

PIREPS

PIREPS

September 2025

Vol 78, Issue 9

Published monthly by

Nebraska Dept. of Transportation
Aeronautics Division
1600 Nebraska Parkway
Lincoln NE 68502
402-471-2371

dot.nebraska.gov/aeronautics

Governor Jim Pillen
NDOT Director Vicki Kramer

Aeronautics Commission
Scott Tarry, PhD, Chair

Michael Cook Edward Dunn
Jon Large Tom Trumble

Administration

Director..... Jeremy Borrell
Deputy Director..... Andre Aman

Comments/Questions

Contact mark.langrud@nebraska.gov
Circulation: 3320

Restricted Use Airspace

By Mark Langrud

About 15 years ago, I had a local Nebraska pilot reach out to me and they stated they had flown a VFR flight to Florida and somewhere in Alabama they had "accidentally" flew through Restricted airspace. This pilot was convinced that they were about to get a call from the FAA and that they wanted to get an hour of remedial training from a CFI to preemptively help their case when the call came. I agreed to meet up with this pilot and go over Restricted airspace. When we met, I had him show me the airspace he flew through. He pulled out his paper chart and then I asked him to point out the airspace he flew through. I then asked him what altitudes and times the airspace was active. He hesitated and said he didn't know. I pointed out a table on the side of the chart entitled "Special Use Airspace" and found the airspace in question. The Restricted airspace was active Monday through Friday, and it turned out that he flew this trip on a weekend. The FAA never called him.

Per the AIM, restricted areas contain airspace identified by an area on the surface of the earth within which the flight of aircraft, while

not wholly prohibited, is subject to restrictions. Activities within these areas must be confined because of their nature or limitations imposed upon aircraft operations that are not a part of those activities or both. Restricted areas denote the existence of unusual, often invisible, hazards to aircraft such as artillery firing, aerial gunnery, or guided missiles. Penetration of restricted areas without authorization from the using or controlling agency may be extremely hazardous to the aircraft and its occupants.

IFR flights are typically routed around restricted airspace when they are active, though pilots of VFR flights will have to be more vigilant. We do not have restricted airspace in Nebraska, but nearby, we have R-3602 just west of the Manhattan, KS airport.

The sectional chart side note has more information for us. R-3602 has a ceiling of Flight Level 290 and is in use Continuously. Any west traveling flights into or out of Manhattan will require going north or south around the restricted airspace. Any further questions could be directed to Kansas City Center on 134.9. ■



SPECIAL USE AIRSPACE ON KANSAS CITY SECTIONAL CHART

Unless otherwise noted altitudes are MSL and in feet. Time is local.
"TO" an altitude means "To and including."
FL - Flight Level
NO A/G - No air to ground communications.
Contact Flight Service for information.

† Other times by NOTAM.
NOTAM - Use of this term in Restricted Areas indicates FAA and DoD NOTAM systems. Use of this term in all other Special Use areas indicates the DoD NOTAM system.

U.S. P-PROHIBITED, R-RESTRICTED, W-WARNING, A-ALERT, MOA-MILITARY OPERATIONS AREA

NUMBER	ALTITUDE	TIME OF USE	CONTROLLING AGENCY/ CONTACT FACILITY	FREQUENCIES
R-3602 A, B	TO FL 290	CONTINUOUS	KANSAS CITY CNTR	134.9 363.2
R-4501 A	TO BUT NOT INCL 2200	0630-2100 MON-SAT †24 HRS IN ADVANCE	KANSAS CITY CNTR	128.35 284.67

What is a Heat Burst?

By Mark A. Sheldon,
University of Nebraska-Omaha, Aviation Institute

There has been a lot of talk lately about a weather phenomenon called "heat burst" occurring from North Dakota to Texas. Heck, even my wife asked me about them. So, let's look at the science behind these phenomena.

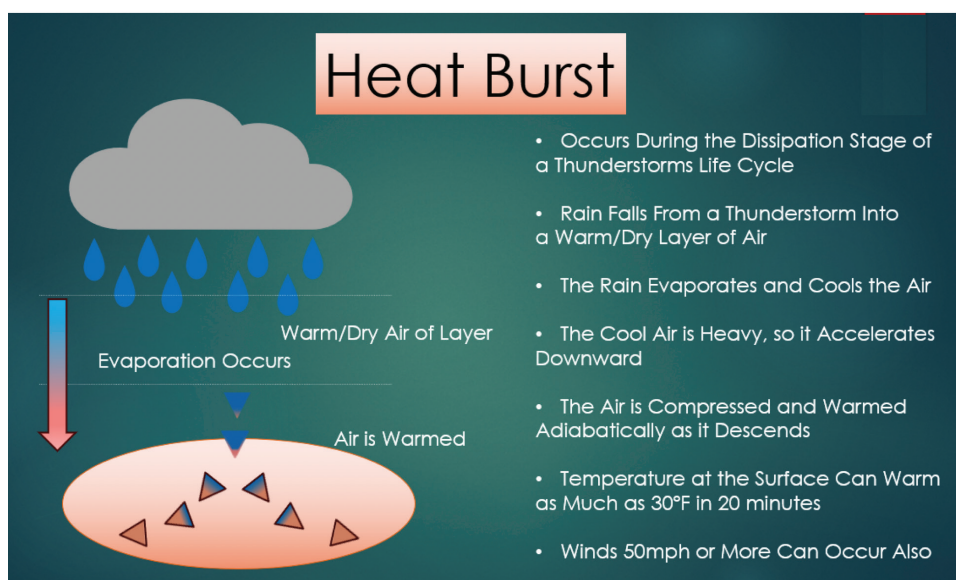
As we should, let's start off by defining what a heat burst is. A heat burst is a sudden, and sometimes dramatic, increase in surface temperatures over a short period of time. Heat bursts can also be accompanied by strong winds and a decrease in humidity.

