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C-5 SAM™
Weather Command
Emergency Response
Weather Station
Training Guide
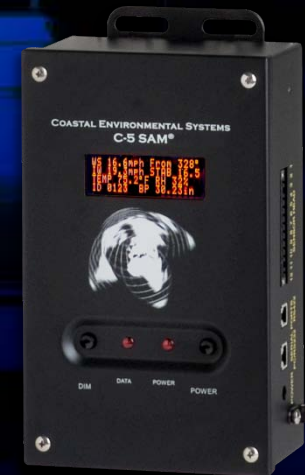
Coastal Environmental Systems, Inc.

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C-5 SAM™ is built for Emergency Responders

The C-5 SAM**™** Weather Station provides on-site, real time, reliable weather data for permanent or mobile deployments. It is a rugged, professional quality, yet inexpensive, weather station.

If you respond to a limited number of hazmat calls, have a low potential for a truly catastrophic spill, and/or are on a limited budget, then the C-5 SAM**™** is the right station for you.

C-5 SAM™ Features:

- Heavy Duty Sensor Head and Mount

- Constructed of "Non Sparking" 6061-T6 Aluminum

- RM Young Wind Monitor

- Air Temperature and Humidity Sensor and Radiation Shield

- Barometer (in Display)

- Hand-held Compass

- Vacuum Fluorescent Display

System Components: Sensor Head

Wind Monitor – Propeller-Style

Temperature & Humidity Sensors are under the Radiation Shield

Power & Data Cable

Mount with a Knob to Screw onto a Tower or Vehicle Mount

System Components:
Sighting Compass

C-5 SAM™ comes with a hand-held sighting compass.

This allows you to easily align the sensor head N arrow to True North.

Failure to do a correct alignment will result in incorrect data.

System Components: Receiver/Display Box

Data displayed…
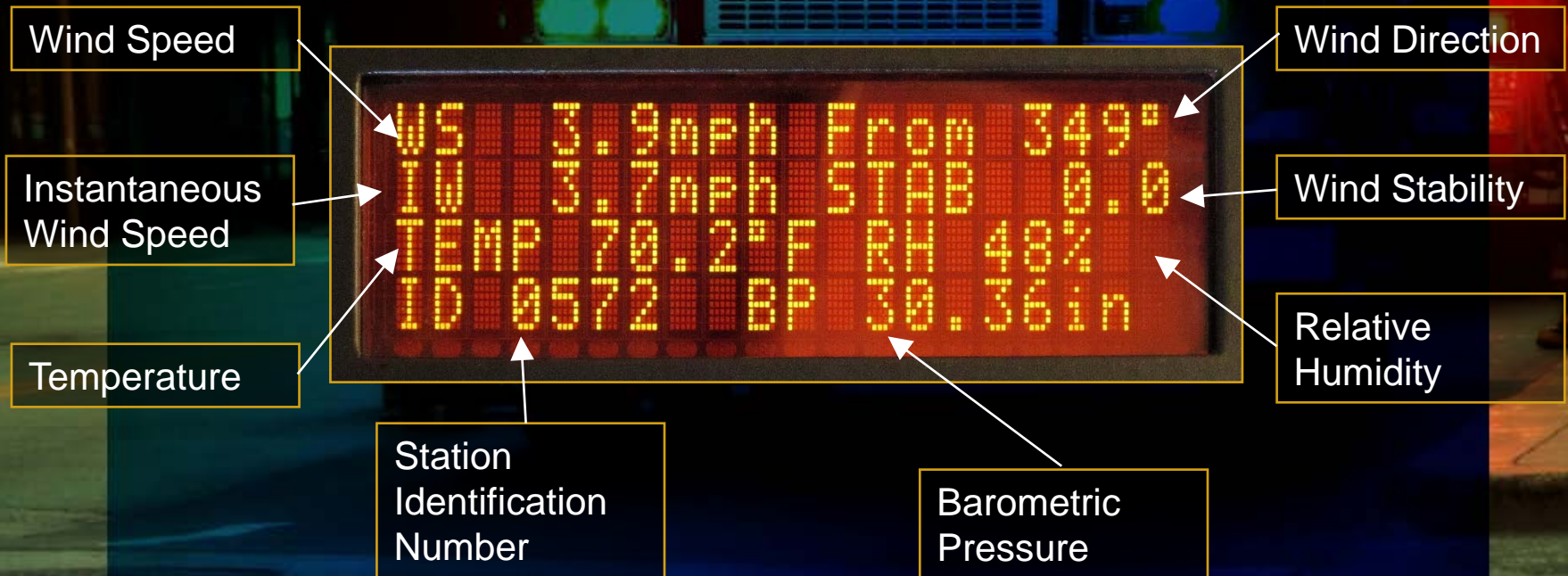
- 5-Minute wind speed & direction

