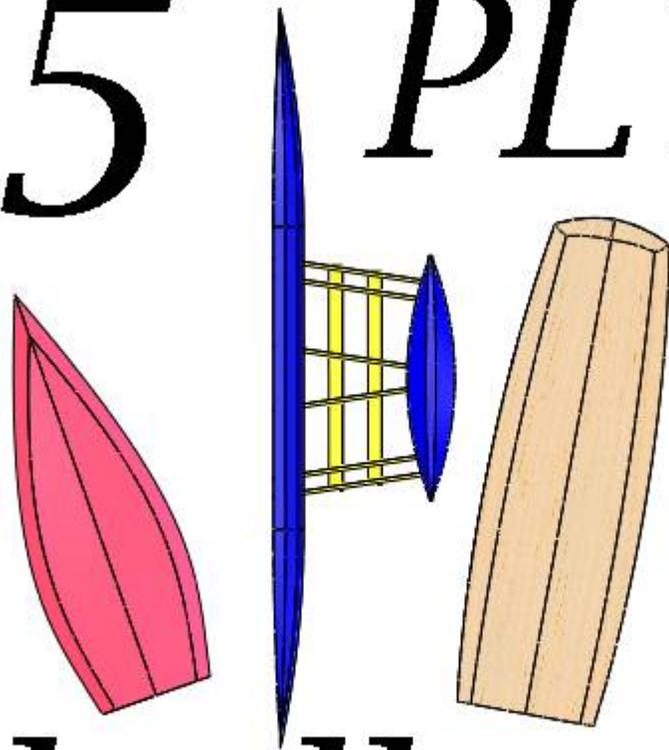


5 PLY



2010

*Challenge*

# INTRODUCTION

- ORIGINS
- RULES & SCORING
- BOAT DESIGN AND BUILDING
  - UC Berkeley - Pacific Proa
  - Brooks Dees - Racing Dingy
  - Joel Welter - Inland Lakes Scow
  - RACING
  - 3PLY CHALLENGE (LESSONS LEARNED)



# ORIGINS

Something Fun to Quell the “Yacht Designer Urge”

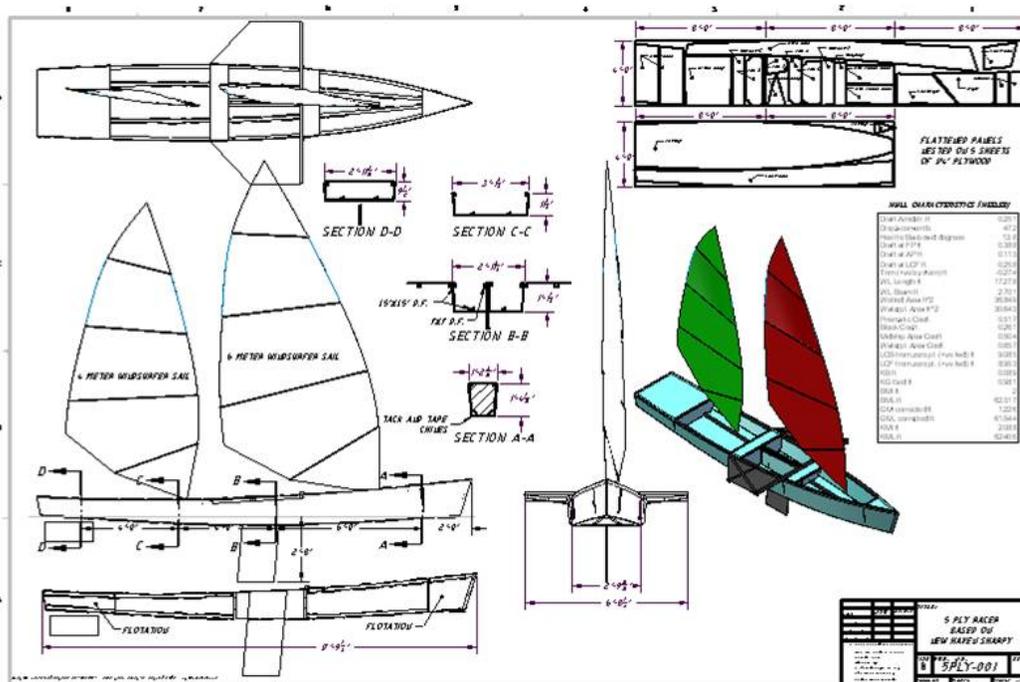
Remove Barriers to Entry

Promote Experimentation (Succeed or Fail Fast)



