THE US Boiler Report

Published by U.S. Boiler Company
Manufacturer of **Burnham®** Brand Products

November, 2013 • Vol 1, Issue 7

Being Thankful...

It's that time of year isn't it…time of to reflect upon things to be thankful for. In keeping with this thought, the USBR has decided to reflect back upon some things and be thankful for that which has made this past year, and our company as a whole, what it continues to be in the marketplace.

As a company specializing in home heating, we are obviously thankful that the summer-like temperatures which exteneded well into fall seem to have given way to cooler temperatures. If you're reading this newsletter, chances are pretty good that you are also involved in the home heating business in some way, so those seasonal temperatures are good news for you as well.

Speaking of the weather, we're also thankful that up to this point, we have not had to respond to any regional weather catastrophes at the same level as what we experienced over the past three years. In all cases, and especially last year with hurricane Sandy, our company was able to respond to the sudden upturn in boiler demand associated with these types of weather events. Having said that, the flipside to the increased sales is that it comes at the expense of thousands of families who have had their lives suddenly turned upside down. As far as we're concerned, we are very happy to see "business as usual" along this front, and hope it continues for the foreseeable future.

Last, but certainly not least, we are very, very thankful for the positive reception that we continue to get for the USBR.

When we started this newsletter back in May, we really didn't know how it was going to be received. It was, and continues to be, a publication that is designed to inform...in every way. From the beginning, we have hoped that it would be something that is informative, entertaining, and enlightening for the diverse mix of audiences for which it is intended.

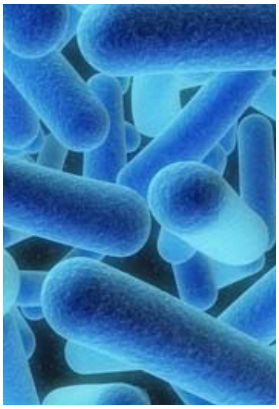
We like to think that there really is something for everyone in it's pages, and thankfully, that's exactly what we've been hearing back from our readers.

In that regard, I guess the biggest thanks of the year should be given to you, our readers. We have truly enjoyed producing this newsletter every month, and also enjoyed hearing back from so many of you with suggestions, positive feedback, and spirited commentary about what is found in its pages. The greatest thing about making a publication like this is knowing that someone is reading and enjoying it on the other end. Thank you!

And a special "Thank You" to all of our customers…we're glad to have you as one of US

What's Inside...

U.S. Boiler Company



Legionella and Scald and Cold Showers, Oh My!

Mixing valves NOT optional

Even when local code calls for the presence of a point-of-source tempering (or mixing) valve, they're all too often absent on residential, tank-type water heaters. Whether indirect fired, like Burnham's Alliance, or a direct-fired unit, some installers don't see the need to put mixing valves in place. It all boils down to safety, but there's some efficiency involved as well.

In a nutshell, there are three main reasons for installing a tempering valve. Scald prevention is typically the first thing that comes to mind, followed by the ability to raise the amount of shower-temp water a tank can supply without time for regeneration. And sometimes, the least-known reason to install a mixing valve can be fatal; legionella bacteria.

Scald ain't no joke

In just six seconds, 140°F water can turn healthy skin into excruciating, third-degree burns. For infants and elderly, escaping exposure isn't as simple as quickly jumping out of the shower or turning off the faucet. Scald-induced skin trauma can lead to seizures, increasing the likelihood of serious or lethal consequences.

Severity of a scald incident depends on two factors; water temperature and duration of exposure. Burns from 1st to 4th degree are entirely possible, resulting in injuries ranging from that of sunburn, to catastrophes that literally cook flesh and require amputation – if the victim survives.

Obviously, any water heater set above 120°F presents an immediate scald threat, but other factors contribute to the danger. Regardless of whether or not the water heater is set at a safe temperature, inaccuracies or defects in thermostats can be a reality. Add to that, the phenomenon of layering can be an issue.

