

Sailors Physique Survey Aarhus 2018

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1 Introduction

The following survey was conducted during the Hempel World Championships in Aarhus 2018 to evaluate the Olympic sailor's physique. The participating sailors represent the top athletes of the sport. Bodyweight and height of these sailors are different, but crucial to be competitive in each of the entered classes. The ten competing classes in Aarhus were 470 Men and Women, 49er, 49erFX, Finn, Laser, Laser Radial, RS:X Men and Women as well as the Nacra 17.

During the equipment inspection of each class the majority of competitors have been asked to voluntarily take part at the survey. They had to give their name, boat class, sail number, nationality, weight, height, position on board and a declaration of consent for processing their data. Body weight scales and height gauges have been provided and used by the sailors to confirm their body dimensions.

In total 737 of 1171 competitors took part in the survey, leading to a participation level of 62.9%. The survey participation level per class varied from 45% (49er and 49er FX) to 93% (RS:X M). The bar diagram in Figure 1 shows the total number of entered boats per class [N] and the participation levels among the sailors of each class. Each bar is divided in participating Helm, Crew and nonparticipating sailors. The gathered data was analysed and is presented in the following report.

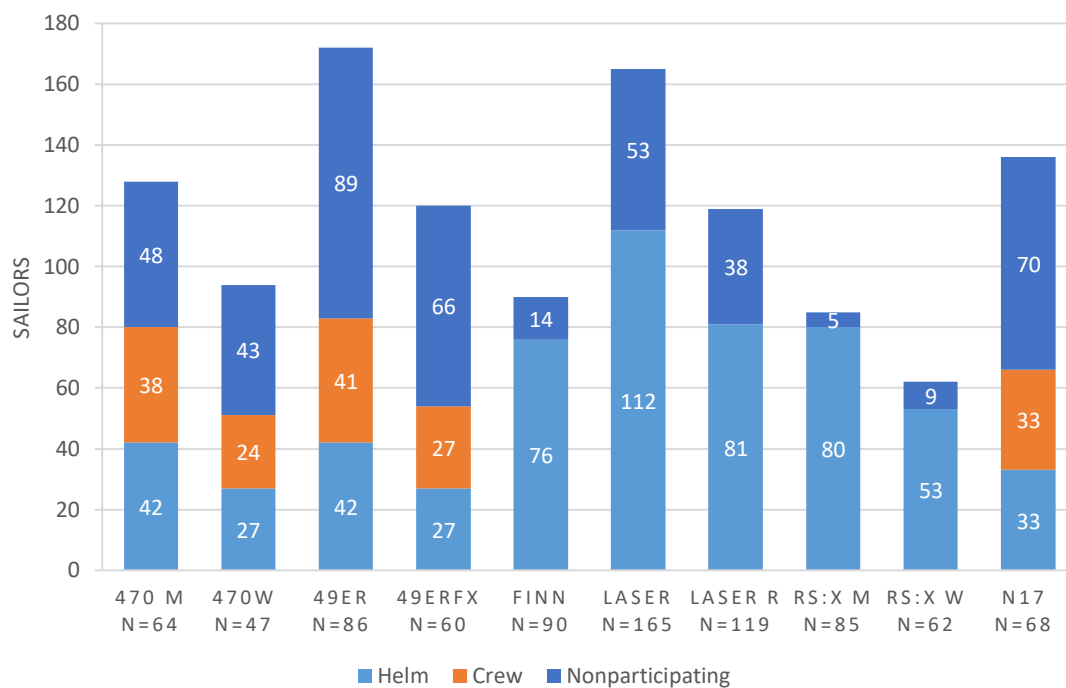


Figure 1: Survey Participation Level

2 Results

The following tables are showing average, minimum and maximum weight and height of each group of sailors. For double handed classes it shows in addition the weight distribution between Helm (blue) and Crew (orange).

The figures in the following illustrate weight and height combinations of all fleets. For double handed classes the crew and helm combinations for the first ten survey participating teams are shown. For single handed classes the averages of the first ten sailors is marked within the survey participating fleet (orange cross).

2.1 470 M

	470 M Helm			
	Average	Minimum	Maximum	Standard Deviation
Weight [kg]	63.9	56.0	75.5	3.9
Height [cm]	172.3	161.0	183.0	4.6
Distribution [%]	47%	43%	51%	2%

	470 M Crew			
	Average	Minimum	Maximum	Standard Deviation
Weight [kg]	72.3	64.0	77.0	3.0
Height [cm]	180.3	170.0	194.0	6.0
Distribution [%]	53%	49%	57%	2%

