

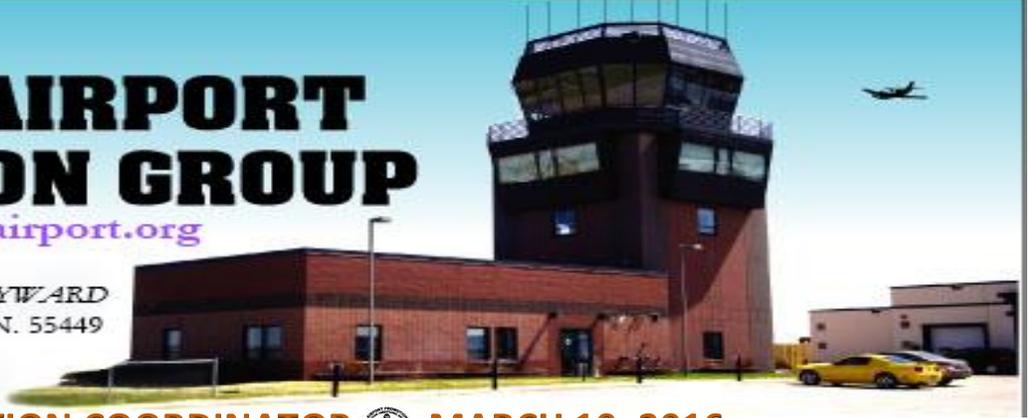
BLAINE AIRPORT PROMOTION GROUP

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8891 Airport Road C-2, Blaine MN. 55449

Sixth Year of Publication



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President Dwight D. Eisenhower established the National Aeronautics and Space Administration (NASA) on July 29, 1958 with a distinctly civilian (rather than military) orientation encouraging peaceful applications in space science. The NASA Seal was approved by President Eisenhower in 1959.

On July 29, 1955 President Eisenhower announced the development of an artificial satellite. That challenge set the date that drafted a launch of an artificial satellite during the International Geophysical Year, 1957-1958, named Project Vanguard. However by October 4, 1957 the US Congress became alarmed by a perceived threat to national security and technological leadership when the Soviet Union launched the world's first artificial Earth satellite named Sputnik 1.

This launch and success of the Soviet low Earth orbit of a man-made 23 inch diameter polished sphere could easily be seen in the night sky as it followed through an elliptical path taking 96.2 minutes to complete each orbit.

The American public was surprised by the success of the Soviet launch of Sputnik 1, while President Eisenhower and the CIA had already learned of the development of the launch from secret U-2 spy plane imagery and attempted balloon flights that entered Soviet airspace named project Moby Dick and Skyhook. These were high altitude balloons made from thin layers of plastic called polyethylene invented by Jean and Jeannette Piccard and manufactured by General Mills where the University of Minnesota had a fundamental role in its development.

President Eisenhower greatly underestimated the reaction of the American public and their reaction to this Sputnik crisis. This outcry of the American public led to the creation of NASA and an increase in U.S. government spending on science research and education. Sputnik also contributed

directly to a new emphasis on science and technology in American schools. With a sense of urgency Congress enacted the 1958 National Defense Education Act, which provided low-interest loans for college tuition to students majoring in math and science.

Aerospace engineering is the primary field concerned with development of aircraft and spacecraft. The demands applied to vehicle components by changes in atmospheric pressure and temperature require various technological and engineering disciplines including aerodynamics, propulsion, avionics, material science, structural analysis and manufacturing. Aerospace engineering is divided into overlapping and major branches. The original description was aeronautical engineering but as flight technology advanced with the first definition of aerospace engineering appeared in February 1958, when Earth's atmosphere and outer space were considered a single realm. To include craft operating in outer space, astronautical engineering was added to describe the second branch in the broader term of aerospace engineering. Each branch has a number of disciplines and complexities and has their own specialized areas of engineering expertise.

The economic benefit of NASA's program was summed up in a 1992 commentary in the British science journal "Nature".

"The economic benefits of NASA's programs are greater than generally realized. The main beneficiaries (the American public) may not even realize the source of their good fortune..."

