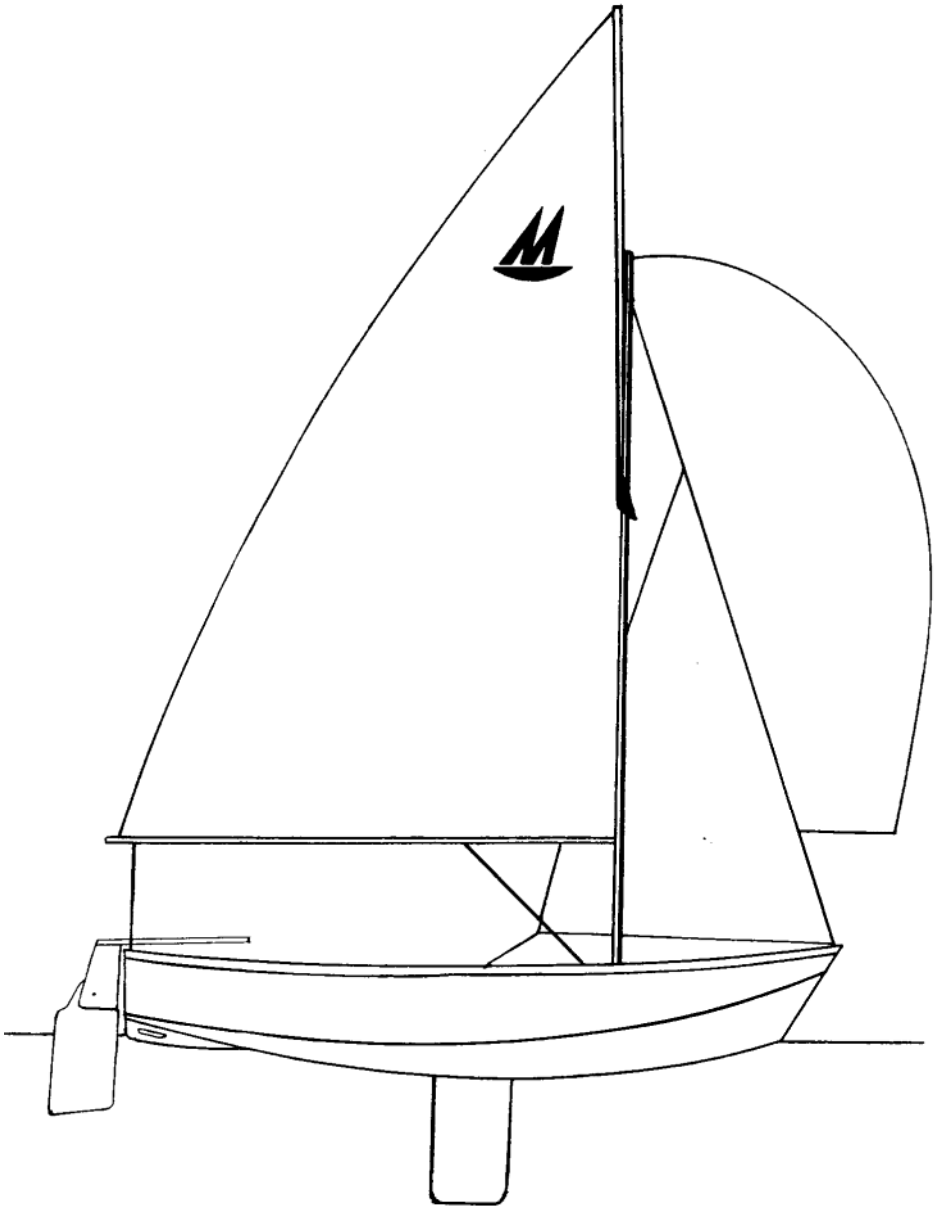
2006

INTERNATIONAL MIRROR CLASS MEASUREMENT FORMS



INCLUDING THE MEASUREMENT CERTIFICATE

Authority: International Sailing Federation

Introduction
These measurement forms have been revised to reflect the introduction of the Bermuda mast option, to address some issues arising from the 2005 Worlds and as a step towards In-house certification.

How to obtain a measurement certificate
1 An **official measurer** shall carry out **fundamental measurement.**

2 The measurement forms, when completed, together with any registration fee that may be required, shall be sent to the owner's **certification authority**. The following forms are required;

i. Hull measurement form (this form)
ii. Daggerboard measurement form
iii. Rudder measurement form
iv. Either;
Bermuda mast measurement form
or
Gunter mast measurement form
Gaff measurement form
v. Boom measurement form
vi. Rigging and Spinnaker / Whisker pole measurement form

3. The owner's **certification authority** will sign and return this and the other forms, or retain them and issue a **certificate**.

Additional or replacement equipment
Owners who purchase or replace equipment (foils, spars, sails) are responsible for ensuring that it meets the class rules. Sails have to undergo **Fundamental Measurement** before they are used for racing. This is good practice for other items as well. The procedure is as follows;

1 An **Official Measurer** shall carry out **Fundamental Measurement** of each item using the appropriate form.

2. The owner should record any measurements for which they are responsible (if any) and sign the owner's declaration on the form. Owners are responsible for ensuring compliance when measurements or rules depend on other equipment or form part of the Racing Rules of Sailing (RRS). For example, the projection of the centreboard below the hull, national letters and sail numbers on sails, advertising rules.

3. The owner should retain the form. If the equipment is subsequently sold, the measurement form should be passed on to the new owner.

MEASURERS
1 Measurements shall be carried out in accordance with the Equipment Rules of Sailing (ERS) except where varied in the **class rules**.
2 If the **official measurer** has any doubt concerning the application of, or compliance of any part of the **boat** with, the **class rules** he shall report it on the measurement form(s) before sending them to the **certification authority** and not sign measurement form(s) or sails.
3 The **boat** shall comply with all the **class rules** even if some of the rules are not mentioned on the measurement form(s).