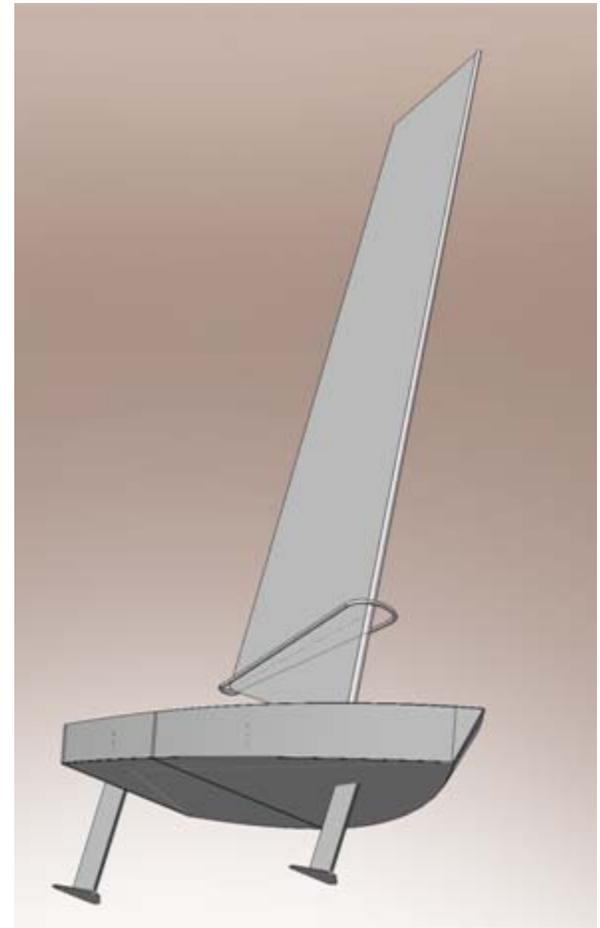
# RULES

- Limited material
- Limited sail area with existing rigs and sails
- Unlimited sail area with innovative materials use
- Drawings showing compliance by deadline

