ReCap

For Professionals Who Monitor the Weather. From the Manufacturers of Capricorn™ and Orion™ Weather Stations.

▼ Air Evac monitors weather for safety of pilots, passengers

Air Evac pilots use real-time weather data and live web cam images to plan their flights. ~ courtesy photo

U p-to-the-minute weather information plays a key role in the safety program of Air Evac Lifeteam, the largest independently owned and operated membership-supported air medical service in the United States. The company provides air ambulance services to rural markets in 11 Southern states.

To help achieve Air Evac's safety goals, they contracted with Anything Weather Communications, Inc., to establish a network of live weather monitoring sites with real-time weather data and live webcam imagery. The 'AnythingWeather System' is an all-in-one weather station/web camera solution that provides remote weather monitoring where computers are not available. Utilizing Capricorn 2000™ weather stations, the system requires only power and an Internet connection at the installation site. Currently, they have systems in Kentucky, Missouri, Texas, and Tennessee with the next systems scheduled for installation this fall in Indiana.

Weather Data on the Internet

Live, real-time weather data and images are displayed on a comprehensive weather website hosted by AnythingWeather.com.

Most of the Air Evac AnythingWeather Systems are installed in remote locations tucked away in the middle of a valley or with near-by hills and mountains. Using the website, Air Evac pilots can determine whether it is safe to fly a helicopter into the area.

Several systems are installed at hospitals, where the helicopters routinely fly their flights for life. By quickly checking the web site before a flight, the pilots can recognize if fog or other inclement weather presents hazardous flying conditions and if so, they decide on an alternate route to another hospital.

In addition to the benefits of live webcam images, the real-time weather data can be used on-site to calculate variables such as estimated cloud ceilings, which helps the pilots make smart decisions that can save lives. AnythingWeather.com includes additional weather components for each site, including hourly and 5-day forecasts, active severe weather watches and warnings, and complete historical archive displays in a monthly and daily format. The best part about this network is that hospitals, the local community, and anyone with Internet access benefit.

History of Safe Flights Translates to Peace of Mind

In its 17 years of operation, with over 120,000 patient transports, Air Evac Lifeteam has experienced zero weather-related accidents. The AnythingWeather network gives Air Evac pilots peace of mind knowing that if the weather is bad and a flight for life is required, weather hazards can be avoided and lives saved, including those of the pilot and medical staff on board.

A Capricorn 2000 weather station with Anything Weather web cam atop a hospital in Missouri. ~ photo by Anything Weather

To view an Air Evac Lifeteam weather page, visit www.anythingweather.com/current.aspx?id=25885. Visit www.anythingweather.com for more information.

▼ CWS News & Events

CWS releases redesigned website

Please check out our updated website: www.columbiaweather.com We are very interested in your feedback. Email info@columbiaweather.com to let us know what you think.

As part of the Hillsboro Air Show, the Blue Angels fly over the CWS office building.

▼ New Product: PLC-Compatible Weather Station

In response to customer requests, CWS has developed a weather monitoring system for industrial PLC interface. Applications include industrial operations such as manufacturing plants, water treatment facilities and power plants.

The Orion 420 Weather Station measures wind speed, wind direction, temperature, relative humidity, barometric pressure and precipitation. With ultrasonic technology, the Orion 420 offers high accuracy and stability.

This system includes a weatherproof enclosure housing a power supply, AC surge protector, and serial to 4-20 mA converters.

Users will be able to view weather data on their PLC plant software such as Wonderware®.

Features

- Six most essential weather parameters measured in one instrument.
- 4-20 mA current output for all measured parameters.
- Triangular design ensures excellent data availability and 360° wind measurement accuracy.
- No moving parts make it superior to conventional mechanical wind sensors.
- Easy to install and requires no field calibration or maintenance.
- Low power requirements make it economical and perfect for solar or battery-powered applications.
- Compact and robust sensor in durable, corrosion-resistant housing.
- Starting threshold for both wind speed and direction is virtually zero.
- A heated model is available for extreme cold environments.

► *WeatherMaster 101: CAMEO/ALOHA Interface*

Most First Responders and Emergency Technicians are all too familiar with the threat of hazardous chemicals when responding to an accident or incident. From on-site chemical storage facilities to large tank farms to dangerous cargo, hazardous materials (HazMat) are ever-present in our world.

To help mitigate toxic spills, accidents, or incidents, the United States Environmental Protection Agency (EPA) and the Federal Emergency Management Agency (FEMA) have produced the Computer Aided Management of Emergency Operations/Areal Locations of Hazardous Atmospheres (CAMEO/ALOHA) computer software program. CAMEO/ALOHA, in conjunction with MARPLOT, helps firefighters and emergency managers mitigate the effects of toxic chemicals leaked into the atmosphere.

