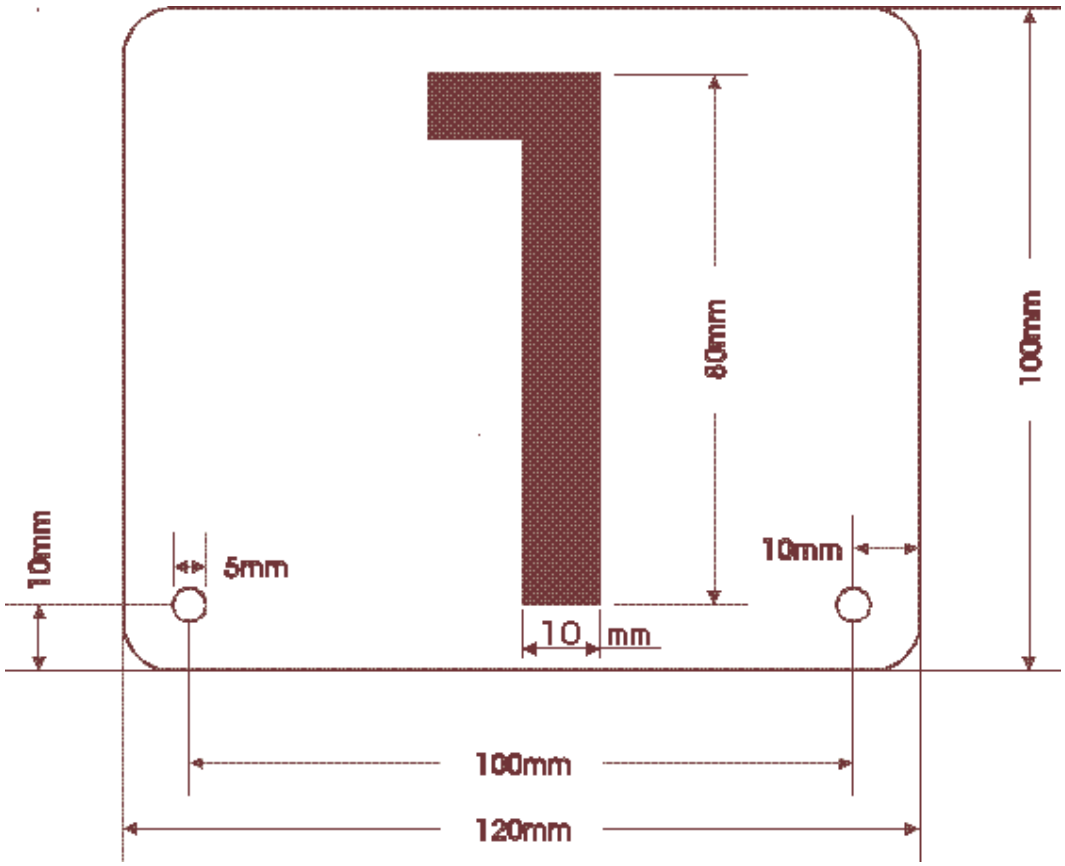
(2)

(3) Every model must have on the deck a longitudinal mount for attaching number plate that can be provided by the organisation. The number plate must be made out of flexible and durable material, which does not cause damage to the model when run over. The plate must be white and the numbers from 1 to 10 must be black. The number plate must be attached to the model with two connections.The number plate for FSR-O must be mounted on the left hand side.It is allowed the use the own number plate if they are according to the rules.

(4) The dimensions of number plates for category FSR are as follows (see drawing 2):

-	Height	100 mm
-	Width	120 mm
-	Thickness approx.	2 mm
-	Distance between the holes	100 mm
-	Distance of hole from the bottom of plate	10 mm
-	Diameter of hole	5 mm

The corners of the shield must be rounded off



Drawing 2: Number plate for category FSR.

(5)
(6)
(7)

(8) In classes FSR-H and FSR-O the rescue of models is only performed after completion of the heat. In FSR-O you are allowed to pickup your boat by your self from within the pontoon on your one place and restart.

(9)
(10)
(11)
(12)
(13)

Amended 01-01-2007

(14) FSR-V35 boats must have a towing eye on the front for recue purposes.

