By Tobias Hinzmann 03/2018
http://www.passion-fliegenfischen.de/_en

The meaning of the translatory motion in fly casting

Many articles about fly casting tend to focus on the rotary motion of the fly cast, since the rotation generates the velocity of the tip most. The meaning of translatory motion is often neglected for that reason. Discussions about the translatory motion are often focused on the way how the translatory motion should overlap the rotary motion: rather uniform over the casting stroke or more at the end of the casting stroke.

With the exception of shorter accuracy cast I almost always recommend a delayed dominated rotary motion “at the very end” of the casting stroke, which leads to a dominated translatory motion at the very beginning of the casting stroke.

This translatory motion, especially as it dominates the very beginning of the casting stroke, basically causes the following:

1.) Possible slack fly line is removed and the whole fly line pulls on the tip of the fly rod, at lastest when the rotary motion prevails.
2.) The path of the tip is elongated.
3.) The mass of the fly rod is set in motion, so the fly rod is not situated in a defined condition.

The translatory motion precedes, “introduces” respectively the rotary motion so to say, and the better this introduction is the better the benefit for the fly cast could be. Both findings are very important to complete the casting stroke successfully with the following dominated rotary motion.

Removing slack line is always a very good idea as well as to elongate the path of the tip for longer fly casts, but there is a further aspect. Since the translatory motion is setting the mass of the fly rod in motion, the dynamical energy transfer property of the fly rod can be improved (redistribution effect). A dominated translatory motion at the beginning of the fly cast enables a deeper deflection of the fly rod, whereby the lower mass elements of the fly rod are able to gain a higher angular velocity than the upper mass elements during the earlier fly cast. This is the moment the energy transfer along the fly rod shaft begins, which leads to an efficient fly cast[1]. This relation I worked out in my “Experimental investigations on the fly rod deflection” as well as in some videos - especially these two: http://vimeo.com/226547073 - http://vimeo.com/187846392

So an optimal interrelation between the translatory and the rotary motion is the key of a good fly cast. Without the translatory motion the rotary motion will miss a very important partner, who provides required properties to perform an efficient, power minimized fly cast.

Tobias Hinzmann

Potsdam- Rehbrücke in March 2018

[1] In contrast to a rigid fly rod the lower mass elements of a flexible fly rod have a higher angular velocity ω than the upper ones during the early phase of the cast, rotation respectively. This leads to a „butt dominated distribution“ of angular momentum L (L = J * ω; J = moment of inertia). Since this angular momentum distributed along the lower mass elements just can’t disappear due to the energy conservation theorem, it must be transferred towards the upper mass elements during the later phase of the fly cast (energy transfer / redistribution).