

## The History of Richmond's Weather Records as Influenced by the National Developments

The Smithsonian was founded in 1846; there was no central agency to provide timely data on the weather. Joseph Henry laid the foundation of a national weather service shortly after becoming the Smithsonian's first Secretary.



When Henry came to the Smithsonian, one of his first priorities was to set up a meteorological program. In 1847, while outlining his plan for the new institution, Henry called for "a system of extended meteorological observations for solving the problem of American storms."

Handwritten document to start the Smithsonian Meteorological Project

<http://www.glenallenweather.com/upload/richmondclimate/beginning.pdf>

By 1849, he had budgeted \$1,000 for the Smithsonian meteorological project and established a network of some 150 volunteer weather observers. A decade later, the project had more than 600 volunteer observers, including people in Canada, Mexico, Latin America, and the Caribbean. Its cost in 1860 was \$4,400, or thirty percent of the Smithsonian's research and publication budget. However, many of these stations were forced to cease operation following the outbreak of war.

In 1865, Henry and others called for the federal government to establish a national weather service capable of issuing storm warnings and other weather predictions. President Grant then signed into law the act creating the predecessor of the National Weather Service on February 9, 1870. By 1874, Henry convinced the Signal Service to take over the volunteer observer system as well. Under the direction of the US Army's Signal Service, the first full-time weather offices in Virginia were established in Norfolk and Lynchburg during

1871 and other early stations were formed around this time. (Reference - Joseph Henry, "The Father of Weather Service" by Frank Rives Millikan, Joseph Henry Papers Project).

See the following link for 10 early Virginia weather stations. This data was bought from the National Archives and has been published on the Glen Allen Weather Station site.

Very Early Virginia Climate data from the National Archives

<http://www.glenallenweather.com/climateVA.htm>

Precipitation records from 1872 to 1886 were kept by the Richmond Fredericksburg and Potomac Railroad Company and were under the direction of Major Edmund Trowbridge Dana Myers, (b. 1830 d.1905) president of the company.

### Maj Edmund Trowbridge Dana Myers

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<p><b>Birth:</b> Jul. 13, 1830 Petersburg City Virginia, USA</p> <p><b>Death:</b> May 12, 1905 Richmond City Virginia, USA</p> <p>The son of Samuel Hays Myers and Eliza Kennon Myers. Worked as a Civil engineer for several railroads in Virginia and around Washington D.C. During the War he worked on the defenses at Jamestown Island. He was member of the staff of Major General John B. Magruder. An early proponent of slave military labor. Later he was Chief Engineer for the Piedmont Railroad. After the war he was president of the RF&amp;P Railroad.</p> <p><b>Family links:</b>  <b>Parents:</b>            Samuel Hays Myers (1799 - 1849)            Elizabeth Kennon <i>Mordecai</i> Myers (1809 - 1861)</p> <p><b>Spouse:</b>            Frances Colquhoun <i>Trigg</i> Myers (1838 - 1899)*</p> <p><b>Children:</b>            Eliza Kennon <i>Myers</i> Preston (1861 - 1934)*            Edmund Trowbridge Dana Myers (1862 - 1934)*            Charles Talcott Myers (1866 - 1878)*</p> <p><b>Sibling:</b>            Edmund Trowbridge Dana Myers (1830 - 1905)            Caroline <i>Myers</i> Cohen (1844 - 1928)*</p> <p>*Calculated relationship</p> <p><b>Burial:</b>  <a href="#">Hollywood Cemetery</a>            Richmond            Richmond City            Virginia, USA</p> <p>Created by: <a href="#">George Seitz</a>            Record added: Sep 24, 2007            Find A Grave Memorial# 21740929</p>	 <p>Added by: <a href="#">PL</a></p> 
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The employees making the record were, first, Mr. W. M. Burke, until 1887, inclusive, and then Mr. J. T. Roth. These records are published on the Glen Allen website but are not accepted by Wakefield Division of the NWS as a part of Richmond's precipitation records.

Major Myers precipitation records starting in 1872 -

<http://www.glenallenweather.com/upload/richmondclimate/precip1871-86.htm>

Precipitation records for Richmond kept at Richmond City Locks 447196 located around Dock St and Libby Hill Park started in 1887. The precipitation data (Jan. 1, 1887 to Dec. 31, 1897) is more complete and is accepted by Wakefield Division of the NWS as a part of the official Richmond records.

