New Standardized WEATHERPAK® Models

Coastal recently standardized its six most popular WEATHERPAK® models in order to provide faster delivery (the goal is four weeks) and to keep costs down.

There are two models designed for emergency response. The first is Coastal's flagship portable WEATHERPAK®, which operates on batteries and mounts on top of a three meter tripod—formerly named the MTR. The second model is a fixed WEATHERPAK® which uses Power over Ethernet (PoE)—previously named the EOC.

There is a model created specifically for marine applications. The integrated GPS with bullet antenna and compass calculate both True and Relative Winds.

Finally, there are three WEATHERPAK® versions developed for railway applications, specifically hump yard, railside and railside-PoE.

All models feature Campbell Scientific's CR6 data loggers. Campbell is known worldwide for its accurate and dependable instruments. Campbell is also manufacturing the powder coated WEATHERPAK® housing, which provides Coastal with more competitive pricing, dependable delivery, and control over the production process.

Welcome to the first issue of the quarterly newsletter published by Coastal Environmental Systems

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- New INTERCEPT® Display

- CAT III AWOS Installation at Ngurah Rai International Airport, Bali, Indonesia

- AWOS Installation at Sauce Viejo Airport, Argentina

- New ISO 14001:2015 Certification

- Show Schedule:
    - MTX, Geneva, Switzerland
    - IAFC Hazmat Conference, Baltimore, Maryland

- Meet Coastal's Sales Team

Coastal will continue to offer custom WEATHERPAK®s for customers whose requirements are not satisfied by the standard models.

New INTERCEPT® Display for WEATHERPAK® RESPONSE Weather Stations

The new portable RESPONSE WEATHERPAK® comes with Coastal's new INTERCEPT® touch-screen display and software.

The display incorporates a 10.1" WXGA TFT LCD with LED backlight, 1280 x 800 resolution, and 8 GB system memory. It has an IP65 plastic front bezel and weighs from 2.38 to 4.8 lbs—depending on radio type. There are multiple mounting configurations: wall-mount articulating (swiveling), heavy-duty articulating desktop, and panel mount.

INTERCEPT® Response software user features include:

- Two built-in audio alarms
- Automatic transmission of weather data to plume modeling software
- User-configurable alerts and alarms
- Graphing
- Historical data logs
- Selectable day or night viewing screens
- Automatic boot-up

Coastal Update
June 2019

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WHEN MEASUREMENTS MATTER

Coastal installs new AWOS at Bali's Ngurah Rai International Airport (CAT III)

Located 13 km south of Bali's capital, Denpasar, the Ngurah Rai International Airport is the second busiest airport in Indonesia. Most tourists use this airport because of its proximity to the idyllic tropical destinations of southern Bali.

In August, Coastal's experienced installation team flew to Bali for the installation. Despite unexpected conditions on-site, including half of the equipment being detained in customs, they installed three sensor group suites at the roll-out, midfield, and touchdown points of the airport's single runway.

The new Automated Weather Observing System (AWOS) measures wind speed and direction, relative humidity, dew point, air temperature, pressure, altimeter setting, ambient light, precipitation amount, visibility, present weather, lightning/thunderstorm detection, solar radiation, runway visual range (RVR), and cloud height.

The system also includes a Runway Lighting Intensity Monitor (RLIM) to automatically determine the brightness setting of the runway lights (used for RVR calculations). The RLIM is a "passive" type that measures electrical current being sent to the runway lights. This type of RLIM is advantageous because it is non-intrusive to existing systems and compatible with many different types of lighting controls and equipment.

Data is sent from the roll-out sensor group via wireless radio to the airport's weather office where the server is located. Due to significant line-of-sight issues, nine radios were strategically placed—some bouncing the signal to a repeater on the air traffic control tower, forming a mesh network—in order to successfully deliver data.

Primary sensor group at the touchdown end of the runway at Bali's Ngurah Rai International Airport

Measurements are then displayed using Coastal's Aviation INTERCEPT® (AI) software, which uses FMH-1 and ICAO approved algorithms. AI also provides message outputs for Automatic Terminal Information Service (ATIS) broadcasts of aviation weather reports directly to pilots, and the Aeronautical Fixed Telecommunication Network (AFTN), a worldwide system for exchanging messages and data between compatible stations.

