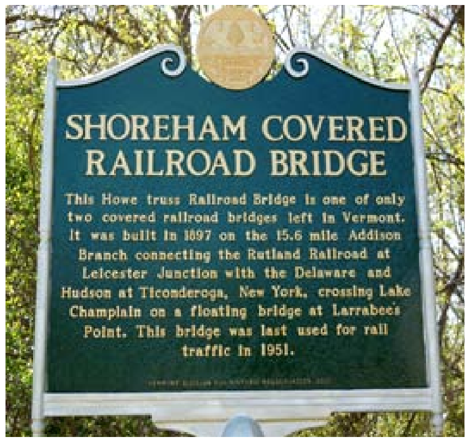
November–December 2014

The PLS GAZETTE

A newsletter of the Pennsylvania Live Steamers, Inc.

Green Signals Ahead

During my vacation travels I always keep my eyes open for items that are throwbacks to the early days of railroading. This year my wife Susan and I made two trips to Vermont to take in the beauty and sites Vermont has to offer. Susan and I both like looking for and photographing covered bridges. Vermont is an excellent location to find many. However, let us not forget about railroading. Vermont has two covered railroad bridges that are still standing and I had an opportunity to find and photograph both in Vermont and two of the four or five in all of New England.



From the mid 1850's through the early 1900's a large number of covered wooden railroad bridges were constructed in New England. Prior to the use of wrought iron and cast iron, wood was the common material for building railroad bridges. In timber rich parts of the country like New England, the use of wood continued to be used as a simple matter of economics — it was cheaper! Why cover a bridge? It's simple, an uncovered wooden bridge in high rail fall areas and exposed to the sun only had a life of 10 to 15 year, but by covering them the life was increased significantly.

Covered bridges are not unique to the United States, you can find them in many European countries, Asia and Japan; there are more than 14 common designs. Some names you may be familiar with are: Kingpost, Queenpost, Burr Arch, Howe Truss, Warren and Town Lattice.

(Continued on page 3)

Shoreham Covered Railroad Bridge, Shoreham, Vermont.

Thank You Allen Underkofler!

Over the past four years member Allen Underkofler has been our *PLS Gazette* Editor producing 25 issues of the *Gazette*. I am sorry to report that this will be his last issue of the *Gazette*. For those of you that have enjoyed reading the Gazette you may not have given much thought to the work that goes into the preparation of each copy, but I can assure you that the voluntary job of *Gazette* Editor can be time consuming and sometimes a difficult job that Allen made look very professional and very easy. The easy part for Allen was his artistic ability to take all the bits and pieces that comes from many individuals every two months and compose them into an eye pleasing easy to read document. The difficult part was meeting a deadline to get to the printer, label for mailing and post to the web, especially when he was waiting for all contributors to provide those bits and pieces that often arrived only a few days before the due date or possibly late. Only then could Allen compose the layout, size photos and get a draft proof copy out for review. In spite of it all Allen managed to get the job done and for a job well done we all owe Allen a grateful **THANK YOU.** Allen's talent and abilities will be missed.

— *Frank Webb*

2015 PLS Calendar of Events

Saturday, Jan. 18	Board of Directors Meeting - 9:30 AM
Saturday, Feb. 15	Board of Directors Meeting - 9:30 AM

Pertinent Dates for the 2015 Election

The 2015 election of all officers and three non-officer directors will take place at the Annual Business Meeting on March 21, 2015. Bruce Saylor and Steve Leatherman volunteered for and were appointed to the Nominating Committee. Regular Members who attended at least half of the membership meetings in 2014 are eligible to be nominated for election to a seat on the Board and to any office except president, which requires prior service of at least one term as an officer or non-officer director. Pertinent dates for the 2015 election are —

December 15, 2014	Last day for Secretary to provide to the Nominating Committee the names of members who are eligible to stand for election to offices and/or the Board.
December 22, 2014	First day to accept nominations.
January 19, 2015	Last day to accept nominations.
January 21, 2015	Last day for Nominating Committee to supply names of nominees for offices and directorships to President and Secretary.
January 21, 2015	Last day for President to supply names of nominees for offices and directorships to the Editor for publication in *The PLS Gazette.*
February 20, 2015	Last day for Secretary to post the names of nominees for offices and directorships in clubhouse.
March 6, 2015	Last day to request an absentee ballot by mail.
March 21, 2015	Election at Annual Business Meeting.

