

Rule 7.2 Wet Clothing

Add to end of present rule:

"Note: The 10kg includes footwear and other clothing below the knee."

Rule 8.4.5 (a) Keel Alteration

Add to end of present rule:

"Note: This section also permits planing the entire lead surface."

INTERNATIONAL EUROPE CLASS

The following amendments to the Class Rules have been approved to be effective 1st March 1999:

Measurement Form 2.2 HULL SHAPE

Amend to read:

Tolerances on hulls are ± 6 mm.

Supplement to the Measurement Form:

Guidelines For Approval Of Prototype Hulls.

Amend to read:

Tolerances on prototype hulls are ± 3 mm.

Grandfathering:

Mandatory for

- | | |
|--|--------------------|
| - all new prototypes | after 1 March 2002 |
| - all boats fundamental measurement | after 1 March 2004 |
| - all boats racing at the Olympics | after 1 March 2004 |
| - all boats racing at World and
Continental championships | after 1 March 2008 |
| - all boats racing | after 1 March 2010 |

National authorities may give further permissions for national events.

Rule 3.5 SPARS

Delete Present Rule, and insert:

Rename "MAST"

3.5.1 General

- (i) The intention of these rules is that masts should be of reasonable cost, reliable, and as uniform as possible, whilst allowing sufficient variation in stiffness to suit a wide range of helm body weights. The rules are framed to discourage the use of expensive materials and production methods, and to prevent developments in the aerodynamic shape.
- (ii) Concentration of weight of the mast by the use of Fittings, Materials or Laminates, even if otherwise permitted within these rules, is prohibited.
- (iii) In case of doubt the ISAF and the IECU may prescribe any tests and investigations, (including, but not limited to, destructive tests) to check rule compliance of the mast at manufacturer's expense.

3.5.2 Mast Builders

- (i) Masts may be built only by manufacturers who have been authorised by the IECU with the approval of ISAF. Authorised Manufacturer status will be granted to applicants based on their technical ability to produce good quality masts in accordance with these rules. Each Authorised Manufacturer will be issued with a unique Authorised Manufacturer Code (AMC) which must be shown on each mast made in accordance with rule 3.5.4 (ix).
- (ii) Prototype measurement is obligatory for all manufacturers to ensure that any prototype mast measures correctly before series production commences. Prototypes shall only be measured by measurer specifically authorised by ISAF and IECU.
- (iii) The ISAF and or IECU will require specification and samples of laminates to check compliance with class rules. A manufacturer shall permit a measurer or class representative, authorised by IECU, to inspect work at any time during production of masts or fittings.

3.5.3 Permitted Mast Material

- (i) The basic mast section (including sail track but without fittings) shall be made of FRP (Fibre Reinforced Plastic)

Permitted mouldable fibres	Shall be Carbon fibres, Glass-fibres, Aramid-fibres or any combination thereof. The fibre volume fraction of the laminate shall be > 50%
Resin	Shall be either: Polyester, Vinylester, Epoxy or Polyurethane. Shall only be used as a matrix to enclose the fibres.
Coating	A coating of any paint may only be used at the outer skin of the mast.

No other materials as prescribed above shall be used to construct the basic mast section.

- (ii) The mast Fittings and Fasteners shall only be made of : stainless steel, brass, copper, aluminium alloys, plastic, FRP or any combination thereof.
- (iii) Metal or plastic washers and backing plates to fasten fittings shall be of max. thickness 2mm, and of max diameter: 3x nominal diameter of it's fastener. Below station 4500 a metal plate of alloy max dimension 4 x 30 x 400mm is allowed for fasten corresponding fittings at the aft face of the mast.

3.5.4 Construction and Measurement

- (i) The mast shall comply with the dimensions and requirements specified on the mast specification and measurement diagram and/or the measurement form.
- (ii) The tolerances on the design shape are as stated in the mast specification and measurement diagram.
- (iii) The mast heel fitting and deck ring shall be mounted concentric to the mast section within ± 1 mm
- (iv) The mast shall be hollow throughout its whole length. The heel and top fittings shall be removable for inspection of the internal mast section without destroying the main structure.

