

PIREPS



UNO Aviation Institute Announces 2026 Honors Convocation Scholarship Recipients

The University of Nebraska at Omaha (UNO) Aviation Institute proudly recognized outstanding student achievement during its 2026 Aviation Institute Honors Convocation, awarding more than \$38,000 in scholarships to 19 students. These scholarships, supported by generous donors and industry partners, reflect the Institute’s commitment to academic excellence, leadership, and the future of aviation.

In addition, the Frank E. Sorenson Award for Pioneering Aviation Education was presented to Sara Martin in recognition of her exceptional contributions to student success and aviation education at the UNO Aviation Institute. Sara Martin has been a dedicated and highly impactful member of the Aviation Institute, serving as our trusted advisor and advocate for students throughout her tenure. With a deep commitment to student success, she has played a critical role in guiding students through course planning, flight training, and career preparation. Sara is widely recognized for her accessibility, attention to detail, and genuine care for each student’s individual

goals, often going above and beyond to ensure they stay on track and feel supported.

Each scholarship honors individuals and families who have made lasting contributions to aviation, while supporting students pursuing careers across professional flight, aviation administration, and related fields. Recipients were selected based on academic performance, leadership, involvement, and commitment to the aviation profession.

“The success of our students is made possible through the continued support of our donors, alumni, and industry partners,” said Scott Vlasek, Director of the UNO Aviation Institute. “These scholarships not only recognize achievement but also provide critical opportunities that help launch the next generation of aviation professionals.”

The Aviation Institute continues to experience record growth and remains committed to advancing aviation education, workforce development, and industry partnerships. ■

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2026 Aviation Institute Scholarship Recipients

- **Col. Kari Johnson Memorial Scholarship:** Zachary Nanfito
- **Russell C. Ross Memorial Aviation Scholarship:** John Arthur
- **Densel K. and Melba J. Acheson Student Enrichment Fund:** Jacob Long
- **Chambers Family Aviation Scholarship:** Connor Grell
- **Robert E. and Rosita C. Wolsmann Scholarship:** Danica Brunk
- **Don Smithey Scholarship:** Victoria Dannelly
- **Robert Azer Memorial Scholarship:** Anna Mock
- **Larry M. Smith Memorial Scholarship:** Izzy Vlasek
- **Arlene V. Steier Memorial Aviation Scholarship:** Calla Behney
- **Bruce Tuttle Memorial Scholarship:** Alex Duman
- **Jet Linx Aviation Institute Golf Classic Scholarship:** Shay Sinnard
- **Nebraska Aviation Council Scholarship:** Talia Meyer
- **Jamie Barrett Memorial Scholarship:** Carter J. Fitzgerald
- **David L. LaMar Memorial Scholarship:** Ronan Baker, John Paul Broer
- **Chris A. Hawks Memorial Scholarship:** Samuel Bergman, Alex Duman, Benjamin Lautenshlager
- **Aviation Institute Student of the Year:** Tyler Thieman
- **Durham Scholarship (Highest Academic Honor):** Izzie Peetz



Experiencing Hypoxia: FAA PROTE Chamber Brings Training to Campus

Understanding hypoxia is a fundamental part of aviation training, yet for many students, that understanding is often limited to classroom discussions and textbook definitions. While students may be able to define hypoxia, identify its four types, and list common symptoms, recognizing those symptoms in real time presents a much greater challenge.

To address this gap, the Federal Aviation Administration (FAA) recently brought its Portable Reduced Oxygen Training Enclosure (PROTE) to campus. The PROTE provides a controlled environment where students can safely experience hypoxia firsthand—an opportunity designed to help future pilots recognize and respond to the condition before it becomes dangerous in flight.