Club Membership News

PLS welcomes new Associate Member Joel Brazy.

Membership Gauge

As of November 30, PLS has:

104 Regular Members
252 Associate Members
9 Honorary Members

Pennsylvania Live Steamers, Inc.

President	Frank Webb	77 Roundwood Circle, Collegeville, PA 19426	president@palivesteamers.org
Secretary	C. Robert Morris	3034 Black Swift Rd., Norristown, PA 19403	rmorris1171@verizon.net
Treasurer	Walter Mensch	1348 Sheep Hill Rd., Pottstown, PA 19465	
Gazette Editor	Allen Underkofler	Box 609, Kimberton, PA 19442-0609	pls@apunderkofler.com

Board of Directors: Sharon Connelly, connellywood@verizon.net; Ron Henderson, ronjhenderson@verizon.net; Steve Leatherman, steveleatherman@gmail.com; Jim Salmons, jshay6@verizon.net; Bruce Saylor, bgsberk@comcast.net; Ron Shupard, ShuSmoke@aol.com.

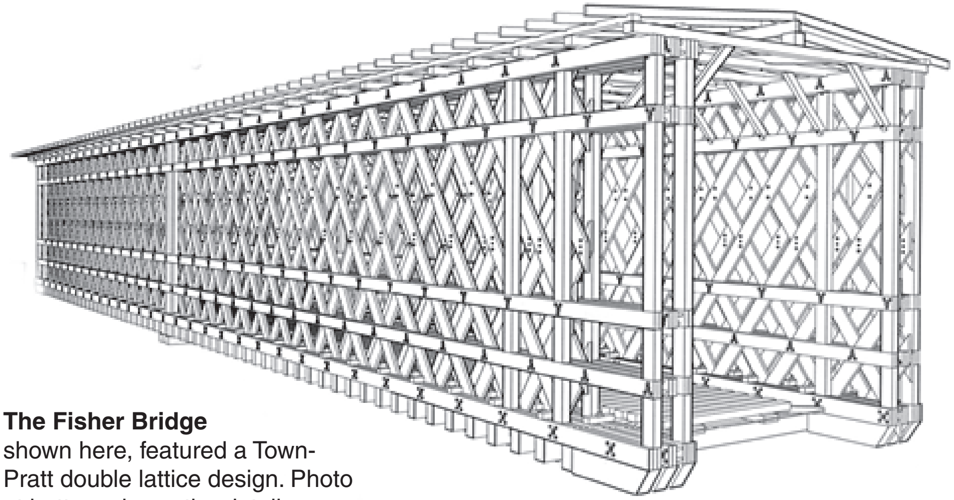
Pennsylvania Live Steamers, Inc. • P.O. Box 26202, Collegeville, PA. 19426-0202 • 610-454-0477 • www.palivesteamers.org

Green Signals Ahead

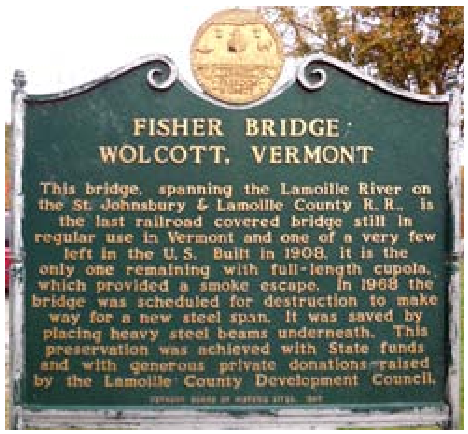
(Continued from page 1)

The Shoreham Bridge crosses the Lemon Fair River and is located in the Champlain Valley in Addison County near the town of Shoreham, Vermont. The owner is the State Division of Historic Preservation. It was built in 1897 by the Rutland Railroad Company using the Howe Truss design and is 108'-3" in length, 20'-0" wide and has an 8'-0" vertical clearance. The bridge sits off the road several hundred yards in a wooded area and was very difficult to find. It was just by chance I caught a glance of it from the corner of my eye as we were driving down a country road.