ITEM	RULE NO	MEASUREMENT	MIN (MM)	ACTUAL (MM)	MAX (MM)
		HULL			
1	1.1	Do the **hull** materials comply with rule Part B – Measurement Rules 1.1? (For GRP **hulls** see below)		Yes/No	
2	1.4.4 1.4.11	Distance around underside of **hull** from the **Hull Datum Point** to: Forward Measurement Point Aft end of **Daggerboard** case	 3078 1410		 3098 1450

ITEM	RULE NO	MEASUREMENT	MIN (MM)	ACTUAL (MM)		MAX (MM)
3	1.4.1	Distance from baseline to outside of **hull** shell, on centreline including keelband: Section 0		220		
		Section 1	98			118
		Section 2	28			48
		Section 3	34			54
		Section 4	66			86
		Forward Measurement Point		250		
	1.4.11	Is the slope of the aft edge of the **Daggerboard** case less than 1 in 20?		Yes/No		
4	1.4.2	Does the transom comply with rule 1.4.2?		Yes/No		
5	1.4.3	Width of outside of each bottom panel, from **hull** centreline to chine (A) at: Section 0	472	Port	Star-board	488
		Section 1	570			586
		Section 2	606			622
		Section 3	587			603
		Section 4	555			571
6	1.4.3	Distance from horizontal line touching the keelband to chine (C) at: Section 0	52			68
		Section 1	60			80
		Section 2	110			130
		Section 3	193			213
		Section 4	230			250
7	1.4.3	Distance from horizontal line to **sheerline** (D) at: Section 0	302			322
		Section 1	403			433
		Section 2	484			514
		Section 3	510			540
		Section 4	505			535
8	1.4.7	Curvature of bottom panels at: Section 0	3	Port	Star-board	9
		Section 1	-3			3
		Section 2	3			13
		Section 3	3			13
9	1.4.8	Are the radii of chines between sections 0 and 3		Yes/No		

ITEM	RULE NO	MEASUREMENT	MIN (MM)	ACTUAL (MM)		MAX (MM)
		less than 10mm				
10	1.4.5	Depth of bow transom	510			530
11	1.4.6	Beam of bow transom: 275 mm from Forward Measurement Point	405			
		475 mm from Forward Measurement Point	550			
12	1.4.9	**Bilge keels**: Length over which cross section is not less than 9mm high and 13mm wide	915	Port	Star-board	
		Distance from hull centreline to centreline of **bilge keels** at; Forward end	375			435
		Aft end	375			435
		Distance from aft transom to aft end of **bilge keels**	730			790
13	1.1.10	Overall length of **skeg**	635			
14	1.4.10	Depth of **skeg** (including keelband) 76mm from section 0	64			
		305mm from Section 0	51			
		457mm from Section 0	32			
15	1.4.10	Thickness of **skeg** at **hull**	18			
16	1.4.10	Length of hole in **skeg**	132			152
		Height of hole in **skeg**	18			28
		Fairing of hole in **skeg**				25
		Hull Datum Point to hole in **skeg**	185			215
		Hull surface to hole in **skeg**	10			20
17	1.4.11	Length of **Daggerboard** slot in the underside of **hull**	381			405
18	1.4.11	Width of **Daggerboard** slot				19
19	1.4.11	Depth of **Daggerboard** case	283			
20	1.4.12	Width of outer gunwales	12			18
		Depth of outer gunwales	25			31
		Is the radii of the outer gunwales 15mm or less?		Yes/No		
21	1.4.13	Length of stem post	200			
		Thickness of stem post	15			
22	1.4.14	Do the holes in the transom comply with rule 1.4.14?		Yes/No		
23	1.4.15	Does the **hull** shell comply with rule 1.4.15?		Yes/No		
24	1.5.1	Does the keelband comply with rule 1.5.1?		Yes/No		

ITEM	RULE NO	MEASUREMENT	MIN (MM)	ACTUAL (MM)		MAX (MM)
25	1.5.2	Do the **rudder** fittings comply with rule 1.5.2?		Yes/No		
26	1.5.5	Does the **hull** comply with rule 1.5.6?		Yes/No		
INTERNAL MEASUREMENTS						
27	1.2	Does the construction comply with rule 1.2?		Yes/No		
28	1.4.3	Beam at **sheerline** (B) at: Section 0	1053			1073
		Section 1	1264			1304
		Section 2	1362			1402
		Section 3	1276			1316
		Section 4	1152			1192
29	1.6.1	Length overall, excluding **rudder** fittings	3285			3325
30	1.6.2	Distance from forward face of the aft transom to forward face of aft bulkhead	395			455
31	1.6.3	Distance from forward face of aft transom to aft face of stowage compartment bulkhead	2085			2115
32	1.6.4	Distance from forward bulkhead to stowage compartment bulkhead	300			340
33	1.6.13.1	Gunter rigged boats - Forward face of aft transom to centre of aft mast step. Bermuda rigged boats – this measurement is not applicable (record N/A).	2145			2175
		Thickness of aft mast step				12
34	1.6.14	Aft face of aft transom to centre of shroud block	1808			1838
35	1.7.1	Do the shroud attachment fittings comply with rule 1.7.1?		Yes/No		
36	1.6.5	Distance between side tank panels at: Aft bulkhead	735			765
		Stowage compartment bulkhead	735			765
37	1.6.6	Depth of side tanks at: Aft bulkhead	200	Port	Star	230
		Stowage compartment bulkhead	260			290
38	1.6.7	Does the decking comply with rule 1.6.7?		Yes/No		
39	1.6.8	Width of thwart	142			
		Thickness of thwart	13			17
		Width of **Daggerboard** slot in thwart				19
		Transverse length of thwart	805			835
		Distance from aft edge of thwart to forward face of aft transom	1315			1365
40	1.6.9	Do the inspection hatches comply with rule 1.6.9?		Yes/No		

ITEM	RULE NO	MEASUREMENT	MIN (MM)	ACTUAL (MM)	MAX (MM)
41	1.6.10	Do the drain holes comply with rule 1.6.10?		Yes/No	
42	1.6.11	Width of inner gunwales	17		23
		Depth of inner gunwales	25		31
		Is the radii of the outer gunwales 15mm or less?		Yes/No	
43	1.6.12	Do the floor battens comply with rule 1.6.12?		Yes/No	
44	1.6.15	Transom thickness	22		28
45	1.6.16	Does the interior comply with rule 1.6.16?		Yes/No	
46	1.7.2	Does the forestay attachment fitting comply with rule 1.7.2?		Yes/No	
47	1.7.3	Do the headsail sheet fairleads and mounting blocks comply with rule 1.7.3?		Yes/No	
48	1.7.4	Does the headsail tack attachment comply with rule 1.7.4?		Yes/No	

OFFICIAL MEASURER'S DECLARATION – HULL

For Wood Hulls: Plaque No: .....

I certify that I have taken the measurements recorded on this form and that, to the best of my knowledge, they conform to the **Class Rules** of the International Mirror Class at present in force, subject to any comments below:

Comments:

Name: ..... Officially recognised by: .....

Signature: ..... Date: .....

For GRP Hulls: Plaque No: .....

