

MINNESOTA AIR NATIONAL GUARD HISTORICAL FOUNDATION
MINNESOTA ANG MUSEUM NEWS
Minnesota Aviation History - Learn of the Past
Spring 2017



New display showing Honeywell Aerospace Gyros and Applications

by Rick Heinecke

Over the last couple of years a program to research and describe how Minnesota companies and organizations have helped develop the Aerospace industry that we know today has been pursued by museum volunteer Rick Heinecke.

The project is a preliminary engineering history research study for the planned AirSpace Minnesota Museum and it explains how Air National Guard aircraft benefit from Minnesota science, technology, engineering and math. A list of over 25 Minnesota companies and universities has been identified as contributing to this industry. This activity is identified as STEM activity in today's world.

Two years ago a team of retired Honeywell Aerospace engineers, calling themselves the Honeywell Aero Legacy Team, came along to give the museum volunteers a hand. The Legacy Team is dedicated to preserving the history of the high-tech aerospace control systems designed, developed, and manufactured at Honeywell's Minnesota-based operations. Working with museum volunteers, the retirees proposed an exhibit showing the evolution of Honeywell gyroscopes. These devices are the heart of flight control systems used in aviation and space flight, as well as many other military and commercial applications.

The exhibit will be shown in a beautiful new display case built and donated by museum volunteer Bruce Graham. The display will include gyro models – ranging from 1940s-era mechanical units to today's Ring Laser Gyros – and illustrations of aircraft and rockets that use these devices. The exhibit also includes a 55-inch TV mounted over the display case and an interactive media player to show exciting applications of the gyro controlled systems. The video system will also be used to show other stories of interest as they are developed.

The birth of Honeywell's aeronautical business goes back to 1941 when Honeywell adapted its existing remote proportional-control heating system technology to build an autopilot that could be used in conjunction with the highly-classified Norden Bombsight. A successful demonstration of what came to be known as the C-1 Autopilot was made in only a few months. The



The Honeywell Aero Legacy Team at the Minnesota Air National Guard Museum includes Dale White, Jerry Seavey, Rick Heinecke, Bill Berschneider, Mark Manfred and Tom Ryno. photo by Jim Atwell

Also inside:

- Collection inventory update
- Call for volunteers for summer activities
- F-89 'Scorpion'



first production C-1 was installed in a B-17 in January 1942. By the end of World War II, more than 35,000 four-engine B-17, B24, and B29 bombers were fitted with C-1 autopilots.

Honeywell Aerospace story continues on page 4

Our volunteers: Nancy Wilson

story and photo by Terry Morris



Nancy Wilson became a volunteer at the Minnesota Air National Guard Museum in 2010 after a visit with her good friend and long time volunteer Ron Kaup. Other than having family members who served during the Korean and Vietnam War eras, Nancy had very little prior experience with the military. After graduating from her Sioux Falls, S. D. high school, she moved to the Twin Cities to train and become a veterinary technician but instead found a 33-year career working in the healthcare field at the University of Minnesota Medical Center. There she developed a passion for helping people and providing the best customer service experience possible. Prior to her initial museum visit, she had serious reservations regarding her level of interest in military history. This clearly changed after she was able to see the history that the museum possessed and understood the need for it to be preserved and shared with posterity.

Since joining the volunteer staff, Nancy has been responsible for the management of the museum's gift shop and birthday parties plus providing support for other special events. The birthday party attendees range from toddlers to seniors and come from a variety of backgrounds. Nancy insures that each party is tailored to deliver the best customer experience possible. She is most proud of the gift shop's financial performance which, through her leadership, has successfully turned into one of the top fund raisers for the museum.

When asked what she likes best about being a volunteer Nancy answers, "The ability to provide a memorable and rewarding experience to all visitors." (By the way.....her favorite airplane is the F-4 Phantom!)

The museum is looking for great people to join the 2017 summer road show

by Anja Dresher

The Minnesota Air National Guard Museum is looking for volunteers to assist during our 2017 road show to fairs and popular events around Minnesota and Wisconsin during the summer.

We are planning to bring a little part of our museum, the F-4 Photo Phantom together with a gift shop where visitors have a chance to experience the inside of the aircraft's cockpit and learn about the history of the Air National Guard and museum.

Pre / post event activities

Offsite event logistics & coordination
Pre/post show set up & break down
F-4 Photo Phantom / large exhibit truck & trailer drivers
Road security shadow drivers

Event activities

Admission & tickets manager
F-4 Photo Phantom cockpit security & support
Gift shop sales, coordination & support

No aviation or F-4 Photo Phantom knowledge is required; we will teach you!

