

Multihull Dynamics, Inc

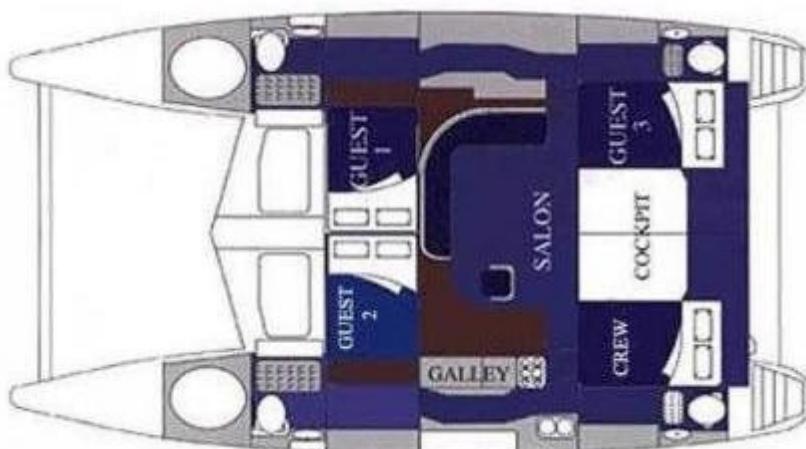
Custom Multihull Eval

St. Francis 44 & 44MKII

Designed by: Angelo Lavranos

Built by: St. Francis Marine

Compiled by MDI Staff 1/08/2012



---

## Basic Specifications:

Differences between the St Francis 44 and 44 MKII are noted in Green

<b>Loa</b>	<b>44.17 ft</b>	<b>13.46m</b>	Length Over All
<b>Lwl</b>	<b>39.58 ft</b>	<b>12.06m</b>	Length at Waterline
<b>Boa</b>	<b>23.58 ft</b>	<b>7.19m</b>	Beam Over All
<b>Bcl</b>	<b>19.46 ft</b>	<b>5.93m</b>	Beam Centerline
<b>Bh</b>	<b>4.12 ft</b>	<b>1.26m</b>	Beam Hull
<b>BdCl</b>	<b>24 in</b>	<b>60.96cm</b>	Bridgedeck Clearance
<b>BdCl v. Nom</b>	<b>-6 in</b>	<b>-15cm</b>	Bridgedeck Clearance vs. Nominal CL

### Displacement:

**6.92 LT**

**15500 lbs**

**7031 kg**

**SA**      **1059 sqft**   **98.38 m<sup>2</sup>**    **1238 sqft**   **115.01m<sup>2</sup>**    Sail Area  
(Main and Jib/fore triangle only)

**Bcl/Lwl**    **.49** Beam Centerline/Length Waterline ratio

**LWL/Bh**   **9.61** Length Waterline/Beam hull ratio

---

## PERFORMANCE INDICATORS:

<b>SA/D</b>	<b>27.26</b>	<b>31.95</b>	Sail Area vs. Displacement Ratio
<b>BN</b>	<b>1.31</b>	<b>1.42</b>	Bruce Number
<b>BSpd</b>	<b>10.81</b> knots	<b>11.43</b> knots	Base Speed
<b>KSP</b>	<b>8.22</b> knots	<b>8.91</b> knots	Kelsall Speed Prediction
<b>Texel</b>	<b>120</b> sec.	<b>112</b> sec.	Texel Rating

---

## STABILITY INDICATORS:

<b>SSpd</b>	<b>19.29</b> knots	<b>16.94</b> knots	Stability Speed
<b>KSI</b>	<b>32.44</b> knots	<b>28.50</b> knots	Kelsall Stability Index

Detailed explanations of terms, formulas and interpretations are available on the Technical pages of the website [www.multihulldynamics.com](http://www.multihulldynamics.com)

---

### **Trend Line Graphs:**

MDI reports comparison data with other vessels selected by Calvin H. Markwood. In the Custom Multihull Eval the comparisons are offered in two ways. In "Cal's Evals" Mr. Markwood gives related LWL vessel *AVERAGES*. The second method is by the *Trend-Line* graphs below. We use the Trend-Lines of the multihull type i.e. Catamaran or Trimaran database as appropriate.