(15)

6.2 Manning Level of the Start Pontoon

6.3 Minimum requirements for the starting area

The minimum requirements for a starting area in the FSR category are:

A starting pontoon for FSR-V class should be minimum 19,5 meters long and 1.5 meters wide, with numbered starting positions from 12 – 1. In the FSR-H class the starting pontoon should be minimum 12 meters long and 1.5 meters wide, with numbered starting positions from 1 – 8 FSR-O numbered starting positions1 - 10
2 sets of number plates with the numbers 1 to 12 for FSR-V and 1 to 8 for FSR-H
for FSR-O 1 to 10.

6.4 Competition course and duration of the race in the FSR-V Classes

6.5 Procedures for Races in the FSR-V Classes

6.6 Lap Counting for FSR-V races

6.6.1 Computerised lap counting

6.7 Scoring in FSR-V classes

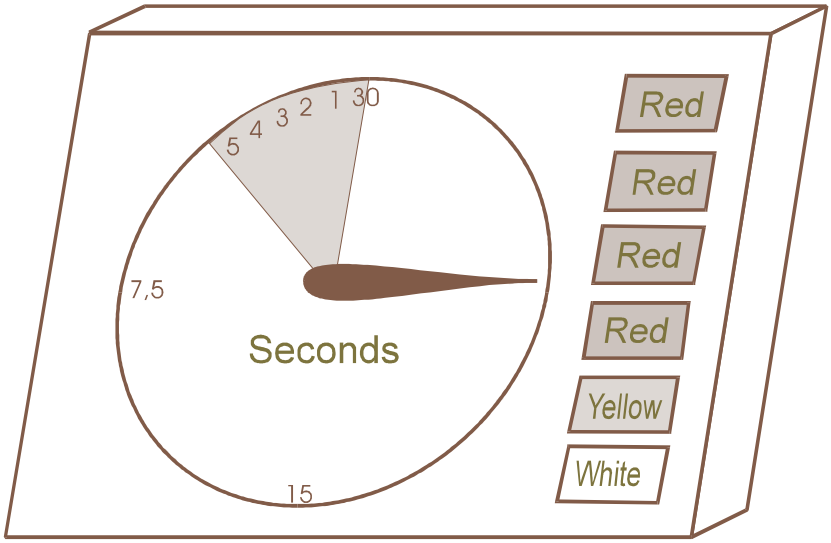
6.8 Composition of Result Lists in the FSR-V classes

6.9 Competition course and duration of a race in the FSR-H classes

6.10 Start clock for FSR-O classes may be also supplemented by a digital diplay

(1) The start clock is designed for FSR-O races with special optical and acoustical information and signals, which the competitors use to prepare for the start of the heat.

Amended 02-02-2005
Amended 01-01-2007



Drawing 5: Start clock for FSR-O races.

(2) The start clock must comply with the following:

1 turn of the hand must be 30 seconds with a precision of approx. 1 second.
The face of the clock must show the following points: 15 seconds, 7.5 seconds, 5, 4, 3, 2 ,1 seconds.
The 5-second segment must be shown in a contrast colour.
There must be 4 red lights, which are all switched on at the beginning of preparation time.
The lights will be switched off individually at 30-second intervals.
After the last red light has gone off a yellow light will come on which indicates the 30 seconds control time when no boats can be launched. At the end of this 30 seconds a white light or acoustic signal will indicate the start of the race.
The clock hand must reach the "12 o'clock" position at exactly the same time as the light or acoustic signal indicates the start of the race.
The face of the clock must be white or orange, the hand must be black.
The diameter of the face of the clock must be between 750 and 1000 mm.
The start clock must be able to float so that it can be positioned within the competition course.

