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**SPECIAL RUNS BEGIN SATURDAY. NOVEMBER 7, 2020 AT 9:00 AM**  
**CHRISTMAS HOLIDAY RUNS BEGIN NOVEMBER 29, 2020 AT 9:00 AM**  
**HAPPY THANKSGIVING TO EVERYONE**

In order that TNMOT Administrative Staff, Employees and Volunteers may spend Thanksgiving Day with their families, TNMOT will be closed Thursday, November 28, 2020. We will reopen on Friday, November 29, 2020 at 9:00 AM.

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## *The Mayflower*

In September 1620, a merchant ship called the Mayflower set sail from Plymouth, a port on the southern coast of England. Normally, the Mayflower's cargo was wine and dry goods, but on this trip the ship carried passengers: 102 of them, all hoping to start a new life on the other side of the Atlantic. Nearly 40 of these passengers were Protestant Separatists—they called themselves "Saints"—who hoped to establish a new church in the New World. Today, we often refer to the colonists who crossed the Atlantic on the Mayflower as "Pilgrims."



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**HISTORY OF THE AUTOMOTIVE HEADLIGHT** - Whether you have a 1948 MG TC Roadster or an Italian built 1984 Ferrari 308 GTB it's quite possible that you'll experience headlight issues at some point. These can range from a burned-out bulb to a miss adjusted headlight beam that fails to illuminate the road properly. Since the headlight has been around for so long and gone through so many changes we thought it was time to shed some light on the origin and evolution of this night driving necessity.

It isn't often that we think about the evolution of car headlights, but when we were putting together our Headlamps of the Arizona Auctions photo gallery, a light went off and we thought the subject warranted further research. Here we'll uncover interesting tidbits of information about what the first automobile used for headlights. Then review some of the technology changes in the headlight manufacturing industry over the last hundred years or so.

**FIRST LANTERN HEADLIGHTS** - The oldest headlamps were fueled by acetylene or oil and were introduced in the late 1880s. Acetylene lamps were popular because the flame was resistant to wind and rain. Although electric headlights came on the scene in the 1890s the technology wasn't strong enough to unseat the acetylene type lamps.

Companies like Prest-O-Light and Corning Conophore took the basic lantern type headlight and turned it into a valuable accessory. Prest-O-light came up with an efficient storage and delivery system for the volatile acetylene gas.

It also created an interior mounted switch that ignited the lantern. Corning Conophore experimented with methods of reflection and focusing. By 1917 a Corning headlamp could illuminate a road sign up to five-hundred feet away from the automobile.

**ELECTRIC HEADLAMPS** - The first electric headlamps were introduced in 1898 on the Columbia Electric car. This company built only electric cars and offered the low powered headlamps as an optional accessory. Two factors limited the widespread use of electric headlamps in the late 1800s.

A big problem became the short life of the glowing filaments. You have to remember in the dawning of the automotive age operating conditions were far less than ideal. Headlamps mounted to the front of the vehicle had to find a way to survive this harsh Environment. Another challenge became the difficulty of producing dynamos small enough, yet powerful enough to produce sufficient current to fuel the new filament style lamps invented by Thomas Edison in 1879.

**HEADLIGHTS AS STANDARD EQUIPMENT** - Prest-O-Lite acetylene lights were offered by a number of manufacturers as standard equipment in 1904. And Peerless made electrical headlamps standard in 1908. In 1912, the innovative Cadillac division of General Motors integrated their vehicle's Delco electrical ignition and lighting system.

This created the first modern-style automotive electrical system. In 1940, the modern sealed beam headlight technology found its way into the automotive industry. For 17 years the government mandated the 7-inch size of the lamp and stifled innovation for this time period. In 1957 the law changed to allow different size and shape lights as long as they illuminated the road properly. Headlight technology was now on the path of improving and innovating once again.

**FROM SEALED BEAM TO HALOGEN** - The sealed beam units were used by all manufacturers in Europe, Japan, and North America through the 1960s. Only after 50 years did a new base technology emerge. Halogen bulbs which have become a standard again in both sealed beams and also as singular bulbs.

