

Memories From the SEAS Time Capsules

The Sixth Decade: 1915-1924



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1864-2014

New York Moments

The Sixth Decade: 1915-1924



- 1915 – Times Square: Broadway and the Times Building, which is the headquarters of the *New York Times* from 1913 through 2007.

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- 1915 – Trustees approve the creation of the Department of Chemical Engineering, which is to be separate from the Department of Chemistry.
- Prof. Daniel Dana Jackson becomes the inaugural chair.

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- With the beginning of World War I in Europe, American engineers increasingly advocate for developing a technological edge, leading to the formation of the National Advisory Committee for Aeronautics (NACA).
- The first meeting of NACA takes place in Washington D.C. on April 23, 1915.
 - Prof. Pupin (seated, on the right) was an inaugural member of this committee.
- NACA works to advance aviation research until it is absorbed into the new space agency, NASA, in 1958.



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- 1915 – Street peddlers are very common in poorer areas.

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Bulletin 125 Petroleum Technology 34
DEPARTMENT OF THE INTERIOR
FRANKLIN K. LANE, SECRETARY
BUREAU OF MINES
VAN. H. MANNING, DIRECTOR

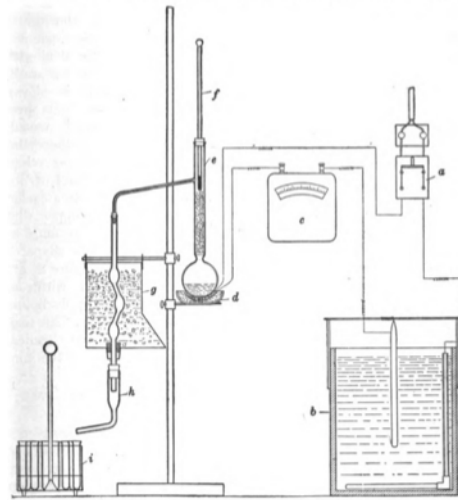
THE ANALYTICAL DISTILLATION OF PETROLEUM

BY
W. F. RITTMAN AND E. W. DEAN



NEW YORK
PUBLIC
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WASHINGTON
GOVERNMENT PRINTING OFFICE
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- 1916 – Graduate student Walter F. Rittman discovers important new ways to crack petroleum.
- In the same year, he writes *The Analytical Distillation of Petroleum*, with E.W. Dean.
 - An example of an apparatus presented in this book is shown.
 - This follows their March 1915 publication in *The Journal of Industrial and Engineering Chemistry* and Rittman's 1915 demonstration of these findings to government and industry representatives in the basement of Havemeyer Hall.
- In 1914, he had written the book *Thermal Reactions in Carbureting Water Gas*.



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- Broadway and 119th Street, in 1916 and 1919.



New York Moments

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- 1916 – The polio epidemic plagues New York.
 - Shown (left), a 1916 pamphlet from the New York City Department of Health that offers sanitary advice for polio prevention.
- 1918-1919 – The “Spanish” influenza pandemic strikes New York.
 - Shown (right), public workers often wore masks for protection.

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- Mines Building lecture hall during this period.



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- 1916 – Pushcart market in the Lower East Side.

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- 1917 – As the U.S. enters the Great War (also called the World War, and later World War I), electrical engineering faculty help the war effort by teaching at the Navy Submarine School in New London.
- As part of this effort, Prof. Michael Pupin develops sonar.

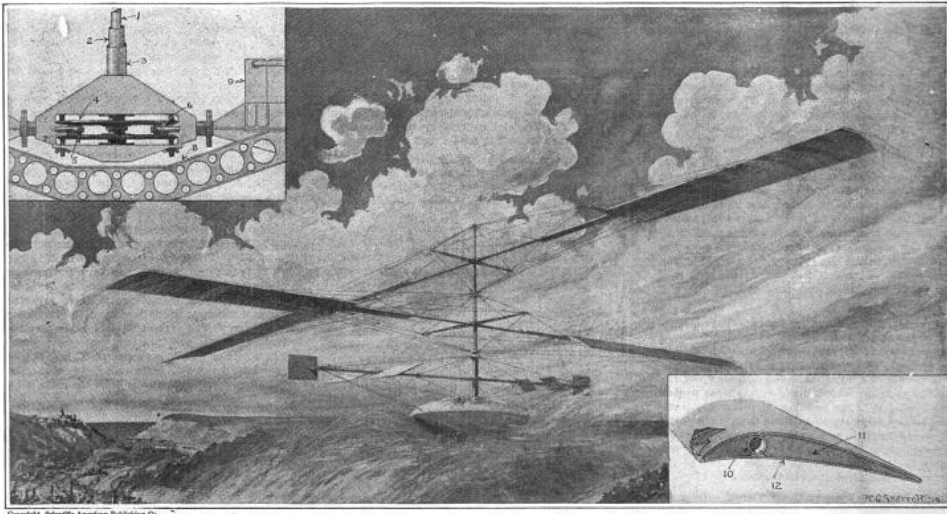
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SCIENTIFIC AMERICAN

December 13, 1919



- 1917 – Prof. Francis Bacon Crocker invents (with Peter Cooper Hewitt) and tests one of the nation's first helicopters.
- Shown, a drawing of this helicopter from the December 13, 1919 issue of *Scientific American*.



