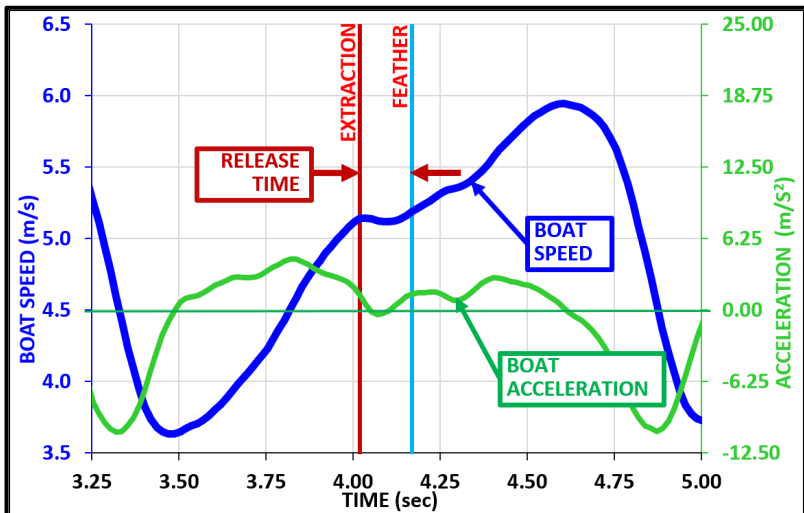


## 2.9.4 Release Time

Release time is the time measured between blade extraction and blade fully feathered, Figure 2.9.4a Release Time. The oar blade begins the release when it starts to travel in the same direction as the boat, typically when it is half out of the water. When the release time begins, the hands are nearing the body, drawing down to extract the blade. The torso reached the full layback position before the extraction began, and the legs stopped pushing as the athlete drew the oar handle to the body. The goal is to cleanly extract the blade from the water while minimizing the time required to rotate it to the feather position.

Figure 2.9.4a Release Time



$$\text{RELEASE TIME} = Vt_f - Vt_{ex}$$

where:  $Vt_{ex}$  - video time blade extraction  
 $Vt_f$  - video time feather (finish)

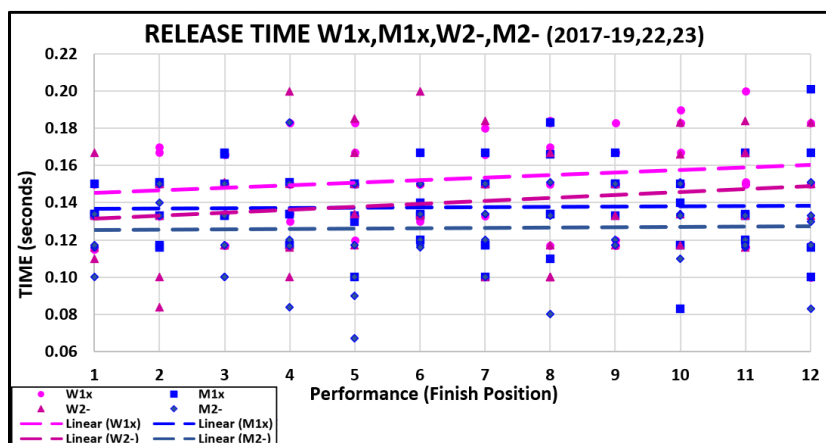
Many coaches will consider that the release begins when the blade starts its vertical movement out of the water. The author provides the above definition as the oar continues to apply force on the oarlock until the blade

begins to move in the same direction as the boat, though admittedly, it has started the extraction from the water.

The release time measures the blade extraction from the water and follows the late drive stage of the stroke, where the athlete works to maintain the blade in the water as long as possible to extend the effective stroke length. The longer the athletes can keep the blade buried, the further the boat will move. It appears that the release time itself is not a performance factor but relates to the effective stroke length, which is a rigging performance factor.

Figure 2.9.4b Release Time Singles Pairs shows data from the crews at the World Championships plotting their release time with their finish positions (1<sup>st</sup> to 12<sup>th</sup>).

*Figure 2.9.4b*      Release Time Singles Pairs



The quick and clean release of the blade from the water during the extraction is critical to maintaining boat speed.

The release speed change is a technique factor measurement that provides objective data on the release efficiency. The release boat speed change is the difference in boat speed between extraction and the feather.

$$\text{RELEASE BOAT SPEED CHANGE} = Vs_f - Vs_{ex}$$

where:  $Vs_{ex}$  - video interval boat speed extraction  
 $Vs_f$  - video interval boat speed feather (finish)

The change in boat speed between the extraction and the feather (finish position) reflects the effectiveness of the release. Release inefficiencies such as dragging the blade from the water (sloppy release) or pushing on the footstops after the extraction point will slow the boat's speed.

*Figure 2.9.4c                      Release Time Data*

| Boat Class | Release Time | Standard Deviation | Min. | Max  | % of Cycle  | Data Ref. (# of crews)      |
|------------|--------------|--------------------|------|------|-------------|-----------------------------|
| <b>W1x</b> | <b>0.15</b>  | 0.03               | 0.10 | 0.25 | <b>8.6%</b> | (59) WC '17,'18,'19,'22,'23 |
| <b>W2x</b> | <b>0.15</b>  | 0.01               | 0.13 | 0.18 | <b>9.2%</b> | (16) WC '19,'22,'23         |
| <b>W4x</b> | <b>0.13</b>  | 0.07               | 0.15 | 0.18 | <b>7.9%</b> | (18) WC '17,'23             |
| <b>W2-</b> | <b>0.14</b>  | 0.03               | 0.08 | 0.20 | <b>8.5%</b> | (59) WC '17,'18,'19,'22,'23 |
| <b>W4-</b> | <b>0.13</b>  | 0.02               | 0.10 | 0.18 | <b>8.2%</b> | (18) WC '19,'23             |
| <b>W8+</b> | <b>0.13</b>  | 0.02               | 0.10 | 0.17 | <b>8.3%</b> | (40) WC '17,'18,'19,'22,'23 |
| <b>M1x</b> | <b>0.14</b>  | 0.02               | 0.08 | 0.20 | <b>8.3%</b> | (59) WC '17,'18,'19,'22,'23 |
| <b>M2x</b> | <b>0.14</b>  | 0.02               | 0.10 | 0.18 | <b>8.9%</b> | (17) WC '19,'22,'23         |
| <b>M4x</b> | <b>0.12</b>  | 0.02               | 0.08 | 0.15 | <b>7.3%</b> | (14) WC '17,'23             |
| <b>M2-</b> | <b>0.13</b>  | 0.02               | 0.07 | 0.18 | <b>8.0%</b> | (60) WC '17,'18,'19,'22,'23 |
| <b>M4-</b> | <b>0.12</b>  | 0.02               | 0.08 | 0.15 | <b>7.7%</b> | (18) WC '17,'19,'23         |
| <b>M8+</b> | <b>0.12</b>  | 0.02               | 0.08 | 0.15 | <b>7.6%</b> | (51) WC '17,'18,'19,'22,'23 |

The release time and the release boat speed change are two technique factors that provide objective values for the efficiency of the release. The release phase of the stroke should not be underestimated as to its value toward performance.