Halogen bulbs are still incandescent style lamps, but use a different twist to the technology. Standard bulbs use a filament surrounded by an inert gas mixture, usually nitrogen-argon. The halogen bulb uses a compact envelope surrounding a tungsten filament. The gas filling the chamber was originally iodine, but now bromine has become the standard. This compact environment allows for a much longer filament life and brighter illumination.

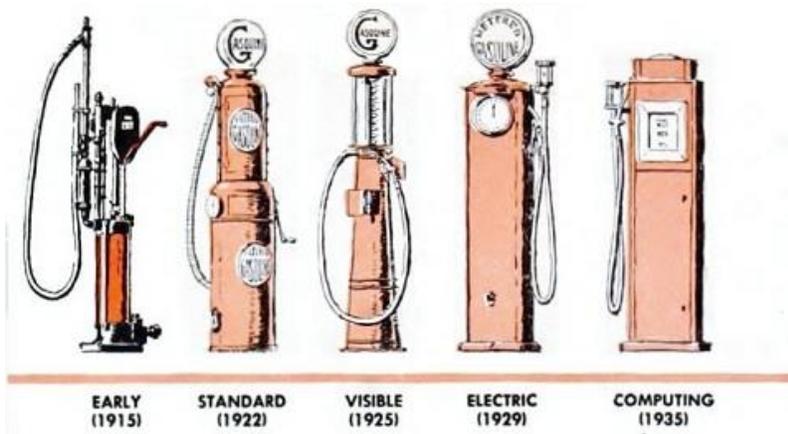
**WHAT'S NEXT FOR THE HEADLIGHT** - Now after nearly another 50 years, we have the new light-emitting diode (LED) technology. Just as innovations of the past, LED bulbs provide longer life and illumination of objects at further distances. In fact, the dependability of these bulbs often robs the vehicle owner of the joy of replacing a headlamp bulb during an average ownership life

cycle. If history repeats itself, we don't think we'll be around for when the next generation of headlight technology hits the automotive market.

**FIRST GAS PUMP AND SERVICE STATION** - Service stations gasoline pumps began with an 1880s device for dispensing kerosene at a grocery store in Indiana.

S.F. (Sylvanus Freelove) Bowser sold his newly invented kerosene pump to the owner of a grocery store in Fort Wayne, Indiana, on September 5, 1885. Less than two decades later, the first purposely built drive-in gasoline service station opened in Pittsburgh, Pennsylvania.

Bowser designed a simple device for reliably measuring and dispensing kerosene – a product in high demand as [lamp fuel](#) for half a century. His invention soon evolved into the metered gasoline pump.



Gas pumps with dials were followed by calibrated glass cylinders. Meter pumps using a small glass dome with a turbine inside replaced the measuring cylinder as pumps continued to evolve.

Originally designed to safely dispense kerosene as well as “burning fluid, and the light combustible products of petroleum,”

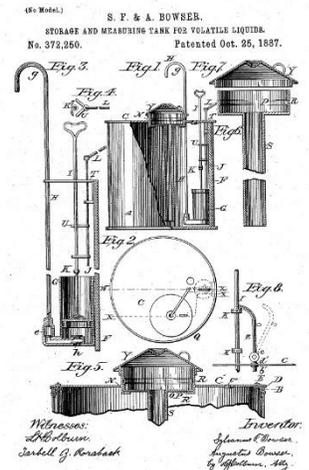
early S.F. Bowser pumps held the same amount of fuel as the standard [42-gallon oil barrel](#).

Bowser's 1887 patent was a pump for “such liquids as kerosene-oil, burning-fluid, and the light combustible products of petroleum.”

Bowser kerosene pumps used marble valves, a wooden plunger and an upright faucet. With the pump's popular success at Jake Gumper's grocery store, Bowser formed the S.F. Bowser & Company and patented his invention in late October 1887.

S.F. Bowser's “Self-Measuring Gasoline Storage Pumps” became known as “filling stations.” An upper clamshell closed for security when unattended.

