Vortex Rings

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https://hackaday.com/2018/06/22/when-vortex-rings-collide/

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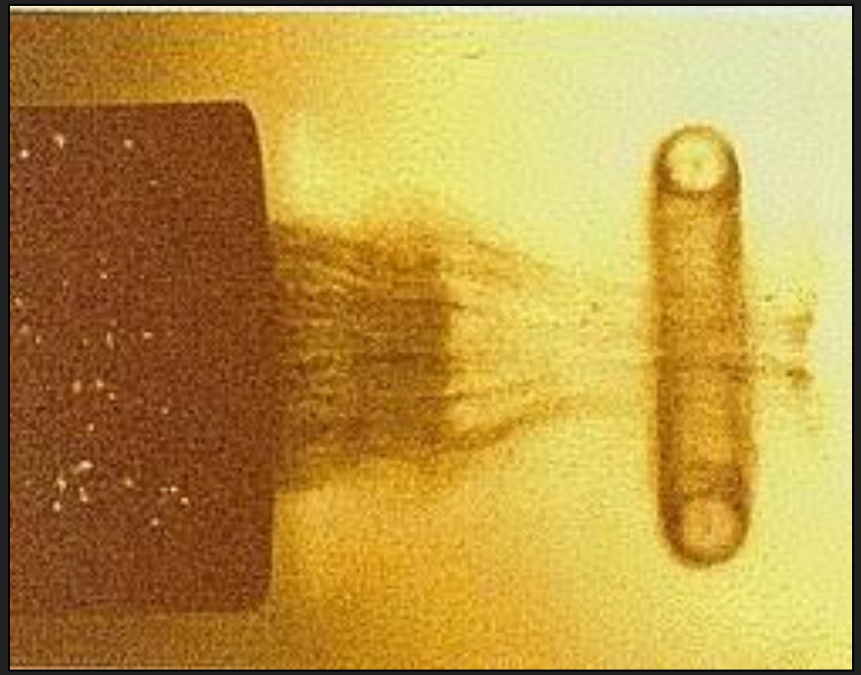
Phenomena Explained



https://physics.stackexchange.com/questions/413158/two-vortex-rings-colliding-reasons-and-the-number-of-rings-created

Construction of Experiment

Conclusion From Experiment

Large Cannon:

Diameter: 8”

Velocity: 9.81 ft/s

Small Cannon:

Diameter: 3”

Velocity: 13.2 ft/s

Relevant Equations

$$V = \frac{\Gamma}{4\pi R}\left(\ln\frac{8R}{a} - \frac{1}{2}\right)$$

Velocity

$$K = \frac{1}{2}\rho\Gamma^2 R\left[\ln\frac{8R}{a} - 2\right]$$

Energy

https://pdfs.semanticscholar.org/6a89/01e8b7f27ecb298c7a3aef5aa8e0e8fb463d.pdf

Natural Occurrences

https://www.howitworksdaily.com/how-vortex-rings-form/

http://ffden-2.phys.uaf.edu/212_spring2011.web.dir/kodiak_cullen/ring.html