Camille Landfall Pressures

Two pressures were measured at or near the time of eye passage in Bay St. Louis, 909 and 904 mb (26.85 and 26.70 inches), and a pressure in the eyewall was measured in Pass Christian, 919 mb (27.15 inches).

The estimated distance between the 909 and 904 mb readings and the center of the eye is 3-4 nm; that is to say, it was on the eastern edge of the small eye (which had a 10 nm diameter, suggesting a radius of maximum winds of 6-8 nm). The estimated distance between the Pass Christian eyewall pressure reading and the center of the eye is 7 nm.

From the storm wallet, a letter detailing the eyewall pressure reading:

> Mr. James Cagle, one of my co-workers here, took barometric readings at his home in Pass Christian during the passage of Camille. His lowest reading was 27.05 at 2330, August 17. I checked his aneroid barometer and found it to have a +0.10 error. Therefore the corrected reading should be 27.15. He also reports that there was no "lull" in his area...Because of this and my own lowest reading of 29.28, only 30 miles east of the eye, I think of Camille as a giant, well-organized tornado rather than as a small, very intense hurricane.

The two documented pressure readings in the eye were taken by Charles Breath, a boat dealer and mariner, who had a marine barometer in his home as well as a wall barometer. He took pressure readings and kept a log starting a couple days prior to the arrival of Camille and increased the frequency of the readings to hourly and then to half hourly as the hurricane approached landfall. The first low reading, the 909 mb, was taken just as the roof had come partially off and the family was awaiting the arrival of the eye in order to evacuate to one of their other (rental) homes on their property further back from the river bluff. He took the marine barometer with him, and once they had walked back to the rental property, took another reading which was lower, the 904 mb. He provided the 904 mb reading to the MTF meteorologist as well as Nash and Ep Roberts.

I interviewed the son and daughter about five years ago. There exists a Mississippi Test Facility (MTF, today is Stennis Space Center) report with a short interview, done a week after the hurricane, and an extensive Camille survivor interview done ten years later.

The log and barometer were provided to Nash and Ep Roberts, brothers who were two local New Orleans meteorologists. Ep Roberts had a store that sold meteorological instruments, and he checked the barometer for accuracy and found it to be accurate. When they came out to talk with Mr. Breath, Nash Roberts apparently documented the 904 mb reading in his notes, and where it was taken, even though it was not in Mr. Breath's log book. Nash Roberts put out a request on-air for weather data and it is possible that Mr. Breath contacted him. It is not known how NHC came to obtain the 909 mb measurement and why they did not

use the 904 mb, but it could be that they went by the log, which had the 909 mb as the last entry.

The Mississippi Test Facility report

A week after the storm two MTF employees, meteorologists at the weather station there, talked to Mr. Breath while driving around the area observing damage and trying to determine the extent of the eye passage. At that time he told them of the 904 mb reading and they documented it in their report, which is in the Camille storm wallet.

The MTF meteorologists drove south from the MTF facility on 607 (which at that time must have been state highway 43, not its current location at the I-10 exit) and then drove east on Highway 90 towards Bay St. Louis trying to determine where the tree fall pattern changed indicating the western edge of the eyewall. They attempted to go over the Bay St. Louis bridge, but the bridge was closed as it was damaged by the hurricane. Right where Highway 90 meets the bridge, the shore road runs to the south. The Breath property was the first property on this road facing the bay, up on the bluff. The road ran lower in front of the bluff and was damaged by the hurricane. The MTF meteorologists attempted to drive south on this road but were not able to continue because of the surge damage to the road. It was then that they stopped and one of them talked to the Breath family about their experiences during the hurricane.

Quotes from the MTF report:

> Mr. Breath...always religiously kept up with the weather. His home was over 100 years old, but sturdily built of wood. Although most of the roof was blown off, the studs of the roof still stood...During the brief time they had in the "eye," not more than 10 minutes, they evacuated to a home on higher ground.
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> He first observed his Aneroid type wall decorative barometer, scaled to 28 inches pressure when the pressure began plunging. He stated the needle just fell off rapidly beyond the 28 inch limit. In the turmoil, he remembered his Marine type barometer and went into another room and observed it. During some time period when he knew he was in the "eye," he read 26 point something, and later recalled that it was probably 26.7 inches pressure. He stated that this was a reading in the "eye" but possibly was not the lowest he observed.

In the University of Southern Mississippi interview, Mr. Breath states again that he obtained a lower reading but he was not able to document it (probably not having brought the log back with him to the other property). It sounds like he meant the 26.70 inches reading as he says he "felt sure" the barometer fell lower than 26.85 inches. In the last part of the USM interview, he says that Nash and Ep Roberts

kept his log and his barometer and traded him another very nice marine barometer (one that went down to 26 inches).