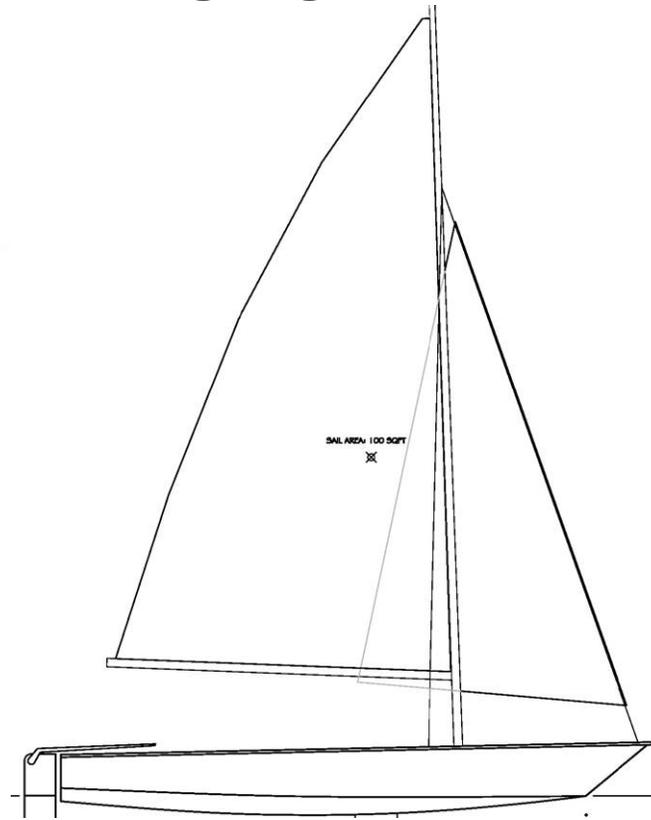
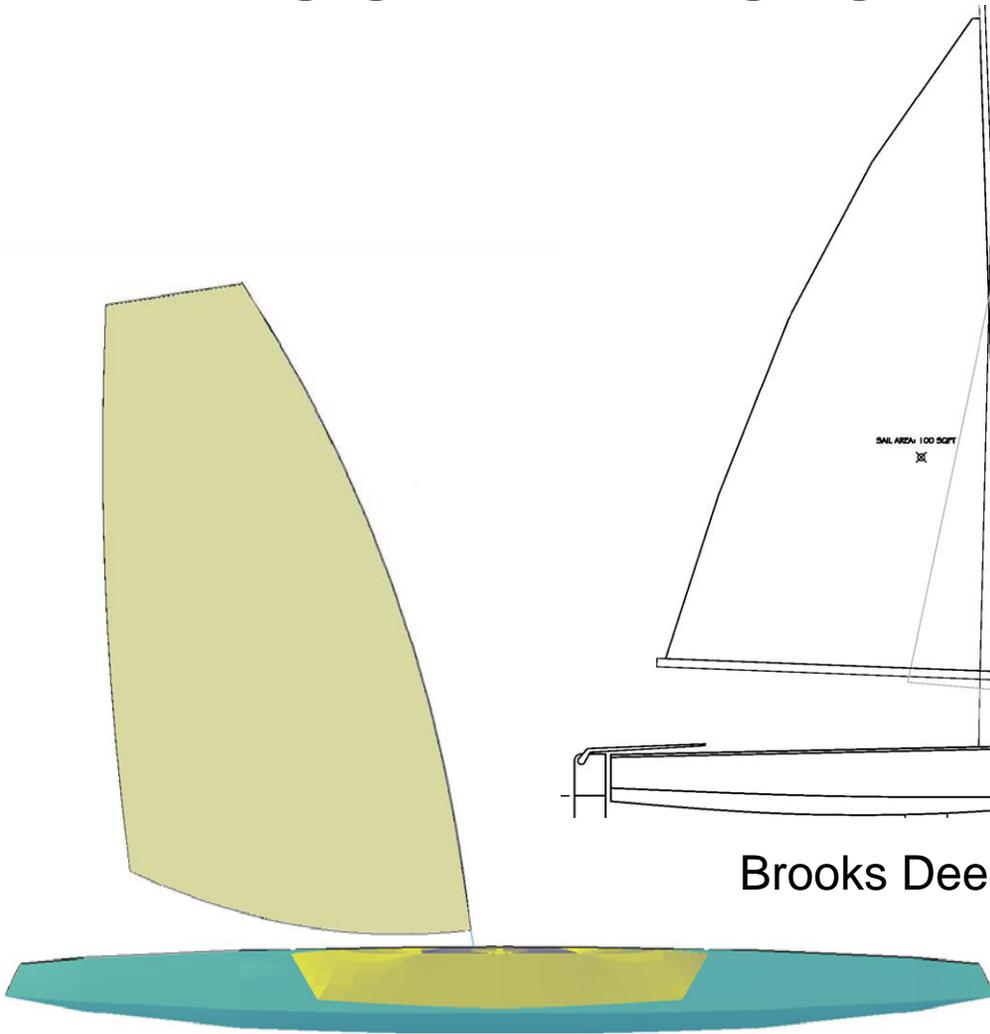


