

# 12



## INTERNATIONAL TWELVE METRE CLASS

Yacht's Name Courageous

National letters and Sail Number USA 26 Club New York Yacht Club

Designer Sparkman & Stephens

Builder Minneford Yacht Yard Inc. Building Year 1974

Owner The Courageous Foundation Inc

Owner's Address 559 Thames Street D-1s  
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: June 25, 2019

Measurer A Williams Signature Ander

Valid until June 25, 2021

Supersedes July 18, 2017


Is this an **Appendix E** Certificate? Y / N  Yes

Was **Appendix F** used for Measurement? Y / N  Yes

Hull Scanned  Yes

Signature [Signature]  
ITMA Technical Director

Stamp of Authority of the International Twelve Metre Association



**RATING CALCULATION****OVERALL LENGTH**

Overhang Forward to FGS  
 Overhang Aft to AGS  
 Total Overhang (Subtract)

2.117
2.235
4.352

**19.980****MEASURED LENGTH (L<sub>BG</sub>)**

Girth at Bow  
 Twice vertical Height at Bow (Subtract)  
 Girth Difference at FGS  
 Add 1.5 x Girth Difference at FGS (min 0.540 m)  
 Girth at Stern  
 Twice vertical Height at Stern (Subtract)  
 Girth Difference at AGS  
 Add 1/3 Girth Difference at AGS (min 0.400 m)  
 Add any penalty (Beam or Displacement)  
 Sum of Length and Girth Corrections

1.620
1.200
0.420
<b>0.630</b>
3.578
2.030
1.548
<b>0.516</b>

**15.628**

Age/Design Correction Factor (ADCF)(see page 3)

0.9870

**16.774****LENGTH (L)**

Skin IM to d1 Port  
 Chain IM to d1 Port  
 d Port  
 Skin IM to d1 Starboard  
 Chain IM to d1 Starboard  
 d Starboard  
 Add d

3.423
3.400
0.023
3.420
3.397
0.023
0.046

**16.556****Add GIRTH 2 d****0.092**

Mean Freeboard Bow  
 Mean Freeboard Midship  
 Mean Freeboard Stern  
 Sum of Freeboards

Datum Sta.	Actual Sta.	Rating FB
	1.249	1.249
	1.217	1.217
	1.195	1.187
		3.653

*Limit used***1.210****Subtract FREEBOARD, F****Add SAIL AREAS (Square root)****12.999****TOTAL OF MEASUREMENTS****28.437**

PENALTY (Draft or Tumblehome)

0.000

0

**RATING****11.999**

Date and Place of Measurement

25-Jun-19

Measurer's Name(s)

A Williams

Signature

*Ander*

<b>Yacht's name : <i>Courageous</i></b>		<b>Date</b>	<b>25-Jun-19</b>
Range Measurement (Yes or No)	Yes	Date:	6-Jun-19

## PENALTIES

Overhang Forward to <b>MWL</b>	2.735	
Overhang Aft to <b>MWL</b>	3.420	
Subtract from overall length	6.155	
Difference of immersion from salt to fresh water	Meas. Density	0.000
<b>WATERLINE LENGTH (LWL)</b>		<b>13.825</b>
Minimum Displacement for Zero Penalty [m3]	24.769	
Minimum Weight for Zero Penalty [ton] (Water of sg 1.025)	25.389	
<b>WEIGHT [tonne]</b> Actual weight		<b>25.500</b>
Equivalent LWL (for Displ. < min.)	13.846	
Difference	0.000	
<b>DISPLACEMENT PENALTY (add to L)</b>		<b>0.000</b>
Displacement Determination Method		
<b>DRAFT (actual)</b>	2.704	
Max. Draft for Zero Penalty	2.712	
Difference (if positive)		
<b>DRAFT PENALTY (add to Rating)</b>	Appendix E	<b>0.000</b>
<b>BEAM (Min)</b>	3.600	
Max Beam at 1/3 of Midship Freeboard	0.000	
Difference (if positive)	0.000	
<b>BEAM PENALTY (add to L)</b>		<b>0.000</b>
Tumblehome Max. (2 x 2% of Extr. Beam)	0.000	
Extreme Beam	3.725	
Beam at deck	3.725	
Difference (if positive)	0.000	
<b>TUMBLEHOME PENALTY (add to Rating)</b>		<b>0.000</b>

