

THE US Boiler Report



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WILL WINTER EVER END?

We asked a few contractors what
this season has done (and will do)
for business



It's a little ironic isn't it? We, as a boiler manufacturer, and many of you, as industry professionals, look to the anticipation of colder weather in order to earn a living. Suffice to say, for the better part of the nation, we really got it this winter...and we keep getting it.

In many parts of the country, this has been a record-setting year. Several extended periods of bitterly cold temperatures locked much of the nation in a deep freeze. Frequent, intense storms pounded the country as well, as decade, and in some cases, century-old records fell. The pain of the typical snowbelt states was shared. In the deep

south, several winter storms affected life in unaccustomed ways and pushed civic resources to the brink.

What has this meant to the overall HVAC and more specifically, the installing and service sector of boiler technicians? How are you holding up? Are you rolling in work and are making the most of the opportunity or have you considered packing it in for the year and heading to Cabo? We decided to take a the temperature of a few of our contractors to see what they said. Some of it was expected, some of it was a little surprising, but one thing was for sure... it definitely wasn't "business as usual".

Biddeford, Maine is not new to harsh winters, however **Jim Godbout of Jim Godbout Plumbing and Heating** stated that this year has been, "Above and beyond what we usually see. Right after Thanksgiving, winter got real here. The December and January heating degree days were 40 or 50 % higher than our five-year average. We've seen ambient temps of -10°F with 40 MPH winds." What this meant was an increase in "nuisance calls", with deep snow and constant drifting hampering efforts. In addition, there have been new problems cropping up that have led to new solutions; "Another issue

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we’ve come across is frozen air intakes on condensing boiler installations. In the 12 years that we’ve been installing mod/cons, this is the first we’ve encountered this problem. Warm, moist air leaving the exhaust pipe hits the dry, cold air outside, and the vapor starts to crystallize inside the adjacent intake pipe. Add heavy snow getting sucked into the pipe, and before long it’s frozen shut. For new installations, we’re making 24 inches our minimum separation for exhaust and intake pipes.”

The worst situation that **Michael Caruso of AC Plumbing, Heating, and Mechanical Inc. in Cleveland** had to deal with was frozen pipes in an unfortunate incident that probably could have been prevented. The property was a rental condo unit that had recently been vacated. That’s where the trouble started; “The owner lives in Boston, and was renting out the beautiful property. The tenant moved out in early January, so the utility shut off the gas supply to the home.”

“Over 20 CPVC fittings in the plumbing system had failed a week before anyone realized. There were leaks from the top floor to the basement, and now the entire condo needs to be gutted and restored. Winterization is so important when a building is unoccupied. I feel for the owner, because someone here in Cleveland wasn’t looking out for his best interests, resulting in a big mess that now involves myself, the insurance company, the utility, the realtor and the owner.”

The weather has had a profound affect on installing new equipment as well. Both new construction projects and system retrofits have taken a back seat to simple survival in these elements. **Andy Mickelson of Andy Mickelson Plumbing and Heating in Missoula Montana** has experienced both ends of this; “It’s been a strange winter for us. Our snowfall in the high country, is 60% over average. Major highways have

been closed for weeks at a time due to avalanche danger, and we’ve lost a number of snowmobilers and skiers to avalanches as well.”

“In January we had a lull in the harsh weather. A few projects broke ground when guys jumped the gun on Spring. But February came back with a vengeance. I was headed to a job last week and the truck read -25°F. Needless to say, construction work has halted.”

He added, “There’s a job coming up in the spring where I’ll be tying a Burnham ES2 into an existing wood-fired hydronic system. In December, the long cold snap was too much for the wood boiler, and the owner needs supplementary and backup heat. Needless to say, he can’t afford to take his system offline for me to install the new boiler until it warms up.”

