

BLAINE AIRPORT PROMOTION GROUP

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8891 Airport Road C-2, Blaine MN. 55449



THE EDUCATION COORDINATOR • FEBRUARY 13, 2014



AVIONICS is the description for aviation electronics that had its development during WWII in systems like auto pilot and radar. Avionics is a substantial portion of military aircraft development and cost. In November 1978 the Navy introduced the F-18 Hornet to replace the F-14 Tomcat. The F-18 was less specialized but 40% cheaper than the F-14 Tomcat in cost per flight hours and reduced repair and maintenance by 75% in working time per flight hours. 40% of the budget was spent on Avionics and the F-18 Hornet was the first plane with a near complete "Screen Cockpit" and "Fly by Wire" where steering commands are electronic signals directed to the on-board computer rather than mechanically or hydraulically. Special operations aircraft can carry as much as 60% of its budget in avionics systems.

Aircraft avionics systems include communications, navigation, monitoring, flight control, weather systems, aircraft management, radar, and collision-avoidance systems.

In 1959, due to the growing development of avionics and need for safety measures as the aviation industry expanded and costs of avionics become affordable for private industry, the Aircraft Electronic Association (AEA) was formed. The AEA represents member companies specializing in maintenance, repair, and installation of avionics and electronic systems in general aviation aircraft. Membership also includes manufacturers of avionics equipment, instrument repair, airframe and test equipment, as well as engineers, distributors, and educational institutions.

On January 13, 2014, the AEA announced a partnership agreement with the NextGen GA Fund to accelerate the

rollout of NextGen by providing access to quick, affordable financial incentives to aid aircraft owners.

The NextGen GA Fund is a public-private partnership formed between the U.S. Congress, the aerospace industry and the private sector investment community. Congress approved of this program by granting federal loan guarantees found in Section 221 of the Federal Aviation Administration Modernization and Reform Act of 2012.

The Joint Planning and Development Office has six areas that will be implemented affecting avionics. •**Improved navigation and routing**, •**Negotiated routing**, •**Low Visibility Approach/Departure**, •**Less separation in flight patterns**, •**ATM Efficiencies**, and •**Surface operations**. The plan is for the development of a satellite-based system using GPS technology to be used to shorten routes, save time and fuel, reduce traffic delays, increase capacity, and permit controllers to monitor and manage aircraft with greater safety margins. Planes will be able to fly closer together, take more direct routes, and reduce delays.



Bench testing avionics module

Success of implementation will also largely depend on the cooperation with the ongoing development of the Europe's air traffic management efforts (SESAR) Single European Sky coordinated by the European Union (ECAA area) and may involve 60 countries.

It is estimated that 157,000 general aviation aircraft will need upgrades to these safety-enhancing installations over the next several years as NextGen is implemented.



Schedule some volunteer time!

ANOKA COUNTY AIRPORT JANE'S FIELD - BLAINE, MN



MAY 31ST & JUNE 1ST

COME TO THE AIRPORT & DISCOVER AVIATION

EXPERIMENTAL, HOMEBUILT, CIVIL, CORPORATE, MILITARY, WWII AND VINTAGE AIRCRAFT ON DISPLAY, CLASSIC CARS, NUMEROUS AVIATION EXHIBITORS AND VENDORS, MILITARY REINACTORS, & FAA SAFETY SEMINARS & PROGRAMS

PANCAKE BREAKFAST: 7A.M. TO 11:30 A.M.
LUNCH: 12 NOON TO 4 P.M.

NEW! EDUCATION CENTER KIDS ENJOY HANDS-ON ACTIVITIES MEET HISTORY'S VETERANS	ENJOY! AIRCRAFT RIDES WARBIRD, BI-PLANE, FIXED WING & HELICOPTER GOLDEN WINGS MUSEUM OPEN FOR VIEWING ITS COLLECTION OF OVER 25 VINTAGE AIRCRAFT MILITARY DISPLAYS & RE-ENACTOR GROUPS FROM THE METRO WWII • KOREA • VIETNAM
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DISCOVER AVIATION DAYS
2014
May 31 & June 1



MINNESOTA PILOTS ASSOCIATION
www.mnpilots.org

The mission of the Minnesota Pilots Association (MNPA) is to promote and protect aviation in our State through advocacy, education, outreach and social activities. Our association firmly believes that a healthy aviation community is an invaluable asset to the State of Minnesota. MNPA membership and volunteers join to act as the voice of pilots, aviation enthusiasts and supporters of aviation in Minnesota.

Plan to attend the Hanger Flying sessions at the Great MN Aviation Gathering at Golden Wings Museum
March 21st & 22nd, 2014

Columbia Heights High School

"Worlds of Opportunity for Every Learner"

Thursday, January 9, 2014, Mr. Kapitzke's Aviation class left Columbia Heights High School to take a field trip to the Anoka County-Blaine Airport. There they had the opportunity to take flying lessons, as well as touring the Control Tower, RC Avionics and the Golden Wings Museum. This was arranged through the Blaine Airport Promotion Group and participating businesses. Mr. Kapitzke stated, "This program has provided my students the chance to see the world of aviation up close. I recommend using this program as a way to experience the airport."

Mr. Kapitzke is a teacher in the Engineering & Technology Education Department at Columbia Heights High School



BLAINE HIGH SCHOOL
CEMS
CENTER FOR ENGINEERING, MATHEMATICS AND SCIENCE
Nationally Recognized School of Excellence and Distinction

Jennifer Birkmeire, CEMS brought students from the Blaine High School to visit the Blaine Airport on February 4, 2014. Harvey Karth, (BAPG) reported that 35 students participated in a tour at Golden Wings Museum that started with a presentation by Chris Gabiou, (TCA) titled, Meteorology for Pilots. The students were then given tours of the Golden Wings Museum in small groups with tour guides, Tom Lymburn, Paul Montgomery, Harvey Karth, and Craig Schiller. Wayne Wayolt presented a propulsion program at a display station along the tour route. Propulsion is the action of the movement of an aircraft through the air that includes not only the engine but also selecting the right propulsion system to match the design of the aircraft. Wayne's presentation shows the desired goal of the designer to achieve fuel efficiency, low engine weight-to-horse power ratio, low total system weight, reliability, ease of maintenance, and noise reduction. Tom Lymburn is a historian that presents an in-depth study of the aircraft history and how it arrived at the museum as well as how an aircraft works and its developmental stages through history. Paul Montgomery comes to us with knowledge of the museum aircraft and takes the students through the development and design features of each aircraft in the collection. James Mecklenburg, MN Project Lead the Way Program Director, Minnesota Center for Engineering and Manufacturing Excellence had a display of materials and assisted in the student tour.



CHRIS GABIOU



TOM LYMBURN



WAYNE WAYOLT



PAUL MONTGOMERY

Following the tour the students were transported to Twin Cities Aviation for a walk-around of aircraft of the modern era and viewed the airport from the observation area where the tour was concluded.

Words of the month: "GRAPHENE" & "TAILERONS"