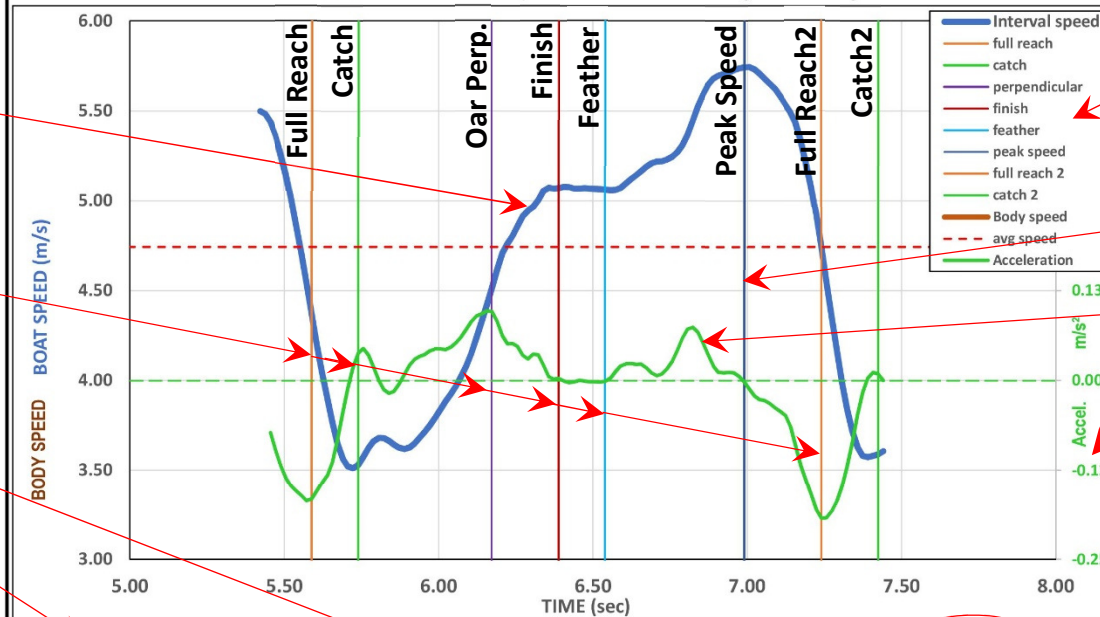


PURCERVERANCE - Boat Speed and Technique Analysis



Crew Name	Jacob	Video File	20180509092506.m2ts	GMS Time	6:38.00
Boat Class	LM1x	Video Location	St. Cath.	Finish Time	na
Race Category	LM	Video Description	Practice #2	Percent GMS	#VALUE!
Boat Length	7.92	Video Time & Date	9:25 AM 2018-05-09	Average Split	#VALUE!

GRAPH ANALYSIS		Weather Cond. clear/sunny, w 4km/h 9oclock		GMS		Boat Movement	
full reach	5.59	4.37	Temp 18.0	Split Speed	1:45.43	1:39.50	7.99
catch	5.74	3.53	Water calm	Average Speed	4.74	94.4%	Drive Distance 2.74 34.3%
perpndclr	6.17	4.51	acceleration	time	speed diff	calc	Dist. Before Pin 1.67 61.0%
finish	6.39	5.07	Catch to Finish	0.65	1.54	2.37	Dist. After Pin 1.07 39.0%
feather	6.54	5.06	Catch to Perp	0.43	0.99	2.27	Recovery Dist. 5.25 65.7%
full rch 2	7.24	4.74	Perp to Finish	0.22	0.56	2.56	speed time
catch 2	7.42	3.59	Finish to Peak	0.60	0.67	1.12	Minimum Speed 3.51 5.72
			Peak to Catch2	0.43	2.15	-4.97	Maximum Speed 5.74 8.99
							Speed Variation 2.23

