

Making Dreams Become A Reality!

It is a **Sunday afternoon** and I am sitting in my office looking out into the future. Can I determine the future? Of course not. But I can make a difference in a youth's life that will ultimately affect my future. Like a drop of water into a glass of water. First you have the concentrated area where the drop lands, then another ring around the area, and another, and another.

So, yes we can all see into the future through the eyes and minds of our youth of today.

When I volunteer at [Flight Expo, Inc.'s](http://FlightExpo.com) Build A Plane program I am able to see firsthand the amount of information is captured into their heads. Also, how they use this information. Some of it surprises me – other times I feel like “Yes, they were listening!”

With the two intern's at [G.A.L.S. Technology](http://GALSTechnology.com) there is a lot of give and take. I want to see what they know, how they handle the tasks I give them, and can they think “**Out Side of the Box**” to solve the challenge.

I start to think about our schools in this area. Hearing from parents that they feel short changed by the school. With the lack of hands on developmental skills—work shop area.



Parents had their eyes opened this year when they watched their youth struggle to learn via the internet. Learn a new way of teaching that is hard to understand.

Currently, due to COVID-19

- there is very little social interaction with their friends
- The students/youth are feeling more like a number in a class on a screen.
- Yes, our students like our Seniors in the Assisted Living/Nursing homes need to be protected from the virus, but at what cost?

Listening to the students in the Flight Expo's Build A Plane program and the interns at G.A.L.S. Technology; they are not a number, they need to feel part of the solution and heard. They want to learn with their hands and minds along side other youth.

Just this last Friday, Governor Waltz put out new restrictions, our schools had to go to distant learning for all ages; causing fear of the unknown for the kids.

At Flight Expo, Inc. with our Build A Plane program, Flying program and touching base with the students help them to identify and feel some what grounded. We practice social distancing, masks, washing hands, using rubbing alcohol on all areas prior to class and after class, keeping those that are feeling under the weather at home.

Flight Expo, Inc. is at full to capacity with 14-15 students and more wanting learn how to build a full

scale aircraft. Learn how an aircraft flies and possibly learn how to fly or get their Aircraft and Power Plant License by the time they turn 18 years of age.

G.A.L.S. Technology has two interns, and they are opening their doors for free tutoring and study time to help students achieve their dreams.

Now it is your turn to help with our ***"FUTURE"***. Flight Expo, Inc. and G.A.L.S. Technology, Inc. have teamed up with a **"Rising Above For Education" fund raiser sweepstakes**.



With the purchase of your ticket you have the opportunity to win a 2021 Polaris Side by Side or \$15,100 in cash. And you will be helping both organizations build a facility here in the Princeton, MN area to:

Making Dreams Become a Reality!

Rising Above For Education **SWEEPSTAKE!**

Win a SIDE-BY-SIDE or \$15,100 CASH while supporting Flight Expo & G.A.L.S. Technology!

Flight Expo is partnering with G.A.L.S. Technology to host a 2020-2021 sweepstakes this fall and winter. Flight Expo and G.A.L.S. Technology are both 501(c)(3) nonprofit organizations designed to educate youth and adults through various educational programs. Your contribution will assist these two organizations in achieving their respective missions. At the same time, you become eligible to win a GRAND PRIZE of either a brand new SIDE-BY-SIDE or \$15,100 CASH upon entering the sweepstakes.

Additional prizes are drawn during the weeks leading up to the final drawing. Winning any of these smaller prizes does not make you ineligible for the Grand Prize.

Each ticket is \$50 and can be ordered online or by mail. You may purchase multiple tickets, although tickets are limited to 4,000 total entries. Entries will be accepted beginning November 1, 2020, and the deadline to enter will be March 5, 2021, or until 4,000 tickets have been sold.

With your support we can build the next generation's Educational Building to house these great programs!

Thank you for your support of Flight Expo and G.A.L.S. Technology!



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Making Dreams Become A Reality!

giveMN.org

Ignite Generosity  Grow Giving

[#GiveWhereYouLiveMN](#)

Give to the Max is a statewide outpouring of support for thousands of nonprofits and schools across Minnesota! Our Giving Holiday is scheduled for Thursday, **November 19**, but you don't have to wait to support the causes that mean the most to you. Early Giving began November 1. Help us here at Flight Expo, Inc. with a donation towards our upholstery needed to complete the Piper Colt aircraft that the students of [Flight Expo Inc.'s Build A Plane](#) program have been working on for the last three years.