This was something of a common theme among those that we talked to. Spring is always viewed as something of a slow season for most installers, and understandably so. This year looks like it’s going to be a different game. Many installations have been patched together to get their owners through the worst of winter, simply because many of these systems cannot be taken offline. These types of jobs are typically only band-aids and are not intended for long term use. A good example of this came from **Eric Aune**. As I’m sure many know, Eric is not only the co-founder of Mechanical-Hub.com, he’s also a guy who has been in the trenches and in the basement as well. **Hailing from Zimmerman, Minnesota**, he also knows a thing or two about cold weather; ‘If I’m not mistaken, we’ve only had 300 hours above 0°F since December 1st. Heating systems are pushed to their limits, and there’s no shortage of failures. I’m personally responding to 20 or so calls each week. Component failures are most prevalent; pumps relays, etc. But there’ve been a number of old boilers that I’ve put into what I like to call ‘emergency mode,’ and will need to be replaced in the Spring.”

“The calls have been great for business, no doubt. But the real value comes from meeting new clients.

People I’ve never spoken to are calling me a panic, saying ‘My heating guy can’t come till June, and I need someone in the next 20 minutes!’

The opportunity to earn their trust and their future business is the silver lining in this horrid Polar Vortex.”

“Right now, I have double the number of estimates out for work in the Spring than what’s normal at this time of year. And that’s good, because at this rate, all my fishing spots will be frozen over until June.” We hear that, Eric!

Jim Hedden, of George’s Plumbing and Heating in Lebanon, NJ echoed some of those observations. “Between thawing pipes and replacing zone valves, I’ve answered calls from a few folks who are looking for in-floor systems. They have big homes with vaulted ceilings and forced air, and they’re not comfortable during extended cold spells. They’re looking to add supplementary radiant heat.”

“There’s another job where the cold has pushed an ailing steam boiler to the brink. The owner’s adamant that she wants to keep the steam, so hopefully we’ll be installing a new Burnham MegaSteam soon. 2014 should be a busy year.”

That seemed to be the overall theme. While the winter tested both heating systems and the technicians who install and service them, the conditions presented opportunities for those who could answer the call. In addition, it seems like those opportunities are going to keep calling for quite a while into the warmer months, which will soon be upon us...[HOPEFULLY](#).



Tracking Jobs



Contractors are notorious for shortchanging themselves. They often don't charge enough per hour. Or, put enough hours in the Job.

How about you? Do you know if your prices are right? Do you know if you are properly bidding your work?

Let's tackle the time!

You can find out if you are building enough time into your jobs by Job Costing. The essentials of Job Costing are:

Comparing bid to actual labor hours. (Don't convert to dollars. Too much "voodoo" goes into that calculation. Match hours bid to the actual hours it took to do the Job.)

Comparing bid material cost in dollars to actual material cost in dollars. You could also track permits and subcontractors, if you use them.

Keep track of the Job.

In the office, create a folder for each Job. Name it, using a standard naming convention. You could use something like this:

Fernwick_1234_South_110715
(Name_Address_YearMonthDay of signed bid/agreement)

Create two Job Folders for every Job, a **BLUE** folder and a **RED** folder. Both of these folders go in a hanging folder in the office. The red folder is the office Job Folder. It's red because it should flash "warning!" if it is ever outside of the office.

In the **RED JOB FOLDER**, include:

- The original signed bid/agreement.
- The bid Pricing Form. The Pricing Form should have the number of hours bid and a list of the materials and their estimated cost.
- Permits and required Job forms.
- Plans and specifications.
- Copies of customer invoices.
- Copies of customer payments.
- The POs or priced invoices for the actual materials used.
- Anything else that will help you deliver this work as promised, stay in compliance and properly account for this Job.
- A Job Costing form where you can tally up actual labor hours (derived by manually pulling from the time sheets or from your Dispatch software program) and the actual materials costs (from the POs/priced invoices.)

Create a **BLUE JOB FOLDER** with copies of the information found in the red job folder. This is the folder that the Lead Installer can take with him or her on the Job. Customize my list to work for you. You don't have to give the Installer everything the red folder contains. The idea is that the Installer has the information he needs to bring the job in as promised. Yet, he doesn't have the only copies.

How did you do?

