



National Weather Service

Storm Data and Unusual Weather Phenomena



March 2005

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Estimated Damage Crops	Character of Storm
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IOWA, Central

Webster County

10 SE Ft Dodge **30** **1225CST** **0.2** **30** **0** **0** **Tornado (F0)**
Brief touchdown in open area.

Webster County

1 E Duncombe **30** **1240CST** **0.1** **25** **0** **0** **Tornado (F0)**
Brief touchdown in open fields.

Hamilton County

5 NE Webster City **30** **1251CST** **0.2** **30** **0** **0** **Tornado (F0)**
Brief touchdown in open fields. Lifted dirt and dust as it rotated northwest.

Wright County

1 NW Dows **30** **1315CST**
1316CST **0.5** **50** **0** **0** **30K** **Tornado (F1)**
Tornado destroyed a garage and ripped the roof off of a barn northwest of Dows.

Cerro Gordo County

4.9 SE Mason City to **30** **1339CST**
4.9 ESE Mason City **1346CST** **1.1** **50** **0** **0** **Tornado (F0)**
Tornado touched down near U.S. Highway 18 and tracked north-northeast across open county. No damage occurred as it only lifted dirt into the air.

Cerro Gordo County

1 E Mason City **30** **1342CST** **0.2** **30** **0** **0** **Tornado (F0)**
Tornado touched down in open area east of Mason City. Reported by three spotters.

Cerro Gordo County

4.9 SE Mason City to **30** **1342CST**
4.9 E Mason City **1344CST** **0.5** **40** **0** **0** **Tornado (F0)**
Brief tornado touchdown in open area southeast of Mason City. Reports indicate there were two quick and brief touchdowns in that area. Track was somewhat intermittent.

The seasons first widespread severe weather episode took place during the day on the 30th. A strong upper level trough of low pressure moved through the central U.S. This system intensified as it moved through the area, eventually becoming a closed low at 500 mb centered over southern Minnesota by the evening. Strong surface low pressure developed and lifted northeast across the area. Moisture was drawn north ahead of the system with surface dew points reaching the mid 50s just ahead of the cold front. Temperatures rose into the mid 60s to low 70s ahead of the cold front. This, combined with cooling aloft, resulted in destabilization of the atmosphere. Lifted indices reached the -5 to -7 C. range with CAPE values in the 1000 to 1500 J/kg range. Freezing levels were low, given the time of the year. Freezing levels were in the 8000 to 9500 foot range during the event. The low level jet had increased to 50 to 60 kts ahead of the cold front. Thunderstorms erupted during the previous night and moved into northwest Iowa before sunrise. They produced nickel size hail in the Estherville area. The main area of thunderstorms developed by the mid to late morning hours and moved east across the state. Most of the storms produced gusty winds and hail of up to one inch in diameter. High winds from one of the storms blew over two semi-tractor/trailer trucks at the junction of U.S. Highway 20 and 14 in Grundy County. A 71 MPH wind gust was recorded by KWVL-TV in Waterloo with the storm. A short time later, winds estimated at 65 MPH were reported in Bremer County. Several reports of tornadoes were received. The tornadoes were all very small and move closely related to land spouts. All touched down in open areas and caused little damage. The first tornado touched down in Webster County southeast of Fort Dodge. A short time later, another tornado touched down east of Duncombe. The storms moved into Hamilton County and produced a brief tornado touchdown northeast of Webster City. Several reports of tornadoes were received from Cerro Gordo County east of Mason City. It appeared a cluster of small tornadoes occurred with several brief touchdowns reported during a brief time. Two of the tornadoes touched down about 5 miles southeast of Mason City in open country. One was on the ground for about a half mile, the other for a little over a mile. One of the stronger tornadoes of the day touched down in Wright County northwest of Dows. The tornado flattened a garage there and ripped the roof off of a barn at a farm about a mile northwest of Dows.



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IOWA, Northeast

Mitchell County

6 W Osage

30	1404CST 1407CST	1	50	0	0	10K		Tornado (F0)
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Mitchell County

Stacyville to
4 NE Stacyville

30	1413CST 1418CST	1	50	0	0	15K		Tornado (F0)
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A potent early spring storm spawned a few severe thunderstorms across parts of northeast Iowa. A small tornado occurred just west of Osage (Mitchell County), near Highway 9 and Echo Avenue. A car was turned upside down, while a board punctured the windshield of a pickup truck. In addition, a machine shed was demolished, which caused sheet metal to be blown several hundred feet in all directions. Another small tornado touched down briefly on the northwest side of Stacyville (Mitchell County) and destroyed a pole barn.