- Air temperature

- Relative humidity

- Barometric pressure

System Components: Receiver/Display Box

The Receiver/Display is also the interface with the PC and plume dispersion modeling software.

Wind Speed

Wind Direction

Instantaneous Wind Speed

Wind Stability

Temperature

Relative Humidity

Station Identification Number

Barometric Pressure

WS   3.9mph From   349°
IW   3.7mph STAB   0.0
TEMP 70.2°F RH 48%
ID 0572   BP 30.36in

Display: Screen Data Explanation

Wind Speed (WS) 5 minute running average (see details below) in mph or m/s

Wind Direction 5 minute running average of direction wind is coming "from" in degrees or ordinal points (N, W, SW, etc.); see the table that translates ordinal points to degrees

Instantaneous Wind Speed (IW) Exact wind speed during last one second before updating display (see details below)

Stability (STAB) Value describing how much wind "mixing" is occurring within the wind direction (see details below)

Temperature (TEMP) 5 minute running average of air temperature in °F or °C

Relative Humidity (RH) 5 minute running average in percentage

Identification (ID) Your C-5 SAM™ unit identification (assigned at the factory)

Barometric Pressure (BP) Average barometric pressure in inHg (inches of Mercury)

Set-up / Siting Considerations

- **Compass Measurements –** The C-5 SAM™ has a hand-held compass for alignment to North. Like all compasses, it will be affected if located near (laterally) large steel objects (i.e. on top of a van is OK, but next to it is not an ideal location). Try to place the C-5 SAM™ at least 30 meters from large vehicles, cranes, etc.

- **Wind Measurements –** Select as exposed a site as possible. The wind pattern around a building or other obstacle is disturbed for a considerable distance – try to get the C-5 SAM™ away from that object.

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Set-up / Assembly
Sensor Head

Attach the sensor head to an existing pole or the bulkhead mount.

Screw down the sensor head using the black knob.

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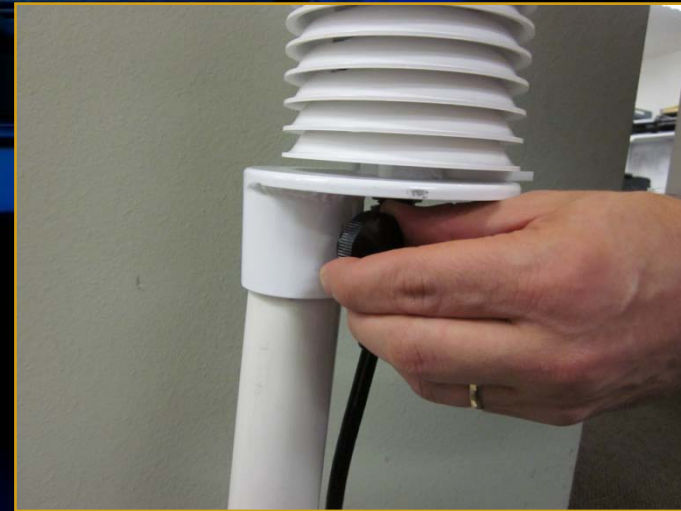
Set-up / Assembly
Cable to the Display

Line up the terminal strip to the connector port on the side of the C-5 SAM™ display

Plug the green terminal strip into the display

Also, plug in the power cable to the display and to a 110 outlet

A cable is run from the RJ connector on the display to a serial port of a computer

Connecting to Computer

- Plug the Display box power cord into a power source (110V unless otherwise marked).