Due to laminar flow, layering in water heaters is a condition where the hottest water rises to the top of the tank after a water draw is completed. The next draw can temporarily produce water at an excessively high temperature.

Not a real fix

As is with most problems, the simplest solution here is not the best. Turning the water heater down to 120°F helps reduce the likelihood of scalding incidents, but leads to several other problems.

Contrary to popular belief, turning down a water heater actually increases the amount of energy it consumes. The reality is that more energy dollars are used because larger volumes of temperate water are needed to achieve the same comfort levels when bathing.

The second issue has an inherent connection to the first; turning back a water heater can result in less-than-ideal bathing conditions, when numerous members of the family are tapping the same volume of heated water in rapid succession.

The BTU storage capacity of a water heater is significantly reduced when the tank's set temp is dropped from 160°F to 120°F, thereby increasing the amount of heated water needed to deliver 105°F to the shower head.

Decreased energy efficiency and cold showers are an inconvenience, but another consequence of turning back a water heater can prove fatal. Much of the groundwater in this country contains Legionella bacteria, and reducing tank storage temperatures is flirting with disaster.

Legionella, a silent killer

Legionella is the bacteria responsible for Legionnaire's Disease (or legionellosis), an acute bacterial infection of the lower respiratory tract. According to the New York State Department of Health, it's estimated that about 25,000 people develop legionellosis in the United States each year. At naturally occurring levels, it typically doesn't pose a threat to public health. But when the bacterium enters a domestic water system it often finds ideal water temperatures of 105-135°F in the DHW tank.

Under these conditions, Legionella can rapidly colonize, forming higher concentrations that can lead to serious illness or death when inhaled. In the shower, the germs are carried in water vapor, directly into the lungs where it reproduces quickly.

Chlorine isn't effective against legionella, not even at concentrations much higher than we could safely drink. The simplest method to maintaining safe domestic hot

–Continues, see "Oh My" on page 8

Bare Bones BizTips

By Ellen Rohr

Build a Better Price Book!

Are you sold on flat rate pricing? (a.k.a. upfront pricing, straight forward pricing or bid pricing.) I hope so. There are lots of reasons why it's a good idea. The number one reason? Your customers want to know how much it's going to cost before they agree to the repairs or replacement.

The best way to present flat rate pricing is with a menu, a price book. Are you ready to build a rockin' great price book? Or upgrade the one you have? Here are some tips for putting together a price book that helps your Service Techs better serve your customers. And, it makes life easier for the Techs, too.

Get Priced Right

Frank Blau taught me this unbeatable selling price formula for an hour of labor: Add up all your costs of doing business – including generous salaries and benefits for you and your team. Then, take the total costs and divide by the number of billable hours you hope to create. Inflate for profit. 20-30% would be darling. That's your price per hour for Labor. For each task, put in a reasonable amount of time…and whatever materials are needed, also inflated for profit. Add them together to create flat rate prices for your top 25 tasks. (You may want to show your team the math behind your selling prices. It can help them "buy in" if they see why you charge what you charge.)

NOTE…

You could use a professional flat rate book service. Crunch your numbers and have their support team help you with your pricing calculations.

Assemble the Binders

Use 3 ring binders…one for each Tech. Inside, you will build your flat rate price books. You can protect the pages with those clear, plastic sheet protectors. (Or, create tablet friendly e-versions!) Include in each book…

Your Company Mission Statement

Why are you in business? Keep it to 10 words or less.

Pictures of Each Tech's Family, Travels, and Hobbies

This helps them keep their own motivations front and center…and it can build conversation and relationships with their customers

Copies of Licenses

Credibility and confidence building.

Cut-aways of Basic Components

Find some generic photos online or have your favorite manufacturers provide their diagrams. This is super helpful for explaining what is or isn't happening with a customer's system.

The Tasks

Organize the tasks according to room… bathroom, kitchen, mechanical room. Include helpful add-ons on the same page as the main tasks. Use real-world words to describe the tasks and skip the techno-jargon. Could you keep it under 30 tasks? Sure you could!

