

RECAP

Winter 2002

For People Who Monitor the Weather. From the Manufacturers of Capricorn™ Reliable Weather Stations.

▼ Umatilla Rural Fire Protection District, OR *Capricorn Helps First Responder Prepare for Crisis*

With the nearby Umatilla Chemical Depot the storage site for tons of nerve agents so powerful that a single drop could kill someone within minutes, Michael Roxbury considers tracking the weather closely to be crucial.

Roxbury is the chief of the Umatilla Rural Fire Protection District, which is charged with the heavy responsibility of being what is called a “first responder” in the event of an emergency associated with the depot.

“We’re tasked with the protection, evacuation and decontamination of citizens in the unlikely event of a nerve gas release,” Roxbury says. “It’s crucial for me to know exactly where a plume is going to be in the case of a spill.”

In fact, the federal government has a number of weather stations set up around the depot. Data from those stations is aimed in particular at keeping responders informed especially about wind direction, which is vital in knowing which way a toxic cloud might be headed.

*Marcia Stokoe,
FF/EMT and
Office Manager,
keeps an eye on
the Capricorn
2000 Weather
Display.*



“We get information from those stations through a computer program, but I had no way to confirm that the weather conditions would be the same here,” Roxbury says. “And I could tell by looking at the real-time maps that it was not what was happening here.”

That need for better, more accurate weather information put Roxbury on the hunt for a weather system he could locate outside the fire district office. His search through trade journals and on the Internet led him to Columbia Weather Systems and the purchase of the Capricorn 2000. He and his secretary installed the system on their office’s roof quickly and easily.

“I picked the Capricorn 2000 because of its ability to track weather patterns over time,” Roxbury says. “This allows me to compare the patterns I get from our station to the patterns I get from the depot so that I can determine what the trend is from here. ... It’s a check-and-balance system.”

In fact, there have been times when his own information and the government’s have not lined up at all.

“The main problem arising from the government model they used was that it accounted for the weather at the time an incident would occur. But it didn’t account for any future weather changes,” Roxbury says.

Though it was already assumed that the government’s plume model was limited, Roxbury says information from the Capricorn 2000 helped highlight just how limited it was.

Eventually, the government changed its computer model. As a result, the level of preparedness has really improved not only for the Umatilla fire district but for all of the area’s first responder teams. And that preparedness is especially appropriate as the date approaches for the destruction of the nerve agents stored at the depot.

“There haven’t been any scares out there yet,” Roxbury says. “But it’s such a big deal ... We don’t want to get caught unprepared.”

▼ Weather Watching: *Proper tools improve forecasting accuracy*



by George Miller,
Consulting
Meteorologist

We've all heard the saying, "If you don't like the weather in the Pacific Northwest, just wait a few minutes or move a mile or two."

Folks in other parts of the country may employ the same saying. There is a lot of truth to this statement especially if the weather is an unsettled period with showers and sun breaks occurring. I know that I have left my home in sunshine, driven a couple of miles, and encountered a heavy shower. Thus, the forecast of: "Partly cloudy with chance of showers."

Although weather forecasts have improved greatly over the years, forecasting just exactly where that shower will occur a day or even six hours in advance is still not possible. Will it ever be? Some say yes and some say no. But an hour or two before the shower arrives? That can be done with the proper tools.

Doppler Allows Tracking

One of those tools is Doppler radar. This radar works along the lines of conventional radars. That is, it sends out a pulse of energy that bounces off the precipitation and then travels back to the radar. If the precipitation is traveling toward the radar, the signal arrives at a slightly higher frequency than it did when it left the radar. Moving away, a lower frequency. Yes, you are right! That's that difference in the sound of the train whistle as the train approaches and then starts moving away.

Doppler radar allows the meteorologist to track those showers. In fact, the radar is "smart" enough to plot the location of the shower or thunderstorm and extrapolate its movement and often the intensity. Currently several race tracks and golf events employ the use of Doppler radar. These radars alert the officials of a pending thunderstorm. The problem is getting that information to you on the 14th fairway!

'Nowcast' Means Immediate Information

The above forecast is often called a "short range forecast" or a "nowcast." The weather downstream is forecast to continue moving as it has in the past. And those Doppler radars have a better chance of locating heavy areas of precipitation. This has been done, and is being done, frequently to locate areas of heavy snowfall or precipitation. This information can then be relayed to transportation officials to help you on your drive home.

Forecast models are also getting much better on the amount of precipitation that may be expected. This is true with large major storm systems as well as with those deluges that your windshield wipers can't handle. The recent rain event in the Pacific Northwest is an excellent example. One to two inches of rain was forecast. "In August? No way," I said, but I recorded over an inch in my rain gauge.

Yet, there are still skeptics today like Mr. Meriam in 1857 but their number is dwindling. One comment I received from one of those skeptics even when I was still working for the National Weather Service was, "George, you are getting disgustingly accurate!" I took it as a compliment. That same individual is probably more "disgusted" today and will be more so in the future as weather forecasts keep improving.

But My Barometer Says Fair, George Miller's book on weather in the Pacific Northwest, is scheduled to be published in early summer.

We've Moved!

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▼ New WeatherMaster 2000™ Software Adds Flexibility

Columbia Weather Systems is excited to introduce our newest design in weather monitoring software, the WeatherMaster 2000 software package.

Previous software for the Capricorn 2000 was developed by third-party companies and gave us limited flexibility in providing a sound software solution for many of our customer's business and professional needs.