TECHNIQUE ANALYSIS BASED ON SPEED CURVE				Ref Dim.	M1x	WC '17 & '18 M1x
Drive	Min. Boat Speed (about catch)	3.51	minimum boat speed			
	Catch Effic. (full reach to catch)	0.15	time between full reach and catch (when the blade is fully buried)			0.14
	Drive Accel. (catch to finish)	2.37	acceleration between catch and finish			2.20
	Drive Accl. Eff. (fin to peak)	85.8%	percentage of area under the curve compared to straight line acceleration			79.3%
	Drive Speed Increases (min. to fin.)	1.56	difference in speed from minimum to finish			
	Perp to Finish Accel (perp to fin.)	2.56	acceleration between oar at perpendicular and finish			2.72
Recovery	Drive Boat Moves (distance)	2.74	distance the boat moves on the drive (catch to finish)			
	Drive Boat Moves (% of total)	34.3%	distance the boat move on the drive as a percentage of total movement one stroke			
	Release Effic. (finish to feather)	0.15	time between oar at finish (furthest sternward) to when it is on the feather			0.13
	Recovery Accel. (finish to peak)	1.12	acceleration between finish at peak speed			1.26
	Recovery Accl. Eff. (fin. to peak)	65.4%	percentage of area under the curve compared to straight line acceleration			
	Recovery Peak Speed (% of Rec)	58.1%	percentage of the recovery that the boat achieves peak speed			63.3%
Recovery	Max. Boat Speed (at peak)	5.74	maximum boat speed (m/s)			
	Total Speed Varies (min to max)	2.23	difference between minimum speed and maximum speed			
	Deceleration (peak to catch2)	-4.97	negative acceleration (straight line) from peak speed and catch2			-6.10
	Decel. Effic. (peak to catch2)	113.5%	percentage of area under curve compared to straight line deceleration from peak to catch2			
	Recovery Boat Moves (distance)	5.25	distance the boat moves on the recovery (finish to catch2)			
	Recovery Boat Moves (% of total)	65.7%	distance the boat move on the recovery as a percentage of total movement one stroke			65.5%

BOAT SPEED CURVE (m/s)

ROWING TECHNIQUE POINTS

Video file information

Crew name and category

Boat length used for distance reference

Weather conditions

Video file time reference

Time between stroke segments

Speed difference between stroke segments

Rigging Analysis based on stroke, oar position and time

Technique Analysis based on stroke oar position, time and acceleration

Graph Legend

Peak boat speed

Boat acceleration

Acceleration axis (m/2²)

GMS Time
Race Finish Time
Percent RCA GMS
Average 500m Split

Speed based on curve

Boat movement, one stroke

Boat Speed, min, max, var.

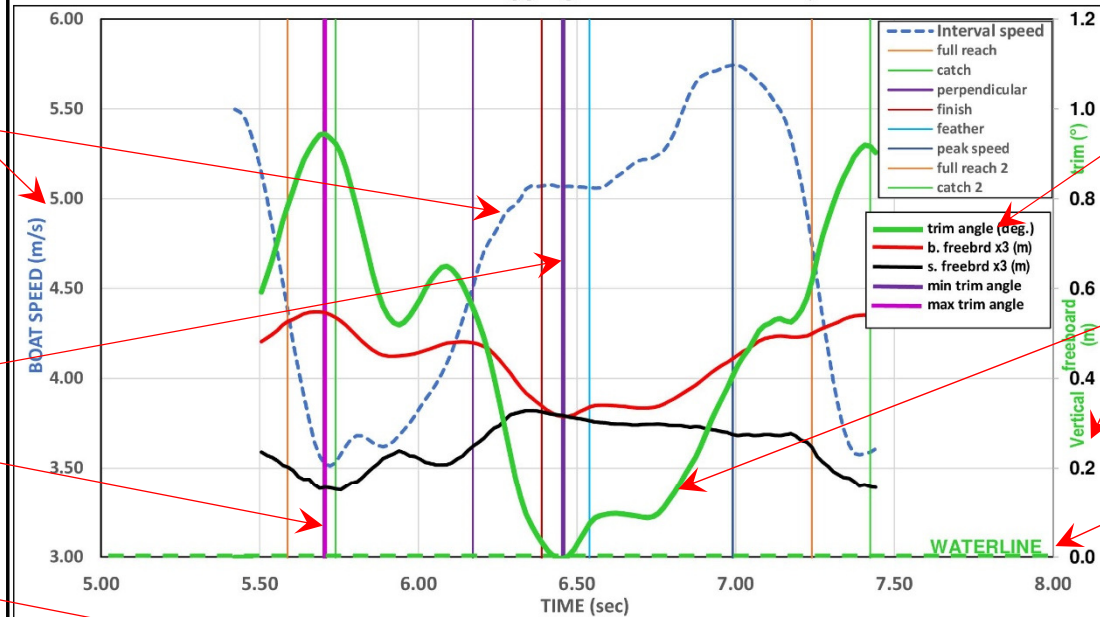
efficiency = $\frac{\text{curve volume}}{\text{calc. line volume}}$