The summary of Richmond's precipitation records today -

<http://www.glenallenweather.com/upload/richmondclimate/precipguide.htm>

**On October 1, 1890: The weather service is first identified as a civilian agency when Congress, at the request of President Benjamin Harrison, passes an act transferring the meteorological responsibilities of the Signal Service to the newly-created U.S. Weather Bureau in the Department of Agriculture and was renamed as the United States Weather Bureau.**

The temperature data from January 1880 to January 1893 inclusive was obtained from the records of Mr. William H. Pleasants who maintained an almost unbroken record of daily maximum and minimum temperatures during that period.

Time line for William Henry Pleasants -

<http://www.glenallenweather.com/upload/richmondclimate/TimeLineforPleasants.pdf>

The 1870 Census states he was a Clerk at the Times Dispatch office and his home was in the Marshall Ward at the east end of Richmond which is around 25th and Main and in the 1880 Census he was an Insurance agent and living in Richmond.

Weather plays an important part in the insurance business. He was working for the Guarantee Company of North America at 1104 1/2 Main Street; his work may have gotten him interested in observing the weather. The NCEI has in its 1952 and 1990 Annual Summary for Richmond that the observations were taken at 150 feet so it very well may have been on the roof of the Insurance Building. It is thought Pleasants didn't have a rain gauge until August of 1890.

Note on William H. Pleasants August 1890 report to the NCEI -

<http://www.glenallenweather.com/upload/richmondclimate/July1890.pdf>

Pleasants' temperature data was recorded in the Richmond Times Newspaper that has been added to the Glen Allen Weather Site at the following link.

17 years of data taken from the Richmond newspaper from 1880 to 1897 -

<http://www.glenallenweather.com/upload/richmondclimate/richwebsite/oldrec/00-1880-98.htm>

The interval from Feb. 1893 to October 1897 inclusive has been filled by interpolation based on Bon Air, Virginia and later Richmond data, and appears with the symbol \* in those months. See reports of the Virginia Section of Climate and Coop. Services for October, 1904, page 3 and February, 1905, page 3 for this data.

Virginia Section of Climate and Coop. Services for October, 1904 -

<http://www.glenallenweather.com/upload/richmondclimate/Pub1904.pdf>

The US Weather Bureau established its first Richmond office in April of 1896 but the first observations weren't taken until October 5, 1897. The NCEI and xMACIS2 has records from January 1, 1897. They chose to use the weather observations taken by John C. Shafer to complete the year of 1897. The Shafer's observations were taken at Westbrook about 4 miles NW of Richmond. Ginter's estate was later turned into a sanitorium.

[Lewis Ginter Westbrook property where John Shafer took his observations –](#)

<http://www.glenallenweather.com/upload/richmondclimate/WestbrookSanitorium.pdf>

Comparing the records of Shafer, Chimborazo, Ashland and the three months of 1897 that Weather Bureau had observations, it was found that Ashland had the best comparison. Shafer's temperatures were lower and the Weather Bureau temperatures were warmer as they were roof top observations.

**October 5, 1897-** The office first occupied by the Bureau was located in the Virginia State Library Building, room # 28, second floor. While in this location the work was carried on in cooperation with the Virginia State Board of Agriculture. No meteorological observations were taken until April, 1896, when a daily journal was regularly kept under instructions from the Central office. The work pertained exclusively to that comprised in issues of climatological reports and the supervision of cooperative observers and crop correspondents and forecast display stations.



Chamber of Commerce 823 East Main St. - Built in 1891 - Demolished in 1912

On May 21 – 22nd 1897 the office was moved to the [Chamber of Commerce Building](#), corner of ninth and Main street, and meteorological observations began at this location on October 5, 1897. The elevation of instruments were: barometer 143.6 ft. above mean sea level; dry thermometer 97.8 ft. above the ground; wet thermometer 97.8 ft. above the ground; rain gauge 89.4 ft. above the ground; anemometer 105.1 ft. above the ground; wind vane 106.7 ft. above the ground. The Chamber of Commerce building was a 6-story building. The height of one story is generally 10 to 14 feet. If the thermometers were at 97.8 feet they must have been placed on the tower where the flag was located or the highest part of the building. After all there must have been steps to the tower to raise and lower the flag. This adds additional proof that observations were made from the top of the Commerce Building. The original Chamber of Commerce Building was demolished in 1912.



