



The Inspector

Volume 18, Issue 1

Spring 2011 Issue

Editor: Matt Keenan
715-648-5000

A WORD FROM OUR PRESIDENT

By: Dave Homan:

It is with some sense of regret, that I have decided not to run for a second term as president of WBIA. With busy work schedules and some recent medical issues, I am finding it hard to focus on my duties. I have enjoyed my term as your president, and as always, I am proud to be associated with such a great group of professionals.

I am sure there are many qualified people among our group, and many who could fill my boon dockers with little effort. I wish my successor well, and am prepared to transfer the helm to the newly elected president for the coming term. I do intend to remain working as a state inspector and a member of WBIA; but with these

personal issues, I need to cut back on some of my activities.

Therefore, I am not seeking re-election as WBIA president for the coming term.

Thank you.

2011 Boiler Seminar May 18 & 19, 2011

The 2011 Seminar will be held later in the year than normal so we can bring you something special. Along with our regular excellent training we have planned an afternoon with the old steam equipment. Yes, we are planning the afternoon of 19th of May at the Thresheree. More information can be found in the insert found in this issue.



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IMPORTANT

Continuing Education Requirements for All National Board Commissioned Inspectors Started in 2005!

Attending the WBIA Seminars helps you meet the requirements of WI Comm 5.60 (5).

The Chief's Words:

By: Mike Verhagen, Chief Boiler Inspector



Greetings Wisconsin boiler and pressure vessel fans. As I begin this article, St. Patrick's Day is a week away and our Waukesha office is preparing for our annual St Patrick's Day feast. Maybe the name "Verhagen" does not sound very Irish but "Maloney", the last name of my spouse tells the real story. Yes, every March 17th my children and I usually woke to loud Irish tunes bouncing off the walls, the smell of corned beef and cabbage in the air with neatly arranged piles of "green" stuff for which we had an option to pick and choose from displays throughout the house. For some reason, each one of us was required by the Irish Chief (my wife) to celebrate St Patty's Day. Since then our children have left the nest, but my home still maintains a collection of green shirts, shamrock ties, hats, candles, leprechaun eye glasses, buttons, green socks, belts, beads and believe it or not, a seldom worn pair of green shamrock boxer shorts. It's been so many years celebrating St Patrick's Day with my (lucky she has me) Irish wife, that this year, I plan to purchase a green carnation, change my name to O'hagen and wear those boxers one more time. I cannot think of a better gift for a true Irish Maloney gal. Although the newsletter will arrive after March 17th, my Irish wish list includes a provision that grants everyone a Safe and Happy St Patrick's Day!

Talk about celebrations. This year is our "SEVENTH ANNUAL" Boiler Safety Industry Days. It just can't be seven years already. Anyway, the 7th **Annual Boiler Safety-Industry Days are scheduled May 18-19, 2011** at the Best Western, 3900 Milton Avenue in Janesville, WI. This year's Industry Days has moved a bit south so it will be in close proximity to the Edgerton Threshere grounds just a few miles north of Janesville. This training seminar will include current day boiler burner, inspection technologies, LWCO info, welding and NDE topics with a field site visit that includes hands-on inspection with demonstrations of operating steam engines and locomotives from the past. Make your hotel reservation as soon as possible and tell receptionist you are members of the Boiler Inspectors Association WBIA to obtain the reduced rate. Although one can send in his registration for training and fee via snail mail as usual, you can also register for this event and take advantage of our new easy "Pay Pal"

option available from our Wisconsin Boiler Inspectors website at: www.thewbia.com. So register soon as our Registration deadline is April 30 after which the registration fee does increase.

Please check out our WBIA website @ www.thewbia.com and provide your input to our webmaster and Secretary Matt Keenan. He has put a tremendous amount of hours revamping and organizing our "membership" WEBSITE. It has everything from soup to nuts, sprinkled with history and beneficial links that can take us to other organizations that share our interest. Try it, you'll love it and while you are there, make it easy on yourself and register for our 7th Annual Boiler Safety Industry Days scheduled May 18-19, 2011 in Janesville WI.