The USM Camille Survivors interview (part of the USM Oral History Program)

Pertinent PDF excerpts have been cut and pasted here. A hardcopy of the full report is available as part of the reanalysis material.

MR. PYLE: How far back was the house that you went to?

MRS. BREATH: Oh, about 500 feet back.

MR. BREATH: About 500 feet, yes.

MRS. BREATH: You see, it's hillier back there than it is up here.

MR. BREATH: I had never witnessed that before, and I had been taking barometer readings for years. Like I told you a while ago, some of my friends would telephone me once in a while, when there was communications still up, wanting to know what the barometer reading was and what I thought.

MR. PYLE: What time in the evening was that reading taken?

MR. BREATH: That was taken just before I left. It was taken around eleven, between eleven and eleven-thirty wasn't it?

MRS. BREATH: Well, maybe. That must have been taken just before the eye.

MR. BREATH: I was in there during the eye, and when the eye came, that's when the needle started falling.

MRS. BREATH: Yes, that was a little bit, maybe by a quarter till eleven when that happened, because I think we were back at the house at eleven.

MR. BREATH: Around eleven anyway.

MR. PYLE: Yes. When you saw the barometer, when you could actually see it dropping, what were your thoughts? It might be hard to recall. I was just wondering if you were thinking about your family, your house--

MR. BREATH: Well, I just couldn't believe what I was seeing. Actually, I just [couldn't believe it].

MR. PYLE: Did you ever question if your barometer was right?

MR. BREATH: Well, I've got two barometers. I checked against that. All of them were dropping. Between the three barometers--one of them is out of commission now because it fell down a couple of weeks ago--but out of the three barometers, when they were in working condition, there was probably, maybe, one or two degrees difference in them. So they were fairly accurate.

As a matter of fact, Nash Roberts, who is a weather report man, had one of his men come over and interview me. He asked permission to take the barometer to have it checked in New Orleans to see if they were actually accurate, or whether I had made a mistake, or what. And I certainly agreed to it. They brought it back in a couple of weeks, and said that it was within a tenth of a point of being right, and that could be the difference between the sea level here and the sea level in New Orleans.

MR. PYLE: That's very true, that's right.

MR. BREATH: And the they brought me back a barometer that was taken off a ship that was supposed to be a real good one, and it's the one that fell down, and it's not [in] working order now. I may have it repaired sometime or another. But they were satisfied that my reading was correct.

MR. PYLE: And the reading then, for the record, was how low?

MR. BREATH: [It was] 26.85!

MR. PYLE: Inches of mercury, that's terrifically [low]! [laughter]

MR. BREATH: And I feel sure that it dropped a little bit more than that, but that's what I actually have a record of.

MR. PYLE: Now that 26.85, as far as the National Weather Service is concerned, what sort of record is that?

MR. BREATH: In one of the articles I was reading on this Camille business, there was only one other [lower] recording from some place in Flordia way back.

MR. PYLE: Goodness gracious! As Hurricane Camille started to come up in the gulf that Sunday afternoon, your wife here has got a panoramic view of the gulf right out in front of you, what did you see? What did it look like, the atmosphere?

MR. BREATH: I have had through the years a habit of watching the barometer. I go more by the barometer than anything else. And I started taking hourly checks on it. And then when the barometer really started to fall, regardless of what we saw out in the gulf or whatever, we started really getting ready to leave. We knew something bad was coming up.

MR. PYLE: Yes, what time in the afternoon, or the evening, did the barometer began to fall? And you've got multiple barometers here too, do you not?

MR. BREATH: Yes. Let's see, the eye hit us about eleven or eleven-thirty at night didn't [it]?

MRS. BREATH: Around that time.

MR. BREATH: And I'd say the barometer was falling--you see, a barometer generally predicts from twelve to twenty-four hours ahead of time, and it started falling. It was just a gradual decrease the day before. I don't have my logarithmic reading on it now.

MRS. BREATH: At that particular time, just before the eye, well, it went down to twenty-six.

MR. BREATH: Oh yes, that's when we left. The last reading I took was 26.85, that was around eleven-thirty that night. That was right in the eye, but you could feel the pressure in the house here just like a vacuum, I mean you could feel it--

MR. PYLE: I'm going to back you up just a little bit before that. You mentioned that you keep a log, that you kept a log evidently starting that Saturday when the barometer began to start dropping, do you still have that log?

