Beyond the Tape Measure and Scale

What is Equipment Control About?

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The Life-Cycle of Equipment Control

MANUFACTURER

- RIGHTS HOLDER
- ISAF
- INTERNATIONAL CLASS

CERTIFICATION AUTHORITY

- ISAF – IN-HOUSE
- MNA
- INTERNATIONAL CLASS
- NATIONAL CLASS ASSOCIATION

SAILOR

- CERTIFICATE HOLDER
- RESPONSIBLE TO MAINTAIN CERTIFCATION

How is Equipment 'Controlled'

ERS DEFINITIONS

C.4.1 Fundamental Measurement

- The methods used as the primary means to establish the physical properties of equipment.

C.4.2 Certification Measurement

- The methods used as the means of equipment control required by **class rules**, or a certification authority, for certification.

C.4.3 Equipment Inspection

- Control carried out at an event as required by the notice of race and the sailing instructions which may include **fundamental measurement**

The Equipment Rules of Sailing

The Equipment Rules of Sailing (ERS) govern the equipment used in the sport. They are revised and published every four years by the International Sailing Federation (ISAF).

The ERS consists of three parts:

- Rules for use of equipment.
- Definitions of equipment, measurement points and measurements for use in **class rules** and other rules and regulations.
- Rules governing **certification control** and **equipment inspection**.

Terminology – bold = ERS definition

italic = RRS definition

How are the ERS used?

Applicability

The ERS may be made applicable by:

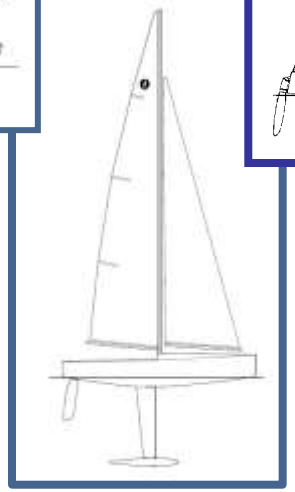
1. **Class Rules**.
2. Adoption in the notice of race and sailing instructions.
3. Prescriptions of an MNA for races under its jurisdiction.
4. ISAF Regulations.
5. Other documents that govern races.

- **Class Rules** use the Equipment Rules of Sailing

WHO USES THE ERS?

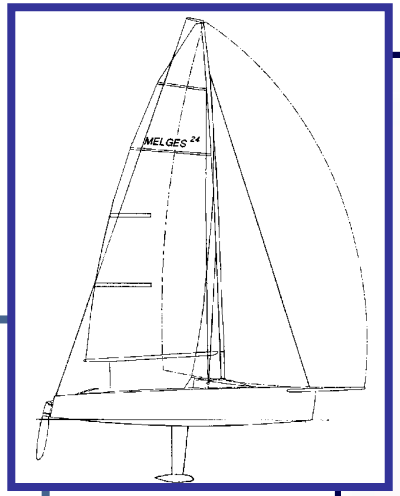
Any boat that has Class Rules

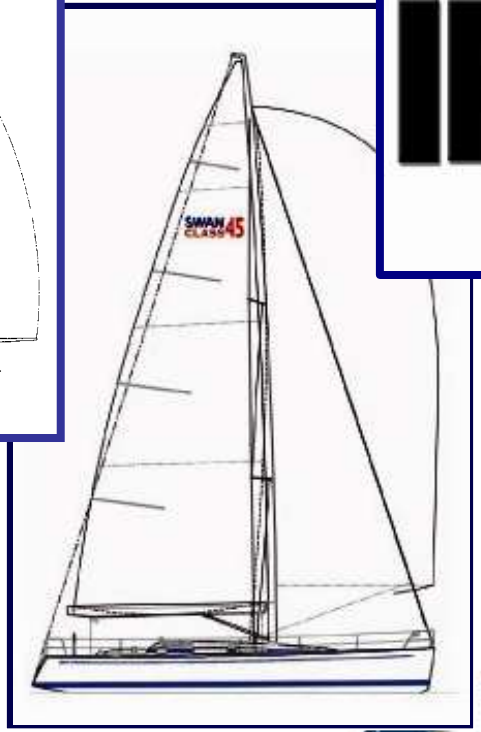
Olympic Classes



1m R Yacht

One-Designs





Offshore

The Equipment Rules of Sailing

- **The ERS is not like the Racing Rules of Sailing!**
  - When you use the ERS to define equipment for your class via your **Class Rules** you can use the standard definition **OR** decide to write your own into your class or handicap rule.

