

# RECAP

Autumn 2006

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

## ▼ Application Highlight: Tualatin Valley Fire & Rescue, Oregon HazMat Response Assisted by Weather Monitoring



With help from federal grant funding, Tualatin Valley Fire and Rescue, Oregon, (along with Portland and Gresham Fire Departments) recently outfitted new their HazMat Vehicles with Orion vehicle-mounted and portable weather monitoring equipment.

“We are now able to receive ‘Live’ accurate weather data to use with the ALOHA Air Plume modeling program,” commented Lt. Dave Pearson of TVF&R. “Having ‘Live’ weather

data is vital to our operation, since it is one of the major factors determining the magnitude of a major release or spill.”

TVF&R recently made use of their weather monitoring capability in a HazMat Drill. The simulated scenario was a tanker truck carrying nitric acid involved in a vehicle accident.

Using their weather data, the HazMat team was able to predict a toxic plume to help manage their response and protect team members from potential contamination.

“Our team likes the easy to set up system ... We can deploy either Orion Weather System within minutes. The Weather Master software is very easy to use. We can instantly see weather data on our display screen or use it with our Air Plume program with the touch of a button.”



### INSIDE ReCap

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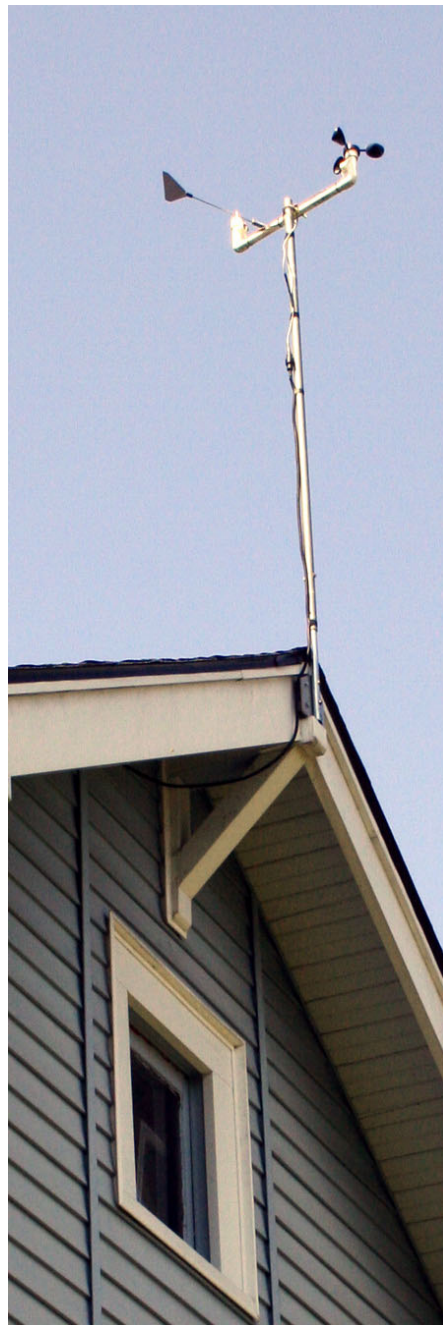
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▼ **Capricorn II Still “Ticking” After 25 years!**

It isn’t often we talk about the old Capricorn II weather station in this newsletter. We stopped selling them a few years ago as several electronic components were made obsolete. We continue, however, to support our longstanding customers who own them and service them as needed.

In July we received an early model Capricorn II, delivered in person for repair. Judy Dodson inherited the weather station from her father. It had been a gift to him in the 1970s from another daughter, Linda, who had a Capricorn weather station herself. When the father passed away, Judy and her sister Betty inherited the weather station and moved it down the road to their house in the farming community of Verboort, Oregon. A faithful companion to their rural lifestyle, the weather station factors into many aspects of their daily life.

As a side note, our current Capricorn 2000 standard wind sensor is based on the one developed by Hinds Instruments (our parent company) for the Capricorn II. Incorporating years of experience and testing, its proprietary solid state, infrared optical design minimizes wear and sustains reliability.



*Betty Vandecoevering refers to the Capricorn II weather station inherited from her father. She especially likes that the bright display can be read from across the room. The wind sensors (above) were recently in the shop for bearing service. Looking pretty good after 25+ years!*

▼ **CWS News & Events**

**September KY Emergency Services Conference**

John Gerrish, sales manager, was in Kentucky September 5-7 for a state emergency services conference which featured issues concerning emergency management, 9-1-1 and homeland security. Topics included VoIP, legislation, NIMS, interoperability, grants and funding.

Go to [www.kena-apco.org](http://www.kena-apco.org) and click on “conferences/meetings” for more information.