# SCORING

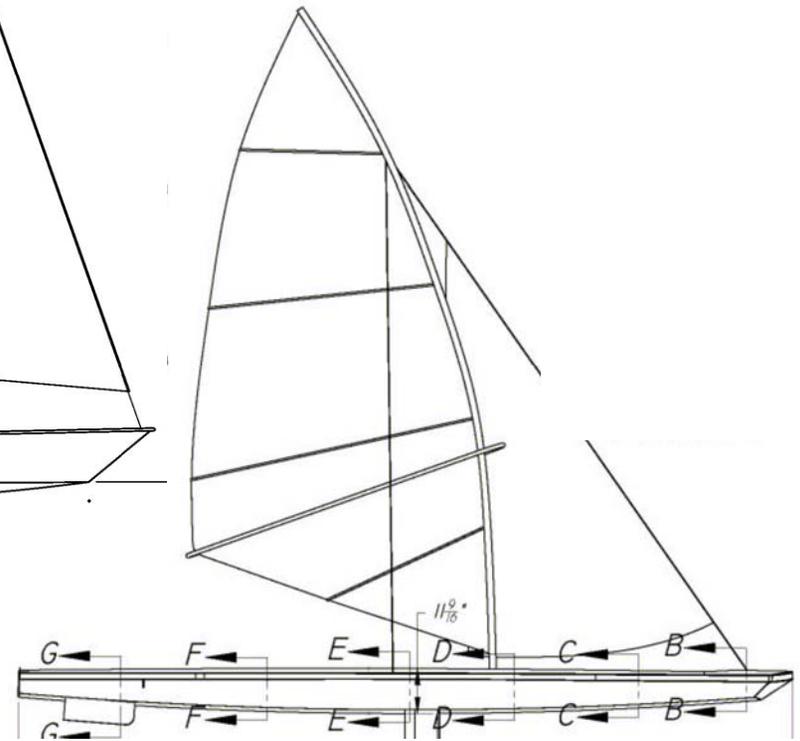
- Weighted average of multiple rankings
  - 60 % race ranking
  - 20% innovation ranking
  - 10% drawing ranking
  - 10% build quality ranking
- What really happened