  WHY DO WE NEED THE ERS? One reason is for Standardized equipment measurements and definitions that are easier for people to use.
- All CONTROL schemes are defined by the **CLASS RULES.** The ERS can help guide a class!

A ERS Definition: **Class Rules**

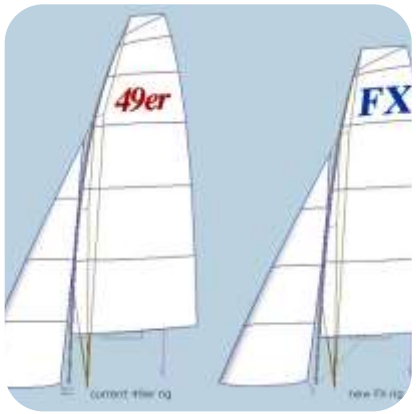
The rules that specify:

- the **boat** and its use, **certification** and administration.
- the **crew**.
- **personal equipment** and its use, **certification** and administration.
- **portable equipment** and its use, **certification** and administration.
- any other equipment and its use, **certification** and administration.
- changes to the Racing Rules of Sailing as permitted by RRS 86.1(c).

The term includes rules of handicap and rating systems.

All terms that are **bold** are defined in the ERS.

Equipment 'Controlled'



MANUFACTURER

- **FUNDAMENTAL MEASUREMENT**
- **CLASS RULES**

CERTIFICATION AUTHORITY

- **CERTIFICATION MEASUREMENT**
- **CLASS RULES**

SAILOR

- CERTIFCATION MAINTENANCE
- EVENT LIMITATION & INSPECTION
- **CLASS RULES**

How is Equipment 'Certified'

Defined in the **ERS**

C.3.3 **Certificate**

- Documentary proof, issued by the certification authority, of successful certification control of the hull, or any other parts required by the class rules or a certification authority.

The term includes handicap and rating certificates.

How is Equipment 'Certified'

C.3.1 **Certification Authority**

- For the hull: the ISAF, the MNA of the owner, or their delegates. (US Sailing delegates to the Class EXCEPT FOR OFFSHORE)
- For other items: the ISAF, the MNA in the country where the certification shall take place, or their delegates (In-House Certification scheme).

TYPES OF CLASS RULES

All schemes are defined by the **CLASS RULES**

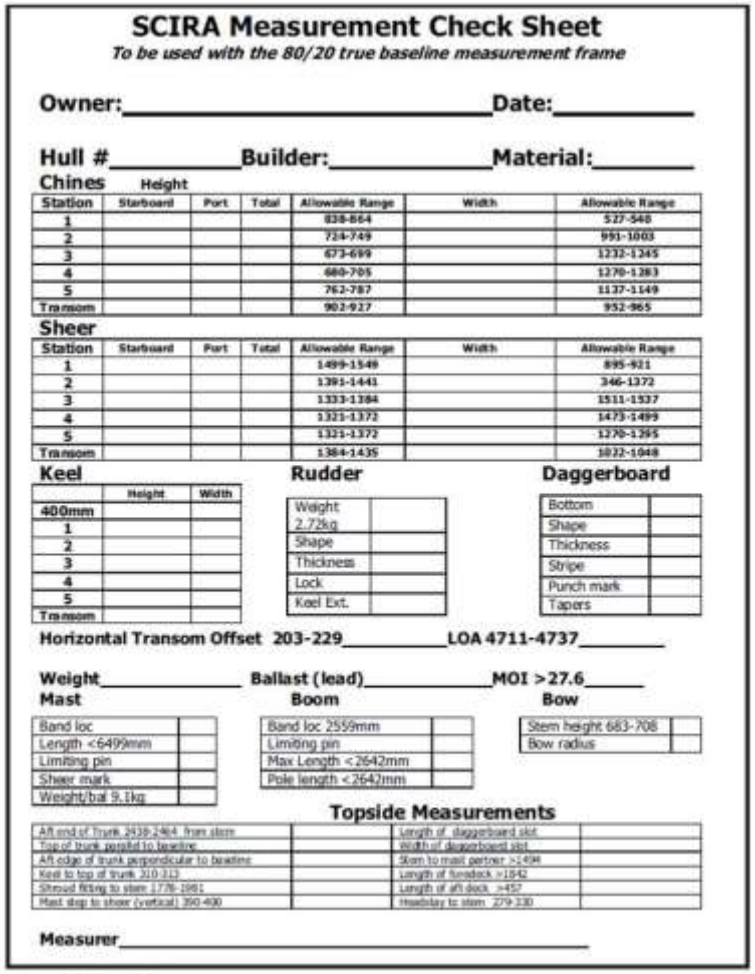
- There are two main types of class rules for control and certification:
  - Measurement Control; data is taken by physically measuring the shape of the item; hull, appendage, sails.
  - Manufacturer Control; all items are made from the same molds or templates following a strict building procedure.