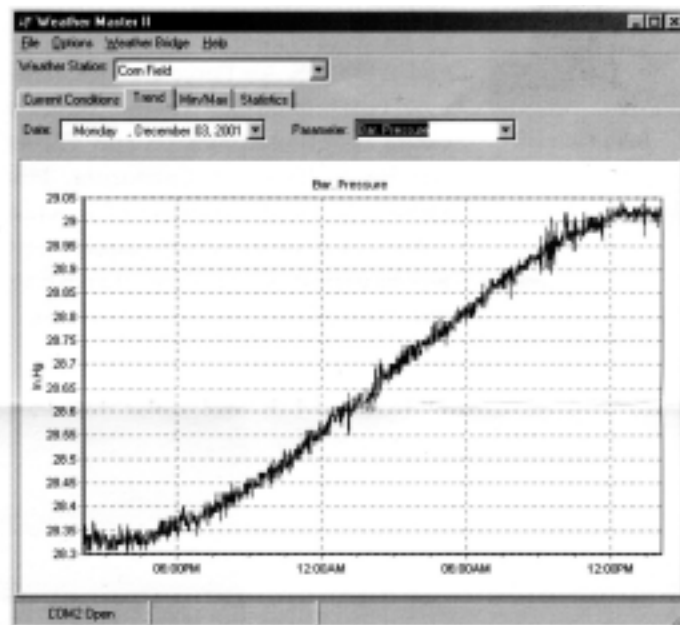
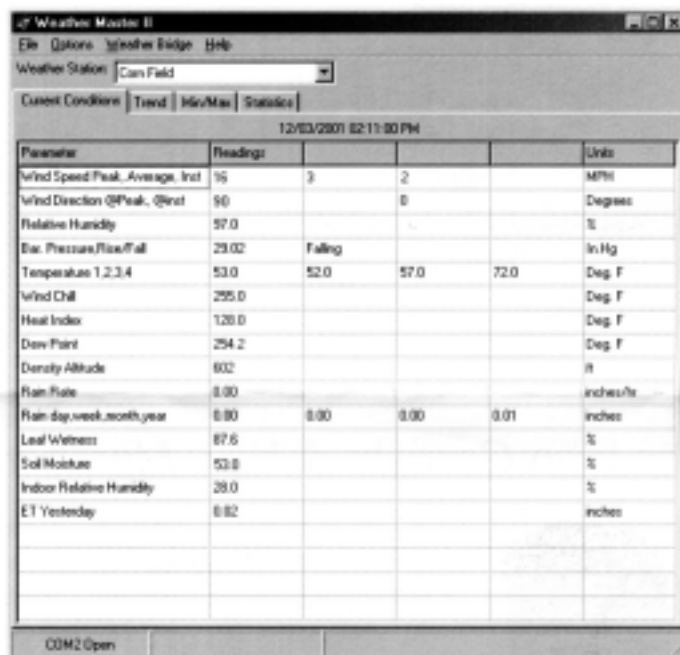
We decided it was time to develop our own software that focused on the needs of our professional customer base. Several factors led us in this direction. Developing our own software will:

- Give us full control of the software, which will enable us to tailor it to meet the needs of specialized markets and give us the capability to be flexible in future markets;
- Make it possible to develop interfaces to other software packages and Internet services;
- Enable us to include more sophisticated calculations and models to help our customers use the basic weather data in more practical and powerful ways;
- Enable us to build a database that is easily accessible by our customers using off-the-shelf database software such as Microsoft Access; and
- Make it possible for our customers to monitor multiple weather stations communicating with the software via a wireless network.

WeatherMaster 2000 will be developed in several stages. The first stage will be ready by the end of February and will focus on the foundation and structure of the software. It will be able to:

- Display real time weather data
- Calculate standard weather parameters such as wind chill, heat index, dew point
- Calculate evapotranspiration
- Calculate growing degree day computations (with multiple thresholds)
- Calculate density altitude
- Create a database that logs all monitored and calculated data
- Display 24-hour trends of all parameters
- Display maximum and minimum values and times of all parameters
- Set alarms for all parameters with email alarm features
- Generate daily and monthly reports
- Transmit weather data and HTML pages to the Internet

We will continue to offer and support WeatherView 32 software for general weather monitoring applications. WeatherMaster 2000 will be offered to specialized markets that require additional or expanded software capabilities.



WeatherMaster 2000 retails for \$349.



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*First Responders Find
Capricorn Essential*



New WeatherMaster 2000™

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▼ John Gerrish: A New Member of the CWS Team



John Gerrish

We are pleased to welcome John Gerrish as the newest member of the Columbia Weather Systems team. John will head up the Sales and Marketing Division and serve as our resident consulting meteorologist.

John spent 20 years as a meteorologist in the U.S. Air Force and has managed two full-service weather stations while assigned at Norton and Travis Air Force Bases in California. His knowledge and expertise of a wide variety of weather-sensing equip-

ment us with an enhanced customer service function.

John spent nine years of his military career in Europe. His in-depth understanding of European weather anomalies also give him a unique perspective on how best to use Columbia Weather Systems' equipment in the European environment.

He also has extensive experience working with various types of weather communication platforms and computerized data storage capabilities. After his military retirement, John spent five years as a consulting meteorologist in the private sector and worked on a wide variety of meteorological research projects for the energy industry using long-range weather forecasting techniques.

Exhibitors at the Northwest Fire Expo in Eugene, Oregon included Nader Khoury, CWS president (not shown), his daughter Julia and wife, Martha Khoury.