**May 29 – 30 – 31, 1900**, the office was moved to the 4<sup>th</sup> floor, **The Times Building** corner of 10th and Bank Street, rooms # 22 – 23 – 24 and 25. Elevations in the new location were: Barometer (above mean sea level) 156.9 ft., instruments (above ground) dry thermometer 82.1 ft.; wet thermometer 82.1 ft.; rain gauge 76.2 ft.; anemometer 90.4 ft.; wind vane 92.4 ft. The Times building was only a 4 story building. The thermometers were moved to 82 feet on June 1, 1900 where the observations were taken which means only the roof around the towers was high enough to be 82 feet above the ground. Even if the floors averaged 14 feet between floors it would give a height of only 64 feet. So observations must have been made on the north side of the towers. The former elevation before June 1, 1900 was 98 feet on the Chamber of Commerce building. (Ref. Original records Annual Summary for 1900 in the Virginia State Library)

The owners of the Times Newspaper- Lewis Ginter definitely had an interest in weather as he was the one who gave William H. Pleasants weather instruments when Pleasants moved from Richmond to Bon Air in August of 1894. (Ref. The February 1895 Virginia NCDC Climate Report-Now the NCEI) Lewis Ginter is also responsible

for having Captain John Clement Shafer, the son of his best friend take observations at his second home at the Westbrook Farm located 4 miles NW of Richmond in the current area just east of the Joseph Bryan Park.



Who was Capt. J.C. Shafer -

<http://www.glenallenweather.com/upload/richmondclimate/CaptShafer.pdf>

The owners of the Times -

<http://www.glenallenweather.com/upload/richmondclimate/Richmond Times.JPG>



**MUTUAL ASSURANCE SOCIETY OF VIRGINIA.**  
Present Building, 1014 East Main Street,

**On June 29 – 30th, 1905**, the office was again moved, the new location being in the Mutual Assurance Society's Building, corner of Ninth and Main St., rooms # 916 – 917 – 918 and 919, ninth floor. The following elevations of instruments resulted: Barometer (above mean sea level) 214.8 ft. instruments, (above ground) dry thermometer 144.9 ft.; wet thermometer 144.9 ft.; rain gauge 138.3 ft.; anemometer 153.1 ft.; wind vane 154.0 ft.

**During the year 1909** – first half, – arrangements were in progress for the erection of a Weather Bureau Building at this station, and said building was finally completed and accepted by the Bureau in January, 1910. On January 29, 1910 the work of moving the office from the Mutual Assurance Society building to the Weather Bureau was begun and the new quarters occupied the following day. Location: Chimborazo Park, Church Hill. Changes in elevation of instruments: Barometer .... thermometer dry 10.8 ft.; wet 10.8 ft.; rain gauge 3.4 ft.; anemometer 52.1 ft.; wind vane 52.7 ft.; all above ground level. The Weather Bureau building cost \$15,489 and the land was donated. The first observations were made January 30, 1910 and the last June 30, 1953.



*The US Weather Bureau office located at Chimborazo Park. (Credit: Cook Collection, Valentine Richmond History Center)*

*(Credit: Edith Shelton Collection, Valentine Richmond History Center)*

Official records for Richmond have been kept by the Weather Bureau from October 5, 1897 to December 1910 at downtown locations.

Official records for Richmond have been kept by the Weather Bureau from January 1911 to December 1929 at Chimborazo Park.

Official records for Richmond kept at Richmond International Airport since January 1930 to present.

A Detailed Chart of the locations where Richmond's climate observations were taken –

<http://www.glenallenweather.com/upload/richmondclimate/LocationChanges.pdf>

The Chimborazo Park office was closed in 1959, and transferred to the National Park Service as part of the Chimborazo Medical Museum. The building still stands today as the visitor center at Chimborazo. You can still see the US Weather Bureau shield and nameplate across the top of the building, though they have been painted over and replaced with “Richmond National Battlefield.”



(Image credit: NOAA; [original found here](#))

(<http://www.photolib.noaa.gov/htmls/wea01351.htm>)

*The US Weather Bureau office today, converted into the Visitor Center for the Richmond National Battlefield Park. (Credit: Dan Goff)*

Dedicated on October 15, 1927, the airport was named after Virginia explorer-aviator Admiral Richard Evelyn Byrd. But Byrd did not attend as he was planning a trip to Antarctica. Colonel Charles Lindbergh, who had just completed his trans-Atlantic flight 5 months earlier in the Spirit of St. Louis, was present as the airport's world famous first official visitor.