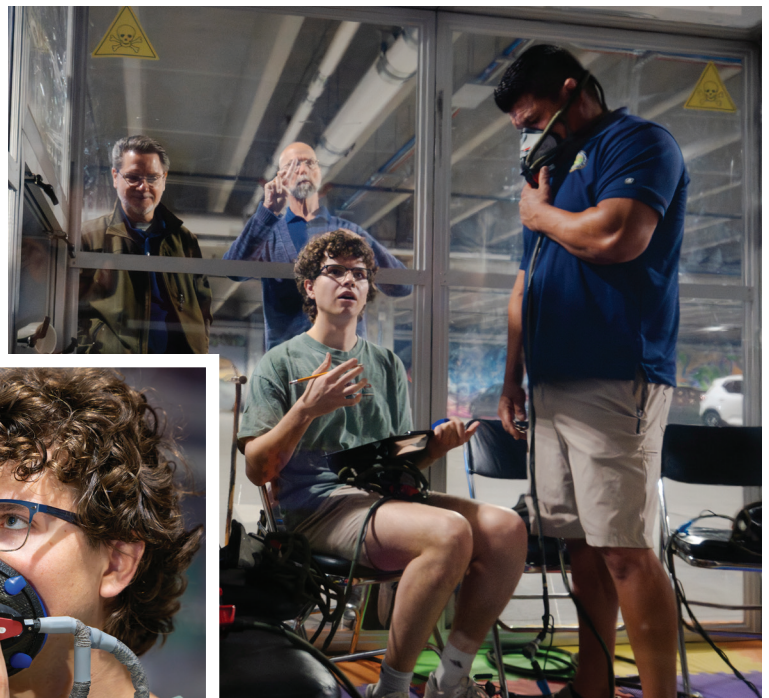
Before entering the chamber, participants attended a detailed pre-brief outlining what to expect.

Oxygen levels inside the enclosure were reduced to approximately 7%, simulating conditions at 26,000 feet above mean sea level. Students also reviewed common symptoms such as lightheadedness, impaired cognition, slowed reaction time, and euphoria, while discussing the primary goal of the exercise: identifying their personal physiological response to hypoxia.

Student Tyler Thieman described the preparation process, explaining, “The four other participants in my group and I, led by one of the FAA representatives,

discussed common symptoms—lightheadedness, impaired cognition, slowed reaction time, euphoria—and, more importantly, the goals of the exercise: to determine what our individual symptoms look like.”

Participants were equipped with pulse oximeters to monitor their blood oxygen saturation throughout the exercise. This allowed both students and FAA staff to



Student Samuel Kennedy has the opportunity to experience hypoxia firsthand in the PROTE chamber.

Experiencing Hypoxia (cont'd.)

track physiological changes in real time and determine when intervention—such as using supplemental oxygen—was necessary.

Reflecting on his baseline condition, Theiman noted, “Prior to entering the chamber, I was resting at 80 BPM heart rate and 99% oxygen saturation.”

Once inside the chamber, the effects of hypoxia set in quickly. According to Theiman, the environment initially felt normal, but the shift was almost immediate.

“Almost immediately, I began to feel lightheaded. My oxygen saturation dropped into the high 80s within moments,” he said.

As the exercise progressed, students were instructed to complete simple cognitive tasks, including a word search, to demonstrate how hypoxia affects mental performance.

“At about the one-minute mark, we were instructed to begin a simple word search. I found one word very quickly before checking my pulse oximeter, which had dropped to 80% saturation. Feeling very dizzy, I looked for more words for another 20 seconds.”

Soon after, FAA staff directed him to use supplemental oxygen.

“At that point, I was instructed to put on my oxygen mask. As I started to pull my mask to my face, I checked my readings—my oxygen saturation had fallen to 68%, and my heart rate had climbed to around 130 BPM.”

Recovery was rapid once oxygen was reintroduced.

“With the mask on, I began breathing heavily. It took about 15 seconds, but my lightheadedness started to disappear.”

Observers later confirmed that his oxygen saturation dropped as low as 62%, while his heart rate peaked at 149 BPM during the exercise.

Following the chamber session, students participated in a post-brief discussion focused on identifying symptoms and evaluating whether they would have recognized them in a real flight scenario.

For Theiman, the conclusion was clear.

“My symptoms were very noticeable—lightheadedness and dizziness that were difficult to ignore. Based on that experience, I came to the conclusion that I would be able to recognize my own symptoms of hypoxia without relying heavily on a pulse oximeter during flight.”

However, not all participants shared the same experience. Some individuals exhibited significantly lower oxygen saturation levels with minimal noticeable symptoms, highlighting the variability in how hypoxia affects different people.



A member of the FAA staff visits with students Kade Snyder, Alex Duman and Huang Nguyen before they enter the PROTE chamber.

Theiman emphasized the importance of this realization, stating, “Seeing this stark difference in experiences reinforced the importance of personal awareness and training.”

The training ultimately underscored a critical lesson for aspiring pilots: hypoxia can develop quickly, and its warning signs are not always universal.