Within a decade – as the automobile's popularity grew – Bowser's company became hugely successful. By 1905, the S. F. Bowser “Self-Measuring was Gasoline Storage Pump” known to





motorists as a “filling station.” The original pump consisted of a square metal tank with a wooden cabinet equipped with a suction pump operated by hand-stroked lever action.

Beginning in 1905, Bowser added a hose attachment for dispensing gasoline directly into the automobile fuel tank. More design innovations followed. The popular Model 102 “Chief Sentry” with its “clamshell” cover offered security when the pump was left unattended (see the [Diamond Filling Station](#) of 1920 in Washington, D.C).

Manufactured in 1911, an S.F. Bowser Model 102 “Chief Sentry” pumped gas on North Capitol Street in



Washington D.C., in 1920. The Penn Oil Company’s pump’s topmost globe, today prized by collectors, survived only as a bulb. Photo courtesy Library of Congress.

With the addition of competing businesses such as Wayne Pump Company and Tokheim Oil Tank & Pump Company, the city of Fort Wayne, Indiana, became the gas-pump manufacturing capital of the world. Some enterprising manufacturing companies even came up with [coin-operated](#)

[gas pumps.](#)

Penn Oil Company filling stations were the exclusive American distributor of Lightning Motor Fuel, a British product made up of “50 percent gasoline and 50 percent of chemicals, the nature of which is secret.” The secret ingredient was likely alcohol. Photo courtesy Library of Congress.

### **FIRST DRIVE-IN SERVICE STATION -**

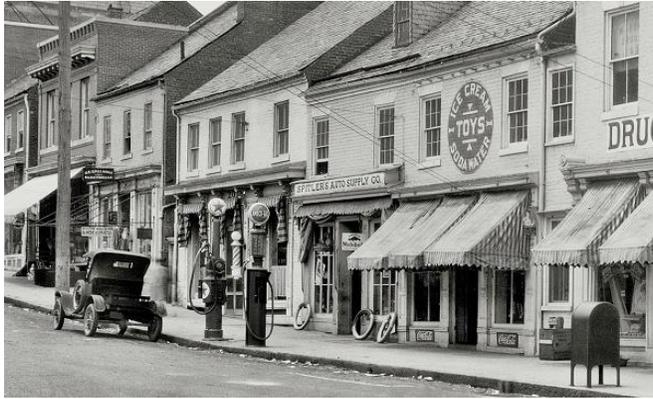
Although Standard Oil will claim a Seattle, Washington, station of 1907, and others argue about one in St. Louis two years earlier, most



agree that when “Good Gulf Gasoline” went on sale, Gulf Refining Company opened America’s first true drive-in service station.



The motoring milestone took place at the corner of Baum Boulevard and St. Clair Street in downtown Pittsburgh, Pennsylvania, on December 1, 1913. Unlike earlier simple curbside gasoline filling stations, an architect purposefully designed the pagoda-style brick facility offered free air, water, crankcase service, and tire and tube installation.



Gulf Refining Company’s decision to open the first service station (above) along Baum Boulevard in Pittsburgh, Pennsylvania, was no accident. By 1913 the boulevard had become known as “automobile row” because of the high number of dealerships. Photo courtesy Library of Congress.

“This distinction has been claimed for other stations in Los Angeles, Dallas, St. Louis and elsewhere,” noted a Gulf corporate historian. “The evidence indicates that these were simply sidewalk pumps and that the honor of the first drive-in is that of Gulf and Pittsburgh.”