- (v) To provide class statistics and information for sailors, 10 mast bend measurements (5 transverse and 5 fore-&-aft) shall be obtained as prescribed on the mast measurement diagram
- (vi) The mast shall pivot on its heel. It shall be supported only at the heel and the deck ring.
- (vii) The mast shall be secured in position in the boat when sailing so that the heel cannot be lifted out of the mast step in any mast position.
- (viii) A manufacturer shall issue with each mast a measurement form issued by IECU. This form shall have three sections, i.e.:
 - a) An Authorised Manufacturers Declaration (AMD) duly signed and filled out by the manufacturer, stating that the mast complies with the relevant class rules.
 - b) A manufacturer's measurement section duly signed and filled out by the authorised manufacturer.
 - c) An official measurers section duly signed and filled out by an official measurer stating:
 - that the mast complies with the relevant class rules.
 - the measurers confirmation that the measurements in section b) are correct.
- (ix) Each mast (near the gooseneck), shall have:
 - a) permanently fixed a unique identifying numbered Authorised Manufacturer Sticker (AMS) issued by ISAF and distributed by IECU. Procedure for AMS fee and fee apportioning shall be similar as stated in Class Rules 2.2.4 (i & ii) for ICF.
 - b) an Authorised Manufacturer Code (AMC), allocated by IECU following approval of each prototype by ISAF, clearly legible and indelibly marked next to the AMS in figures not less than 6mm high. This code may be invalidated if it is established that masts have deviated from the class rules after prototype approval.

3.5.5 Weight

The weight of the mast shall be not less than 5.5kg and the centre of gravity shall be not more than 3500mm below the lower edge of the upper measurement band. If the mast weighs less than 5.5kg but not less than 5.0kg and/or the centre of gravity is more than 3500mm below the lower edge of the upper measurement band, both measured with the halyard removed, lead corrector weight(s), of maximum length 250mm, shall be permanently attached to the outer face of the mast. The weight and the AMS number (see 3.5.4 ix a) shall be permanently marked on the corrector weight(s).

3.5.6 Grandfathering

Masts shall comply with these rules after:

- | | |
|--------------------------------|-----------------|
| - at fundamental measurements | 1 March 2000 |
| - at the Olympic Games | 1 March 2000 |
| - at World Championships | to be confirmed |
| - at Continental Championships | to be confirmed |
| - at National Championships | to be confirmed |
| - at other regattas | to be confirmed |

Event authorities may set earlier dates.

Existing Rule 3.6 SAIL renumbered 3.7

3.6 BOOM

3.6.1 Boom Builders

- (i) Booms may be built only by manufacturers who have been authorized by the IECU with the approval of ISAF. Authorized Manufacturer status will be granted to applicants based on their technical ability to produce good quality booms in accordance with these rules. Each Authorized Manufacturer will be issued with a unique Authorized Manufacturer Code (AMC) which must be shown on each boom made in accordance with rule 3.6.3 (vii).
- (ii) Prototype measurement is obligatory for all manufacturers to ensure that any prototype boom measures correctly before series production commences. Prototypes shall only be measured by a measurer specifically authorised by ISAF and IECU.
- (iii) The ISAF and or IECU will require specification and samples of materials to check compliance with class rules. A manufacturer shall permit a measurer or class representative, authorised by IECU, to inspect work at any time during production of booms or fittings.

3.6.2 Permitted Boom Materials

- (i) The basic boom section shall be made of wood, laminated wood or aluminium alloy, or any combination of these materials.
No other materials as prescribed above shall be used to construct the basic boom section.
- (ii) The boom fittings and Fasteners shall only be made of stainless steel, brass, copper, aluminium alloys, plastic, FRP or any combination thereof.
This shall apply for booms fundamental measured after 1 March 1998 and all booms after 1 March 2000.
After 1 March 2000 National Class Unions may give a limited permission to use old carbon booms for national events only. Provided these carbon booms have passed fundamental measurement before 1 March 1998.