MEASUREMENT CONTROL

The Manufacturer/Builder – hulls and appendages

- Follows a specification called a builders manual that tells him exactly how to build the boat.
  - In a *measurement controlled* class there might be some "shape" tolerances that can be used to make the parts *different* in small ways between builders.
  - Lightning, Snipe, Star, 470, rating rules
- These must be measured to obtain a certificate as dictated by the class rules.
  - C.4.2 Certification Measurement

Equipment Measurement 'Controlled'



SCIRA Measurement Check Sheet

To be used with the 80/20 true baseline measurement frame

Owner:_____ **Date:**_____

Hull #_____ **Builder:**_____ **Material:**_____

Chines Height

Station	Starboard	Port	Total	Allowable Range	Width	Allowable Range
1				838-864		527-548
2				724-749		991-1003
3				673-699		1232-1245
4				680-705		1270-1283
5				762-787		1137-1149
Transom				902-927		952-965

Sheer

Station	Starboard	Port	Total	Allowable Range	Width	Allowable Range
1				1499-1549		895-921
2				1391-1441		346-1372
3				1333-1384		1511-1537
4				1321-1372		1473-1499
5				1321-1372		1270-1295
Transom				1384-1435		1022-1048

Keel

	Height	Width
400mm		
1		
2		
3		
4		
5		
Transom		

Rudder

Weight 2.72kg	
Shape	
Thickness	
Lock	
Keel Ext.	

Daggerboard

Bottom	
Shape	
Thickness	
Stripe	
Punch mark	
Tapers	

Horizontal Transom Offset 203-229_____ **LOA** 4711-4737_____

Weight_____ **Ballast (lead)**_____ **MOI** >27.6_____

Mast

Band loc	
Length <6499mm	
Limiting pin	
Sheer mark	
Weight/bal 9.1kg	

Boom

Band loc 2559mm	
Limiting pin	
Max Length <2642mm	
Pole length <2642mm	

Bow

Stem height 683-708	
Bow radius	

Topside Measurements

Aft end of Trunk 2438-2464 from stem		Length of daggerboard slot	
Top of trunk parallel to baseline		Width of daggerboard slot	
Aft edge of trunk perpendicular to baseline		Stem to mast partner >1498	
Keel to top of trunk 310-313		Length of foredeck >1842	
Shroud fitting to stem 1776-1981		Length of aft deck >457	
Mast step to sheer (vertical) 390-400		Headstay to stem 279-330	

Measurer_____

Page 2 SCIRA MDS

This form is supplied To the **Certification Authority** for a so a **Certificate** can be issued to the sailor!

MANUFACTURER CONTROL

The Manufacturer/Builder – hulls and appendages

- In a *manufacturer's controlled* class the molds to build the parts are all the same (taken from the same master) and there is little "shape" difference between builders. All builders follow the same building procedures.
- Laser, 9ers, J Boats, Melges 24 and 20

- These must be manufactured in a certified mold and built to the same procedures as dictated by the class rules and building manual.