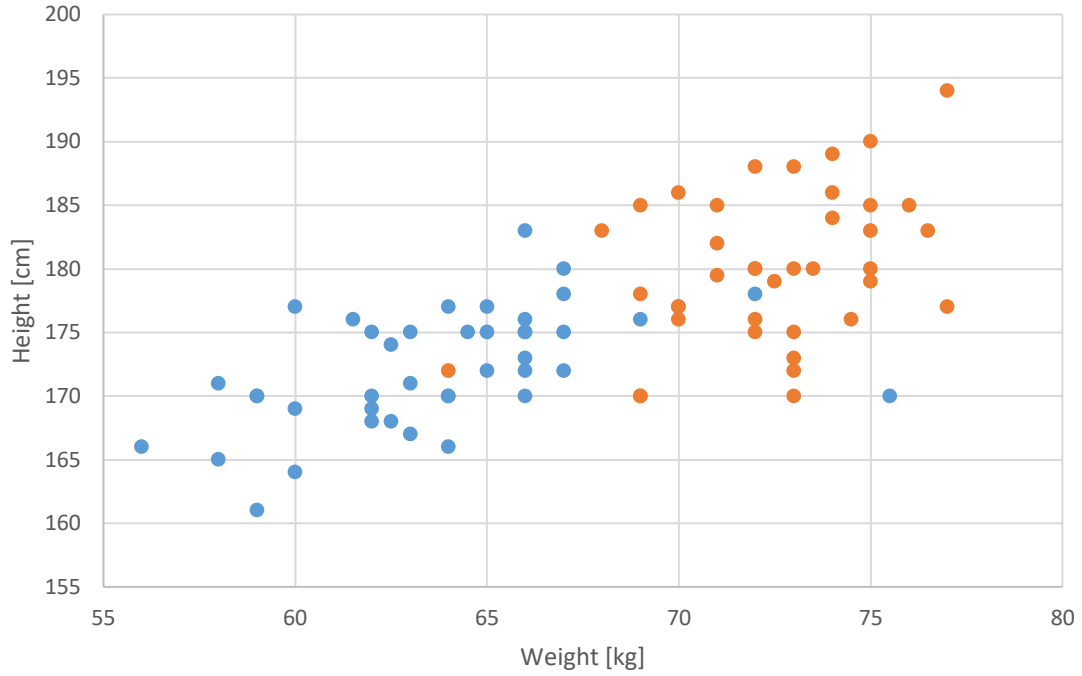


Figure 2: 470M Fleet Physique

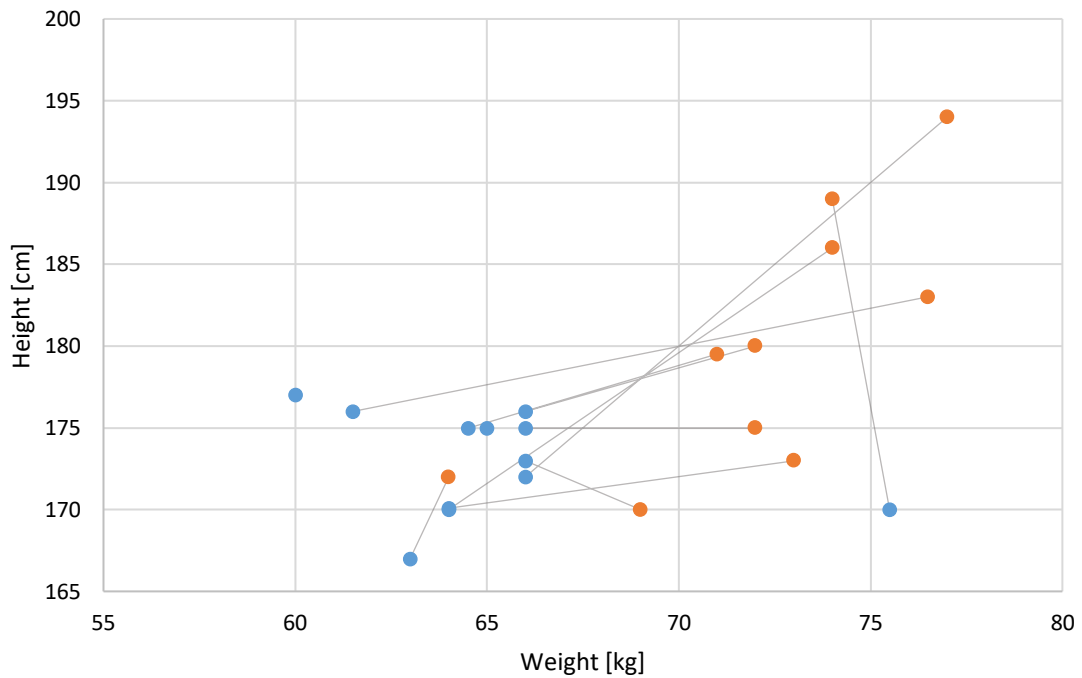


Figure 3: 470M Top10 Pairings

2.2 470 W

	470 W Helm			
	Average	Minimum	Maximum	Standard Deviation
Weight [kg]	56.5	50.0	64.0	3.3
Height [cm]	163.0	150.0	174.0	5.4
Distribution [%]	45%	42%	50%	2%

	470 W Crew			
	Average	Minimum	Maximum	Standard Deviation
Weight [kg]	69.0	63.0	74.0	2.8
Height [cm]	173.9	163.0	184.0	4.3
Distribution [%]	55%	50%	58%	2%

