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In the Path of Destruction

Tornadoes are an unpredictable act of nature. With the studies experts have done over the years, we have discovered great insight on how they form and we are now are able to better prepare people by getting the warning out sooner. The process of a tornado developing is very complex from the beginning stages of forming, to becoming a destructive wind funnel, to the point where it finally dies down. This complex process needs the right conditions to start and because of that, this process almost always begins as a result of a thunderstorm.

To begin this process, there has to be an unstable interaction of two different types of air. The cold, dry air in the upper atmosphere and the warm, moist air in the lower atmosphere need to meet (“Tornadoes”). You then need a force developed from a thunderstorm to cause instability between these two forces of air. This force causes the warm air to go upward causing an updraft, which then mixes with the cold air (“How a Tornado Forms”). For the conditions to be just right, the base of the updraft needs to be close to the surface. This means that the dewpoints and relative humidity will also be higher. After you have the right conditions for a tornado, you then find that the tornado will begin.

The next stage of the formation of a tornado starts after all the conditions have been met for a tornado to form. The updraft of warm air causes the thunderstorm to keep from dying out. While it keeps the storm going, it also forces the cool heavy air to continue pushing the heavy water droplets to fall (“How a Tornado Forms”). As the updraft fuels the storm, it also begins the initial spinning reaction of the air, which is known as the vertical wind sheer (“How a Tornado Forms”). The more these winds develop and the faster they rotate, the more compact they become (“How a Tornado Forms”). This is when the funnel cloud has initially been formed and is reaching towards the ground. The hail and rain in the thunderstorm help push the funnel cloud the rest of the way to the ground (“How Do Tornadoes Form?”). You now have a fully developed tornado that is wreaking havoc on its surroundings.

The final stage of a tornado is when it finally starts to die down. The warm air that was fueling the updraft is starting to slow down at this point. This is called the dissipation stage, where the cold air has overtaken the warm air and there is nothing left to fuel the funnel cloud (“How a Tornado Forms”). When this happens the air twisting and forming the tornado starts to slow down. As the air slows, the tornado weakens and slowly starts to dissolve, pulling back up into the clouds (Coffey, Jerry). At this time, the tornado has finally finished wrecking its destruction.

As you can see, tornadoes are a very complex work of nature. The correct weather conditions have to be met before they can ever start developing a funnel cloud. After the conditions have been met, the tornado begins to cause destruction before it finally ends in the dissipation stage. Tornadoes are a very unpredictable, complex work of nature.

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