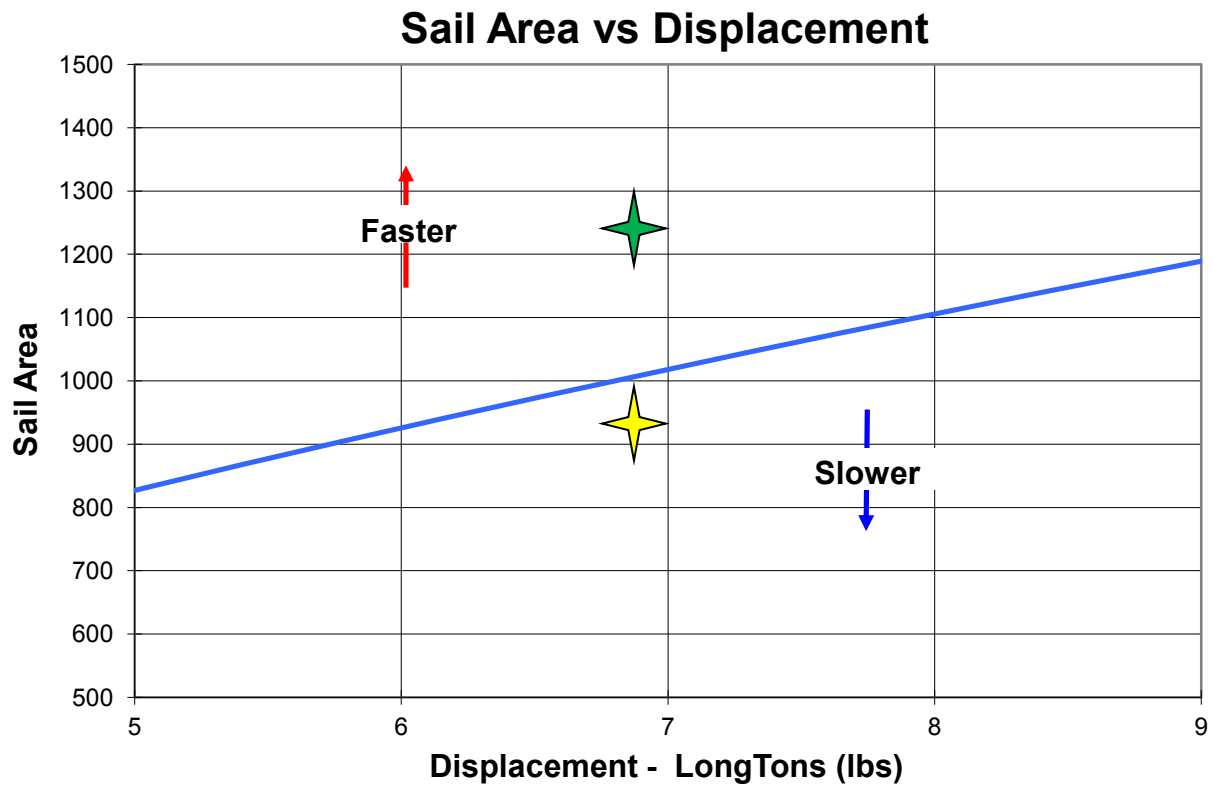
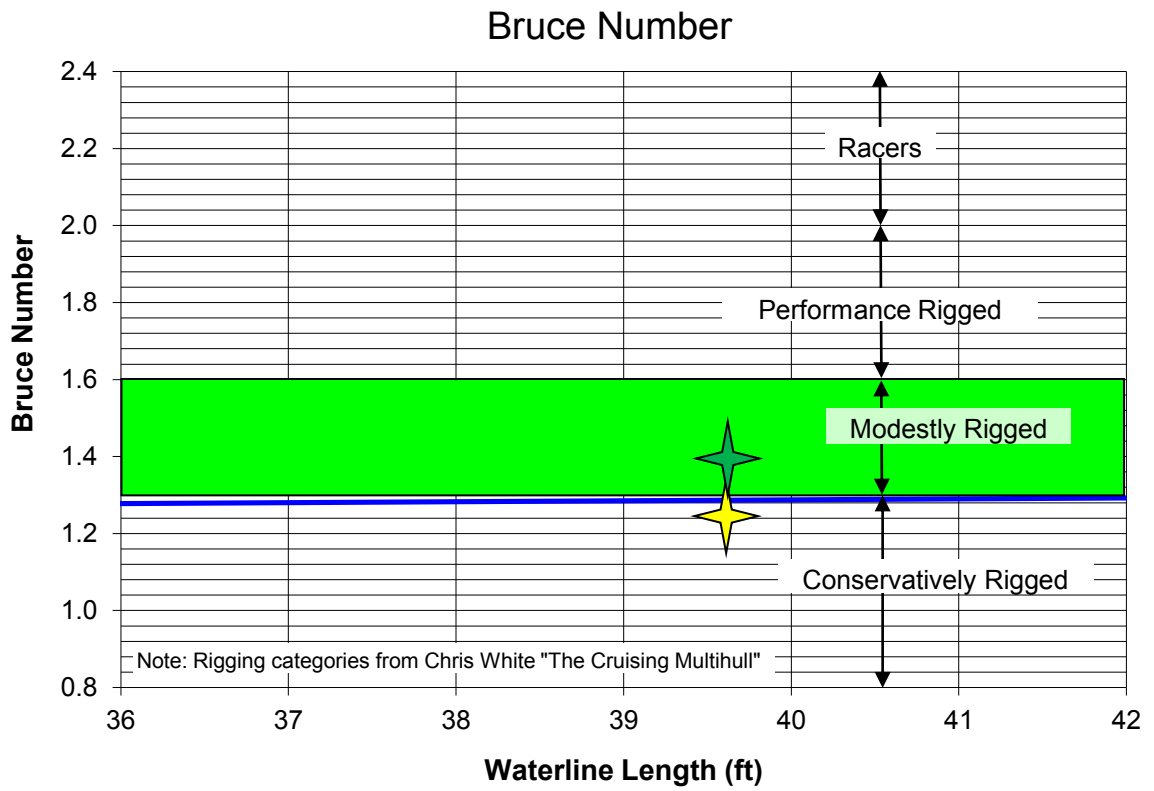
Below you will find 7 graphs of the Type Trend Lines; the Trend Lines are depicted in **blue**. These Trend Lines are not averages or means, but rather are statistical evaluations that give the "relationship" of these multihulls to other catamarans of similar waterline length in the Database. The **Gold star** on the graphs represents the St. Francis 44 and the **Green star** represents the St Francis 44 MKII.