6.11 Procedures for races in the FSR-H classes

6.12 Basic rules and penalties in the FSR-H classes

6.12.1 Left Turns

6.12.2 Right of Way

6.12.3 Negotiating/passing the buoys

6.13 Rules for overtaking in the FSR-H classes

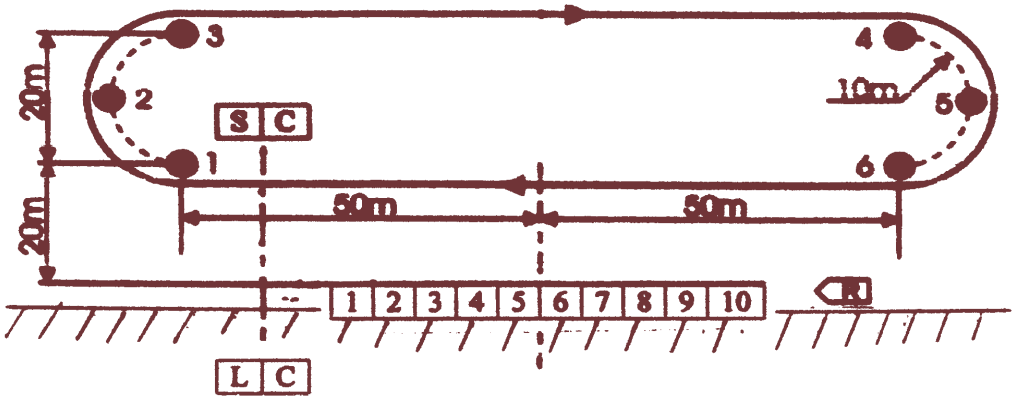
6.14 Calculation of final results in the FSR-H classes

6.15 Composition of results in the FSR-H classes

Amended 02-02-2005

6.16 Competition course and duration of a race in the FSR-O classes

(1) The competition will be held on a course as shown in drawing 4.a The competition course has to be placed so that the base line runs parallel to the starting pontoon.



Lapcounter and finish line have to be on the leftside hand side of the pontoon

1---------10	=	Start positions
RB	=	Recue boat
SC	=	Start clock
LC	=	Lapcounting

(2) Starting time for the heat has to be shown on a start clock (see drawing 5) or other adequate (optical or acoustic) means (see 6.10 for start clock).

6.17 Procedures for races in the FSR-O classes

(1) The Offshore classes are running 2 heats on a day and the follow order will be on this manner 3.5J, 3.5S, 7.5J, 7.5S, 15J, 15S, 35S, and round again.

(2) A heat must have a minimum of 4 and maximum of 10 competitors. Each competitor must run at least 4 heats.If there are more than 10 competitors entered in a class, a final must be run in accordance with paragraph (3).

(3) A heat shall be so composed that the competitors will be mixed in the heats as much as possible. Also the place on the pontoon shall be randomly.

(4) 10 competitors with the highest scores from the heats qualify for the final. For the final one heat is to be run. The best placed competitor will occupy start position 1, the second best placed start position 2, the third best placed start position 3, and so on till place 10.

(5) Before the start of each heat a radio check has to be carried out to prevent interference. Therefore all transmitters and receivers must be switched on. When it has been confirmed that there is no radio interference it is no longer possible to protest. (point 6.5 (5) FSR/V)

(6) Each race consists of three independent phases:
Preparation time (Pit time) 2 minutes
Control time (Milling time) 30 seconds
Course time (Race time) 8 minutes for qualification and 12 minutes for final

Amended 02-02-2005
Amended 01-01-2007

(7) During preparation time engines are started, and the boats launched. Races cannot be repeated. Preparation time must not be delayed or cancelled, unless in exceptional circumstances at the judges discretion (e.g. problems on the racecourse). Models can be adjusted during the preparation time, however the competitor is not allowed to leave the start position.

(8) During the control time no further boats can be launched. During the course time the competitiors are allowed for after start.

(9) The competitor should have 1 minimum milling lap.If the boat is not in the water at the white light the judge will be given the competitor 1 penalty lap.

(10) The competitors must drive their boats around the course or the special lay-by zone allocated by the competition management, so that all the competitors can cross the start line at the end of control time. Boats must drive the course in the clockwise direction.

(11) During the last 15 seconds of the control time in order to ensure the safety of all the boats, the models must keep in a straight line after passing buoy No 6. Zigzagging across the course, course changes in excess of 45 degrees in order to avoid crossing the start line early etc., are not allowed and are penalised with a one lap off.

