

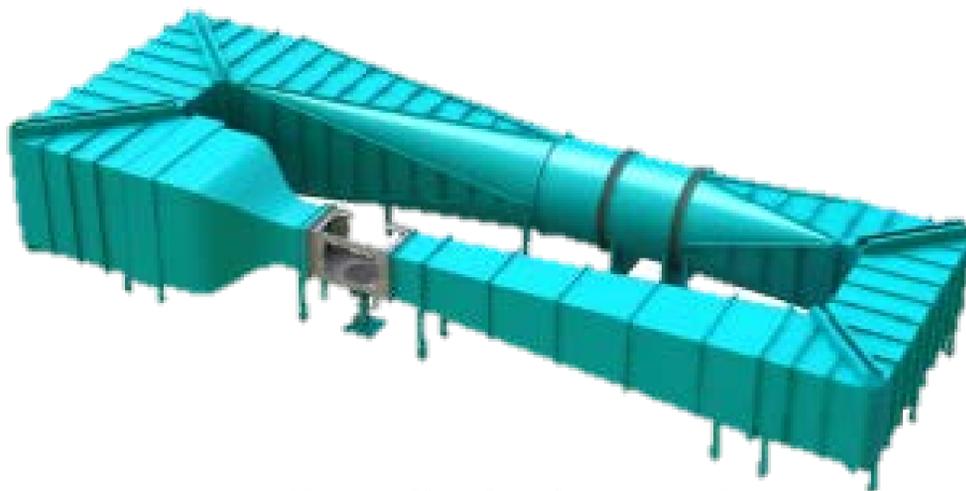
S&T Campaign: Sciences for Maneuver
Platform Mechanics

Chris Kroninger, (410) 278-5690, christopher.m.kroninger.civ@mail.mil
John Hrynyuk, Ph.D., (410) 306-4402, john.t.hrynyuk.ctr@mail.mil

Research Facilities

Closed-Circuit Wind Tunnel

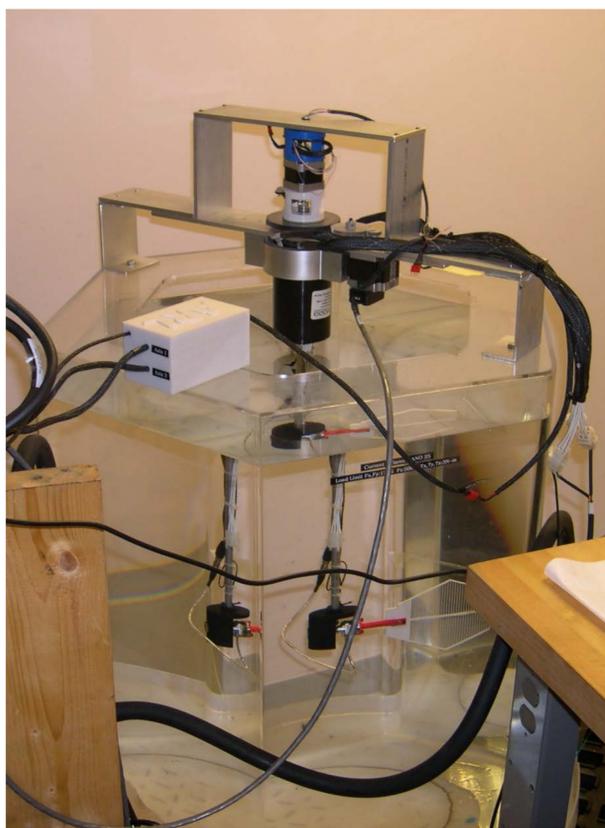
- Test Section: 3' x 3' x 6'
- Speed: 0.5–40 m/s (1–100 mph)
- Model yaw and pitch control
- Six-component sting-mounted force balance
- Stereo particle image velocimetry (PIV)
- Triple component hot-wire anemometry
- Scanning pressure system



Closed-Circuit Wind Tunnel

Low Reynolds Number Oil Tank

- Capacity: 70 gallons of mineral oil
- Motion: Rotation and pitch (angle of attack)
- Arbitrary motion profiles
- Six-component force balance



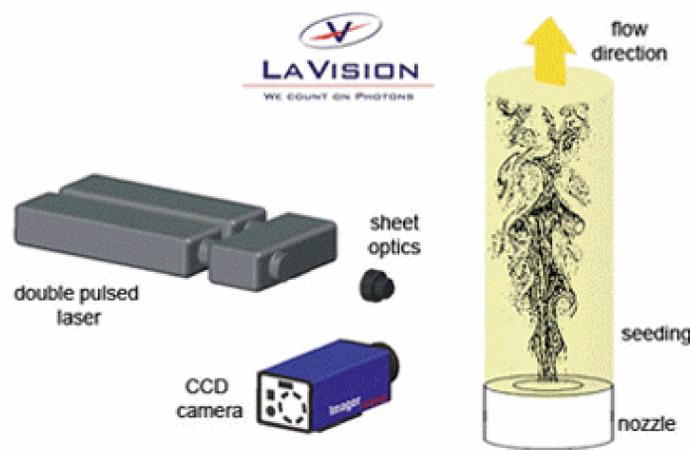
Oil Tanks



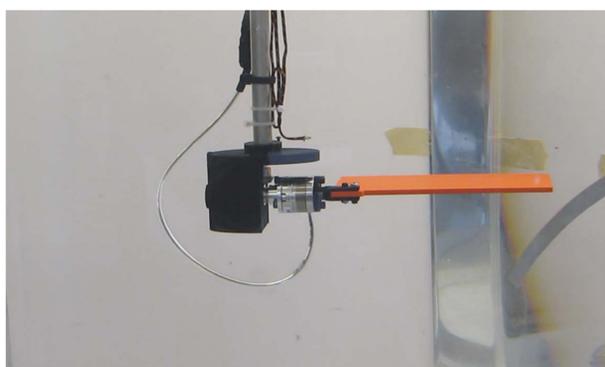
Triple-Component Hot-wire Anemometry (Dantec Dynamics)



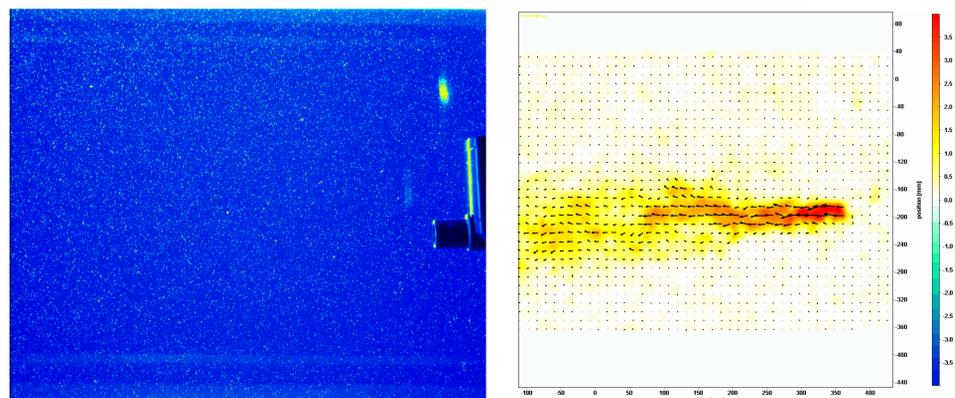
Scanning Pressure System (Pressure Systems)



PIV Experimental Setup (LaVision)



Wing Mounted on Force Balance



PIV Measurement Processing