Reflecting on the overall experience, Theiman said, “The FAA PROTE chamber made it clear how quickly hypoxia can take effect.” He added that the experience reinforced the importance of early recognition and immediate corrective action.

Programs like the FAA’s PROTE chamber provide a rare opportunity for students to move beyond theory and gain practical, life-saving awareness. By experiencing hypoxia in a controlled setting, future pilots are better equipped to recognize their own symptoms, respond effectively, and maintain safety in the cockpit. ■

The Forecast Process

By Mark A. Sheldon, University of Nebraska-Omaha, Aviation Institute – msheldon@nebraska.edu

I have a lot of conversations with people from all walks of life about weather, and a question most folks ask me, even my wife, is why forecasts are so different at times? This leads to a conversation on how the forecasts are actually created. With that, I thought that a little background on how weather forecasts are created might be a good topic for an article. So, let's talk about it. I will start with the first step of looking at the current conditions and go all the way through the final forecast. At the end of the article, I will cover why the forecasts you see on TV or on a weather Apps are so different at times.

The first step in the forecast process is looking at the current conditions of the atmosphere. You have to know the current state of the atmosphere before you can start to look into the future. Weather forecasters use a wide range of observations to determine the current state of the atmosphere. We will look at surface observations, which can come from weather stations around the world, buoy data, and even oil platforms. These systems will record weather parameters such as temperature, dew point, wind speed and direction, pressure, precipitation types and amounts, and cloud cover and amounts. This data helps forecasters identify where areas of low and high pressure are and lets us determine where the fronts are located. According to the National Weather Service (NWS), there are about 11,000 locations taking observations in the U.S.

Upper Air Observations

Next, we will look at the upper atmosphere. For this, we look at upper air observations. Upper air observations are obtained by weather balloons, which are also known as Radiosondes. These balloons are sent up, generally, at 00Z and 12Z at locations all over the world. They record weather parameters such as temperature, dew point, pressure, and wind speed and direction. From these observations, upper air charts can be made.

During potential severe weather events, the NWS will direct specific locations to launch a balloon at 18Z to obtain more information about the state of the atmosphere. This will also be done if a major hurricane is approaching the U.S. According to the NWS, there are about 92 stations in the U.S. taking upper air observations. This limited number does affect the forecast. When you look at a map of these locations, you can see large areas of the U.S. that do not have

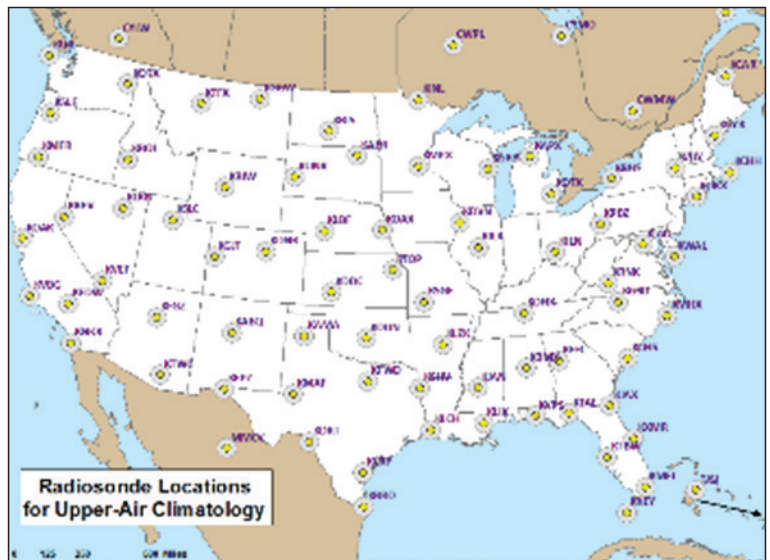


Figure 1 - U.S. Upper Air Stations

observations, so there are large gaps in the data. (See Figure 1 for locations)

Other data sources include Radars, weather satellites, PIREPS and weather data from aircraft called Aircraft Meteorological Data Reports (AMDAR). All of this data is used to analyze what is happening in the atmosphere and can help augment the lack of upper air data that is collected. I make PIREPS a point of emphasis in my Aviation Meteorology class. I tell my students that the more information we as forecasters have about the atmosphere, the better the forecast may be, so giving us PIREPS is really helping yourselves out. Of course, they also help make other pilots aware of the weather you have experienced. They are a Win Win for pilots.