(12) The end of the control time indicates the start of the race time, regardless of where the boats are on the course.

(13) Models crossing the start line immediately before the end of control time have a false start and must therefore complete an extra lap.

(14) FSR-O boats can be repaired and/off refuelled during a heat. Only laps completed during the heat will be counted.

(15) For repairing or refuelled the boat must come in with a running engine.

(16) During the racetime you may leave the start position to pickup the model or to fetch spare materials. However while driving the competitor must not leave the start position. It is not allowed to remove the transmitter from the start position.

(17) All buoys must be negotiated in accordance with the course. Touching the buoys is allowed. Only those laps negotiated in accordance with the course are counted.Running over the buoy the lap will be not counted.

(18) During the race each competitors laps must be displayed on a scoreboard.

(19) If a buoy is passed on the wrong side, it is allowed to re circle the buoy without interfering with other competitors. If you do not re circle the buoy the lap will not be counted.

(20) A slower boat can be overtaken on either side. During the overtaking manoeuvre the slower boat must not change course or get in the way of the overtaking boat. The overtaking boat can return to the racing line when no less then three boat lengths ahead.

The faster boat is not allowed to interfere with the slower model during the overtaking manoeuvre.

Amended 01-01-2007

(21) The boat on the race line, which is less than 5 boat lengths from a buoy, has right of way. A manoeuvre to force a boat to pass on the inside of a buoy in order to overtake is not permitted.

(22) If a boat looses the numberplate during the race it is allowed to complete the commenced lap. Any laps completed after this lap without a number plat will not be counted.

(23) A race can be stopped by the start position official due to exceptional circumstances (e.g. sheered off buoys). Rules for stopping a race:

a) The start position official gives an acoustic signal about the same as at the end of a race. At the same time as the signal is given the clock which measures the duration of the race is stopped. After the start position official has given the signal, the models have to complete the commenced lap and this lap will be counted.
b) The time, from when the signal was given, until the models pass the finish line, must be recorded. The models have to be taken from the water and the engines stopped.
c) Competitors and assistants have to step back from the models. Repairs are not permitted. During the interruption in the race models can be rescued.
d) Rescued boats are not allowed to restart.
e) After resolving the cause for the interruption, the start position official will give a start signal. The time keeping will continue with the start signal.
f) If the race is stopped within the first three minutes it will be annulled and restarted from the beginning.

(24) If a heat had to be stopped, all the laps and times have to be added together.

(25) In cases of unfair behaviour, interference with other competitors, not following the rules or endangering spectators (e.g. collision with the starting pontoon)(to fast within 3 mtr.from the pontoon a yellow safety card) the start position leader can pronounce the following penalties.

a) The first occurrence of not following the rules described in paragraphs (18) - (20), where no other boat has stopped as a result of the incident a warning (yellow card) will be given.
b) The second occurrence of not following the rules described in paragraph (18) - (20), or a more serious incident, or running over a stopped boat will be punished with a one-lap deduction (yellow card with number 1).
c) The third occurrence of not following the rules described in paragraph (18) - (20), or exceptionally serious incident, or causing another boat to stop will be punished by a two-lap deduction (yellow card with the number 2).
d) The fourth occurrence of not following the rules described in paragraph (18) - (20), or exceptionally inconsiderate behaviour of a competitor will be punished by disqualification (red card). The model has to be taken out of the water immediately.
e) The yellow safety card will given one penalty lap off..If the competitor get the safety card for the third time he has to take out his boat and can not take part further on in that head. The competitor must be verbally and visually notified of a penalty There is no possibility of an appeal against the decision.The start position official must record the penalty and the start number of the competitor.

(26) The end of the race is indicated by an acoustic signal. All models must after the signal complete the commenced lap and this lap will be counted. After the final signal the lap counters will record the time of delay for every model passing the finishing line. This time will be recorded with the number of laps.

Amended 01-01-2005
Amanded 01-01-2007
Amanded 01-01-2009

6.18 Lap Counting for FSR-O races

Lap counting can be computerised.**For the Worldchampionship only with transponder**.

6.18.1 Computerised lap counting

(1) For computerised lap counting only 4 to 6 lap counters are needed (2-3 announcers, 2-3 operators of the counting equipment).

