



ATLANTIC COAST OBSERVER NETWORK, MD / DE / DC CHAPTER WITH DATA FROM NEARBY AREAS

DEADLY COLLEGE PARK TORNADO

September 2001 will be remembered more by the four deadly attacks on America than by the weather which included the deadly F3 tornado that struck College Park Maryland the afternoon of the 24th.

September was a cool, dry month. A result of the seven cold fronts which passed through the region was the lack of 90 degree temperatures. The absence of tropical activity help to hold down precipitation.

TEMPERATURE

September continued its trend of the last dozen years or so of below normal temperatures. The month began on a cool note. The 2nd saw minimums fall into the low 50's at cooler suburban locations. The coolest temperatures were observed by **Rebecca Harvey** of **Eagle Rock** (44 degrees) and **Rob Rickell** of **Hanover 1 S PA** (46 degrees). The warmest portion of the month was generally from the 7th to the 10th and the 13th when temperatures were generally in the low to mid 80's. The warmest temperatures observed by ACON observers was 90 observed by **Brian Papa** of **Dupont Circle NW DC** on the 10th.

Cool Canadian air returned to the region on the 14th. Many observers reported morning lows in the 40's from the 15th to the 18th. The first sub 40 degree reading (38 degrees) of the season was observed by **Rebecca Harvey** of **Eagle Rock** on the 15th.

Warm late summer conditions returned on the 22nd and lasted until it was pushed out on the 24th by a strong cold front. Maximum temperatures rose to the lower 80's while minimums remained in the 60's. The coolest maximum temperatures of the month occurred on the 30th. Temperatures failed to reach 60 degrees at some locations as a light chilly rain fell east of I-95 / I-83.

PRECIPITATION

Rainfall continued its' below normal trend this month. 5 periods of rain (10th, 14th, 20th-21st, 24th-25th, and 30th) affected most of the region this month while

Delaware and a few Maryland stations received rain on the 4th.

A heavy thunderstorm moved southeast out of Pennsylvania through Delaware on the evening of the 4th. It brought heavy blinding rains to **Bear 2 SW, DE** (1.34") and a 52 MPH wind gust to Wilmington DE NWS.

Heavy rains fell at **Fallston 2 NW** (1.74") and **Oraville** (1.14") on the 10th. **Clinton Bubb's Morganza** station was struck by lightning on the 10th. Over an inch of rain fell at the following stations on the 20th: **Fallston 2 NW** (1.25"), **Laurel JHU/APL** (1.14"), **Bethesda** (1.29") **Forest Glen** (1.02"), **Oraville** (1.01"), and **Hanover 1 S PA** (1.60").

The heaviest rains of the month occurred ahead and with a cold front that brought six (6) tornadoes to Northern Virginia, Maryland, and Southern Pennsylvania on the 24th. The heaviest rains fell in Maryland's Carroll and Howard Counties. **Bobby Miller** of **Millers 4 NE** observed a storm total of 3.93", **Herb Close** of **Manchester 1 S** 3.30", **Ralph Hartsock** of **Westminster 4 SSE** 3.26", and **Rich Giannola** of **Laurel JHU/APL** 2.58".

TORNADOES

Tornadoes hit the area on the afternoon of the 24th. Six tornadoes occurred during the mid to late afternoon. Four of these were in Virginia, one in Maryland, and one in Pennsylvania. ACON member Jim Vaughn of Smithsburg 2 NE, who works as a weather observer at Reagan National Airport, provided this eyewitness account: "Around 4:50 this afternoon the NWS was tracking a rotating thunderstorm heading up I-95 towards downtown DC. I was on the roof of the weather station scanning the sky when I saw two funnel clouds descend from the storm 1.5 miles to my west heading east-northeast. One funnel cloud touched down. I observed (while trying to scream at people on the ground four floors below me to run for their lives)

EXTREMES REPORTED BY

ACON OBSERVERS

MAXIMUM TEMPERATURE

DuPont Circle NW, DC	90
Manchester 1 S	89

MINIMUM TEMPERATURE

Parkton 5 SW	36
Fallston 2 NW	37

WARMEST AVG. TEMP.

