

# **AC45 Class Rule**

## **Version 2.0**

**3 July 2014**

### **INTRODUCTION**

*The AC45 Class Rule is owned by Golden Gate Yacht Club as trustee of the America's Cup.*

*The AC45 Class has been created as a one-design catamaran where teams can develop their skills related to the AC62 Class.*

*AC45 hulls, crossbeams, spines, bowsprits, hull appendages, standing rigging and wings are manufacturing controlled. AC45 soft sails are measurement controlled.*

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## PART I - ADMINISTRATION

### SECTION A – GENERAL

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#### A.1. RULES

ISAF Equipment Rules of Sailing sections G and H5 shall apply unless specifically stated otherwise.

#### A.2. LANGUAGE

- A.2.1. The official language of the AC45 Class Rule is English. Except for words defined herein, the meaning of any word shall be determined by reference to the Oxford English Dictionary. When there is more than one definition in the Dictionary, the **Measurement Committee** shall determine the appropriate definition, and may consult other references in making that determination.
- A.2.2. When a term is used in AC45 Class Rule or **build specification** defined sense, it is printed in **bold** type.
- A.2.3. When a term is used in the Equipment Rules of Sailing (ERS) defined sense, it is printed in underlined type.
- A.2.4. The words "shall", "will" and "must" are mandatory. The words "can" and "may" are permissive. The word "should" is advisory.
- A.2.5. This class rule is a closed rule. Anything not specifically permitted by the class rules is prohibited.
- A.2.6. Other than as defined in A.3, components, and their use, are defined by their description or as illustrated in the attached Appendices.

#### A.3. DEFINITIONS

- A.3.1. **Build specification** means the yacht as described in AC45 Build Specification Document and associated documentation that defines the design, construction and assembly as approved by the Regatta Director.
- A.3.2. **Measurement Committee** means the same committee appointed under the Protocol for the 35<sup>th</sup> America's Cup or those appointed by the Regatta Director.
- A.3.3. **Measurement condition** means the condition as specified in rule C.2
- A.3.4. **Measurer** means a person appointed by the **Measurement Committee** to perform measurement services or compliance checks; a **measurer** may or may not be a member of the **Measurement Committee**.
- A.3.5. **Soft sail** means a sail that is not a **wing**.
- A.3.6. **Trampoline** means the mesh installed between the **hulls** and extending the full length of the **spine** to provide a working area for the crew.
- A.3.7. **Wing** means a rigid or semi-rigid structure (encompassing a traditional yacht's mast and mainsail structures), similar to an aircraft wing fixed approximately vertically to provide propulsion from the wind.
- A.3.8. **Wing measurement condition** means the condition of the **wing** as specified in rule D.1.2.
- A.3.9. **Wing membrane** means the material stretched over the **wing flaps** and **wing spars** to create the surface over which the air flows.
- A.3.10. **Wing spar** means the fully assembled **upper wing spar** and **lower wing spar**.

**A.4. RULE AUTHORITY**

- A.4.1. The authority of the class is the **Measurement Committee**, which shall consult with the Regatta Director in all matters concerning the AC45 Class Rule.
- A.4.2. Only the **Measurement Committee** may issue or invalidate a certificate.

**A.5. UNITS OF MEASUREMENT AND MEASUREMENT PROTOCOL**

- A.5.1. The Metric System shall be used for all measurements.
- (a) Unless otherwise stated, linear measurements shall be taken and recorded in millimetres.
  - (b) **Soft sail** linear measurements shall be taken and recorded in centimetres.
  - (c) Running rigging length shall be taken and recorded in centimetres.
  - (d) Weights of the **wing** and the yacht in **measurement condition** shall be taken and recorded to the nearest kilogram.
  - (e) Any other weights, if used, shall be taken and recorded to the nearest 0.1kg.
- A.5.2. The **Measurement Committee** shall determine and record measurements of any other components to a degree of precision and using methodology they determine to be practical and appropriate.
- A.5.3. Competitors shall permit and assist all inspections and measurements by a **measurer**.
- A.5.4. The measuring equipment used by the **measurer** shall be the reference device for determining compliance with the AC45 Class Rule.

**A.6. INTERPRETATIONS**

- A.6.1. A competitor may seek an interpretation by submitting a request in writing to the **Measurement Committee**, or the **Measurement Committee** may initiate an interpretation. The **Measurement Committee** shall issue interpretations publically in writing within 21 days of the request or receipt of any additional required information, or may request a longer period subject to agreement of the competitor seeking the interpretation.
- A.6.2. A competitor shall not rely on any advice or opinion from a member of the **Measurement Committee** other than through a written interpretation published by the **Measurement Committee**.

**A.7. AMENDMENTS**

- A.7.1. The AC45 Class Rule may be amended as per Protocol Article 35.1.

**A.8. YACHT IDENTIFICATION**

- A.8.1. Yacht identification shall be managed by the **Measurement Committee**. An AC45 yacht shall retain the same identification number irrespective of validity of class certificate, change of ownership or any replacement of components.

## A.9. CERTIFICATES

- A.9.1. When the **Measurement Committee** concludes that the yacht complies with the AC45 Class Rule, having successfully completed all the measurement checks and compliance inspections requested by the **Measurement Committee**, it shall issue a measurement certificate as in Appendix A.
- A.9.2. A copy of the measurement certificate will be supplied to the yacht and the Regatta Director.
- A.9.3. When the **Measurement Committee** determines that a yacht does not comply with the AC45 Class Rule, that yacht's certificate shall be made invalid.
- A.9.4. When a new certificate is issued the old certificate is made invalid.
- A.9.5. When there is a change of ownership a yacht's certificate shall be made invalid.
- A.9.6. The **Measurement Committee** shall retain the original documentation upon which the current certificate is based.

## PART II – REQUIREMENTS AND LIMITATIONS

The crew and the yacht shall comply with the rules in Part II when racing.

### SECTION B – CONDITIONS FOR RACING

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#### B.1. GENERAL

- B.1.1. A yacht shall have a valid AC45 measurement certificate unless otherwise permitted by the Regatta Director.
- B.1.2. A yacht shall only be raced with original or replacement equipment supplied or specified, except where otherwise authorized by the AC45 Class Rule.

#### B.2. YACHT

- B.2.1. The weight of the yacht without:
  - (a) crew, guests(including their corrector weights) and media personnel;
  - (b) personal equipment;
  - (c) **soft sails**, including bags, battens, luff cables and associate fittings;
  - (d) drinks and/or food.
  - (e) **wing spar** extension and all associated fixings, fittings, and components,  
shall not be less than its weight in **measurement condition** nor more than 10kg greater than its weight in **measurement condition**.
- B.2.2. Dead weight, ballast, **soft sails** and other equipment shall not be moved for the purpose of changing trim or stability.
- B.2.3. Yachts shall start racing with bilges free of water and shall not be configured to retain water.

**B.3. CREW**

- B.3.1. The crew shall consist of 5 persons.
- B.3.2. The total weight of crew dressed in underwear shall not exceed 437.5 kg. Crewmembers shall be weighed prior to competing in a race. The **Measurement Committee** shall use that recorded weight at any post-race verification of compliance. In the event that a crewmember is re-weighed at any time, a new weight will be recorded and shall be used for any subsequent post-race verification.
- B.3.3. In addition to the crew, the Regatta Director may implement an on-board guest program, with specific limits and requirements.

