

LOENING INTERCOLLEGIATE CHALLENGE CALLS ON STUDENTS TO DESIGN THE NEXT GENERATION OF AMERICAN TRAINING AIRCRAFT

"Cognitive Cockpit", Advanced Propulsion, and "No Single Point of Failure" Set the Standard for Safer Flight Training

COLUMBUS, OH, UNITED STATES, August 25, 2026 /EINPresswire.com/ -- The Loening Committee has launched the 2026–2027 Loening Intercollegiate Challenge, inviting college and university students nationwide to design safer, more capable, and more affordable American-made training and recreational aircraft.

Using the 2026 Cessna 172 as a performance baseline, interdisciplinary student teams will develop comprehensive aircraft designs and business proposals addressing safety, advanced technology, manufacturing feasibility, and the future of professional flight training.

Central to the challenge is the Cognitive Cockpit, a concept introduced by the Loening Judging Committee. It envisions artificial intelligence functioning as a virtual copilot by continuously interpreting aircraft instrumentation and comparing actual performance with intended flight parameters. AI could convert instrument readings and deviations into spoken advisories, situational updates, crew resource management support, checklist guidance, and emergency-procedure commands.

Combined with the four Cs—Command, Control, Communications, and Computers—the Cognitive Cockpit could use advanced data links and low-Earth-orbit satellite connectivity to exchange real-time position, flight, and weather information, Up and Down Link, with air traffic controllers and government aviation agencies. Text-based clearances and automated communications could bring capabilities associated with CPDLC, ACARS, and advanced professional and military aircraft into general aviation.

The challenge places equal importance on power-plant selection. The rising cost, environmental impact, public concern, and uncertain long-term availability of 100-octane low-lead aviation gasoline require new thinking about propulsion, fuel, operating economics, and safety.

Teams are encouraged to examine Jet-A-fueled engines, hybrid-electric systems, advanced

electrical propulsion, redundant power sources, and other practical technologies. Full Authority Digital Engine Control, or FADEC, could give beginning pilots single-lever power control while automatically managing fuel flow, engine performance, and operating limits. This would prepare students to use the same basic power-management philosophy they will find the norm in their professional flying careers. "Train like you plan to fly. Fly like you train"

Critical thinking will be required to meet the design goal of "no single point of failure". A hybrid propulsion system could combine a primary engine or electrical generator with a lightweight, high-capacity backup battery and an independently powered propulsion source. Similar to the operating concept of a hybrid automobile, stored electrical power could allow an aircraft to continue controlled flight following a primary power-plant failure—providing enough time to divert and land safely instead of leaving the pilot with only a forced-landing option.

Teams should also examine how proven automotive safety technologies could be adapted to aviation. Ultrasonic proximity sensors, compact digital radar, and AI-assisted infrared and optical cameras could supplement the pilot's vision, identify conflicting traffic, and issue directional voice warnings. When integrated with aircraft tracking data and the Cognitive Cockpit, these systems could substantially reduce the threat of midair collisions.

"Grover Loening believed that the college students of today would shape the future of air travel," said Commander Robert H. Clement, USN (Ret.), Chief Judge of the Loening Trophy. "We are challenging this generation to rethink the complete aircraft—from its AI-enabled cockpit and collision-avoidance systems to its propulsion, fuel, and emergency power—and create a practical American design worthy of the future."

The competition welcomes students from engineering, aviation, computer science, artificial intelligence, business, finance, manufacturing, and related disciplines. A university flight program is not required. Faculty and industry professionals may advise teams, but students must perform the project development and final presentations.

Established in 1929, the Loening Trophy recognizes excellence in collegiate aviation. Its original judging committee included Grover Loening, Amelia Earhart, Charles Lindbergh, and naval aviation pioneer John Towers.

Notices of Intention to Compete are due October 1, 2026. Final proposals, aircraft drawings, performance projections, and working X-Plane models are due December 1, 2026. Selected finalists will present in March at the 2027 Collegiate Aviation Symposium in Columbus, Ohio.

For competition details and application materials, visit www.LoeningChallenge.org.

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