

AC45 Class Rule Version 2.3

14 October 2015

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 AC Class.

AC45 hulls, crossbeams, spines, bowsprits, hull appendages, standing rigging, sails and wings are manufacturer controlled.

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PART I - ADMINISTRATION

SECTION A – GENERAL

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. In interpreting this AC45 Class Rule, the definitions in Article 1 of the **Protocol** shall apply.
- A.2.3. When a term is used in AC45 Class Rule or **build specification** defined sense, it is printed in **bold** type.
- A.2.4. When a term is used in the Equipment Rules of Sailing (ERS) defined sense, it is printed in underlined type.
- A.2.5. The words "shall", "will" and "must" are mandatory. The words "can" and "may" are permissive. The word "should" is advisory.
- A.2.6. This class rule is a closed rule. Anything not specifically permitted by the class rules is prohibited.
- A.2.7. 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 this Rule, the original AC45 drawings where applicable and the drawings prepared specifically for the foiling version of the AC 45 Yacht as approved by the Regatta Director.
- A.3.2. **Measurement Committee** means the same committee appointed under the Protocol for the 35th 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**.
- 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 metres to 3 decimal places or millimetres.
 - (b) **Soft sail** linear measurements shall be taken and recorded in metres to 2 decimal places.
 - (c) Running rigging length shall be taken and recorded in metres.
 - (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.7.2. The Measurement Committee, with the approval of the Regatta Director, has the authority to amend these Class Rules regarding yacht weight and wing weight.

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

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 light shorts only 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 as specified the Article 44 of the **Protocol**.

B.4. APPENDAGES**B.4.1. 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) The shape of the daggerboard shall not be altered in any way except where repairs are required. Such repairs shall only return the daggerboard to its original shape. Repairs shall only be carried following approval from the **Measurement Committee**.
- (d) Daggerboards may rake about a transverse axis. The rake shall not exceed 10 degrees; and
- (e) Daggerboards cases and the attendant daggerboard bearings shall be installed in accordance with the supplied drawings. The bearings shall not be modified in any way except is specifically authorised by the **Measurement Committee** and the Regatta Director.
- (f) Daggerboards shall not be used to generate force for the purpose or effect of increasing righting moment when used on the windward side of an AC Class Yacht. This Rule B.4.1(f) does not apply:
 - (i) when the daggerboards are fully retracted;
 - (ii) prior to starting, as defined in the Racing Rules;
 - (iii) when the windward daggerboard inadvertently penetrates the surface of the water for less than 10 continuous seconds;
 - (iv) when the AC45 Yacht is within 10 seconds prior to and after tacking or gybing; or
 - (v) when the AC45 Yacht is taking a penalty

B.4.2. RUDDERS

- (a) Both rudders shall be installed in the position shown in the supplied drawings.
- (b) Rudders may rake about a transverse axis but shall not be adjusted whilst racing. The rake shall not exceed 3 degrees.
- (c) The shape of the rudder and rudder wings shall not be altered in any way except where repairs are required. Such repairs shall only return the rudder and rudder elevator to their original shape. Repairs shall only be carried following approval from the **Measurement Committee**.
- (d) Both rudders shall be connected to their tillers and the tillers connected to the tiller linkage arm. Rudders shall not be moved independently.

B.5. STANDING RIGING

- B.5.1. The **forestay** shall not be adjusted.
- B.5.2. **Upper shrouds** and **lower shrouds** shall not be adjusted.
- B.5.3. The **running backstays** shall remain fully led.

B.6. RUNNING RIGGING AND ASSOCIATED FITTINGS

- B.6.1. All running rigging shall remain fully led, except if being replaced and/or during manoeuvres.
- B.6.2. All turning blocks, winches and associated running rigging fittings and equipment shall remain on board.
- B.6.3. All running rigging listed in Appendix E shall remain on board unless otherwise permitted by the **Measurement Committee**.