Dupont Circle NW, DC	70.1
Baltimore 2 SE	70.0

COLDEST AVG. TEMP.

Eagle Rock	58.9
Hanover 2 S, PA	61.6

MAXIMUM PRECIPITATION

Fallston 2 NW	4.83
Millers 4 NE	4.65

MINIMUM PRECIPITATION

Baltimore 2 SE	0.70
Jug Bay Wetlands	1.47

parts of buildings and sparks coming from the tornado as it crossed the northern part of the airport heading towards the Mall. The tornado pulled up and became a funnel cloud as it reached the 14th Street Bridge. The two funnel clouds traveled over the Mall. The smaller funnel cloud dissipated. The second funnel cloud moved DIRECTLY over the Washington Monument. It was 30 to 40 feet above the monument. Constant cloud to ground and cloud to cloud lightning flashed around the station which made it interesting while I was standing on the roof observing the tornado activity."

The thunderstorm continued to move northeast across DC into Howard County Maryland where another tornado formed. This one peaked at F3 and killed two students at the University of Maryland."

OBSERVER COMMENTS FOR SEPTEMBER 2001

Jim Canavan of Wilmington 4 NNE, DE

Thunderstorm on the 4th, 10th, & 14th

Gary Gallaher of Bear 2 SW, DE

Cool, dry month. This was the seventh month this year with below normal precipitation. Many mornings with heavy dew.

4th - Early evening thunderstorm with heavy rain which reduced visibility to below 1/4 mile.

Al Kreinik of Parkton 5 SW

10th - Overcast till 10:30 AM, then clearing with brief heavy rain @ 3:12 PM.

24th - Afternoon shower, rain by 5:30 PM very heavy at times on into the **25th**. Some flooding behind house.

Joe Manfre of Baltimore 2SE

4th - Partly cloudy, warm and humid.

Herb Close of Manchester 1 SW

4th - Isolated moderate - heavy shower 6:10 - 6:40 AM.

24th & 25th - Storm total 3.30". Moderate - heavy rains, breezy, and windy. Heaviest rainfall in over 3 months. **24th** - F2 tornado 9 miles NW at ~ 6:40 - 6:45 PM, SE of Hanover, PA.

Ralph Hartsock of Westminster 4 SSE

24th & 25th - Storm total 3.26". **24th** - Flooding rains all evening - thunderstorms.

Bobby Miller of Millers 4 NE

12th - Minimum relative humidity of 29%.

16th - Cool, morning low of 43 degrees.

24th & 25th - Storm total 3.93". **24th** - Heavy rain 5:50 PM to 7:50 PM (note obs time 6 PM) and occasionally there after. Gusts SSW to 32 MPH. More rain fell from this storm than the previous 80 days. 3.58" on the **25th** was the fourth greatest September daily rain behind 3.79" (9/16/99), 3.74" (9/18/87), & 3.67" (9/27/85). A station record 1 hour rainfall of 1.90" fell from 7 to 8 PM on the 24th

30th - Virga.

Rich Giannola - JHU/APL of Laurel

24th - Heavy rain and strong winds at time of tornado passage to the east of APL in North Laurel. Peak wind gust was 51 MPH from SE at 5:35 PM. At 5:42 PM it was raining at a rate of 4.00" per hour. In the 15 minute period from 5:30 - 5:45 PM, it rained 0.80".

Rob Cohen of Potomac 4 N

20th - Thunder at observation (2100 hours) to 2300 hours.

Rich Giannola of Olney 1 S

24 & 25th - RW's and TRW's beginning in afternoon on 24th, occasionally heavy. Precipitation ended before dawn on the 25th.