I certify that I have taken the measurements recorded on this form and that, to the best of my knowledge, they conform to the **Class rules** of the International Mirror Class at present in force, subject to any comments on this form.

*Note: The **Official Measurer** need only take as many measurements as he feels necessary to satisfy himself that to the best of his knowledge the boat has been built in the approved moulds stated in the builders declaration. Item numbers 3, 5 (section 2), 6 (section 2), 7 (section 2), 28 and 33 must be measured for all boats.*

Comments:

Name: ..... Officially recognised by: .....

Signature: ..... Date: .....

BUOYANCY ENDORSEMENT
This **Hull** complied with the buoyancy test conducted in accordance with the **Class Rules**:
Official Measurer's Signature: ..... Date: .....

WEIGHT ENDORSEMENT		
Hull Weight at **Fundamental Measurement** (Exc. Correctors)	**Corrector Weight** (3kg max)	**Total Weight**
kg	kg	kg
Official Measurer's Signature: ..... Date:		

RE-WEIGHING ENDORSEMENT					
Date	**Hull Weight** (Kg) (Inc. correctors)	Total **Corrector Weight** (3kg max)	Number of **Corrector Weights**	Signature of **Official Measurer**	**Certification Authority** Stamp and Date
On re-weighing this **Certificate** must be returned to the **Certification Authority** for re-validation by stamping.					

LICENSED KIT MANUFACTURER'S DECLARATION

Note: Licensed Kit Manufacturer's must sign either Declaration A for kits, Declaration B for complete wooden boats, or Declaration C for GRP boats.

A. Wooden Kit

I declare that this kit has been produced by our company in accordance with the ISAF Kit Specifications and Plans and that ISAF Plaque Number ..... was supplied with the kit:

Company: .....

Signature: ..... Date: .....

B. Complete Boat (complete wooden boats, not kits)

I declare that this boat has been built by our company in accordance with ISAF Specifications and Plans for Wooden Mirrors and is in compliance with the International Mirror **Class Rules** and that ISAF Plaque Number ..... has been affixed to the transom:

Company: .....

Signature: ..... Date: .....

C. GRP Boat (complete GRP, not kits)

I declare that this boat has been built by our company in accordance with ISAF Specifications for GRP Mirrors, in a mould approved by the ISAF and to the laminate schedule approved by the ISAF, and is in compliance with the International Mirror **Class Rules** and that ISAF Plaque Number ..... has been affixed to the transom:

Company: .....

Signature: ..... Date .....

PROFESSIONAL OR AMATEUR BUILDER'S DECLARATION

To be completed by the Professional or Amateur Builder of a wooden kit supplied by a Licensed Kit Manufacturer on completion of the kit.

I declare that this boat has been completed using only parts and materials supplied with the kit (except where otherwise permitted by the **Class Rules**) and in accordance with the **Class Rules**:

Builder: .....

Signature: ..... Date: .....

CHANGE OF OWNERSHIP

Note: Change of Ownership invalidates this **Certificate**. The new owner should sign the declaration below and send the **Certificate** to their **Certification Authority** for re-validation.

SECOND OWNER'S DECLARATION

Second Owner's Name: …….....

Second Owner's Address: .....

…….....

To be signed by the Second Owner:
I undertake to race this International Mirror only so long as I maintain it in conformity with the **Class Rules**. I also undertake that the **Corrrector Weights** (if any) will not be altered or removed except when done in conjunction with an official re-weighing and that only sails, spars etc., which have undergone **Fundamental Measurement** and found to be in accordance with the *rules*, will be used.

Signature: ..... Date: .....

This certificate is dated ..... and its validity is confirmed by .....

for ..... (Name of **Certification Authority**)

Signature: ..... Stamp of **Certification Authority**

THIRD OWNER'S DECLARATION

Third Owner's Name: .....

Third Owner's Address: .....

…….....

To be signed by the Third Owner:
I undertake to race this International Mirror only so long as I maintain it in conformity with the **Class Rules**. I also undertake that the **Corrector Weights** (if any) will not be altered or removed except when done in conjunction with an official re-weighing and that only sails, spars etc., which have undergone **Fundamental Measurement** and found to be in accordance with the *rules*, will be used.

Signature: ..... Date: .....

This certificate is dated ..... and its validity is confirmed by .....
for ..... (Name of **Certification Authority**)

Signature: ..... Stamp of **Certification Authority**

OWNER'S DECLARATION

To be signed by the First Owner:
I undertake to race this International Mirror only so long as I maintain it in conformity with the **Class Rules**. I also undertake that the **Corrrector Weights** (if any) will not be altered or removed except when done in conjunction with an official re-weighing and that only sails, spars etc., which have undergone **Fundamental Measurement** and found to be in accordance with the *rules*, will be used.

Name: .....

Address: .....

.....

.....

Signature: ..... Date: .....

Certification Authority checklist

Please ensure all required equipment forms have been submitted when you **Certify** the boat.

Daggerboard measurement form ☐ , Rudder measurement form ☐ , Boom measurement form ☐ ,

Rigging and Spinnaker pole measurement form ☐ ,

Either Bermuda mast measurement form ☐

or Gunter mast measurement form ☐ , Gaff measurement form ☐ .

Subsequently, when equipment is replaced or added, these forms can be substituted by equipment measurement forms signed by an **Official Measurer**.

MEASUREMENT CERTIFICATE

To be completed by the **Certification Authority**:

National Letters: ..... Sail Number: ..... ISAF Plaque Number: .....

Builder: .....

Number of **Hull Corrector Weights**: ..... Total of **Corrector Weights**: .....kg
(See Re-weighing Endorsement)

This **Certificate** is dated ..... and its validity is confirmed

by ..... for.....
(Block Capitals) (Name of **Certification Authority**)

Signature: ..... Stamp of **Certification Authority**

INTERNATIONAL MIRROR DAGGERBOARD MEASUREMENT FORM

In order to link this measurement form to the physical **Daggerboard**, it is necessary for the **Daggerboard** to carry a unique identification string or serial number. This can be one assigned by the manufacturer, or the **Official Measurer**. It is suggested that **Official Measurers** adopt the following format for identification strings.

CCC/NNN/DD/MM/YYYY-n where;

CCC are the national letters denoting the **Official Measurer's** ISAF Member National Authority (e.g. AUS, RSA, SWE,…)

NNN are the **Official Measurer**'s initials.

DD/MM/YYYY is the date when the **Daggerboard** underwent **Fundamental Measurement**.

n is a serial number used where more than one **Daggerboard** undergoes **Fundamental Measurement** in a day.

