

Strange and Unusual Weather Experienced Outside of Northeast Montana -- by Jim Branda

Before joining the National Weather Service roughly two years ago, I had the luxury to observe and forecast the weather for the United States Air Force. Over the course of twenty years, I spent time in Southwest Asia, Panama, and Korea. All three areas had totally different climates and unique patterns affecting daily weather. Some of those days and events were quite bizarre with the chances near zero of ever occurring in Northeast Montana. Here are a few I would like to share with you.

During my stay in Panama from October through February I was not just able to observe the weather there, but also forecast for Amazon River Valley. The key to tropical forecasting near the equator is to monitor the north and south progression of the Equatorial Trough. This elongated area of low pressure is the focus for stormy weather and changes in monsoon type climates. In Montana, storm systems typically move from west to east, however in Brazil, they move from east to west. Low pressure in Montana is counter clockwise, in Brazil they rotate clockwise. You can see how it took me awhile to get into the groove; the forecast groove that is.

The part that was unique was a squall line of thunderstorms that started near the mouth of the Amazon River along the Atlantic Ocean. The line of storms extended over 1000 miles from north to south, sustained itself for five days and traveled over 3000 miles before breaking up across the Andes of Peru and Ecuador. Now typically storms only last a few hours and move less than 300 miles back in the states. By the way, it took me couple of days to realize that nothing was going to stop this line from progressing until they would hit the mountains. Even though it covered a lot of square miles, it was estimated that over 100 inches of rain fell daily, as the storm transverse the area. I guess they don't call it the Rain Forest for nothing.

Now the monsoon across Panama typically runs from May to December, where you can expect some rain everyday. Then one day between Thanksgiving and Christmas the valve is shut off and the rain stops. Temperatures jump from 85 to 95 degrees with a breezy southwest wind. Interesting to note, due to the strength of the Monsoon, Panamanian kids enjoy their summer break from January through March.

In Korea you can expect all four seasons with a unique summer monsoon season that can generate tropical storms and typhoons. In August of 1995, I was carefully watching the monsoon boundary which draped west to east across the East China Sea. It soon started to interact with a Tropical Storm named Seth. Now Seth wanted to head to Japan, however the monsoon boundary kept Seth on a due north course. I realized quickly that Seth was coming to Korea, and he planned on bringing the monsoon boundary with him. I went out on a limb and generated a forecast for 10 inches of rain starting in two days and lasting for two days. Well, Seth did come to Korea and took a direct hit near Seoul, where I was staying. Seth soon left as quickly as he came, however he left behind the monsoon boundary right across South Korea. Our Base received not ten, but fourteen inches of rain in less than 48 hours, setting an all time two-day record. Imagine getting over your yearly amount of precipitation in less than two days.

My last stop is in Southwest Asia, specifically the countries of Jordan, Saudi Arabia and Kuwait. My location in Jordan was about 60 miles east of the Jordan River.

The climate was fairly dry during my stay in early May. However, in spring the sun is fairly high in the sky and the winds are generally light. These ingredients lead to some very impressive dust devils. Now, folks in Montana can relate to dust devils, but the ones in Jordan were totally grand. It was quite common for me to see five occurring at the same time with bases greater than a 100ft across and vertical extensions well over a thousand feet. Several times aircraft had to be diverted and forced to land with a tailwind during my three week stay. Wind speeds reached greater than 60 mph in the stronger rotations. So from about 10am to 3pm each day folks had to hold on to their hat and occasionally each other.

Next on my ventures was Saudi Arabia, where the main weather occurs during the winter months. The large city of Riyadh lies nearly smack dab between the Persian Gulf and the Red Sea, in about the largest sand box on the east side of the Sahara Desert. A potent cold front heading south had just enough moisture and a temperature change to generate one lonely thunderstorm. Thunderstorms are not too uncommon for the region however this one generated golf-ball size hail for 30 minutes right over Riyadh. Hail is odd in a desert, golf-ball size was not heard of, until then. Several hundreds of thousands of dollars in damage was calculated from this single event. Oh, by the way only a trace of rain was reported with the storm! Free ice cubes anyone?

My last interesting location was in Kuwait. My trip to this small country was my first experience in Southwest Asia. I heard of the hot temperatures before leaving the U.S. but figured I'm tough; I could handle the 120 degree heat. After all it was supposed to be a dry heat; so I thought. It happened about two weeks after arriving in late August. The temperature had risen that afternoon to a sultry 128 degrees (a near record for the country). Everyone stationed at the small base about 30 miles west of the Persian Gulf was drinking plenty of water. The heat was tolerable due to a dew point of about 40, putting the relative humidity at about six percent. Heck, some old timers who had been there all summer were even playing some outdoor basketball.

Then without any true warning the winds shifted from west to east. The change allowed the sea-breeze front from the Persian Gulf to extend far onshore. Typically it can only make it about 5 to 10 miles inland due to the desert dryness. I thought not so bad, for the temperature had dropped fourteen degrees. However, the dew-point climbed to a moist 88. This put the relative humidity now at 45 percent. Everyone continued to sweat, but it wasn't going anywhere. Folks quickly flooded the tent I was working in asking "what's going on?" I told them that the Heat Index went from 116 degrees to a whopping 162! You couldn't keep enough water down, tent air conditioners froze up, and outdoor work was at a standstill. Soon the Commander wanted the scoop and quick. I told him it wouldn't last long. Sure enough two hours later the sun had started to set and the sea breeze retracted back towards shore, relieving us from the temporary turmoil. That was the hottest day in my life and one I will never forget.

So what is my moral of the stories? Maybe the occasional extreme weather across Northeast Montana may not be so bad after all.