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May 2005

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Estimated Damage Crops	Character of Storm
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IOWA, Central

Audubon County

1 NE Kimballton to 2 ENE Kimballton	10	1858CST 1905CST	2	40	0	0	2K		Tornado (F0)
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Tornado tracked through open fields.

Audubon County

1 N Kimballton to 2.5 NE Kimballton	10	1913CST 1917CST	2	40	0	0	2K		Tornado (F0)
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Tornado tracked through open fields.

Audubon County

2 SSE Audubon to 3 ESE Audubon	10	1920CST 1926CST	2.5	40	0	0	2K		Tornado (F0)
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Tornado tracked through open fields.

A volatile situation took shape during the afternoon of the 10th. A unseasonably deep upper low had formed aloft over the southwest U.S., while at the same time a cold front dropped south across the state during the day. Behind the cold front was a strong polar high pressure area. The southwest flow aloft impinged on the frontal boundary, setting the stage for very strong thunderstorm development. Temperatures reached the low 90s over far southwest Iowa, with mid 80s over the central sections. Dew points reached the mid 60s to the south of the front by late afternoon. North of the front, temperatures were in the 50s during the afternoon. The very unstable air was lifted north over the frontal boundary with explosive development during the early evening as the low level jet began to strengthen. The airmass to the south was very unstable with lifted indices of -11 C., CAPE values of 3500 J/kg, and a freezing level of only 13,300 feet. Hail was very widespread with the event. During the initial convection, a super-cell moved into southwest Iowa. This storm dropped three small tornadoes in Audubon County. All of the tornadoes were relatively short lived and caused little damage as they were in open areas. The main weather feature was the hail. There were numerous reports of nickel to quarter size hail with the storms. The largest hail occurred with the super cell in Audubon County, with tennis ball size hail falling southwest of Audubon. In several reports of hail of ping pong to golf ball size were received from Carroll and Guthrie Counties. As the evening progressed, a secondary line of storms formed to the north of the developing MCS. These formed in an east to west line across northern Iowa, producing a round of hail there. Late in the storm life cycle, a few of the storms began to produce strong winds. As one of the storms moved through the Des Moines area, winds of 57 MPH were measured. Some minor damage occurred to a fast food sign. Sixty MPH winds were reported in Marion County, while 60 to 65 MPH winds blew down power line poles in Poweshiek County. Late in the event, as the storms moved through Hamilton County, lightning struck a storage and repair shop building in Webster City. The building was set ablaze and was a total loss.

Calhoun County

2 N Farnhamville to 2 NNE Farnhamville	18	1758CST 1803CST	2	100	0	0	50K		Tornado (F1)
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Tornado touched down on a farm north of Farnhamville, damaging several buildings on the farm. The tornado moved from Calhoun County into Webster County.

Webster County

1 WSW Slifer to 5.7 NE Lehigh	18	1803CST 1837CST	22.5	50	0	0	40K		Tornado (F1)
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Tornado moved from Calhoun County into Webster County. It moved through mostly open country and have a very intermittent track from Slifer on northeast. Damage occurred to several grain bins, then tornado lifted for some time with another tornado forming over Hamilton County.

Hamilton County

4 N Blairsburg	18	1938CST	0.2	20	0	0	10K		Tornado (F0)
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Tornado occurred north of Blairsburg with only a brief touchdown



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May 2005

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					Killed	Injured	Property	Crops	

IOWA, Central

The frontal boundary from Nebraska moved into western Iowa during the evening hours. The airmass was unstable, but not overly so. CAPE values were around 1500 J/kg with Lifted Indices around -2. There was about 45 kts of effective shear in place. A few thunderstorms developed ahead of the boundary with one of the cells becoming severe. The first tornado occurred in Calhoun County at 2358 UTC where the tornado dropped into a farm field between York ave and Zearing Ave south of 320th St. about 2 miles north of Farnhamville. The tornado was an F1 tornado as it crossed the intersection of Zearing and 320th St. IT destroyed dome outbuildings north of the intersection and continued moving northeast toward Slifer in Webster County. The tornado remained on the ground crossing the Calhoun/Webster County line crossing County Road D46 between Zebulon Ave and County Road P29. The tornado destroyed three grain bins and just missed a farm. Debris was tossed over several hundred yards before the tornado weakened and lifted for the first time prior to reaching Slifer. The F1 tornado was on the ground for about 4 miles during this time with F1 strength and a width of 50 to 100 yards. The tornado was reported on the ground very intermittently from this point on with numerous reports southwest of Callender, northeast through the Woodman Hol State preserve and into the Brushy Creek State Reserve. At this point, the tornado lifted. The parent storm continued into Hamilton County. A brief touchdown was reported in Hamilton County north of Blairsburg. No damage was reported and the tornado roped out quickly

Butler County **2 S Greene**

26	1528CST	0.2	25	0	0	Tornado (F0)
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Brief touchdown in open field south of town.