DEPARTMENT NEWS

Since our Capitol and new Governor have been a major hit in the National news, I assume all members will attend this years training just to obtain the latest scoop on the privatization of our existing Department of Commerce. With the passage of time, we may be in a better position to explain such change but for now all is questionable. Safety and Buildings including the Boiler Safety programs plan a move into the Department of Regulation and licensing which may get an applicable name change which may move some employees from one building to another and of course new Department administrators may be assigned. Although I could ramble on and on like the news media, I will sign off the topic indicating with certainty that Boiler safety will still be in place, staff included to continue our program work as usual. Hope to have more concrete information prior to our training in May but please don't hold your breath. While our Governor needs to calm the battle between the Republicans and Democrats, someone also has to persuade some legislative representatives to return from Illinois.

With all the early retirements occurring and the uncertainty with employee pay and benefits, Boiler Program Supervisor, Rick Merkle manages to keep the program oiled and running smoothly in both the Waukesha and Madison offices. Statewide overdue inspections numbers were recently reported in the decline. Inspection report processing in Madison remains efficient and I want to extend my appreciation for everyone's help and efforts to make timely inspections. Thanks to you inspectors, contractors and plant engineers in Wisconsin, our installations, in-service inspections, maintenance and repairs make Wisconsin a safe place to work and enjoy. Good health and safe travels while assuring public safety in Wisconsin.

Department News:

By: Rick Merkle, Section Chief Safety & Buildings

As the Department of Commerce, Safety and Buildings (S&B), Integrated Services, Section Chief, my prime mission will be to assure a smooth transition with our programs from the Department of Commerce to the Department of Regulation and Licensing (DRL). There may be some slight delays during the transition period, but as with any transition there will be some bugs that hopefully we can resolve quickly.

Most should already be aware, that the Department of Commerce will be disbanded and become a public/private corporation that will be known as the "Wisconsin Economic Development Corporation".

The transition to Department of Regulations and Licensing is expected to occur by July 2011. However, many of the details are expected to extend into December. No decision has yet been made regarding a physical move from the S&B Madison Office, located on West Washington to the DRL building located on East Washington Avenue, but we have been advised that about two-thirds of the Commerce's administrative support staff will move to DRL. More information will become known once the governor's next biennial budget is finalized.

Commerce business should remain the same because I don't expect a lot of changes currently with the exception of business cards and our name change...which is unknown at this time. "DRL" could be changed to another name too. For the majority, all the staff that you currently know and are working with, their phone numbers will remain the same. Of course, their e-mails may change with the new Department name.

Until we learn more, we should expect to continue as usual with current operations.

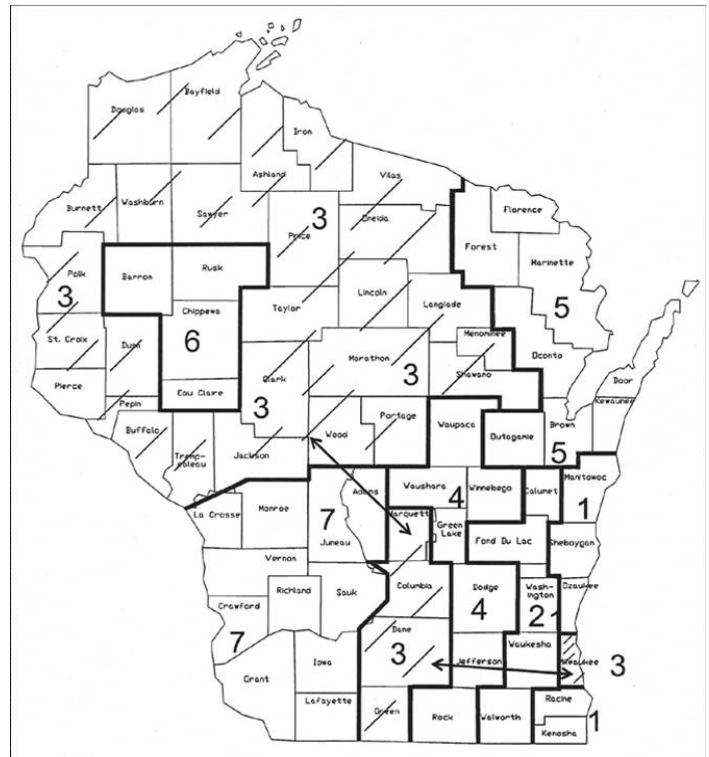
I will keep the WBIA and you all posted on the changes as we move forward.