The Fisher Covered Railroad Bridge crosses the Lamoille River and is located in the North central part of Vermont in Lamoille County near the town of Wolcott. The owner is the State Division of Historic Preservation. It was built in 1908 by St. Johnsbury and Lamoille County Railroad using the Town-Pratt double lattice design and is 109'-0" in length and 15'-0" wide, vertical clearance not listed. The double lattice design is the most common construction method for wooden railroad bridges. The Fisher Bridge is also topped with a near full length cupola which allowed smoke from steam locomotives out of the bridge. Unlike the Shoreham Bridge the Fisher Bridge was very easy to locate.



The Fisher Bridge shown here, featured a Town-Pratt double lattice design. Photo at bottom shows the detail.



See you on the main line,

Frank Webb - President

Donation Acknowledgements

PLS wishes to thank the following members for donations received during October and November: Mayland Crosson, Ruth Morewood, and Robert Gray III. Thank you also to the Time Bandits Car Club and the Delaware Valley Chapter of NRHS.

PLS is also grateful to Eleanor Yinger for her contribution in memory of Bob and Ann Marie Bent.

For Sale

5 HP Rotary Phase Changer

Single phase to three phase. Motor is a US Electric, 5 HP 208-230/460 volt, 3,495 RPM.

Asking $150

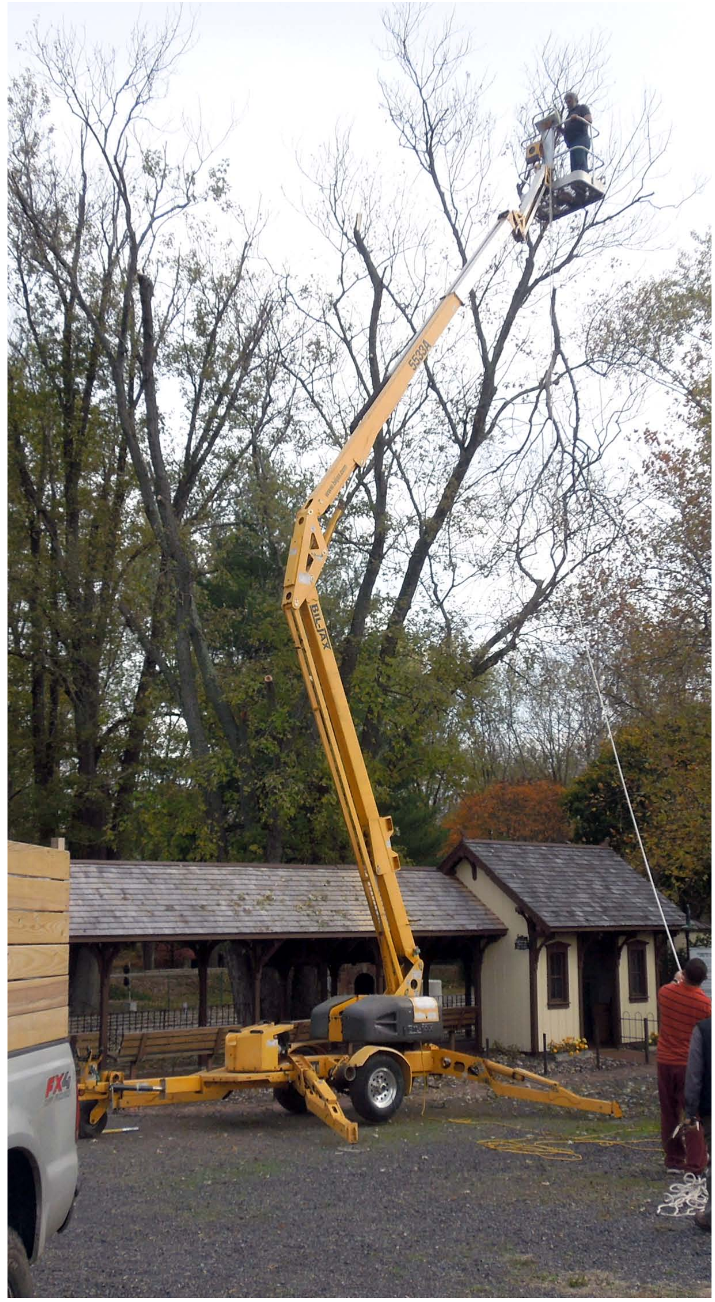
— Jim Salmons.