3.6.3 Construction and Measurement

- (i) The boom shall comply with the dimensions and requirements specified on the mast and boom measurement diagrams and/or the measurement form.
- (ii) A stop shall be fitted to the boom to prevent the sail being hauled out beyond the inner edge of the measurement band.
- (iii) The boom shall be straight but a permanent set due to distortion of 20mm shall be permitted.
- (iv) The boom shall be fitted to the mast so that they rotate together.
- (v) There shall be a track or groove on the upper side of the boom for the foot bolt rope of the sail.
- (vi) A manufacturer shall issue with each boom a measurement form issued by IECU. This form shall have three sections, i.e.
 - a) An Authorised Manufacturers Declaration (AMD) duly signed and filled out by the manufacturer, stating that the boom complies with the relevant class rules.

- b) A manufacturers measurement section duly signed and filled out by the authorised manufacturer.
 - c) An official measurers section duly signed and filled out by an official measurer stating:
 - that the boom complies with the relevant class rules.
 - the measurers confirmation that the measurements in section b) are correct.
- (vii) Each Boom (near the gooseneck), shall have:
- a) permanently fixed a unique identifying numbered Authorised Manufacturer Sticker (AMS) issued by ISAF and distributed by IECU. Procedure for AMS fee and fee apportioning shall be similar as stated in Class Rules 2.2.4 (i & ii) for ICF.
 - b) an Authorised Manufacturer Code (AMC), allocated by IECU following approval of each prototype by ISAF, clearly legible and indelibly marked next to the AMS in figures not less than 6mm high. This code may be invalidated if it is established that booms have deviated from the class rules after prototype approval.

3.6.4 Weight

If the weight of the boom, without sheet blocks and shackles, but with securing eyes, kicker (vang) system and its running rigging in their racing position (loose and movable ends fixed vertically), is less than 3.30kg but not less than 3.00kg and/or the centre of gravity is less than 1250mm from the gooseneck end, lead corrector weights shall be fitted to the outside of the profile.

As a consequence of splitting old 3.5 SPARS into 3.5 MAST and 3.6 BOOM, Old 3.6 is renumbered 3.7.

3.7 SAIL

3.7.5 The sail shall be hoisted on an external halyard. The arrangement shall permit hoisting and lowering the sail at sea from the cockpit.

3.8 ALL UP WEIGHT (old 3.7, no changes)

Delete Present Rules:

MAST AND BOOM MEASUREMENT DIAGRAMs – SHEET 1 OF 3
 MAST AND BOOM MEASUREMENT DIAGRAMs – SHEET 2 OF 3
 MAST AND BOOM MEASUREMENT DIAGRAMs – SHEET 3 OF 3

Insert:

MAST MEASUREMENT DIAGRAMs – SHEET 1 OF 2:
 Mast bend characteristics
 MAST MEASUREMENT DIAGRAMs – SHEET 2 OF 2:
 Different parts of mast
 MAST DESIGN SPECIFICATION
 Table of mast offsets
 BOOM MEASUREMENT DIAGRAM
 Different parts of boom