Daggerboard Manufacturer ……

Daggerboard serial number or identification string ……..

On completion of **Fundamental Measurement** the **Official Measurer**, if satisfied that the **Daggerboard** complies with the current **Class Rules**, should sign and date the **Daggerboard** at the top.

ITEM	RULE NO	MEASUREMENT	MIN (MM)	ACTUAL (MM)	MAX (MM)
1	2.1	Does the **Daggerboard** comply with rule 2.1?		Yes/No	
2	2.2	Width of **Daggerboard**: At top	260		320
		Below cut off corner	356		380
3	2.2	Are the radii of bottom corners between 30 and 50		Yes/No	
4	2.2	Thickness of **Daggerboard**			14
5	2.2	Width of fairing from any edge			50
6	2.2	Depth of cut off			165

OFFICIAL MEASURER'S DECLARATION – Daggerboard

To be signed by the **Official Measurer(s)**:

I certify that I have taken the measurements on this form for the **Daggerboard** and that, to the best of my knowledge, they conform to the **Class Rules** of the International Mirror Class at present in force, subject to any comments on this form.

Comments:

Name: ..... Officially recognised by: .....

Signature: ..... Date: .....

This section covers **Daggerboard** measurements which depend on the **Hull**. As such it is the responsibility of

the owner to ensure compliance with the **Class Rules** for the identified **Hull**.

ISAF Plaque No: .....

ITEM	RULE NO	DAGGERBOARD MEASUREMENTS	MIN (MM)	ACTUAL (MM)	MAX (MM)
1	1.4.11	Projection of **Daggerboard** when fully down			610

OWNER'S DECLARATION

To be signed by the Owner:
I acknowledge that I am responsible for ensuring that this **Daggerboard** complies with the requirements of the **Class Rules**. I have checked the items identified above as my responsibility and I undertake to maintain it in conformity with the **Class Rules**.

Name: .....

Address: .....

.....

.....

Signature: ..... Date: .....

INTERNATIONAL MIRROR RUDDER MEASUREMENT FORM

In order to link this measurement form to the physical **Rudder**, it is necessary for the **Rudder** to carry a unique identification string or serial number. This can be one assigned by the manufacturer, or the **Official Measurer**. It is suggested that **Official Measurers** adopt the following format for identification strings.

CCC/NNN/DD/MM/YYYY-n where;

CCC are the national letters denoting the **Official Measurer**'s ISAF Member National Authority (e.g. AUS, RSA, SWE,…)

NNN are the **Official Measurer**'s initials.

DD/MM/YYYY is the date when the **Rudder** underwent **Fundamental Measurement**.

n is a serial number used where more than one **Rudder** undergoes **Fundamental Measurement** in a day.

Rudder Manufacturer ……

Rudder serial number or identification string ……..

On completion of **Fundamental Measurement** the **Official Measurer**, if satisfied that the **Daggerboard** complies with the current **Class Rules**, should sign and date the **Rudder** on the blade.

ITEM	RULE NO	MEASUREMENT	MIN (MM)	ACTUAL (MM)	MAX (MM)
1	3.1	Does the **rudder** comply with rule 3.1?		Yes/No	
2	3.2	Distance from centre of pivot: Aft corner of **rudder** blade	545		575
		Lower edge of **rudder** blade measured parallel to leading edge	495		525
		Underside of tiller measured parallel to leading edge of **rudder** stock	204		228
3	3.2	Width of **rudder** blade	265		295
4	3.2	Thickness of **rudder** blade			14
5	3.2	Width of fairing from any edge			25
6	3.2	Are the radii of bottom corners less than 50mm		Yes/No	

OFFICIAL MEASURER'S DECLARATION – Rudder

To be signed by the **Official Measurer**:

I certify that I have taken the measurements on this form for the **Rudder** and that, to the best of my knowledge, they conform to the **Class Rules** of the International Mirror Class at present in force, subject to any comments on this form.

Comments:

Name: ..... Officially recognised by: .....

Signature: ..... Date: .....

INTERNATIONAL MIRROR GUNTER MAST MEASUREMENT FORM

In order to link this measurement form to the physical Gunter **Mast**, it is necessary for the Gunter **Mast** to carry a unique identification string or serial number. This can be one assigned by the manufacturer, or the **Official Measurer**. It is suggested that **Official Measurers** adopt the following format for identification strings.

CCC/NNN/DD/MM/YYYY-n where;

CCC are the national letters denoting the **Official Measurer**'s ISAF Member National Authority (e.g. AUS, RSA, SWE,…)

NNN are the **Official Measurer**'s initials.

DD/MM/YYYY is the date when the Gunter **Mast** underwent **Fundamental Measurement**.

n is a serial number used where more than one Gunter **Mast** undergoes **Fundamental Measurement** in a day.

Gunter **Mast** Manufacturer ……

Gunter **Mast** serial number or identification string ……..

On completion of **Fundamental Measurement** the **Official measurer**, if satisfied that the Gunter **Mast** complies with the current **Class Rules**, should sign and date the Gunter **Mast** near the **Heel Point**.

ITEM	RULE NO	MEASUREMENT	MIN (MM)	ACTUAL (MM)	MAX (MM)
1	5.1.1	Overall length of **mast**			3296
2	5.1.5	Base of **mast** to main halyard sheave bearing surface			3200
		Does the main halyard sheave comply with rule 5.1.5?		Yes/No	
3	5.1.7	Weight of **mast**	2.7kg		
4	5.1.8	Does the **mast** comply with rule 5.1.8?		Yes/No	
	5.1.9	Does the position of the peg on the **mast** comply with rule 5.1.9?		Yes/No	
	5.1.10	Does the **mast** comply with rule 5.1.10?			
5	5.1.2	Does the **mast** comply with rule 5.1.2?		Yes/No	
6	5.1.3	Does the **mast** comply with rule 5.1.3?		Yes/No	
7	5.1.4	Diameter of wood **mast**	44		56
		Diameter of aluminium **mast**	47		53

MEASURER'S DECLARATION – Gunter Mast

To be signed by the **Official Measurer**:

I certify that I have taken the measurements on this form for the Gunter **Mast** and that, to the best of my knowledge, they conform to the **Class Rules** of the International Mirror Class at present in force, subject to any comments on this form.

Comments:

Name: ..... Officially recognised by: .....

Signature: ..... Date: .....

This section covers Gunter **Mast** measurements which depend on the **Hull** and the **Boom**. As such it is the responsibility of the owner to ensure compliance with the **Class Rules** for the identified **Hull** and **Boom**.

ISAF Plaque No: .....

