

Abstract Submitted  
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**How nose curvature affects splashing** JESSE BELDEN, Naval Undersea Warfare Center, MATTHEW JONES, Utah State University, Dept. of Mechanical & Aerospace Engineering, AREN HELLMUM, ANTHONY PAOLERO, Naval Undersea Warfare Center, TADD TRUSCOTT, Utah State University, Dept. of Mechanical & Aerospace Engineering — The splash and air cavity formation following the impact of a disk on a free surface are well-documented. Such events are characterized by a sub-surface air cavity and an above surface splash crown that ultimately domes over and seals. If slight curvature is given to the face of the disk, however, these phenomena can change quite dramatically, even resulting in cases that suppress cavity formation. In this talk, we examine the effect of nose curvature on the splash and cavity physics and suggest mechanisms responsible for the observed differences. Furthermore, we directly measure body accelerations in order to estimate instantaneous forces, and relate these measurements to high speed images of the cavity and splash phenomena.

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