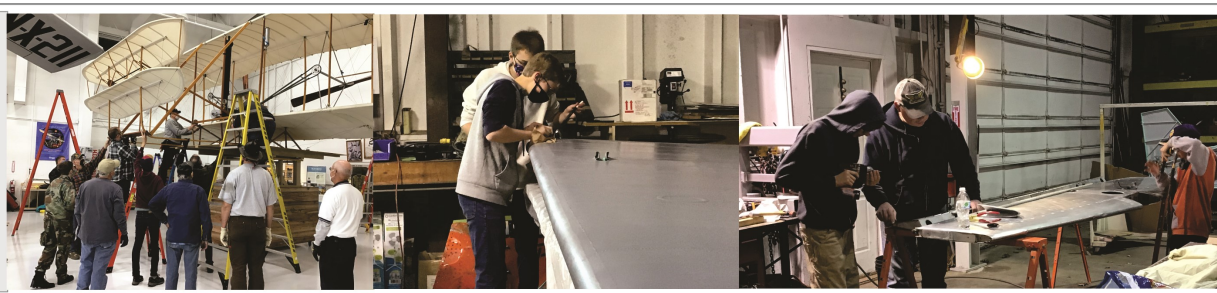


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And the Winner is..... October 2020 was our first fund raiser of the Fall 2020 Flight Expo, Inc. Build A Plane program season for a drawing with two different firearms. The students and their parents sold 800 tickets. The drawing was on October 31, 2020.

Congratulations to Our Raffle Winners!

Connie Mochlmann



Jenna Johnson




“MAKING DREAMS BECOME A REALITY!”
Shop to Make a Difference



Making Dreams Become A Reality!



The MN Road to Kitty Hawk

I (Sharon Sandberg) had just become president of a new non-profit in 1996 called Flight Expo, Inc. with a mission statement of:

Promoting Aviation through Education and Preservation

When the Director of the MN Dept of Transportation Office of Aeronautical (Ray Rought) informed the group that he would like a "Full Scale MN Wright Flyer" for the 100 years anniversary of first flight. We had over six years to make this happen. Our current board that was made up of builders and strong members of the Experimental Aircraft Association felt this was doable accomplishment.

Gary Spectator reached out to his sources and found the last bolt of fabric that was similar to the one used in the original Wright Flyer. We had the drawings and money and were starting to gather the volunteers that would like to help make this happen for the state.

As they always say the best laid plans can change in a heartbeat. Well this is what happened to our group. Due to personnel reason I resigned from the board in 1999, several of our other board members were being pulled to other areas and non-profits. The ship was not being steered to finish the mission it was tasked with.

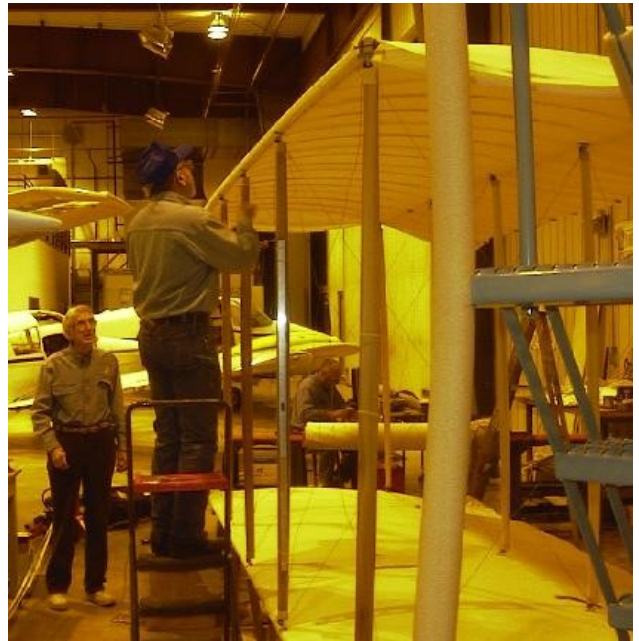
Three years later after my resignation, I received word that everything we had in place stopped and nothing had happened. My

life had settled down some and my obligation towards completing the task at hand needed to happen. A few short meetings later we had Dale Johnson as our main lead volunteer to start building the aircraft. Dale went to work immediately in his work shop encouraging others to join him.

January of 2003, [Flight Expo, the Minneapolis College of Aviation](#) (at the Flying Cloud Airport) and the Minnesota Department of Transportation, Office of Aeronautics entered an agreement to do final assembly at the Minneapolis College of Aviation.