Boom serial number or identification string ……..

ITEM	RULE NO	GUNTER MAST MEASUREMENTS	MIN (MM)	ACTUAL (MM)	MAX (MM)
2	5.1.6	Base of **mast** to top of **boom**	659		679
3	5.1.9	Does the movement of the mast peg in the mast step comply with rule 5.1.9?		Yes/No	

OWNER'S DECLARATION

To be signed by the Owner:

I acknowledge that I am responsible for ensuring that this Gunter **Mast** complies with the requirements of the **Class Rules**. I have checked the items identified above as my responsibility and I undertake to maintain it in conformity with the **Class Rules**.

Name: .....

Address: .....

.....

.....

Signature: ..... Date: .....

INTERNATIONAL MIRROR GAFF MEASUREMENT FORM

In order to link this measurement form to the physical Gaff, it is necessary for the Gaff to carry a unique identification string or serial number. This can be one assigned by the manufacturer, or **the Official Measurer**. It is suggested that **Official Measurers** adopt the following format for identification strings.

CCC/NNN/DD/MM/YYYY-n where;

CCC are the national letters denoting the **Official Measurer**'s ISAF Member National Authority (e.g. AUS, RSA, SWE,…)

NNN are the **Official Measurer**'s initials.

DD/MM/YYYY is the date when the Gaff underwent **Fundamental Measurement**.

n is a serial number used where more than one Gaff undergoes **Fundamental Measurement** in a day.

Gaff Manufacturer …….

Gaff serial number or identification string ……..

On completion of **Fundamental Measurement** the **Official Measurer**, if satisfied that the Gaff complies with the current **Class Rules**, should sign and date the Gaff on one side just above the jaws.

ITEM	RULE NO	MEASUREMENT	MIN (MM)	ACTUAL (MM)	MAX (MM)
1	5.3.1	Length of gaff measured along the slot			2809
2	5.3.2	Does the gaff comply with rule 5.3.2?		Yes/No	
3	5.3.3	Periphery of gaff: At peak	102		
		At gaff band	146		
		204mm from lower end	127		
		Fore and aft dimension			45
4	5.3.4	Does the gaff comply with rule 5.3.4?		Yes/No	
5	5.3.5	Does the painted band comply with rule 5.3.5?		Yes/No	
6	5.3.6	Top of gaff to lower edge of either the gaff band or pin			1733

MEASURER'S DECLARATION – Gaff

To be signed by the **Official Measurer**:

I certify that I have taken the measurements on this form for the Gaff and that, to the best of my knowledge, they conform to the **Class Rules** of the International Mirror Class at present in force, subject to any comments on this form.

Comments:

Name: ..... Officially recognised by: .....

Signature: ..... Date: .....

INTERNATIONAL MIRROR BOOM MEASUREMENT FORM

In order to link this measurement form to the physical **Boom**, it is necessary for the **Boom** to carry a unique identification string or serial number. This can be one assigned by the manufacturer, or **the Official Measurer**. It is suggested that **Official Measurers** adopt the following format for identification strings.

CCC/NNN/DD/MM/YYYY-n where;

CCC are the national letters denoting the **Official Measurer**'s ISAF Member National Authority (e.g. AUS, RSA, SWE,…)

NNN are the **Official Measurer**'s initials.

DD/MM/YYYY is the date when the **Boom** underwent **Fundamental Measurement**.

n is a serial number used where more than one **Boom** undergoes **Fundamental Measurement** in a day.

Boom Manufacturer ……

Boom serial number or identification string ……..

On completion of **Fundamental Measurement** the **Official Measurer**, if satisfied that the **Boom** complies with the current **Class Rules**, should sign and date the **Boom** at the inner end.

ITEM	RULE NO	MEASUREMENT	MIN (MM)	ACTUAL (MM)	MAX (MM)
1	5.2.1	Overall length of the **boom** excluding fittings	2235		2285
2	5.2.4	Distance from inner end of **boom** to kicking strap **Rigging Point** with the kicking strap held at 90 degrees to the **spar**.	483		
3	5.2.2	Does the **boom** comply with rule 5.2.2?		Yes/No	
4	5.2.3	Width of wooden **boom**	37		43
		Depth of wooden **boom**	37		43
		Alloy **boom spar cross section vertical**			51
		Alloy **boom spar cross section transverse**			51
5	5.2.5	Does the **boom** comply with rule 5.2.5 and 5.2.6?		Yes/No	

MEASURER'S DECLARATION – Boom

To be signed by the **Official Measurer**:

I certify that I have taken the measurements on this form for the **Boom** and that, to the best of my knowledge, they conform to the **Class Rules** of the International Mirror Class at present in force, subject to any comments on this form.

Comments:

Name: ..... Officially recognised by: .....

Signature: ..... Date: .....

INTERNATIONAL MIRROR BERMUDA MAST MEASUREMENT FORM

In order to link this measurement form to the physical Bermuda **Mast**, it is necessary for the Bermuda **Mast** to carry a unique identification string or serial number. This can be one assigned by the manufacturer, or the **Official Measurer**. It is suggested that **Official Measurers** adopt the following format for identification strings.

CCC/NNN/DD/MM/YYYY-n where;

CCC are the national letters denoting the **Official Measurer**'s ISAF Member National Authority (e.g. AUS, RSA, SWE,…)

NNN are the **Official Measurer**'s initials.

DD/MM/YYYY is the date when the Bermuda **Mast** underwent **Fundamental Measurement**.

n is a serial number used where more than one Bermuda **Mast** undergoes **Fundamental Measurement** in a day.

Bermuda **Mast** Manufacturer ……

Bermuda **Mast** serial number or identification string ……..

On completion of **Fundamental Measurement** the **Official Measurer**, if satisfied that the **Mast** complies with the current **Class Rules**, should sign and date the **Mast** near the **Heel Point**.

