

Abstract Submitted
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Splash Production of Single Jointed Divers ELIZABETH GREGORIO, ELIAS BALARAS, MEGAN C. LEFTWICH, George Washington University — Olympic divers achieve a no splash entry by pulling apart their arms and rolling their bodies after hitting the surface, performing what is called a “rip dive.” While the practice is widespread in competitive diving, there is no data on how the surrounding fluid is manipulated to minimize the splash. To better understand this complex phenomenon, we create an experimental model consisting of thin, single-jointed objects falling into a pool of water. A spring pin is inserted at the joint to investigate how the roll changes the splash formation. The creation of an air cavity during the roll is inspected to understand how the fluid is manipulated. In addition, the length ratio between the upper and lower joints are varied to better understand the movement. The water entry of these objects is recorded using high speed video to qualitatively analyze the splash and an accelerometer is attached to estimate force upon entry. These results will begin to illuminate how competitive divers are able to achieve minimal splash upon water entry and later be used to validate computational fluid dynamics simulations.

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