B.7. SOFT SAILS

- B.7.1. Each **soft sail** shall carry an AC45 sail identification sticker assigned to it by the **Measurement Committee**.
- B.7.2. **Soft sails** shall only be used as defined in section E.
- B.7.3. One jib and one other **soft sail** shall be on board.
- B.7.4. 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.7.5. The jib shall be attached to the **forestay** along its luff.
- B.7.6. The code zero shall be sheeted through the **forward cross beam** jib tracks.
- B.7.7. 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.8. ELECTRONICS

- B.8.1. Yachts may have "Velocitek 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 by **Measurement Committee** issued numbered signed stickers or other manner acceptable to the **Measurement Committee**:

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

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 Notice. 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 to 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 1625 kg plus the weight of organiser specified media equipment or more than 1655 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 fore and aft 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 (r) 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; and
- (f) 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, Alexseal or Resene, may be used as the outermost surface finish of the **hulls**, hull appendages and wing if applicable. Epoxy-based primers and undercoats manufactured for use with these topcoat systems are permitted, and may form part of the exposed surface finish, provided they are unmodified from their standard formulation. 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 prior to racing, to the surface of daggerboards only where they pass through the daggerboard bearings 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 other types and quantity of friction-reducing compounds other than McLube 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 on the centerline of the yacht, with easily breakable attachments when not in use.
- C.4.3. Crew restraints may be fitted if approved by the **Measurement Committee**. Such restraints shall not be used for any other purpose.
- C.4.4. Guest handles shall be fitted on the aft beam. These guest handles shall not extend more than two meters from the centerline of the yacht.
- C.4.5. Two knives and one personal air supply shall be attached to the spine aft of the forward beam. The attachment for each item shall be able to be easily broken to enable 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

D.1. GENERAL

- D.1.1. The **wing** in **wing measurement condition** shall not weigh less than 390 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.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 Cortuff® 300 Gauge membrane material or alternative materials that are a similar stiffness and weight that have been approved by the **Measurement Committee** via an interpretation. 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 C.3.1.and C.3.2 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 while racing, no more than two Code Zero luff support cables in a calendar year.

SECTION E – SOFT SAILS

E.1. GENERAL

- E.1.1. Appendix B shall define the build specifications and planform dimensions for the **soft sails**.
- E.1.2. No more than four **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;
- E.1.3. Sail bags shall weigh no more than 4.0 kg and shall not be designed to retain water.
- E.1.4. The Jib shall be attached to the forestay along its luff and the Code Zero shall be attached to the luff support cable.
- E.1.5. Soft sails shall not be stowed inside the hull of a yacht while racing.

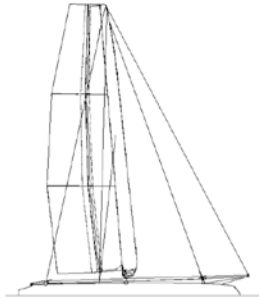
E.2. BATTENS

- E.2.1. 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: _____
Port Elevator ID: _____
Stbd Elevator ID: _____

Measurer Name and Signature: _____

Measurer Name and Signature: _____

Date: _____

APPENDIX B – SOFT SAIL BUILD SPECIFICATIONS - 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.