E-mail – jshay6@verizon.net

Timber!

Bill Gambone of BG Tree Service was hired to remove several trees from PLS property that were deemed dangerous. Bill used his bucket trailer and ropes to remove the tree behind the 1½ inch station while he had a friend come in with his bucket truck and cut down the tree by the steaming bay. PLS members helped with cleanup. The two day work job cost us $5,000. The guy with bucket also trimmed the top of another tree and informed us that tree was not in good shape. It is dying from the top. Bill also trimmed the tree by building 2 and said it has the same problem. It was discussed among PLS board members that we may have to have them come back in the spring to remove those trees also. Branches falling from the top of these trees can cause serious damage to property and especially to any one of us.

— *Bruce Saylor*



The Turkey Trot

By Harry Quirk and Ryan Bednarik

Fall is a special time for celebrations in America. One day in particular that is highly admired in our history is Thanksgiving Day!

Between Thanksgiving and the turn of the new year there are many occasions to join with friends and family for the enjoyment of what we have and where we are in life. One particular day has been a tradition for a group of overstuffed comrades trying to get enough fresh air and exercise to counter the sleepiness of the traditional turkey meal — "Black Friday."

Black Friday, though not officially on the list of holidays or observances, found many traveling from near and far, enduring shopping traffic to get to the annual Turkey Trot event at PLS. The gathering is a tradition among friends who enjoy the live steam hobby.

The camaraderie of running steam locomotives is traditionally combined with magical cinematic offerings, often accompanied by commentary, both on and off film, from those watching. Movies of yesteryear at lunch this year enhanced and warmed the day. This year's Turkey Trot entertainment was initiated with Harry Quirk's offering of his excellent home footage of the Reading Rambles. As an encore, Paul Quirk showed his vintage footage of many various steamups of yesteryear, including footage of Rahns in the 1980-1990s.

We had 13 dedicated but frozen attendees (11 members and 2 guests) who endured the cold and snow, plowing through the frozen tracks to carry their equipment. The weather hardships could not stop this band of steamers. The operations went well despite temperatures in the 30s along with a strong wind (and snow). The event featured both gas and alcohol-fired locomotives representing gauge 1 in standard and narrow gauges with locomotive sizes varying from small 0-4-0s to large 4-8-4s.

There is hope that in 2015, steam locomotive rambles will continue and the large steam programs of Union Pacific and Norfolk Southern, along with other efforts will successfully continue to keep alive our steam railroading heritage, captivating new generations in the same way that the rambles of some forty-plus years ago did.