MAST AND BOOM MEASUREMENT NOTES

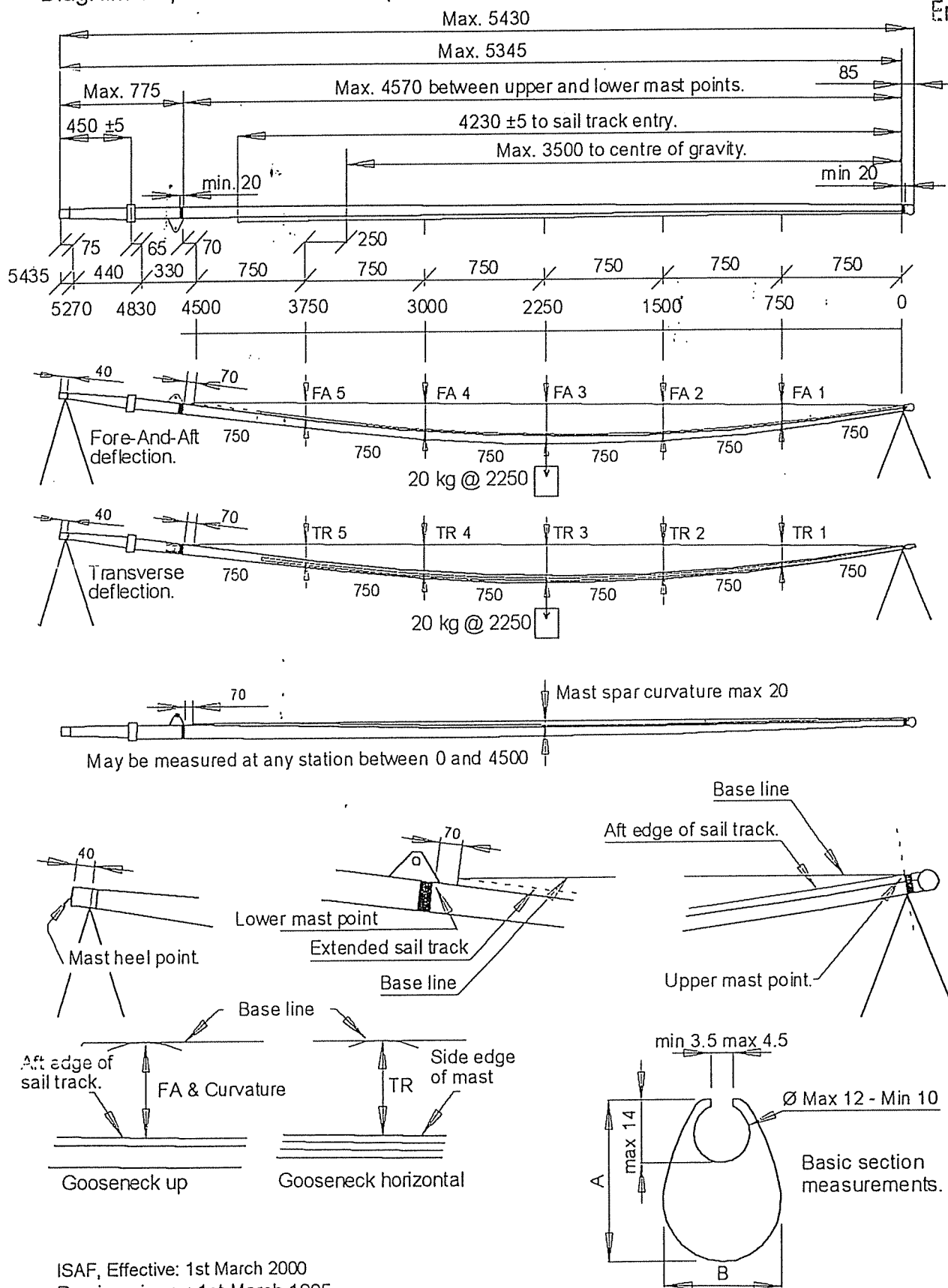
Delete Present Rule and insert:

1. A number inscribed in a circle is a reference to the note of that number.
2. The type of permitted fittings used on mast and boom are optional. Permitted are: gooseneck; mast deck bearing ring, which shall have no moving parts; mast heel fitting, which shall have no moving parts; halyard sheave and housing, halyard lock, halyard tail cleat or other securing arrangement, not more than 3 halyard tail locating clips on the foreside of the mast burgee and/or wind direction indicator, control line sheaves, housings and/or blocks, sheet blocks and securing eyes, boom kicker (vang) system, mast retaining system.
3. No fittings should be positioned so that measurement at the stations shown in the measurement form may be obstructed.
4. The gooseneck fittings of the mast and boom shall be made so that every boom fits every mast and both can be measured separately. The profiles, cross sections and dimensions of the fittings shall comply with those specified on the mast and boom measurement diagram and the measurement form.
5. The position of the inner edge of the mast and boom measurement bands shall be permanently marked with a scribed line or not less than two indentation marks. If correctly positioned, of sufficient width and of a contrasting colour, the gooseneck and halyard sheave case on the mast and/or the end fitting/outhaul sheave case on the boom shall be used in lieu of any other form of measurement band. If so used scribed lines or indentations are not required.
6. The surface of the basic mast section without heel, top, gooseneck and other fittings shall be as shown in the Table Of Offsets (MAST DESIGN SPECIFICATION), within the tolerances stated. (For the intended prototype measurement the tolerances are half the figures given in the Tables Of Offsets).
7. The mast shall be straight. A permanent set of not more than 20mm, measured to a taut line touching the surface of the profile at the lower edge of the upper measurement band and at station 4500 at the height of the extended aft face of the sailtrack, is permitted.
8. The horizontal movement of the mast at the bearing surfaces on the boat shall be not more than 5mm at the deck and not more than 5mm at the heel including movement of the mast heel position adjustment system.
9. The mast bend measurements shall be obtained as given in the mast measurement diagram - sheet 1 of 2.
10. Measurement marks. Masts and booms shall have indented marks at those stations shown in the measurement form, where figures or controls have to be taken.
11. The boom, without fittings, shall be capable of passing through a 76mm diameter circle. The cross section shall be constant, with a tolerance of 2mm, from 90mm from the foremost point of the boom part of the gooseneck to the outer edge of the measurement band.

See 1999 Class Rules for Mast and Boom Diagrams.