Manufacturer 'Controlled'

INTERNATIONAL 49er CLASS

Class Rules Compliance

Pre Event Inspection Form - Team to provide details where highlighted

Country Code				
Sail No				
ISAF Plaque				
HULL				
Hull Builder				
Hull Weight				
Hull corrector weight				
WINGS				
Wing Serial Number	Stb		Pt	
SAILS				
Mainsail Serial Number				
Headsail Serial Number				
Gennaker Serial Number				
FOILS				
Foil Serial Number	CB		Rud	
SPARS				
Mast Serial Number	Top		Mid	Lower
Spreader Serial Number	Top		Lower	
Bowsprit Serial Number				
RIGGED				
Forestay compliant	YES/NO			
Fully Rigged - Class Compliant	YES / NO			

DECLARATION

I declare that my International 49er Class dinghy ISAF Plaque Number……conforms to the current class rules and in particular Class Rule C.2.3 MODIFICATIONS whereby the hull has not undergone any modification that may contradict the International 49er Class, Class Rules.

Boat Representatives Signature……Date……

How is Equipment 'Certified'

- **Certification System**: ***STAR***

As prescribed by their class rules

- Hulls and Appendages are certification-controlled.
- Rigs and Sails have detailed measurement rules but no certification obligation.
- Hulls are sold with a measurement form.
- The measurement form is also the measurement certificate.
- Sails are not certified before being presented for racing. All sails are regularly measured at district events and at all Continental and World events.
- Hulls are sequentially numbered, currently at 8486.
- The sail number is the same as the hull number.
- Personal or national numbers are not allowed.

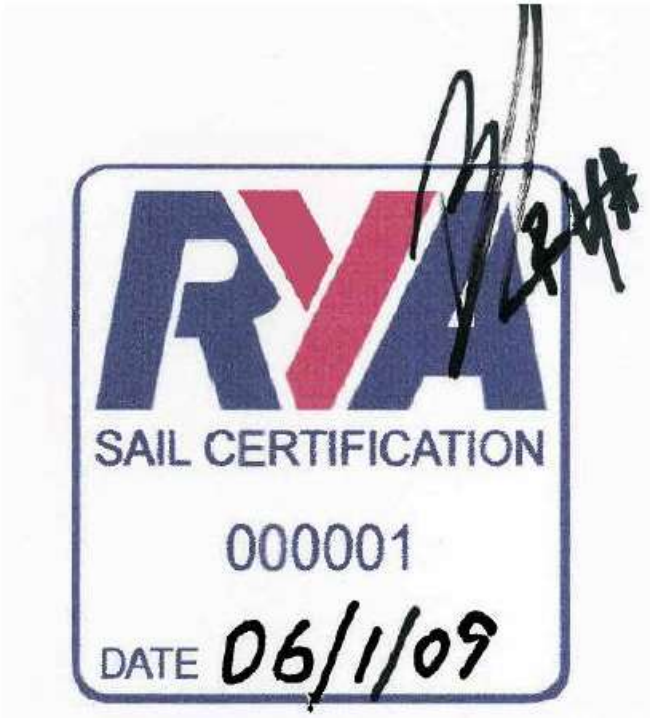
How is Equipment 'Certified'

Sails – look for the certification marks

- In a manufacturer's controlled class the sails all come from the same loft as certified equipment.
- In a measurement controlled class there are multiple lofts who can make sails. These sails need to measured before use.
- MANY CLASSES ARE HYBRID. They have manufacturer control of the hulls and appendages and measurement control of sails to encourage competition on cost!

How is Equipment ‘Controlled’

Certification Marks



Manufactured
49er/FX Jib with Sticker Certificate

Equipment Certificate!

1. A Certificate is issued to a controlled part.
2. A sailor is responsible to have the certificate at an event.
3. ISAF Plaque in a hull does not mean that it is certified!
4. A sail with a Certification Label is certified if that label is signed. Or if that sail is labeled by the manufacturer.

EVENTS – Equipment Inspection

CONTROL FOR CLASS AND NON-CLASS EVENTS

- Class EVENT: Class Rules/Championship rules define what control is to take place.
- Principal Events
  - Class Worlds (Highest Level)
  - Class Continental (Typically same as Worlds)
- NON-Class EVENT: Mulitclass with lots of boats. Less Control!
- Key West, Miami OCR, NOOD

C.4.3 **Equipment Inspection**

Control carried out at an event as required by the notice of race and the sailing instructions which may include fundamental measurement (ie, tape measures and scales).

