



RECAP

Autumn 2000

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

▼ Davidson County 911, North Carolina *Capricorn Helps Prepare County Agencies for Weather Events*



*Terry Bailey
Assistant Director*

Davidson County 911 Communications Center in Lexington, North Carolina, has a pretty straightforward mission: "To serve ... the citizens of Davidson County, and to provide helpful, caring service to all agencies and persons that call for assistance..." In his own words, Assistant Director Terry Bailey describes how the Capricorn weather station fits into that important mission:

Here at Davidson County 911, weather information is important to us year round. We are the answering point for the entire county of Davidson. The units that we dispatch depend on us to have weather knowledge each day to assist them in the tasks that they face and to aid them in doing their jobs.

In North Carolina, as in other regions of our great country, we face weather that changes with very little notice. The Capricorn Weather System will aid us in helping to prepare for the weather events that occur.

The (EMS) field units pay special attention to the Heat Index in the summer months and the wind chill factor in the winter months to determine special needs that they may have.

The Fire Department units that we dispatch value the humidity levels to assist in burn factors for grass and woods fires. Also in a Hazardous Material incident there are a number of weather variables that need to be considered depending on the situation that may be encountered. This information at our fingertips will allow us to advise the field units in a more timely manner. No more calling the local weather service to get this information.

We have a computer in the middle of our communication room that will have the WeatherView software on it and will be live 24 hours a day for our employees to use. We hope to incorporate some of the Capricorn Weather Station information into our own web site. www.davidsoncounty911.com. We will also use the weather software to send alerts to pagers when weather thresholds are broken, i.e. when heat index gets above, or when the wind chill drops below, a certain level. These alarms will trigger alerts to go out through our system to other agencies.

The Capricorn Weather Station was chosen after gathering information on other brands of weather equipment and researching internet sites containing weather systems. The Capricorn System appeared to have the features that would work better for our facility, the agencies that we serve and for our future needs.



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▼ Capricorn 2000™ Updates: Ag Display and Wireless Option

► New Display Adds Ag Features

The Agricultural edition of the Capricorn 2000 Weather Display is designed to give the user more than just the standard environmental conditions such as temperature, winds speed and humidity. It is designed to calculate complex parameters such as evapotranspiration and degree days to help farm managers make decisions affecting agricultural operations and get the most value from their weather station.

Evapotranspiration calculations are based on the 1982 Kimberly-Penman formulas. These formulas take into consideration factors such as average air temperature, average wind speed, average dew point, solar radiation, station elevation, and the day of the year.

The Weather Display will calculate the ET for the day at midnight and it will display it the next day as "ET Yesterday" in inches per day or mm per day. In addition the Weather Display will store a year worth of ET values. The user can easily select a desired day to look up ET for that day.

Degree day calculations use a modified simple average degree day formula with a lower threshold temperature (base temperature). The simple average degree day formula is $((T_{Min} + T_{Max})/2) - T_{Base}$. The Weather Display unit uses a slightly modified formula that will give greater accuracy: $T_{Average} - T_{Base}$.

The Weather Display unit displays degree day for the day, degree day for yesterday and degree day accumulation. The user can set the starting day for the accumulation and the base temperature.

The user will also be able to look up the degree day accumulation between any two dates in the year. Degree day accumulation is used primarily as a tool for pest and disease modeling and control.

In order to have all the information needed for ET and DD calculations, the Ag Edition Display requires a Capricorn 2000 MP (multi-purpose) weather station with solar radiation sensor. Contact us for upgrade information.

Capricorn 2000 Display Ag Edition Screens

Top: Evapotranspiration History will store ET values for up to one year.

Center: Ag Temperature Screen showing Degree Day. Press Degree Day button for Accumulation Screen (bottom).

Not Shown: New Moisture Screen displays ET.