Since AI is web-based, no user licenses are required, and data is accessible to authorized users through a web browser on any computer connected to the local area network.

Even though Coastal had little time from purchase order to planned installation, the AWOS was successfully installed on time, at the end of August, 2018. In addition to on-site training, 22 representatives from our customer came to Seattle shortly before system installation to complete Coastal's AWOS Operator & Maintenance Training Course and Factory Acceptance Test.

Coastal has now installed a total of 19 AWOS at airports throughout Indonesia, including two at the north and south runways of Jakarta's Soekarno-Hatta International Airport.

We want to thank our welcoming hosts and hard working on-site production team for their assistance during system installation.

Coastal's AWOS installation at the Sauce Viejo Airport, serving the city of Santa Fe, in Argentina

Coastal's new AWOS installation at the touchdown end of the runway at Sauce Viejo Airport, Santa Fe, Argentina

Coastal installed a new AWOS in October at the touchdown (northeast) end of the runway at Argentina's Sauce Viejo Airport (CAT I). The AWOS replaced a small consumer weather station.

Measurements include wind speed and direction, relative humidity, dew point, air temperature, pressure, ambient light, altimeter setting, precipitation amount, visibility, present weather, lightning/thunderstorm detection, solar radiation, runway light intensity, runway visual range (RVR) and cloud height.

The system's primary communications uses a fiber optic link with a back-up spread spectrum radio link.

Sauce Viejo also uses Coastal's propriety Aviation INTERCEPT® software to display the weather measurements.

AWOS operation and maintenance training for the airport's technicians was provided by Coastal on-site.

Coastal achieves ISO 14001:2015 Certification

In May, Coastal received ISO 14001:2015 certification—the most widely recognized international standard that specifies requirements for an effective environmental management system (EMS).

Coastal has been completing processes and procedures for this certification since 2017. Although the company already had environmental-friendly policies in place, such as recycling, we also wanted to reduce emissions in the environment. Additionally, achieving certification in this area will introduce future European markets to our aviation solutions and other weather monitoring products; after all, it's in our name.

A significant challenge was integrating ISO 14001:2015 with Coastal's current QMS system. The company needed to add items that didn't already exist in ISO 9001:2015, so we conducted a gap analysis to identify the differences. A few of these were:

- Determine and then control environmental aspects, such as identifying all company waste products, then deciding how to mitigate and minimize waste—for instance, reducing use of paper.

- Install processes for developing new programs, such as reducing and recycling cardboard, and converting packaging waste into outgoing packaging.

- Simultaneously considering environmental issues while engineering new systems, to accurately gauge their impacts on the environment.

ISO 14001 is an addition to Coastal's ISO 9001:2015 certification, which is a quality management system dedicated to continuous improvement for industries involved in the design, development, manufacturing, installation, and servicing of products.

Coastal first achieved ISO 9001:2008 certification in 2011; however, commitment to quality has been top priority since the company was founded in 1981.

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CAMPBELL SCIENTIFIC
WHEN MEASUREMENTS MATTER

Event Schedule

See What's New from Coastal at MTX in Geneva, Switzerland

Meteorological Technology World Expo 2019

Hall 4, Palexpo
Stand #3010
Geneva, Switzerland
June 5-7, 2019
https://www.meteorologicaltechnologyworldexpo.com/en/

If you'll be in Geneva, Switzerland for the Meteorological Technology World Expo 2019, please visit us at Stand #3010 to learn how we can help you find your complete weather monitoring solution. Together with our colleagues from Campbell Scientific, Inc., Campbell Scientific Europe, and Corobor Systems, we offer:

• Portable and permanent weather monitoring systems for any environment

• Stand-alone and networked solutions

• Products designed and engineered to our customers' specifications

You can see our portable tactical WEATHERPAK® aviation weather station—designed specifically for critical military operations and used in the harshest environmental conditions, and the new SkyVue8M military ceilometer—compact and lightweight with extremely low power consumption.