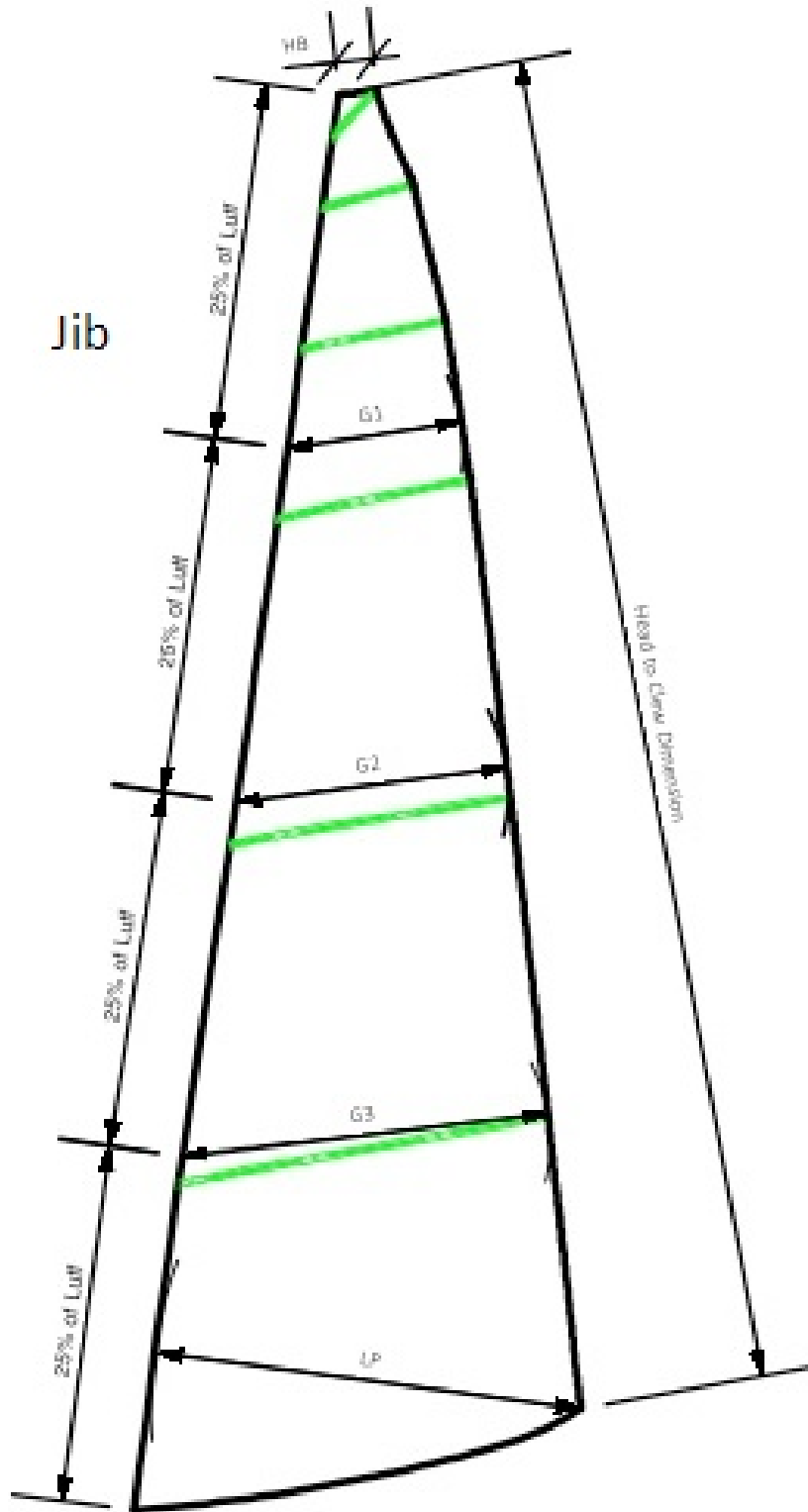
G3 is as above, at 25% up the luff.