09/18/2000 10:30 AM

ET History

| DATE | ET (INCHES/DAY) |
|------------|-----------------|
| 09/17/2000 | 0.12 |

Crop Factor:

| | | | | | | | |
|------|------|-------|-------|--------|-------|--------|--------------|
| Main | Temp | Moist | Mn/Mx | Trends | Units | Config | Screen Saver |
|------|------|-------|-------|--------|-------|--------|--------------|

09/18/2000 10:30 AM

| | |
|---|---|
| TEMPERATURE 66.9 °F | TEMPERATURE 3 66.7 °F |
| TEMPERATURE 2 69.5 °F | TEMPERATURE 4 70.2 °F |
| WIND CHILL 66.9 °F | DEGREE DAY 10.7 °F |
| HEAT INDEX 66.0 °F | DD YESTERDAY 13.7 °F |
| DEW POINT 58.0 °F | DD TO DATE 109.2 °F |
| SOLAR RAD. 231 w/m ² | <input type="button" value="Degree Day.."/> |

| | | | | | | | |
|------|------|-------|-------|--------|-------|--------|--------------|
| Main | Temp | Moist | Mn/Mx | Trends | Units | Config | Screen Saver |
|------|------|-------|-------|--------|-------|--------|--------------|

09/18/2000 10:30 AM

Degree Day Accumulations

| START DATE | END DATE | DD (°F) |
|------------|------------|---------|
| 09/13/2000 | (TODAY) | 109.3 |
| 09/17/2000 | 09/18/2000 | 24.4 |

Base Temp:

| | | | | | | | |
|------|------|-------|-------|--------|-------|--------|--------------|
| Main | Temp | Moist | Mn/Mx | Trends | Units | Config | Screen Saver |
|------|------|-------|-------|--------|-------|--------|--------------|

How far can it go?

► *Extending the Distance Between Control Module and Computer or Display*

The standard RS-232 cable length included with the Capricorn Display Console, or for use with a computer, is 7 feet. You can extend the length of cable by ordering additional RS-232 cable to maximum length of 150 feet.

If your application requires greater distance, two options are available. The first option, RS-422 Converter Modules, will extend the range of cable to 4000 feet.

Additionally, Columbia Weather Systems is introducing wireless options for the Capricorn 2000 weather station. They can be used to transmit data from the Capricorn 2000 Control Module to either a Weather Display console or a computer running Weather View32.

Model 8242 offers a range of 1600 feet (line of sight) with an RF communications rate of 19.2 Kbps.

Model 8243 is a powerful 1 Watt transceiver that transmits data at 56 Kbps over distances of up to 24 miles line of sight.

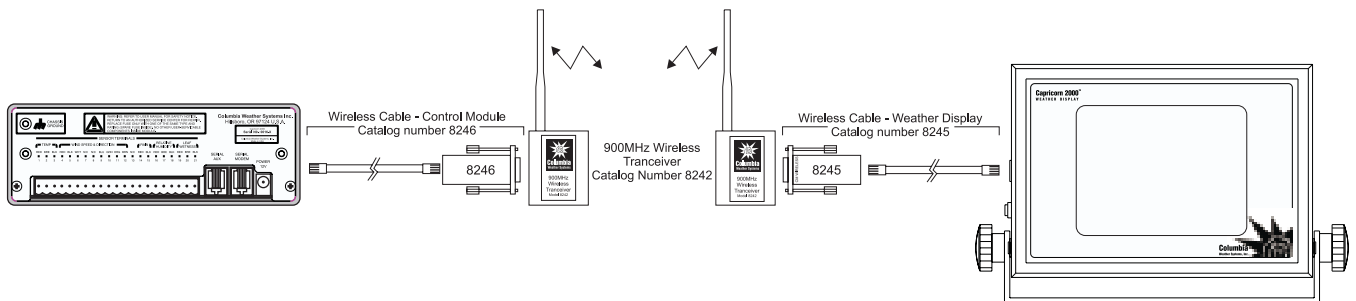
Proprietary technology offers increased security and minimizes the effects of interference, making these the most reliable and cost-effective radios available.

Additionally, spread spectrum technology allows use of these transceivers without an FCC site license. They are certified for use as unlicensed spread spectrum devices in the United States and Canada.