Date and Place of Measurement	25-Jun-19	
Measurer's Name(s)	A Williams	Signature <i>Ander</i>

Design/Age Correction Factor Calculation		
Age Date	1974	
ADCF ( Table E-2)	0.9870	
Hull Alteration Scope and Date	1974	
Appendage Change Scope and Date	1974	
Change/Alteration Correction ADCF		
Accommodation Deficiency Ballast		

Yacht's name : **Courageous**

Date

**25-Jun-19****SAIL PLAN**

Max Height of Sail Plan =	<input type="text" value="25.000"/>	J=	<input type="text" value="7.395"/>	I =	<input type="text" value="18.750"/>
Boom above Mast Datum =	<input type="text" value="1.499"/>	P=	<input type="text" value="23.501"/>	E=	<input type="text" value="9.365"/>
Rated Mainsail Area	<input type="text" value="110.043"/>	Spi boom=	<input type="text" value="7.395"/>	√S=	<input type="text" value="12.999"/>
J used for Rating			<input type="text" value="7.395"/>		
Rated Foretriangle Area	<input type="text" value="58.929"/>	Propeller allowance			<input type="text" value="1.000"/>
TOTAL RATED SAIL AREA (S)	<input type="text" value="168.972"/>	Corrected sail area			<input type="text" value="168.972"/>

**SAIL LIMITS**

Mainsail max girth:	1/2 height (68% of E)	<input type="text" value="6.368"/>	3/4 height (41% of E)	<input type="text" value="3.840"/>
Genoa:	max. foot length (J + 4.8m)	<input type="text" value="12.195"/>		
Spinnaker:	1/2 foot max breadth (125% J)	<input type="text" value="9.244"/>	max. luff length=	<input type="text" value="18.624"/>

**Spar Measurement**

MAST (material)	<input type="text" value="Aluminium"/>	Mast Weight	<input type="text" value="546"/>	CG pos.	<input type="text" value="9.503"/>
	Deck	Half-Height	Jib-Halyard	Head	
Mast dimensions [mm]	<input type="text" value="352 x 248"/>	<input type="text" value="351 x 247"/>	<input type="text" value="282 x 205"/>	<input type="text" value="169 x 126"/>	
Sections area [cm <sup>2</sup> ]	<input type="text" value="680"/>	<input type="text" value="681"/>	<input type="text" value="454"/>	<input type="text" value="166"/>	
Mast CG Correction (if applicable) Wt & CG	<input type="text" value=""/>	@	<input type="text" value=""/>	Mk <sup>c</sup>	<input type="text" value=""/>

**Engine/Propeller Installation**

Engine and propeller weight	<input type="text" value="NA"/>	Propeller diameter =	<input type="text" value=""/>
Minimum boat speed with engine	<input type="text" value=""/>	Propeller position =	<input type="text" value=""/>
Propeller Type (folding feathering fixed pitch etc.), no of blades	<input type="text" value=""/>		<input type="text" value=""/>
Propeller Skew	<input type="text" value=""/>		<input type="text" value=""/>

**Flotation**

Internal Ballast	Amount	Location aft of bow
Lead blocks	127	9.52

**Measurer's Notes**

- 1 Freeboards 1971 rule
- 2 Keel pockets filled
- 3 New rudder 2008
- 4 Certificate only valid for World Sailing and ITMA events when both (2) aft hatches are closed and secured
- 5 While racing
- 6 New trim tab 2019
- 7

Date and Place of Measurement

**25-Jun-19**

Measurer's Name(s)

**A Williams**

Signature