Kevin Shaw of Gaithersburg 2 WNW

A somewhat cool, dry month, highlighted by the severe weather outbreak on the late afternoon / early evening of the 24th. No real damaging weather at my station. Temperatures were particularly cool on the minimum side of things, with one minimum in the 30's and 9 minimums in the 40's.

Joe Terry of Forest Glen

Driest month since April.

24th - Very little sun kept temps in the 70's but dew point was as high as 70 during the afternoon. Heavy thunderstorm around 1730 hours dumped 0.54". Apparent FROPA at 2045 hours followed by many more hours of light to moderate rain.

Bill Hudelson of South Bowie

10th - Thunderstorm activity early-mid afternoon.

14th - Overcast AM with thunderstorm 0600-0635, rain end 1200, broken sky after, clear evening, gust NW 18.

Clinton Bubb of Morganza

10th - Thunderstorm damages weather equipment.

Floyd Abell of Hollywood

14th - Mostly cloudy with mid day showers.

23rd - AM fog and brief shower, then variable clouds.

Greg Keefer of Hagerstown 1 E

1st - A beautiful sunny day with lower temperature and humidity.

3rd - Another great day just a touch more heat and humidity.

13th - Sunny and rather hot today high 88 F but low humidity.

15th - Low of 40 F Bright sunny chilly day.

17th - Chilly low of 42 F. Sunny and warm today high 80 F.

Jim Vaughn of Smithsburg 2 NE

Thunderstorms on the 10th, 20th, & 24th. This was the third coolest September on record. Coolest Sept is 65.4 set in 1984. This was the 5th driest September on record. It has been 101 days since a daily rainfall of 1" or more fell.

4th - 48 MPH winds.

9th - 47 MPH winds.

Rob Rickell of Hanover 1 S, PA

24th - An F-2 tornado moved north-northeast just 1 mile east of this station. 2.16" of rain fell on the 24th & 25th.

**ACON WEATHER PARTY
SATURDAY, DECEMBER 8, 2001
AT THE HOME OF HERB CLOSE,
MANCHESTER 1 S, MD**

**PLEASE CONTACT HERB TO LET HIM
KNOW IF YOU ARE COMING
BY NOVEMBER 30.**

REPORT ON THE F3 COLLEGE PARK TORNADO WRITTEN BY THE NWS STERLING

Below is the written portion of the report report issued for tornado #5 by the NWS Sterling. For pictures and the complete report on all five (5) tornadoes log onto the following web site:

<http://205.156.54.206/er/lwx/924tornadofiles/September%2024,%202001%20Tornadoes.htm>

Tornado #5
Time: 5:19 to 5:54 p.m. EDT
F-scale: 3
Est. Max Wind: 150 - 200 mph
Path Length: 17.5 miles
Path Width: 100 - 200 yards
Deaths: 2
Injuries: 50+

Thunderstorm moved out of the District of Columbia and dropped another tornado. This one became violent as it moved into the University of Maryland Campus at 5:22 PM. Heavy damage began at Adelphi and University Blvd. The tornado struck 10 trailers (being used as temporary facility for the Maryland Fire and Rescue Institute) and tore them to pieces. One trailer bottom was carried 200 yards into some trees. A car carrying two young females students (sisters) was hurled several hundred yards and over a high-rise 8 story dormitory. The ladies were sadly killed. The nearby buildings took damage to windows, doors, trim, and roof and showed marks of where airborne missiles struck the buildings but did not punch through. The tornado was rated F3 at this point (Max winds 175 to 200 mph) and was believed to have two vortices.

Behind the dorms, the tornado crossed a student parking lot tossing cars on top of one another and into trees which it flattened. The tornado left College Park where it had done \$15 million in damages to the University and headed north crossing the U.S. Dept. of Agriculture's Research Center. Here it did an estimated \$41 million in damages to buildings and lost research. The tornado continued north through Beltsville between I-95 and U.S. Route 1 damaging homes, businesses, and schools. It was still F2 (max winds up to 150 mph) strength...a significant tornado.