Photo Credits: Clockwise from top left: Ross McGee; Ross McGee; Ross McGee; Scott McDonald

The Blue Comet

Luxury on the CRR of New Jersey

By Bob Thomas

The Central Railroad of New Jersey, also known variously as Central of New Jersey, Jersey Central or its CNJ reporting marks, was a scrappy Class 1 railroad of 693 route miles. It was concentrated in northern New Jersey but had branches into Eastern Pennsylvania and down the length of Maryland's Eastern Shore peninsula. It also provided running rights for the Reading and B&O to New York City through its busy Communipaw (Jersey City) ferry terminal. Jersey Central's reach into Pennsylvania was necessitated by an oppressive tax burden imposed by New Jersey, prompting the railroad to flee as much as possible to a more welcoming financial environment. Pennsylvania's anthracite coal fields were another attraction; CNJ was an "anthracite road" operating a fleet of husky Camelback locomotives with Wooton fireboxes specifically designed to burn a thin fire of hard coal on a wide grate. Aside from a few long distance trains, CNJ passenger service was primarily devoted to carrying New York commuters between the Jersey City ferry terminal and numerous bedroom communities in North Jersey.

The *Blue Comet* was conceived in 1928 by CNJ president R.B. White to provide direct travel between New York and Atlantic City in opulent accommodations in reserved-seat coaches at regular coach fare. Two identical trains were made of air conditioned refurbished rolling stock. Cars were painted in Packard Blue with a broad cream band along window height. Each train had a consist of a baggage car, combine/smoker, diner, four coaches, and an observation car. Cars were named after comets. The train embodied every bit of its *deluxe* portrayal: Dining car chairs were upholstered in blue linen, porters were attired in blue uniforms, even the ornate tickets were blue, and to cap it all, the observation car's nickel plated railing carried a *Blue Comet* drumhead.

Three identical Baldwin G3s Pacific locomotives were assigned to *Blue Comet* service. With an 85 square foot grate and 79-inch drivers on roller bearings, they were easily capable of steady running at 70 mph through the Jersey Pines. They too were painted Packard Blue and had nickel plated cylinder and valve covers. But what really set them off was the huge Elesco feedwater heater above the train's name board at the top of the smokebox. Few locomotives of the day exhibited such an imposing front end! Then there was the long-bell three-chime whistle, not unlike that of river steamer, with an incomparable low-pitched tone like no other locomotive whistle I have ever heard, On a summer day in 1937 my father and I were at Lakehurst around noon to watch the *Comet* take on water. After the train had departed and was out of sight the sound of its

soft, low, almost mournful wail could still be heard receding in the distance, creating an indelible impression on a ten-year-old that can be recalled to this day!

The *Blue Comet* made its first run on February 21, 1929 following a long publicity campaign in the press and on radio. Interest was intense — crowds gathered at lineside to see the train pass. Two sections ran each way. Passengers for the first section left the West 23rd Street Ferry terminal in Manhattan at 9:45 AM for arrival at Atlantic City 1:08 PM. The second section departed at 3:45 PM for arrival at 7:45. Return trips departed A.C. at 4:35 and 6:55 PM. Only one dining car was available; it was on the first southbound train of the day and returned on the first northbound train. After departing Jersey City, the *Blue Comet* made station stops only at Newark, Red Bank, Lakewood, and Lakehurst. It transferred to Reading tracks at Winslow Junction, then to Hammonton and on for a final gallop to "The Boardwalk Empire." Both trains maintained a 97% on-time record but by 1933, as the Depression deepened, improved roads encouraged more use of automobiles, and the Pennsylvania-Reading Seashore Lines came into existence, *Blue Comet* service was reduced to one train each way per day. Even so, it ran *on time*.

Joshua Lionel Cowen was an early frequent patron of the *Blue Comet* so it's no surprise his company lost little time issuing a Standard Gauge version of the train in 1930. Although the locomotive number 831 is correct that was about the limit of Lionel accuracy to prototype. There were the usual Lionel "deviations" from scale but the most egregiously prominent ones were the locomotive with a 4-4-4 wheel arrangement and a Vanderbilt tender. Nevertheless, the Lionel version was very well received and surviving sets in good condition are valued at $8,000 or more.