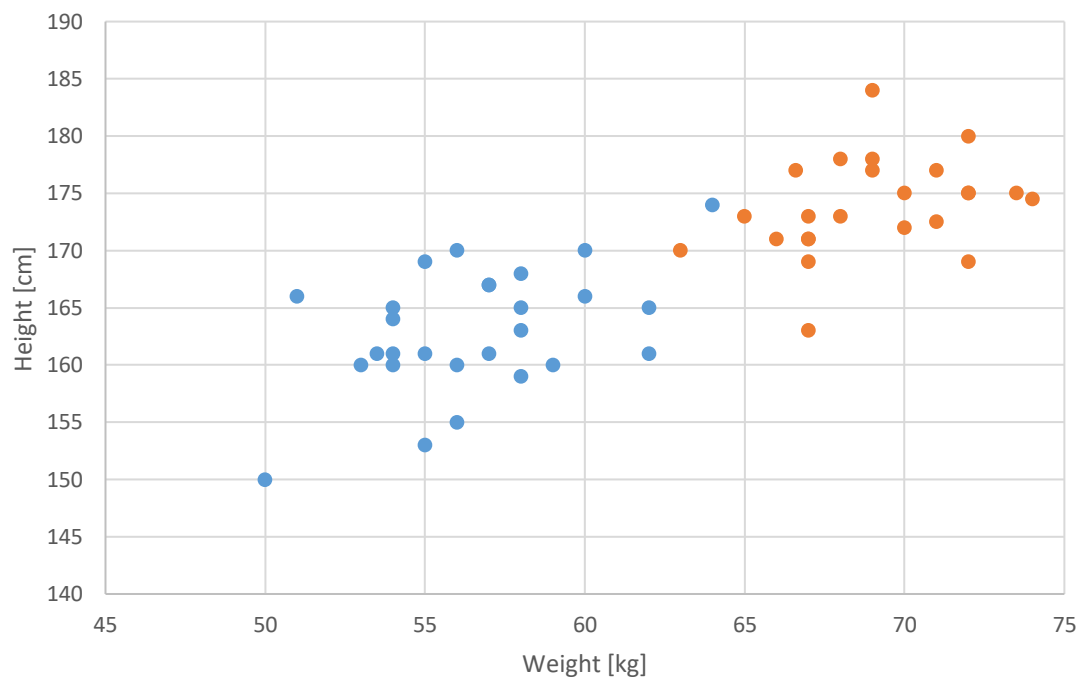


Figure 4: 470W Fleet Physique

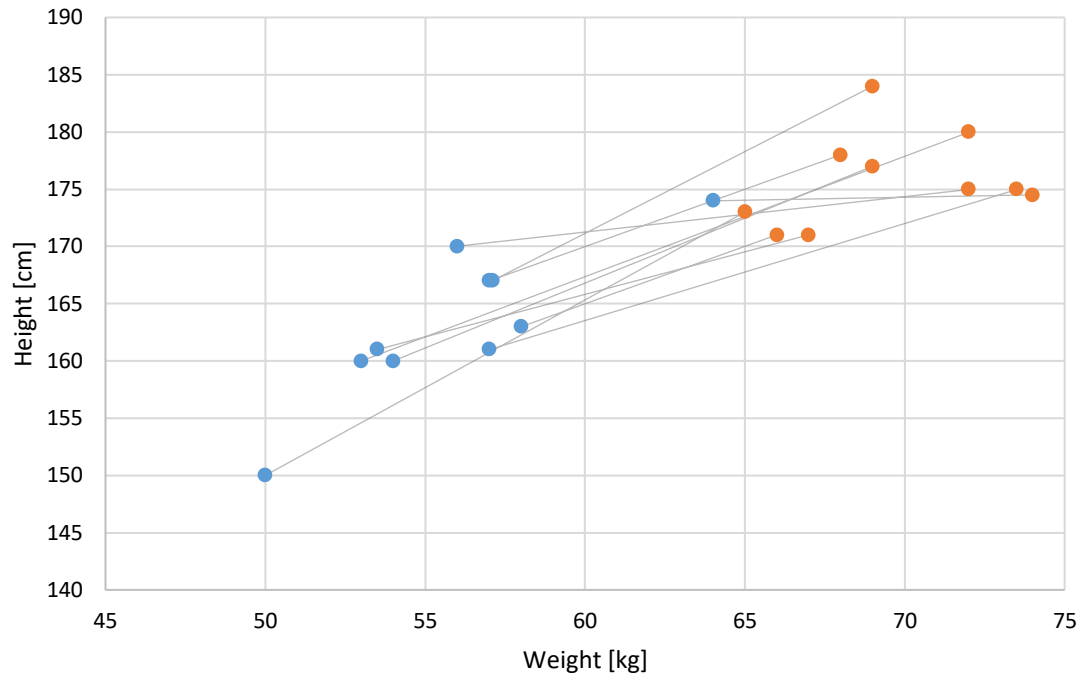


Figure 5: 470W Top10 Pairings

2.3 49er

	49er Helm			
	Average	Minimum	Maximum	Standard Deviation
Weight [kg]	77.7	71.0	84.0	3.2
Height [cm]	179.8	168.0	197.0	5.5
Distribution [%]	49%	45%	53%	2%

	49er Crew			
	Average	Minimum	Maximum	Standard Deviation
Weight [kg]	80.5	70.0	91.0	4.3
Height [cm]	182.0	166.0	194.0	5.7
Distribution [%]	51%	47%	55%	2%

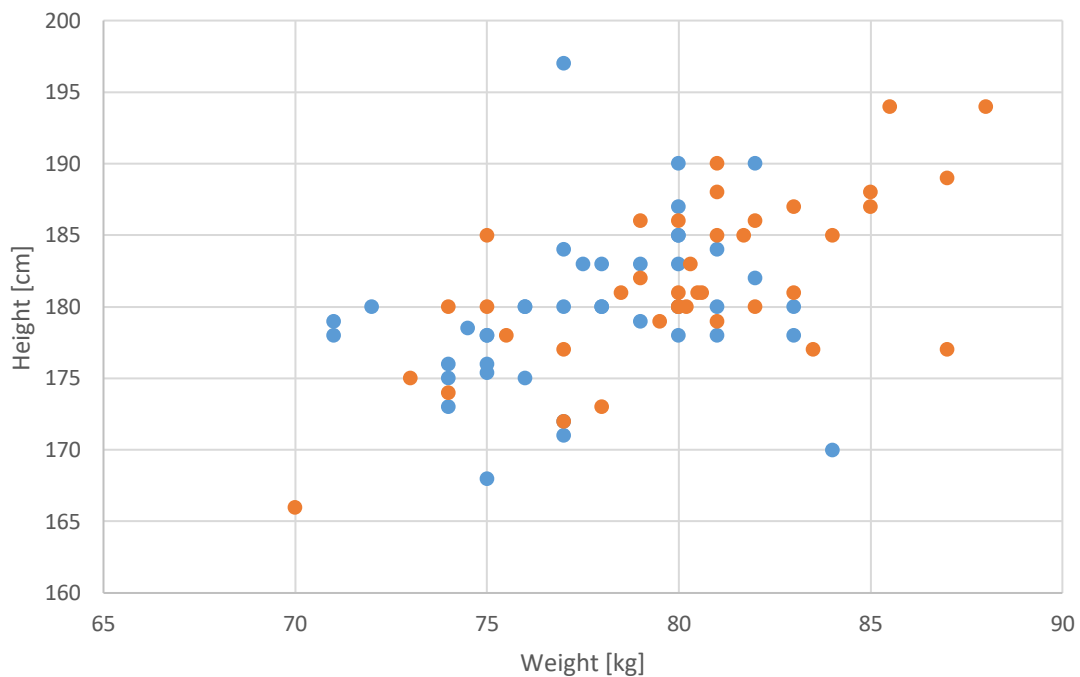


Figure 6: 49er Fleet Physique

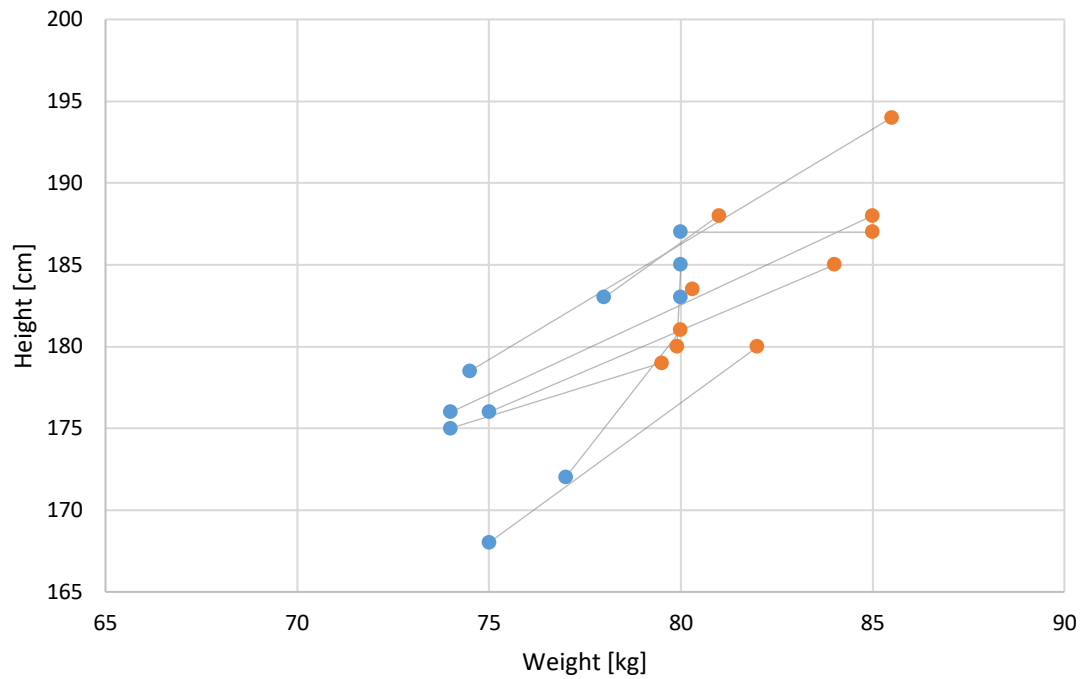


Figure 7: 49er Top10 Pairings

2.4 49er FX

	49er FX Helm			
	Average	Minimum	Maximum	Standard Deviation
Weight [kg]	60.6	53.4	72.0	4.1
Height [cm]	165.9	154.0	178.0	5.3
Distribution [%]	47%	43%	52%	2%