Before and After Pictures

Include pictures of happy customers – real names, no initials-only nonsense – and their testimonials.

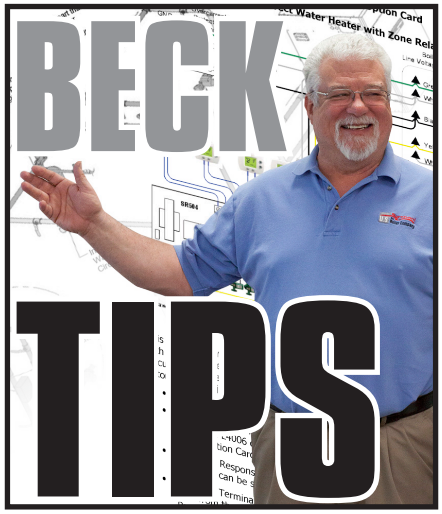
Checklists

Show off what you do on every job. Use your diagnostic survey and your exit checklist to help your customers understand why working with you is different and better. Checklists show you care about doing things right every time.

Use 'em

Your Techs will get used to and come to appreciate a better price book. It will help them build relationships, deepen trust, and make good sales. Ride along and see for yourself. I'd love to hear about your experiences! Email me at contact@barebonesbiz.com Better yet, send me a short video…load it up to my Facebook page at www.facebook.com/barebonesbiz.

A business plan can get you all on the same page! Less stress and drama, MORE MONEY! Download Ellen's free Biz Planning Video Series at: www.BareBonesBiz.com You can also find "ellenrohr" on Facebook, Twitter and Google+.



The Proper Disposal of Boiler Condensate

By Ron Beck,
U.S. Boiler Company

The decision to install an Alpine high efficiency, modulating, condensing boiler inevitably leads to some responsibility regarding disposal of condensate. It's produced by the cooling of flue gasses to a point where they hit dew point. In the Alpine, as we remove the heat from the flue gasses, we add it back into the heating water for the home.

While visiting jobsites to assist contractors, I've seen a multitude of ways that condensate is removed from the boiler room and disposed of. The handling of condensate can create concerns due to the corrosive effect it has. Care has to be taken to ensure that the surfaces it's allowed to come in contact with are resistant.

Although there's no limit to the variations, there are two basic strategies most often used to get rid of condensate. The first being gravity, and the second utilizing a pump designed for condensate removal. Either method requires use of non-corrosive pipe such as schedule 40 PVC or CPVC.

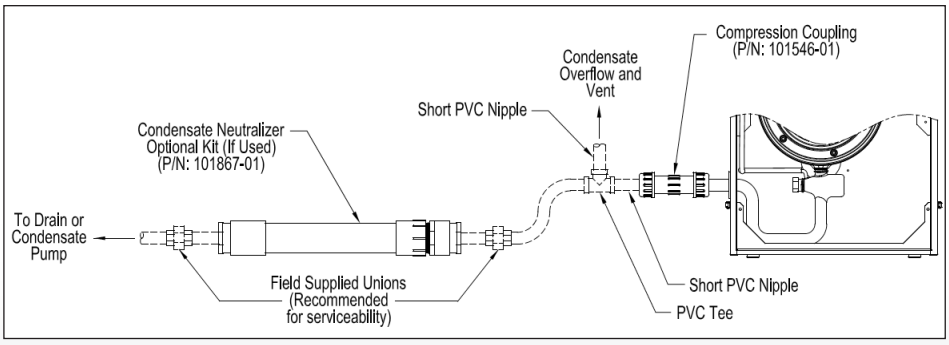
When a gravity drain system is used, the drain line is normally run horizontally along the floor. In a perfect situation, the drain line should always pitch downhill. If it cannot pitch downhill it may run horizontally but must always stay below the trap outlet. It's a good idea to use a vacuum breaker at the trap *(see illustration below).*

If the condensate line will need to terminate above the boiler trap, the use of a condensate pump is required. Your distributor will be able to suggest the proper pump for this application. I usually prefer a condensate pump with an overflow switch that shuts the boiler down if the pump were to fail. The safety switch could be wired to the external limit terminals on the boiler's low voltage terminal strip. This would show a soft lock-out on the boiler, and the open limit string display would show open contacts on external limit directing you to the condensate pump. At US Boiler, we install a condensate trap on the boiler so the use of a second trap is not recommended. A second trap could create operational problems for the boiler. The termination of the pump must also be installed so the condensate pump tank, tubing or tube termination can't freeze.