Emergency Responders, Visit Coastal at Hazmat 2019 in Baltimore

International Hazardous Materials Response Teams Conference

Booth #306
Hilton Baltimore
Baltimore, MD, USA
June 13-16, 2019
https://www.iafc.org/events/hazmat-conf

Come see the new INTERCEPT® touch-screen display (see page 1) along with the WEATHERPAK® emergency response weather station, the most rugged weather station available.

WEATHERPAK® provides on-site, real-time weather data for chemical, biological and radiological response. It's impervious to airborne chemicals and designed to be deployed directly in the hot zone.

WEATHERPAK®s feature:

• 60 second set-up, no tools required

• Ultrasonic (no-moving-parts) wind sensor

• Automatically updates *ALOHA® and other plume modeling software

*ALOHA is a registered trademark of US EPA and NOAA.

Meet Coastal's Business Development and Sales Team

The first company representatives our customers will likely encounter are Michael Burke and Tyler Cronk, Coastal's Business Development and Sales Managers, They believe in building strong relationships, and work hard to determine the best solution for their customers' needs.


Michael Burke

Michael started his employment at Coastal in 2009 in a sales support role, and has grown with the company to become it's lead sales manager, Currently he focuses on global sales for aviation markets, including specific proposal development for international aviation tenders. He is experienced in all aspects of AWOS system development.

Michael is a lifelong resident of the Seattle area and earned his BA in Marketing and Management from Gonzaga Univerity.
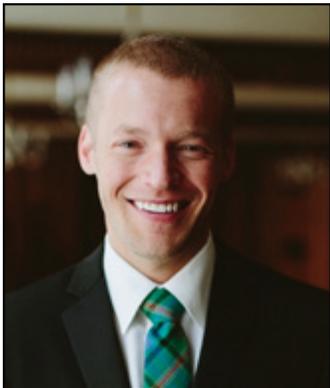
Tyler Cronk

Tyler joined Coastal in April, 2019. He brings significant business development, sales, and engineering knowledge. Previously he worked as an applications engineer for Paroscientific, a pressure sensor manufacturer. Tyler has an MEng in Mechanical Engineering from Boston University.

Tyler has been immersed in learning the details of Coastal's WEATHERPAK® systems and has been instrumental in releasing the new standardized models.

WEATHERPAK Models — Components	RESPONSE 1 (Portable)	RESPONSE 2 (Fixed-PoE)	MARINE	RAIL 1 (Hump Yard)	RAIL 2 (Railside)	RAIL 3 (Railside-PoE)
WEATHERPAK® Housing White	●	●	●	●	●	●
Campbell Scientific CR6 Data Logger	●	●	●	●	●	●
GPS	●	●		●	●	●
GPS–Bullet Antenna			●			
Compass	●	●	●	●	●	●
INTERCEPT® Display	●		O			
High-Visibility 3 Meter Tripod Tower and Canvas Bag	●					
WEATHERPAK® Hard Case with Foam Inserts	●					
Communications						
Serial			●	●	●	
UHF Radio transmitter (USA) or Spread Spectrum Radio (International)	●					
Ethernet		●	O	O		●
NMEA 0183 Output			●			
Sensors						
Ultrasonic Wind	●	●	●	●		
Heated Ultrasonic Wind		O		O	●	●
Stainless Steel Ultrasonic Wind			O			
Mechanical Wind				O		
Barometer	●	O	●		●	●
Barometer (0.23mbar)			O			
Air Temperature/Relative Humidity	●	●	●	●	●	●
Power Supply						
10 D Cell Batteries	●					
DC Power	O		O			
AC/DC Power Converter			O			
Power over Ethernet (PoE)		●				●
Isolated DC Input 9-36 VDC				●	●	
Accessories						
Power Cable	O					
Quick Release Vehicle Adapter	O					
Roof Vehicle Mount	O					
Side Vehicle Mount	O					
INTERCEPT® Software	●		O			
Bulkhead Display			O			

● = Standard / O = Option