Columbia Weather Systems has developed a computerized interface with CAMEO/ALOHA, through Weather-Master™ software, that automatically inputs live weather readings for on-the-fly toxic plume modeling. The following steps are provided to interface the two software packages.

I. Open Aloha software.

A. Select **SiteData** from the top menu bar. A drop down sub-menu bar will appear.

1. Select **Location**. Select from the list of cities nearest the site or create a new location. Click **Select** to close the box.

2. Select **Building Type** and follow the on-screen selections. Click **OK** to close the box.

3. Select **Date/Time**, if different from the computer clock. Update and click **OK** to close the box.

B. Minimize Aloha software.
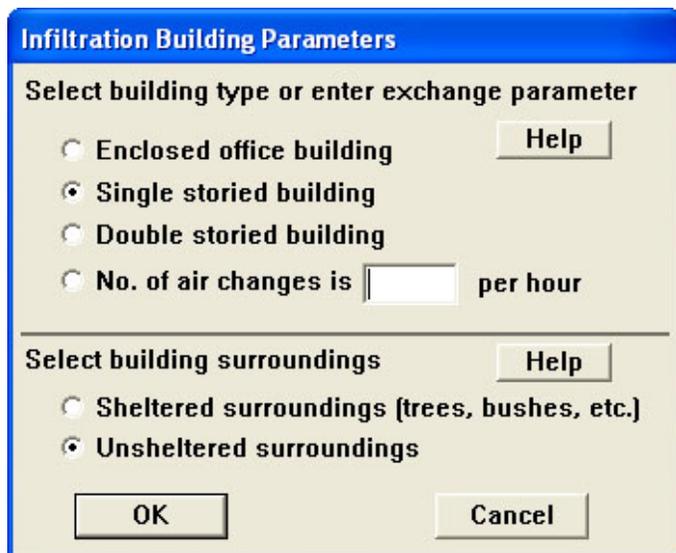
II. Open WeatherMaster software with weather station powered and transmitting data.

A. Click on **Configuration** tab on the top menu bar.

1. Click on **Weather Stations** from the drop-down menu.

a. Ensure the **Aloha Interface Box** is checked at the bottom left of the Weather Station dialog box and click **OK**.

b. Check that the task bar across the bottom of the screen indicates "Aloha Inactive" or "Aloha Active."

i. If it reads "Aloha Unavailable" refer to the troubleshooting notes for renaming the .dll file.

ii. If it does not say anything about Aloha at all, the Aloha Interface Box is not checked.

B. Minimize WeatherMaster.
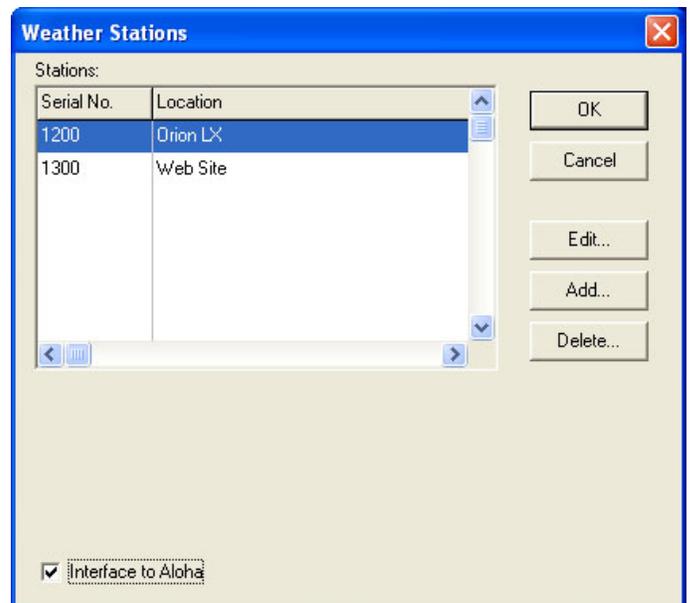
III. Maximize ALOHA software.

A. Click on **SetUp** from the top menu bar. A drop down sub-menu bar will appear.

1. Select **Chemical**. Choose from the menu of chemicals listed anc click Select. (Or add a new chemical, click on Add.)

2. Select **Atmospheric**. A side menu bar will appear.

a. Click on **SAM Station**. You should get the **Note!** dialog box. Click **Yes**. *If, instead, you get the Serial Port Connection dialog box refer to the troubleshooting notes for renaming the .dll file.*

▶ *CAMEO/ALOHA Interface continued...*

i. In the **User Input** dialog box:

Select **Inversion Data** and click **OK**.