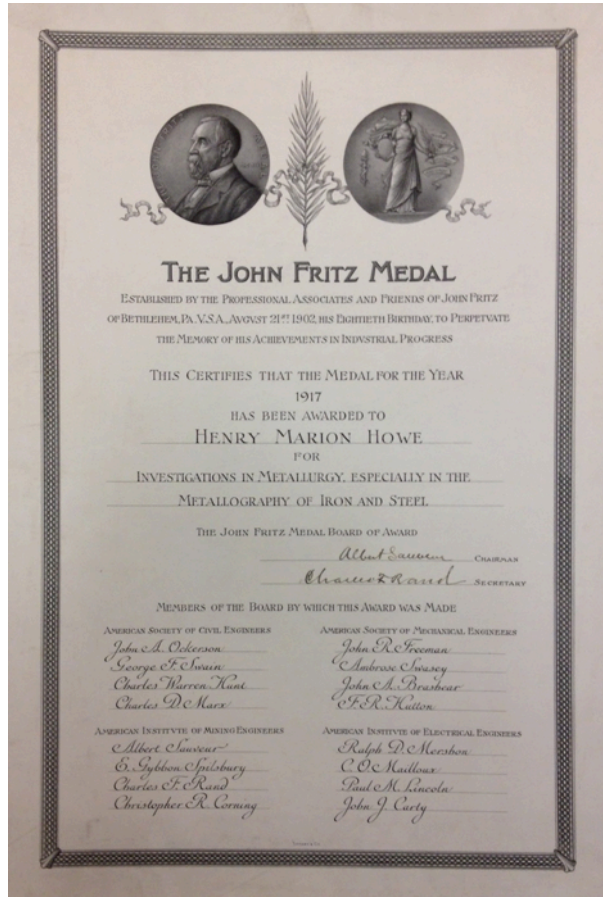
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- 1917 – The John Fritz Medal is awarded to Mines’ steel expert, Prof. Henry Marion Howe.
- Since 1902 it has been awarded annually by the American Association of Engineering Societies for "outstanding scientific or industrial achievements".
- Other awardees in the same time period included
 - 1906 George Westinghouse
 - 1907 Alexander Graham Bell
 - 1908 Thomas Alva Edison
 - 1910 Alfred Nobel
 - 1920 Orville Wright
 - 1923 Guglielmo Marconi

New York Moments

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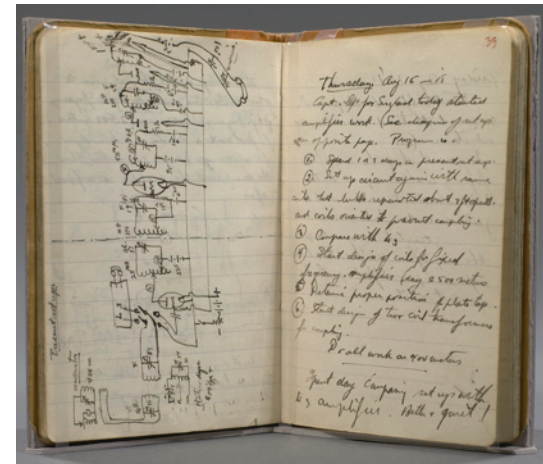
- 1918 – Fifth Avenue bus.

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- 1918 – Laboratory notebook (below), describing Edwin H. Armstrong's discovery of superheterodyne reception, as recorded by Harold Miller Lewis (1893-1978).
- Armstrong is an instructor and assistant to Prof. Pupin at the time, and becomes a professor after WWI.
- As a student, he had already developed the regenerative circuit (1912) and, as a professor, would later invent FM radio (1933).
- He is shown atop RCA's 115-foot north antenna tower, which stood on the roof of 21-story Aeolian Hall station's in New York City, on May 14, 1923.