# VESSEL DESIGN AND BUILDING



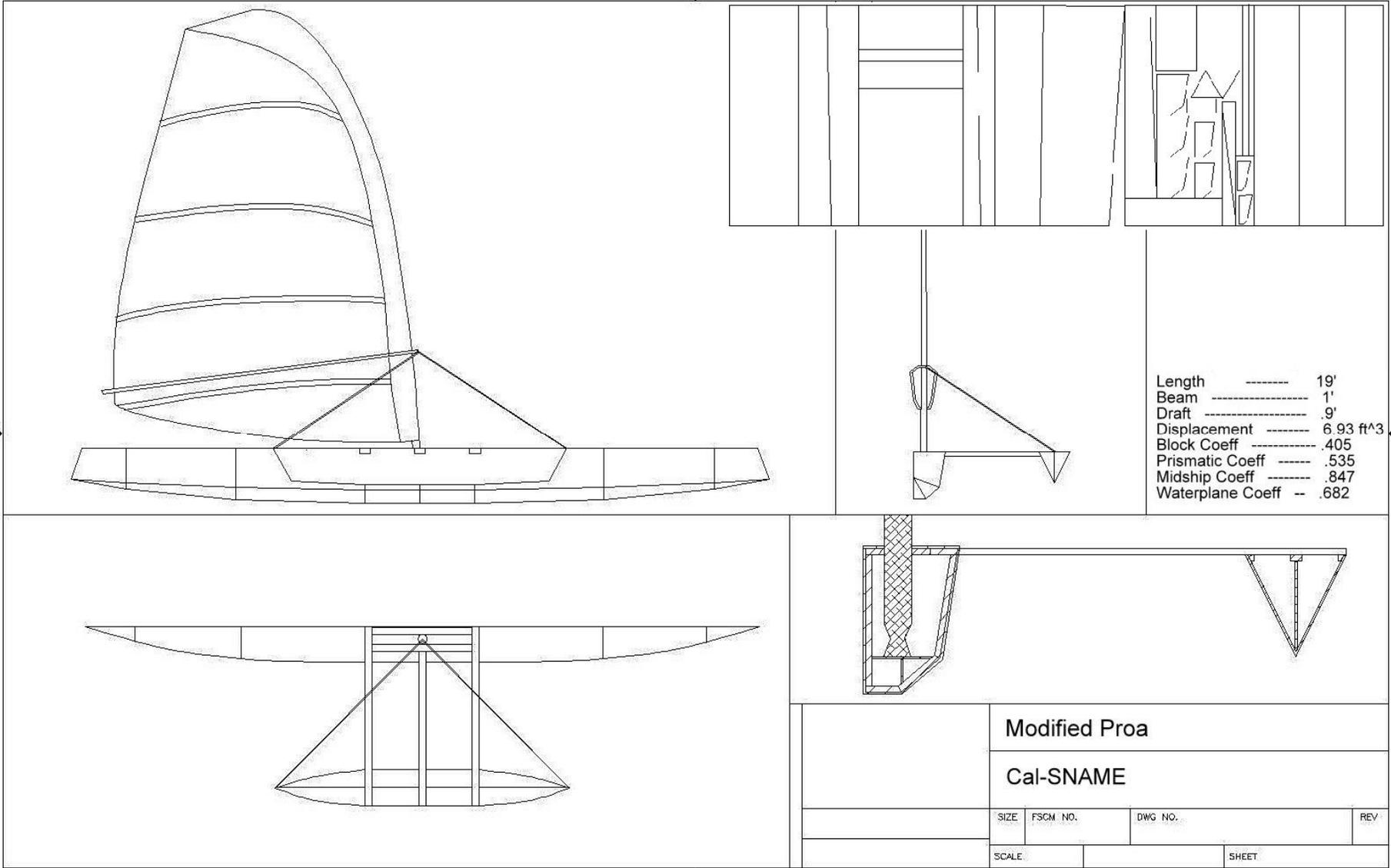
Brooks Dees



Joel Welter

Nico van der Kolk, Nate Tom, Christophe Cochet

# UC Berkeley



Length ----- 19'  
 Beam ----- 1'  
 Draft ----- .9'  
 Displacement ----- 6.93 ft<sup>3</sup>  
 Block Coeff ----- .405  
 Prismatic Coeff ----- .535  
 Midship Coeff ----- .847  
 Waterplane Coeff -- .682

Modified Proa

Cal-SNAME

SIZE	FSCM NO.	DWG NO.	REV
SCALE	SHEET		

# UC Berkeley

## Proa Characteristics

### Main Hull

Length: 28'  
Beam: 1'  
Depth: 1.5'

### Ama

Length: 8'  
Beam: 1.5'  
Depth: 1'

Overall Beam: 6.25'