(2) The announcers and operators work in pairs and will be responsible for counting the models. The announcers will call the number of the model passing the finishing line and the lap will be recorded by the counting equipment operator.

(3) Lap counters will only do the lap counting. Any lap deductions will be recorded by the assistant pontoon judges and will be deducted from the total of laps recorded by the lap counters at the end of the heat.

(4) There is only one start and finish line for all 10 models. The start and finish line is located on the left hand side of the pontoon. The lap counters will be located in a raised position in line with the finish line.

(5) In the event of equal number of laps, the competitor whose model passes the finish line first, will be the winner.

6.19 Scoring in FSR-O classes

(1) The competition result is decided on the number of valid laps and the delay time after deduction of penalty laps.

(2) The best three of four heats will be counted together for qualifying scores.

(3) If there are 10 or fewer competitors entered for a particular class only qualification has to be run. This will be the finally result.

(4) The places will be decided on the number of laps achieved. When there is more than one competitor with the same number of laps, the competitor with the shorter delay time will be placed higher.

(5) In the event that a final race takes place in accordance with paragraph 6.17 item (3), the placing are as follows:

a) The finalists are placed according to their finishing position in the final.
b) Placing of the remaining competitors will be in sequential order of the number of laps and delay time achieved in their qualifying heat.

Amended 01-01-2007

Composition of Result Lists in the FSR-O classes

The following items should be recorded in the result list of a competition in the FSR-O class:
Type, place and date of the event
Sequence of placing in accordance with paragraph 6.19
Class
Surname, Christian name, country and registration number of the competitor
Number of valid laps (in brackets any laps deducted) from each heat and total
The delay time from each heat and total
Name and registration number of the judge
Signatures of the chief judge

7 Methods for measuring noise levels in the FSR category

7.1 General

(1) The measurement microphone must be positioned as follows:

Height 1000 mm approx. X 200 mm above water level
Position 25 meters to the right for FSR-V and to the left for FSR-H/O at the right angle to the centreline of the FSR course and 22 meters away from the line connecting the two lowest buoys.
The measurement microphone must be shown at right angles and with the connecting line of the two lowest buoys and securely attached.

(2)

(3)

7.2 Measuring methods in FSR-H classes

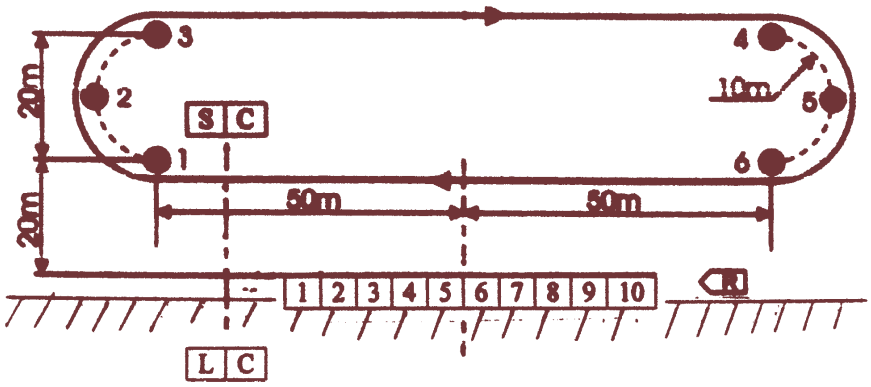
7.3 Measuring methods in FSR-O classes

(1) At least three noise level measurements must be taken for each model during the race, under the following conditions:.

There should be no other boat within 15 meters around the model being measured.
The noise measurement must be taken when the boat is on the base line at least 15 meters away from the microphone.
The measurements must be evenly spaced during the race.

(2) The competitor must be advised immediately if their boat exceeds 80dB/A. If the second measurement also exceeds the noise level they will receive a warning and if the third measurement exceeds the noise level they will be immediately disqualified..

Drawing 4 a: FSR O competition course



Lapcounter and finish line have to be on the left side of the pontoon.

1------- 10	=	Start positions
RB	=	Rescue boat
SC	=	Start clock
LC	=	Lapcounting

Amended 01-01-2007