Once the forecaster understands the atmosphere, we can now start to look at how the location of highs and lows will change, and how that will affect the weather. To do this, forecasters use weather models to help look into the future. Basically, there are two types of models, numerical and graphical (See Figures 2 and 3).

Weather Models

Numerical models are just that, a bunch of numbers a computer generates for the atmosphere. Graphical models will show you an image of the weather parameter it has created. Graphical model output has changed dramatically since I started in weather in 1991. From basic charts we received via teletype and fax machines, to the advanced displays you see every day on the local television stations and on certain weather

The Forecast Process (cont'd.)

websites that are out there. With the advancement in computer technologies, the number of organizations who create model data has drastically increased. The government, colleges, and even private companies have created their own models. In addition to that, the speed at which they can be produced has increased. With all these models, this can lead to confusion about which model is best. I will discuss these differences, as well as ensemble models and artificial intelligence, in another article later in the year I am writing about models. But I will say that most forecasters will look at numerous models and model types to come up with the forecast they produce. But with that, most of us have our favorites.

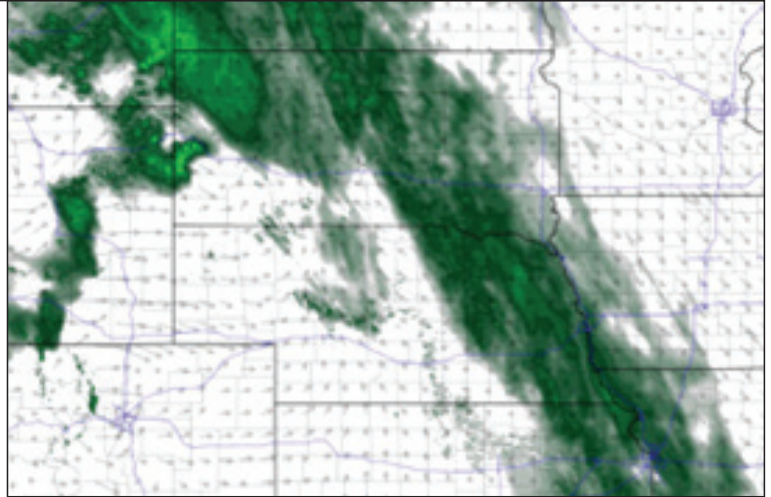


Figure 2 - Graphical Weather Model Example

A key step in the forecast process is making sure the models are accurate, so we will look at the first chart of the model and compare it to the current conditions and see how well it did initially with the forecast. After that, we will continually do this process through verification of later times throughout the model. Through the initialization and verification processes, we can use the model forecasts just as they are if they are on, adjust if slightly off, or toss out if they are way off.

Pre-flight Planning

Once the forecaster looks at all this data, they will start to make their forecast. As you know, some weather systems are easier to forecast than others. High pressure sitting over an area is much easier to forecast than a low-pressure system moving across the plains with severe weather to the south and winter weather

to the north. And as you all are aware, 10 miles can make a dramatic difference in forecasts at times. The models have gotten much better over the years, but they still are not perfect and can't help in all cases. An example I use with my students is with summer air mass thunderstorms. I can forecast that they are going to happen, but I honestly don't know if they will happen over Millard, Omaha, or the Council Bluffs airport for sure. That's where good pre-flight planning and paying attention to the weather while you are flying pays off.

Forecaster experience is another factor that can lead to good or bad forecasts. Just like any profession out there, the more you do it, the better you get at it. This can also go both ways: a seasoned forecaster understands weather systems and patterns, and can identify issues in the models, but they can also get comfortable in their ways and miss something. You know, that "Gut" feeling we get is a thing. And in my experience, forecasters do have models and data they like to use, and other they don't. The big thing is understanding the models and what data they may be focusing on, how they may be off and adjusting as needed. An example may be a certain model forecast always seems to be low on wind speeds when the winds are above 20 knots. The experience using the model may lead the forecast to bump the wind speeds up 5 knots or so, and 10 knots on the gusts.

