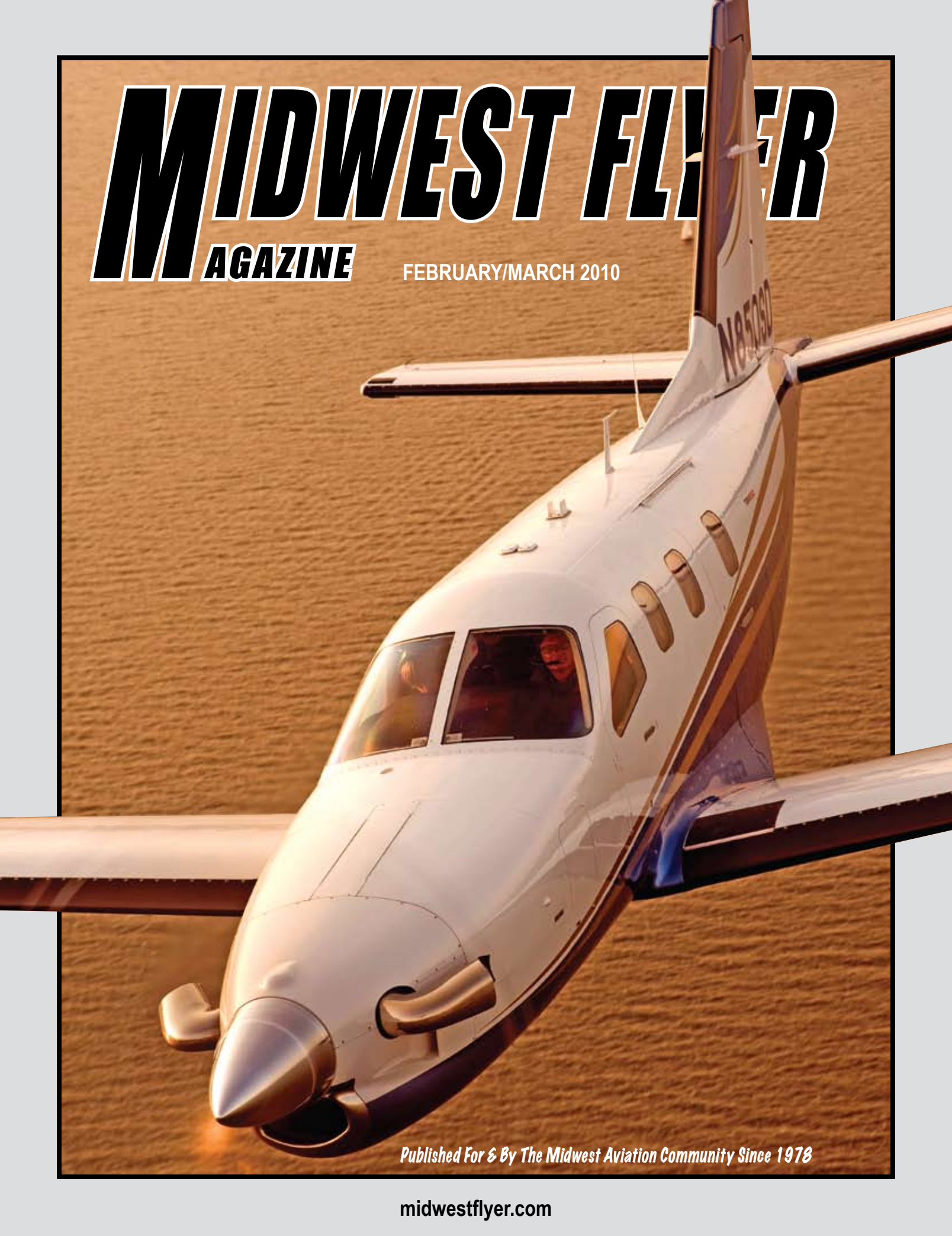


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# Unmanned Aerial Vehicles... The Future At Our Doorstep



Dave Weiman

MQ-9 Predator B on display at EAA AirVenture 2009, Oshkosh, Wisconsin.

**W**e can see that times are changing as our government becomes more adept at using Unmanned Aerial Vehicles (UAVs) for Homeland Security, Border Patrols and other law enforcement activities. Sadly, the reality is that there IS a need for them and we are headed into a time where GA and UAV aircraft will regularly share the skies.