As might be expected of any high speed train in a rural area, the *Blue Comet* was involved in a few collisions at unprotected grade crossings. A much more serious event occurred in the late afternoon of August 19, 1939. The Tuckerton Weather Bureau reported almost fifteen inches of rain fell in the region on that day, most of it during a torrential downpour between 2 and 6 PM. Patronage on the *Blue Comet* had been steadily declining for reasons mentioned previously but on this day of terrible weather it was further diminished to only 49 northbound passengers from Atlantic City. The truncated train with locomotive 830 on the point included a combine, diner, only two coaches, and an observation car. Poor visibility caused the engineman to reduce train speed to 35-40 mph. It was six minutes late at Winslow Junction, where the agent hooped-up orders to be especially cautious at grade crossings where deep deposits of sand were building up.

Near MP 86, just west of Chatsworth, a 24-inch culvert under the roadbed became overwhelmed beyond its capacity by the huge deluge. Excess water poured over and through the roadbed causing a destructive washout that was impossible to see the through driving rain from 830's cab. The locomotive made it safely over the damaged track but the rear tender truck derailed causing the tender to heave upward, decouple from the train, and tear up 600 feet of track until the locomotive was brought to a stop. All the cars derailed and tilted at precarious angles along the roadbed. Inside the train, the chef was severely burned by the galley oven. 32 passengers were injured, many of them by unsecured wicker chairs that had been thrown about in the observation car. Flood conditions made rescue difficult, but all the injured were eventually transported to hospitals in Mt. Holly and Camden. The only fatality was the chef, who tragically died of his burns two days later. Gandy dancers repaired the track, ready for service, in 48 hours.

Two years after the accident patronage had further declined to such an extent the fabled train was no longer financially viable. The *Blue Comet* made its last run on September 27, 1941 becoming, like so many of the other great trains of its time, a cherished memory of those who rode on it, saw it pass by, or heard its haunting whistle fade in the distance.

CLOUDY

The Philadelphia Inquirer

PUBLIC LEDGER

An Independent Newspaper for All the People

WANT ADS

PRICE, TEN CENTS

GERMANS MASS SLOVAK ARMY ON POLISH LINE

Two Divisions Reported Sent to Maintain Frontier To 'Defend' Country

Pope Begs Rulers to Keep Peace

POLAND MOVING UP TROOPS TO BORDER

NORTHEASTER BATTERS PHILA. AND N.J. COAST

Inches of Rain Flood Streets Here; 12 Aboard 4 Boats Missing at Wildwood

Crack N. J. Central Express Derailed By Washout; 17 Injured, 30 Jolted

Blue Comet Wrecked at Chatsworth

CONFERENCE CALLED IN N. Y. MILK STRIKE

Passengers Feared Flyer's Coaches Would Topple Into Water

MERCY CAVALCADE RUSHED TO WRECK

A Bit About Boilers

Some Background ... **By Murray Wilson**

Our club is no longer exclusively or even predominantly a steam one, but boilers remain interesting things. They've been around throughout most of the history of man, providing hot water and sometimes steam for cooking, cleaning or processing natural textiles, but in the early 1700s William Savory and Thomas Newcomen started to develop steam engines and more suitable boilers had to be built.

Both men's inventions were intended for pumping water from the tin and coal mines in Britain and both were 'atmospheric engines.' They relied on the fact that when a closed vessel is filled with steam and the steam then condensed a partial vacuum will be formed. In Savory's case the vacuum was simply used to draw in water, which meant it's theoretical limit was to bring water up from at most about thirty three feet, but in practice considerably less than this as there was always air in the vessel, which reduced the attainable vacuum. Newcomen developed Savory's idea so that rather than water being drawn in by the vacuum a piston in a cylinder was caused to move. This was then connected by rods to a piston pump which could be down in the mine. This arrangement is still seen today in the familiar oil well pumps which have the motor driven rocking beam at the surface and the pump at the bottom of the well operated by a long rod.

Even Newcomen's engine was very inefficient because the cylinder had to be reheated to steam temperature after each condensation stroke and James Watt devised the external condenser, which immediately gave a significant improvement in efficiency and operating rate. There still was a strong economic incentive to further improve efficiency and this lead to using steam pressure rather than the vacuum to move the piston. None of this is directly pertinent to the subject of boilers, but it was the improvement in the steam engine which made necessary the corresponding improvement in boiler technology, a development process which continues to this day.