Now, we will look at how they develop. During the late spring and summer, afternoon heating leads to airmass thunderstorms to develop and progress through their life cycles: Cumulus, Mature, Dissipation Stages. Heat bursts usually occur during the late night/early morning hours because this is when the parent thunderstorm loses its support mechanism, which is surface heating, and goes into the Dissipation Stage. During this stage, the thunderstorm is weakening and is dominated by downdrafts. This allows the rain/air to descend from the cloud. The rain falls into a layer of air that is dry and warm. This layer is key in the development of heat bursts. The rain will evaporate as it travels through this layer and will initially cool. Since the air is cold, it is heavy and will accelerate as it descends. As the air descends, it undergoes adiabatic compression and will start to warm. The faster the air descends, the stronger the adiabatic compression, which in turn causes the air to warm even faster.

What can you expect when a heat burst occurs? Of course, it can cause temperatures to increase suddenly, as much as 30°F in as little as 20 minutes. Since the air is warm and dry, you will also feel the relative humidity decrease during the event. Think about opening the door to your oven and getting hit by that burst of hot/dry air. Lastly, you can experience winds gust of 50 knots (58mph) or stronger to occur as the air hits the ground and spreads out. Normally, the effects of a heat bursts do not last very long (minutes to hours) and only effects a small area.

To give you visual of what I just described, see **Figure 1** that I created. Also, I have pulled down a couple series of weather observations of heat bursts occurrences here in NE. One is from Lexington, NE in 2023, and the other is from Lincoln in 2025. I have highlighted the temperature rise, dew point (relative humidity) decreases and the wind gusts that occurred for you.

I hope this answered any questions you might have had about heat bursts. If you have a topic you would like me to write about, please let me know. You can email me at msheldon@unomaha.edu. ■



Lexington, NE 23 Jul 2023

Station ID	Date/Time (Zulu)	Temp (F)	Dew Point (F)	Relative Humidity (%)	Wind Direction	Wind Speed (kts)	Wind Gusts (kts)
LXN	7/24/2023 2:55	82	72.5	73	140	6	
LXN	7/24/2023 3:15	80.6	73.4	78.76	130	5	
LXN	7/24/2023 3:35	79.3	73.4	82.19	0	0	
LXN	7/24/2023 3:55	79	73.2	82.45	270	22	29
LXN	7/24/2023 4:15	96	35.6	12.15	240	16	30
LXN	7/24/2023 4:35	86	65.5	50.48	330	7	14
LXN	7/24/2023 4:55	84	68	58.69	230	8	

Lincoln, NE 10 July 2025

Station ID	Date/Time (Zulu)	Temp (F)	Dew Point (F)	Relative Humidity (%)	Wind Direction	Wind Speed (kts)	Wind Gusts (kts)
LNK	7/10/2025 8:54	74	62	66.2	200	18	28
LNK	7/10/2025 9:54	72	63	73.34	330	4	M
LNK	7/10/2025 10:54	71	63	75.87	170	3	M
LNK	7/10/2025 11:54	74	63	68.57	200	18	26
LNK	7/10/2025 12:54	86	53	32.36	230	26	45
LNK	7/10/2025 13:54	84	58	41.36	240	14	25
LNK	7/10/2025 14:54	83	61	47.54	270	14	24

Transition Training

By David Morris

For quite some time the lack of transition training has been cited as a causal factor in many General Aviation accidents. We have learned that frequently accidents result from pilots being unprepared for challenges presented by the new, or different, aircraft they are flying. Even if we as pilots are legally certificated to operate aircraft within a specific category and class, significant differences can exist among different types of aircraft within that category and class – thus meeting the need for effective transition training.

Imagine yourself sitting behind the wheel of a vehicle that has a stick shift, but all you've ever driven is an automatic transmission. It is quite obvious you will need transition training from an automatic to the manual transmission.