	49er FX Crew			
	Average	Minimum	Maximum	Standard Deviation
Weight [kg]	68.3	63.0	75.0	3.1
Height [cm]	172.7	164.0	183.0	4.5
Distribution [%]	53%	48%	57%	2%

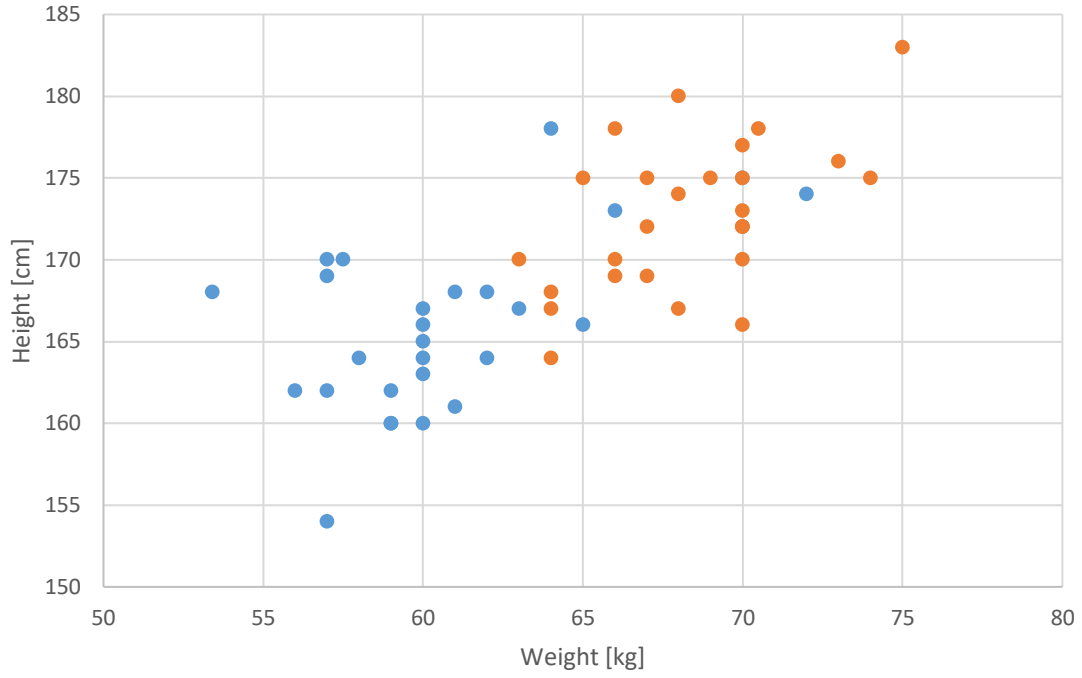


Figure 8: 49erFX Fleet Physique

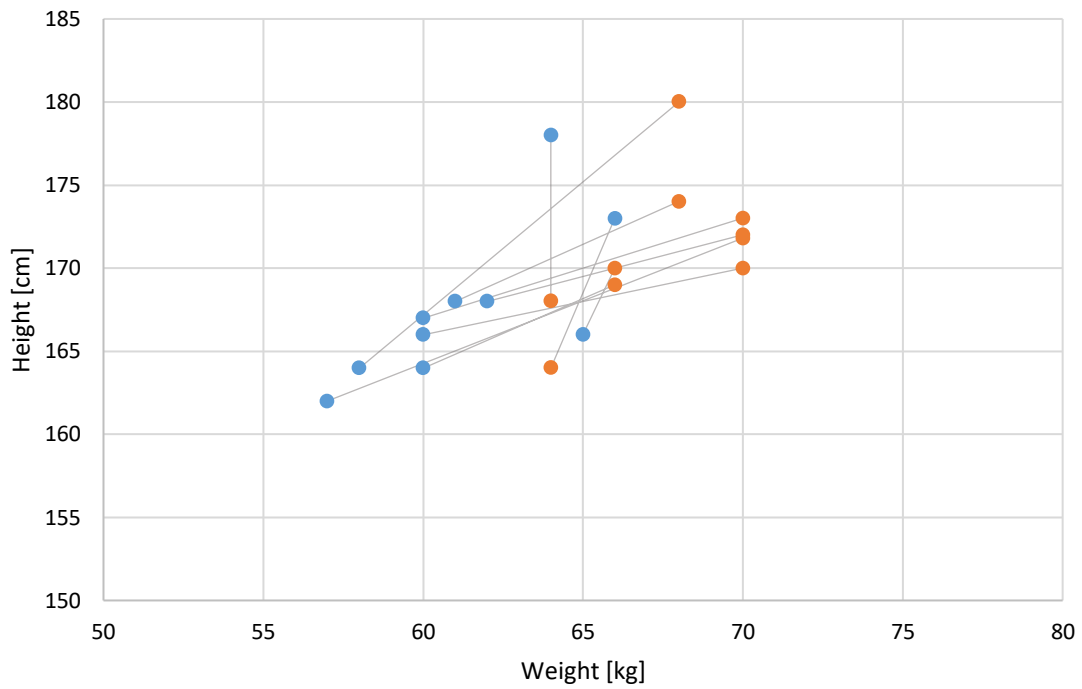


Figure 9: 49erFX Top10 Pairings

2.5 Finn

	Finn Helm			
	Average	Minimum	Maximum	Standard Deviation
Weight [kg]	96.7	87.0	120.0	5.2
Height [cm]	189.1	175.0	200.0	5.3

