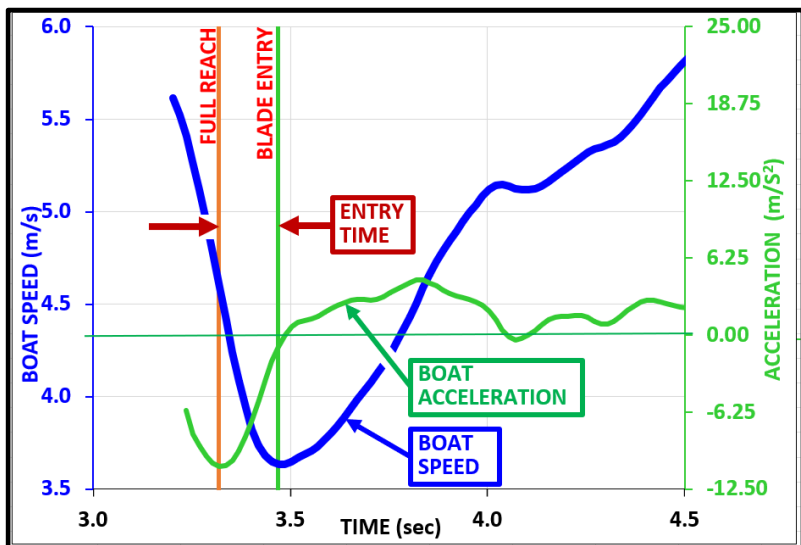


## 2.9.1 Entry Time

The entry time is a technique factor that provides an objective value for the movement of the catch or entry. The entry time is measured in hundredths of a second between when the athlete achieves the full reach position at the catch and the blade entry (blade full bury) point. This part of the stroke was traditionally known as the catch and is now called the entry. During the entry time, the athlete lifts their hands and pushes on their footstops to emerge the oar blade underwater. The boat's speed slows through the entry time and typically does not increase until the blade is fully buried. Figure 2.9.1a Entry Time is a graph of the boat's speed (blue line) and acceleration (green line), and it identifies the full reach and entry positions as vertical lines.

Figure 2.9.1a Entry Time



Coaches have long considered the entry movement a unique phase of the stroke cycle and a critical part of the rowing technique. Reducing the time between full reach and blade entry allows the boat to begin to accelerate

sooner. Lowering the entry time also extends the effective stroke length as the blades are buried quicker in the drive phase of the stroke. The reduced loss in speed and the extended stroke length link the entry time to improved performance. Technique factors that link to improvement are known as performance factors.

The entry time is calculated from the video time data as follows:

$$\text{ENTRY TIME} = Vt_{c1} - Vt_{fr1}$$

where:  $Vt_{c1}$  - video time oar at entry

$Vt_{fr1}$  - video time oar at full reach1

The objective measurement of entry time provides the coach and crew with an evaluation and a value of their performance. Data extracted from video taken at the World Rowing Championships is shown in Figure 2.9.1b Entry Time Singles Pairs. The graph charts entry times with performance (first through twelfth place) for singles and pairs. The graph also shows trendlines for the data related to each boat class.

Figure 2.9.1b Entry Time Singles Pairs

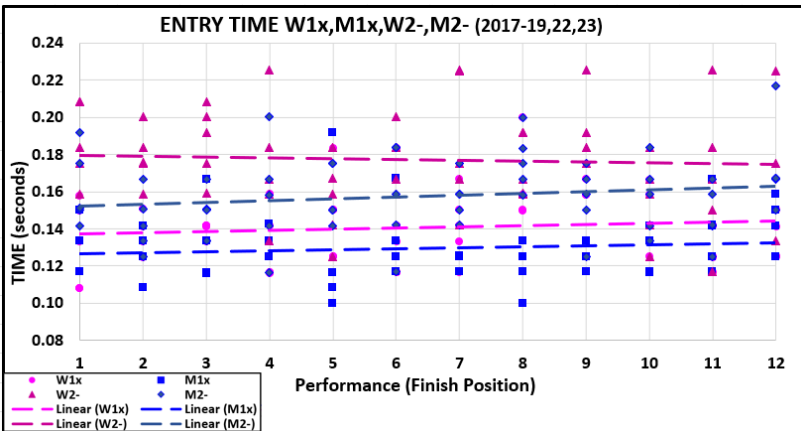


Figure 2.9.1c. Entry Time Data shows the entry times for a variety of boat classes at the World Championships. The data on the chart includes the average entry time for

crews in each boat class. The chart also includes the standard deviation, minimum and maximum entry times for each boat class, and the number of crews in the sample. The chart also compares entry time to the entire stroke cycle time to provide the percent (%) of cycle value.

*Figure 2.9.1c                      Entry Time Data*

Boat Class	Entry Time	standard deviation	Min.	Max	% of Cycle	Data Reference (# of crews)
<b>W1x</b>	<b>0.14</b>	0.02	0.11	0.20	<b>8.0%</b>	(59) WC '17,'18,'19,'22,'23
<b>W2x</b>	<b>0.15</b>	0.02	0.12	0.17	<b>8.8%</b>	(16) WC '19,'22,'23
<b>W4x</b>	<b>0.15</b>	0.01	0.13	0.18	<b>9.4%</b>	(18) WC '17,'23
<b>W2-</b>	<b>0.18</b>	0.03	0.12	0.24	<b>10.7%</b>	(59) WC '17,'18,'19,'22,'23
<b>W4-</b>	<b>0.17</b>	0.02	0.15	0.22	<b>10.7%</b>	(18) WC '19,'23
<b>W8+</b>	<b>0.18</b>	0.02	0.13	0.23	<b>11.6%</b>	(40) WC '17,'18,'19,'22,'23
<b>M1x</b>	<b>0.13</b>	0.02	0.10	0.19	<b>7.8%</b>	(59) WC '17,'18,'19,'22,'23
<b>M2x</b>	<b>0.13</b>	0.01	0.11	0.16	<b>8.3%</b>	(17) WC '19,'22,'23
<b>M4x</b>	<b>0.15</b>	0.02	0.12	0.18	<b>9.2%</b>	(14) WC '17,'23
<b>M2-</b>	<b>0.16</b>	0.02	0.12	0.22	<b>10.0%</b>	(60) WC '17,'18,'19,'22,'23
<b>M4-</b>	<b>0.17</b>	0.02	0.12	0.20	<b>10.7%</b>	(18) WC '17,'19,'23
<b>M8+</b>	<b>0.17</b>	0.02	0.13	0.22	<b>11.4%</b>	(51) WC '17,'18,'19,'22,'23

Through objective analysis and measuring the entry time, coaches can compare their crew's entry times throughout the year to monitor improvements. Entry time values can be compared to data in Figure 2.9.1c, and much slower times should be considered an opportunity for improvement. As entry time is designated a performance factor, coaches must continue to monitor and focus on improving this part of the stroke.