Thunderstorms developed during the mid to late afternoon hours and persisted into the evening. A weak trough of low pressure moved through the state during the afternoon setting off the first line of thunderstorms. A cold front dropping south through South Dakota formed another line of thunderstorms to the northwest. These storms raced southeast into the state at nearly 50 kts. The airmass was fairly unstable as a closed upper level low was settling into the area and the cold pool was in place aloft. Freezing levels were in the 8000 to 8500 foot range. The Lifted Index was around -5 by late afternoon with 800-1000 J/kg of CAPE. The airmass was quite dry in the low levels with soundings showing an inverted "V" type structure in a unidirectional profile. Considerable virga was reported with most of the storms producing 45 to 55 MPH winds as they passed. A few produced small hail, and one produced a tornado that touched down briefly in a rural area of Butler County. Damage was spotty with small limbs being taken down. High winds tore a stop sign out at the base in Dallas County at Woodward. Trees were downed in the city of Boone in Boone County. The storms weakened quite rapidly once sunset occurred.

IOWA, Northwest

O'Brien County **5 S Hartley**

18	1534CST	0.1	50	0	0	Tornado (F0)
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A brief tornado caused no reported damage.



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June 2005

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Estimated Damage Crops	Character of Storm
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IOWA, Central

Ringgold County

10 SE Mt Ayr to
9 S Kellerton

04	1815CST 1817CST	1	50	0	0	5K	Tornado (F1)
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Tornado crossed into Iowa from Harrison County, MO and passed across a few farm fields before lifting.

A very active pattern was in place over the central U.S. During the previous night, a strong short wave lifted northeast across the area, setting off a round of thunderstorms. The thunderstorms moved northeast of the area by afternoon with a large area of subsidence moving into Iowa. This allowed the atmosphere to recover during the afternoon. An upper level closed low pressure area was positioned over western and central Nebraska during the afternoon and evening hours. The low lifted northeast as a surface dry line extending south from the low advanced east across Kansas. The airmass was quite unstable with lifted indices around -8 C. by late afternoon and mixed layer CAPE values in the 3000 to 4000 J/kg range. The freezing level at the beginning of the event was around 14,000 feet. Thunderstorms became tornadic to the southwest of Iowa during the late afternoon. One of the storms produced a tornado in northern Missouri which crossed into Ringgold County. The tornado passed through farm fields for about a mile before lifting. Little damage resulted. The storms moved in to south central Iowa and produced some very large hail. Softball size hail fell during the early stages of the event in Ringgold County, with baseball size hail in Decatur County. As the system moved northeast, hail sizes decreased and the event turned into more of a wind event. There were several reports of 55 to 65 MPH winds received as the line lifted northeast. Some damage occurred, however the damage was not widespread.

Taylor County

7 ENE Bedford

13	1750CST	0.2	30	0	0	1K	Tornado (F0)
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Tornado touched down briefly in farm fields.

Marion County

1 WNW Melcher

13	1930CST	0.2	30	0	0	1K	Tornado (F0)
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Tornado touched down briefly in open fields west of Melcher.

Marion County

1 NE Melcher

13	1947CST	0.2	30	0	0	1K	Tornado (F0)
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Tornado touched down briefly in fields northeast of Melcher

Marion County

7 NE Knoxville

13	1953CST	0.1	25	0	0		Tornado (F0)
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Tornado made a brief touchdown in open areas northeast of Knoxville.

An unseasonably dynamic weather pattern was in place over the central U.S. on the 13th. A closed upper level low pressure system lifted northeast out of the southwest U.S. and was centered over southeast South Dakota by the evening of the 13th. A strong mid level jet of 80 kts was present at 500 Mb. The atmosphere was unstable, but not as much as it could have been. Surface temperatures reached the low 80s with dew point readings in the 60s for the most part. CAPE values measured shortly before thunderstorm initiation were in the 1200 to 1500 J/kg range with lifted indices in the -4 to -7 C. range. With the upper low moving into the area, cooling took place in the mid and upper levels of the atmosphere during the day with the freezing level dropping to under 11,000 feet over western Iowa. The freezing level was around 12,500 over the eastern counties. Lapse rates were around 8 C. in the 850 to 700 mb layer. Thunderstorms formed over eastern Nebraska by the late afternoon hours. They formed along the west edge of the dry slot, then lifted northeast across the CWA. Although the expectation of tornadoes was there, the lifted condensation level was fairly high and limited the number of tornadoes. Three did touch down in Marion County during the evening hours. Two of them were in the Melcher area and touched down briefly in farm fields around town. A third tornado touched down northeast of Knoxville in a field. Little damage was reported. Earlier there was another brief touchdown in open country east of Bedford in Taylor County. The main severe weather mode with the storms was hail. There were numerous reports of hail in the three quarter to one inch range all along the line. One of the stronger storms dropped one and one half inch diameter hail in Polk County at Johnston. A few of the storms produced high winds with scattered damage reported. semi tractor-trailer truck was blown over east of Arcadia in Carroll County along U.S. Highway 30.