Calculated acceleration

Reference for comparison

Rowing technique notes/recommendations based on analysis

PURCERVERANCE - Rigging and Boat Fit Analysis



Boat Speed
(blue dashed line)
vertical scale in m/s

minimum trim

maximum trim

Freeboard: 'the distance from the waterline to the upper edge of the side of the hull'

Rigging Analysis efficiency calculations

Sample reference for comparison

Athlete anthropometric measurement data

Boat Rigging dimensions/measurements

Rowing technique reference dimensions

Athlete race power

Boat information

Oar information rigging measurements

Trim Legend

Boat hull trim stern to bow (angle), vertical scale in degrees

Waterline is 0.0 Vertical scale for bow and stern above water (m) with exaggeration factor x3

Trim: 'the vertical angle between the water surface and a straight line from stern to bow along the deck.' (negative angle is bow down)

Notes on trim analysis

Notes explaining rigging recommended adjustments with reference letter

Recommended adjustment dimension with reference letter

Crew Name Name Video File 20180509092506.m2ts Boat Speed 4.74 1:45.43 Split

Ref. Dim.	M1x analysis	YC'178'18 Max	Freeboard		Boat Trim				
			dist (m)	time	time	diff (m)	angle (°)		
Drive Time	0.80	0.80	bow min	0.105	6.456	min trim	6.456	-0.001	-0.004
Blade Slip	+0.02	+0.10	bow max	0.183	5.689	max trim	5.706	0.131	0.944
Eff. Stroke Length	2.76	2.88	bow vert	0.078		change	0.751	0.131	0.948
Stroke Position	66.6%	68.7%	strn min	0.051	5.739	Notes: Trim to be reviewed following rigger and footstop relocation.			
Stroke Rate	35.6	35.6	strn max	0.109	6.356				
Stroke Ratio	1.11	1.13	strn vert	0.058					
Oar Catch Angle	n/a								

Athlete	category	LM	Rigging Info	existing	suggested	Note	Notes
race weight	72.5		pin line from bow	4.250	4.275	(A)	(A) move rigger one hole toward stern to maintain positive boat trim throughout stroke
shoe size	10.5		pin line % from bow	53.66%	53.98%		
height	177		rigger locate ref	2nd hole	1st hole		
seat to shoulder ht.	60		span	160.0	159.0	(B)	(B) move footstops similar distance towards stern.
arm span	189		footstop distance	35.0	35.0		(C) move track towards stern
sleeve length	84		footstop location ref	6th/2nd	update		(D) adjust pitch on both oarlocks to 4.0 degrees. Current pitch may contribute to lifting of hull through mid drive.
right leg shin length	57.5		footstop height	13.0		(C)	
left leg shin length	57.5		footstop angle	45.0		(D)	
inseam length	84.5		work through	18.0			
ankle flexibility	58		finish seat dist.	measure			
stroke length on ERG	130		starbd oarlock pitch	5.5	4.0	(D)	
seat travel ERG	45		port oarlock pitch	4.8	4.0		
handle to front seat	-		starbd oarlock ht.	16.5			
finish handle split dist	23		port oarlock ht.	16.0			
target race rate	34		Oar Info/Rig	existing	suggested	Note	
race power (watts)	378		oar manufacture	C2			
			oar stiffness	med			
			oar length	287.0			
			inboard	87.0			
			outboard	200.0			
			blade type	smth2			
			blade area	822			