Condensate has a pH range of 3.5% - 4.5%, making it acidic. Where we terminate the condensate needs to be considered due to the corrosive effect of condensate. It can cause damage to, or destroy, many items it comes into contact with. When possible, it's good practice to run condensate lines in areas where a leak won't cause property damage. And make no mistake, it's no joke. I've seen situations where multiple boilers draining into the same floor drain have totally destroyed the cast-iron floor drain cap within a couple of years.

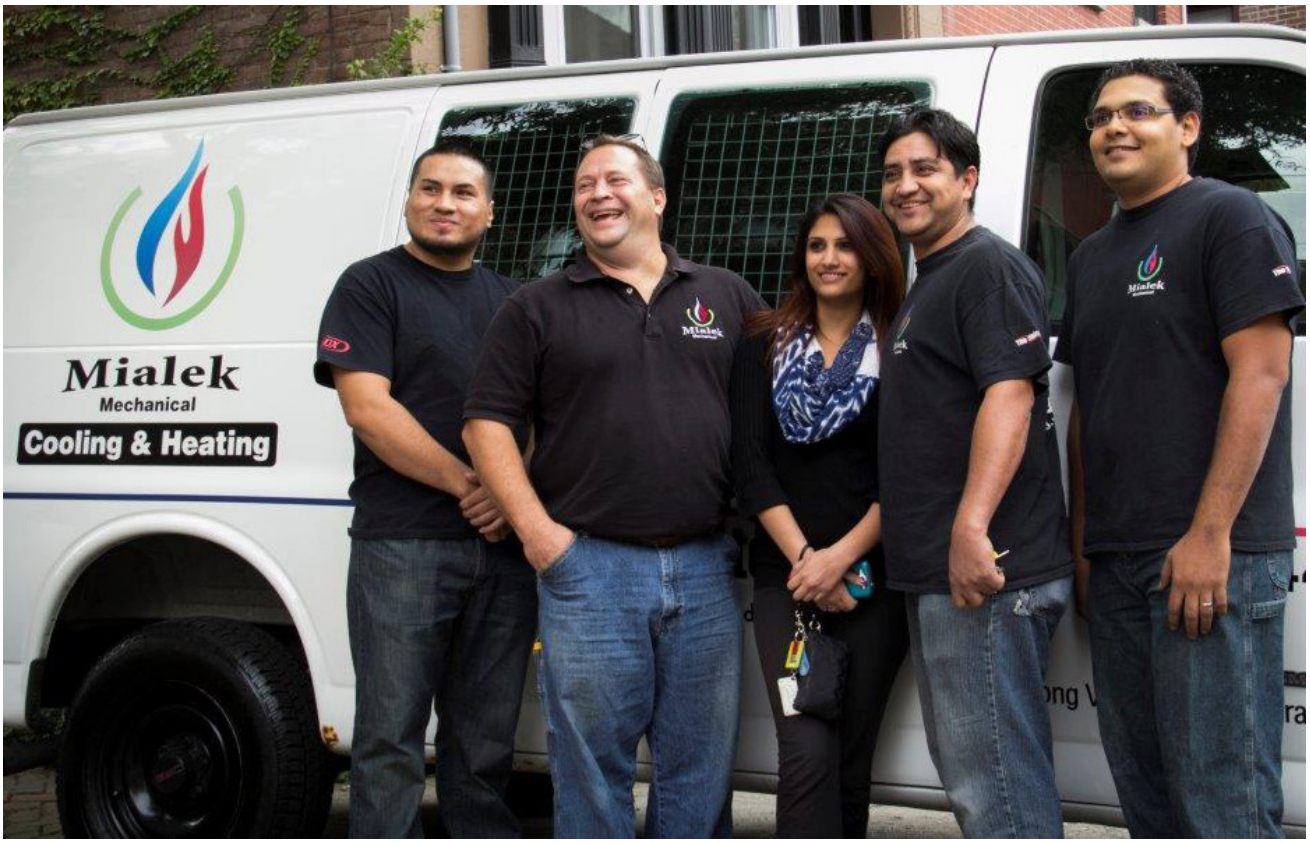
An even bigger concern is that old, cast-iron drain and sewer lines are just as susceptible; a big concern in old homes. Although the newer plastic lines will not be affected, the older ones can be. We must also ask ourselves what happens at the wastewater/sewage processing plants, and in on-site septic systems. The pH of wastewater needs to remain between 6 and 9 to protect the microscopic organisms that are so vital to sewage disposal. Acids and other substances that alter pH can inactivate treatment processes when they enter the wastewater plant.