The same required transition training for pilots might include transitioning to aircraft that are unfamiliar and

not only stick and rudder development, but also specific training in the new aircraft's systems and its operating characteristics that may include normal, abnormal and emergency procedures.

We need to remember transition training works both ways – stepping down is just as important as stepping up. It's also about learning to transition from high performance complex aircraft to aircraft with lower performance and complexity.

Whether we're transitioning from higher-to-lower performance aircraft, or to a different model, we might consider the following to insure a safe and successful transition training program:

- Review the Aircraft Operating Manual/Pilot's Operating Handbook.
- Train with a qualified Certified Flight Instructor.
- Practice what you have learned. ■

CALENDAR OF EVENTS

Recurring Events

3rd Thursday of every month | Third Thursday Pilot Lunch | 88 Tactical, 15350 Shepard St., Suite 1, Omaha | 11am | Open to the public

3rd Saturday of every month | EAA 569 Fly-In Breakfast 3rd Saturday April thru October at Wahoo Municipal Airport (AHQ) | 8-10am (suggested donation: \$10/adults; \$5/kids)

Last Saturday of March - October | Nebraska Chapter of the Antique Airplane Association Hamburger fly-In lunch at Hastings Municipal Airport (KHSI) | 11:30am-1pm (free-will donation)

Last Saturday of every month | Burgers & Brats | Wayne Municipal Airport (LCG) | 5-8pm

September

9/4 - 9/7 | 2025 Tandem Wing Fly-In | O'Neill Municipal Airport (ONL) | A fly-in event for pilots and builders of Tandem Wing aircraft and specifically, the Quickie and Dragonfly aircraft. | Block of rooms available for participating pilots/builders, contact through the Facebook pages | Event: 2025 Tandem Wing Fly-In | Host: The Stearns Family Quickie Q200 - A Homebuilt Aircraft Story

9/6 | EAA 804 Fly-In Breakfast | O'Neill Municipal Airport (ONL) | 8am

9/6 | Aviation STEM Day | Millard Airport (MLE) | 11am-1pm | Join us for a hands-on aviation experience designed to ignite curiosity and open doors to aerospace careers. Perfect for students, families and aviation enthusiasts | Contact: Hague Howey at 402-510-3528 or Hague.Howey@AviationstemAHA.org

9/13 | Goin' To Oshkosh Fly-In | Garden Co. Airport-King Rhiley Field (OKS) | 7am-2pm | Public welcome, food & overnight camping available

9/13 | Fly-In Breakfast | Stuart-Atkinson Municipal Airport (8V2) | 8-11am | Free Will Donation, All who fly (122.9) eat free

9/14 | EAA 804 Young Eagle Rides (Weather Permitting) | Stuart-Atkinson Municipal Airport (8V2) | 8-11am | Free plane rides for children 9-16. Limited rides available, register at the Fly-In | Contact: Jack at 402-340-0388

9/20 | EAA 569 Fly-In Breakfast | Wahoo Municipal Airport (AHQ) | 8-10am | suggested donation: \$10/adults; \$5/kids

9/20 | 5K on the Runway | Hastings Municipal Airport (HSI) | 8am | 5K on the Runway - City of Hastings, NE

9/21 | Applejack Fly-In/Drive-In Fundraiser | Nebraska City Municipal Airport (AFK) | 7am-12pm | Hosted by Blue Line Aviation, Breakfast: \$8/adults (ages 12+), \$4/kids (ages 3-11), Under 3 & Fly-In Pilots eat free

9/21 | Girls in Aviation Day presented by WIA Cornhusker Chapter | Lincoln Airport (LNK), 1761 W Kearney Ave, Lincoln, NE 68527 | 1-3pm | Open to ages 8-13. Limit 300 attendees. Register: giad2025-cornhuskerwai.eventbrite.com | Questions: cornhuskerwai@gmail.com

9/27 | NEAAA Hamburger Fly-In | Hastings Municipal Airport (HSI) | 11:30am-1pm

9/27 | Sandhills Fly-In and Poker | Dismal River Club Airport 82NE | 9am-12 noon CDT | Flour drop and spot landing, Silent Auction, Poker Run ending at Oshkosh | Contact Josh Vinton sandhillsflight@gmail.com

9/27 | Burgers & Brats | Wayne Municipal Airport (LCG) | 5-8pm

9/28 | Arthur Fly-In NE33 | 9am-12 noon CDT | Flour drop and spot landing | Contact Josh Vinton sandhillsflight@gmail.com

October

10/5 | EAA 918 Fly-In Breakfast | Norfolk Regional Airport (OFK) | 8-11am | Public Welcome

10/18 | EAA 569 Fly-In Breakfast | Wahoo Municipal Airport (AHQ) | 8-10am | suggested donation: \$10/adults; \$5/kids

10/25 | NEAAA Hamburger Fly-In | Hastings Municipal Airport (HSI) | 11:30am-1pm

10/25 | Burgers & Brats | Wayne Municipal Airport (LCG) | 5-8pm