- Plug one end of the serial data cable into the computer COM port.

- Turn the Receiver switch on.

- The Receiver power indicator light should now be on.

- With the C-5 SAM™ assembled and running, the "Data" light should blink briefly every 30 seconds. If the light doesn't blink, refer to the section on troubleshooting.

- In the event your computer does not have a Serial Port available, you must employ a "Serial to USB" converter. These devices are inexpensive and readily available from most computer retailers.

Maintenance

Periodic Maintenance Schedule

Routine maintenance is required on the C-5 SAM™ every 12 months. This maintenance is to ensure that the system and its sensors are working and performing to specifications. In addition, the entire C-5 SAM™ should be examined for other damage.

Troubleshooting

Do not take the C-5 SAM™ or the Display box apart…

This will void the warranty. If the procedures below do not solve the problem, call Coastal Environmental Systems' Service Department at 800-488-8291 x 157.

Troubleshooting

Is the Receiver/Display box on?

The Display backlight should be on and the Display characters visible. If this does not occur, do the following:

- Be sure the Receiver/Display is plugged in and turned on.

- Check the power light on the front panel. It should be lit.

- If the power light is not lit, check for power at the outlet where the Receiver/Display is plugged in.

Power Indicator Light

Troubleshooting

Data light not flashing?

Every 30 seconds, the data light will flash, signifying the C-5 SAM™ is updating the display. If the light does not flash, then do the following:

- Be sure the Receiver/Display is plugged in and turned on.

- Check the power light on the front panel, it should be lit.

Data Light

Troubleshooting

The Computer

There is data on the Display, but there is either no data, or erroneous data, at the computer.

- Check all the connections from the Receiver/Display to the computer.

Error messages while running plume dispersion model

These are not related to the use of the C-5 SAM™. They are messages from the plume dispersion modeling software or your computer's operating system.

- Consult the EPA web site
  https://www.epa.gov/cameo
  for CAMEO®/ALOHA® support.

- Contact Coastal. We are not CAMEO®/ALOHA® experts or certified trainers, but we may be able to help.

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Please... Read the User's Manual!

- This presentation is intended to provide a quick overview of the C-5 SAM™. It is not intended to provide all the information necessary for the proper use and maintenance of the system. The User's Manual provides a great deal more information and a level of detail not available in this presentation.

- A printed copy of the User's Manual was shipped with the C-5 SAM™. It is also available in a separate file on this disk, in Adobe® PDF format.

- Should you discover contradictory statements or information, consider the Manual as the correct and final source.

- If you do find a discrepancy, or have a suggestion on how to make this presentation more useful, please contact the Coastal Environmental Systems Sales Dept. at 800-488-8291.

Optional Vehicle Mount

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ALOHA® and MARPLOT® Screens

- The C-5 SAM™ measures air temperature, relative humidity, wind speed and direction, and barometric pressure every second.