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

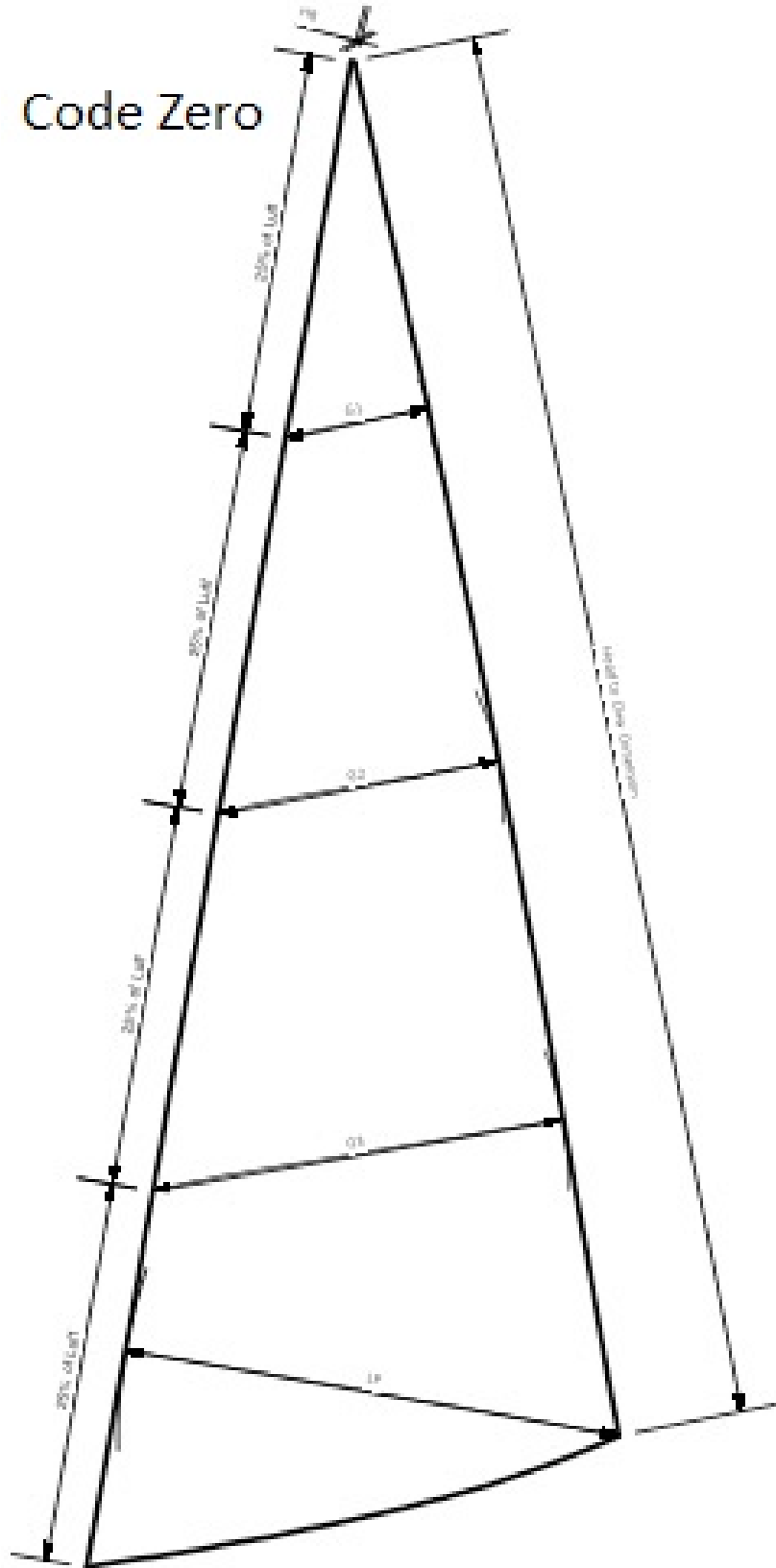
App B2 Jib Batten Location

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

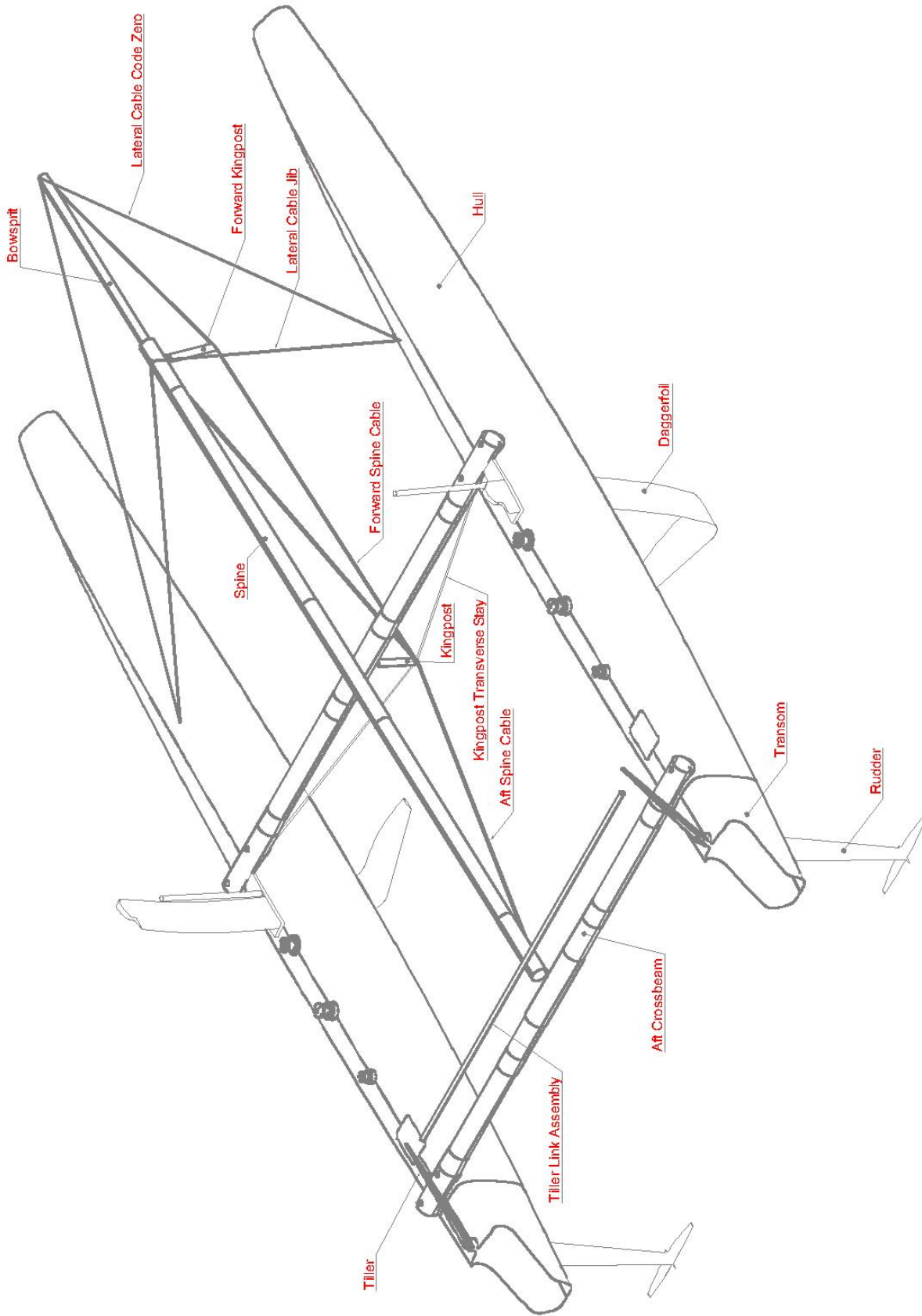
Batten #	Large Jib & Medium Jib		Small Jib	
	% up Luff	% up Leech	% up Luff	% up Leech
6	23%	22%	28%	20%
5	47%	46%	50%	45%
4	70%	70%	70%	68%
3	82%	83%	82%	81%
2	92%	93%	92%	91%
1	97%	100%	97%	100%



