Factual Report – Attachment 5

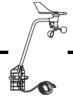
Showboat Branson Belle anemometer specifications and correspondence with the anemometer's manufacturer.

METEOROLOGY

DCA18MM028

Submitted by: Mike Richards NTSB, AS-30

Vantage Pro2[™] Accessories



Includes both wind speed and wind direction sensors. Rugged components stand up to hurricane-force winds, yet are sensitive to a light breeze. Includes sealed bearings for long life. The range and accuracy specifications have been verified in wind-tunnel tests. In areas where icing of the anemometer is a problem, drip rings deflect water from the joint between moving parts.

General

Sensor Type Wind Speed Solid state magnetic sensor Connector Modular connector (RJ-11)

Note Maximum displayable wind speed decreases as cable increases. At 140' (42 m) of cable, maximum displayable wind speed is 135 mph (60 m/s); at 240' (73 m), maximum wind speed displayed is 100 mph (45 m/s).

Material

Wind Vane and Control Head. UV-resistant ABS Wind Cups Polycarbonate

Anemometer Arm..... Black-anodized aluminum

Sensor Output

Wind Direction

Wind Speed

Resolution and Units Measured in 1 mph. Other units are converted from mph and rounded

to nearest 1 km/h, 0.1 m/s, or 1 knot

cable from Anemometer to ISS increases. At 140' (42 m), maximum

speed is 135 mph (60 m/s). At 240', the maximum is 100 mph.

Input/Output Connections

Wind speed contact closure to ground

Wind direction pot wiper ($20K\Omega$ potentiometer)

..... Pot supply voltage 1600 rev/hr = 1 mph

V = P(2.25/T) (V =speed in mph, P =no. of pulses per sample period

T = sample period in seconds)

Variable resistance $0 - 20K\Omega$; $10K\Omega = south$, 180°

Package Dimensions

Product #	Package Dimensions (Length x Width x Height)	Package Weight	UPC Codes
6410	17.75" x 10.50" x3.00" (451 mm x 267 mm x 76 mm)	2.0 lbs. (.9 kg)	011698 00237 5



Richards Michael

From: Curtis Lawton < @davisinstruments.com>

Sent: Tuesday, August 21, 2018 3:03 PM

To: Richards Michael @ntsb.gov>

Cc: 'Kelsey Angle - NOAA Federal' < @noaa.gov>

Subject: RE: question about anemometer

Hi Mike,

I'd ask that since this is an open investigation that you do not distribute this image to anyone. I will not share this information.

I am reading this that the maximum wind magnitude observed by the anemometer on July 19 occurred at 7:07pm, and it was a wind of 73 mph.

Yes you are correct

This wind was an *instantaneous* wind calculation, and is not averaged over any sort of period using multiple observations.

Correct the value of 73mph was instantaneous value. Correct, there is no average.

With regard to direction and magnitude, I assume that the display presents <u>true</u> wind information, as opposed to relative wind information, which requires that the unit has some sort of knowledge of the vessel's heading and speed over ground. So that the "north" indication on the display means that the wind of 73mph measured at 7:07pm was from true north at 73 mph relative to the ground regardless of the vessel's speed and orientation at the time of observation.

Yes

Take care, Curtis L