A Rule of Thumb to help determine Inversion information:

- If the barometric pressure is rising, the atmosphere is sinking vertically; therefore, select Inversion Present and a general height of 100ft, if otherwise unknown.

- If the barometric pressure is falling, the atmosphere is rising vertically; therefore, select No Inversion.

*Select what best describes the **Ground Roughness***

*Select **Station Height** above ground. 10 feet or 3 meters is average.*

ii. In the **Cloud Cover and Humidy** dialog box:

Select what best describes the **Cloud Cover**.

Select what best describes the **Humidity**. Click **OK**.

3. Observe the **ATMOSPHERIC DATA** in the Text Summary box. Once the **Wind:** changes from (unavail) to a reading, then select **Source** from the **SetUp** menu. Work through the dialog boxes selecting the parameters that best fit the conditions at the scene.
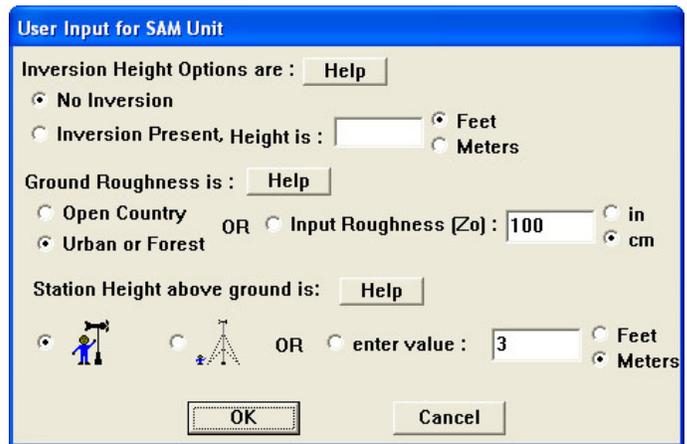
B. Click on **Display** from the top menu bar. A drop down sub-menu bar will appear.

  1. Click on **Threat Zone**.

    a. Select the appropriate **Hazard to Analyze** and click OK.

    b. Click OK in **Toxic Level of Concern** dialog box.

    c. A graphical display of the **Toxic Threat Zone** will appear and adjust as the weather conditions change (below left).
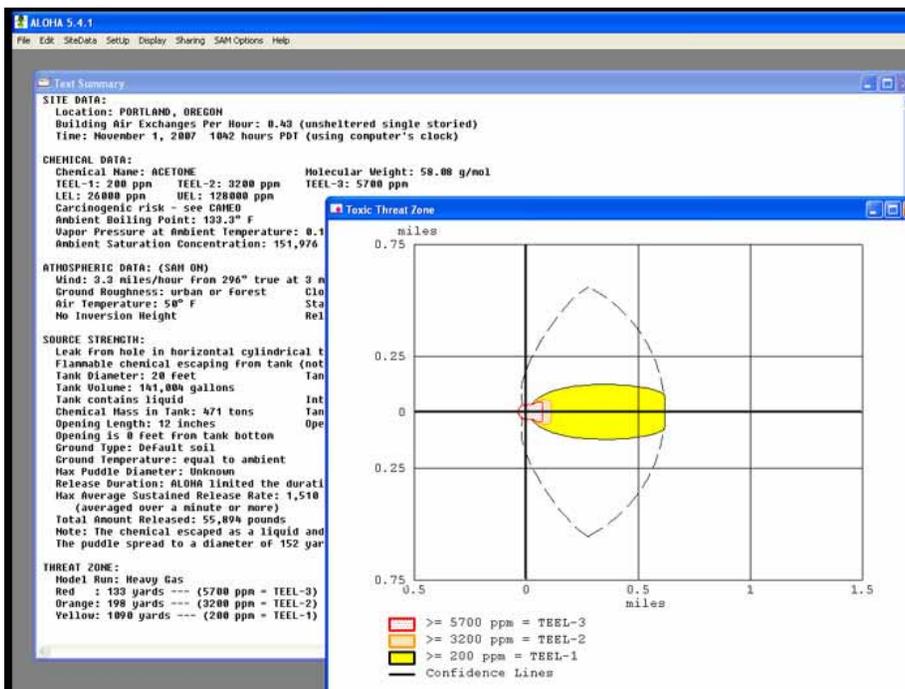
HazMat technicians will use this information to help deploy resources, monitor potential evacuation requirements, mitigate the hazmat threat, and plan cleanup.