For a more in depth understanding of these graphs and their results you may wish to read the free Technical Section of the MDI website.

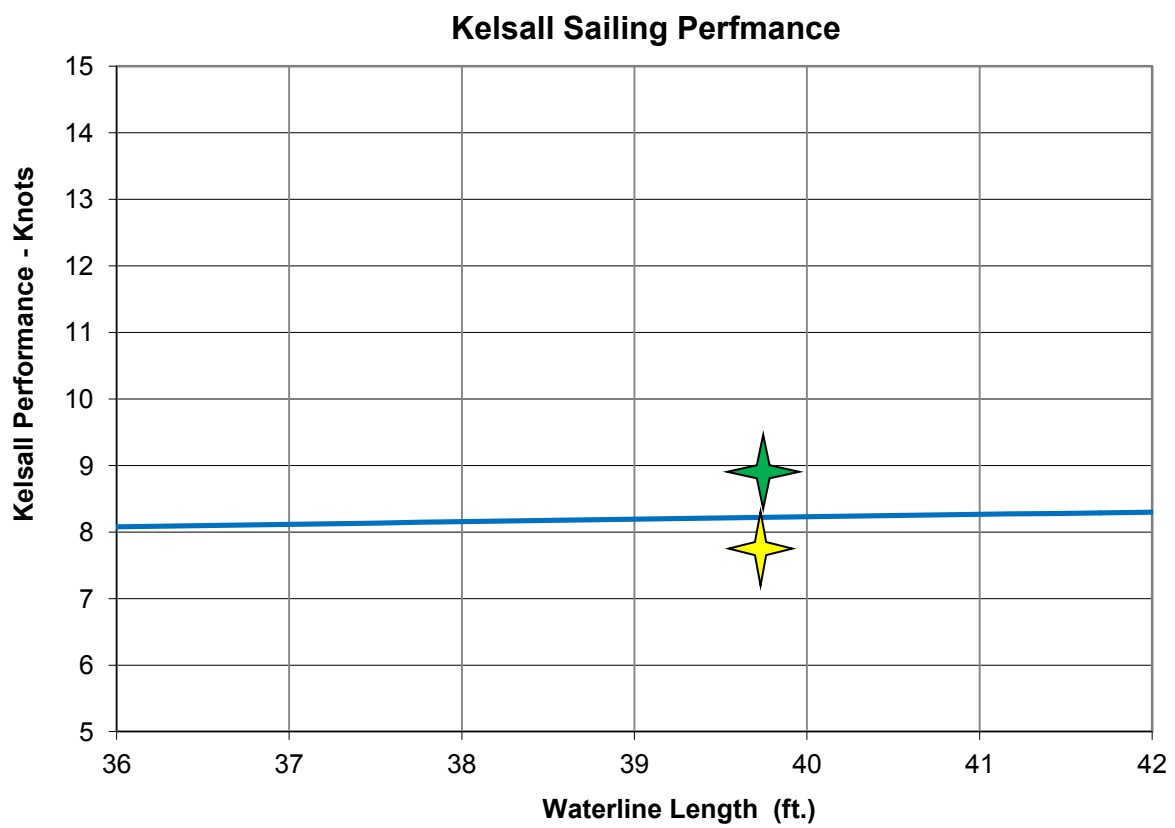
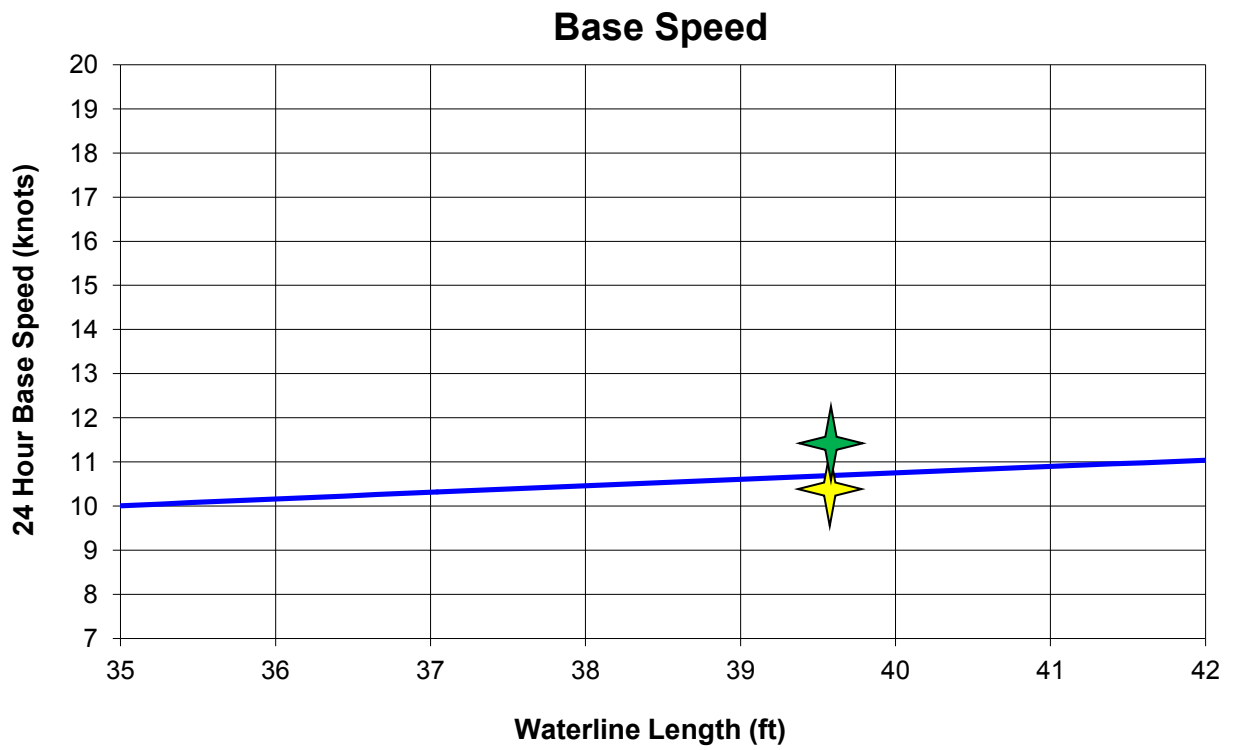
The order of the graphs is: power ratings, performance and stability formula predictions.