MR. BREATH: No, the weather people--my reading on the barometer was 26.85 when we left. And somehow or other, the weather bureau in New Orleans, Nash Roberts, I guess, heard about it, and he sent this man over here, and he wanted to take by barometer and check it. He thought that I might have been wrong, and of course, I didn't do it wrong. I check by barometer with the reading in New Orleans. You know you hear it over the news on the weather, and I come within a plane to make it half plane again, the same, myself. So, when they took it into New Orleans and checked it, and they found out that I was in a half plane of being right. They gave me another barometer from what they had taken off of a ship and then traded, because it was all adjusted and all. So, most of the barometers don't read that low. Most of them read to about twenty-eight.

MR. PYLE: Is that all?

MR. BREATH: Yes, that's all.

MR. PYLE: I didn't realize that.

MR. BREATH: Well, they get down to twenty-six, its's so unusual. I understand from them that that is the lowest reading ever recorded in this section, and there was only one recording lower than that, was just a couple points lower than that, was some place in Flordia, way back in the years. I don't remember the date, but it was way back in the years.

MR. PYLE: That day when it was still light, you mentioned that you judged the effect of a hurricane by the barometric pressure without regards of what it looks like. Was there anything peculiar about that day, as opposed to the day before, the day of the hurricane?

MR. BREATH: Not necessarily. You see, hurricanes travel in a counter-clockwise way. And generally, a good-sized hurricane generally has winds that just shifts around from east to west, and then to northwest and northeast; and then, they shift around again. And coming out of the gulf, which is generally southeast, she really opens up then, but it does give you some time. During the '47 hurricane, she and I were sitting on the beach before, and the tide was so low, it had--

MRS. BREATH: That night before.

MR. BREATH: Yes, that was the evening before that it was beautiful. It was just as clear as it could be, just as pretty as it could be. The winds were out of the northwest, I think, at that time.

MRS. BREATH: The sandbars--

MR. BREATH: And there were sandbars all the way out to the channel.

MRS. BREATH: At six o'clock the next morning--

MR. BREATH: Mary and I were sitting on the beach, I said, "It just doesn't look like we are going to have a hurricane. It's just too clear to me." But what happened when the tide went out, and then when the wind kept shifting around counterclockwise and came back in, we has a rush tide. The tide ran so fast that it was difficult to really prepare for it. If you had not had that experience, I mean.

And then again, that's where the barometer deal came in, because even though the wind was out from the north that way, the barometer started falling and, you see, like I mentioned before, the barometer dropped twelve to twenty-four hours ahead, and we knew that it was coming. Besides, it was backing up, the barometer was backing up a bit. They had told us from the readings that they had gotten in, from the report that they [the winds] had gotten further out into the gulf.

MR. PYLE: Your barometer, did that give you a hint, even as late as Saturday and all day Sunday, that is was going to much worse than--

MR. BREATH: No, with the way the barometer falls, the speed that it falls, will give you an indication of how bad it is going to be, and how fast it will be, the extent of its traveling. You can just, like I said, it's just like a clock with them, you know, we go by that more than anything else. It can be blowing like the devil right now, and the barometer is starting to rise, well, you know that in twelve hours if it continues to rise, you know you are going to be all right, It'll give you something to look forward to, that you've got a bright spot in the next twelve hours ahead of you.

MR. PYLE: Yes, did you have any preset contingency plans just in case something unforseen happened?

MR. BREATH: No, our plan was that we were going to go to one of the houses in back, because they were empty. But I wasn't going to risk my being hurt or my wife, or the girls being hurt with something flying, and that--we waited until the eye came. The when the eye came, there was a stillness, just like a vacuum, you could feel it in your ears and all. And that's when we went out the back, we were hoping--I had a truck in the backyard. We were hoping we could drive back in the truck, but the water there, which we weren't aware of how high the water was because it was so dark, you couldn't dare--ordinarily, in hurricanes I'd go around the house and look out and take a look and see if the trees were all right and if my aerial was still up and such as that. You wouldn't dare go out in that kind of weather. [laughter]

MR. PYLE: Exactly.

MR. BREATH: So, when we had the stillness, and we said, "Let's go to the--

MRS. BREATH: When Charlie went out with the flashlight, then he came right back in and he said, "The water's coming into the back," and that had never happened before. So, he said, "Let's go."

MR. PYLE: How aware were you of the time you were in the house before you left?

MR. BREATH: Oh, I was watching closely because I was keeping this log, see. I was watching it close. I had a log in the beginning at every hour. And then as it would start falling more, I'd have it every half hour and make a recording of it.

MR. PYLE: Roughly, what time was it that the dormer disappeared?

MR. BREATH: I would say, sometime around ten or ten-thirty or eleven, wouldn't you say?

MRS. BREATH: Yes.

MR. PYLE: And then, you took your last reading and left about what time?

MR. BREATH: Oh, probably about eleven-fifteen.