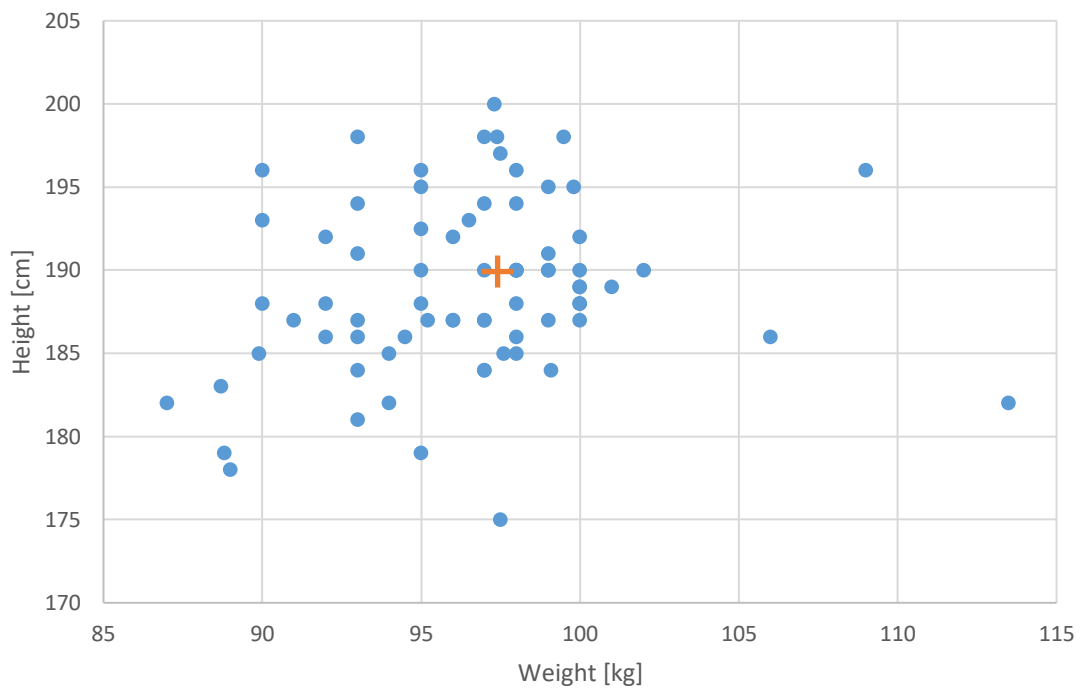


Figure 10: Finn Fleet Physique and Top10 Average

2.6 Laser

	Laser Helm			
	Average	Minimum	Maximum	Standard Deviation
Weight [kg]	81.1	68.0	87.0	3.1
Height [cm]	182.3	168.0	195.0	5.4

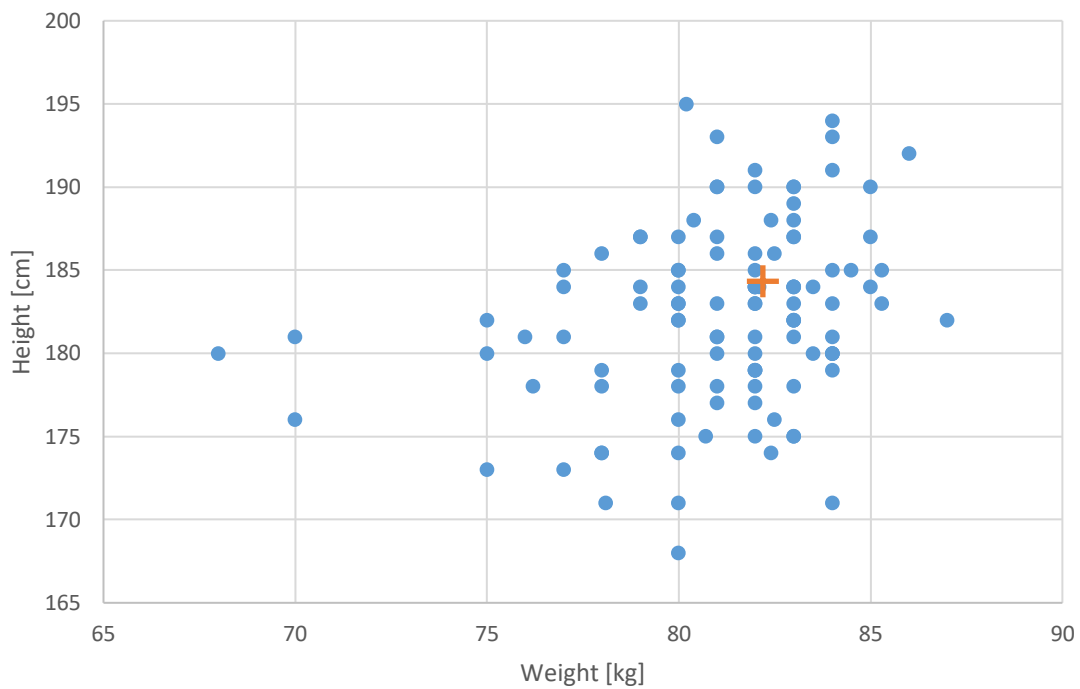


Figure 11: Laser Fleet Physique and Top10 Average

2.7 Laser Radial

	Laser R Helm			
	Average	Minimum	Maximum	Standard Deviation
Weight [kg]	66.7	53.0	83.0	4.2
Height [cm]	170.2	155.0	183.0	5.6

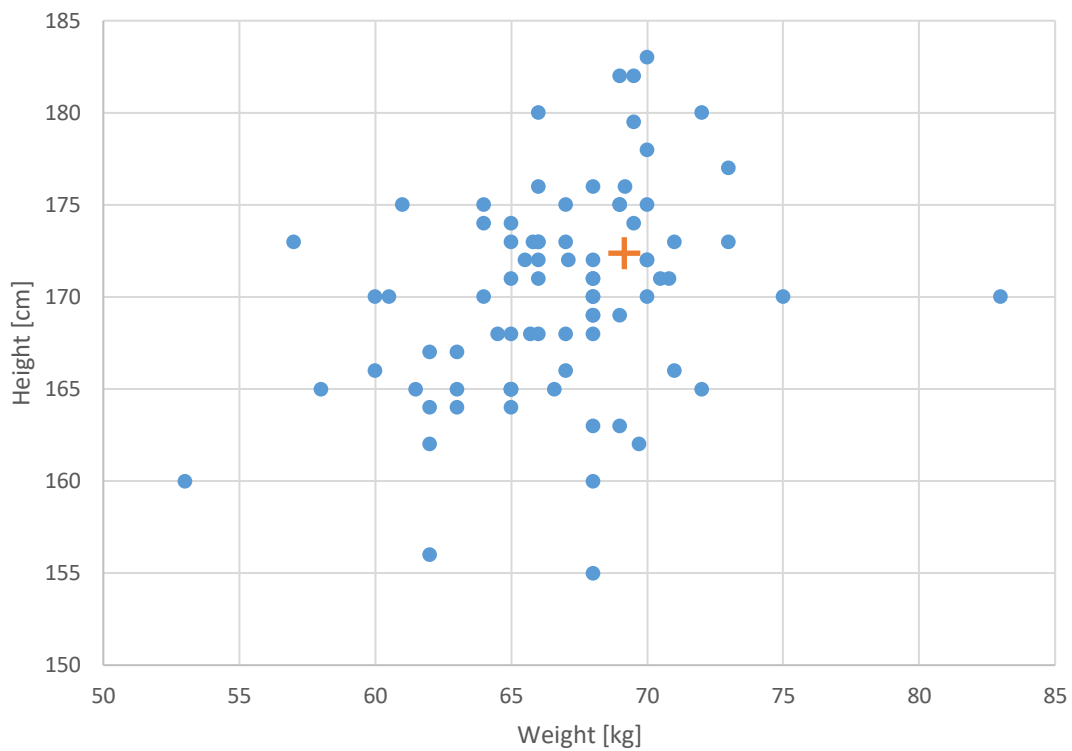


Figure 12: Laser Radial Fleet Physique and Top10 Average

2.8 RS:X M

	RS:X M			
	Average	Minimum	Maximum	Standard Deviation
Weight [kg]	72.5	63.0	84.0	4.4
Height [cm]	182.0	165.0	197.0	6.1