**B.4. PERSONAL EQUIPMENT**

- B.4.1. The yacht shall be equipped with one personal floatation device for each crewmember to the minimum standard ISO 12402-5 (CE 50 Newtons), USCG Type III, or equivalent.
- B.4.2. The yacht shall be equipped with one helmet for each crewmember.
- B.4.3. The total dry weight of worn or carried personal equipment shall not exceed 6.0 kg per crew member. This weight may be adjusted by the **Measurement Committee** with the approval of the Regatta Director to accommodate additional clothing for cold-weather venues, or for additional personal safety equipment designated by the Regatta Director.
- B.4.4. Crew clothing and equipment shall not retain water for the purpose of increasing weight.
- B.4.5. In addition to the items listed in B.4.1 through B.4.4, no more than 5 kg of drink and food may be on board.

**B.5. APPENDAGES****B.5.1. DAGGERBOARDS**

- (a) Both **daggerboards** shall be retained in their **daggerboard** housings;
- (b) **Daggerboards** shall not be retracted or extended beyond the specified mechanical stops;
- (c) **Daggerboards** shall only be extended and retracted; and
- (d) **Daggerboards** shall not be retracted or extended using a winch.

**B.5.2. RUDDERS**

- (a) Both **rudders** shall be in their designed sailing position.
- (b) Both **rudders** shall be connected to their **tillers** and the **tillers** connected to the **tiller linkage arm**. **Rudders** shall not be moved independently.
- (c)

**B.6. WING**

- B.6.1. The **forestay** shall not be adjusted.
- B.6.2. **Upper shrouds** and **lower shrouds** shall not be adjusted.
- B.6.3. The **running backstays** shall remain fully led.

**B.7. RUNNING RIGGING AND ASSOCIATED FITTINGS**

- B.7.1. All running rigging shall remain fully led, except if being replaced and/or during manoeuvres.
- B.7.2. All turning blocks, winches and associated running rigging fittings and equipment shall remain on board.
- B.7.3. All running rigging listed in Appendix E shall remain on board unless otherwise permitted by the **Measurement Committee**.

**B.8. SOFT SAILS**

- B.8.1. Each **soft sail** shall carry an AC45 sail identification sticker assigned to it by the **Measurement Committee**.
- B.8.2. **Soft sails** shall only be used as defined in section E.
- B.8.3. One jib and one other **soft sail** shall be on board.
- B.8.4. The total weight of **soft sails** aboard (including luff cables, battens, hanks, and any sail bags) shall be no less than 35kg and no greater than 70kg.
- B.8.5. The jib shall be attached to the **forestay** along its luff.
- B.8.6. The code zero shall be sheeted through the **forward cross beam** jib tracks.
- B.8.7. The gennaker shall be sheeted with the forward most bearing point aft of the **forward cross beam**.
- B.8.8. No device shall control a **soft sail** except:
  - (a) sheets attached at the clew to sheeting points on the yacht;
  - (b) leech and foot lines;
  - (c) a furling system;
  - (d) a halyard; and,
  - (e) sail ties or similar devices for securing a **soft sail** when not in use.

**B.9. ELECTRONICS**

- B.9.1. Yachts may have "Velociteck Pro Start" instruments or similar devices approved by the **Measurement Committee**.

## SECTION C – YACHT

### C.1. YACHT

C.1.1. A yacht shall carry an AC45 yacht identification number affixed to the **aft cross beam** by the **measurer**.

C.1.2. The following components shall comply with the **build specification**. As required, components shall be identified in a manner acceptable to the **Measurement Committee**:

	Component	Identification required
(a)	<b>Hulls</b>	Required
(b)	<b>Transoms</b>	Required
(c)	<b>Cross beams</b>	Required
(d)	<b>Spine</b>	Required
(e)	<b>Bowsprit</b>	Required
(f)	<b>King post</b>	Required
(g)	<b>Forward king post</b>	Required
(h)	<b>Lateral cables - Gennaker</b>	Required
(i)	<b>Lateral cables - Jib</b>	Required
(j)	<b>Forward spine cable</b>	Required
(k)	<b>Aft spine cable</b>	Required
(l)	<b>Trampoline</b>	
(m)	<b>King post transverse stay</b>	Required
(n)	Board lifting posts	
(o)	<b>Daggerboards</b>	Required
(p)	<b>Rudders</b> (including stocks)	Required
(q)	<b>Rudder</b> hull cassette	
(r)	<b>Tiller</b>	
(s)	<b>Tiller link assembly</b>	
(t)	<b>Lower wing spar</b>	Required
(u)	<b>Upper wing spar</b>	Required
(v)	<b>Lower wing flap</b>	Required
(w)	<b>Mid wing flap</b>	Required
(x)	<b>Upper wing flap</b>	Required
(y)	<b>Forestay</b>	
(z)	<b>Upper shrouds</b>	
(aa)	<b>Lower shrouds</b>	
(bb)	<b>Running backstays</b>	
(cc)	<b>Wing membrane</b>	
(dd)	<b>Control arms</b>	
(ee)	Gennaker cable	Required
(ff)	Code Zero cable	Required
(gg)	Hardware, fittings and fixings supplied with the components	

C.1.3. All items listed in C.1.2 shall be built by a manufacturer licensed or otherwise specified by the Regatta Director to produce that item. The stickers required in C.1.2 confirm that the item has complied with the AC45 **build specification** at the time of manufacture.

C.1.4. All production moulds, jigs and construction methods used for manufacture of the items listed in C.1.2 shall be approved by the Regatta Director.



- C.1.5. In regards to the components listed in C.1.2:
- (a) they shall not be modified or replaced unless specifically permitted by the **Measurement Committee** via a Measurement Memorandum. Application of branding and team graphics is not considered to be modification for this purpose.
  - (b) maintenance may be carried out provided that the essential shape, characteristics and function of the original component are not affected.
  - (c) repair work may be carried out, provided:
    - (i) any repair work shall be reported the **Measurement Committee** before the yacht next races, or on days of multiple races, before the next scheduled race day.
    - (ii) any repair shall be such that the **Measurement Committee** is satisfied that there is no advantage gained as a result of the repair.
- C.1.6. The yacht, in **measurement condition**, shall not weigh less than 1320 kg plus the weight of organiser specified media equipment or more than 1350 kg plus the weight of organiser specified media equipment. Any shortfall in this weight shall be made up by corrector weights securely fixed to the **hulls** or their internal structure within 0.420m of the shroud chainplate bulkhead, as specified by the **Measurement Committee**.

## C.2. MEASUREMENT CONDITION

### C.2.1. **Measurement condition** shall include:

- (a) components of C.1.2 (a) to (s) and associated hardware, fittings and fixings fully assembled;
- (b) the **wing** in **wing measurement condition**;
- (c) all running rigging that may be on board while racing, excluding any spares;
- (d) all advertising branding applied to the yacht;
- (e) corrector weights required by the **Measurement Committee**;
- (f) all media equipment listed in Appendix F when specified for an event;
- (g) four winch handles;
- (h) all other equipment and modifications approved by the **Measurement Committee**; and
- (i) weight adjustment by the **Measurement Committee** and agreed by the Regatta Director for event-specific issues.

### C.2.2. **Measurement condition** shall NOT include:

- (a) crew, guests (including their corrector weights) and media personnel;
- (b) personal equipment;
- (c) **soft sails**, including bags, battens, luff cables and associate fittings;
- (d) spares and tools;
- (e) safety equipment;
- (f) the AC45 Wing Spar Extension and all associated fixings, fittings, and components; and
- (g) drinks and/or food.