Lastly, please continue working on the overdue Boilers and Pressure Vessels I'm striving to be the best program in the state.

Thanks for keeping Wisconsin a safe place to live and play.

PLEASE PASS THIS ON TO OTHERS IN YOUR ORGANIZATIONS...THANK YOU!

Wisconsin Inspectors Map



- 1- David Homan 262-424-1471 / 608-283-7433
- 2- Terence Waldbillig 414-303-8575 / 608-283-7429
- 3- Damarc Quality Inspection Services, 866-361-4321, Fax 715-755-4800
- 4- Jon Wolf 920-723-0032 / 608-283-7435
- 5- James Markiewicz 920-428-9423 / 608-283-7434
- 6- Duane Leetch 715-559-8817 / 608-283-7431
- 7- Dean Yourchuck 608-235-0607 / 608-283-7430
Supervisor Rick Merkle 608-266-3037 / 608-267-9723

1914 Steam Engine Explosion



On the morning of July 30, 1914, two young men were firing up for a day of oat threshing when their engine exploded.

The two men, Oscar Kuersten and Fred Schmidke, ages 22 and 24, were killed instantly. One body even had to be extracted from a tree. The boiler shell ripped from the engine and landed 200 feet away. The engine frame and flywheel flew over the house landing in the orchard. Many small fittings were never found.

The Henry Ohlendorf farm, site of this tragedy, is deserted now and most of the eye witnesses are gone. But it is still a third generation legend to many folks here about.

Three probable causes have been given as to the failure of this boiler: jammed relief valve to make more steam, a solid

plug instead of a fuse and the correct reason as stated by Mr. Albert Dralle and the late Rudy Klemme was that water was added to a red hot fire box.

The late Gustav Haemker remembered on that hot, dry morning of so many years ago that he was helping his father shock oats when the earth trembled and the sky roared. A cloud of steam and dust hung over the site three days after it dissipated.

The engine belonged to the man whose farm it blew up on (Henry Ohlendorf). The make of the engine has been lost to time, but the wheel hub looks like that of an Aultman.

Explosion of a Steam Fire Engine



EXPLOSION AND LOSS OF LIFE; Bursting of the Boiler of Steam Fire Engine No. 1. Five Lives Lost and Twenty-two Person Wounded. Frightful Calamity at a Fire in the Bowery.

WBIA WEBSITE



THEWBIA.com

The WBIA operates a website and you should take a look at what it can do for you! The Jurisdiction Section allows you access to Codes and Search engines for eight different States. Our Newsletter back issues and Seminar information is available a click away. We also link to all ASME/NB forms and every important Organization having Boiler and Pressure Vessel information. More links coming daily. Our website is easily usable from your Blackberry or other hand held devices. You are always near the information you need! Try it! Tell others about it!

Thought of the Day

“To speak kindly does not hurt the tongue.”

Proverb

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The Steam Engine

Article reproduced from <http://campus.udayton.edu/~hume/Steam/steam.htm>

"The wonderful progress of the present century is, in a very great degree, due to the invention and improvement of the steam engine, and to the ingenious application of its power to kinds of work that formerly taxed the physical energies of the human race.

"~Robert H. Thurston



The #15 2-8-2 in Tacoma Washington is just one example of the many uses of steam engines.

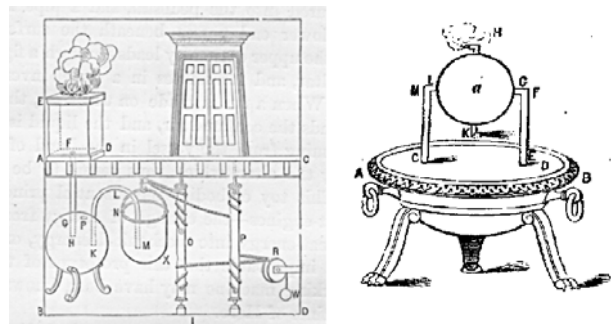
The steam engine can easily be considered the single most important invention of the entire industrial revolution. There is not one part of industry present in today's society that can be examined without coming across some type of reference or dependence upon the steam engine. But, who deserves the credit for this great invention? Some give the credit to James Watt while others claim that Thomas Newcomen was the original inventor. However, the idea of the using the power of steam to the advantage of human beings has been around practically since the beginning of time. But, no practical uses for steam emerged until the 17th century.

