

Asheville AMS
Minutes of Meeting
6 Dec 2007

1. The third meeting for the 2007-08 season of the American Meteorological Society (AMS), Asheville chapter, was held on Thursday, 6 December 2007, at Laurel Forum on the University of North Carolina Asheville campus. This was the annual holiday meeting with refreshments served before the meeting commenced. After refreshments and socializing, the meeting was called to order by the chapter president, Lt Col Paul Roelle. The secretary's and treasurer's reports were read with no corrections.

2. Lt Col Roelle closed the business meeting and introduced the evening's speaker, Mr Crae Morton, president of Grandfather Mountain. Mr Morton's family has owned and managed Grandfather Mountain for several generations. Mr Morton became the president of Grandfather Mountain in 2005. In addition to a popular tourist destination in the mountains of western North Carolina, it has become a managed natural area. Also, it was declared a United Nations Biosphere Reserve, the only privately owned one of 507 biosphere reserves in 102 countries.



3. While the emphasis of the presentation was on the very high winds as reported in past years, Mr Morton began by giving some background on Grandfather Mountain. The Morton family bought the land when it was considered non-productive. In subsequent years tourists began discovering its scenic beauty. The completion of the nearby Blue Ridge Parkway increased traffic considerably. The area gradually changed emphasis from tourism in the 1950's to more of an ecological preserve and a scenic site to educate people. Tourist numbers became less important. Protecting rare plants, promoting good visibilities, and attempting more accurate science became a higher priority.



4. Mr Morton showed some pictures taken by his grandfather, an avid and accomplished photographer, also past head of Grandfather Mountain. The beauty of the location was captured well by Mr Morton.

5. Crae then talked about attempts to better measure the winds on Grandfather Mountain. At 5,964 feet above sea level, the peak of Grandfather Mountain is 794 feet lower than Mount Mitchell, the highest peak east of the Mississippi, and only 40 miles to the northeast. However, wind measurements on a saddleback below the peak of Grandfather Mountain were reported over 200 mph in Jan 2006. According to the North Carolina Division of Parks and Recreation website wind speeds of up to 178 mph have been recorded at the Mount Mitchell location. The suspect wind speeds for Grandfather Mountain were the subject of this talk.

6. The location of the previous wind anemometer at Grandfather Mountain was on top of the main building, situated in a high saddleback below the main peak. It is open to the northwest, allowing direct funneling from some of the strongest winter winds. Wind flow is also further accelerated up the side of the large building on which the wind equipment was situated. Many meteorologists felt the anemometer was situated so wind speeds were actually higher than most of the surrounding locations. Beginning a couple of years ago, attempts were begun to find a site which would better represent wind speeds.

7. A group of scientists met with Grandfather Mountain officials to study a better site for the wind equipment. In addition to a site with more representative winds, attention was paid to putting the equipment where it wouldn't be a eyesore within the surrounding natural beauty. Availability and cost of electricity was also a factor. There were a few sites which were studied. Based on the above criteria it was decided to attach the anemometer to the existing swinging bridge buttresses. Built within the framework of the bridge, it offers very little in the way of additional protrusion. Also, the bridge itself offers very little wind resistance, so the flow of wind around the equipment is minimally affected by any ventura effect.



8. The other consideration was the selection of the anemometer. High wind speeds were a given, and any equipment would need to be engineered to withstand them. However, the area experiences extreme icing and rime ice accumulations which would adversely affect the ability to accurately measure wind. After evaluations an RM Young alpine anemometer was chosen. NASA had tested it for speeds of up to 250 mph. It is also coated with material to prevent ice from sticking to it.

9. The new anemometer has been operating since April 2007. So far, wind speeds in the upper 90's have been recorded. Comparisons with the old anemometer have demonstrated that constant wind speeds are comparable between the two sites. However, wind gusts are where the greatest differences have been demonstrated, although they have not kept complete statistics. As expected, the wind gusts were greater at the old location on top of the building.

10. Questions followed the presentation. Lt Col Roelle announced the next 3 meetings would be on climate change and would be held in the Diane Wortham Theater in downtown Asheville. The dates were announced as Jan 15th, Feb 12th, and April 15th.

John D. Gray
Secretary, Asheville AMS