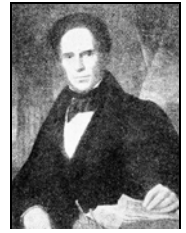


A Newsletter on the

History and Heritage

of American Civil Engineering



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Upcoming Events dealing with history

The Environment and Water Resources Institute will have an engineering history session: "FROM BRIDGES TO FORTS AND WATER PIPES: ENGINEERING HISTORY," during the annual conference: May 16-20, 2010 at the Providence Marriott in Rhode Island.

The ASCE History & Heritage Committee (with Richard Wiltshire, Symposium Chair, David Gilbert and Jerry Rogers) is involved in the planning of the Hoover Dam 75th Anniversary History & Heritage Symposium October 21-22, 2010 at Bally's- Las Vegas concurrently with the ASCE Annual Conference. A tour of Hoover Dam is planned for the afternoon of Wed. October 20. An ASCE publication *Hoover Dam 75th Anniversary Symposium Proceedings* will be available at the October ASCE Annual Conference Publications table and (www.asce.org, Publications)

New York City East River Bridges Dedicated

The Metropolitan Section ASCE Dedicated the Williamsburg, Queensboro and Manhattan Bridges as NHCEs on April 9, 2010.

Before starting the dedications a brief visit was made to the former ASCE Society House on West 57th Street near Carnegie Hall, which served as ASCE's headquarters from 1897-1917 and was designated as a New York City Landmark in 2008. A brief visit was also made to the New York Marble Cemetery in the East Village, the gravesite of Benjamin Wright, the chief engineer of the Erie Canal and the "Father of American Civil Engineering."

ASCE National President Blaine D. Leonard, Met Section officers, and officials from the New York City Department of Transportation (NYCDOT)

dedicated the three bridges spanning the East River as ASCE's newest National Historic Civil Engineering Landmarks.

The bridges were designated by ASCE in 2009 and joined ten other projects in the Met Section that were previously designated as national or international historic civil engineering landmarks, which include the neighboring suspension bridges to the north and south: the Brooklyn Bridge and the Robert F. Kennedy Memorial Bridge (formerly known as the Triborough Bridge).

The day started off with a plaque unveiling at the Queensboro Bridge on the Manhattan side of the bridge along East 60th Street, just west of its intersection with First Avenue.

A second plaque unveiling was held at the Manhattan approach of the Williamsburg Bridge, near the intersection of Delancey Street and Clinton Street at the entrance to the pedestrian and bicycle path.

The plaque for the Manhattan Bridge was unveiled on the plaza near the entrance to the pedestrian path, which is located on the east side of Jay Street between High and Sands Street, where President Leonard was joined by NYCDOT Commissioner Janette Sadik-Khan and NYCDOT Deputy Commissioner for Bridges Henry D. Perahia.

Following the Manhattan Bridge plaque unveiling, guests walked along the pedestrian path to the Brooklyn tower of the bridge, viewing the builder's plate, the Brooklyn Bridge, and the skyline of Lower Manhattan. The group returned to the New York City College of Technology for a formal dedication ceremony that included speakers from the college, Met Section, NYCDOT, and NYC

Bridge Centennial Commission. Robert Olmsted, Chair of the Met Section's History and Heritage Committee provided a historic overview of the three bridges.

After the reception the group walked across the Brooklyn Bridge and visited the ASCE Founder's Plaque in City Hall Park, the former site of the Rotunda Building and the offices of the Croton Aqueduct Department, where ASCE's founding meeting was held on November 5, 1852.



Manhattan Bridge Dedication

International Historic Civil Engineering Landmark

George Vancouver's Mapping of the West Coast of North America, 1791-1795

A plaque celebrating the work done by the British navigator George Vancouver in surveying and mapping the northwest coast of North America was dedicated on April 22, 2010 at the Maritime Museum of British Columbia, in Vancouver

“The Vancouver mapping landmark is special because it is one of only a few international ASCE landmarks to be designated by more than two national civil engineering societies, in this case the Canadian Society for Civil Engineering, the Association of Civil Engineers of Spain, and ASCE,” (D.Gilbert)



Dedication Presentation



Queensboro Bridge Dedication



Williamsburg Bridge Dedication



Plaque in English and Spanish

Some thoughts by George S. Morison, President ASCE 1895, expressed in his book “The New Epoch as Developed by the Manufacture of Power” 1903

“The distinctive mark of a liberal profession is that its members shall know enough of matters outside their professional work to respect, to appreciate and in a general way to understand the work of other men, whether those men belong to other active professions...The civil engineer of the new epoch must sink the individual in the profession. The engineering work of the future must be better work than has ever yet been done. The best work is never done by separate men. It is only accomplished when professional knowledge so permeates all members of a profession that the work of one is virtually the work of all...

In all history and in all periods of the world, the honors are held to belong, not to those who enjoy the results, but to those who have made these results possible. Our generation has the privilege of doing its full share in bringing forth the great changes which are ushering in the new epoch.”

Banner Images

In the January issue, the bridge is an adaptation of the creation of Leonardo DaVinci’s 1504 bridge designed for the Golden Horn at the mouth of the Bosphorus Strait in Turkey. It was built in 2001 in Norway at the town of As over the E-18 highway to serve pedestrians and bicycles. It is made of laminated wood.

The engineer was Leon Moisseff. He was a leading bridge engineer of the late 19th and early 20th Centuries. He introduced the deflection theory of

suspension bridges in the US starting with the Manhattan Bridge across the East River. He consulted on many suspension bridges around the United States including the Benjamin Franklin, Golden Gate and Tacoma Narrows Bridges. The latter, aka Galloping Gertie, failed shortly after it was built and marked the end of a brilliant career.