The 1989 Chapman Research report examined 259 non-space applications of NASA technology during an eight-year period (1976-1984) and found that \$21.6 billion in sales and benefits were reported, 352,000 jobs were created that resulted in \$355 million in federal corporate income taxes generated. The National Aeronautics and Space Administration Authorization Act of 2014 appropriated \$17.6 billion for activities of NASA. Grants and awards went to various education institutions and non-profit organization in all 50 states. NASA's 2016 budget is \$19.3 billion. Minnesota

receives an average of a \$10 million boost in NASA dollars to the economy each year that can provide job opportunities in the current listing of 15 small high-tech companies. NASA's centers across the country have helped 41 Minnesota companies develop revolutionary spinoff technologies.

NASA actively seeks partnerships with U.S. companies that can license NASA innovations and create "spinoffs" in areas such as health and medicine, consumer goods, transportation, renewable energy, and manufacturing. When businesses leverage NASA technologies to develop new products, it not only benefits the regional economy, but significantly strengthens the nation's competitiveness in the global marketplace.

With the help of NASA funding, BRS Aerospace, St. Paul Minnesota developed whole aircraft parachute recovery system and has sold 30,000 systems worldwide and the product has become the standard equipment on many top-selling small planes. Cirrus Design Corporation of Duluth, Minnesota is another example of partnering with NASA in development of safety features such as airbags, modified airfoils to help prevent spins and improved crashworthiness.

An Eden Prairie, Minnesota company, MTS Systems Corporation, has a worldwide customer base market that includes power generation, aerospace, ground vehicles and bio-medical. Their aerospace structural testing market consists of manufacturers of commercial, military and private aircraft and their suppliers. MTS licensed NASA's parented auto-adjustable pin tool, a product that uses friction (Friction Stir Welding) to produce high-strength welds in a wide range of alloys including previously unweldable aluminum and high-temperature materials. This enabled the company to introduce new innovative products with applications using high-strength structural alloys.

These partnerships between industry and NASA have a great impact on our local economy creating jobs and new opportunity for growth.

General aviation activities occur on seven Metropolitan Airports Commission (MAC) airports. The majority of this activity occurs at the six smaller airports, which relieve congestion at Minneapolis-St. Paul International Airport and provide infrastructure for the region's corporate and leisure aviation needs.

The public perception regarding these reliever airports is often that the airports are there for the sports and recreational flyers, when in reality these regional airports connect the local communities industries to the rest of the

world. Critical medical care to the outer reaches of the community, delivery of goods and products, commuter aircraft and corporate business flights that provide a cheaper means of doing business and reducing the time away from their home base of operations are everyday occurrences.

Total Economic Impact of Small and Medium Sized Airports
According to a 2009 report by the Center For Transportation Studies, University of Minnesota, corporations spent \$56.8 million to operate their planes in Minnesota, hired 167 individuals, and paid them \$20.4 million in labor income. As a result, the total economy of Minnesota increased by \$98.5 million including 441 jobs and \$32.7 million in labor income. In total, Minnesota small and medium sized airports created \$434 million in output in the state in 2009 including 3,758 jobs and \$184 million in labor income. This impact was created from expenditures by eight airport-based activities including: public airport operations and capital investments, fixed based operators (FBOs), commercial scheduled air service, retail businesses, general aviation, freight operators, private corporations with flight departments, non-profit and 18 government agencies. These airport-based activities spent \$234 million in 2009, employed 2,337 individuals, and paid them \$120 million in labor income.

Minnesota airports contributed \$12.2 billion to the state's economy, including 164,900 jobs and \$6.5 billion in labor income.

The Anoka County-Blaine Airport is a 1,800-acre airport situated in the north metro of Minneapolis, Minnesota. The airport has multiple fixed base operations serving the most diverse airport mix in the Metropolitan Airports Commission's general aviation system. Currently 407 aircraft are based on the field that has a non-federal aircraft control tower directing 68,000 landings and takeoffs annually. Fixed Base Operations (FBO) provides high-quality service for both corporate and general aviation. Flight training, simulator training, certified repair services, jet maintenance, avionics and electrical equipment, structure and composite servicing, powerplant repair service, medical delivery to 11 cities in 5 states, museum, medical rescue operations and charter services have a supporting role in providing continued service to the aviation industry and in support of the local economy. In 2012 property tax of \$742,681.99 was collected from these airport businesses and private owners of general aviation and corporate facilities.

A 2005 Airport Economic Impact Study by the Wilder Foundation reported that the Anoka County, Blaine airport contributed more than \$35.1 million to the area economy and provided 350 jobs.