The tornado hit the heart of Laurel at 5:39 PM (as captured on video). It cut a path through the city just west of the downtown area. One vortex briefly reached back up into the F3 strength as it tore the roof off of a wing of the Laurel High School and then destroyed a single level house in the neighborhood behind the school. Moving out of Laurel, it crossed from Prince George's County into Howard County. Here it was still F2 strength and it damaged 43 townhomes. It began to weaken to F1 (max winds 90

REPORT ON THE F2 TORNADO THAT HIT SE HANOVER, PA.

Below is the report written by ACON member Herb Close of Manchester, Maryland. This tornado's path was in Pennsylvania and was not surveyed by the Sterling NWS.

Copyright 2001 by Herb Close

An F2 tornado roared through Penn and West Manheim townships by SE Hanover on Monday night on September 24, 2001. Winds estimated between 110 and 120 mph, damaged 100 structures, mostly homes in the area. There were no serious injuries. Thirty-one people were left homeless by the tornado according to the American Red Cross. Damage will likely reach into millions of dollars. One business, Cooper Motors, reported damage of \$500,000. South Western school district officials, who were forced to cancel school the day after the tornado, estimated damage to the high school and intermediate school, at \$300,000.

The storm's path measured between 50 and 150 yards wide, and it traveled five miles in seven minutes skipping along the path. In spots along the path, homes were nearly destroyed while others had little or no damage.

I was able to survey the damage Saturday afternoon on September 29th. I checked as many locations as I could accessible by road. I checked out seven locations along the five mile path. The only accessible spot I did not check was South Western school due to lack of time. The amount and intensity of damage varied considerably.

I talked to an elderly woman that lived by the tornadoes path and she said there was a huge swirl of debris headed for her back yard on that Monday evening. She also heard that freight train sound. The wind blew strong in one direction then strong in the other direction. The damaged trees and bushes in her yard confirmed that. She said the rain was also very heavy. Her house only had minor damage but neighboring homes had more major damage. Large trees went down and a garage badly damaged. She told me where to go to see some of the worst damage. The damage could not be seen along Rt. 94, but just inside the development by Cardinal Dr., Garden LA, and Meadow LA. As I drove inside the development, I could see many homes with blue tarps on top, some on damaged roofs, others on homes with no roofs at all. Then I began to see homes with missing walls and entire front sides missing so that you could see the inside of the houses. Some homes were nearly destroyed.

I saw two men sitting on a tailgate of a pickup truck. The one man was the owner of one house with a roof and front side missing. He said he wasn't home at the time of the storm, but his clock inside the house stopped at 6:45 PM. He told me that his roof got picked up off the house and simply got lost. It's nowhere to be found! There has been no sign of it anywhere in the area! He also told me a lot of very heavy rain fell with the storm. He had a large can with about 5" water inside. When the tornado tore the roof off, all that rain made everything wet inside the house and it all had to be thrown out. Despite all the damage on this side of the street, on the other side only minor damage. Homes mostly intact. In fact this area was nearly surrounded by homes with little or no damage at all which shows that the tornado skipped. This damage occurred just southeast of Grandview Road and not far from when the tornado first touched down.

About halfway through the tornado path at Black Rock Rd. and Valley View, there was more considerable damage. This time however, there was more tree damage than house damage. I saw a large tree uprooted and fallen onto the front side of a single story house. There were also about half a dozen large pine trees snapped like toothpicks, some about a foot in diameter. Some pine trees snapped near the base, others about halfway up. Along Valley View Rd., many trees were uprooted or snapped. Some yards looked like battlefields with filled in holes from many uprooted trees. There were several people there still cleaning up the damage. Most of the trees had already been sawed

Continued from page 3 left column

to 110 mph) as it moved north through new and old neighborhoods west of Savage, Maryland. It continued to weaken as it crossed I-95 at route 32 (max winds 70 to 90 mph). The last known damage from the tornado was seen in Columbia at Snowden River Parkway and Patuxent Parkway.