1. The power rating graphs are: Bruce Number (BN) and Sail Area/Displacement Ratio (SA/D)
  2. The performance graphs are: Base Speed (BSpd), Kelsall Sailing Performance (KSP) and Texel Rating (TR)
  3. The stability graphs are: Stability Speed (SSpd) and the Kelsall Stability Index (KSI)
-

## Power Graphs:



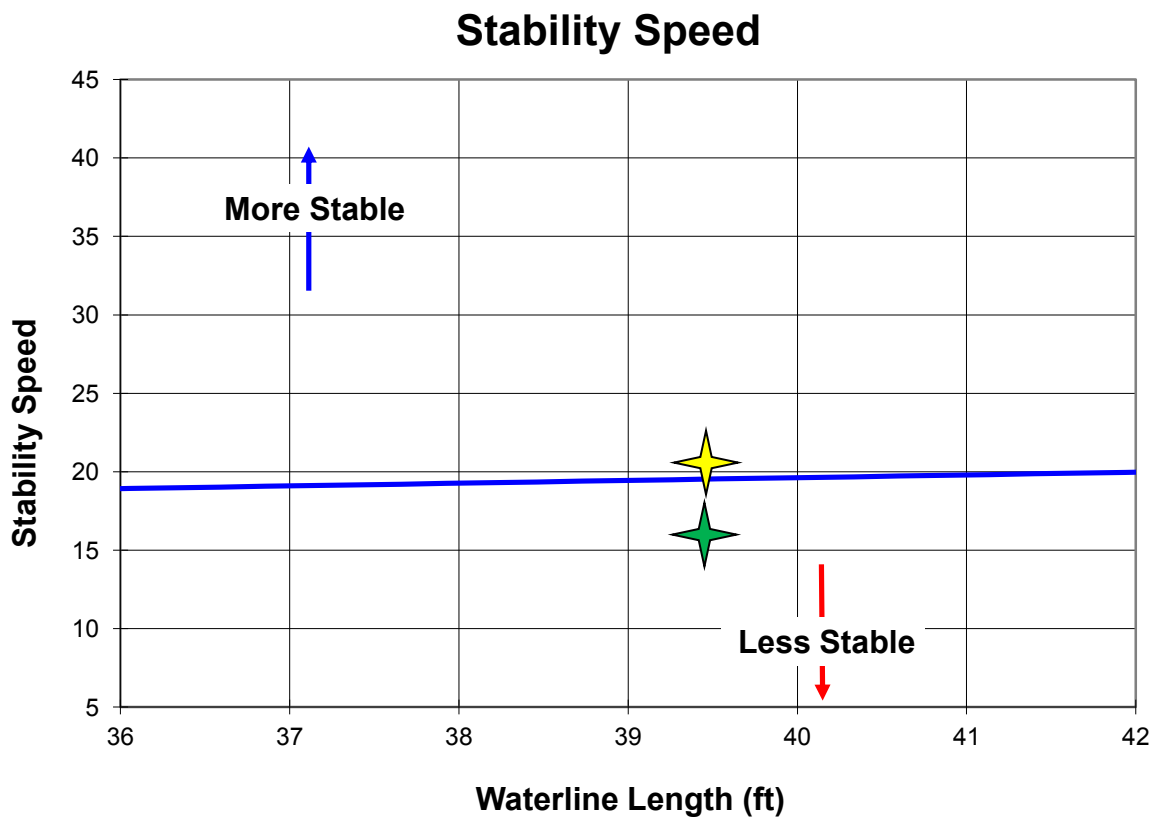
## Performance Graphs:



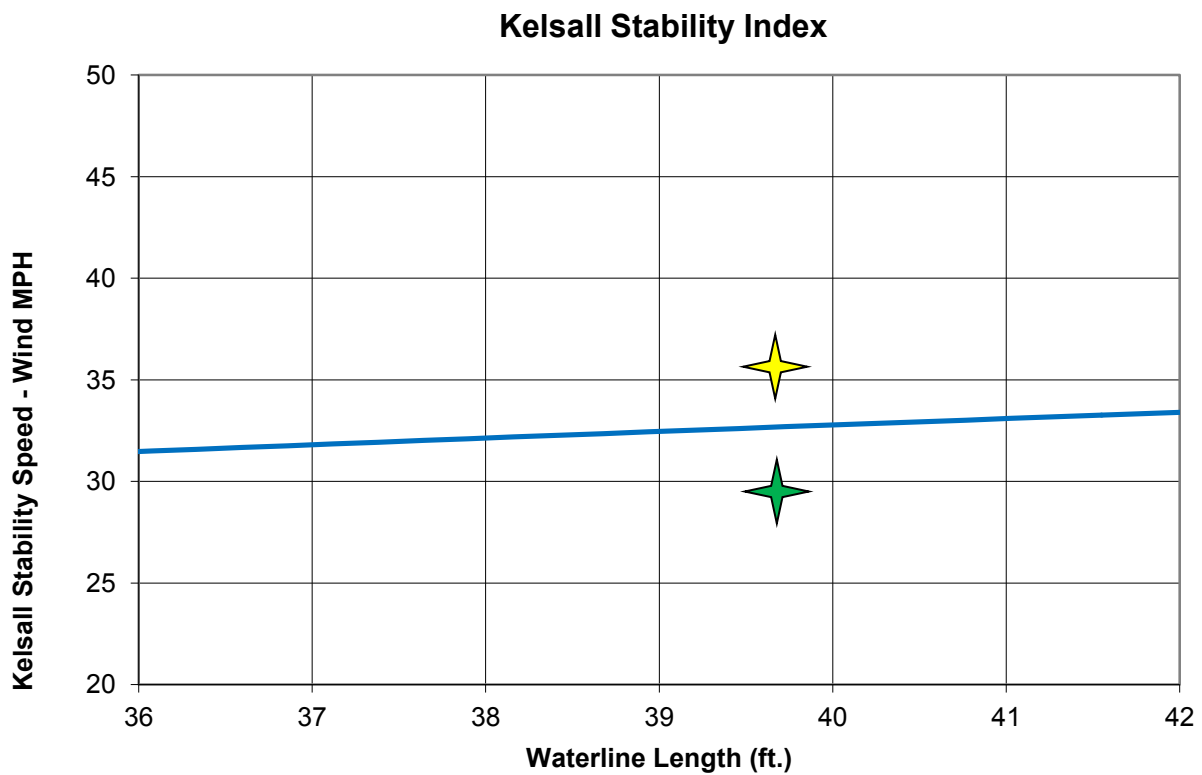
\* Base Speed and the Kelsall Sailing Performance are two different types of speed predictors. A detailed explanation of Base Speed is in the Technical Section of the MDI website.



**Stability Graphs:**



**\*\***Stability Speed (SSpd): This formula does not take wave action; it is the suggested abeam windspeed to begin reefing. It includes a 40% safety factor for wind gusts but does not compensate for wave effect.



**\*\*\*** Kelsall Stability Index (KSI): This formula predicts abeam windspeed at which point the windward hull of catamaran or the main hull of a trimaran will lift out of the water and the multihull will be sailing on the Leeward hull of a catamaran or the Leeward ama of a trimaran.

For more information on Stability Speed read the Technical page on the website. Detailed explanations of terms, formulas and interpretations are available on the Technical pages of the website [www.multihulldynamics.com](http://www.multihulldynamics.com)

**\*\*\*\*** The reader of this report should understand that all formulas have been calculated using the upwind/windward/weather sail area of main and 100% jib. It is imperative that the captain appreciate that if either of these multihulls is being sailed at greater sail area then the stability wind speeds must be adjusted down. At the same time if either of these boats are reefed or sailed at reduced sail area the stability wind speeds are adjusted up.

When comparing these two boats it may appear that one is more stable than the other, however reducing the sail area will increase either boats stability.

---

## Cal's Evals -

### **St. Francis 44 Mk II**

This 44 foot cruising catamaran is a bit of a puzzle to analyze because she has a significant bow overhang, unlike most of her sister ships. Thus, it is hard to know whether to compare her with other catamarans in the 44 foot overall length range or 39 foot waterline range. When faced with that, it is always interesting to do both. So in the data to follow, the first value is for the SF44 MKII, the second [in brackets] is the average of 34 boats with overall length between 44 and 45 feet and the third is the average of 50 boats with 39-40 foot waterline length:

Length overall: 44.17 feet [44.42 for the similar overall length boats, 41.38 for the similar waterline length boats]

Waterline length: 39.67 [42.06 ft, 39.40 ft]

Displacement: 6.89 tons [7.78T, 6.65T]

Sail Area: 1238 sq. ft. [1032 sq. ft., 1007 sq. ft.]

Displacement-Length Ratio: 55.20 [52.94, 54.28]

Sail Area-Displacement Ratio: 28.69 [25.22, 27.42]

Beam between hull centerlines: 19.48 feet [19.99 ft., 18.86 ft.]