TAPE MEASURES AND SCALES Expected At Class Events

PRINCIPAL EVENTS INSPECTION

J/24 Worlds at Rochester YC

Typical Activities

- Each boat would present a certificate.
- Hulls are weighed
- Sails are measured
- Rigs are measured
- Appendages would be checked; measured where possible

PRINCIPAL EVENTS

CONTROL FOR CLASS EVENTS

Inspection procedure for Principal Class Events:

Melges 24: Pre, During, Post

Pre

- Certificates are reviewed by the IM.
- Sail certification marks are inspected.
- Class sail labels are recorded.
- Crew are listed and weighted.

During

- Boats are scrutinised for:
  - Conformity of Sail Numbers.
  - Breach of Advertising Code.
  - Missing Limit Marks on spars.
  - Presence of Event Stamp on sails.

- After each race, ECI or IM boards a boat and checks:
  - Number of stamped sails.
  - Safety equipment is on board.
  - Tightness of hiking lines and rear gate.
  - Sails stopper at the end of the boom.
  - No elastic to assist the retraction of the bowsprit.

29er Worlds

Hull Weighing

Checking Forestay length

Multiclass Events - ISAF Events

ONLY CERTIFIED EQUIPMENT ALLOWED

Key West Race Week – No equipment inspection prior to racing.
SI's have Safety, Crew Weigh-in, and On-the-water Inspection provisions.
Equipment is controlled via *RRS 78.*

NOOD Regattas – NOR posted states that boats must have a valid certificate.