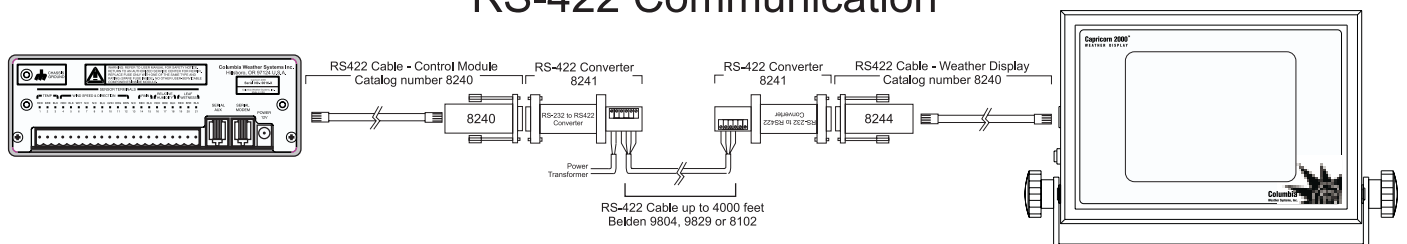
Each model includes a transceiver, power supply, communication cable and antenna. Prices are per set of two.

| Options | Model # | Price |
|--------------------------|---------|-----------|
| Additional RS-232 cable | 8233 | \$0.25/ft |
| RS-422 Converter Modules | 8241 | \$300.00 |
| RS-422 Cable | 8230 | \$1.50/ft |
| Wireless, 1600 ft range | 8242 | \$674.00 |
| Wireless, 24 mile range | 8243 | \$1070.00 |

Wireless Communication



RS-422 Communication





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BULK RATE
US POSTAGE PAID
Hillsboro, OR
Permit No. 984

Address Correction Requested

*Davidson County 911
Chooses Capricorn 2000*



*Wireless Option Extends
Range to 24 Miles*

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▼ Weather Watching: *Association of State Climatologists*



by Michael Fagin

Columbia Weather Systems was represented at the American Association of State Climatologists (AASC) convention in Logan Utah this past August. Logan sits in the high desert and mountains and is a great environment to enjoy a convention. The AASC is a professional scientific organization composed of state climatologists and other climate professionals.

At one point state climatologists were employees of the federal government. That era ended during some major budget cutting. Did the climatologists go away? No way! Many of them are now either employees of state agencies or are staff members of state supported universities.

Their function is to consolidate the relevant weather data for their state and to provide access to the public through published data. Now, of course, much of the data is published on internet sites. The weather information includes data for the ma-

for cites in their respective states and includes data on wind, rainfall, snow and temperatures. The data is also archived with the federal government.

Another group that is very active in the AASC is the Regional Climate Centers. There are six of them and I also encourage you to visit their web site.

The final active participant at the meeting was the National Climate Data Center which stores all the major climate data for the United States.

The three days of meetings provided a lot of interesting information. One of the more interesting topics was the location of weather station installations. Many of these sites were installed many years ago in rural surroundings. Over time cities have grown around them with lots of asphalt and concrete. Of course this would tend to bias the temperatures upward. There seems to be general consensus that many of the temperature readings seem high simply because of the urban growth.

Michael Fagin is a new sales representative for Columbia Weather Systems. Mr. Fagin owns and operates Washington Online Weather which provides mountain weather information to the active outdoors person. To contact Michael Fagin, call toll free 1 877-969-4786 or email to wow_weather@wowweather.com.

Mr. Fagin has over 22 years of experience forecasting mountain weather in the Pacific Northwest. When he isn't forecasting the mountain weather, you can find him most weekends hiking, climbing or skiing in the mountains.



Web Sites

National Climate Data Center
www.ncdc.noaa.gov

State Climatologists
www.ncdc.noaa.gov/stateclimatologists.html

Regional Climate Centers
www.ncdc.noaa.gov/regionalclimatecenters.html

Michael Fagin's Washington Weather Online
www.wowweather.com