### C.3. SURFACE FINISHES AND BOUNDARY LAYER INTERFERENCE

- C.3.1. Only paint systems generically specified as two-component linear polyester saturated aliphatic polyurethane, two-component epoxy urethane, or two-component acrylic urethane, and manufactured by International, Awlgrip, Akzo Nobel, DuPont or Resene, may be used as the outermost surface finish of the **hulls** and hull appendages. No materials other than specified manufacturer-supplied retardants, accelerants, thinners and pigments shall be added. Similarly, the specific gravity of the paint shall not be altered with any material other than those specified above. The **Measurement Committee** may authorize the use of comparable paint products from other manufacturers provided those products meet comparable requirements for product standardization, compliance, and testing.
- C.3.2. The application of vinyl, mylar or other plastic film over the surface of the **hull** for advertising or branding is allowed, provided that the film shall not be specially textured or otherwise manufactured in a way that could improve the character of the flow of water inside the boundary layer, and provided that the material is neither unnecessarily heavy nor applied in a manner that is designed to alter the distribution of the yacht's weight for the purpose of improving performance.
- C.3.3. Small quantities of friction-reducing compounds (for example, McLube) may be applied only to the surface of **daggerboards** prior to racing, and solely for the purpose of reducing bearing friction while raising and lowering the **daggerboards**. A competitor shall seek the approval of the **Measurement Committee** for the type and quantity of friction-reducing compounds to be used for this purpose.
- C.3.4. The outermost surfaces of the **hulls** or hull appendages may be sanded and cleaned with normal concentrations and quantities of detergents or similar materials. However, while afloat on a scheduled race day, no substances other than those allowed in C.3.1, C.3.2 and C.3.3 shall be present on the outermost surfaces of the **hulls** or hull appendages.

### C.4. EQUIPMENT

- C.4.1. All sail handling equipment, including winches, turning blocks (floating and fixed) tracks, padeyes etc., supplied with the yacht or specified by the Regatta Director shall be installed using appropriate fixings, lashings and fastenings. All running rigging shall comply with Appendix E.
- C.4.2. The yacht shall be equipped with no less than two righting lines, one attached to the inner side of each **hull** at the padeye immediately aft of the forward crossbeam. Each line shall at least be long enough to extend from the padeye to the approximate centerline of the yacht, and may consist of a continuous loop, or a line with a suitable loop at its working end. These lines shall be strong enough to withstand the loads associated with righting the yacht after a capsize. The lines may be secured to the **trampoline** with easily breakable lashings or cable ties when not in use.

### C.5. ASSEMBLY

- C.5.1. The yacht and all associated hardware, fittings and fixings shall be assembled as per the **build specification**, except when altered, added or replaced as permitted by the **Measurement Committee** in Section C of these class rules.

## SECTION D – WING

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### D.1. GENERAL

- D.1.1. The **wing** in **wing measurement condition** shall not weigh less than 385 kg plus the weight of organiser specified media equipment. Any shortfall in this weight shall be compensated for by the necessary corrector weight being affixed at the connection between the **lower wing spar** section and the **upper wing spar** section, as shown in Appendix D.
- D.1.2. **Wing measurement condition** shall include:
- (a) The fully assembled **wing spar**, including all fittings and fixings.
  - (b) The lower, mid and upper **wing flaps**.
  - (c) The **forestay**.
  - (d) One pair of **upper shrouds**.
  - (e) One pair of **lower shrouds**.
  - (f) One pair of **running backstays**, including flying blocks and **running backstay** tails.
  - (g) Four **control arms**, each fully assembled, including all running rigging and all associated fittings and fixings.
  - (h) **Wing membrane**.
  - (i) All applied advertising and branding applied to the components that are part of **wing measurement condition**.
  - (j) All media equipment listed to be attached to the **wing** in Appendix F, when specified for an event.
  - (k) All halyards and any other **wing**-specific running rigging not described above.
  - (l) Weight adjustment by the **Measurement Committee** and agreed by the Regatta Director for event-specific issues.
- D.1.3. **Wing measurement condition** shall NOT include the AC45 Wing Spar Extension and all associated fixings, fittings, and components. The **Measurement Committee**, in consultation with the Regatta Director, may equalize the weights of the AC45 Wing Spar Extension with corrector weights if required.

### D.2. WING MEMBRANE

- D.2.1. The **wing spar** and each **wing flap** shall be covered completely on both sides between the aft edge of the leading edge spar and the trailing edge, from the foot to the head of the **wing** with a membrane material which shall comply with the **build specification** in force at the time of manufacture. Surfaces of the **wing spar** and each **wing flap** may be covered with paint complying with Rule C.3.1.
- D.2.2. Adhesives and edging tape may be used, and vinyl, mylar or other plastic film may be applied over the surface of the **wing** for advertising or branding, provided that the film shall not be specially textured or otherwise manufactured in a way that could improve the character of the flow of air inside the boundary layer.
- D.2.3. The outermost surfaces of the **wing** may be sanded and cleaned with normal concentrations and quantities of detergents or similar materials. However, while afloat on a scheduled race day, no substances other than those allowed in D.2.1 and D.2.2 shall be present on the outermost surfaces of the **wing**.

### D.3. STANDING RIGGING

- D.3.1. Standing rigging shall comply with the **build specification** and shown in Appendix D.
- D.3.2. Shrouds shall be of equal length port and starboard within 10mm.

### D.4. RUNNING RIGGING

- D.4.1. All running rigging shall comply with the specification given in Appendix E. The length of running rigging shall be within 10% of the specified length, except for general lashings..
- D.4.2. Yachts shall use no more than four Gennaker / Code Zero luff cables in a calendar year.

## SECTION E – SOFT SAILS

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### E.1. GENERAL

- E.1.1. **Soft Sails** shall comply with Appendix B with the luff lengths measured from the tack point.
- E.1.2. Other than as required for **soft sail** hardware, intentional openings in **soft sails** are prohibited.
- E.1.3. Artificially thickened Jibs are prohibited, e.g., foamed Jibs, rigid Jibs, or multiple-surface Jibs, whether inflated by the action of the wind or otherwise, except for battens, batten pockets, and luff attachment devices as provided in Rule E.1.8.
- E.1.4. No more than five **soft sails** may be declared for use during one event. The declared **soft sails** shall be identified by the AC45 sail identification sticker and may consist of:
  - (a) No more than two Large or Medium Jibs;
  - (b) No more than one Small Jib;
  - (c) No more than one Code Zero;
  - (d) No more than one Gennaker.
- E.1.5. The dimension of any **soft sail** hardware, in any direction, shall not exceed 0.300 m for a clew point, or 0.250 m for any other hardware
- E.1.6. Leech and foot lines shall not be greater than 5 mm in diameter.
- E.1.7. Sail bags shall weigh no more than 4.0 kg and shall not be designed to retain water.
- E.1.8. The Jib shall be attached to the forestay along its luff and the Code Zero and **Gennaker** shall be attached to the luff support cable, and:
  - (a) discontinuous luff attachment devices (hanks) shall measure no more than 0.075 m parallel to the luff and 0.120 m orthogonal to and forward of the luff;
  - (b) continuous luff attachment devices (luff pockets) shall have an internal width no more than 0.150 m measured orthogonal to the luff, and shall be no thicker than required for their attachment function;
  - (c) no luff attachment or luff support device shall be used to increase effective Jib area; and
  - (d) for the measurement of LP, HB, G1, G2, and G3, the forward edge of the Jib shall be taken as the forward edge of a closed luff pocket, or as the forward edge of any discontinuous luff attachment device (or projection thereof parallel to the luff).

