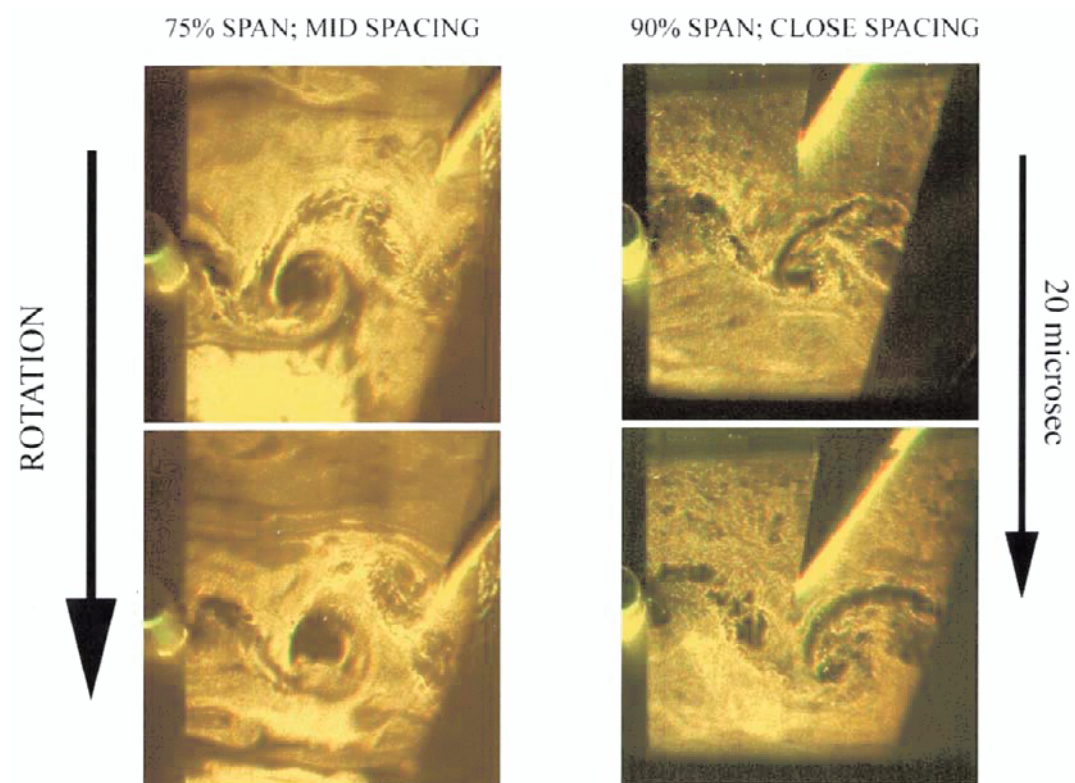


## 1. Visualization of Vortex-Shedding and Blade Synchronization in a Transonic Compressor

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Wake-blade interactions for two configurations of a high-through-flow, axial-flow transonic compressor located in the Compressor Aerodynamic Research Laboratory (CARL) at Wright-Patterson Air Force Base were visualized using Digital Particle Image Velocimetry (DPIV). The synchronization of the vortices with the potential field of the leading edge of the blades and the shock as a function of blade position is evident. Axial distances between the wake generators and the blade leading edge are 12% (close) and 26% (mid) of the chord. The visualizations were performed using a cross-correlation camera, with double exposures of 1  $\mu$ s. The first frame was colored green and second, red. The images were then superimposed, resulting in the orange DPIV visualization.