ITEM	RULE NO	MEASUREMENT	MIN (MM)	ACTUAL (MM)	MAX (MM)
1	5.5.16	Does the mast comply with rule 5.5.16?		Yes/No	
2	5.5.17	Does the mast comply with rule 5.5.17?		Yes/No	
3	5.5.19 (a)	Does the mast have the following fittings;			
	(1)	Shroud and forestay tangs, eyes, or hook terminal backing plates.		Yes/No	
	(2)	Mainsail halyard sheave box, eye or a mast head fitting incorporating a sheave.		Yes/No	
	(3)	Gooseneck.		Yes/No	
	(4)	Heel fitting, which may incorporate sheaves for halyards and control lines.		Yes/No	
	(5)	Main halyard cleat, hook or tooth rack.		Yes/No	
	(6)	Jib halyard cleat, hook or tooth rack.		Yes/No	
4	5.5.19 (b)	Does the mast comply with rule 5.5.19 (b)? (i.e. fittings in addition to 5.5.19 (a) must be in 5.5.19 (b))		Yes/No	
5	5.5.20	Does the mast comply with rule 5.5.20		Yes/No	
6	5.5.21	Mast heel tenon shoulder height	8		12
		Lower limit mark width	10		
		Lower point height	659		
		Spinnaker pole fitting projection			35
		Mast spar cross section 1700mm above the **mast datum point**			
		fore-and-aft	47		70
		transverse	47		70

ITEM	RULE NO	MEASUREMENT	MIN (MM)	ACTUAL (MM)	MAX (MM)
		Forestay height	3173		3193
		Shroud height	3173		3193
		Mast taper point height	3193		
		Spinnaker hoist height			3283
		Spinnaker hoist fitting projection			90
		Upper limit mark width	10		
		Upper point height			4857
		Mast spar cross section 4857mm above the **mast datum point**			
		fore-and-aft	25		70
		transverse	25		70
		Mast spar curvature			30
7	5.5.22	**Spar weight**	3.7kg		
8		Does the **mast** have a join? (a join is optional)		Yes/No	

Dimensions applying to Bermuda **masts** with joins only;

9	5.5.18	Does the **spar** comply with rule 5.5.18?		Yes/No	
10	5.5.21	Mast join lower point height	2893		
		Mast join upper point height			3493
		Mast join reinforcement length			650

MEASURER'S DECLARATION – Bermuda Mast

To be signed by the **Official Measurer**:

I certify that I have taken the measurements on this form for the Bermuda **Mast** and that, to the best of my knowledge, they conform to the **Class Rules** of the International Mirror Class at present in force, subject to any comments on this form.

Comments:

Name: ..... Officially recognised by: .....

Signature: ..... Date: .....

This section covers Bermuda **Mast** measurements which depend on the **Hull** and the **Boom**. As such it is the responsibility of the owner to ensure compliance with the **Class Rules** for the identified **Hull** and **Boom**.

ISAF Plaque No: .....

Boom serial number or identification string ……..

ITEM	RULE NO	BERMUDA MAST MEASUREMENTS	MIN (MM)	ACTUAL (MM)	MAX (MM)
11	ERS B.7.1	Does the **Boom** comply with ERS B.7.1? (top edge of boom above top edge of lower limit mark)		Yes/No	
12	5.5.21	Does the **spar** comply with rule 5.5.21?		Yes/No	
13	1.6.13.2	Forward face of aft transom to intersection of fore face of **spar** mast and surface of foredeck butt strap.	2145		2175

OWNER'S DECLARATION

To be signed by the Owner:

I acknowledge that I am responsible for ensuring that this Bermuda **Mast** complies with the requirements of the **Class Rules**. I have checked the items identified above as my responsibility and I undertake to maintain it in conformity with the **Class Rules**.

Name: .....

Address: .....

.....

.....

Signature: ..... Date: .....

INTERNATIONAL MIRROR RIGGING AND SPINNAKER / WHISKER POLE MEASUREMENT FORM

In order to link this measurement form to the physical **Spinnaker / Whisker Pole**, it is necessary for the **Spinnaker / Whisker Pole** to carry a unique identification string or serial number. This can be one assigned by the manufacturer, or the **Official Measurer**. It is suggested that **Official Measurers** adopt the following format for identification strings.

CCC/NNN/DD/MM/YYYY-n where;

CCC are the national letters denoting the **Official Measurer**'s ISAF Member National Authority.

NNN are the **Official Measurer**'s initials.

DD/MM/YYYY is the date when the **Spinnaker / Whisker Pole** underwent **Fundamental Measurement**.

n is a serial number used where more than one **Spinnaker / Whisker Pole** undergoes **Fundamental Measurement** in a day.

Spinnaker / Whisker Pole Manufacturer ……..

Spinnaker / Whisker Pole serial number or identification string ……..

On completion of **Fundamental Measurement** the **Official Measurer**, if satisfied that the spinnaker / whisker pole complies with the current **Class Rules**, should sign and date the pole near the centre.

ITEM	RULE NO	RIGGING MEASUREMENT	MIN (MM)	ACTUAL (MM)	MAX (MM)
1	6.1.1	Does the **rigging** comply with rule 6.1.1?		Yes/No	
2	6.1.2	Does the **rigging** comply with rule 6.1.2?		Yes/No	
3	6.1.3	Does the forestay comply with rule 6.1.3?		Yes/No	
4	6.1.4	Do the shrouds comply with rule 6.1.4?		Yes/No	
5	6.2.1	Does the running rigging comply with rule 6.2.1?		Yes/No	
PROHIBITIONS					
6	9.1	Does the boat comply with rule 9.1?		Yes/No	
7	9.2	Does the boat comply with rule 9.2?		Yes/No	
8		Does the boat have a **Spinnaker/Whisker Pole**? (**Spinnaker/Whisker Poles** are optional)		Yes/No	
ITEM	**RULE NO**	**SPINNAKER/WHISKER POLE MEASUREMENT (Spinnaker/Whisker poles are optional)**	**MIN (MM)**	**ACTUAL (MM)**	**MAX (MM)**
9	5.4.1	Overall length of spinnaker pole or jib stick			1524
10	5.4.2	Do the spinnaker pole and jib stick comply with rule 5.4.2?		Yes/No	

MEASURER'S DECLARATION – Rigging and Spinnaker / Whisker Pole

To be signed by the **Official Measurer**:
I certify that I have taken the measurements on this form for the **Rigging** and **Spinnaker / Whisker Pole** and that, to the best of my knowledge, they conform to the **Class Rules** of the International Mirror Class at present in force, subject to any comments on this form.
Comments:

Name: ..... Officially recognised by: .....

Signature: ..... Date: .....

INTERNATIONAL MIRROR MAINSAIL MEASUREMENT FORM

In order to link this measurement form to the physical Mainsail, it is necessary for the Mainsail to carry a unique identification string or serial number. This can be one assigned by the manufacturer, or the **Official Measurer**. It is suggested that **Official Measurers** adopt the following format for identification strings.

CCC/NNN/DD/MM/YYYY-n where;

CCC are the national letters denoting the **Official Measurer**'s ISAF Member National Authority (e.g. AUS, RSA, SWE,…)

NNN are the **Official Measurer**'s initials.