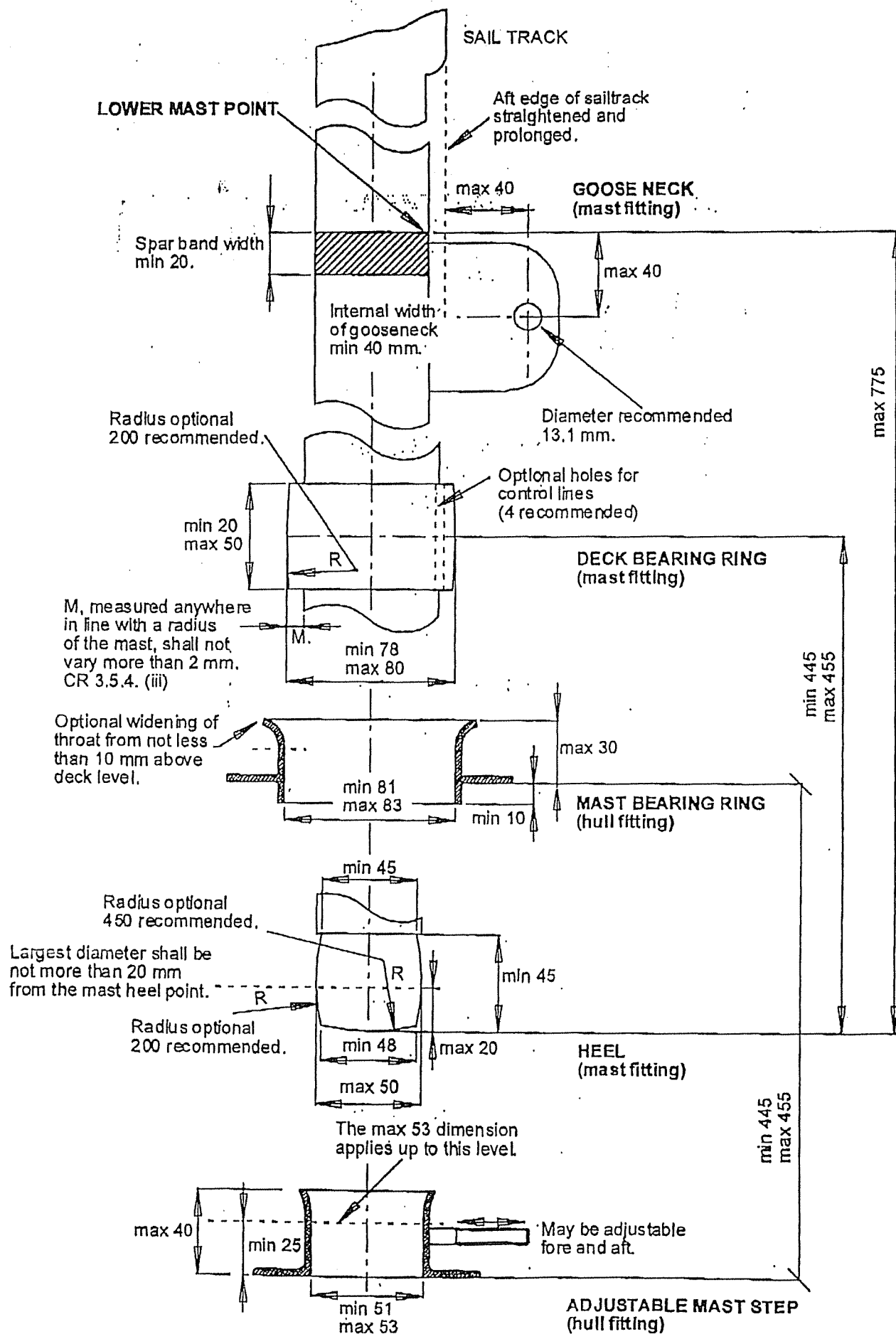
Diagram 1/2,

(see class rules for diagram 2/2 & masts specifications)



ISAF, Effective: 1st March 2000
Previous issue: 1st March 1995

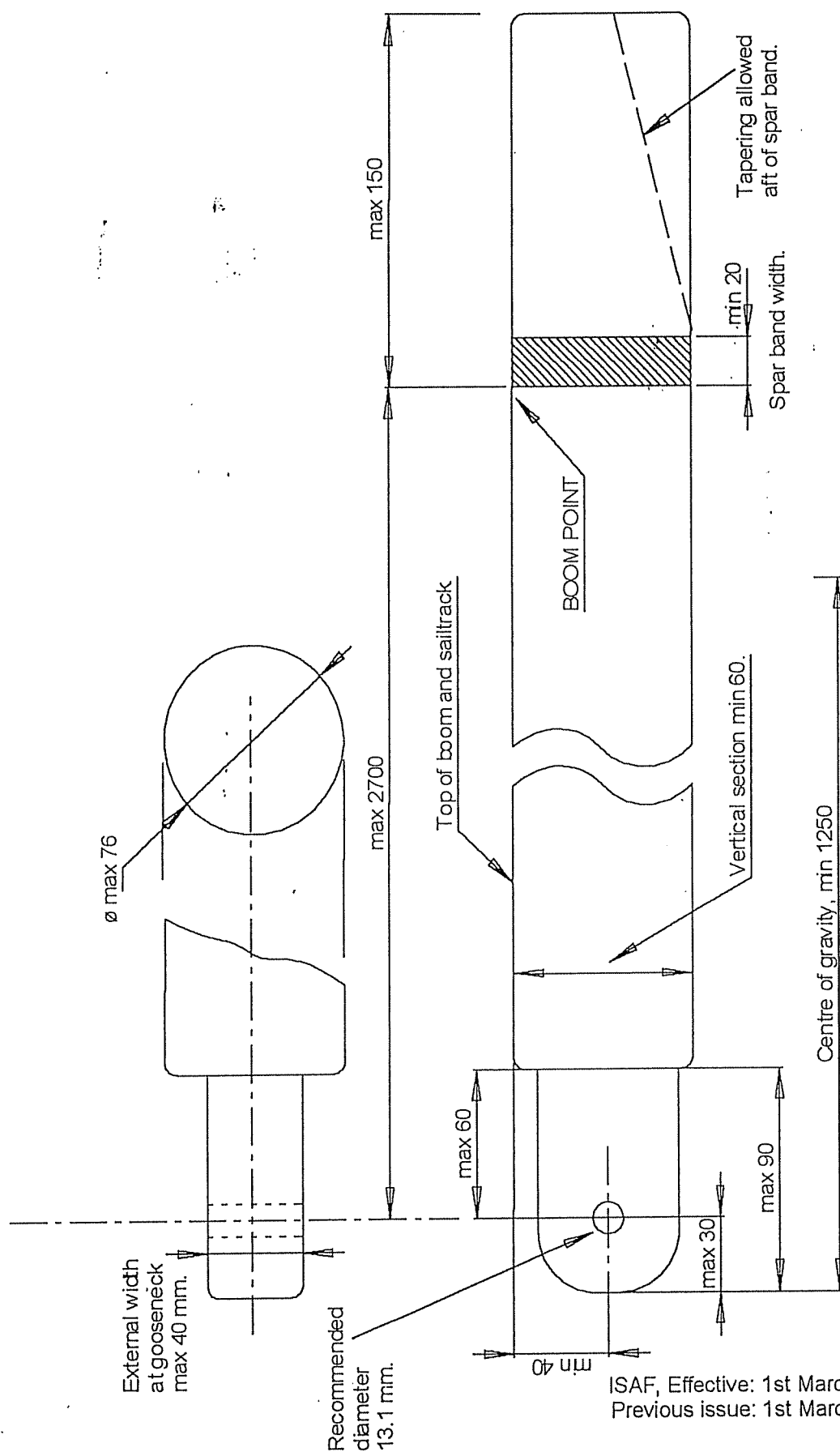
MAST MEASUREMENT DIAGRAM SHEET 2 OF 2.