- The resulting data is used to automatically compute the stability class of the wind and 5-minute running averages of wind speed, direction, and temperature. Every 30 seconds this data is transmitted to the Receiver/Display box and then output to your computer… automatically updating the plume dispersion modeling software.
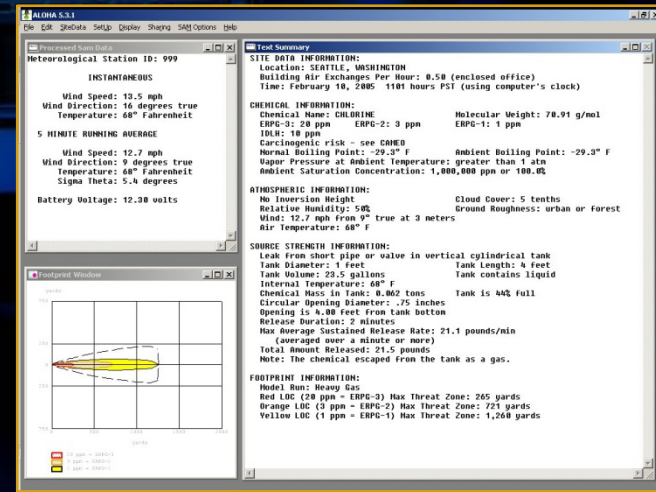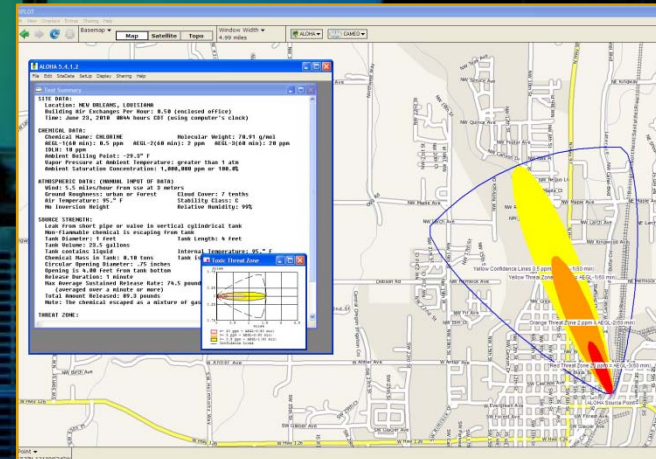
ALOHA® and MARPLOT® Screens

Important Note:

When using the C-5 SAM™ with ALOHA® & MARPLOT®, the ALOHA® application must be running in a window in front of MARPLOT®. The plume dispersion diagram on MARPLOT® will not update every 30 seconds unless the ALOHA® application window is on top.

Resize the ALOHA® window and move it to an area of the screen where the plume dispersion diagram will not be obscured.

While it is advisable to resize the ALOHA® window, do not make it so small that it might be inadvertently "lost" behind the MARPLOT® window.
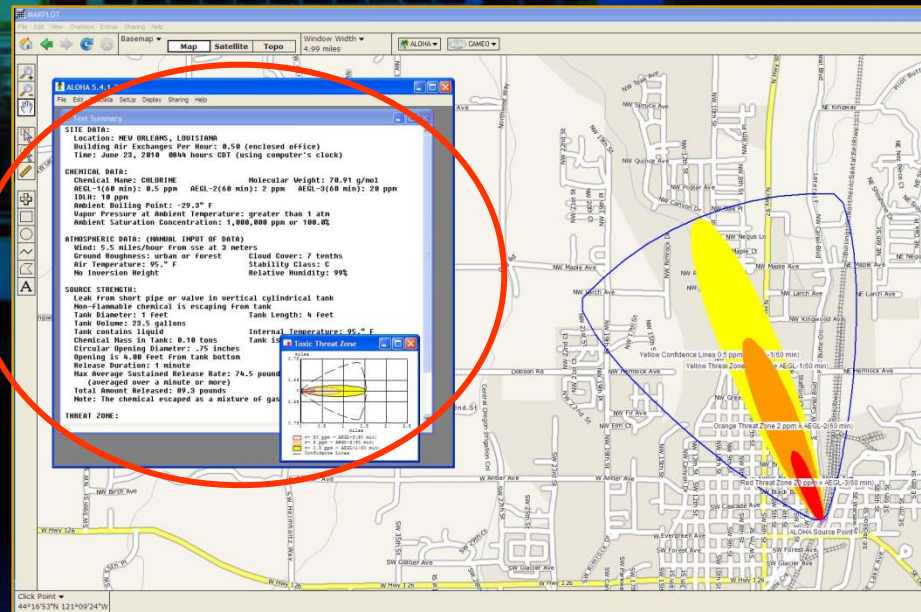
C-5 SAM™ Weather Command
A Final Note

At Coastal Environmental Systems, Inc., we are very proud of the C-5 SAM™ and the service it has provided to the hazmat response community, both civilian and military.

Be assured your C-5 SAM™ has been designed and built to the highest standard and will provide many years of quality service.

If we can be of further assistance, please do not hesitate to call us at 800-488-8291.

Service x 157

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