If you are interested and have the skills in ANY of the above mentioned activities, love to engage with people, are passionate about teaching and aviation and enjoy being outside, come join us at events that are scheduled for the 2017 season.



Duluth, Minn. – June 3 & 4
Rush City, Minn. – June 11
Flying Cloud, Minn. – July 15 & 16
Siren, Wis. – July 22
Osceola, Wis. – September 11
Farmington, Minn. – not yet scheduled
Please check our website: mnangmuseum.org for updates.

For offsite museum events, individuals should be at least 18 years of age, a U.S. citizen, be able to lift at least 20 lbs. and be able to be active outside for 5-8 hours. You do not need a passport or an Enhanced Driver's License that are required for museum onsite activities.

Museum onsite volunteer positions are open for Visitor Engagement (docent, giftshop, special events coordination), Museum Operations (administrative, volunteer coordination, data entry, marketing & communication) and Museum Display & Artifact (museum maintenance, artifact restoration, exhibit development & construction).

Notice to all former military service members by Jerry Schultz

We invite you to share your experiences with the readers of our newsletter. Whether you spent 2, 4, 6 or more years in service to our country, your contribution to freedom and our way of life is important. For information on how to submit your article, please go to the museum website at <http://mnangmuseum.org> and look under "contact us" for details. Thank you all for your service!!

Mission Statement:

The mission of the Minnesota Air National Guard Historical Foundation is to preserve the heritage and traditions of the Minnesota Air National Guard.

Board Members:

Chairman: Brian Wyneken

Vice Chairman: Karen Wolf

Secretary: Terry Morris

Executive Dir./Dir. of Operations: Jim Atwell

Operations Assistant: Anja Drescher

Treasurer: Tom Simonet

Members: Ray Pittman, Rick Heinecke, Jerry Schultz, Brig. Gen. Greg Haase, Rick Dow, Herb Ketcham and Mike Drews

Wing Advisor: Col. Dan Gabrielli

Legal Counsel: Kelly & Lemmons, P.A., Joe Kelly and Kevin Beck

Newsletter editor: Jim Atwell

Assistant editors: Sharon Drews and Mark Moss

Museum hours and access:

Tours can be arranged through Stan Christianson (stanangmuseum@gmail.com) or call him at (612)713-2523. Special events such as birthday parties can be arranged through Nancy Wilson (nanc.mn.ang.museum@gmail.com) or call (612)458-8012.

Address all correspondence to:
Minnesota Air Guard Museum
P.O. Box 11598
St. Paul, MN 55111-0598

<http://mnangmuseum.org>

(The Minnesota Air National Guard Historical Foundation is a 501(c)(3) non-profit organization and not affiliated with the Department of Defense, Minnesota National Guard or the 133rd Airlift Wing.)

MUSEUM WISH LIST

We are in need of a fourteen-inch metal cutting friction chop saw for use with various projects around the museum and the airpark.

If you are interested in making a monetary donation to the museum to assist in the purchase of this and other items, we would be extremely grateful.

Donations can be made by check written to the Minnesota Air National Guard Museum and mailed to: P.O. Box 11598, St. Paul, MN 55111-0598. Pay Pal can also be used to make a donation. Please visit our website, <http://mnangmuseum.org>, for details. As always, we appreciate everyone's continued support.

Chairman's comments

With the arrival of spring we see traditional patterns of preparation activity as we ready for the museum season, museum projects, priorities plan, and the publication of this newsletter. Over the winter, museum volunteers and contract employees continued work in archiving our collection artifacts and in building storage fixtures. Foundation board member Anja Drescher led a team of volunteers in publication of an annual report (available on our website) that really captured the spirit and accomplishments of our organization. These newsletters, the annual report, sound bookkeeping, and the demonstrable consistent success of our operations allow us to present our story as a focused organization successfully pursuing our mission.

As most of you know, about seven years ago our continuing mission included a vision for a new Air and Space Center to be developed and built on the Fort Snelling Upper Bluff. To that end, the Foundation created a new entity, "AirSpace Minnesota" (ASM), to lead the effort towards this long-term and highly complex goal. At that time, our Foundation seemed principally focused on this project, and ASM was controlled both in governance and in practice by our Foundation. In the ensuing years, however, the consensus of our board has been to re-focus on our current mission and museum operations.