This was 17.5 miles from its touch down point. The path width ranged from a narrow 50 yards to 200 yards and probably averaged around 150 yards. Damages to Prince Georges County were 861 residential homes damaged, 560 vehicles damaged, and at least 23 commercial businesses. Damages to the county were estimated at \$16 million but would likely go up. Howard County likely saw another million in damage. Add this to the \$41 million to USDA and \$15 million to the University and it comes to over \$73 million dollars in damages. Two people were killed and over 50 injured. A video from the Fire and Rescue Institute was found near Ellicott City (about 25 miles away), IDs were found in Monkton (about 45 miles away) and papers were found in a field in Northwest Harford County (about 60 miles away).

PUBLIC INFORMATION STATEMENT
NATIONAL WEATHER SERVICE BALTIMORE-
WASHINGTON
625 PM EDT TUE SEP 25 2001

...SIGNIFICANT TORNADO HITS COLLEGE
PARK AND LAUREL AREAS...

NATIONAL WEATHER SERVICE STORM DAMAGE SURVEY TEAM WENT TO THE COLLEGE PARK AREA OF MARYLAND THIS MORNING. AN AERIAL SURVEY WAS CONDUCTED ALONG THE LENGTH OF THE TRACK AND A GROUND SURVEY WAS CONDUCTED AT THE UNIVERSITY. SIGNIFICANT DAMAGE BEGINS JUST SOUTHWEST OF THE UNIVERSITY OF MARYLAND AND CONTINUES FOR ABOUT 13 MILES THROUGH A PORTION OF LAUREL TO NEAR SAVAGE MARYLAND. THE DAMAGE PATH WAS ABOUT 150 YARDS WIDE OCCASIONALLY NARROWING TO ONLY 50 YARDS WIDE. THE TORNADO HAS BEEN RATED AN F-3 ON THE FUJITA DAMAGE SCALE. AN F-3 TORNADO HAS MAXIMUM WINDS BETWEEN 158 AND 206 MPH. TORNADOES ARE RATED ACCORDING TO THE MAXIMUM DAMAGE THAT THE STORM PRODUCES.

THE TEAM FIRST SURVEYED THE AREA ON THE UNIVERSITY OF MARYLAND CAMPUS ALONG UNIVERSITY BOULEVARD. TEN CONSTRUCTION TRAILERS WERE TOTALLY DESTROYED. THE BASE OF ONE OF THE TRAILERS WAS DEPOSITED IN TREES ABOUT 200 YARDS AWAY. LARGE MISSILES WERE GENERATED THAT STRUCK THE UNIVERSITY BRICK BUILDINGS. THE BUILDINGS WERE ABLE TO WITHSTAND THE POUNDING WITH ONLY DAMAGE TO WINDOWS, EXTERIOR TRIM AND SOME ROOFING. AN ESTIMATED 200 VEHICLES WERE MOVED, FLIPPED, OR BECAME AIRBORNE. SOME VEHICLES ARE BELIEVED TO HAVE BEEN CARRIED SEVERAL HUNDRED YARDS AND TWO FATALITIES RESULTED. THIS DAMAGE WAS THE BASIS OF THE F-3 RATING. THIS TORNADO STORM BEGAN IN VIRGINIA PASSING THROUGH FRANCONIA...CRYSTAL CITY...PASSING NEAR THE PENTAGON AND INTO THE DISTRICT OF COLUMBIA. A FUNNEL CLOUD

Continued from Page 3 right column

up. I talked to one man there and he said the tornado nearly sucked his wife out the front door, but he managed to grab her and take cover inside the house. He said the tornado sounded like a train. The tornado spared the house with only minor roof damage and a twisted waterspout. Their side and back yards however were a mess from the uprooted trees making it look like a battlefield. The yard was very lumpy with filled in holes. Across the narrow street there was no damage at all. Looking to the NE, I could see South Western High School about a mile away. I did not see any damage from the distance, but the path of the tornado would have taken it right to the school and newspapers stated that \$300,000 damage occurred at the school. I did not have enough time to get a closer look at the school.