With Dale taking lead, he was assisted by Steve Adkins, Mike Hagberg and Clair Dahl. What a great group of men. Dale and Steve had to take time off to go wind surfing on the frozen lakes or Steve would Glider tow out of Benson, MN. Clair would drive all the way from Ellendale, MN to help.

The group finished the aircraft in May of 2003. Just in time for the Discover Aviation Days event at the Anoka County Airport. The aircraft was moved the first time from the school to the American Wings Air Museum to be put on display.



In 2008 the aircraft was moved to South St. Paul to a hanger know as Gary Lysdale's hanger. With the help of MN AVIATION HISTORY AND EDUCATION CENTER and the St. Paul Civil Air Patrol the Wright Flyer was put up on display. For twelve years it has been in this location we very little public access. On October 17, 2020 the aircraft was moved to the Wings of the North Museum. Ironically it is the same location that the aircraft had final assemble at.

The Museum has updated the lights and painted the interior with a bright white that show cases their full collection of aircraft, cars and other artifacts.

The [MN Wright Flyer](#) will reside here until a permanent location can be built in the Princeton, MN area.

Thank you to those that helped with the move:

Dale Johnson, Duane Kruse, John Bjornstad, Bob & Judy Jaspersen, Gary Applebaum, EAA 237, Wings of the North Volunteer, Flying Cloud Civil Air Patrol and many others!

Flight, when did man feel this strong urge to join the ranks of the birds? According to many documentation this was way before Christ. The earliest invention stems back to B.C. Fourth C. the Invention of the kite in China and their use spread to Jap soon there-after. The earliest recored kite flight of historic not took place in about 200 b.c., when the Chinese general Han Hsin dispatched a kite on a distance-measuring mission. By flying the kite over enemy fortifications and paying out a measured rope attached to it, the general was able to determine how far his engineers would have to dig in order to burrow under the enemy's walls.

For a thousand years thereafter, kites were used in China for aerial observation, as signaling devices and as playthings. At the siege of Nanking in the Sixth Century A.D., kites were used to signal information from the beleaguered city to army commanders in the field. By the 10th century the Chinese were flying kites that had cambered, or curved, wings, which they had found more effective than flat-surfaced wings.

18th Century the Western Scientists turned to the kite as a tool for practical research. In 1749 a Scottish astronomer, Alexander Wilson, raised a series of kites that were carrying thermometers to measure air temperatures at various altitudes. Three years later the





American Benjamin Franklin flew a kite during a thunderstorm to demonstrate the electrical nature of lightning.

Aerial research with the unwieldy kites of Wilson and Franklin's day was not intended to aid in the long-sought conquest of the air. Yet many men of the century started the study of the wind-borne kites to help unlock the secrets of winged flight.

At the same time Hot Air Balloons, Wind Mills, how a bird lands, flaps his wings and many other areas were being studied for man's powered flight. It was a May 30, 1899 that a 32-year-old Wilbur Wright wrote to the Smithsonian Institution requesting information about published material on aeronautics. Wilbur firmly believed that man could fly in a powered aircraft.

Wilbur's younger brother Orville was also an aviation enthusiast and was interested in seeing the possibilities of powered flight. Neither Wilbur nor Orville attended college; Orville did not even finish high school.

By spring of 1899 the Wright Brothers had read almost everything that was related to flight that had been published. After reading this material it came to light that the one basic question had not been answered: effective flight control.

In July of 1899 Wilbur and Orville developed a concept of wing warping. By manipulating cords attached to each wing tip and operator of a kite on the ground could twist on set of tips upward while twisting the other set downward. Wilbur tested the apparatus in a field outside of Dayton while Orville was away on a camping trip. The wing warping system worked to control the kite's balance.



From October 10 – 22, 1900 Wilbur and Orville did multiple tests on their 17 foot kite-glider. During this time they were able to have a pilot in the kite flying the various wind drafts up to 300 and 400 feet. With landing speeds of 30 miles per hour.

From 1901 – 1902 Wilbur and Orville studied and developed a control able kite glider for a pilot. The next step was to develop a light weight engine to assist with the powered flight. With the automobile industry springing up, the Wrights thought they could use an existing engine. But after much search they could not find one with the specifications they needed. The Brothers decided to design and build their own engine. With the help of Charles Taylor, they were able to build the light weight engine they needed for the aircraft.

Next was the propellers. After many "heated" arguments the brothers were able to come to term and design two eight and one foot propellers.