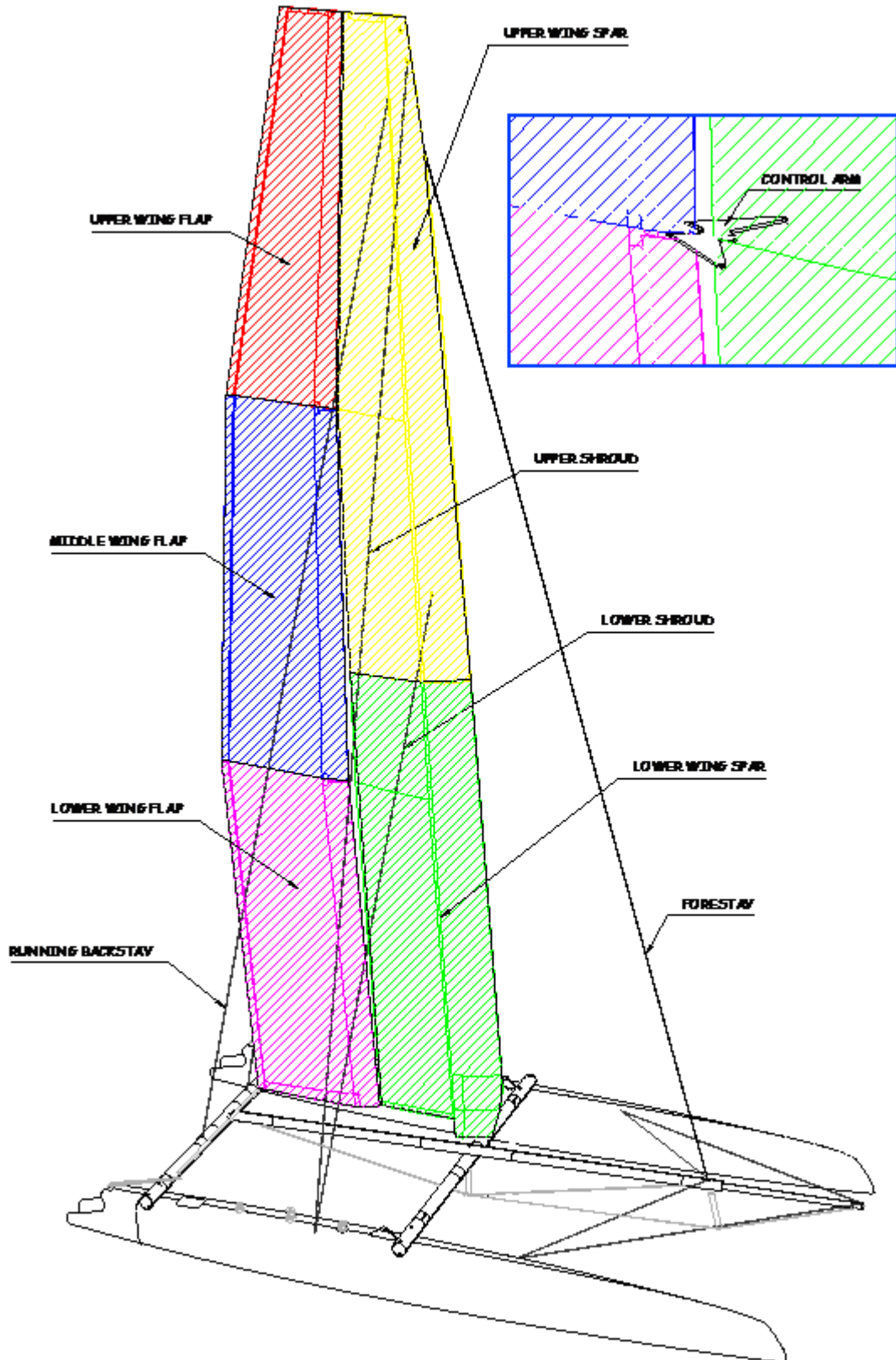
Code Zero



APPENDIX C – HULL DRAWINGS



APPENDIX D – WING DRAWING



APPENDIX E – RIGGING LIST

<u>Description</u>	<u>Qty</u>	<u>Length</u>	<u>Minimum Diam</u>	<u>Core</u>	<u>Cover</u>	<u>Associated Hardware</u>	<u>Notes</u>
Jib halyard 1:1	1	18.5	7mm	Dyneema or X-Wire	Req'd but blend optional	Connection to jib head Optional??	
Jib halyard 2:1	1	40	10mm	Dyneema	Req'd but blend optional	HK3215	HK1958 old part number
Jib halyard final purchase 6:1	1	10	5mm	Dyneema	Req'd but blend optional	HK2639/2640/291	
Code Zero halyard	1	48	10mm	Dyneema	Req'd but blend optional	Top Swivel HK 3101 Unit 0	
Code Zero jammer trip line 1:1	1	18	3mm	Dyneema	Req'd but blend optional	HK224	
Code Zero jammer trip line 2:1	1	6	4mm	Dyneema	Req'd but blend optional	HK291	
Runner tails 3:1	2	12	10mm	Dyneema	Req'd but blend optional	HK 3251/HK3245/HK3230	HK 3199/3014/3196 old part numbers
Runner light tail - optional	2	6	5mm	Polyester	Req'd but blend optional	None	Optional
Jib sheets	2	18	10mm	Dyneema	Req'd but blend optional	T-Ring Loops	
Code Zero sheets	2	32	10mm	Dyneema	Req'd but blend optional	T-Ring Loops	
Wing sheet 1:1	1	20	10mm	Dyneema	Req'd but blend optional	Dog bone or button on wing clew	Continuous
Board up line	2		10mm	Dyneema	Req'd but blend optional		
Board down line	2		10mm	Dyneema	Req'd but blend optional		
Furling line	1	32	8mm	Dyneema	Req'd but blend optional	HK 2151 or HK 2152	2 x HK 2607 old part number
Net lashing	1		2.5mm	Dyneema	None	None	
Headstay loop bottom	1	0.7	Optional	Dyneema	Dyneema	Forestay Trumpet	0.35 basket
Headstay loop top	1	0.34	4 x 4mm core or equiv	Dyneema	Dyneema	Southern Spars Lashing Eye	0.16 basket
Lower shroud top	2	0.5	4 x 4mm core or equiv	Dyneema	Dyneema	Southern Spars Lashing Eye	
Upper shroud top	2	0.35	4 x 4mm core or equiv	Dyneema	Dyneema	Southern Spars Lashing Eye	
Runner top	2	1.6	4 x 4mm core or equiv	Dyneema	Dyneema	Southern Spars Lashing Eye	
Runner bottom loop	2	0.18	4 x 4mm core or equiv	Dyneema	Dyneema	Southern Spars Lashing Eye	0.90 basket
75mm Runner purchase block	2	0.26	4 x 4mm core or equiv	Dyneema	Dyneema	HK3230	HK3196 old part number
100mm Runner purchase block	2	0.31	4 x 4mm core or equiv	Dyneema	Dyneema	HK3245	HK3199 old part number