DD/MM/YYYY is the date when the Mainsail underwent fundamental measurement.

n is a serial number used where more than one Mainsail undergoes **Fundamental Measurement** in a day.

Mainsail Sailmaker ……..

Mainsail serial number or identification string ……..

On completion of **Fundamental Measurement** the **Official Measurer**, if satisfied that the sail complies with the current **Class Rules**, should sign and date the sail at the **Tack**. Note that national letters, sail numbers and advertising do not form part of **Fundamental Measurement**. It is the responsibility of the owner to ensure compliance with these sections of the RRS.

ITEM	RULE NO	MEASUREMENT	MIN (MM)	ACTUAL (MM)	MAX (MM)
1	7.1.3	Do the **seams** comply with rule 7.1.3?		Yes/No	
2	7.2.1.1	Does the sail comply with rule 7.2.1.1?		Yes/No	
3	7.2.1.2	Does the sail comply with rule 7.2.1.2?		Yes/No	
4	7.2.1.3	Does the sail comply with rule 7.2.1.3?		Yes/No	
5	7.2.1.4	Are the centrelines of the **batten pockets** within 50mm of the quarter, half and three quarter points on the **leech**?		Yes/No	
6	7.2.1.5	Length of bolt rope from the **head** along the **luff**	2810		
7	7.2.1.6	Does the sail comply with rule 7.2.1.6?		Yes/No	
8	7.2.1.7	Is the **foot** convex		Yes/No	
9	7.2.1.9	Number of lacing eyes below the LMP	0		6
10	7.2.2	**Leech length**			4520
		Head Width			55
		Luff length			4052
		Foot length			2135
		Foot median			4340
		Half leech point to LMP			1650
		The diagonal taken from LMP to the **clew point**			2530
		Upper width at 1067mm down **leech** from **head point**			725
		Primary reinforcement from **corner measurement points**			271

ITEM	RULE NO	MEASUREMENT	MIN (MM)	ACTUAL (MM)	MAX (MM)
		Secondary reinforcement from **corner measurement points**			813
		Flutter patches			100
		Chafing patches			750
		Batten pocket patches			150
		Uppermost **Batten Pocket Length - Inside**			560
		Uppermost **Batten Pocket Width - Inside**	32		60
		Middle **Batten Pocket Length - Inside**			660
		Middle **Batten Pocket Width - Inside**	32		60
		Lowermost **Batten Pocket Length - Inside**			660
		Lowermost **Batten Pocket Width - Inside**	32		60
11	7.6.4	Does the Mainsail comply with 7.6.4?		Yes/No	
12	7.6.5	Does the Mainsail comply with rule 7.6.5?		Yes/No	
13	7.5.2	Does the Insignia comply with rule 7.5.2?		Yes/No	
14	7.5.4	Does the Insignia comply with rule 7.5.4?		Yes/No	

MEASURER'S DECLARATION – Mainsail

To be signed by the **Official Measurer**:

I certify that I have taken the measurements on this form above this box for the Mainsail identified and that, to the best of my knowledge, they conform to the **Class Rules** of the International Mirror Class at present in force, subject to any comments on this form.

Comments:

Name: …..... Officially recognised by: …..

Signature: …..... Date: …..

It is the responsibility of the <u>owner</u> under the Racing Rules of Sailing (RRS) to ensure the sail complies with the items in the checklist below.

ITEM	RULE NO	MEASUREMENT	MIN (MM)	ACTUAL (MM)	MAX (MM)
1	RRS G1.2(a)	Do the sail numbers and national letters comply with RRS G1.2 (a) (legible capitals and Arabic numerals)?		Yes/No	
2	RRS G1.2(b)	Does the size of the sail numbers and national letters comply with RRS G1.2 (b)?	230	Yes/No	
3	RRS G1.2(b)	Does the spacing between the sail numbers, national letters and the edge of the sail comply with RRS G1.2 (b)?	45	Yes/No	

ITEM	RULE NO	MEASUREMENT	MIN (MM)	ACTUAL (MM)	MAX (MM)
4	RRS G1.3(a)	Do the position of the Insignia, national letters and sail numbers comply with RRS G1.3 (a) (where possible within 2712mm of **head point**, if at different heights, starboard side uppermost)?		Yes/No	2712
5	RRS G1.3(b)	Do the position of the Insignia and national letters comply with RRS G1.3 (b) (Insignia above national letters)?		Yes/No	
6	RRS G1.3(c)	Do the position of the national letters and sail numbers comply with RRS G1.3 (c) (national letters above sail number)?		Yes/No	
7	RRS G1.1(c) & 7.5.3	Does the sail number comply with rule RRS G1.1(c) and Class rule 7.5.3 (full boat/plaque number) ?		Yes/No	
8	7.5.4	Do the sail numbers and national letters comply with rule 7.5.4 (black) ?		Yes/No	
9	ISAF Reg 20.3 (b) (i)	Does the size of the sailmaker's marks comply with ISAF Regulation 20.3 (b) (i) (one mark on each side each fitting within a 150mm X 150mm square)?		Yes/No	150 X 150
10	ISAF Reg 20.3 (b) (i)	Does the position of the sailmaker's marks comply with ISAF Regulation 20.3 (b) (I) (no part of the mark more than 320mm from the **tack point**)?			320

OWNER'S DECLARATION

To be signed by the Owner:
I acknowledge that I am responsible for ensuring that this sail complies with the requirements of the RRS. I have checked the items identified above as my responsibility and I undertake to maintain it in conformity with the RRS.

Name: .....

Address: .....

.....

.....

Signature: ..... Date: .....

INTERNATIONAL MIRROR JIB MEASUREMENT FORM

In order to link this measurement form to the physical Jib, it is necessary for the Jib to carry a unique identification string or serial number. This can be one assigned by the manufacturer, or **the Official Measurer**. It is suggested that **Official Measurers** adopt the following format for identification strings.

CCC/NNN/DD/MM/YYYY-n where;

CCC are the national letters denoting the **Official Measurer**'s ISAF Member National Authority (e.g. AUS, RSA, SWE,…)

NNN are the **Official Measurer**'s initials.

DD/MM/YYYY is the date when the Jib underwent **Fundamental Measurement**.

n is a serial number used where more than one Jib undergoes **Fundamental Measurement** in a day.

Jib Sailmaker ……..

Jib serial number or identification string ……..

On completion of **Fundamental Measurement** the **Official Measurer**, if satisfied that the **sail** complies with the current **Class Rules**, should sign and date the **sail** at the **Tack**.