Although our board's priorities in these past couple years has not been active in seeking to influence or closely monitor ASM, this spring will see an adjustment to that as well. ASM has established new leadership under Dr. Gregg Strathy who was recently appointed co-chair of the ASM board. Dr. Strathy came to ASM through his involvement as a board member of the Minnesota Pilots' Association. He and I had an opportunity to talk recently, and we have agreed on concepts for increasing collaboration and communication in our support of the ASM mission for creating the Air and Space Center on the Upper Bluff. Dr. Strathy's priority is research and publication of a master plan for Upper Bluff development. To that end, he is consulting with national experts in museum development projects and is recruiting talented personnel to forge a path to this destination as so envisioned back in 2010.

How our Foundation supports and influences this effort will be a continuing story. For the past several years, board members Jerry Schultz and Rick Heinecke have worked with the ASM History Committee and Jerry has also been our representative board member. Foundation board member Rick Dow has also stepped forward and will soon be pivotal to the cross-collaboration between our two organizations. I would like to thank all these board members for their dedicated work towards this long-term effort. As progress continues, I believe there will be opportunity for more of our volunteers to lend their experiences and expertise.

Sincerely - your Foundation Board Chair,
Brian Wyneken

The Collection Inventory Project

by Kirk Ransom

As reported in our last newsletter, the collection inventory grants from the Minnesota Historical Society (MHS) and the Support our Troops program of the Minnesota Adjutant General's Office (SOT), continues.

Since January 2016 (for the SOT grant) and April 2016 (for the MHS grant), museum collection technicians have been hard at work. The SOT grant is focused on archives (two dimensional items) and the MHS grant is focused on artifacts (three dimensional items).

For the SOT grant project, to date approximately 12,300 archive items have been inventoried over a fifteen-month period. In this process, Mariah Kenney examines each archive and records details about it on a specific form. These archives range from official military orders and documents to letters, photographs, negatives, slides, books, maps, 16 mm films and other things. Taylor Barker is our data entry technician who enters information from the completed forms into a database.

Inventoried is not a rapid task. Mariah averages recording about 25 items per day or about 3.1 items an hour. Some things, like books, go fairly quickly while photographs that were taped onto pages in three ring binders may take an hour to remove the tape without damaging the photograph.

Ninety percent of the archive collection has never been inventoried. This inventory is the first time they have ever been touched. This is the first stage of the project to get control of the historical collection of the museum. It is very rewarding to be able to look things up and know where they are located.

2016 Museum Raffle

During 2016, a raffle was conducted to help raise revenue for the museum's operations. We were able to sell raffle tickets at the museum, during birthday parties and tours, and also at off-base airshows and other events

There were five prizes awarded to the winners of the drawing:

First Place Prize – 32" flat screen color TV, won by Gary Sansouci

Two Second Place Prizes – A.C.E.S. Flight Simulator Gift Card, won by Jim Tubbesing & Brian Markie

But this is only the beginning; the next stage has two parts. The first part is examining the record and determining what items are not appropriate to the scope of collection and should be "weeded" through specific processes to discard items. The second part is to photograph or scan each item remaining in the collection and doing more detailed research on each to determine the provenance. Then each item is reconciled to any documentation available in the museum.

For the MHS grant, approximately 5,531 artifacts have been inventoried. Each of these objects has been meticulously described, photographed and then entered into a museum application for the record. The collections technician, Lindsay Marshall, has recorded details about each artifact including its description and function, as well as finding any donor or other pertinent information from other databases and museum records since 1983. Each item is also photographed. Like the archives, the artifacts take time so about 2.8 items can be recorded per hour.

Congratulations to Lindsay Marshall, the collections technician with Museology who has been recording information on the many museum artifacts. Lindsay has taken a position with The Lake of the Woods County Museum located in Baudette, Minn. Lindsay will be the Executive Director/Curator. We thank Lindsay and wish her well in her new position.

There is a problem, however. The MHS grant project will end in April. The SOT grant will end in October. We do not want these projects to end or languish. Therefore, we need a volunteer who is good at grant writing and development to keep this project on track.

We need volunteers to continue the inventory and cataloging to finish the project. Volunteers can work one day a week or more, but we would like at least one volunteer working each week day and we will train and assist. We also need volunteers for data entry.

Two Third Place Prizes – Art Deco Airplane Clock won by Michael Roberts & Tom Ashworthy

Honeywell Aerospace story continued from page 1

Honeywell Legacy Group volunteers include Mark Mansfred, Dale White, Armand Peterson, Bill Berschneider, Les Kuivanen, Tom Ryno, Gerald Seavey, and Bruce Seiber.

Future plans include displays that show the many Minnesota companies that have provided the research, development, and manufacture of the sensors and control systems for today's Air and Space industries.