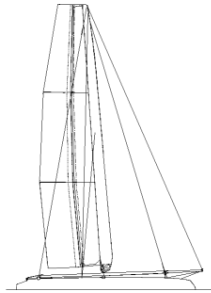
**E.2. Battens**

- E.2.1. Code Zero and Gennaker **soft sails** shall not have battens or batten pockets.
- E.2.2. Jibs shall have no more than six battens, and battens shall be no closer than 0.25 m to each other at any point
- E.2.3. Jib battens:
- (a) shall pass through a 0.055 m diameter circle;
  - (b) may consist of multiple elements that need not necessarily be attached to one another, provided the batten is fitted within a single, continuous batten pocket, and provided the multi-element array complies with Rule E.2.3(a) and all other limits of this Rule E.2.3;
  - (c) shall not have a permanent bend or set, within a tolerance of 0.050 m over their entire length;
  - (d) shall not be adjusted while the Jib is set;
  - (e) shall not be inflatable; and
  - (f) shall be within a pocket not exceeding 0.12 m in internal width measured orthogonal to the longitudinal axis of the batten.

**PART III – APPENDICES**

**APPENDIX A – CLASS CERTIFICATE**

Page 1 of 2



Office Use Only
Original to Owner ( )
Copy to MC File ( )
Copy to ACRM ( )

**AC45 Yacht**  
**Measurement Certificate**

Name of Yacht: \_\_\_\_\_

Owner(s): \_\_\_\_\_

Yacht Identification Number: \_\_\_\_\_

Measurement Certificate Number: \_\_\_\_\_

**VALIDATION**

We confirm that this yacht has been measured in accordance with the AC45 class rule, and has been found to be in compliance with the rule.

Signatures of issuing measurers: \_\_\_\_\_

\_\_\_\_\_

Date of certification: \_\_\_\_\_

Supersedes Certificate No. & Date: \_\_\_\_\_

Yacht Name: \_\_\_\_\_  
Certificate Number: \_\_\_\_\_

Yacht ID: \_\_\_\_\_

**YACHT**

Yacht weight (kg): \_\_\_\_\_  
Yacht correction (kg): \_\_\_\_\_

Port Hull ID: \_\_\_\_\_  
Stbd Hull ID: \_\_\_\_\_  
Spine ID: \_\_\_\_\_  
Bowsprit ID: \_\_\_\_\_  
Port Transom ID: \_\_\_\_\_  
Stbd Transom ID: \_\_\_\_\_  
Fwd Cross Beam ID: \_\_\_\_\_  
Aft Cross Beam ID: \_\_\_\_\_

**WING**

Wing weight (kg): \_\_\_\_\_  
Wing correction (kg): \_\_\_\_\_

Upper Spar ID: \_\_\_\_\_  
Lower Spar ID: \_\_\_\_\_  
Upper Flap ID: \_\_\_\_\_  
Middle Flap ID: \_\_\_\_\_  
Lower Flap ID: \_\_\_\_\_

**APPENDAGES**

Port Daggerboard ID: \_\_\_\_\_  
Stbd Daggerboard ID: \_\_\_\_\_  
Port Rudder ID: \_\_\_\_\_  
Stbd Rudder ID: \_\_\_\_\_

Measurer Name and Signature: \_\_\_\_\_

Measurer Name and Signature: \_\_\_\_\_

Date: \_\_\_\_\_

## APPENDIX B – SOFT SAIL PLANFORM DIMENSIONS

### App B1 Sail Dimensions

The maximum permitted dimensions for each sail are listed below. The minimum permitted dimensions of HB, G1, G2, G3 and LP shall be 0.03 m less than the listed value and the minimum permitted dimensions of Luff and Head to Clew Point shall be 0.05 m less than the listed value

G1 is the shortest distance from luff to leech at 75% of luff length above tack point.

G2 is as above, at 50% up the luff.

G3 is as above, at 25% up the luff.

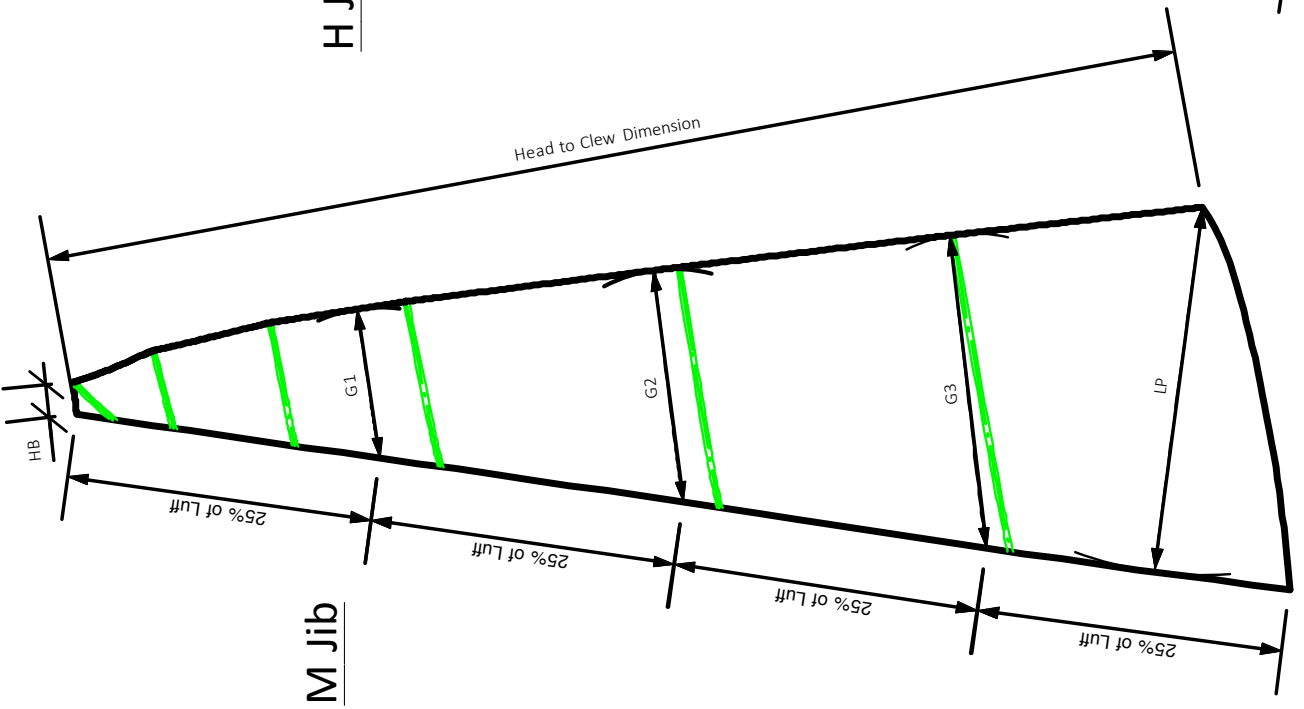
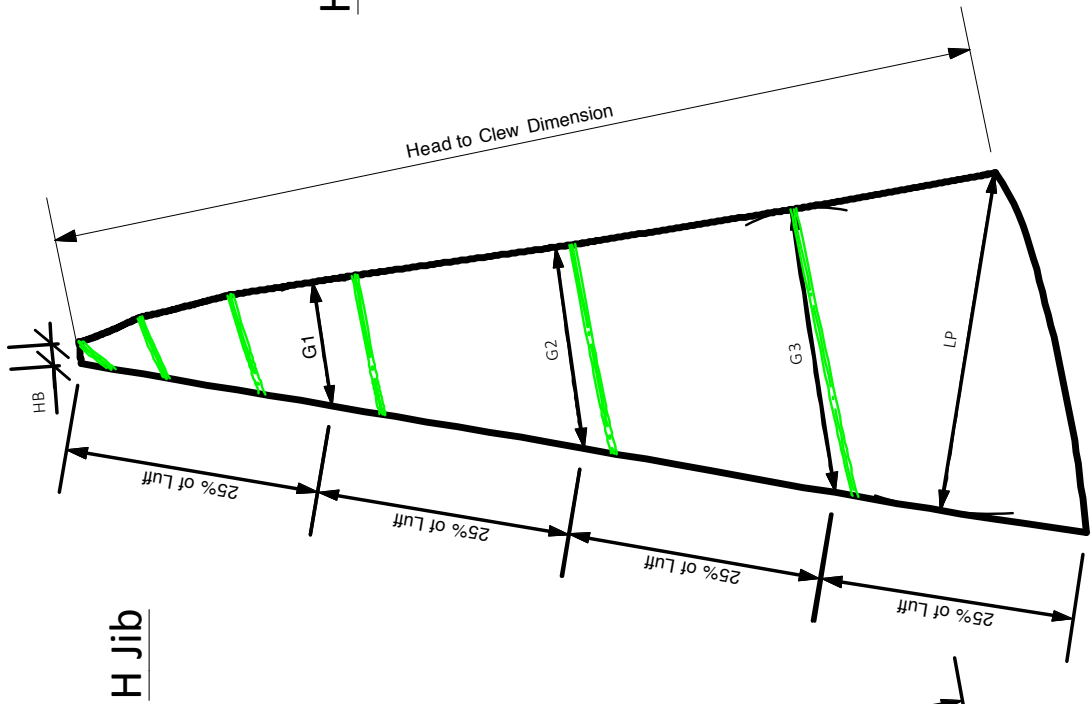
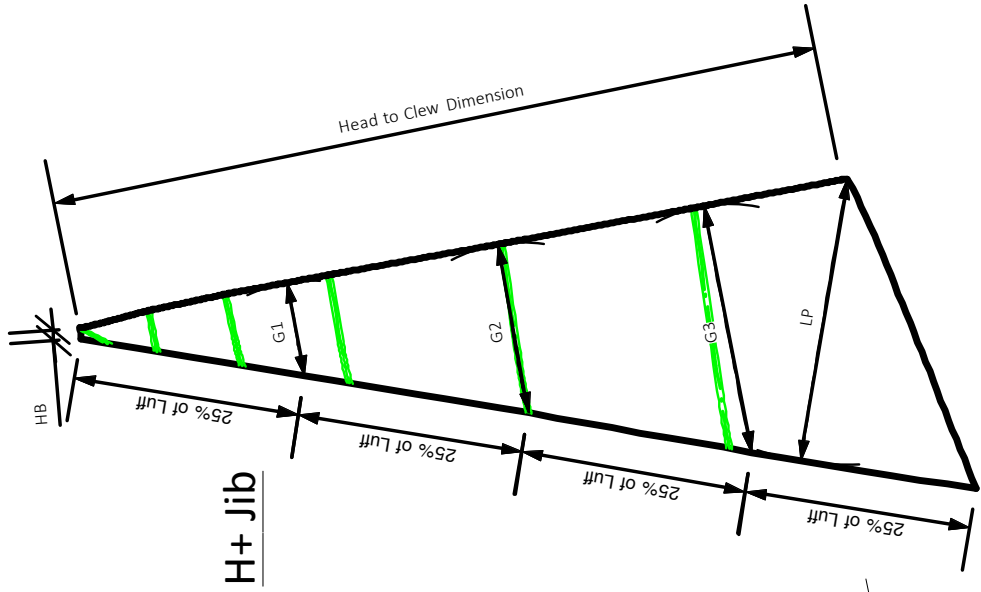
	Large Jib	Medium Jib	Small Jib	Code Zero	Gennaker
HB	0.36 m	0.24 m	0.12 m	0.08 m	0.08 m
G1	1.66 m	1.39 m	1.05 m	1.98 m	3.52 m
G2	2.57 m	2.25 m	1.90 m	3.88 m	6.48 m
G3	3.46 m	3.17 m	2.78 m	5.66 m	9.06 m
LP	4.05 m	3.78 m	3.16 m	6.81 m	10.50 m
Luff	13.50 m	11.25 m	10.00 m	20.75 m	20.75 m
Head to clew point	12.62 m	10.31 m	8.63 m	19.00 m	19.03 m