The growth and overall sophistication of the UAV platforms, as well as the variety of UAV aircraft, have grown exponentially since 2001. Now these “drones” are much more than just a camera-carrying platform. They can currently fly missions ranging from surveillance, to aerial mapping, to air search and rescue (though it will be a manned vehicle that will do the on-scene rescue). There are many other potential applications for UAVs, and

that potential will, in the very near future, place these aircraft in domestic airspace in ever-increasing numbers.

In an article presented by Minnesota Public Radio (Broadcast Dates: Morning Edition, 12/15/2009, 7:20 a.m.), December 15, 2009, author Dan Gunderson said, “Unmanned aircraft fly missions every day in Iraq and Afghanistan, but experts say someday those remotely piloted planes could play a big role in commercial aviation right here at home.”

He continued, saying, “Unmanned aircraft are strictly limited by the Federal Aviation Administration. The agency will grant waivers for specific flights. Customs and Border Protection (CBP) has a waiver to fly unmanned craft along the borders conducting surveillance.

The University of North Dakota (UND Aerospace) has permission to fly unmanned aircraft in restricted military airspace. They hope to have a large unmanned flight test range in northern North Dakota approved by the FAA as soon as next year.”

The Grand Forks Herald published an article on November 21, 2009 by reporter Tu-Uyen Tran. The article is titled, “The Scan Eagle Has Landed.” In that piece Tran states that, “The Federal Aviation Administration has been moving very cautiously with unmanned aircraft because it fears that without the situational awareness of a pilot in the cockpit, unmanned aircraft could pose a greater risk to manned aircraft.”

Tran adds that, “Researchers around the world and at UND are working on systems that would allow unmanned aircraft to sense and avoid other aircraft, but it’s hard to tell when

they'll come up with a product."

A test has been developed under the direction of UND Professor Ben Trapnell who is leading the development of the school's Unmanned Aircraft Degree Program. The test will help determine if radar controllers can see the various UAVs and perhaps devise a solution that will aid them to see not only UAVs, but aircraft that are made of cloth, like hot air balloons. The test will use three radar units arranged in a triangle approximately 19 miles on a side. That way whatever direction the aircraft is pointed will likely be seen by one or more of the radars at any given time.

In the meantime, researchers at UND and other locations across the country are working to develop the technology that will allow unmanned aircraft to not only sense other aircraft, but also autonomously avoid other aircraft. It could take years, however, before that technology is developed, tested and made available

for the UAV systems. Thus the radar tests and their potential useful outcomes might fill the gap until the "sense and avoid" technology comes on line. Even when such technology is in place, it will remain one of the pilot's primary responsibilities to fly their aircraft and maintain good situational awareness at all times.

With the future at our doorstep, it is amazing to think that the pilots of today may have grandchildren and children who, in a very short period of time, will be studying and practicing to be pilots that may never leave the ground. But that doesn't mean they will simply be "simulator-type pilots."

In fact, UND is taking a proactive approach to training its new UAV pilots.

Because they recognize the UAV industry is still in its infancy, UND is designing their programs to teach future UAV pilots to be active critical and creative thinkers. This is being done so that the pilots can effectively communicate ideas and information, while actively contributing to the growth and safety of this new facet of the aviation industry.

Article located at: <http://minnesota.publicradio.org/display/web/2009/12/11/und-unmanned-aircraft/> □

## Aviation Maintenance Conference To Feature "Aviation Jobs" Nationwide



March 29-30, 2010  
Earle Brown Heritage Center  
Brooklyn Center, Minnesota



The 2010 Minnesota Aviation Maintenance Conference will be held March 29-30 at the Earle Brown Heritage Center, 6155 Earle Brown Drive, Brooklyn Center, Minnesota. Attendees will be able to participate in continuing education classes, visit with exhibitors and aviation industry employers, and complete their Inspection Authorization (IA) renewal on site. The event is co-sponsored by the Minnesota Department of

Transportation and the Federal Aviation Administration.

This year's conference theme is "Back to Basics." More than 500 people are expected to attend the conference and participate in training sessions that cover a large variety of maintenance subjects on aircraft and systems from props to jets. Attendees will have the opportunity to enjoy education, networking, industry exhibits, and career opportunities.

The conference continues to

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