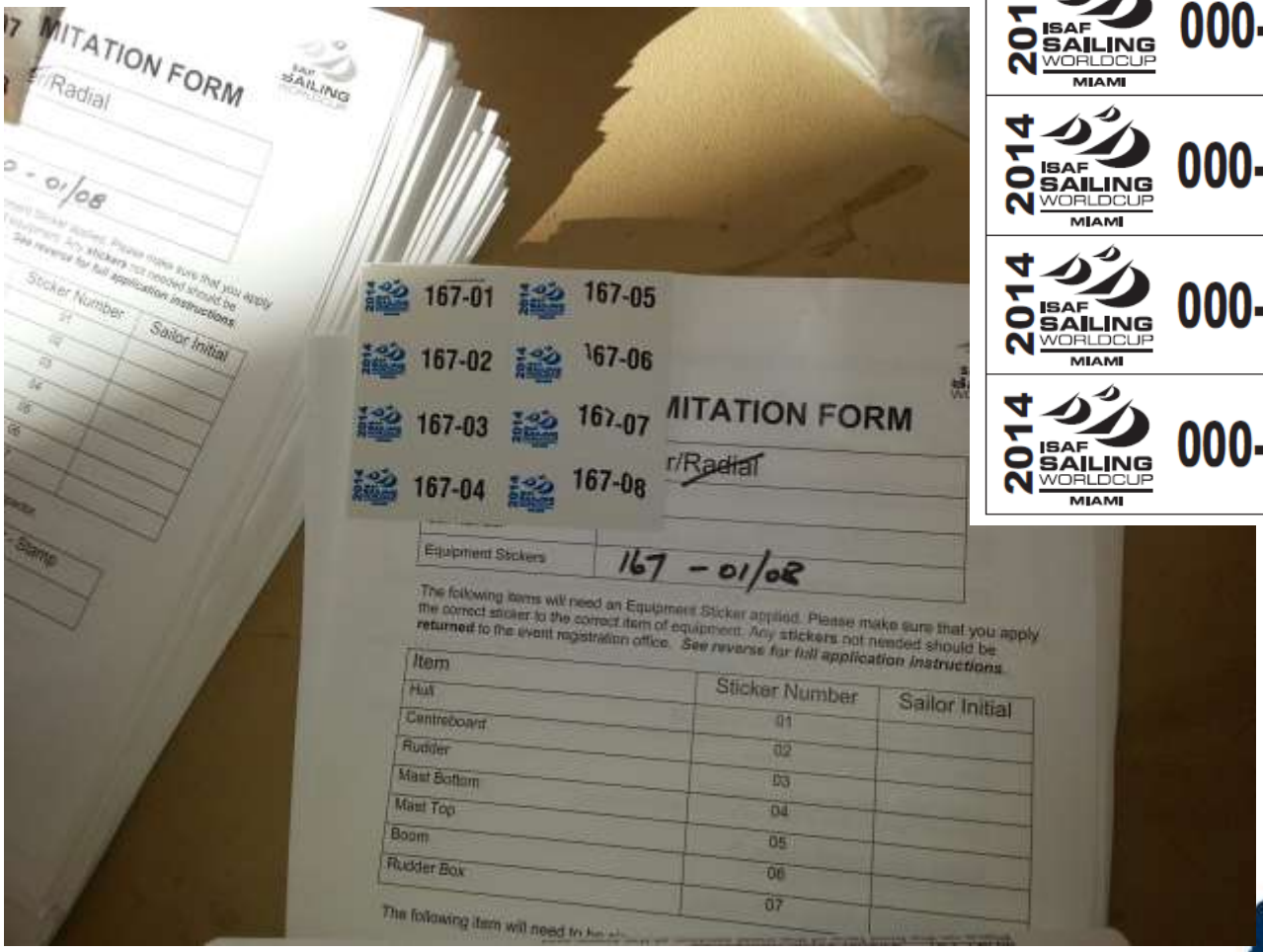
5 ISAF Sailing World Cups in 2014

SWC Miami had **over 400 boats** is the 10 Olympic Classes and 3 Paralympic Classes.
Pre Event Equipment Inspection involves equipment limitation, certificate reviews where required.
2014 was accomplished with 3 people in 12 hours time.

- Equipment Checks continue throughout the week and before the medal races.

SWC EVENTS EQUIPMENT LIMITATION

Compliance with Class Rules; Certificates- ***RRS 78***



2014 ISAF SAILING WORLDCUP MIAMI 000-01	2014 ISAF SAILING WORLDCUP MIAMI 000-05
2014 ISAF SAILING WORLDCUP MIAMI 000-02	2014 ISAF SAILING WORLDCUP MIAMI 000-06
2014 ISAF SAILING WORLDCUP MIAMI 000-03	2014 ISAF SAILING WORLDCUP MIAMI 000-07
2014 ISAF SAILING WORLDCUP MIAMI 000-04	2014 ISAF SAILING WORLDCUP MIAMI 000-08

EVENT EQUIPMENT LIMITATION

INSPECTION ON THE WATER

EVENT EQUIPMENT LIMITATION

INSPECTOR CAN CLEARLY SEE LIMITATION MARKS
…AND SO CAN YOUR COMPETITORS!

Photo by Amory Ross Miami OCR 2011

EQUIPMENT CONTROL TOPICS

- Equipment Control is fundamental to the sport.
- The Class Rules specify the boat and how it is used; certification and administration as well as the crew and any personal equipment that may be carried.
- Class Rules are supported by the ERS
- Every Event has Equipment Control and sometimes “measurement”.

EQUIPMENT CONTROL

QUESTIONS?

Your Opinion Matters

Please "**check-in**" to this session on the Sailing Leadership Forum app
and complete the session survey

Or

Complete one of the yellow survey forms in the back of the room and drop in the box

Thank you for attending this session

EQUIPMENT CONTROL

3 Post-Race on the water inspection will include such items as agreed in advance by the EIC for each Class. Generally, they should include event limitation marks, safety equipment including PFDs and use of equipment according to Class Rules such as positioning of sails in relation to the limit marks on the rig when applicable. After the last race of each day, boats may be escorted back to shore for more detailed inspections. These inspections will be performed in a protected space of the sailing marina. Boats selected for shore inspection shall be informed so at the finish, and coach or other boats shall be prohibited from coming close during the trip back to the sailing marina unless permitted by the ISAF Measurer. Shore controls may be performed with the assistance of other ISAF Measurers or Equipment Inspectors.

EXCERPT FROM THE EQUIPMENT INSPECTION POLICIES DOCUMENT FORNTH 2012 OLYMPICS