Abstract Submitted
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Bird beaks bear the brunt of bashing impact SABERUL ISLAM SHARKER, Utah State University, SEAN HOLEKAMP, Naval Undersea Warfare Center, FRANK FISH, Westchester University, JESSE BELDEN, Naval Undersea Warfare Center, TADD TRUSCOTT, Utah State University — Seabirds can dive from 30 meters reaching speeds of 24 meters per second as they impact the water reaching depths of 9 meters due to their momentum, and a further 25 meters by active flapping. It is thought that their geometry, particularly the beak, allows them to endure relatively high impact forces that could kill non-diving birds. Acceleration data of simplified models of diving birds agree with simulated data for one species, however, no reliable experimental data with real bird geometries exist for comparison. We experimentally measured the impact accelerations of twelve 3D printed models of diving birds (seven surface diving and five plunge diving) during water-entry at different impact velocities using accelerometers.

Tadd Truscott
Utah State Univ

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