Once a week, measure your performance with your team. Meet with the Salespeople and the Installers. Call

out the assembled actual performance numbers – hours and dollars – and have the Lead Installer tally up his or her Jobs.

Live and learn!

Celebrate Jobs that come in at or below bid. Learn from the ones that don't. You may find that the Salespeople are skimping when it comes to how many hours to include. And the Installers may want the Sales team to pad the bids too heavily to make sure the Jobs come in on time. Work together to develop efficiency without unrealistic expectations.

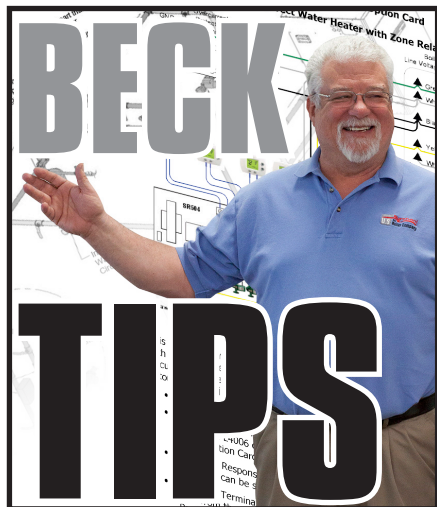
And, if you are nailing the Jobs for hours and materials, and you are still not making the money you would like to make, you have one more thing to do: Raise your prices.

BONUS!!!

Would you like a free Job Cost form and Pricing Form? Just ask and I will send them to you!

<http://www.barebonesbiz.com/contact>

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
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**By Ron Beck,
U.S. Boiler Company**

While working as a tech for an oil company decades ago, I can recall being on a service call and completely stumped on the resolution. I started looking around for the installation manual, which was not to be found. I grabbed my iPhone, and went to the internet to look for the manual... **NOT!**

This was before iPhones and even before bag phones (if you remember them) and possibly even before the internet, so I did the next best thing. I borrowed the customer's phone, called the distributor to get the manufacture's phone number, and hoped it was an 800 number so the owner wouldn't be charged. After playing 20 questions with the tech guy on the other end of the line, we came to a resolution for the ailing patient. I remember how good it felt to have that problem job behind

The Voice on the Phone

me. It was comforting to know there was help from the voice on the phone.

After my 20-year tenure with the heating firm, I was hired by U.S. Boiler Company and I became that voice on the phone.

It was more challenging than I anticipated. While working as a service manager for the oil company, I assisted service techs with problem calls, but I knew most of the job sites they were on, what equipment was there, how it was piped, and the test equipment my guys were using. Now, as a manufacturer's tech support guy, I had no information on the jobsite except the product itself. Granted that's a big help, but losing the familiarity of the jobsite made me feel like I lost my finger on the pulse of the patient.

At that time, I had wiring diagrams to all of our products current and past. I knew the gas and oil controls, oil burners and systems from my past life with the heating company. What I didn't know was if the boiler was oversized, the way it was piped or vented, the voltage readings and the fuel supply information, the number of zones, circulator sizing, etc.

I recall ending one particular service call. I started thinking about the old TV show

from the 70s, called "Emergency". The characters, Gage and DeSoto, would encounter many medical emergencies. With a two-way radio, they'd relay vital information from the accident site to the doctor at Rampart General Hospital. The doctor would get the heart rate, blood pressure and respiration information to name a few.

Similarly, tech-support personnel get information from the contractor. I would ask questions about boiler vitals, like voltage at certain test points, gas pressure, combustion results, near boiler piping, etc. Via my questions, the contractor would be my eyes and ears.

After gathering information I'd offer a solution. Most of the time it was quick, but inevitably some calls take longer due to the complexity of the problem or the inability to get the proper info. Often, it's due to lack of test equipment. With today's high-efficiency appliances, a tech should have a manometer and volt/ohm meter for gas service. For oil, a volt/ohm meter, pump pressure and pump vacuum gages. A combustion analyzer is a must.