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June 2005

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IOWA, Central

Emmet County

1 N Gruver

20 1555CST 0.2 30 0 0 5K Tornado (F0)

Tornado touched down briefly in open fields north of Gruver.

An unstable airmass was in place over the central U.S. on the afternoon of the 20th. A large area of high pressure aloft was located over the west half of the country, placing Iowa in a large scale northwest flow pattern. A weak cold front dropped southeast through the Dakotas and approached northwest Iowa. At the same time, a series of MCS's developed over the Rockies, and rode around the upper level ridge of high pressure. During the day, the dew points across Iowa warmed into the mid 60s to mid 70s with surface temperatures in the mid to upper 80s. The lifted index by evening was in the -5 C. range with CAPE values in the 2000 to 3000 J/kg range. The provided a rich environment for an MCS that approached the state during the later part of the afternoon. The MCS developed over eastern Wyoming and southwest South Dakota earlier in the day. As it overtopped the upper ridge, it turned southeast into Iowa. As it did, the storms took on more of a bow echo appearance and the cluster became a small Derecho. Early on in the event a tornado touched down briefly in Emmet County north of Gruver. It was in open fields and caused little damage. The main mode of severe weather was in the form of high winds. There were few hail reports, however with the freezing level above 16,500 feet, hail was limited. The winds caused widespread damage from Emmet County, east to Winnebago County, then south into the central part of the state about as far south as Interstate 80. South of this area no damage was reported as the storms weakened rapidly. Two semi-tractortrailer trucks were overturned in Story County by the high wind about 2 miles west of Nevada. There was one injury from this. One of the drivers had to be rescued as he hung over the edge of a bridge. He was taken to hospital, treated, and released. There were numerous reports of tree and power line damage over the northwest, north central, and central counties of the state. High winds blew windows out of a home at the ISU Agronomy Farm. Structural damage was reported in Marshall County at State Center. The roof of a large building with a roof of less than two years of age received damage. A high school roof in Story County at Nevada had its roof partially peeled back as well. In addition to these reports, there were scattered reports of outbuildings and sheds being flattened by the wind. Visibility during the high winds was occasionally reduced to near zero in blowing dust by the time the storms reached central Iowa. The gust front from the storms had moved well ahead of the storms themselves, some 10 to 15 miles ahead, with some of the areas receiving severe winds not receiving any rainfall at all.

IOWA, East Central and Southeast

Linn County

1.9 W Waubeek to
1.2 WNW Waubeek

29 2251CST 0.7 20 0 0 5K Tornado (F0)

Rated high F0.

Tornado developed between Jordans Grove Road and Bridge Out Road west of Waubeek. The tornado just missed the Pflaghaupt farm and went through a corn field. A long downburst west of Jordans Grove Road likely aided in tornadogenesis. The tornado track was unknown until it was discovered the following morning by a KCRG TV helicopter.

IOWA, Northwest

Plymouth County

1 S Akron to

04 2050CST 1 50 0 0 Tornado (F0)



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June 2005

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					Killed	Injured	Property	Crops	

IOWA, Northwest

1.5 SE Akron

2053CST

A tornado was observed by a spotter for three minutes. The tornado caused no reported damage.

Sioux County

**3 E Chatsworth to
3.1 E Chatsworth**

04

**2102CST
2103CST**

0.1

50

0

0

Tornado (F0)

A brief tornado caused no reported damage.

Sioux County

4 W Ireton

04

**2122CST
2123CST**

0.1

50

0

0

Tornado (F0)

A brief tornado caused no reported damage.