The makers of the early boilers almost certainly had no formal schooling. Their knowledge of strength of materials and the properties of various geometric shapes was empiric, it had to be found out by experience that a boiler should be made up of cylindrical surfaces as far as possible. The practical size of simple tank boilers heated by a fire underneath was limited because the ratio of heating area to water volume decreased rapidly with increasing boiler size, so this lead to the development of two quite similar internally fired horizontal boilers, the Cornish and the Lancashire. The furnace(s) were large cylindrical tubes passing through the boiler's water space and discharging the hot gases at the back of the boiler into flues within the boiler's brick work mounting. These flues then carried the hot gases under the boiler to the front, then back along the sides and into the chimney uptake. The Cornish boiler had one furnace, the Lancashire two. With two furnaces each could be stoked in turn, thus maintaining steam pressure better and minimizing smoke. Both designs rely on a tall chimney to develop sufficient draft. The Lancashire boiler remained the standard boiler in the British cotton mills right until the demise of the industry in the 1960s.

The original Newcomen engines were linear engines and the development of the rotative engine by Watt and others lead to its use for marine propulsion. The brick set boilers such as the Lancashire were very heavy and so the Scotch boiler was developed. This was similar to the Lancashire, but the gases leaving the furnace at the back of the boiler instead of going to external flues were returned to the front of the boiler and the chimney uptake through numerous fire tubes of three to four inches diameter inside the boiler shell. This increased efficiency and reduced both weight and size. Typically there were at least two furnaces, commonly four. With the exception of a few very early ships and the Liberty ships of WW2 almost all seagoing ships with reciprocating engines had Scotch boilers, usually a minimum of two, five was common, the *Titanic* had twenty-four. The modern package boiler such as the Cleaver Brooks is a direct descendant of the Scotch boiler.

Land transportation was not being forgotten. The roads of the time were appallingly bad and not well suited to heavy steam propelled vehicles, but railways were quite another matter. None of the stationary boiler designs was well suited and the rudiments of what was to become the classic fire tube boiler for rail and road locomotives gradually developed. Stationary boilers relied on tall chimneys to create the draft for the fire, but chimney height on a locomotive had to be modest. The use of exhaust blast to draw the fire perhaps was not an invention of George Stephenson, but his famous engine "Rocket" certainly demonstrated its effectiveness and superiority very publicly at the Liverpool and Manchester Railway locomotive trials in 1829. The boiler of "Rocket" was also possibly the first successful multi fire tube boiler This use of exhaust blast is almost exclusive to locomotives, in most other applications exhaust steam is condensed and the condensate returned to the boiler. The beauty of the locomotive boiler is its self regulating property, the harder the engine works the greater the exhaust blast and the more the fire is drawn. This property unfortunately is lost when burning metered fuel such as oil or gas. Several countries experimented with water tube boilers in locomotives but not surprisingly they were not a success. A water tube boiler ideally needs height.

Fire tube boilers even today are limited in their working pressure because of the way the tube ends are terminated in the tube plates by mechanical expansion. The boiler pressure is tending to collapse the tube and consequently reduce its expansion fit and this limits the tolerable pressure. An industrial or marine fire tube boiler had tubes three to four inches diameter and the boiler typically operated at about 250psi. The advantages of water tube boilers were recognized early on, but they were far more difficult and expensive to build, largely because there was no simple way of producing tubes. As long as the reciprocating engine prevailed there was little need for the higher pressure capability the water tube boiler offered.