Description	Qty	Length	Diameter	Core	Cover	Associated Hardware	Notes
Runner aft beam loop	2	>0.84	1 x 6mm core loop or equiv	Dyneema	Dyneema	2 x Dog Bone 12mm x 60	>0.42 basket
Jib turning block loop aft beam	2	>1.20	1 x 6mm core loop or equiv	Dyneema	Dyneema	Ferrule 42mm x 2 / HK3230 x 2	>0.60 basket / HK3196 old part #
Code Zero loop aft beam	2	>0.86	1 x 6mm core loop or equiv	Dyneema	Dyneema	Ferrule 42mm x 2 / HK3214 x 2	>0.43 basket / HK 3195 old part #
Jib tack T-ring loop	1	0.4	1 x 6mm core loop or equiv	Dyneema	Optional	None	
<u>Jib In/out System</u>							
75mm turning block loop outboard end	2	0.32	1 x 6mm core loop	Dyneema	Optional	HK3230	0.16 basket / HK3196 old part #
57mm turning block loop	2	0.38	1 x 4mm core loop	Dyneema	Optional	HK3214	0.19 basket / HK3195 old part #
Car link strop (optional)	2	0.79	6mm core	Dyneema	Optional		
Cascade anchor strop	2	1.65	6mm core	Dyneema	Optional	42mm ferrule x 2	
Cascade to car	2	1.62	6mm core	Dyneema	Optional		
2nd cascade	2	4.5	5mm core	Dyneema	Optional	HK3214	Hk3195
3rd cascade	2	4.35	5mm core	Dyneema	Optional	HK3214	Hk3195
Control line	2	1	6mm	Dyneema	Req'd but blend optional	HK3214	Hk3195
<u>Jib Up/Down System</u>							
Fwd loop - ferrule @ forestay	1	0.35	N/A	Dyneema	Optional	HK 8684 x 1 or HK3214 x 2	
Jib / Code Control	2	7.2	6mm core	Dyneema	Optional	HK 8684 x 4	
1st cascade thru ferrule	2	1.98	6mm core	Dyneema	Optional		
2nd cascade	1	4	5mm core	Dyneema	Optional	HK3214	
3rd cascade	1	3.88	5mm core	Dyneema	Optional	HK3214	
4th cascade	1	3.6	5mm core	Dyneema	Optional	HK3214	
Control Line	1	28	6mm	Dyneema	Req't'd but blend optional	2640/2642/2636 x 2 (or 2148)	old part # 2651
<u>Wing Control cables</u>							
Flap Control cable 2	2	9.38	6mm core	X-Wire / Dyneema	Dyneema	Lashing ferrule or turnbuckle	
Flap Control cable 3 - upper 1:1	2	3.2	6mm core	X-Wire / Dyneema	Dyneema	Wichard 1303 x 2 / HK2151 or 2152	Old part # 2607
Flap Control cable 3 - lower 2:1	2	16.1	6mm core	X-Wire / Dyneema	Dyneema	316 Dog Bone x 2 - 32mm ferrule x 2	

<u>Description</u>	<u>Qty</u>	<u>Length</u>	<u>Diameter</u>	<u>Core</u>	<u>Cover</u>	<u>Associated Hardware</u>	<u>Notes</u>
Flap Control cable 4 - upper 1:1	2	17.24	6mm core	X-Wire / Dyneema	Dyneema	Wichard 1303 x 2 / HK2151 or 2152	Old part # 2607
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 purchase	1	12	6mm	Dyneema	Req'd but blend optional	Swivel cleat - Harken or Spinock	
Twist Control - 1:1	1	0.36	6mm core	Dyneema	Optional	HK 2605 and HK2604	

Notes:

All rope sizes refer to outside diameter of covered rope unless otherwise stated.

Chafe protection may be added to any load bearing part of sheet or halyard

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.

APPENDIX G (Updated on 26 August 2015)

This appendix includes all the agreed modifications to the AC45 Yacht and may be updated periodically.

Note: Latest Appendix G can be found at:

<https://sites.google.com/a/acracemgt.com/noticeboard/home/ac45-class/appendix-g>