KOHLBECKER

14. Dez. 1998

Zrl.....



ISAF, Effective: 1st March 2000
Previous issue: 1st March 1995

MAST DESIGN SPECIFICATIONS, basic FRP profile incl. sailtrack. (without fittings), see CR 3.5.4. (i)

Table of offsets:

Position	Station	A	B	A1	C	D	E	G	H	I	J	K	L
Measurement tolerance.	±1	±1	±1	±1	±1	±0.5	r ±1	r min	r max	min	max	max	Ø±1
Top of design shape.	-85	27.6	21.6	-	16.8	-	10.8	33	3	3.5	9	14	11
Upper mast point.	0	28.3	22.3	-	17.1	0.0	11.2	35	3	3.5	9	14	11
Section.	750	34.3	28.5	-	19.7	0.3	14.3	43	3	3.5	9	14	11
Section.	1500	40.2	34.7	-	22.3	0.5	17.4	54	3	3.5	9	14	11
Section.	2250	46.2	40.9	-	24.9	0.8	20.5	64	3	3.5	9	14	11
Section.	3000	52.2	45.9	-	28.0	1.2	23.0	74	3	3.5	9	14	11
Section.	3750	58.2	49.8	-	31.9	1.4	24.9	83	3	3.5	9	14	11
Section.	3840	58.9	50.0	-	32.5	1.4	25.0	85	3	3.5	9	14	11
Sail track entry high.	4220	62.0	50.5	-	31.7	5.0	25.3	85	3	3.5	9	14	11
Sail track entry low.	4240	52.3	50.5	50.3	20.0	5.0	25.3	-	3	-	-	-	-
70 above lower mast point.	4500	55.5	55.9	52.1	21.1	3.0	28.0	-	3	-	-	-	-
260 below lower mast point.	4830	59.5	62.9	54.9	22.9	0.5	31.5	-	3	-	-	-	-
Centre of bearing ring.	4895	60.5	64.0	55.1	23.1	0.0	32.0	-	3	-	-	-	-
75 above heel point.	5270	51.3	52.5	51.2	24.8	-	26.3	-	-	-	-	-	-
Bottom of design shape, heel.	5345	50.0	50.0	-	-	-	25.0	-	-	-	-	-	-

Shapes shall vary gradually between stations without any sudden changes, parameters for any other station can be obtained by interpolation, except Fore and Aft measurements between stations 4220 and 4240 (sailtrack entry). Shapes between -20 and -85 and between 5270 and 5345 may deviate to suit top and heel fittings. Joints between arcs shall be at their mutual tangent.