**November FireRescue Expo**

November 7-11 CWS will be exhibiting at the FireRescue Conference and Expo in Las Vegas. Sponsored by Wildland Firefighter and the IAFC, the conference will include education, hands-on training and an exhibit hall with the latest tools, equipment and apparatus. Conference sessions include topics like fire operations, rescue/extrication and company officer development. Visit [www.firerescue.com](http://www.firerescue.com) for details and registration information.

**CWS Places 7th at 2nd Annual Tom Cooper Golf Tournament**

In tough competition, CWS’s four-some won 7th place, coming within a few strokes of the tournament winners at the 2nd annual Tom Cooper Golf Tournament. The tournament benefited our former UPS driver who has ALS.

In addition to fielding a team, CWS sponsored a hole. The event included a raffle and silent auction to help support Tom and his family. Additional donations may be made to the Tom Cooper ALS Fund at any branch of U.S. Bank or Washington Mutual.

## ► Product Updates

### New Wind Charts in WeatherMaster™ and Using a Network

#### WeatherMaster New Release

The latest version of our proprietary WeatherMaster Software includes two new wind charts. The first is a vector mean wind run compass based on ALOHA calculations for vector mean wind speed, direction and the standard deviation wind direction. (ALOHA software is used for hazardous materials response.) The compass will show the corridor of wind direction for the past hour and is useful for plotting the spread of a hazardous plume.

The second is a wind run 16-pt compass. This model shows the direction and distance the wind has traveled in the last hour.

Also newly available is the option of viewing data from multiple weather stations on one display screen. This option is customized for a flat fee of \$75 per application.

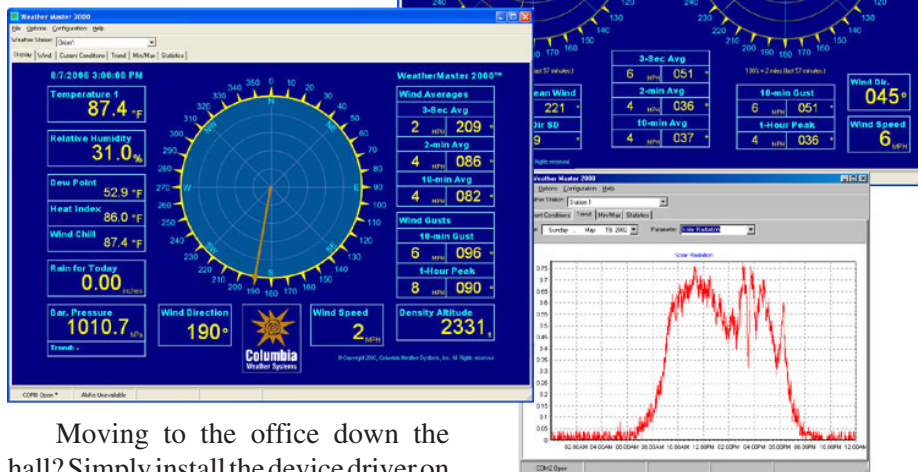
If you currently own a previous version of WeatherMaster Software, please contact us for a free upgrade.

#### Monitoring for Network Users

For weather monitoring applications situated in a large facility such as an industrial plant or hospital, instead of running miles of cable from the weather station on the roof to a computer on the first floor, users can take advantage of existing LAN cables to hook up.

A **Serial to Ethernet Device** connects the weather station to the LAN. At the monitoring computer a driver creates a virtual serial port and converts the data to be read by the available weather software such as WeatherMaster or WeatherView 32.

WeatherMaster's new wind display shows Vector Mean and Wind Run Charts (right). Display screen (below). Graph shows 24-hour solar radiation (below, right).



Moving to the office down the hall? Simply install the device driver on your new computer and you're up and running.

**Weather View 32 Network Software Package** enables multiple computers on a network to access and display weather data simultaneously. This product requires WeatherView 32 to be installed on a "server" computer connected directly to the weather station.

All features are enabled for "client" users except changing the weather station settings. For example, each "client" can set up their own monitoring screen to display the parameters and the format they require, independently of the other users.

This edition is widely used by schools, corporate installations and municipalities allowing many users to access the current weather data at the same time.

#### ORDERING INFORMATION

Part Number	Price
8290 WeatherMaster™ Software	\$395
WeatherView 32™ Network Software Package	
8278-2 Up to Five Users	\$750
8279-2 Unlimited Users	\$1750
8250 Serial to Ethernet Device	\$249

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## ▼ **HazMat Weather Part II: Weather Monitoring as a Force Multiplier**

In Part I we discussed the ways weather factors can influence HazMat incidents. In this issue, we're focusing on optimizing the weather monitoring capabilities as an integral component of the HazMat response team.

### **Planning**

In contingency planning, weather conditions play a major role in any scenario – from the initial approach to the scene, to coordinating staging areas, to the actual mitigation process. Prior to deployment, a HazMat team member could be designated as the “weather coordinator.” The CAMEO/ALOHA software technician is a logical choice because they use the weather station's data and have access to the Incident Commander.