The change from reciprocating engines to steam turbines brought in the era of water tube boilers. Turbines thrive on high pressure. Water tube boilers up to about 1,800psi also usually have the tubes expanded into the headers and drums because the boiler pressure being inside the tube tends to further expand the tube rather than contract it. Above that pressure the tubes are more likely to be welded in. Water tube boilers are typically built vertically and the furnace is formed from four flat walls of tubes, so is square in cross section. A large modern power plant boiler is likely to be about 300 feet high, even though it is folded into an inverted 'U' shape. The furnace forms the up leg, the down leg is taken up with the primary superheater, economizer and air heater sections. Both forced and induced draft fans are essential in this type of design. An important advantage of water tube boilers is their capability for rapid load changes due to the much smaller mass of water they contain and the large amount of radiant heating surface.

One of the characteristics of a tube is that for a given working pressure the smaller the tube diameter the thinner its wall thickness can be. So with increasing pressure boilers went to smaller diameter tubes and more of them. This resulted in better heat transfer, but at the cost of more resistance to natural circulation by convection and ultimately pressures were reached where it became necessary to use pumps to assist circulation. These designs are known as Assisted or Controlled Circulation Boilers. Increasing pressure also results in reduced difference in density between the boiler water and the steam being reduced, further inhibiting natural circulation, but more importantly making the separation of steam and water in the drum more difficult. This is a serious matter as the steam is then likely to carry over water droplets to the superheater, if fitted, and the turbine. Any dissolved solids in the boiler such as water treatment chemicals are then deposited in the superheater tubes and on the turbine blades. In both cases there is a loss of efficiency and in the case of the superheater tubes a real risk of them bursting. One answer to this was to do away with circulation altogether and go to a 'once through' boiler. Essentially a number of tubes in parallel with water being pumped in at the bottom and steam issuing at the top, a 'flash boiler.' The expense of the pumps and the control system this required made the jump to 'Super Critical' operation the sensible choice. At and above the Critical Pressure of 3,200psia liquid water changes to steam without the addition of Latent Heat and also without any change in density. There is as a result a significant increase in thermal efficiency. A 'once through' boiler does not have to operate super critically, lots of model boats have used flash boilers, but a super critical boiler must be a 'once through.'

Whilst all these considerations due to increasing pressure were going on steam temperatures were not being neglected. The limit of what has been practical at any time has been one of materials, both for the superheater itself and the engine being driven. As the engine these days is normally a steam turbine it is the creep of the turbine blades which is the concern at that end of the steam pipe. In the boiler it is the metal temperature of the superheater elements. The superheater is normally in two parts and the secondary receives direct radiant heat from the fire, so upon a sudden loss or large reduction in load there may be insufficient steam flow to keep the superheater metal elements from overheating and for this reason the safety valves on the superheater outlet header are set to blow first so an adequate steam flow is maintained through the superheater.

For a good number of years now maximum steam temperatures for both main steam and reheat have been in the range 1,050°F to 1,100°F, that is well into the 'red heat' range. The boiler's reheater is another superheater which takes steam already partly expanded in the turbine and brings it up to full temperature again before returning it to the turbine. This is both to improve thermal efficiency and to reduce erosion of blades in the lower pressure stages of the turbine by water droplets in the the steam. Secondary reheating could bring further efficiency increase, but the cost of the additional piping and valves makes it uneconomic. At the other end of the temperature scale every effort is made to bring the temperature of the flue gases exiting the boiler down as low as possible, but the temperature must be kept above the dew point of the flue gases to minimize corrosion of the boiler and its ducting.

Other attempts to increase thermal efficiency went in the direction of using mercury instead of water as the working fluid. Several plants were built here in the USA and operated successfully, but the initial cost was very high and the idea was not pursued. Today of course a mercury boiler would never be approved. Probably better known than mercury was the use of naphtha instead of water as the working fluid, but this was not an attempt at higher efficiency, just convenience and it was more or less confined to recreational launch propulsion.

Though the general public may not realize it steam power is still very much with us today, over 70% of electricity generation in the world is by steam turbines. After three hundred years the development continues.

The
PLS GAZETTE
P.O. Box 26202
Collegeville, PA 19426-0202

FIRST CLASS

Thanks for the memories!
Allen Underkofler

Scott McDonald

Gauge 1 members shiver at the Turkey Trot — Story on page 5.