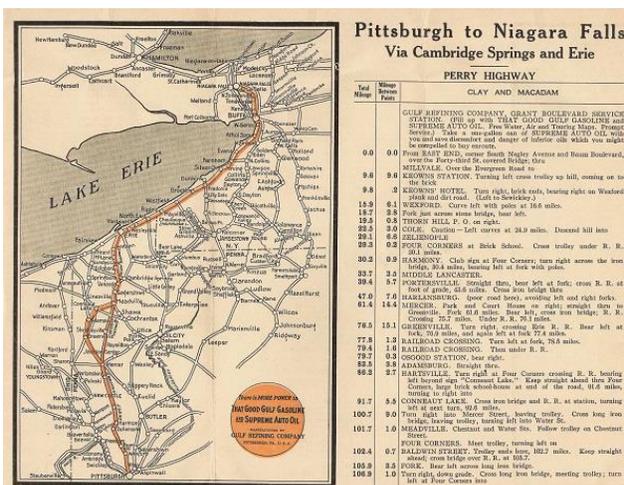
The Gulf station included a manager and four attendants standing by. The original service station’s brightly lighted marquee provided shelter from bad weather for motorists.

Spitlers Auto Supply Company, 205 Commerce Street, Fredericksburg, Virginia, closed in 1931. It was an example of curbside pumps used before Gulf Refining Company established covered, drive-through stations.

“On its first day, the station sold 30 gallons of gasoline at 27 cents per gallon. On its first Saturday, Gulf’s new service station pumped 350 gallons of gasoline,” explained the Pennsylvania Historical and Museum Commission.

“Prior to the construction of the first Gulf station in Pittsburgh and the countless filling stations that followed throughout the United States, automobile drivers pulled into almost any old general or hardware store, or even blacksmith shops in order to fill up their tanks,” the historical commission noted at [ExplorePAhistory.com](http://ExplorePAhistory.com).

The decision to open the first station along Baum Boulevard in Pittsburgh was no accident.



Until about 1925, Gulf Refining Company was the only oil company to issue maps. Gulf was formed in 1901 by members of the Mellon family of Pittsburgh. Map image courtesy Harold Cramer.

By 1913 when the station was opened, Baum Boulevard had become known as “automobile row” because of the high number of dealerships that were located along the thoroughfare. “Gulf executives must have figured that there was no better way to get the public hooked on using filling stations than if they could pull right in and gas up their new

car after having just driven it off the lot,” notes a commission historian.



This 1916 Bowser gasoline pump operated by a hand crank and “clock face” dial. Photo from the Smithsonian Collection.

In addition to gas, the Gulf station also offered free air and water – and sold the first commercial road maps in the United States. “The first generally distributed oil company road maps are usually credited to Gulf,” said Harold Cramer in his [Early Gulf Road Maps of Pennsylvania](#). “The early years of oil company maps, circa 1915 to 1925, are dominated by Gulf as few other oil companies issued maps, and until about 1925 Gulf was the only oil company to issue maps annually,” Cramer noted.

The Gulf Refining Company was formed in 1901 by members of the Mellon family, along with other investors, as an expansion of the J. W. Guffey Petroleum Company formed earlier the same year – to exploit the [Spindletop oilfield discovery](#) in Texas.

While the Gulf station in Pittsburgh may have been the first “modern” service station, kerosene and gasoline “filling stations” helped pave the way. “At the turn of the century, gasoline was sold in open containers at pharmacies, blacksmith shops, hardware stores and other retailers looking to make a few extra dollars of profit,” noted Kurt Ernst in a 2013 article.

“In 1905, a Shell subsidiary opened a filling station in St. Louis, Missouri, but it required attendants to fill a five gallon can behind the store, then haul this to the customer’s vehicle for dispensing... A similar filling station was constructed by Socal gasoline in Seattle, Washington, opening in 1907,” Ernst explained in his [The Modern Gas Station celebrates its 100th Birthday](#).

“Today, 152,995 gas stations dot the landscape, including 123,289 convenience stores,” Ernst reported. On average, each location sells about 4,000 gallons of fuel per day, “quite a jump from the 30 gallons sold at the Gulf station in Pittsburgh on December 1, 1913.”



Collectors value station memorabilia, including this pump and globe exhibited at the Northwoods Petroleum Museum outside Three Lakes, Wisconsin, established in 2006.

Photographs of early service stations remain an important part of preserving U.S. transportation history (also true for architecture, pump technologies, advertising methods, and more). The Library of Congress maintains a large collection, as do others.