Base Speed: 11.45 knots [10.76 knots, 10.73 knots]

Texel Rating: 122 [117, 116]

Bruce Number: 1.42 [1.25, 1.30]

Stability Speed: 16.95 knots [21.29 knots, 19.43 knots]

St. Francis 44 Mk II has a displacement that is mid-way between the two groups of boats, but has a sail area that is significantly larger than both. Thus, the sail area to displacement ratio is high, giving rise to the higher base speed than either group, with it attendant larger handicap represented by the Texel Rating. As expected, with average beam between hull centerlines, the greater sail area results in lower stability speed than either group.

The Multihull Maven website description of this boat states "While owners won't break any speed records on this boat, she sails well



and can easily be operated shorthanded, and turns out good average daily runs for a cruiser of her class”.

The numbers pretty well confirm this. The CSK Patty Cat II has a base speed of 12.10 knots, the highest in the 44 foot LOA group of boats, while the Fusion 40 Sport has a base speed of 13.92 knots, the highest in the 39 foot LWL group.

Calvin H. Markwood  
Engineering Analyst  
Multihull Dynamics, Inc.

Contact Cal: [multihull.analysis@comcast.net](mailto:multihull.analysis@comcast.net)

---

#### St Francis Owners Groups:

1. <http://groups.google.com/group/saintfrancis>
2. <http://www.cruisersforum.com/forums/f48/st-francis-44-a-11343.html>
3. <http://www.multihulls4us.com/forums/forumdisplay.php?f=4>
4. St Francis Marine <http://www.stfrancismarine.com/>
5. One owner's comments found on a forum:

*“St Francis is owned by Duncan Lethbridge, who started the company and continues to build 50 footers. The molds for the 44 were sold to Knysna, which continues to build them. Angelo Lavranos designed the 44. 43 hulls were built by St. Francis. Many of them have circumnavigated and almost all of them are still out there, cruising. (We just returned from 3 weeks in Desolation Sound, BC.) There is an active owners group on Google.*

*The mid-ship engines are different, but they have a number of advantages. Engine access is great (takes me 5 minutes to do my daily checks and I don't have to tear up any beds or crawl down through a transom, either). The placement optimizes weight distribution. The transoms are slender and maximize water exit, which enhances performance. With the props on the inside of the hulls, you are highly unlikely to ever catch a line in a prop, since there is the entire hull between the prop and where the line is likely to be dangling. Since the props are about 18 inches higher than the bottom of the keels, they are very well protected from groundings and never come out of the water in even the lumpiest of seas. There are two disadvantages: You have to walk around the cowlings (you easily get accustomed to that), but you also gain the space in the aft cabin, and the engine noise is a bit higher (though not by a lot) than with engines under the aft berths.*

*St. Francis 44's is wonderful cruising boats that sail very well. Very few keeled cruising cats can point up to 35 while maintaining 50%+ of windspeed. Plus, they are also excellent light air boats. In 6 to 7 knots of wind, we're still going 4 to 5 with just working sails, with a spinnaker up, we will be doing 5 to 6.”*

The above comments were altered to a small extent, the actual comments and discussion can be reviewed at this link: <http://www.cruisersforum.com/forums/f48/considering-buying-a-cat-st-francis-44-or-mayotte-47-a-65683.html>

6. YouTube <http://www.youtube.com/watch?v=GvmkQAcFVdk>

---

## **MDI Policy:**

### **Multihull Database**

Multihull Dynamics, Inc. reserves the right to list boats for which specification information is published in magazines, brochures, websites and other public media. Where possible, we augment published information with specification data provided by the designers and builders. Where invitations to provide this information are declined, we use estimating methods described in the article [Analysis and Comparisons of Cruising Multihulls 2008](#) to provide the missing information.

**Disclaimer:** Neither Multihull Dynamics, Inc, nor any of its employee's guarantees in any way the data in neither this report, nor the calculations derived from use of any formulas on this report, including those services purchased.

**Terms of Use:** [Visit the website for an explanation of your previous agreement to "Terms of Use".](#)

Copyright 2004-2012 Multihull Dynamics Inc. All rights reserved

Note: Due to difference in computer printers, browsers, etc... there may be a slight variation in the location of the multihull depicted on the graphs. Using the basic data for each boat will allow the reader to insure the mark indicating the location of the boat on the Trend-Lines is accurately depicted and understood.