F-89H 'Scorpion'

by Russ Jensen

In the 1950s, the F-51 'Mustangs' were flying out of Saint Paul's Holman Field. The 440th at the Air Force Reserve was flying C-119 'Flying Boxcar' cargo planes, and then changed to F-80 'Shooting Star' jet fighters. Meanwhile, the Air Force had the Air Defense mission at the current 133rd Airlift Wing location. They were part of the DEW Line across the Northern U.S. so they were on alert at the hangar which now houses the museum.

At one time the 133rd was flying F-94 'Starfire' jet fighters, but I don't recall the sequence. The Air Force handed over the defense mission to the Air Guard and it became the 133rd Fighter Interceptor Wing that trained in the F-89 'Scorpion' jet fighter and took over the defense mission. Rumor has it that the airplane was too difficult to maintain. They lost one at the MSP airport, and another ended up in the river. When the Guard took them over, all the maintenance problems disappeared and confidence in the aircraft was restored. Chalk that up to the maintenance crews.

The Guard flew the F-89s in 1958 and 1959. At the summer camp in Alpena, Mich., they were told to expect F-101 'Voodoo' jet fighters for 1960. Unfortunately, there were other forces working against the 133rd. The F-89s were generating noise that upset the residents living under the flight path and the City of Minneapolis was working directly with the Air Force to remove the defense mission from the airport. This story was covered in the North Star Guardian, and it is worth looking up.

The 133rd began to look for another compatible mission and was offered the Military Air Transport Command and C-97 'Stratofreighter' cargo planes. The city's efforts were successful and on January 16 the first C-97 was delivered. The Guard flew the F-89s to the Davis-Monthan Air Force Base on that day, and

the transfer was complete. Most of the fighter pilots were lost in the trade, but there were plenty of transport pilots around. However, it just wasn't the same. They had never flown by committee and that's how the C-97 worked best.

The loss of the F-89 'Scorpion' jet fighters is an interesting story. Over the years, I developed a theory about the loss of the fighter mission. The MSP airport did not have an approach control until 1958. That meant the aircraft coming into the MSP airport were handed over to the tower from center, and they sequenced them for a standard VFR pattern – a left handed pattern; downwind, base and final.

The Air Force landing procedure was to approach the end of the runway at 700 feet and 260 knots. When the pilots reached the approach end, they executed a 60 degree left turn, closed the throttle and, on downwind, sized up a landing spot on the base. They set the flaps, turned to final approach and landed – all while the engine was at idle. Nobody heard us, and taxiing in was quiet. But when the approach control was instituted at MSP, all aircraft were handed over to approach control 20 miles out and they were sequenced for landing.

About five miles out, all aircraft were slowed to 120 knots for landing. Back then all airplanes had two or four reciprocating engines. There were no other jets, except for the F-89s. As we were sequenced for approach, we also had to slow down to 120 knots. The F-89 doesn't fly well at 120 knots. We had our gear down, flaps down, and with all that hanging we had to increase the power to stay at 120 knots. The slower an airplane goes, the higher the nose is in the airstream. The F-89 nose, when high, directs the blast from the engines downward. Coming into runway 11R over Edina and the Washburn tower, or over Eagan, had to cause a terrible racket on the ground. If we could have continued to do our 360 degree maneuver, we would have been all right.



On the cover: F-89s on the MSP flightline in the late 1950s. *file photo*

Above: The museum's F-89 in 2006. *photo by Tech. Sgt. Erik Gudmundson*

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Museum Lobby Remodel by Mike Drews

The museum is excited about the progress being made in remodeling the museum's lobby. This process started a year ago when volunteers traveled to the Chanute A.F.B. Museum. The Chanute Museum was closing due to financial issues and the Air Guard Museum was fortunate to acquire five large wood display cabinets and five smaller glass display cases.

During this past year, volunteers Mike Drews, Dave McCarthy and Pete Backlund refinished three wood cases for the lobby. The inside of the cases were painted, the outside stained to create a new finish, and LED lighting was added. The cabinets will be used to display all of the items that were in the old display cabinets, and there is enough additional room in the cabinets to display twice as many artifacts.

The Honeywell display in the museum lobby is in its final stages of development. The 52-inch television and touch screen unit has been installed and visitors will be able to watch a Honeywell presentation regarding the equipment they supply to the military, a series of photos of the Air Guard from 1921 to the present, and a video of the 9/11 event that the Guard produced.

Another improvement to the lobby will be a new display of the American flag along with flags honoring all of the military.

Minnesota Air National Guard Museum News

We hope to have these new displays finished in the next few weeks and hope you will make a point of coming to the museum this summer to see the new displays in the lobby and the many other artifacts on display in the museum hangars and the planes on display in our airpark. Please visit the museum's website for more information on tours and other events. We look forward to seeing you soon!



Spring 2017