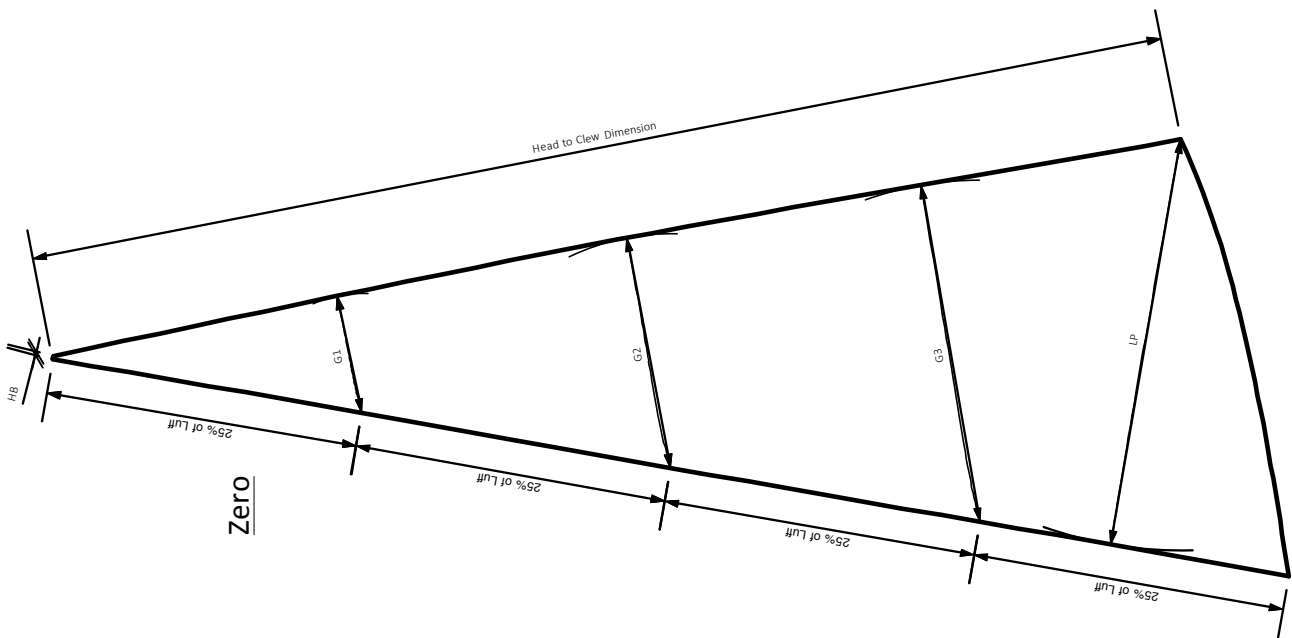
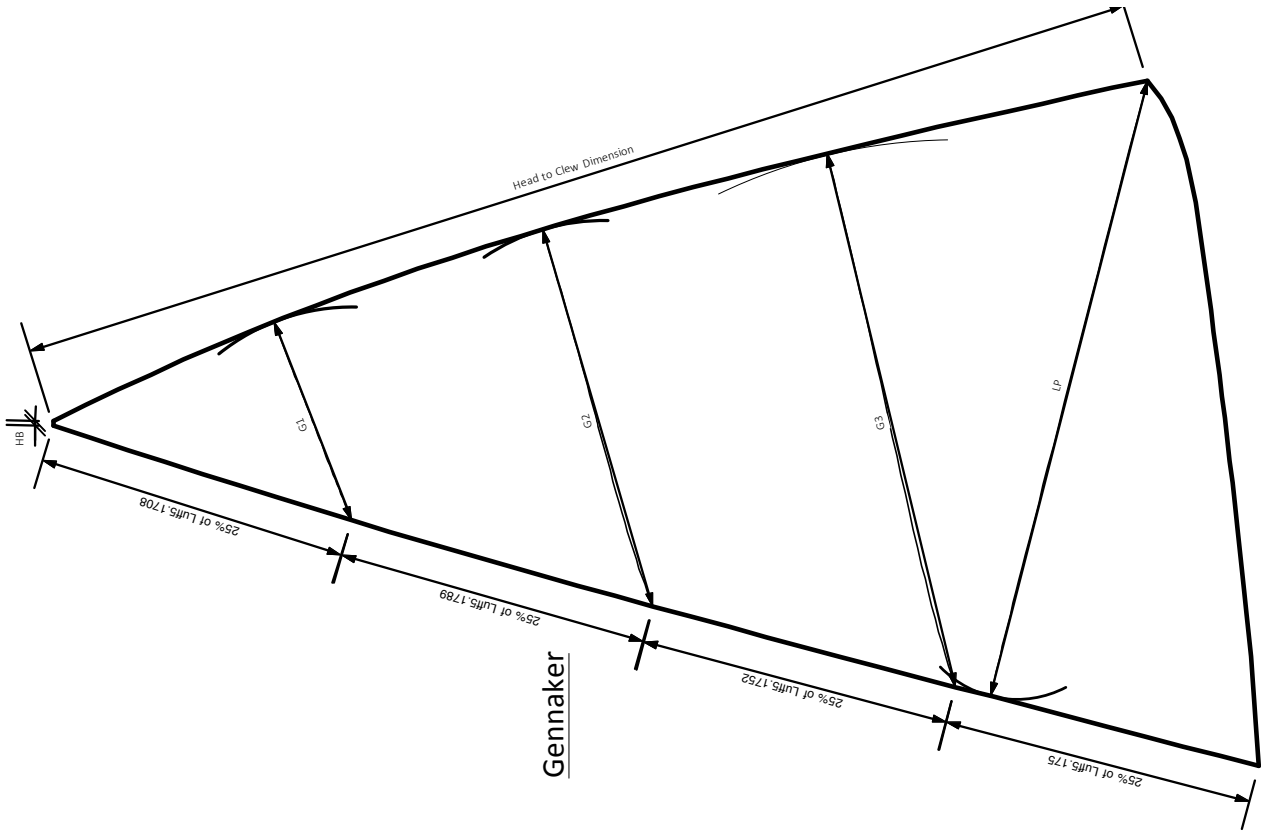
### App B2 Jib Batten Location