The majority of people will tell you that the steam engine was invented by James Watt. But, this is far from the truth. Like all other great inventions and great discoveries, the steam engine came about after centuries of work by numerous scientists, engineers and even writers. It came from a compilation of work and theories that took centuries to complete. If James Watt was not the first to create the steam engine, who was? How did James Watt end up with all of the credit for the invention? Was he just the one that was there at the right time and in the right place? Is it true that James Watt discovered the steam engine when he observed the lid of a kettle lifting as water boiled within? Those are the questions that we are out to

answer. But, keep in mind that "...inventions only become successful when they are not only needed, but when mankind is so far advanced in intelligence as to appreciate and to express the necessity for them, and to at once make use of them"~Robert H. Thurston.

The idea using the power of steam to our advantage goes back nearly twenty-one centuries. A learned writer in ancient Alexandria, named Hero, wrote a manuscript describing various devices and ideas of the time. Although it is not proven that Hero was the inventor of any of these devices, he is given credit for the earliest mention of steam power. Hero describes a method to open the doors of a temple with the action of a fire on the alter at the front of the temple. The picture below on the left shows Hero's plan. A series of pipes runs between the alter and the temple doors. The force of the steam created by the fire on the alter is strong enough to open the temple doors. The essential principle that Hero used was to change heat energy into mechanical energy or work. Supposedly, Hero continued his work and ended up creating what is often called the "First Steam Engine." Hero's engine is featured on below on the right. The cauldron or bowl like portion AB holds water. There is a steam tight cover place over top of the cauldron. Two pipes extend from the lid and suspend a globe directly above the cauldron. The water is heated, causing steam to be created and forced through the pipes. The globe then fills with steam. Pipes K and H are located on opposite sides of the globe and allow the steam to escape when the pressure becomes uneven. The escaping steam then causes the globe to spin on its axis.

The power of steam has always existed in our environment. It has been shown constantly through natural



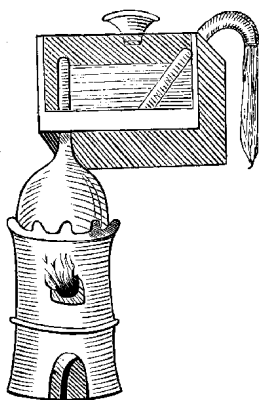
occurrences all around us. But, man did not make the power of steam useful until the beginning of the Christian era. Even after the development of Hero's engine, it took hundreds of years until any single person

found a practical use for this awesome power. Humans never saw a need to harness the power of steam because the labor and toil of slaves and animals was sufficient for everything that needed to be done.

Experiments with steam began to resurface again near the end of the sixteenth century. A man named Matthesius preached about what was believed to be a steam engine and its "...tremendous results which may follow the volcanic action of a small quantity of confined vapor "(Thurston, 10). It is believed that the first attempt to actually make steam use practical occurred in 1543 upon a naval ship. Blasco de Garay, a Spanish naval officer, attempted to move the paddle wheels of the ship with what could possibly be considered a steam engine. This account however is not well credited because nothing is really known about the make-up of the so called steam engine except that it contained a "vessel of boiling water."

In 1601, Giovanni Battista della Porta described a machine that could be used to raise a column of water with the use of steam. He described this machine in a work entitled "Spiritali." Porta's work included a vacuum created by the condensation of steam into which water would flow. Porta's apparatus, picture below, was called the

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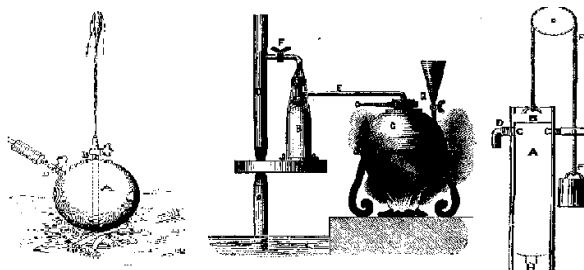
"Pneumatica." Porta's was described as be-raise water with steam sure. Although Porta's was never applied to uses, he accurately the necessary pres-vacuum created by raise the water.

