INTERNATIONAL TWELVE METRE CLASS

Yacht's Name	***Onawa***
National letters and Sail Number	***US 6*** **Club** ***New York Yacht Club***
Designer	**Burgess, Rigg and Morgan Ltd.**
Builder	**Aberking & Rasmussen** **Building Year** 1928
Owner	**Earl McMillen III**
Owner's Address	**PO Box 1495 Newport, RI 02840 USA**
Lloyds R class certificate (Number or Date)	

RATING CERTIFICATE

This yacht has been measured by measurer(s) appointed by the International Twelve Metre Association and has been found to rate not more than 12.000 metres.

This certificate is dated:	**11-Jul-23**	
Measurer	**A Williams**	Signature
Valid until	**11-Jul-25**	
Supersedes	**09-Jun-21**	
Is this an **Appendix E** Certificate?	**Y / N**	**yes**
Was **Appendix F** used for Measurement? Hull Scanned	**Y / N**	**no**

Signature _____
ITMA Technical Director

I T M . A 12 World INTERNATIONAL TWELVE METRE ASSOCIATION

Stamp of Authority of the
International Twelve Metre Association

Yacht's name : Onawa	Date	11-Jul-23

RATING CALCULATION

OVERALL LENGTH				**21.270**
Overhang Forward to FGS			3.023	
Overhang Aft to AGS			2.721	
Total Overhang (Subtract)			5.744	
MEASURED LENGTH (LBG)				**15.526**
Girth at Bow			1.760	
Twice vertical Height at Bow (Subtract)			1.200	
Girth Difference at FGS			0.560	
Add 1.5 x Girth Difference at FGS (min 0.540 m)			**0.840**	
Girth at Stern			3.228	
Twice vertical Height at Stern (Subtract)			1.668	
Girth Difference at AGS			1.560	
Add 1/3 Girth Difference at AGS (min 0.400 m)			**0.520**	
Add any penalty (Beam or Displacement)				
Sum of Length and Girth Corrections				**16.886**
Age/Design Correction Factor (ADCF)(see page 3)		0.9550		
LENGTH (L)				**16.126**
Skin IM to d1 Port			2.145	
Chain IM to d1 Port			2.141	
d Port			0.004	
Skin IM to d1 Starboard			2.164	
Chain IM to d1 Starboard			2.159	
d Starboard			0.005	
Add d			0.009	
Add GIRTH 2 d				**0.018**
	Datum Sta.	Actual Sta.	Rating FB	
Mean Freeboard Bow		1.331	1.331	
Mean Freeboard Midship		0.995	0.995	
Mean Freeboard Stern		1.014	1.014	
Sum of Freeboards			3.340	
Subtract FREEBOARD, F			*See note*	**1.113**
Add SAIL AREAS (Square root)				**13.410**
TOTAL OF MEASUREMENTS				**28.441**
PENALTY (Draft or Tumblehome)			0.000	0
RATING				**12.000**

Date and Place of Measurement	**11-Jul-23**		
Measurer's Name(s)	**A Williams**	**Signature**	Ander

Yacht's name : Onawa		Date	11-Jul-23
Range Measurement (Yes or No)	Yes	Date:	April 2017

PENALTIES

	Overhang Forward to **MWL**		3.641	
	Overhang Aft to **MWL**		3.329	
	Subtract from overall length		6.970	
1	Difference of immersion from salt to fresh water	Meas. Density		1.025
	WATERLINE LENGTH (LWL)			**14.300**
	Minimum Displacement for Zero Penalty [m3]		27.271	
	Minimum Weight for Zero Penalty [ton] (Water of sg 1.025)		27.953	
	WEIGHT [tonne] Actual weight			**28.250**
	Equivalent LWL (for Displ. < min.)		14.353	
	Difference		0.053	
	DISPLACEMENT PENALTY (add to L)			**0.000**
	Displacement Determination Method			
	DRAFT (actual)		2.752	
	Max. Draft for Zero Penalty		2.788	
	Difference (if positive)			
	DRAFT PENALTY (add to Rating)		Appendix E	**0.000**
	BEAM (Min)		3.680	
	Max Beam at 1/3 of Midship Freeboard		0.000	
	Difference (if positive)		0.000	
	BEAM PENALTY (add to L)			**0.000**
	Tumblehome Max. (2 x 2% of Extr. Beam)		0.000	
	Extreme Beam		3.690	
	Beam at deck		3.690	
	Difference (if positive)		0.000	
	TUMBLEHOME PENALTY (add to Rating)			**0.000**

Date and Place of Measurement	**11-Jul-23**		
Measurer's Name(s)	**A Williams**	**Signature**	Ander

Design/Age Correction Factor Calculation

Age Date	1928/1939	
ADCF (Table E-2)	0.9550	
Hull Alteration Scope and Date		
Appendage Change Scope and Date		
Change/Alteration Correction ADCF		
Accommodation Deficiency Ballast		

Yacht's name : Onawa	Date	11-Jul-23

SAIL PLAN

Max Height of Sail Plan =	25.000	J=	7.030	I =	18.740
Boom above Mast Datum =	1.230	P=	23.770	E=	10.650
Rated Mainsail Area	126.575	Spi boom=	7.030	√S=	**13.410**
J used for Rating			7.030		
Rated Foretriangle Area	55.990		Propeller allowance		0.985
TOTAL RATED SAIL AREA (**S**)	182.566		Corrected sail area		179.827

SAIL LIMITS

Mainsail max girth:	1/2 height (68% of E)	7.242	3/4 height (41% of E)	4.367
Genoa:	max. foot length (J + 4.8m)	11.830		
Spinnaker:	1/2 foot max breadth (125% J)	8.788	max. luff length=	18.512

Spar Measurement

MAST (material)	Aluminium	Mast Weight	510	CG pos.	10.445
	Deck	Half-Height	Jib-Halyard	Head	
Mast dimensions [mm]	354 x 260	350 x 255	284 x 240	194 x 145	
Sections area [cm^2]	723	701	535	221	
Mast CG Correction (if applicable) Wt & CG	@		Mk^2		

Engine/Propeller Installation

Engine and propeller weight	Yes	Propeller diameter =	0.525
Minimum boat speed with engine	Yes	Propeller position =	Not Skewed
Propeller Type (folding feathering fixed pitch etc.), no of blades		Feathering	3.000
Propeller Skew			

Flotation

Internal Ballast	Amount	Location aft of bow
None		

Measurer's Notes

1	Full fitout below
2	Re configured draft 2009
3	Freeboard as per 1933-1970 rule (Sum/3) max 1.21
4	LOA and overhangs changed as a result of scan

Date and Place of Measurement	**11-Jul-23**		
Measurer's Name(s)	**A Williams**	**Signature**	Ander