The jib batten locations are listed below. The tolerances of these dimensions are +/- 1.5%.

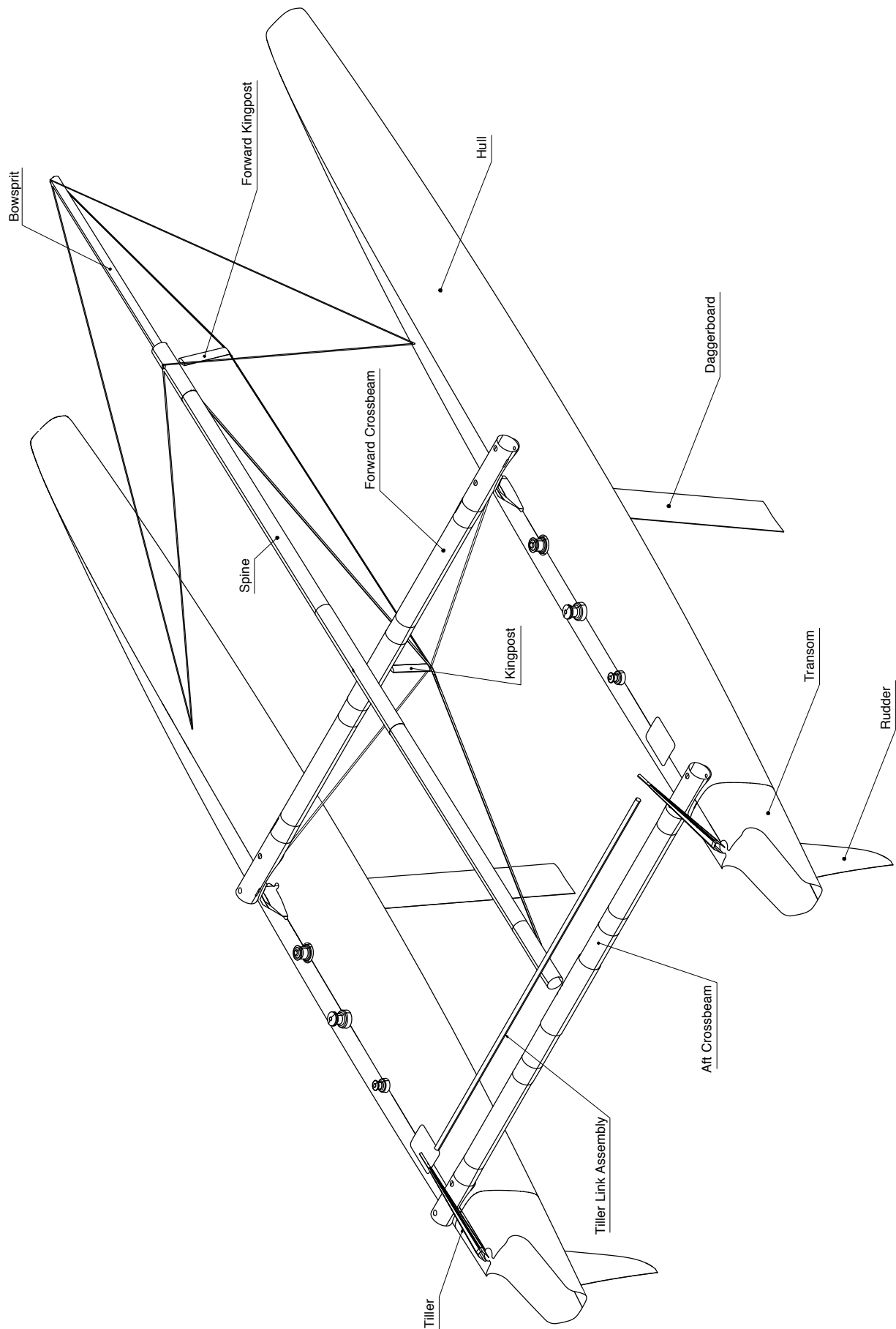
Batten #	Large Jib & Medium Jib		Small Jib	
	% up Luff	% up Leech	% up Luff	% up Leech
6	23%	22%	28%	20%
5	47%	46%	50%	45%
4	70%	70%	70%	68%
3	82%	83%	82%	81%
2	92%	93%	92%	91%
1	97%	100%	97%	100%