Another given a lot of of the steam erset, Mar-Marquis has originator of the machine that was used to raise water by the force of fire. However, the Marquis never actually built such a machine. The only machine that he ever constructed was capable of raising water to a height of forty feet, but this was done by a manual pump in 1663. The Marquis was all talk and no action. He tried to convince everyone around him through his writing that he was capable of raising water with fire. But, nobody ever saw him actually achieve his claim. He may have had some pretty convincing plans about a way to make his claim work, but the Marquis failed every time.

Other people that can be credited with work on the steam engine are Jacob Besson a professor of Mathematics and Natural Philosophy at Orleans, Agostino Ramelli an Italian

writer, Leonardo da Vinci a mathematician, engineer, poet and painter, Florence Rivault, Salomon de Caus, Giovanni Branca, David Raseye, Thomas Grant, and Edward Ford. All of these men made contributions to the idea of the steam engine before Newcomen and Watt were ever even born. Below are three examples of the designs that some of these men came up with.

Thomas Savery became the first man to produce



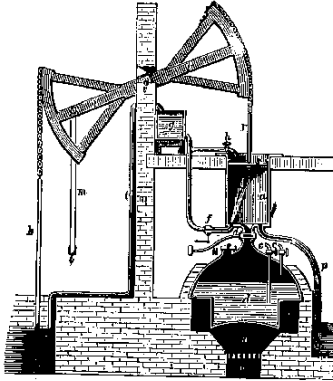
a workable apparatus for raising water. Savery's apparatus was able to draw water up by suction to a height of approximately twenty-six to twenty-eight feet. The water was able to reach this height due to atmospheric pressure and the condensation of steam within the closed vessel. Savery was the first to make the necessary connection between steam power and atmospheric pressure. Without adding in atmospheric pressure, steam power may have never been harnessed. Savery became the first to put the method of raising water by fire to use for draining mines. In 1698, Savery patented his design.

It is believed that Thomas Newcomen simultaneously came up with the idea of the fire engine. Newcomen was born to a good family but received very little schooling. Newcomen was the first man to work on the steam engine who was a practical tradesman. He did not waste his time with philosophers or royal protégés. Newcomen was an iron monger in Dartmouth. Because of his lower class standing, Newcomen was not quickly accepted or recognized for his achievements or contributions to the steam engine. It is believed that Newcomen had no prior knowledge of the work of his predecessors in the area of the steam engine. His engine was introduced in 1712 and was basically a combination of the boiler used in Savery's engine with a cylinder and pump. The Newcomen model was unlike other engines up to this time. It was the first engine that was actually self acting. The make up of the engine went a little something like this. The cylinder housed a piston that was forced to move up and down due to atmospheric pressure and steam pressure. There was a boiler that produced the steam and a cock that allowed a jet of cold water to condense the steam

and vary the pressure within the engine. As the piston was forced up and down the of an at-lever was move as well. This tus was successfully water from

apparatus used to raise mines.

New-engine cessful still be the



comen's was so suc- that it was ing used in twentieth

century. Modern day steam engines can easily be traced back to Newcomen's design. The driving force behind Newcomen's engine was a vacuum that was created by the condensation of steam back into water. He was definitely the first to make a huge advance in the development of the steam engine. There is actually a Newcomen Engine still around today. It resides at the Henry Ford Museum in Dearborn, Michigan. The engine, pictured below, was originally used to pump water from a mine with an over all power of about fifteen horsepower in 1760.