On May 20, 1927 the twenty-five year old Lindbergh flew the Atlantic 3,610 miles in 33 hours altered his future and our world forever.

Weather Bureau also established an office at what was then known as Byrd Field in July 15, 1928 to 1984 when the airport was renamed Richmond International Airport.

Then from July 15, 1928 to August 3, 1930 Aviation Observations were taken as a branch of the city office of the Weather Bureau with the CAA personnel cooperating. From August 3, 1930 through May 26, 1935 the Weather Bureau Airforce Service used full time Weather Bureau observations. Starting in January 1930 the Airport observations became the official observations for Richmond as recorded by the NCEI in Asheville, NC. Observations were made by the personnel of the CAA Communications Station from May 27, 1935 to July 14, 1938, when the Weather Bureau reopened its Airport Station. The Airport office recorded observations in addition to the Chimborazo or City office, but the Airport was twice closed: once from May 27, 1935 to July 14, 1938, and again from September 24, 1942 as observations were then made by the Army Base Weather Station during World War II until April 19, 1946 when the Weather Bureau Airport Station was again established.

On June 1, 1950 the Weather Bureau Airport Station moved into the new Terminal Building for Byrd Field. It was supplied with the regular airport station instruments and equipment and, in addition, had a triple register installed so that it would have automatic wind, sunshine, and precipitation records. Hourly airway observations are taken, also the six-hourly observations, and pilot balloon observations. The ground elevation of the present building is 167 feet, elevation of barometer 180 feet, anemometer 81 feet above the ground and 9 feet above the tower roof. Thermometers are in a standard shelter and are 6 feet above the ground. Automatic records of wind, sunshine, and rainfall were discontinued at the City Office when they began at the Airport Station, and a weighing recording precipitation gauge was put in use at the City Office. July 1, 1953 the city weather office closed and consolidated; all climatological records were discontinued at the Chimborazo Park city office location.

The staff and functions of the city office were relocated to Byrd Field when the Chimborazo Office was closed. Bill Sammler, the Warning Coordination Meteorologist at the National Weather Service's Wakefield office, explained that opening of the Byrd Field office was driven by a need to provide meteorological support for aviation activities. However, it is unknown why the Chimborazo office closed.

Byrd Field received a WSR-3 Weather Service Radar, and it was commissioned on July 7, 1958. In the early 1990s, the National Weather Service (renamed from the Weather Bureau in 1969) began a campaign to modernize, automate, and consolidate their facilities, spending \$4.4 billion to reduce their forecast offices from over 250 down to just 116. At the time, forecast offices were located in Norfolk, Richmond, Roanoke, and Sterling, and an opportunity was seen to combine the Richmond and Norfolk offices into one centrally-located space that could serve both regions. In addition, each of the new offices received new WSR-88D Doppler radar units which were located in Blacksburg, Sterling, and Wakefield. Had it been installed earlier, according to National Weather Service meteorologists interviewed at the time, the Doppler radar unit in Wakefield could have detected the 1993 Colonial Heights tornado earlier and allowed residents to receive earlier warnings and have additional time to prepare. It was also the first recorded F4 tornado in Virginia state history.

The Richmond International Airport office gave its last local forecast on August 5, 1994. The Sterling office temporarily handled forecasting duties for the region until the Wakefield office came online in August 1995. The observations previously taken by meteorologists at KRIC were replaced by an Automated