Now to answer the question on why the forecast can be different based on whose forecast you are looking at, whether it is from the NWS, local television station, or the App on your phone. There are a lot of avenues where forecasts are created and published to the public. The NWS and military aviation forecasts and local television stations

MAV TEXT BULLETIN																						
KMSP	GFS MOS GUIDANCE																					
DT /DEC	9/DEC 10					12/09/2025					1200 UTC											
HR	18	21	00	03	06	09	12	15	18	21	00	03	06	09	12	15	18	21	00	06	12	
N/X						21					23					6					18	11
THP	29	30	30	33	33	30	26	21	20	20	17	13	10	8	8	7	14	17	14	15	13	
DPT	26	29	30	29	27	24	21	17	15	13	10	7	6	4	3	3	6	8	8	10	9	
CLD	OV	OV	OV	OV	OV	OV	OV	OV	OV	OV	BK	BK	SC	SC	SC	BK	BK	OV	OV	OV	OV	
MOR	15	13	13	01	35	35	33	32	33	32	31	31	30	30	29	15	16	14	11	35	30	
MSP	04	10	07	09	14	17	15	12	12	11	09	07	05	04	03	03	06	07	07	04	10	
P06		96		100		67		22			6		1		1		0		32	26	15	
P12						100					22				1				33	35		
Q06		2		2		1		0			0		0		0		0		1	0	0	
Q12						2					0				0				0		1	
T06		0/	0/	1/	0/	0/	0/	0/	0/	0/	0/	0/	0/	0/	0/	2	0/	0/	0/	0/	4	
T12				1/	3		0/	3			0/	0/			0/	2	0/		0/	0/		
POZ	7	10	5	3	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0
POS	68	70	65	69	95	100	100	100	100	100	100	100	100	100	99	100	100	99	100	99	98	98
TYP	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
SMW						6									0						1	
CI6	4	3	3	3	3	4	4	5	3	4	7	8	8	8	8	8	8	8	7	3	4	4
VIS	7	3	3	3	3	4	7	7	6	7	7	7	7	7	7	7	7	7	7	5	5	7
OBV	N	N	BR	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N

Figure 3 - Numerical Weather Model

The Forecast Process (cont'd.)

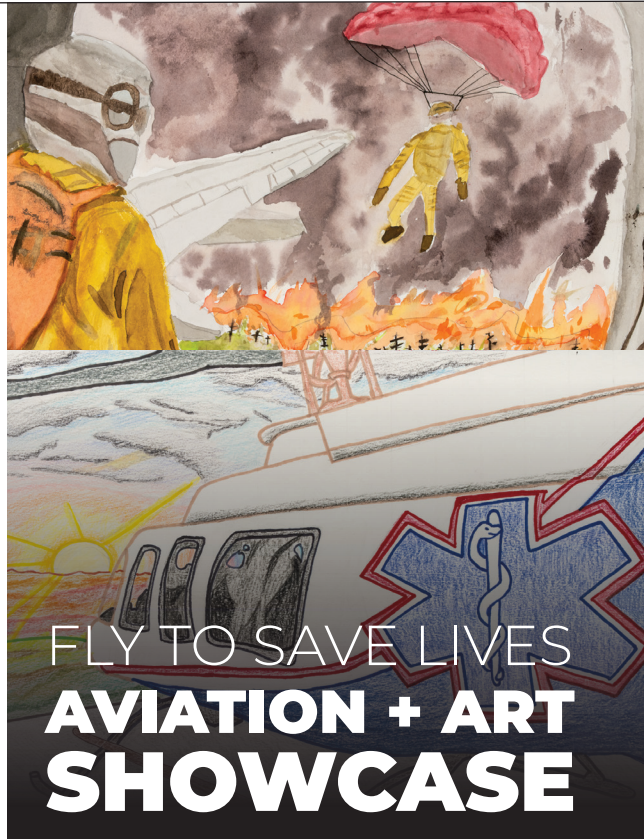
have weather forecasters who will go through the process I have described above and produce the forecast. They can modify the forecast based on their experience and determination of how well the models are handling the systems. Of course, the NWS and military aviation forecasts go into much more detail than the television weather forecasts, but this is just really based on the who is using the forecast.

Forecast Models

Most Apps, and many of the forecasts you get off the internet are computer generated. And yes, you can go to the NWS page and get both forecasts created by humans and computers.

These computer-generated forecasts can be different because of multiple reasons. The big difference will be which model is used to create the forecast. Things like how often the model is generated (every hour, every three hours, etc.), and the time you access the forecast. These models can be created by the company who makes the App, or they may purchase the forecast from another source. As I mentioned above, there are a tremendous number of organizations who make models these days. Next, you have to look at what the models were created to do. Some are generic models, forecasting for general weather conditions, some are made to focus on severe weather or snow events, and NOAA has a model that they created to focus on forecasting hurricanes.