However, Newcomen is unfortunately overshadowed by the well known James Watt. Beginning in 1765, Watt was incorrectly labeled the "inventor" of the steam engine. James Watt was born in Greenock, Scotland. Around 1769, he was assigned the task of repairing a Newcomen engine that was deemed inefficient. The Newcomen engine however was the best engine available at the time. Watt eventually added a separate condenser to Newcomen's engine. This caused the steam to condense in a separate vessel instead of within the cylinder itself. This conserved heat energy that had been lost due to alternately heat-

ing and cooling the cylinder. Watt's addition saved almost %75 of the fuel that had previously been used by the engine. Because of this improvement, a new era of steam engines arose. It was almost a rebirth for the entire industry. Although Watt did not initially invent the steam engine, he was given a lot of credit for it at this point. Watt's addition ended up being the single greatest improvement ever made to the engine. A New England writer was quoted in an article as stating, "...as Minerva sprang, mature in mind, in full stature of body and completely armed, from the head of Jupiter, so the steam engine came forth, perfect at its birth, from the brain of James Watt"(Thurston, 3). It is statements like these that take the credit away from the people that deserve it and give it to the one person who just happened to be in the right place at the right time. James Watt's addition to the steam engine most likely would have been overlooked had it been added years before. He just lucked out and happened to make the addition when the people were ready to accept it. As Thurston says, "Inventions only become successful when they are not only needed, but when mankind is so far advanced in intelligence as to appreciate and to express the necessity for them, and to at once make use of them"(Thurston, 3). Watt ended up with the majority of the credit for the steam engine because all of the men before them were basically ahead of their time. The people were not technologically advanced enough or mentally ready to accept and appreciate their work.

The picture below shows the an actual condenser that was added to a Newcomen engine.



Watt's addition to the steam engine caused its production and overall usefulness to skyrocket in the 1800s. The steam engine became that most important aspect of the industrial revolution. It was used on railways, paddle steamers, and steamboats. It was not only used to move goods from place to place but also to move people.

The dawn of the nineteenth century brought about the Industrial Revolution. The steam engine was a major factor in the Industrial Revolution. Steam locomotives and steam paddle boats began to pop up everywhere. In 1807, Robert Fulton introduced the first steamship to pro-

vide regular passenger service to the people of America. He named it the "Clermont." The "Clermont" made a 150 mile trip from New York City to Albany in 32 hours at an average speed of 5 miles per hour. By 1825, steam locomotives were no longer used just for moving goods. Passenger locomotives were rapidly growing due to the increase in commuter traffic in large cities. By the early 1900's, express locomotives were beginning to appear. Locomotives started getting bigger and faster. 1960 brought about the end of the locomotive era however. The "Evening Star" was the last express locomotive to be built in Britain.



Combustible Dust

Federal Register # - 74:54333-54347

Standard Number - 1910:1911

A new rule is being discussed by the US Occupational Safety & Health Administration (OSHA). This new standard will regulate combustible dust. This will definitely affect the way coal is handled. In April of 2011 the rule making process will begin the Small Business Regulatory Enforcement Fairness Act review. This gives small businesses the ability to have input in the rule making process. There has been a lot of concern on how this will effect the industry. It is expected to cost more to do business. When is this expected to take affect? No one is sure as of yet. How will this affect you?

Con't from Page 2, Chiefs Words

DEPARTMENT of COMMERCE

Department of Commerce
 Safety & Buildings Division
 141 NW Barstow St, 4th Floor
 Waukesha WI 53188-3789

Rick Merkle, Waukesha Section Chief
 Email: rick.merkle@wi.gov
 262-561-5065 / fax 608-283-7415

Mike Verhagen, Chief Inspector
 Email: mike.verhagen@wi.gov
 262-548-8617 / fax 548-8614

Get application to register for the 7th Annual Boiler Safety - Industry Days, Janesville **May 18-19, 2011** from the WBIA website below. After registration then confirm room reservations today at reduced state rate for night at the **Best Western, Janesville ... reserve now at 608-756-4511**

Wisconsin Boiler inspector's Association

www.thewbia.org ... for 7th Annual Industry Days

National Board - www.nationalboard.org

ASME—www.asme.org

Department of Commerce ...scroll down to click Safety & Buildings, then Boiler Program

www.commerce.wi.gov

Credential –License Check ...verify current certifications, registrations & licenses

http://apps.commerce.wi.gov/SB_Credential/SB_CredentialApp/SearchByMultipleCriteria

Thanks for your cooperation and support. Do register for the Boiler Safety Industry Days Seminar scheduled on **May 18-19, 2011**. Look forward to seeing you at our 7th Annual Boiler Industry Days in Janesville, WI.

INSPECTOR MATERIAL ORDERS

Material orders for registration tags "B or U" # s, may be ordered preferably via materialorders@wisconsin.gov