The Wright Brothers arrived back to Kitty Hawk in October of 1903 to start testing their engine and props. Upon the first start up the engine sputtered and backfired; the propellers would not spin smoothly. Finally, after several stationary test runs, both propellers jerked loose, damaging their shafts. Thus, creating at least a 10 days delay for test flying.



On November 20, 1903, the repaired shafts arrived. After dinner that night they reinstalled and tested the propellers, but now they were so loose on the shafts that the propellers would not rotate. The next day the brother found a new application for the tenacious adhesive (Arnstein's hard cement). they normally used for fastening bicycle



tires onto wheel rims.

After completing a few adjustments and minor repairs to the machine, the brothers decided to make the first trial flight on the 25th. The weather turned on them just as they were preparing for their test flight and had to wait 3 more days for their first test flight. After one of their testing, the Brothers noticed that one of the propeller shafts had cracked again. Orville left Kitty Hawk bound for Ohio, bringing new and stronger propeller shafts made of solid spring steel.

Orville arrived back in Kitty Hawk on December 11. On Monday December 14, Wilbur took the first flight in the aircraft. The machine shot up to about 15 feet. But its nose was too high. Unaccustomed to operating the swiftly responsive elevator in a powered machine, Wilbur had climbed too steeply. The stall that followed was inevitable; after three and on half seconds by Orville's watch the craft was plowing in the sand about 105 feet from the end of the takeoff track. The left wing, the

front rudder and one of the skids taking the brunt of the fall.

The Wright Brothers did the repairs on the aircraft and on Thursday morning; December 17, 1903 they pulled their aircraft out. Pools of rain water lay under thin sheets of ice on the dunes, and a north wind blustered at 20 to 25 miles per hour. Winter was upon them. By 10:30 am the brothers had positioned the launching track – pointing into the north wind.

With Orville at the controls of the Wright Flyer- he released the restraining wire and the machine move slowly forward into the 27 mile wind. Wilbur ran along side of the aircraft steadying the right wing. The aircraft reached a speed of seven or eight miles per hour before lifting into the air about 40 feet along the track. Orville raised the elevator and the machine rose suddenly to about 10 feet, dipped, climbed again, then darted for the ground a little more than 100 feet beyond the end of the track.



Orville wrote later: *It was nevertheless the first in the history of the world in which a machine carrying a man had raised itself by its own power into the air in full flight, had sailed forward without reduction of speed and had finally landed at a point as high as that from which it started.*

Three more times that morning the Wright Brothers took to the air. On the final flight, Wilbur covered 852 feet and stayed aloft for 59 seconds before coming hard to the ground and damaging the elevator.

The Wright brothers' famous flight (which they funded without government help), Dr. Samuel Langley of the Smithsonian Institution used a \$70,000 U.S. government grant to create an airplane. What happened? It crashed into the Potomac River, the Wright brothers succeeded in their flight nine days later, and Langley laid much of the blame on "inadequate" Federal funding. So much for government's "intimate role" in technology.

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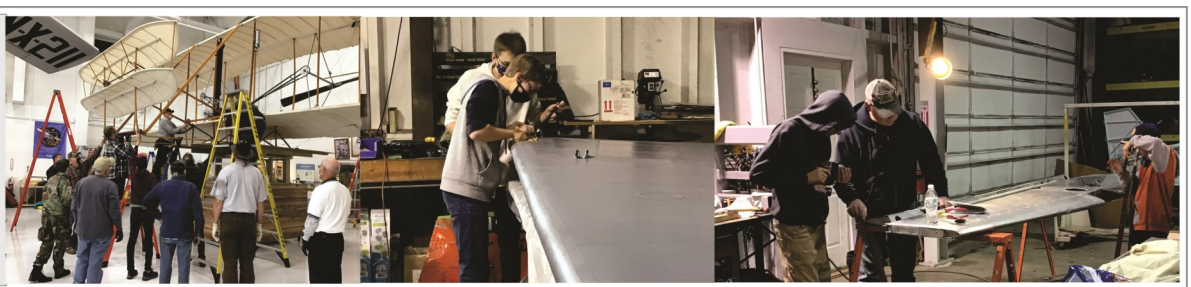


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The Tsunami Project

November 8 at 7:46 PM · Per John Bjornstad's post:

We didn't finish the floor, but we got pretty close. The cross members are permanently fastened, unfortunately we were running low on the rivets we needed to secure the floor to the longerons. However, they're on order, and we will finish up shortly.