US Boiler offers an optional condensate neutralizer filled with limestone chips. The limestone will require replacement over time, determined by a pH test on the condensate leaving the neutralizer. Condensate neutralizers are a simple, inexpensive, but yet very effective security measure where you can't be entirely certain what kind of you're draining into, or where local code dictates.



Ron Beck is Outside Technical Advisor and Manager of Training for U.S. Boiler Company, where he's been since 1998. Ron's 34 years of experience in the heating industry include climbing the ranks of a HVAC company, from apprentice to service manager. Currently, he's the de-facto, go-to solution guy for contractors in the field. Ron can be reached at: RBeck@usboiler.net or (717) 877-9738

Mialek Mechanical



Family-Owned and Niche-Driven

For Mialek Mechanical, in Hoboken, NJ, the combination of family ownership and product-specific work has been the ticket to success for the past nine years. One thing that sets the business apart from other small mechanical outfits is that they only use equipment that they've come to know and trust.

The name of the seven-person firm is derived from the first names of the co-founder, Mia Szymanski, and daughter, Alek. Since Mia and her husband, Rich Szymanski, started the business, he's turned down quite a number of jobs simply because the homeowner wants something that won't work. "I just don't want the company's name on a job that's not going to live up to its potential," he explained.

"Our main territory is Hoboken," said Szymanski. "There's rarely new construction, and all of the 100-year-old homes are unique, which means we have to know what works. Even more importantly, we know what doesn't."

According to Szymanski, his insistence on specifying and sticking to a select few products puts him in a category of installers that makes up roughly 10% of the total; what he calls "product-specific contractors." Over the years, the rigid approach to specifying certain products has certainly lost the company some volume of work, but the rock-solid reputation it's produced has resulted in more than enough to make up for it. The referrals and repeat customers are proof.

Mialek uses Burnham boilers and Alliance indirect water heaters, Unico Systems small duct heating and AC systems matched with product from, Lennox, Grundfos circulators, Honeywell comfort controls and Kohler generators. The exclusive selection process allows him to know his products inside and out.

Word of mouth

Early last year, Mialek was called by Walter Cullen, a homeowner who'd gotten the company's number from neighbors. Cullen had two problems; he was paying far too much to heat his home, and he wasn't getting enough domestic hot water. He had just added two more residents to his five-bedroom home.

"My daughter and my grandson, Max, moved in," said Cullen. "It's a blessing to have them here, but it initially meant lukewarm showers. Our water heater couldn't keep up."

-Continues, see "Mialek", page 6

–"Mialek", continued

"I had a few companies bid the project," he continued. "Mialek wasn't the lowest price, but Rich didn't pressure me, and really made an effort to help me understand why the system he was suggesting had the most advantages." The goal was to retrofit the home's fin-tube baseboard system with a high-efficiency modulating boiler.