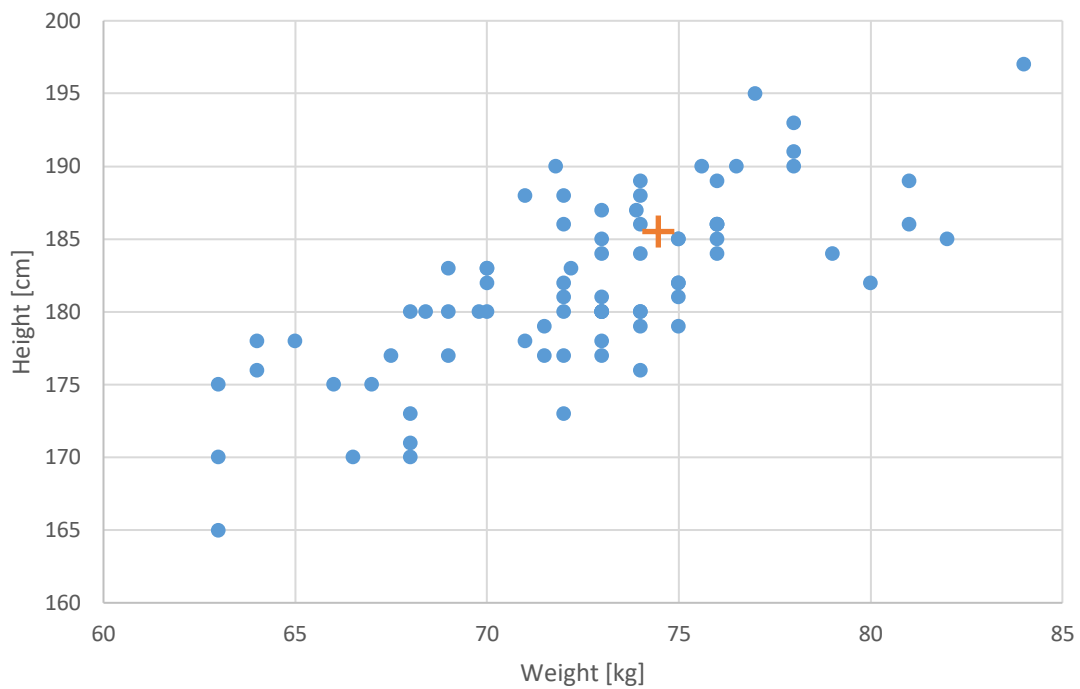


Figure 13: RS:X M Fleet Physique and Top10 Average

2.9 RS:X W

	RS:X W			
	Average	Minimum	Maximum	Standard Deviation
Weight [kg]	59.1	53.0	68.0	3.2
Height [cm]	167.9	157.0	177.0	4.4

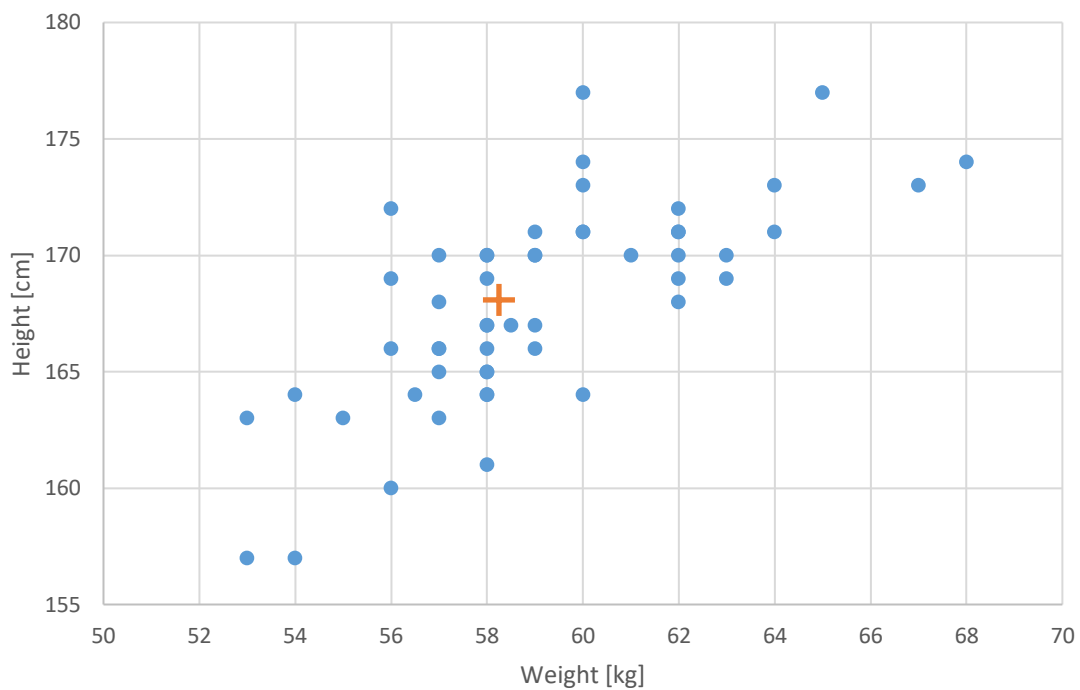


Figure 14: RS:X W Fleet Physique and Top10 Average

2.10 Nacra 17

	N17 Helm			
	Average	Minimum	Maximum	Standard Deviation
Weight [kg]	69.3	53.0	82.0	8.5
Height [cm]	174.4	158.0	190.0	8.4
Distribution [%]	50%	39%	57%	6%

	N17 Crew			
	Average	Minimum	Maximum	Standard Deviation
Weight [kg]	70.1	55.0	90.0	9.3
Height [cm]	175.3	155.0	197.0	9.6
Distribution [%]	50%	43%	61%	6%

Since the Nacra 17 is a mixed class it is necessary to evaluate the average physique of both genders for both positions. The following table shows the average physique for male and female helms as well as male and female crew, where N is the sample size.

