

## **March 21, 2013 Gulf Coast webinar**

### **Questions asked, and answered, during the March 21, 2013, Gulf Coast webinar:**

*Q: If I live by a bayou, do I need to be worried about a storm surge?*

A: (NHC hurricane scientists) Bayous are typically low-lying areas that are quite prone to storm surge flooding. I'm not sure if you are in Louisiana, but if you are, that is one of the most vulnerable surge areas along the Gulf coast. So, in answer to your question, yes.-

*Q: Can hurricanes or storms happen in areas such as Antarctica?*

A: (NHC hurricane scientists) Antarctica is not a region where we see tropical cyclone formation. The main reason for this is because the waters are too cold. While tropical cyclones are not possible near Antarctica, strong winter storms can occur.-

*Q: What was the strongest hurricane that has occurred in history?*

A: (NHC hurricane scientists) The strongest hurricane in the Atlantic basin was Hurricane Wilma in 2005. It had peak winds of 185 mph and the pressure was an exceedingly low 882 millibars (26.05" of mercury).

*Q: What would happen if a hurricane and a tsunami combined with each other?*

A: (NHC hurricane scientists) Tsunamis, while causing flooding, are caused by a different type of environmental phenomenon called an earthquake. The storm surge is basic impact produced by a hurricane.-

*Q: What training is needed to become a hurricane hunter? to fly the airplane into a storm?*

*Another related question: What type of training do hurricane hunters need to do their job?*

A: (Richard Henning, AOC) Most of our pilots transfer over from the Navy because the P-3 is mostly a Navy aircraft. They are trained through the Navy aviation program. The Air Force also has hurricane hunters that fly through the storm in C-130 aircraft.

*Q: My students would like to know why hurricanes are named, and who determines their names? Another related question- My students would like to know, who is in charge of naming the hurricanes?*

A: The names are carved out for 6 years. The names can be retired if they deliver significant impacts or cause wide spread property damage or loss of life such as Sandy, Ike and Katrina. We also have a name replacement system to replace those names that have been retired. The system is a very strict process that goes through the World Meteorological Organization so it is not just one person picking the names, it is a thorough process that is taking place.

*Q: Do you go out and recover the dropsondes-or are they littering the oceans and land after the storms?*

A: (Richard Henning, AOC) Our dropsondes are expendable. Unfortunately they are not recoverable but they just sink harmlessly to the bottom.

*Q: How long do hurricanes usually last?*

A: (Answered by NHC hurricane scientists) Hurricanes can last a couple of days to several weeks. The average duration is generally at least several days. One of the longest-lived hurricanes lasted for about a month.-

*Q: Good morning, my students would like to know if you get the dropsondes back?*

A: (Holly Morin, HSS Team) The AOC experts answered a similar question above- they do not get the dropsondes back. They are expendable and will just sink to the ocean floor.

*Q: My students at Ozona Elementary in Palm Harbor, FL would like to know what kind of training is required to pilot the P-3?*

A: (Holly Morin, HSS Team) The AOC experts answered a similar question above- most of their pilots transfer over from the Navy because the P-3 is mostly a Navy aircraft. They are trained through the Navy aviation program. The Air Force also has hurricane hunters that fly through the storm in C-130 aircraft.

*Q: Where do most tornadoes develop during a hurricane?*

A: (NHC hurricane scientists) Most of the tornadoes develop in the outer rainbands, typically a far distance from the eye. Tornadoes are also most favored in northeast portion of the storm.

*Q: My students would like to know how long a flight into the hurricane would typically last?*

A: (Richard Henning, AOC) Typically our flights last 8.5 or 9 hours long. Pretty tiring when it's a long lasting storm and we fly 5-7 missions!

*Q: About how many hurricanes hit the Gulf Coast after the end of hurricane season?*

A: (NHC hurricane scientists) Very few hurricanes have made landfall along the Gulf coast outside of the hurricane season. There have been a few recorded in May, but none from December-April.-

*Q: My students would like to know who designs the desponders? Is it the NHC or an outside company?*

A: (Richard Henning, AOC) We purchase our dropsondes from an outside company called Vaisala. They are a very good meteorological instrument company that have become the standard in both dropsondes and radiosondes for weather balloons-

*Q: What are the steps/training to become a hurricane tracker?*

A: For the scientists that fly on the hurricane mission, we all have degrees in meteorology, some of us went to Florida State University, and others went to other universities around the country. I think the one thing we all have in common is that we all love science, I know when I was in 5<sup>th</sup> grade science was my favorite subject. Work really hard in high school in science and math; try to get into a good school a good university that has a meteorology program. That is a good way to become a hurricane hunter scientist. Most of our pilots got their training from being in the military. We have folks that come from the US navy that flew P3's in the navy. It takes a lot of training to fly into the storms.

*Q: From Mrs. Pitt's 5th grade class in Tampa, Florida: Have all the planes returned from the missions safely?*

A: (Richard Henning, AOC) We have never had a plane go down throughout NOAA's history of flying through storms. We try to make a dangerous mission as safe as possible by analyzing the risks that we take every year.