Work started not long after Mialek's initial visit to the home. A 175 MBH steel Burnham boiler from the 1970's was removed. Although the 40 year-old unit still heated the house, the home only needed 100 MBH, even with the addition of DHW production. A 40-gallon gas-fired water heater was also removed from the basement; a space that doubles as Cullen's workshop.

Unlike the atmospheric boiler, which vented through a chimney in the center of the basement, the replacement boiler was hung on a wall, out of the way. Mialek technicians teamed a 105 MBH, 95 percent efficient Alpine boiler up with a 50-gallon Alliance indirect tank.

"There are three reasons we use Burnham boilers," said Szymanski. "First and foremost, it's an American-made product that works very well. Second, there's literally a product for every single application we encounter, from oil-fired steam to modulating natural gas, and we've successfully installed every model they make."

"Last but definitely not least is the support we receive from Venco Sales," he continued. "Tom Dwyer is a walking hydronic encyclopedia, and Bobby Bruno is an expert with the Burnham line-up. We owe much of our success and growth to the Venco team and products they rep."

Solutions

"Under- and over-heating certain rooms in the house was an issue before we got to Walt's," said Szymanski. "We split one zone – for a total of eight – and used a variable-speed pump, both of which helped us balance the heat distribution. Having more, smaller zones isn't an issue because we can capitalize on the Alpine's ability to modulate to a lower output."

Szymanski also wanted to ensure that nobody was stuck with a cold shower. He has a mixing valve on top of the tank set at 120°F, for a safe supply water temperature, but the boiler is set to keep the Alliance at 160°F. This not only raises the amount of DHW he can supply with that tank, but also eliminates the possibility of legionella bacteria living in the tank.

All told, Cullen's gas bill fell by more than 50 percent. That's quite an accomplishment considering that his DHW load doubled, controllability went up, and the home now stays warmer than it did in winters past.

"The only thing that surprised me was that now, our basement stays cool," said Cullen. "Before the retrofit, it was warm in the winter, simply from the presence of the old boiler." The condensing Alpine boiler - without a large water jacket and standing heat loss – doesn't throw away energy by heating the space.

(top) Mialek Mechanical did the heating system upgrade in this New Jersey home and saved the owners about 50% on their previous month's gas bill. (below) Rich stands with the Alpine boiler and Alliance indirect water heater at the heart of the system's transformation.

Cullen admits that's he's "old-school," and enjoys fixing and making things in his basement shop. There's rarely a time when he doesn't have a project or two in the works. The retrofit opened up the floor space so that he has more room to work, and doesn't need to worry about bumping into equipment.

"We can always add another zone, to warm the basement up," said Szymanski. "It's was a great retrofit, and we haven't had a call-back," said Szymanski. "It proves that when you trust the products you install, and know how to apply them correctly, the outcome is predictable and positive. We've added Walter to our list of proponents, and he'll send more business our way."

ASK ALEXIS!

Photography for Online Use

by Alexis Gessner

Alexis is the Marketing Media Specialist for U.S. Boiler Company and manages all the company's social sites. She graduated in 2010 with a BS in Business, Digital Media, and Photograpy, and brings a young, tech savvy perspective to the HVAC industry...a growing trend.

This article is part of an occasional series devoted to the many sides of marketing in today's digital media environment. If you have any suggestions or questions for Alexis she can be reached at: webadmin@usboiler.net

US UNMATCHED ANYWHERE

We discussed the importance of social media in September and October. Let's now take a look at how you can exponentially increase the effectiveness of your sites through the use of hi-quality photography.

If you don't already have a digital camera, you won't need to break the bank to get one. Any new digital camera in the $300 range will satisfy all the needs of an amateur photographer.

Be sure to spend the extra 20 bucks or so on a larger memory card.

You may want to buy an extra one, too. Now, instead of taking one picture of any given situation or pose, you can snap three, four, or a dozen. Later, you can flip through the shots and pick out and remove those inevitable "mid-blink" shots.