	N17 M Helm [N=20]			
	Average	Minimum	Maximum	Standard Deviation
Weight [kg]	74.8	60.5	82.0	4.4
Height [cm]	178.5	164.0	190.0	6.3

	N17 W Helm [N=9]			
	Average	Minimum	Maximum	Standard Deviation
Weight [kg]	59.4	53.0	65.5	4.7
Height [cm]	166.3	158.0	176.0	5.2

	N17 M Crew [N=8]			
	Average	Minimum	Maximum	Standard Deviation
Weight [kg]	81.5	74.0	90.0	5.9
Height [cm]	187.9	178.0	197.0	6.2

	N17 W Crew [N=17]			
	Average	Minimum	Maximum	Standard Deviation
Weight [kg]	65.0	58.0	84.7	6.4
Height [cm]	168.9	155.0	183.0	6.2

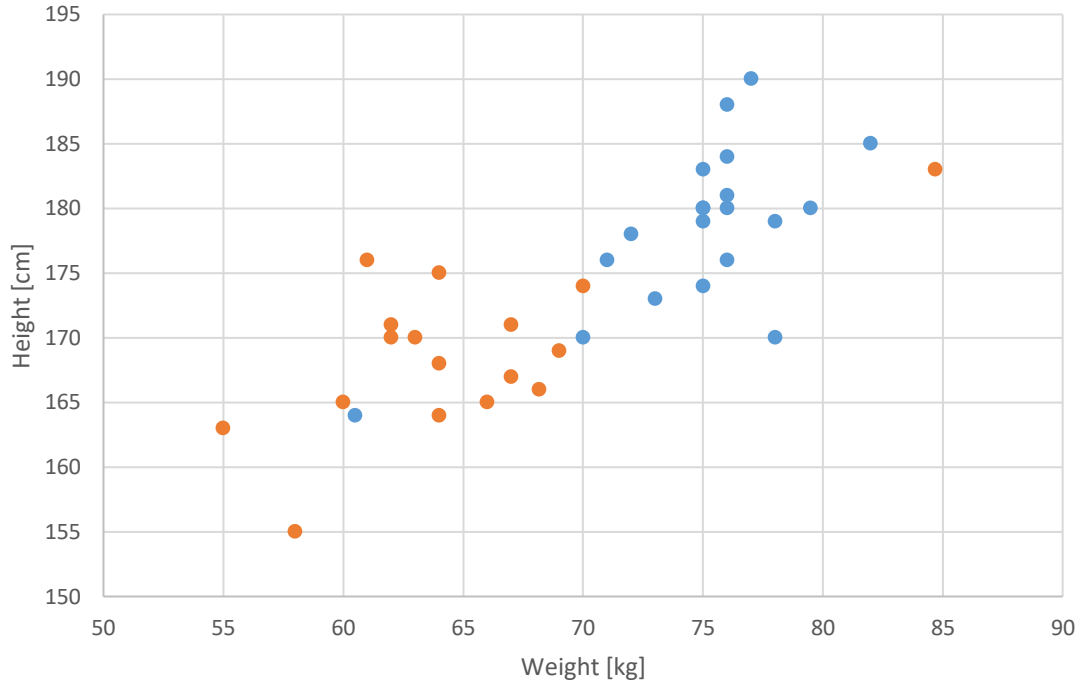


Figure 15: Nacra 17 Fleet Physique

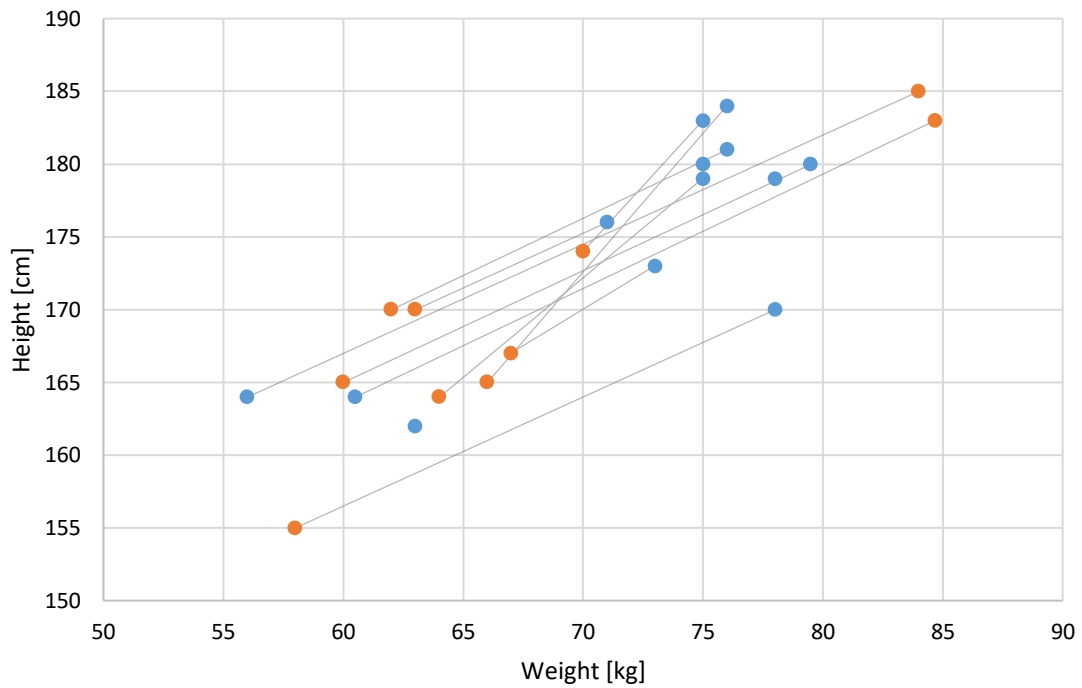


Figure 16: Nacra 17 Top10 Pairings

3 Fleet Comparison

The following Figure 17 and Figure 18 show the sailors physique of the men and women fleets of all classes in comparison.