ITEM	RULE NO	MEASUREMENT	MIN (MM)	ACTUAL (MM)	MAX (MM)
1	7.1.3	Do the seams comply with rule 7.1.3?		Yes/No	
2	7.3.1.2	Does the jib comply with rule 7.3.1.1?		Yes/No	
3	7.3.1.2	Does the jib comply with rule 7.3.1.2?		Yes/No	
4	7.3.1.3	Does the jib comply with rule 7.3.1.3?		Yes/No	
5	7.3.1.4	Does the jib comply with rule 7.3.1.4?		Yes/No	
6	7.3.1.5	Does the jib comply with rule 7.3.1.5?		Yes/No	
7	7.6.5	Does the jib comply with rule 7.6.5?		Yes/No	
8	7.3.2	**Luff length**			2782
		Leech length			2442
		Foot length			1540
		Foot median			2545
		Top width			35
		Primary reinforcement from **corner measurement point**			234
		Secondary reinforcement from **corner measurement point**			702
		Flutter patches			100
		Chafing patches			750
		Size of **window** in any direction			460
		Shortest distance from edge of **window** to edge of sail	125		

MEASURER'S DECLARATION – Jib

To be signed by the **Official Measurer**:

I certify that I have taken the measurements on this form for the Jib identified and that, to the best of my knowledge, they conform to the **Class Rules** of the International Mirror Class at present in force, subject to any comments on this form.

Comments:

Name: ..... Officially recognised by: .....

Signature: ..... Date: .....

It is the responsibility of the <u>owner</u> under the Racing Rules of Sailing (RRS) to ensure the sail complies with the items in the checklist below.

ITEM	RULE NO	MEASUREMENT	MIN (MM)	ACTUAL (MM)	MAX (MM)
	ISAF Reg 20.3 (b) (i)	Does the size of the sailmaker's marks comply with ISAF Regulation 20.3 (b) (i) (one mark on each side each fitting within a 150mm X 150mm square)?		Yes/No	150 X 150
	ISAF Reg 20.3 (b) (i)	Does the position of the sailmaker's marks comply with ISAF Regulation 20.3 (b) (i) (no part of the mark more than 300mm from the **tack point**)?			300

OWNER'S DECLARATION

To be signed by the Owner:
I acknowledge that I am responsible for ensuring that this sail complies with the requirements of the RRS. I have checked the items identified above as my responsibility and I undertake to maintain it in conformity with the RRS.

Name: .....

Address: .....

.....

.....

Signature: ..... Date: .....

INTERNATIONAL MIRROR SPINNAKER MEASUREMENT FORM

In order to link this measurement form to the physical Spinnaker, it is necessary for the Spinnaker to carry a unique identification string or serial number. This can be one assigned by the manufacturer, or the **Official Measurer**. It is suggested that **Official Measurers** adopt the following format for identification strings.

CCC/NNN/DD/MM/YYYY-n where;

CCC are the national letters denoting the **Official Measurer**'s ISAF Member National Authority (e.g. AUS, RSA, SWE,…)

NNN are the **Official Measurer**'s initials.

DD/MM/YYYY is the date when the Spinnaker underwent **Fundamental Measurement**.

n is a serial number used where more than one Spinnaker undergoes **Fundamental Measurement** in a day.

Spinnaker Sailmaker ……

Spinnaker serial number or identification string ……..

On completion of **Fundamental Measurement** the **Official Measurer**, if satisfied that the **sail** complies with the current **Class Rules**, should sign and date the **sail** at the head.

ITEM	RULE NO	MEASUREMENT	MIN (MM)	ACTUAL (MM)	MAX (MM)
1	7.1.3	Do the seams comply with rule 7.1.3?		Yes/No	
2	7.4.1.1	Does the spinnaker comply with rule 7.4.1.1?		Yes/No	
3	7.4.1.2	Does the spinnaker comply with rule 7.4.1.2?		Yes/No	
4	7.4.1.3	Does the spinnaker comply with rule 7.4.1.3?		Yes/No	
5	7.4.1.4	Does the spinnaker comply with rule 7.4.1.4?		Yes/No	
6	7.6.5	Does the spinnaker comply with rule 7.6.5?		Yes/No	
7	7.4.1.6	Are the leeches within 15mm of straight line?			15
8	7.4.2	**Leech lengths**	2700		2820
		Foot median			3490
		Foot length			2286
		Quarter width			2550
		Half width			2220
		Three quarter width			1190
		Size of **primary reinforcement** from **corner measurement point**			234
		Size of **secondary reinforcement** from **corner measurement point**			702
		Size of **primary or secondary reinforcement** at a recovery point			225

MEASURER'S DECLARATION – Spinnaker

To be signed by the **Official Measurer**:

I certify that I have taken the Measurements on this form for the Spinnaker identified and that, to the best of my knowledge, they conform to the **Class Rules** of the International Mirror Class at present in force, subject to any comments on this form.

Comments:

Name: ..... Officially recognised by: .....

Signature: ..... Date: .....

It is the responsibility of the <u>owner</u> under the Racing Rules of Sailing (RRS) to ensure the sail complies with the items in the checklist below.

ITEM	RULE NO	MEASUREMENT	MIN (MM)	ACTUAL (MM)	MAX (MM)
9	RRS G1.2(a)	Do the sail numbers and any national letters (optional) comply with RRS G1.2 (a) (legible capitals and Arabic numerals)?		Yes/No	
10	RRS G1.2(b)	Does the size of the sail numbers and any national letters comply with RRS G1.2 (b)?	230	Yes/No	
11	RRS G1.2(b)	Does the spacing between the sail numbers, any national letters and the edge of the sail comply with RRS G1.2 (b)?	45	Yes/No	
12	RRS G1.3(a)	Do the position of any national letters and sail numbers comply with RRS G1.3 (a) (where possible within 1692mm of the **head point**)?		Yes/No	1692
13	RRS G1.3(c)	Do the position of any national letters (optional) and sail numbers comply with RRS G1.3 (c) (any national letters above sail number)?		Yes/No	
14	7.5.3	Does the sail number comply with rule 7.5.3?		Yes/No	
15	ISAF Reg 20.3 (b) (i)	Does the size of the sailmaker's marks comply with ISAF Regulation 20.3 (b) (i) (one mark on each side each fitting within a 150mm X 150mm square)?		Yes/No	150 X 150

OWNER'S DECLARATION

To be signed by the Owner:
I acknowledge that I am responsible for ensuring that this sail complies with the requirements of the RRS. I have checked the items identified above as my responsibility and I undertake to maintain it in conformity with the RRS.

Name: .....

Address: .....

.....

.....

Signature: ..... Date: .....