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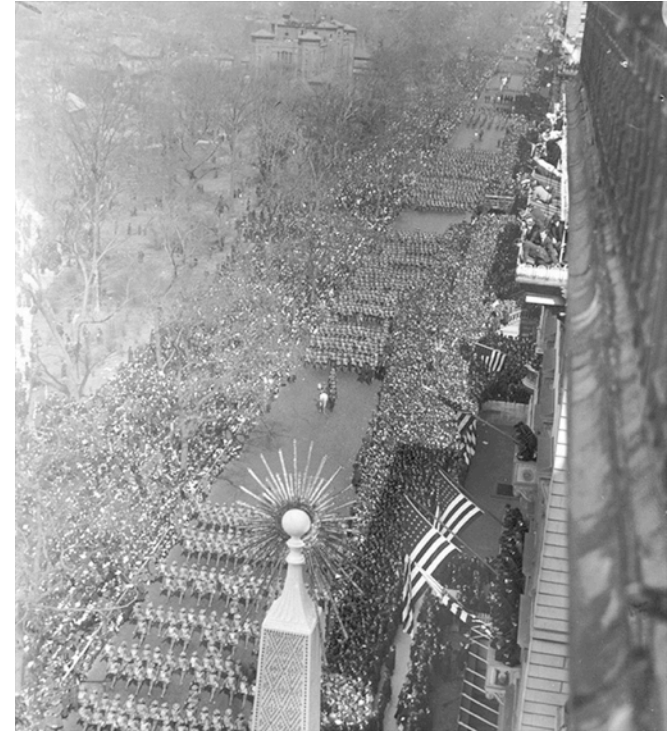
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- Celebration when World War I ends on November 11, 1918.



- On September 10, 1919, nearly a year later, Gen. John J. Pershing leads a victory parade down Fifth Avenue.

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- 1920 – The Department of Industrial Engineering (IE) begins, with founding chair Prof. Walter Rautenstrach (upper photo).
- Operations Research (OR) is later promoted by Prof. Sebastian Littauer (lower photo).
 - OR courses are offered starting 1952.
- IE and OR are integrated into the Department of Industrial and Management Engineering in 1961, becoming IEOR in 1978.



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- Lou Gehrig, Columbia student for two years, starting in 1921.
- Prepares to pursue a degree in engineering.
- Plays Columbia baseball and football, shown on the left.
- Leaves to join the New York Yankees in 1923.
 - Shown below in the background behind Babe Ruth on June 1, 1925, one day before he replaces Wally Pipp at first base and does not miss a game until May 1, 1939.



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- Times Square in 1922.

New York Moments

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- Summer in the City, at the Coney Island beach, looking east from Steeplechase Pier, on Sunday, July 30, 1922.



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CHEMICAL + METALLURGICAL ENGINEERING
Columbia University Abolishes Six-Year Engineering Courses MAY 1924

FRIENDS of Columbia University will regret to learn of the action of the faculty in abolishing the 6-year course for engineering, including chemical engineering. Coming as it does from one of the leading educational institutions and at a time when educators are concluding as a result of their experience that 4 years is not sufficient time for an adequate course in chemical engineering, the reversal of form by Columbia will have a discouraging influence. When engineering was put in the graduate school several years ago it was hailed as a forward step in engineering education. It was felt that even though there might be a reduction in the number of students completing the graduate courses, the quality would be so improved as to compensate for loss in numbers. Apparently, however, the departments of mining, civil and mechanical engineering have not been impressed with the results of the experiment and have brought sufficient pressure to bear to reduce all engineering courses to the undergraduate school, leading to the bachelor's degree in 4 years and to the engineer's degree in 5 years for such as care to pursue the course.

The action of Columbia in this matter is to be regretted not only from an educational point of view but also with respect to industry and young graduates in chemical engineering. Columbia's own experience since adopting the 6-year course for chemical engineering has been that graduates were in strong demand at salaries ranging from 50 to 100 per cent above those offered to men with only 4 years of college education. Six-year men were obviously better trained and worth proportionately more to industry. It is to be hoped that Columbia has not spoken the last word on this subject and that progressive forces will again prevail, at least as far as chemical engineering is concerned. If mining engineering is in the doldrums and if the other branches of engineering do not feel the need of 6-year courses, chemical engineering is nevertheless in a different class. Its graduates require more extensive education and experience in research in order to achieve conspicuous success in industry.

- 1922 – The 2/2 program begins.
 - After 2 years, College students can now transfer to Engineering to obtain a generic BS in two years, for a total of four years.
 - Replaces the six-year-long 3/3 program and makes Columbia Engineering more competitive.
 - From 1864 until until the start of the 3/3 plan (1913-1914) high school graduates could enter Mines/Engineering directly and matriculate as undergraduate students.
- The 2/2 program is considered a great improvement by most, but not all (left).



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- April 18, 1923 – Yankee Stadium opens, as seen:
 - Just before opening (upper left)
 - Again in 1923 (lower left). The mezzanine and upper grandstands are completed later in the 1920s.
- Later, on April 16, 2009, the new Yankee Stadium opens (below).



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- Electrical Engineering laboratory during this period.



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- Manhattan traffic, looking west from the Williamsburg Bridge, on January 29, 1923.

New York Moments

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- Door knobs are plated on April 3, 1924 that are the first objects ever chrome plated by the process invented and popularized by Chemical Engineering professor Colin Fink (upper photos).
- Plated door knobs (lower photo) upon their retirement in 1953 after being used on the doors of Prof. Fink's lab in 101 Havemeyer for 24 years, along with Vernon Burr, who plated them as a lab assistant, and Mrs. Colin G. Fink.