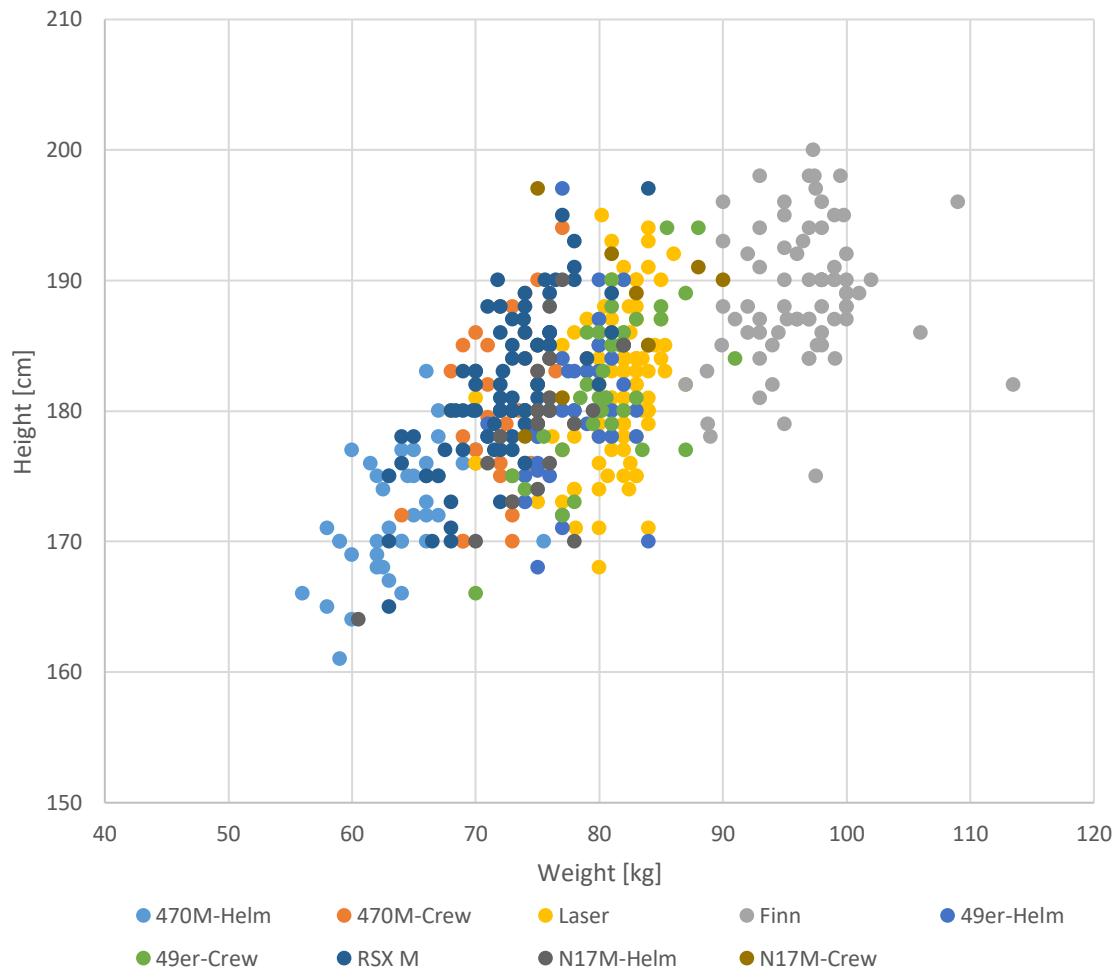


Figure 17: Aarhus 2018 Men's Fleet Overview

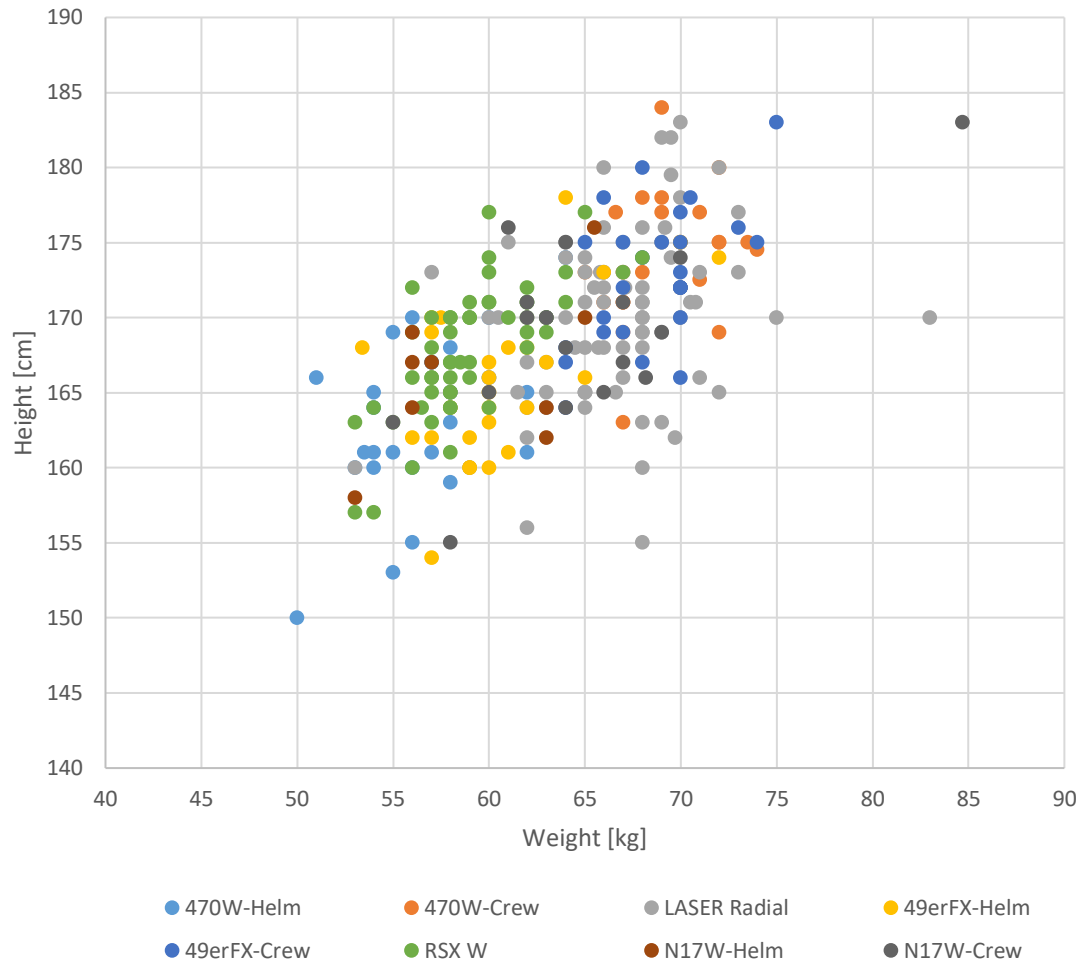


Figure 18: Aarhus 2018 Women's Fleet Overview

4 Contact

For any further information please contact:

WORLD SAILING (UK) Ltd, 20 Eastbourne Terrace, Paddington, London W2 6LG, UK

World Sailing Technical Department • Email: technical@sailing.org