National Weather Service

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July 2005

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Estimated Damage Crops	Character of Storm
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IOWA, Central

Cerro Gordo County

4 NE Rock Falls	03	1735CST	0.1	25	0	0	1K	1K	Tornado (F0)
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Tornado touched down briefly in open field

Thunderstorms formed along a cold front as it moved southeast into Iowa. Convection earlier in the day and considerable cloudiness throughout the day limited heating of the atmosphere. In spite of that, temperatures warmed into the low 80s with dew point readings in the upper 60s to low 70s common. This produced a marginally unstable atmosphere with lifted indices in the -4 to -5 C. range and CAPE values in the 1500 to 2000 J/kg range. One of the thunderstorms became severe in Cerro Gordo County and produced a brief tornado touchdown in open areas northeast of Rock Falls

Crawford County

7 NE Deloit	24	1805CST	0.5	50	0	0	1K	5K	Tornado (F0)
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Tornado touched down in a corn field and cut a path across the field

A very warm and unstable airmass was on place over Iowa on the evening of the 24th, and had been for several days. The airmass was relatively capped with 700 mb temperatures around +12 C. Surface temperatures warmed into the mid 90s in most areas with dew point readings in the mid to upper 70s. The lifted index was around -6 C by the early evening hours. There was a decent amount of CAPE with values running around 3000 J/kg, however with the cap in place it was difficult to realize the CAPE. The freezing level was quite high, reported at 16,400 feet. A cold front sagged southeast into the state during the day. This front, in combination with a weak upper level system, was enough to generate vigorous convection over northern Iowa. There were several reports of high winds, with numerous trees and power lines downed. A microburst hit the Webster City Airport with a 70 MPH wind gust. The microburst dropped dew points into the mid 50s, which lasted for several hours. Reports of hail were spotty and generally in the three quarter inch diameter range. Two storms were exceptionally strong and dropped 2 inch diameter hail. One occurred west of Breda in Carroll County. The second was in Crawford northeast of Deloit. The hail lasted for about 20 minutes as the storm moved very slowly southwest, cutting a swath nearly two miles wide with the ground becoming white for a period of time. This storm also produced a tornado northeast of Deloit. The tornado touched down in a corn field and cut a swath across the field.

Kossuth County

6 SSW Algona to 5 SSW Algona	25	1802CST 1804CST	1	40	0	0	30K	2K	Tornado (F0)
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Tornado touched down in field, then tracked across field hitting a 60 X 90 foot shed. The shed was 2 years old and was damaged

A very warm and unstable airmass was in place over Iowa, as had been the case for the past several days. A cold front sank southeast into the state during the afternoon and evening hours. The freezing level was very high, ranging from 15,500 to 17,000 feet across the area. The lifted indices were in the -8 range by late afternoon. There was considerable cloud debris over the northern part of the CWA, however clearing set in across the south. Temperatures soared into the mid 90s with dew point readings in the low to mid 70s. Plenty of CAPE was available with values by late afternoon in the 3500 to 4000 J/kg range. Thunderstorms fired along the front and became severe. The storms did not remain severe for very long as in spite of the linear presentation on radar, the storms became multi-cellular. The cloud shield and outflow from the storms diminished their intensity within 90 minutes of the storms becoming severe. During the early stages of the line, a tornado dropped down into Kossuth County south of Algona. The tornado tracked across a corn field and hit a two year old shed. The shed was 60 X 90 feet and was damaged significantly. The farmhouse was damaged with siding pulled off of it, however it was not directly struck. There were numerous reports of high winds of 60 up to 75 MPH across the west central into the north central counties. Numerous trees were damaged or toppled and some crop damage was reported. One of the stronger storms produced winds high enough to topple 3 power poles north of Aspinwall in Crawford County. Hail from the storms was quite limited, though spotty reports of up to dime size hail were received. One storm did produce quarter size hail in Crawford southeast of Vail during the initial stages of the storm development.



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August 2005

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Estimated Damage Crops	Character of Storm
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IOWA, Central

Tama County

2 S Garwin

19 1853CST 0.2 30 0 0 1K Tornado (F0)

Tornado touched down briefly in farm fields south of Garwin.

A complex weather situation set up over Iowa during the afternoon of the 19th. During the previous day, a strong short wave moved across Minnesota into Wisconsin. A trailing frontal boundary swept across Iowa and set up an east to west boundary across northern Missouri into Kansas. This boundary resulted in an area of thunderstorms during the night of the 18th into the morning of the 19th. These storms reinforced the boundary. During the afternoon of the 19th, the boundary set of another line of thunderstorms in the same area. In the meantime, another cold frontal boundary moved into northwest Iowa from the northwest during the afternoon and evening of the 19th. The airmass ahead of the boundary became unstable with surface temperatures warming into the upper 80s to low 90s and dew point readings in the low to mid 70s. Moisture streamed north into the area as a tropical tap was clearly evident on satellite pictures extending into Iowa. Precipitable water values reached 1.5 to 2 inches across the area. By evening, lifted indices were in the -5 to -8 C. range with cape values in the 1500 to 3000 J/kg range. In spite of the unstable airmass, hail as limited with freezing levels between 15,000 and 15,800 feet. The storms that developed along the old frontal boundary to the south of Iowa effectively cut off much of the severe weather potential across the CWA. Some storms did form ahead of the cold front. They produced 40 to 50 MPH winds and small hail for the most part. The interesting feature of the air mass over Iowa was the fact that Iowa was in an island of dry air aloft during the day with 850 mb dew points in the zero to +5 C. range. This aided in the development of numerous non-severe downburst wind events. During the evening, a strong moisture gradient lifted north into the state. The moisture gradient created a boundary and helped produce the conditions for one of the thunderstorms to produce a brief tornado touched down in Tama County. The tornado touched down in open country and caused little damage. Storms earlier in Story County produced downburst winds that downed power poles in Story County at Nevada and damaged branches in the town of Gilbert.