Another reason for the larger memory card (and an extra one): they'll allow you to notch the resolution up a bit. In fact, I recommend that you set the camera on its highest resolution. The "bigger" the picture, the better it's going to turn out when you upload them to your computer; after all, that's what we're leading up to here.

The only downside is that, with higher resolution, you can't fit as many pictures on the card. But, hey, if the "Memory Full" warning pops up, just press a button, pop the card, swap-in the new one and keep shooting.

Do your best not to use the zoom function unless you have to

If you do, it's not the end of the world. Both digital and optical zooms present problems. Digital zoom wreaks havoc on picture quality, and in many situations optical zoom can limit the amount of light the camera takes in. Now, of course you can't entirely eliminate the use of your camera's zoom, but depending on the circumstance, you can limit it. Fill the screen by walking closer to the subject, not by zooming in on it. You can always crop pictures later.

Check your surroundings.

Try to keep clutter out of the background as much as possible. Sweep the floor and use a wet rag to wipe down pipes, expansion tanks, and that beautiful Burnham boiler. You wouldn't want an audience of your peers to see a sloppy mechanical room aftyer all the work you put into it. Also, do your very best to hold the camera level.

Learn to pre-focus your camera.

Hold the shutter release button half way down. The first time you try this you might snap a photo. No biggie; just go back later and delete it. The image on the screen will get clearer and stabilize if your camera has vibration reduction. When you are satisfied, push the button a little harder.

Learn to use your camera's timer.

If you are ever in the situation where you don't want to leave anyone out of a shot, you will need to know how to use the timer. Most camera's have a setting that will allow you to set the camera down, focus it, hit the shutter button and go jump in the shot. Now you can prove to your honey that you really do put in a day's work! This works best with a tripod. Those can be purchased pretty inexpensively.

Last but possibly most importantly, watch your lighting.

Do your best to get the room as light as possible. Don't have your subject stand right in front of a light either. They'll look like a black silhouette on a bright background. Several sources of light are better than one Avoid big, dark shadows, whether on people of equipment. Sometimes it's as simple as plugging in a treble light.

Have fun with it!

Make mistakes and learn from them. And don't expect to be a professional photographer your first time on the job with a camera. Remember, although you're striving for the best photo you can get, social media photos don't need to make it into *Time Magazine's* photos of the year line-up.

Easy, Intelligent, & Proven… Alpine Boilers

- *Fast & easy "out of the box" installation. The Alpine's default settings can speed installation and eliminate guesswork.*
- *A Touch Screen Interface provides visual prompts and plain language instructions (eliminates codes and scrolling).*
- *Flexible capabilities are built into the Sage 2.1 control system which enable optional custom boiler settings to fit the needs of many heating systems.*
- *Increased modulation control for boilers approaching high limit temperatures. This capability slows the rise of boiler temperature and minimizes nuisance lockouts.*

US UNMATCHED ANYWHERE

– "Oh My", continued

water is to keep the water heater above 140°F. At this temperature, Legionella are killed within 32 minutes.

Tempering valves to the rescue

It is possible to simultaneously avoid scald incidents, destroy Legionella bacteria, maintain optimal energy efficiency and have plenty of hot water on tap. Point-of-source tempering valves do it all for a nominal price. Downstream, tempering valves at points-of-use can assist in scald prevention, or stand as a safety back-up.

Regardless of differing local codes, thermostatic tempering valves are a necessity on every domestic hot water system.

The Holidays are Close… Time Flies, Doesn't it

How does your company give back to the community throughout the year? Do you donate fuel to a needy family? Ever participate in charity retrofits? Toys for Tots? Salvation Army? Wounded Warrior Project? Let us know what you do, and why you do it. We'd like to share it with others in our December issue of The US Boiler Report!

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The U.S. Boiler Report is a monthly publication produced by Delta C, LLC in conjunction with U.S. Boiler Company. For inquiries or additional information regarding article submissions, please contact:

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