Near the end of the tornado path, by the corner of York Street (Rt. 116) and Blooming Grove Road (Rt. 216), the front side of a house and a car dealership were badly damaged. The Hanover Evening Sun stated that \$500,000 damage occurred at the car dealership. My aunt lives just about ¼ mile down York Street from the damage. Her house was not in the path of the tornado. There were many other homes and developments between the dealership and South Western High School that had no damage at all. Only a few spots with minor siding or roof damage. The damage from this tornado could have been much worse if it hadn't skipped like it did. There could have been many more injuries and even deaths. Thank God that did not happen!

The following is from an e-mail written by ACON member Rob Rickell of Hanover 1 S

September 25, 2001

I just got some more info on the Hanover tornado, as of 6 PM this evening News 8 reported that it was officially an F-2 Tornado that rolled through the south and east parts of Hanover. I also just returned from looking at storm damage.....It looks as if paths were cut through trees and neighborhoods, there must be more than 100 homes/businesses that sustained damage, some of which are now condemned. I personally observed a path cut through a row of trees, only about 75 feet wide, and trees on either side of this swath were untouched.

Some of the homes were literally picked up off their foundations and set back down again. The neighborhood that lies just 1 mile ENE of my home is just littered with debris that include roofs, siding, lumber, trees. The Wendy's that is about 1 1/2 miles to my northeast sustained much damage as well. Many streets are still blocked off and I have not been able to see the entire damaged area. It took me almost an hour just to get near and see just a portion of the area. I will surely be out later this week to look at the damage in the neighborhoods that I could not get close to this afternoon.

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WAS OBSERVED BY SOME OVER THE DISTRICT. THE TORNADO TOUCHED BACK DOWN OUT OF THIS SAME THUNDERSTORM IN A SUBDIVISION SOUTHWEST OF THE UNIVERSITY. THIS WAS NEAR WEST HYATTSVILLE AND NORTHWEST BRANCH STREAM VALLEY PARK. THE TORNADO REACHED ITS PEAK STRENGTH AS IT MOVED THROUGH THE UNIVERSITY. IT CONTINUED NORTH-NORTHEAST DAMAGING NUMEROUS HOMES AND BUSINESSES THROUGH COLLEGE PARK AND BELTSVILLE. BUILDINGS ON THE CAMPUS OF THE NATIONAL AGRICULTURAL RESEARCH CENTER WERE ALSO DAMAGED.

THE TORNADO TRACKED BETWEEN I-95 AND ROUTE 1 AS IT HEADED FOR LAUREL. HERE IT TORE PART OF THE ROOF OFF THE LAUREL HIGH SCHOOL AND THEN CUT THROUGH THE RESIDENTIAL COMMUNITY. AGAIN NUMEROUS HOMES AND BUSINESSES WERE IMPACTED. THE TORNADO STRENGTH WAS STILL SIGNIFICANT WITH WINDS ESTIMATED IN THE 125 TO 150 MPH RANGE. THE TORNADO CROSSED INTO HOWARD COUNTY BEGAN WEAKENING AS IT MOVED TOWARD THE SAVAGE AREA.

AN ADDITIONAL SURVEY TEAM HAS BEEN OUT TODAY IN CULPEPER AND FAUQUIER COUNTIES IN VIRGINIA. THAT INFORMATION WILL BE RELEASED AS SOON AS THE TEAM RETURNS. THE FRANCONIA-CRYSTAL CITY-DC AREA WILL BE LOOKED AT TOMORROW (WEDNESDAY).