Recent Articles/Books On Civil Engineering History

Wolf, Donald E. *Crossing the Hudson: Historic Bridges and Tunnels of the River* (New Brunswick, N.J.: Rutgers University Press, 2010).

Thoughts for the Day

What we have done for ourselves alone dies with us. What we have done for others lasts forever.(Mackay)

Technology should improve your life, not become your life (Mackay)

Control yourself: Anger is just one letter short of danger.(Mackay)

The ambitious, who are not content with the gifts of life and the beauty of the world, are given the penitence of ruining their own lives, and never possessing the utility and beauty of the world. (Leonardo, *Atlanticus* 91, v-a)

God give us men! A time like this demands
 Strong minds, great hearts, true faith, and ready hands,
 Men whom the lust of office does not kill,
 Men whom the spoils of office cannot buy,
 Men whom possess opinions and a will;
 Men who have honor; men who will not lie.
 (Josiah G. Holland, 1872)

Character is much easier kept than recovered.
 (Thomas Paine 1783)

God grants liberty only to those who love it, and are always ready to guard and defend it.
 (Daniel Webster 1834)

CIVIL ENGINEERING ~ALMANAC~

MAY / JUNE

May is the anniversary of the birth of noted civil engineer **James Buchanan Eads**. Born in Lawrenceburg, Indiana on May 23, 1820, Eads namesake was his mother's cousin, James Buchanan, who later became President of the United States. Not long after turning eighteen, Eads began to develop a means to recover riverboat salvage from the bottom of the Mississippi River. By age twenty-two had invented a salvage boat and diving bell that led to a profitable business for twelve years. After the outbreak of the Civil War in 1861, Eads was consulted by the US Attorney General on the defense of the Mississippi River. He proposed that ironclad steam-powered warships of shallow draft be built to operate on the rivers. Soon afterward, he was contracted to construct the City class ironclads for the United States Navy, and produced seven such ships within five months. Eads designed and built the first road and rail bridge to cross the Mississippi River at St. Louis. The Eads Bridge, constructed from 1867 through 1874, was the first bridge of a significant size with steel as its primary material, and it was the longest arch bridge in the world when completed. Eads was the first bridge builder to employ the cantilever method, which allowed steam boat traffic to continue using the river during construction, and he was the first to use pneumatic caisson in the construction of bridge piers.

On June 14, 1874, John Robinson led a "test elephant" on a stroll across the new Eads Bridge to prove it was safe. A big crowd cheered as the elephant from a traveling circus lumbered towards Illinois. It was believed that elephants had instincts that would keep them from setting foot on unsafe structures. Two weeks later, Eads sent 14 locomotives back and forth across the bridge at one time. The bridge

is still in use today, carrying both automobile and light rail traffic over the river. The Eads Bridge was the iconic symbol of the City of St. Louis until the construction of the Gateway Arch in 1965.

Eads died in Nassau, Bahamas on March 8, 1887 at the age of sixty-six. He was buried in St. Louis, Missouri.

June is the anniversary of the birth of Major General **George Washington Goethals**, a US Army officer and civil engineer. Goethals, the first consulting engineer of the Port Authority of New York (now Port authority of New York and New Jersey) is best known for his leadership during the construction of the Panama Canal. Born in Brooklyn on June 29, 1858, Goethals attended the College of the City of New York (now City College of New York) and the United States Military Academy at West Point, where he graduated second in his class in 1880.

Goethals' first field assignment came with his appointment as engineer officer in Vancouver, Washington. In September 1884 he transferred to Cincinnati, Ohio, as an assistant in charge of the navigational improvements of the Ohio River. From 1885 to 1889 he taught civil and military engineering at West Point. During the Spanish-American War in 1898 Lieutenant Colonel Goethals served as the Chief of Engineers in the First Army Corps, and was assigned to the General Staff of the United States Army from 1903 to 1907. In 1907 US President Theodore Roosevelt appointed Goethals as chief engineer of the Panama Canal.

Sensitive to the debate concerning whether the canal should be a military or civilian undertaking, the Colonel never wore his uniform in Panama. He took an intense personal interest in the well being of his men, including an emphasis on sanitation and health. Goethals enjoyed being amongst his workers and routinely toured the zone on a motor-driven car that ran on railroad tracks. On Sundays he held informal court sessions, listening to complaints and settling disputes.

The atmosphere of cooperation generated by Goethals allowed his team to succeed where others had failed, and the project reached completion six months ahead of schedule.

Upon finishing the canal in 1914, Goethals was honored as a hero, promoted to major general, and retired. He resigned from the post of Governor of the Canal Zone in 1916. With the impending U.S. involvement in World War I, Goethals was recalled to active duty in 1917. In 1919, he requested his release from his active service and headed an engineering and construction firm. He later became the first consulting engineer for the fledgling Port of New York Authority, which was established in 1921.

Goethals died in New York City on January 21, 1928. The Port of New York Authority's bridge spanning the Arthur Kill between Staten Island, New York and Elizabeth, New Jersey, was named the Goethals Bridge in his honor. The Goethals Bridge opened five months after his death, on June 28, 1928, the date that would have been Goethals' seventieth birthday.

Poughkeepsie Bridge Images on opening day, Walkway Over the Hudson



Over 40,000 people crossed the bridge during the grand opening ceremonies last October. In its first eight weeks over 400,000 people made the walk over the Hudson.



Poughkeepsie Bridge from Mid-Hudson Bridge



Mid-Hudson Suspension bridge adjacent to the Poughkeepsie Bridge. It is a New York State Historic Civil Engineering landmark.

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