IOWA, East Central and Southeast

Buchanan County

**2.5 NW Winthrop to
2.4 NNE Winthrop**

11 1946CST 3.4 20 0 0 10K Tornado (F0)
1952CST

Rated high F0 with winds estimated at 57 knots (65 mph). Based on areal video footage from KCRG TV Chopper 9.

Tornado developed in a corn field north of the intersection of Plymouth Avenue and 205th Street 2.5 miles northwest of Winthrop. Tornado moved on a east northeast track crossing 200th Street about 0.5 miles west of Reed Avenue and then crossing Reed Avenue about 0.3 miles north of 200th Street. Tornado continued east northeast crossing county route W45 (Slater Avenue) about 0.3 miles south of 190th Street. The tornado appears to have dissipated 0.3 miles east of Slater Avenue in a corn field just short of outbuildings on the Tegler Farm. Maximum width was 20 yards.



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September 2005

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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IOWA, Central

Story County

Ames	08	1130CST	0.7	75	0	8	150K		Tornado (F1)
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A tornado touched down in the central Campas Area of ISU. Eight injuries occurred, one serious enough to require hospitalization.

A nearly stationary front extended east-southeast to west-northwest across Iowa. Cooler and drier air was to the north of the front, with very warm and unstable air to the south. Dew point temperatures approached 70 to the south of the boundary during the morning hours of the 8th. A short wave tracked southeast across the area in a general northwest flow. The air mass became quite unstable in the vicinity of the boundary with lifted indices around -7 C. The shear profile was favorable with about 40 kts of shear in the lower layers. Plenty of deep moisture was available with the system with precipitable water values in the 1.5 to 1.8 inch range. Hail was somewhat limited with the storms, but not absent with freezing levels in the 12,500 to 13,000 foot range. CAPE values ahead of the storms were in the 1500 to 2000 J/kg range, with CAPE in the -10 C to -30 C layer of the atmosphere in the 400 J/kg range. Thunderstorms which began well to the northwest during the previous night tracked southeast into Iowa during the morning of the 8th. A steady flow of moisture was transported into the area with a feed at 850 mb of about 25 kts. The storms were fast moving and the area tended to bow out. Wind damage was wide spread with numerous reports of winds of 60 to 70 MPH. An intense cluster of storms moved through the central Iowa area with measured wind gusts of 83 MPH reported at both Ames and Ankeny with the gust front passage. There was one reported tornado with the system in Ames. The tornado touched down near the power plant on the ISU Campus. Eight people were injured by the tornado. One was injured seriously enough to be taken to hospital. Initial damage estimates were around \$150,000. Many of the storms produced hail, however much of the hail was below severe limits. Reports of penny size hail were received from several locations. The largest hail came with the cluster in central Iowa. Golf ball size hail fell west of Elkhart in Polk County. The storm and high winds resulted in power outages to 8700 customers in the Des Moines area. The high winds caused a semi-tractor trailer and a camper to overturn on Interstate 80 just west of exit 141 in Polk County. The thunderstorms also produced locally heavy rainfall. Local flooding occurred on the north side of Indianola as the storms moved through.



National Weather Service

Storm Data and Unusual Weather Phenomena



November 2005

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Estimated Damage Crops	Character of Storm
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IOWA, Central

Greene County

8 S Scranton	12	1550CST	1	45	0	0	5K		Tornado (F1)
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Tornado touched down in open areas south of Scranton, then lifted.

Boone County

1.5 SSE Boxholm to 3 NNW Pilot Mound	12	1627CST 1633CST	5.1	125	0	0	250K		Tornado (F1)
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Tornado moved across Boone County and moved into Webster County.

Dallas County

2 W Minburn to Bouton	12	1628CST 1641CST	12	100	0	0	2.5M		Tornado (F2)
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Tornado touched down in Dallas County and moved into Boone County.