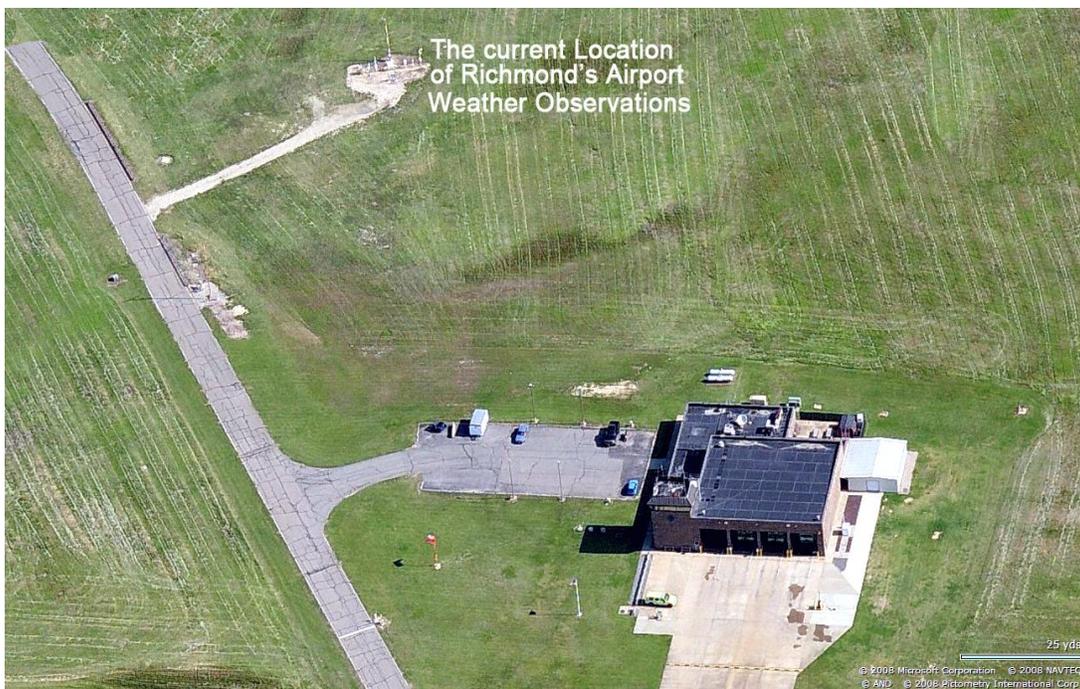
Surface Observing System (ASOS) unit that was commissioned on October 1, 1995. The Norfolk office was closed around the same time, and its operations were also consolidated to Wakefield. The Wakefield Doppler radar was turned on in July 1994, and the office commissioned on August 17, 1995. The WSR-74 unit at Volens, Virginia, that was previously providing coverage for most of the state was decommissioned on December 1, 1995.

The Richmond International Airport on June 24, 2002



In 2007 the airport completed construction of a multimillion-dollar renovation that expanded the terminal building by 155,000 square feet, quadrupling the amount of usable floor space in the ticketing hall and baggage claim areas, doubling the space for security checkpoints and doubling the outdoor curbside loading/unloading zones to help ease vehicle congestion.

The need to provide support for the aviation community led to the establishment of the Weather Bureau office at Richmond International, and though consolidation has closed the office, that same need drove the decision to install automated observing equipment at most of the commercial and general aviation airports around the Commonwealth.



**In 2008 Air Canada began twice-daily service from Richmond to Toronto, and construction was completed on two Airport Drive roadway flyovers, improving the traffic flow to and from the airport.**

**In 2010 an expansion of the Airport's North Parking Garage was completed, adding 2,600 on-site parking spaces and bringing the total number of**

parking spaces to 10,000. In June, a new business center opened in RIC's upper level connector, offering travelers free Wi-Fi, work stations and meeting room space. In addition, a USO center opened for U.S. Armed Forces personnel and their families.

Today CoCoRaHS is an acronym for the Community Collaborative Rain, Hail and Snow Network. CoCoRaHS is a unique, non-profit, community-based network of volunteers of all ages and backgrounds working together to measure and map precipitation. By using low-cost measurement tools, stressing training and education, and utilizing an interactive website, our aim is to provide the highest quality data for natural resource, education and research applications. The network originated with the Colorado Climate Center at Colorado State University in 1998 thanks in part to the Fort Collins flood a year prior. In the years since, CoCoRaHS now includes thousands of volunteers nationwide.

CoCoRaHS is used by a wide variety of organizations and individuals. The National Weather Service, other meteorologists, hydrologists, emergency managers, city utilities (water supply, water conservation, storm water), insurance adjusters, USDA, engineers, mosquito control, ranchers and farmers, outdoor & recreation interests, teachers, students, and neighbors in the community are just some examples of those who visit our website and use our data.

The CoCoRAHS program has provided observations from multiple locations giving a higher resolution of data points and provides valuable information to meteorologists and the public. Link <http://www.cocorahs.org/>

Volunteer programs like CoCoRAHS even though they may not be part of the official climate record give us a more concise picture of a region's climate.