The weather coordinator and other team members should be well-trained in the weather station's operation, set up, and take down procedures. The weather station's quick set up and operation is paramount to the initial mitigation process. These responsibilities can be easily incorporated into training programs and deployment responsibilities.

### **Weather Data Dissemination**

In this day and age of interoperability, new innovations have made it feasible to disseminate on-scene weather information to multiple using agencies. Many mobile command vehicles have satellite links, wireless Internet, and wireless Local Area/Wide Area Network (LAN/WAN) services available.

It's now possible to provide real-time weather readings to all echelons of command, whether at the scene, or not. It's also possible to have multiple on-scene agencies receive official weather readings from a single weather station, rather than have multiple agencies with various different

weather stations providing conflicting information. Such confusion could result in misinformation and/or casualties.

Procedures should be in place to disseminate weather information during an incident – both up and down the chain of command. In addition to incorporating weather data into the CAMEO/ALOHA software, the Incident Command and emergency technicians should be notified of initial and changing weather conditions throughout the incident.

All team members and upper echelon leaders should be made aware of weather monitoring capabilities and reporting procedures.

### **HazMat Response**

In staging a HazMat incident response, primary weather concerns are wind direction and speed. Operations should be staged from an upwind position. Once Incident Command has been established with weather monitoring in place, weather readings help identify the approach route for arriving responders, help determine the type of mitigation plan, and provide an evacuation corridor for victims and evacuees.

Site, elevation, and sun data are entered into CAMEO/ALOHA, as well as the type, quantity, source, and character of the chemical spill. This creates a chemical plume dispersion plot – or plume model – determining the toxic cloud's width and distance downwind.

However, CAMEO/ALOHA does not provide a preliminary dispersion plot or provide vector wind data during the initial stages; it may take up to an hour to determine the downwind fallout area. WeatherMaster's new vector wind and downwind projection plots use current conditions to project an initial plume corridor for immediate evacuation of the potential contamination area. In this way WeatherMaster acts as a force-multiplier – freeing up human resources and providing vital information in the Incident Command's decision-making process.

### **Working Conditions**

#### *Triage*

When accidents or incidents involve casualties, emergency personnel must triage victims in order to use the limited resources where they will do the greatest amount of good. Triage by definition, is a system of medical or emergency aid established to ration limited medical services to care for the greatest number of patients as possible.



## ▼ HazMat Weather continued...

Triage areas may be set up anywhere and initial resources may not be readily available. Water, shelter from the elements, and medical supplies may be immediately critical to victim survival. Depending on the circumstances, knowing the weather conditions can play a vital role in dispensing resources and providing back up medical assistance necessary to save lives.

### *Air Evac Operations*

Hand-in-hand with triage and mass casualty situations, emergency medical airlift evacuation (Air Evac) operations may be necessary to quickly transport critical patients to local hospitals and medical facilities. On-scene weather readings becomes crucial in providing aircrews with real-time weather data to help with aircraft lift computations, entry/exit route strategies and flight path calculations, plus aiding in aircraft safety issues.

### *Heat Illness*

Weather conditions also play a major role in managing emergency resources, including first responder and firefighter safety.

During high temperature conditions, Heat Stress, Heat Exhaustion, and Heat Stroke are primary threats to emergency responders.

HazMat suits do not allow for fresh air circulation and Personal Protective Equipment (PPE) can become extremely uncomfortable in searing heat. Heat Exhaustion not only neutralizes the responder, it also occupies the personnel who rescue them taking them away from operational tasks.

WeatherMaster's alarm notification program monitors Heat Stress Index and then alerts when user-defined thresholds are breached, notifying decision-makers to take the necessary precautions to keep emergency personnel from becoming victims of Heat Illness.

Work/Rest cycles are also established based on Heat Stress conditions to keep on-scene personnel ready for



duty. Under extreme Heat Stress conditions, first responders may work only 20 minutes per hour while drinking as much as two quarts of water to keep hydrated and sweating as much as one and a half to two quarts per hour.

### Optimizing the HazMat Weather Monitoring

In conclusion, the following steps can optimize weather-monitoring capabilities for HazMat response and mitigation:

- 1) Identify potential weather-related risks
  - Site selection upwind from the scene at a safe distance
  - Determining points of entry to the scene
  - Establishing staging areas for incoming crews
- 2) Designate a weather coordinator to assist the Incident Commander in monitoring weather conditions
- 3) Establish procedures for:
  - Weather station set up, take down, and operations
  - Interface with CAMEO/ALOHA
  - Disseminating weather information to all echelons of command
  - Operating under extreme or hazardous weather conditions
- 4) Notify team members and leaders of weather monitoring capabilities and procedures
- 5) *“Training is the key to preparedness and preparedness is the key to success.”*