Webster County

5 SE Dayton to 6 E Dayton	12	1633CST 1641CST	6.7	150	0	0	450K		Tornado (F2)
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Tornado moved in from Boone County, then tracked into Hamilton County.

Boone County

6 W Madrid to 4 WNW Madrid	12	1641CST	1	100	0	2	750K		Tornado (F2)
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Tornado moved from Dallas County into Boone County. Two injuries occurred in Woodward

Hamilton County

Stratford to 6 NNE Stratford	12	1641CST 1648CST	5.8	150	1	3	11.7M		Tornado (F3)
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Tornado moved from Webster County in to Hamilton County. One woman was killed when her house collapsed. F82PH

Boone County

5 NW Madrid to 10 NNE Madrid	12	1648CST 1654CST	6	75	0	0	200K		Tornado (F1)
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Tornado hit one home, but remained mostly in open countryside.

Story County

Ames	12	1656CST 1658CST	0.2	30	0	0	2K		Tornado (F0)
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Tornado touched down briefly on the southwest edge of Ames. The tornado showed anticyclonic rotation

Boone County

10 ESE Boone to 10 E Boone	12	1658CST 1701CST	3	75	0	0	100K		Tornado (F0)
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Tornado touched down in Boone County and moved into Story County.

Story County

1 NW Ames to 3 S Story City	12	1701CST 1712CST	9	100	0	1	250K		Tornado (F2)
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Tornado moved from Boone County into Story County. One minor injury occurred on the west side of Ames

Story County

1.6 SW Story City to Story City	12	1715CST 1718CST	1.6	50	0	0	50K		Tornado (F0)
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Tornado was on the ground briefly southwest of Story City.

Story County

1 W Roland to 3 NNE Roland	12	1720CST 1723CST	4	75	0	0	580K		Tornado (F1)
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Tornado developed in Story County and moved into Hamilton County.

Hamilton County

9 SE Ellsworth	12	1723CST 1724CST	1	75	0	0	75K		Tornado (F1)
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Tornado moved from Story County and across southeast Hamilton County, then into Hardin County.



National Weather Service

Storm Data and Unusual Weather Phenomena



November 2005

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Estimated Damage Crops	Character of Storm
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IOWA, Central

Hardin County

4 WSW Garden City to 3 S Radcliffe	12	1724CST 1727CST	3	75	0	0	75K		Tornado (F1)
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Tornado moved into the county from Hamilton County.

Hamilton County

4 S Williams	12	1727CST 1730CST	1.5	30	0	0	10K		Tornado (F0)
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Brief touchdown south of the town of Williams.

Hardin County

4 NNW Steamboat Rock 5 N Steamboat Rock	12	1750CST	0.7	30	0	0	10K		Tornado (F0)
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Brief tornado touchdown north of Steamboat Rock.

Monroe County

7 SE Albia	12	1840CST 1843CST	1.5	50	0	0	50K		Tornado (F1)
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Tornado touched down southeast of Albia and tracked across mostly open country.

A very intense weather system developed over the central U.S. during the day on the 12th. A strong upper level system moved through the area with mid and upper level winds in the 70 to 90 kt range. Low level winds of 35 to 50 kts transported moisture north into the system. High temperatures reached the mid 60s to low 70s, with dew point readings approaching 60 by late afternoon. A surface low developed over northern Kansas during the previous night and lifted northeast into eastern South Dakota during the afternoon of the 12th, then into central Minnesota as a 985 mb low by late evening. The atmosphere became quite unstable with CAPE values reaching 1000 J/kg by late afternoon. The Lifted Index values were in the -5 C. range. Being as it was in November, the freezing level was quite low during the event, in the 10,000 to 11,000 foot range. Though the soundings were quite unidirectional, there was plenty of shear with zero to 6 km shear values around 65 kts. Thunderstorms erupted during the afternoon in west central in to southwest Iowa. The storms became severe quite quickly. Initially the storms produce quarter to golf ball size hail, with 2 1/2 inch diameter hail falling in Dallas County. Hail up to baseball size fell in Greene County as well. The system transitioned into a tornadic system within an hour with several tornadoes touching down in the central sections of the state. At least 9 communities were hit by tornadoes and 65 homes damaged or destroyed. An 82 year old woman was killed in Stratford when the tornado demolished her home. In a 2 or 3 block area of downtown Woodward, at least 12 houses were totally destroyed. There was one minor injury in Ames, two serious injuries in the Woodward area, and three injuries in Stratford. Due to the extensive damage to property caused by the tornadoes, Iowa Governor Vilsack declared Boone, Story, Webster, Dallas and Hamilton Counties disaster areas.