Troubleshooting Note:
Renaming the .dll File:

If ALOHA and WeatherMaster are not communicating, WeatherMaster will show "ALOHA Unavailable" in the status bar and, when a SAM Station is selected, a Serial Port Connection dialog box will ask for a COM port, as shown below.
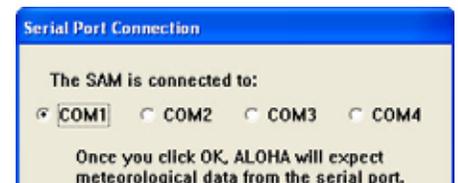
The cause of this problem is the location of the NOAA_32.dll file. This library file enables the two applications to communicate. *This file should reside only in the Windows folder.*

Perform a search to verify that the NOAA_32.dll file only exists in the C:\Windows folder (or equivalent.) If other copies of the NOAA_32.dll are found, simply rename then to NOAA_32.tmp.

▶ *Diary of a Tornado Chaser:*
CWS Meteorologist Heads Up Tornado Chase Team

Spring 2007 produced another exciting tornado chasing season. May 6-12 was my week to head up the chase crew. Here are some of the excerpts from the chase log:

Sunday, May 6

The start of a new chase week. We changed crew – Jason Webb driving and John Gerrish meteorologist.

Our destination was western Oklahoma, where several tornadoes were reported the evening before. One touched down and took the roof off the school in Sweetwater, Oklahoma. We drooled as we watched it on local TV. We were headed to the same vicinity in the morning…

We engaged buildups about 30 miles west of OKC, but trudged on to the target area. Radar located an isolated (thunderstorm) cell and we positioned ourselves near the town of Gould, OK.

As we watched the big cell, it was blackish-green and it displayed all the signatures; however, it just never developed any organization or rotation.

Another cell developed to the south and moved north right in front of us. It was well organized and we saw rotation. Funnels dropped and dissipated, dropped and dissipated. At this point, we were about 1/2 mile away facing west as the storm passed from left to right.

One funnel appeared from the side of the wall cloud and had particularly good tight horizontal rotation. We could see it roping toward the ground and were a bit uncomfortable with it being so close. If it touched down it would only be about 1/4 mile away from us. The funnel dissipated as we watched. Then it appeared again in about the same location, but was a bit more intense. We thought

Supercell thunderstorm near El Dorado, TX.

touchdown was imminent; very close, very clear, right in front of us. As we watched, it suddenly lost focus and rotation, and was gone. After watching some more, we chased as the storms moved off. Nothing more. Close, but no cigar.

Wednesday, May 9

After staying the night in San Angelo, TX, we spent most of the day around town, seeing the sights and doing some shopping. Around 3 p.m. we headed south toward the town of Eldorado, TX. A line of thunderstorms were building, some with severe signatures, so we were on them.

About 10 minutes into the trip, Crockett County "went Red" meaning a tornado warning had been issued for the county. The chase was afoot!

Some of the storms were above 50,000 feet and soon Schleicher and Sutton counties also issued tornado warnings. We intercepted the line of storms just east of Eldorado and took the Supercell photo (left). We noted rotation throughout as radar indicated the line was "bowing." We were determined to stay in front of this rapidly moving Bow Echo. We ended up in the town of Menard and turned north, hoping to spot funnels or tornadoes. Weather radio reported a tornado 16 miles NE of Menard heading northeast toward the town of Brady, which was our next target city.

As we approached Brady – in a complete downpour – the Baron radar failed, so we were operating blind – no radar and the visibility was about 100 feet – not a comfortable position with a tornado in the vicinity! We decided to break off the chase and get the heck out of Dodge – er, Brady – before something bad happened.

► *Tornado Chaser*

We all were disappointed, but agreed it was the right decision. Tonight, we're in Brownwood, TX.

Thursday, May 10

Today started with a road trip to the south and east; target city, San Antonio. The last remnant of the upper level Low was moving through east Texas, with the associated trough expected to create deep convection over south Texas. We moved into position just west of the city, and stopped in the town of Bandera awaiting engagement. In the interim, we visited the Texas Frontier Museum.

Back on the road, we engaged our first cell just west of San Antonio. We

Hail shaft downburst near Hondo, TX.

chased in torrential rain and five o'clock traffic - not fun! Once on the south side of the city, traffic lightened and we chased some nice storms, but they didn't have the vertical shear to make them severe. Even so, we got some nice photos as the sun was setting.

All in all, we witnessed two tornados and were in the hunt on a couple of others during the week. We traveled almost 2,000 miles, practically all in Texas. Texas is a BIG state!

We felt fortunate. During the following week's chase a large High Pressure system established itself across the Midwest and there wasn't any severe weather to be found. Such is the life of a tornado chaser.

Severe thunderstorm lighting up the evening sky, Floresville, TX.

John Gerrish is the Sales Director at Columbia Weather Systems, Inc. He's also a certified meteorologist who chases with F5 Tornado Chasing Safaris™. For more information about tornado chasing opportunities, click on F5 Tornado Chasing Safaris.