

# **Report to the Atlantic J29 Class Measurement of Foils on Selected J29's**

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We were able to look at 7 boats over the past year to primarily determine the characteristics of foils and to compare to "Official Keel Offsets", "Rudder Plan and Offsets" as well as other references to foils from the J29 web site. In addition this provides a database for use in applying Rule 3.5 to other characteristics of hull and foils.

Information was recorded on keel depth, location as well as rudder size and depth for some boats for the purposes of comparison.

The following boats were measured:

Colmonell  
Feed Me  
J Zeus  
Paradigm Shift  
Satisfaction  
Scotch Mist  
Silver Woman

Our method was to locate the measurement points on the keel faces and to use calipers to determine the thickness at those points. This, we felt, was a more precise way to compare keels to the official measurements and it also gives more data and precise data. Templates are more suited for use in fairing keels and for determining "go/ no go" conformance and also require an extensive manual for direction in using. A reasonably acceptable tolerance for error in measuring should be minus 2mm for the forward areas of keel and 1mm for rudder and 1mm for trailing edges of keel and rudder.

The specific information obtained on each boat is given on individual forms for each boat. These have provided to each boat and to the AJ29 Class executive.

A table of comparison of some of the measurements taken is provided here for the information of boat owners. If agreed, this information could be used for application of Rule 3.5.

## Class Rules ( US Web Site ) clauses related to foils

### General:

1. Rules relating to keel and rudder were “ Temporarily suspended pending validation of Plan A” .
2. Rule 1.3 – “ All J29s shall comply with standard building specifications and these Class Rules. No alterations, modifications or additions are permitted unless explicitly state(d) in these Rules. Modifications including coring, drilling out, rebuilding or replacing materials; grinding, removing or relocating standard equipment in any way to reduce weight, to improve moments of inertia or to change standard shapes.”
3. Rule 3.5 “ Any alleged or suspected alteration(s) to the configuration or design of the hull, keel, rudder, equipment, spars, interior standard construction or their location and weights for which specific descriptions are not stated in the rules or specifications, or following a protest concerning same, shall be compared by a Measurer appointed by the J/29 Class Association to a sample of four (4) other yachts similarly rigged. The disputed yacht shall be accepted if she doesn't show any evidence of having been altered and if she has dimensions equal to, or between, those of the maximum and minimum dimensions obtained from the sample of the four other yachts. If there is evidence of any alterations having been made or if the dimensions are greater or less than those of the four other yachts sampled, the matter shall be referred to the J/29 Class Association.”
4. Rule 5.4 – “ The rudder blade may be faired to the shape described by minimum offset dimensions of Plan A, except that such fairing shall not remove glass fibre content of the rudder...
5. Rule 6.3 – “The keel may be faired to the minimum dimensions described by offsets of Plan A. The shape of the keel shall not be altered from those described by the offsets.”
6. A note relating to rudder offsets states in effect that the thickness may be only 4mm **greater** than the minimum.

Note: 2 of the offsets in the keel table as shown on the US web site are incorrect and should be replaced with new figures which we have obtained from J Boats.

## Findings

The generalized findings are as follows: (\* indicates data for comparison only and not related to any specific rule limitations ).

1. **Keel Thickness:** Generally found to be above or near the minimum thickness. One boat was found to be slightly below the minimum however this keel was being worked on at the time of measuring ; range of 17, 14 and 21 mm at thickest point at 3 chord sections.
2. **Distance from trailing edge of keel at hull / keel intersection and corner of transome\*** : range of 53 mm..
3. **Distance from trailing edge at Section 4 and corner of transome\*** : range of 75mm. !!!
4. **Rudder Chord Length:** On 5 rudders measured found to be within the 5mm range allowed.
5. **Rudder depth below corner of hull:** On 4 boats measured found to be within a range of 15 mm, the deepest of which was 45mm over maximum. On a 5<sup>th</sup> the rudder was 43 mm less than the minimum depth.
6. **Rudder Thickness:** On 5 rudders measured all were found to be thicker than the minimum

## Recommendations

That the Atlantic J29 Fleet consider the following:

1. Adopting the Rules of the Class ( US Web Site) and using them as amended by the AJ29 Class. Remove the reference to “temporary suspension” related to foils.
2. That tolerances for below table of minimum thicknesses be as used in this process.
3. That for variations in measurements other than keel and rudder thickness that the AJ29 Class maintain a database to enable application of Rule 3.5 allowing comparison to 4 boats ( dropping the outside measurements for other boats ) for requesting compliance.
4. That the AJ29 Class maintain, and add to, a database for use in addressing questions of compliance.
5. That a rule be established that after work on foils that affects measurements covered by Class rules that the work, on completion, be checked by a Class designated measurer.