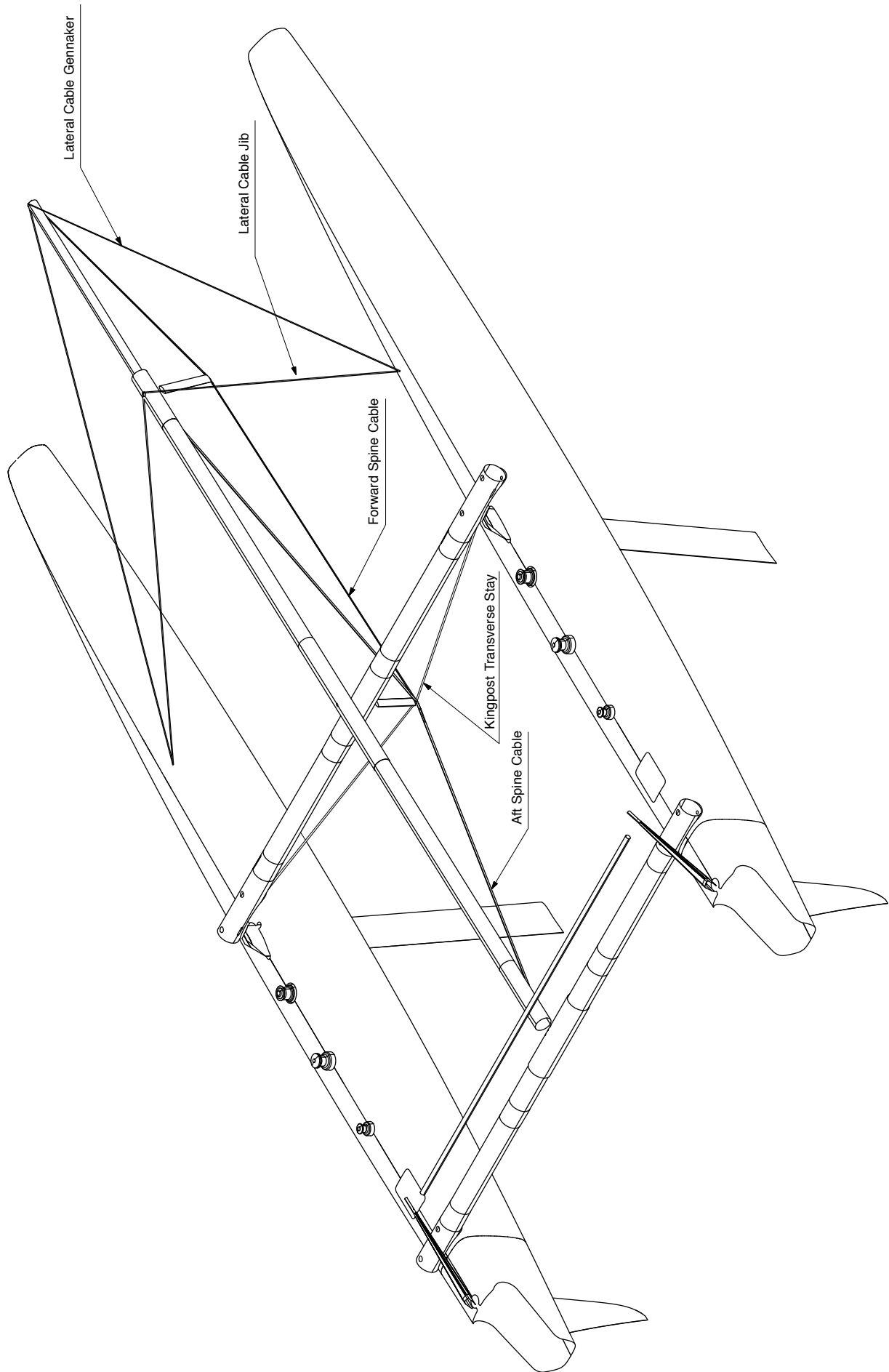




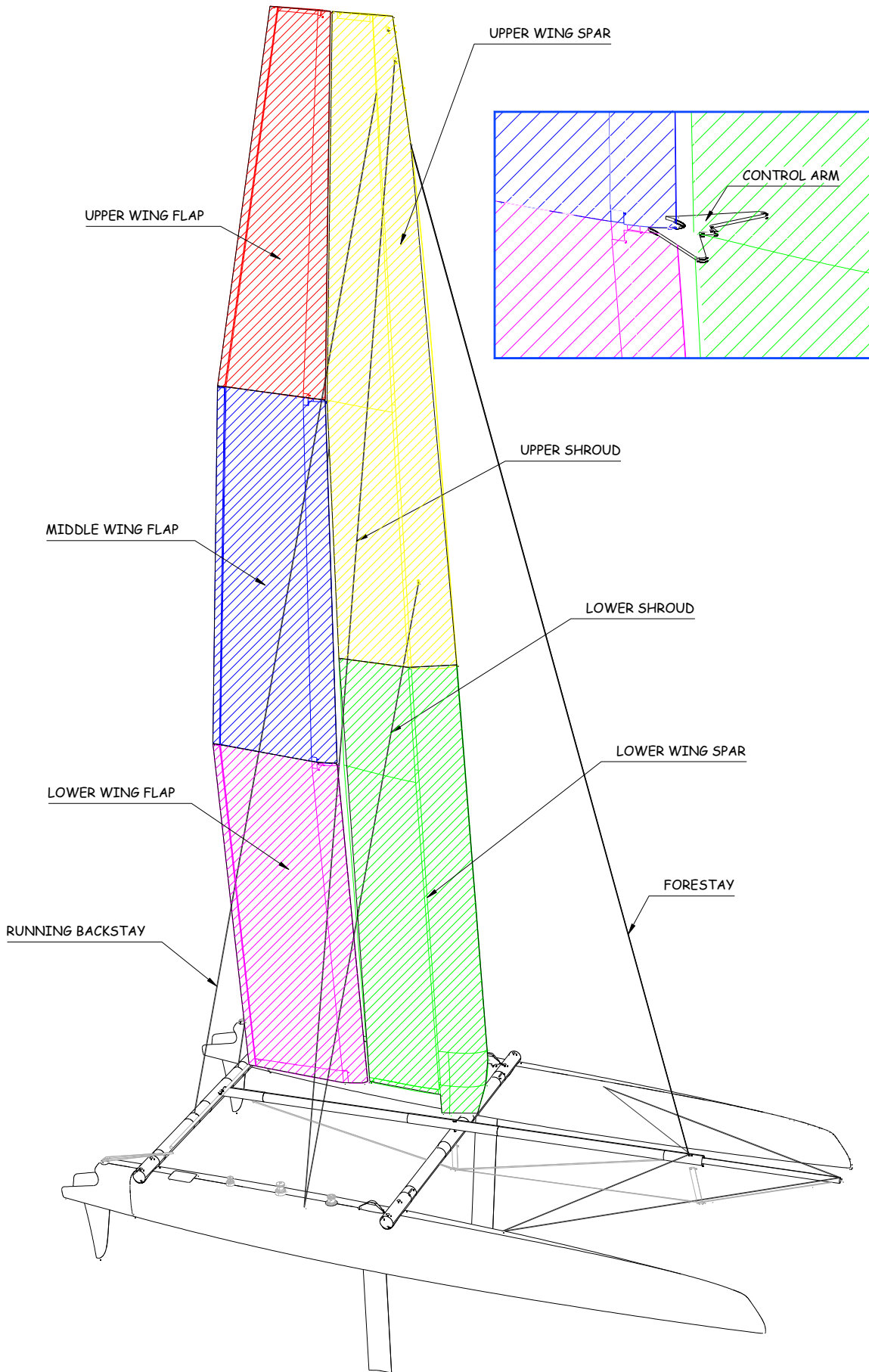


**APPENDIX C – HULL DRAWINGS**





**APPENDIX D – WING DRAWING**



**APPENDIX E – RIGGING LIST**

<b>Description</b>	<b>Qty</b>	<b>Length</b>	<b>Diam</b>	<b>Core</b>	<b>Cover</b>	<b>Associated Hardware</b>	<b>Notes</b>
Jib halyard 1:1	1	18.50	7mm core	Dyneema or X- Wire	Dyneema at end	Lashing or Dog Bone Loop	
Jib halyard 2:1	1	40.00	10mm	Dyneema	Tech/Poly	HK1958	Uncovered end
Jib halyard final purchase 6:1	1	10.00	4/5mm	Dyneema	Polyester	HK2639/2640/291	
Gennaker halyard	1	48.00	10mm	Dyneema	Tech/Poly	HK150/HK145	
Gennaker jammer trip line 1:1	1	18.00	3mm	Dyneema	None	HK224	
Gennaker jammer trip line 2:1	1	6.00	4/5mm	Dyneema	Polyester	HK291	
Runner tails 3:1	2	12.00	10mm	Dyneema	PBO/Tech/Poly	HK 3199/3014/3196	
Runner light tail	2	6.00	6mm	Polyester	Polyester	None	Optional
Jib sheets	2	18.00	10mm	Dyneema	PBO / Poly	T-Ring Loops	
Gennaker sheets	2	32.00	10mm	Dyneema	Tech/Poly	T-Ring Loops	
Wing sheet 1:1	1	20.00	10mm	Dyneema	PBO/Poly		Continuous
Board up line	2	8.00	8mm	Dyneema	Tech/Poly	HK2615	
Board down line	2	8.00	8mm	Dyneema	Tech/Poly	HK2652 / cam cleat	
Furling line	1	32.00	8mm	Dyneema	Tech/Poly	2 x HK 2607	
Net lashing	1	300.00	3mm	Dyneema	None	None	
General lashing	1	<100.00	2mm	Dyneema	None	None	
General lashing	1	<30.00	4mm	Dyneema	None	None	
General lashing	1	<50.00	5mm	Dyneema	None	None	
General lashing	1	<40.00	6mm	Dyneema	None	None	
Headstay loop bottom	1	0.70	Optional	Dyneema	Dyneema	Forestay Trumpet	0.35 basket
Headstay loop top	1	0.34	4 x 4mm core	Dyneema	Dyneema	Southern Spars Lashing Eye	0.16 basket
Lower shroud top	2	0.50	4 x 4mm core	Dyneema	Dyneema	Southern Spars Lashing Eye	
Upper shroud top	2	0.35	4 x 4mm core	Dyneema	Dyneema	Southern Spars Lashing Eye	
Runner top	2	1.60	4 x 4mm core	Dyneema	Dyneema	Southern Spars Lashing Eye	
Runner bottom loop	2	0.18	4 x 4mm core	Dyneema	Dyneema	Southern Spars Lashing Eye	0.90 basket
75mm Runner purchase block	2	0.26	2 x 4mm core	Dyneema	Dyneema	HK3196	
100mm Runner purchase block	2	0.310	4 x 4mm core	Dyneema	Dyneema	HK3199	

<b>Description</b>	<b>Qty</b>	<b>Length</b>	<b>Diam</b>	<b>Core</b>	<b>Cover</b>	<b>Associated Hardware</b>	<b>Notes</b>
Runner aft beam loop	2	>0.84	1 x 6mm loop	Dyneema	Dyneema	2 x Dog Bone 12mm x 60	>0.42 basket
Jib turning block loop aft beam	2	>1.20	1 x 6mm loop	Dyneema	Optional	Ferrule 42mm x 2 / HK3196 x 2	>0.60 basket
Code Zero loop aft beam	2	>0.86	1 x 5mm loop	Dyneema	Optional	Ferrule 42mm x 2 / HK3195 x 2	>0.43 basket
Jib tack T-ring loop	1	0.40	1 x 4mm loop	Dyneema	Optional	None	
<b>Jib In/out System</b>							
75mm turning block loop outboard end	2	0.32	1 x 6mm loop	Dyneema	None	75mm turning block	0.16 basket
57mm turning block loop	2	0.38	1 x 4mm loop	Dyneema	None	HK3195	0.19 basket
Car link strop (optional)	2	0.79	6mm core	Dyneema	None		
Cascade anchor strop	2	1.65	6mm core	Dyneema	None	42mm ferrule x 2	