*Q: From Mrs. Boritz's fifth grade class in Arcadia, Florida. What type of training do the hurricane hunters need to do their job?*

A: For the scientists that fly on the hurricane mission, we all have degrees in meteorology, some of us went to Florida State University, and others went to other universities around the country. I think the one thing we all have in common is that we all love science, I know when I was in 5<sup>th</sup> grade science was my favorite subject. Work really hard in high school in science and math; try to get into a good school a good university that has a meteorology program. That is a good way to become a hurricane hunter scientist. Most of our pilots got their training from being in the military. We have folks that come from the US navy that flew P3's in the navy. It takes a lot of training to fly into the storms.

**Unanswered questions from the March 21, 2013, Gulf Coast webinar (questions were asked during the webinar but answered by NHC forecasters and AOC personnel after the webinar):**

*Q: How long does a hurricane last on land?*

A: Hurricanes weaken very quickly over land after moving away from their energy source, the warm ocean. Most hurricanes weaken to tropical storms within 12 to 24 hours after making landfall along the coast and to tropical depressions a short time later. However, these weakening systems can continue to produce devastating effects, including flooding rains and tornadoes, well inland.

*Q: Mrs. Congden's 5th grade class- What has been the longest lasting hurricane in the last decade (10 years)?*

A: The longest-lived hurricane during the last decade was Hurricane Isabel of 2003. It lasted as a hurricane for a period of nearly 12 days. Hurricane Nadine is a recent example of another long-lived tropical storm but it was not a hurricane for as long. It was a tropical storm or hurricane, however, for about 3 weeks.

*Q: Was the National Hurricane Center built in a vulnerable location on purpose?*

A: Not on purpose. The National Hurricane Center was established in Miami during the 1940's as a result of government-led research activities on hurricanes taking place in south Florida. Soon thereafter, part of the Miami Weather Forecast Office was designated as the National Hurricane Center. The National Hurricane Center has since become one of nine national centers in the National Weather Service.

*Q: How often are there hurricanes on June 1st, the first day of hurricane season?*

A: Not all that often. In fact, tropical storms occur on average in June one every other hurricane and hurricanes generally occur every one in five. However, we sometimes can see tropical storm and hurricane activity starting before the official start date of the hurricane season. For example, Tropical Storms Alberto and Beryl formed in middle to late May.

*Q: What other hurricanes have had strong winds like Hurricane Wilma?*

A: Hurricane Wilma at its peak intensity was a category 5 hurricane on the Saffir-Simpson Hurricane Wind Scale. Hurricanes of this strength are somewhat rare, but a number of them have had peak winds nearly as strong as Wilma's.

*Q: Why do we name storms?*

A: Tropical storms and hurricanes are named to provide ease of communication between forecasters and the general public regarding forecasts, watches, and warnings. Since the storms can often last a week or longer and that more than one can be occurring in the same basin at the same time, names can reduce the confusion about what storm is being described.

*Q: How big can a hurricane get to be? (width, height)*

A: Hurricanes vary in width quite a bit. Some are quite small, but others like Hurricane Igor of 2010 are incredibly large (wide). Strong winds in some the biggest (widest) storms can extend several hundred miles from the center of the storm. In intense hurricanes, the clouds and precipitation associated with the storm can extend as high as 40,000 ft.

*Q: Has anything bad ever happened to the pilots that fly through the hurricanes?*

A: On September 26, 1955, a Navy P2V-3W Neptune aircraft was lost in the Caribbean flying into Category 5 Hurricane Janet (with 9 crewmembers and two journalists onboard). This was a military aircraft. No NOAA crewmembers or aircraft have ever been lost in a hurricane.

*Q: My students would like to know how long the NOAA Aircrafts have been traveling into the hurricanes?*

A: What is now the NOAA Aircraft Operations Center (AOC) began its existence in 1961 as an organization called the Research Flight Facility operating four hurricane hunter aircraft out of Miami, Florida.

*Q: Hello from Houston/Katy Texas (Hurricane Ike survivors) Our question is: Has anyone on your team ever been hurt during the operations and tracking of the various hurricanes?*

A: No NOAA crewmembers here at the Aircraft Operations Center (AOC) have ever been injured flying into a hurricane but several decades ago there were military aircraft that have been lost in both the Atlantic and flying Pacific typhoons (see related question above).

*Q: Have all the planes returned safely after flying into the eye?*

A: While only one aircraft has ever been lost in the Atlantic flying into a hurricane (the flight into Hurricane Janet in 1955 described in the previous question), there have been 5 planes lost flying into typhoons in the Western Pacific:

**October 1, 1945:** Navy PB4Y-2 was lost in a Category 1 typhoon over the South China Sea

**October 26, 1952:** Air Force WB-29 was lost in Category 5 Typhoon Wilma east of the Philippines

**December 16, 1953:** A Navy PB4Y-2S was lost in Category 2 Typhoon Doris near Guam

**January 15, 1958:** An Air Force WB-50 was lost in Category 4 Typhoon Ophelia near Guam

**October 12, 1974:** An Air Force WC-130H was lost in Category 1 Typhoon Bess in the South China Sea