A long-lived tornado tracked through several counties across central Iowa during the late afternoon hours of Nov. 12, 2005. The tornado path is estimated at 27.5 miles long and between 100 and 150 yards wide along the damage path.

Tornado (1) initially touched down just west of E Avenue (just south of Boxholm in northwest Boone county), one half mile south of Boone County Highway E18 at approximately 4:27 p.m as an F1 tornado. The tornado then tracked northeast across E Avenue, hitting a farm just north of E18, damaging the home and some out buildings. It also flipped over one pickup truck and killed two horses at this location.

The tornado continued northeast, spreading debris across F Avenue just north of 125th Street as it maintained F1 intensity. Two additional homes were damaged with outbuildings destroyed as the tornado tracked northeast across G and H Avenues near 105th Avenue. It then intensified to an F2 tornado as it crossed the Boone/Webster county line. Another home was heavily damaged and a large outbuilding destroyed just north of the Boone/Webster county line. The tornado quickly moved northeast, crossing 390th Street and headed toward the Des Moines River, weakening to an F1 tornado.

A continuous, but weak damage path was observed crossing the river as the tornado tracked across open farmland and land adjacent the Des Moines River. The tornado has been rated an F1 tornado during this time. After crossing County D64 in Webster county, the tornado struck another farm near 370th Street and Washington Avenue, damaging the residence and destroying a machine shed along with most of its contents. The tornado again intensified to an F2 at this location.

The tornado then headed toward Stratford, crossing the Webster and Hamilton county line just west of County Road D54. The tornado entered Stratford at 4:46 p.m. on the west-central end of town, heavily damaging many homes. The tornado crossed the city park and then exited the city near the north-central portion of Stratford. Numerous homes were heavily damaged with one fatality

As the tornado left Stratford, it continued on a northeast track, lifting and dropping to the ground several times as an F0 and F1 tornado. It damaged three additional farms northeast of Stratford with the last damaged farm north of 320th Street and west of County Road R21 in Hamilton County.



National Weather Service

Storm Data and Unusual Weather Phenomena



November 2005

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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IOWA, Central

Tornado (2) touched down one mile west of Minburn in Dallas County according to the aerial survey. The tornado tracked northeast for about eight miles, producing F0-F1 damage before intensifying near Highway 141. The tornado produced F2 damage at a farm one mile southwest of Woodward, and continued to produce F2 damage through the south and east portions of Woodward. The tornado dissipated one mile northeast of Woodward. Severe houses slid off their foundations in Woodward, and a double-wide home was flipped upside down into the street. Total path length was 11 miles.

Tornado (3) touched down in open fields one mile northwest of Madrid. It hit a home three miles north of Madrid on Highway 17, producing F1 damage. One other farm site sustained damage as the tornado moved northeast. The tornado dissipated after a six mile track.

Tornado (4) started just west of Ames near the Highway 30 and Lincoln Way Split, according to the aerial survey. The tornado produced F1-F2 damage on the northwest fringe of Ames. It weakened as it moved northeast, before intensifying again and produced F2 damage to a farm site just south of Gilbert. F1 damage occurred as the tornado crossed highway 69. The tornado dissipated three miles south of Story City after a 10 mile track.

Tornado (5) was a short-lived satellite tornado that was on the ground for 1.6 miles ending at the southwest edge of Story City. The aerial survey showed very minor damage.

Tornado (6) developed one mile west of Roland and tracked across the extreme southeast corner of Hamilton county before entering Hardin county. The tornado produced damage up to F1 intensity to rural farm sites in far northern Story county and five miles south of Radcliffe in Hardin county. The KCCI-TV aerial survey indicated the track was nine miles in length.

Tornado (7) was a brief touchdown just south of Williams in Hamilton County. No damage was found from this brief tornado and it is not shown here.

Tornado (8) was briefly sighted near Blakesburg in Monroe County. The tornado produced minor damage to a farm building but was not surveyed.

Tornado (9) touched down briefly north of Steamboat Rock in Hardin County. The tornado caused little damage.

Tornado (10) was actually the first tornado of the day. It formed from the same supercell that eventually moved northeast into the Stratford area. The tornado caused little damage as it moved through fields south of the Scranton Area.

Tornado (11) was a brief touchdown on the southwest edge of the Ames City limits. This tornado was from the same parent cell as the previous tornado that touched down in Ames, but was distinct. The tornado was weak and lifted lawn chairs and caused some shingle damage. This tornado was ANTICYCLONIC in nature.

IOWA, Northwest

Sioux County

.5 W Hospers to
.5 E Hospers

12	1630CST 1633CST	1	100	0	0	800K	Tornado (F1)
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A tornado destroyed the wall and part of the roof of a business in Hospers, and caused minor damage to contents in the building