Cascade to car	2	1.62	6mm core	Dyneema	None		
2nd cascade	2	4.50	5mm core	Dyneema	None	Hk3195	
3rd cascade	2	4.35	5mm core	Dyneema	None	Hk3195	
Control line	2	1.00	6mm	Dyneema	Polyester	Hk3195	
<b>Jib Up/Down System</b>							
Fwd loop - ferrule @ forestay	1	0.35	N/A	Dyneema	Optional	HK 8684 x 1 or HK3195 x 2	
Jib / Code Control	2	7.20	6mm core	Dyneema	Optional	HK 8684 x 4	
1st cascade thru ferrule	2	1.98	6mm core	Dyneema	Optional		
2nd cascade	1	4.00	5mm core	Dyneema	Optional	HK3195	
3rd cascade	1	3.88	5mm core	Dyneema	Optional	HK3195	
4th cascade	1	3.60	5mm core	Dyneema	Optional	HK3195	
Control Line	1	28.00	6mm	Dyneema	Optional	2640/2642/2651 x 2	
<b>Wing Control cables</b>							
Flap Control cable 2	2	9.38	6mm core	X-Wire / Dyneema	Dyneema	CA2 - 32mm ferrule x 2	
Flap Control cable 3 - upper 1:1	2	3.2	6mm core	X-Wire / Dyneema	Dyneema	Wichard 1303 x 2/Hk2607 x 2	
Flap Control cable 3 - lower 2:1	2	16.10	6mm core	X-Wire / Dyneema	Dyneema	316 Dog Bone x 2 - 32mm ferrule x 2	
Flap Control cable 4 - upper 1:1	2	17.24	6mm core	X-Wire / Dyneema	Dyneema	Wichard 1303 x 2 / Hk2607 x 2	
Flap Control Cable 4 - lower 2:1	2	6.44	6mm core	X-Wire / Dyneema	Dyneema	316 Dog Bone x 2 / 32mm ferrule x 2	
Twist Control - Final to Hull	1	12.00	6mm	Dyneema	Optional	Swivel cleat	
Twist Control - 1:1	1	0.36	6mm core	Dyneema	Dyneema	HK 2605 x 1	
Twist Control block dead end	1	0.80	3mm loop	Dyneema	None	HK2604 x 1	0.40 basket

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<b><i>Description</i></b>	<b><i>Qty</i></b>	<b><i>Length</i></b>	<b><i>Diam</i></b>	<b><i>Core</i></b>	<b><i>Cover</i></b>	<b><i>Associated Hardware</i></b>	<b><i>Notes</i></b>
Camber Control dead end	1	0.80	1 x 6mm loop	Dyneema	Dyneema	Dog Bone 316 - 10mm x 45	
Camber Control cascade anchor	1	0.20	3mm loop	Dyneema	Dyneema	Hk1950	0.10 basket
Camber Control 1:1 to arm	1	3.87	6mm core	Dyneema	None	1 x Dog Bone 316	
Camber Control cascade 2:1	1	2.44	6mm core	Dyneema	None	1 x Dog Bone 316 - HK1950	
Camber Control purchase 4:1	1	26.00	6mm	Dyneema	Optional	HK2604 and HK2603	



## **APPENDIX F – MEDIA EQUIPMENT**

The Regatta Director may specify media equipment to be installed aboard each AC 45 yacht for an event or series of events. At this time, the intention is that the race organisers or their agents will install and maintain the specified media equipment. Competitors shall give race organisers or their agents reasonable and timely access to install and maintain this equipment.

In the event that installed media equipment is not identical across the fleet for any event, the weight of media equipment aboard each yacht will be equalized insofar as practical using corrector weights, installed where specified by the **Measurement Committee**.

If a competitor becomes aware that installed media equipment is lost, damaged or non-functional, he shall inform the race organisers. Competitors shall not modify or remove media equipment without the permission of race organisers.