Overall Weight: 200 lbs

Sail Area: 100 sqft



# UC Berkeley



# UC Berkeley



# UC Berkeley



# UC Berkeley



# UC Berkeley



# UC Berkeley



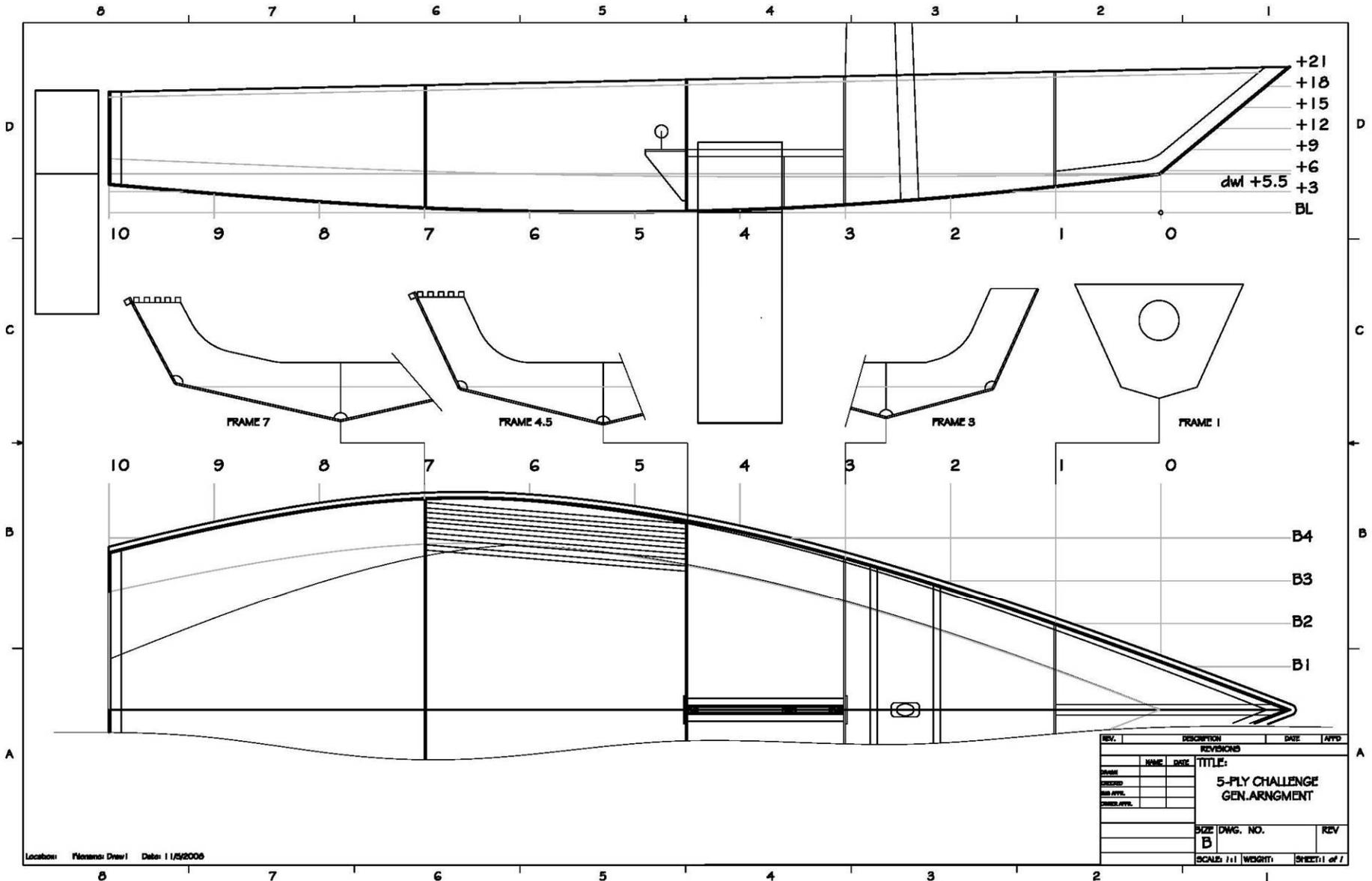
# UC Berkeley



# UC Berkeley



# 64 Valiant



# 64 Valiant

## Characteristics

Length:	14'
Beam:	5.1'
Depth:	1.5'
Weight:	160lbs
Sail Area:	100 sqft



# 64 Valiant



# 64 Valiant



# 64 Valiant



# 64 Valiant



# 64 Valiant



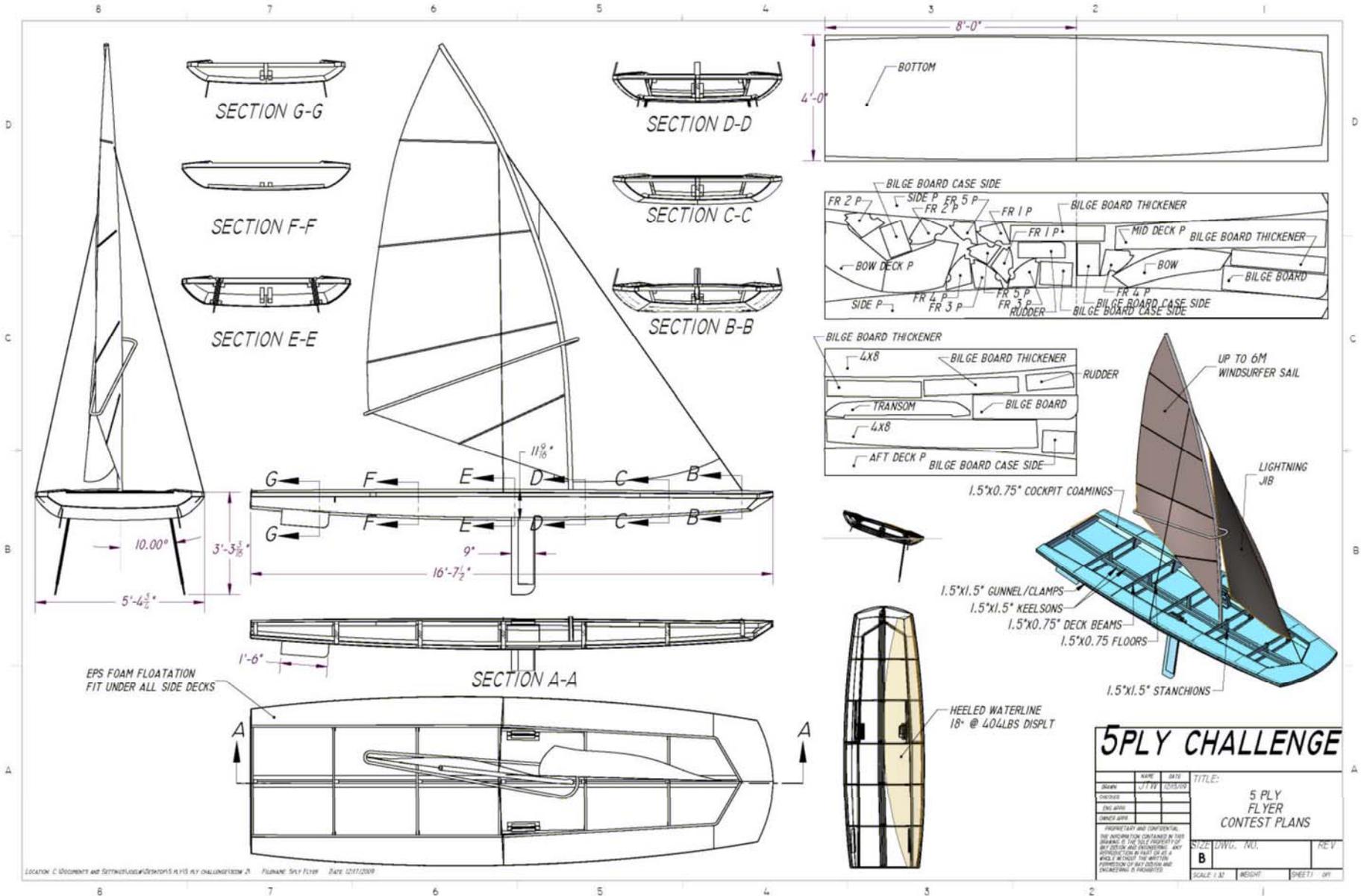
# 64 Valiant



# 64 Valiant



# The Hungry Pig



## 5PLY CHALLENGE

NAME	DATE	TITLE:
DRAWN	1/18	12/15/00
CHECKED		
ENG APPR		
OWNER APPR		

SIZE: DWG. NO. REV

**B**

SCALE: 1/32 WEIGHT SHEET 1/81

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# The Hungry Pig

## Characteristics

Length:	16.5'
Beam:	5.75'
Depth:	1'
Weight:	250lbs
Sail Area:	120 sqft



# The Hungry Pig



# The Hungry Pig



# The Hungry Pig



# The Hungry Pig



# The Hungry Pig



# The Hungry Pig



# The Hungry Pig



# Racing



# Racing



# Racing



# Racing



# Racing



# Racing



# Racing



# Racing



# Racing



# The 3Ply Challenge (Lessons Learned)

## **What Worked:**

- SNAME Microsite is a wonderful tool
- Valuable experience for all
- Low cost vessels and racing events
- Wide variety of vessel types and ideas