I hope this has given you a little more insight into how weather forecasts are made, and what are used to generate them. As you know, we as forecasters are not 100% correct all of the time, but the weather forecasts are getting better and better. And for the most part, you can trust forecasts within the next three days. If you have any further questions, please send me an email, I would be happy to answer any questions. ■



Special Guests:



Rory O'Donnell

1st Place State
Intermediate Division



Avery Powers

1st Place State
Junior Division



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Aviation Pilots**

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Monday, May 11, 2026
11 a.m. - 12:30 p.m.
Lincoln Airport

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DEPARTMENT OF TRANSPORTATION

Can you identify the following Nebraska public airport based on the following aerial snippet? North is up. (Answer is on the last page)



CALENDAR OF EVENTS

May

5/1 | LNK Outdoor Movie Night: Zootopia | 3801 NW 34th St., Lincoln, NE 68524 | 7 PM, movie starts at dark | Free Event | www.eventbrite.com/e/lnk-outdoor-movie-night-zootopia-2-tickets-1986838811369

5/1 - 5/2 | MAC80 Aerobatic Championship | Seward Municipal Airport (SWT) | www.iac.org/contest/2026-05-01-mac-80-aerobatic-championship

5/7 | Nebraska Business Aviation Association Spring Luncheon | 11:30am-1:30pm | Location TBD | nebaa.org/event-6404149

5/8 | Nebraska Aeronautics Commission Meeting | Western Nebraska Regional Airport (BFF), Conference Room | 1pm MDT

5/9 | EAA 569 Fly-In Breakfast | Wahoo Municipal Airport (AHQ) | 8-10am | suggested donation: \$10/adults; \$5/kids

5/30 | Nebraska Chapter of the Antique Airplane Association Hamburger Fly-In | Hastings Municipal Airport (KHSI) | 11:30am-1pm (free-will donation)

June

6/16 | EAA 569 Fly-In Breakfast | Wahoo Municipal Airport (AHQ) | 8-10am | suggested donation: \$10/adults; \$5/kids

6/20 | State Fly-In at Fremont Municipal Airport

6/21 | EAA 804 Fly-In/Walk-In Breakfast during Berry Pepper Days | 7-11 am | Creighton Municipal Airport | Free Will Donation & PIC's eat free | Questions: Contact Barry Steans at 308-379-5331 or Jason Schindler at 402-961-9499

6/27 | Nebraska Chapter of the Antique Airplane Association Hamburger Fly-In | Hastings Municipal Airport (KHSI) | 11:30am-1pm (free-will donation)

6/28 | Fly-In Breakfast | Pender Airport (0C4) | 8-11am (PIC eat free)

July

7/11 | EAA 569 Fly-In Breakfast | Wahoo Municipal Airport (AHQ) | 8-10am | suggested donation: \$10/ adults; \$5/kids

7/25 | Nebraska Chapter of the Antique Airplane Association Hamburger Fly-In | Hastings Municipal Airport (KHSI) | 11:30am-1pm (free-will donation)

Airport quiz answer: Ogalala

Nebraska State Fly-In

Fremont Municipal Airport
1777 W 23rd St Fremont, NE

Opening Ceremony Begins at 8:30 AM
Saturday, June 20th, 2026

Event will last until 2:00 PM

Celebrate aviation in Nebraska at this family-friendly event!

- Sign-up for FREE Youth Flights
- Aviation Hall of Fame Display
- Shop Local Vendor Fair
- Feature Planes PT-19 & BT-13
- Local Food & Drink Options
- PT-19 Rides for Purchase
- Children's Activities (see attached booking info)

FREE Breakfast Provided 8AM-11AM By FREMONT KIWANIS CLUB

We are thrilled to bring this special aviation experience to the Fremont community! Come learn about aviation across the state and discover the exciting local operations right here at your airport.

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FREMONT MUNICIPAL AIRPORT
FREMONT, NEBRASKA | JUNE 20-21

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EAA CHAPTER 569
THE SPIRIT OF AVIATION

MONTHLY FLY-IN BREAKFAST

2nd Saturday of the Month (April – October)

8am – 10am

Come for Good Food, Good Fun, and Good Conversation!

Wahoo Municipal Airport **KAHQ**