## **What Needs Improvement:**

- Limited participation
- Build times too long
- Vessel transportation

# The 3Ply Challenge (Lessons Learned)

## **Reduced Boat Size**

- Quicker build in smaller space
- Easier boat transport/storage

## **Limited Rig (Windsurfer)**

- Cheap and easy to source
- Easy to set up and use
- Allows sail swapping and skipper-weight based sail area limits

## **Simplified Rules and Scoring**

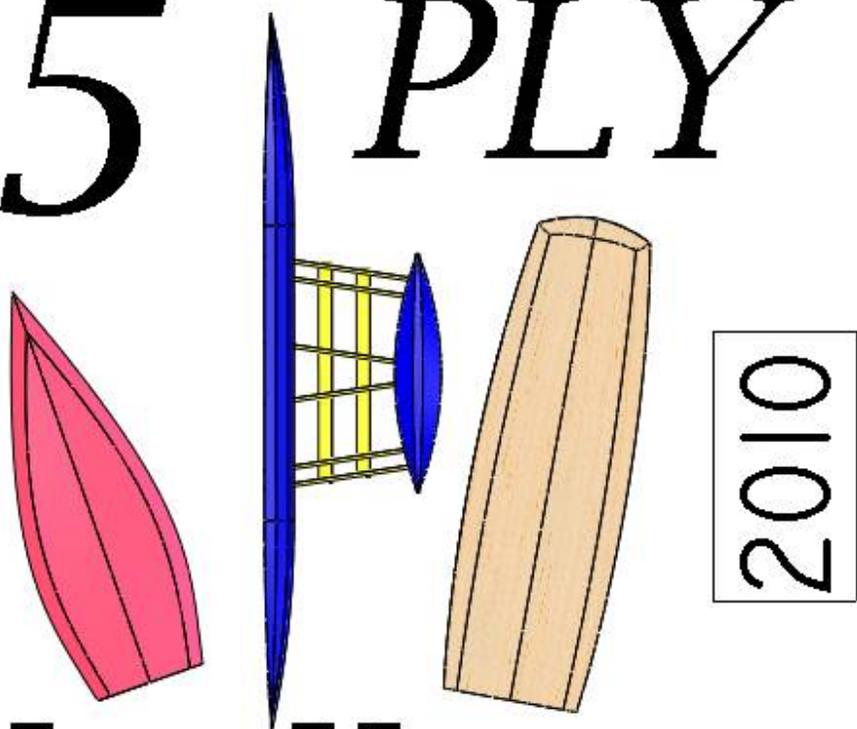
- Contest Plans submitted by deadline for entry
- Winner determined by race results only

## **Encourage Student Participation**

- Looking for mentors to assist students
- High Schools, UC Berkeley, Cal Maritime, Other?

[www.sname.org/sname/3plychallenge](http://www.sname.org/sname/3plychallenge)

# 5 PLY Challenge



The illustration depicts a 5-ply challenge, a common sailing maneuver. It features a red sail on the left, a blue boat in the center, and a wooden boat on the right. The blue boat is shown from a side profile, with a yellow and white striped sail. The wooden boat is shown from a top-down perspective, with a blue sail. The year 2010 is written vertically in a box on the right side of the illustration.

2010



Joel, soaked, but having fun



Joel and Nico Tacking



Brooks with the 64 Valiant



Nico and Friends skipping dinner to sail



Nico preparing to shove off for an evening sail