To help the voice on the phone help you, the best advice I can offer is to have the correct test equipment available, and know how to use it. Be as detailed as possible when answering questions, and if you don't know the answer, don't be afraid to admit it. False information can lead to a misdiagnosis.



*Look for this logo to find unique features that set U.S. Boiler Company apart from the competition. It's a quick, easy way to identify a product or service our competitors don't have – like **The US Boiler Report!***

Maintaining a Legacy



(left) AC Plumbing founder, Tony Caruso, with son Anthony at the Railroad Museum of Pennsylvania – they took a little detour after attending a U.S. Boiler training event in Lancaster (center) A Burnham Independence piped with a drop header – Anthony learned the value of this steam piping method early in his career. (right) Many of the homes in the Cleveland area still use steam heating

Cleveland Heights, Shaker Heights, and generally most of Northeast Ohio, is as much hydronic country as anywhere. Big, old homes are heated with lots of cast iron; some steam, some water.

“The men who installed these systems 100 years ago were engineers in every sense of the word,” said Tony Caruso. “They didn’t have a degree, but anyone who has ever worked on a large steam system understands what I mean.”

Here, not far off Lake Erie, Caruso and his three children operate AC Plumbing, Heating and Mechanical Inc., a full-service company focused on both residential and commercial work.

“We make it more affordable

for homeowners to keep their big, beautiful old homes,” said Caruso. “From an efficiency standpoint, the houses around here leave a lot to be desired. We can often drastically shrink heating bills by simply installing new technology correctly.” In the process, the historic value of the home isn’t lost.

Big iron

“I’m a fan of antiquated chunks of metal,” said Caruso. “Whether it’s old steam locomotives that moved our nation, or huge fire-tube boilers that have been sitting cold in basements for 50 years, they tell the stories of the brilliant people that came before us.”

“During the 1920s, gas companies in our area were in their infancy,” explained

Caruso. “In an effort to gain market share, they were *giving away* gas-fired boilers. Folks took the offer, but were still skeptical. Homeowners converted to gas, but left the piping connected to the original coal units as backup.”

In many of the houses AC Plumbing (for Anthony Caruso) works on, the coal boilers are still in place long after the gas boiler has been swapped several times. Often, owners keep the unit in the basement, adding to the home’s historic ambiance.

Service company x2

AC Plumbing got its start a little differently than most similar companies. Caruso just retired from a 27-year Firefighting/EMS career with Cleveland Heights Fire Dept.

Son Anthony now does the same, as a Fireman/Paramedic for the City of Independence Fire Dept.

In 1980, while Caruso was still working as a machinist, he started the company in his off-time. Through hard work and dedication, the firm has grown into the multi-generational business it is today.

“Spending your formative years in old firehouses and machine shops inevitably leaves with you with a reverence for hard working people and equipment,” said Caruso. “I guess that’s the reason for my fascination with fire trucks, boilers and trains.”

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—“Legacy”, continued

Full Steam Ahead

“Steam *anything* is exciting,” continued Caruso. “One time, Anthony and I got the opportunity to fire an old steam locomotive to 245 PSI. That was a thrill and a check off my bucket list! What’s neat about some of the old boilers is that they’re literally locomotives with the wheels knocked off. And now we’re replacing them with units smaller than a kitchen oven, and so much more efficient.”

About 90 percent of the big homes in the AC territory heat with steam, and they’ve developed an aptitude for making steam systems more efficient and comfortable. One effective way is to get dryer steam, resulting in faster, more even heat transfer.

“The Burnham Independence is our bread-and-butter boiler,” he continued. “It comes in so many sizes, each of which can accept existing pipe orientations, that we can put it in virtually any steam application we come in contact with. We’ve found that - with correct installation - the Independence will deliver dryer steam than just about any other boiler out there.” The gas-fired Independence is available with outputs from 62 to 385 MBH, in chimney or power-vented models.

But, AC Plumbing goes a step further to get the



Old and new worlds collide, when a Burnham Alpine condensing boiler is installed to do the same job as the cast-iron dinosaur beside it.

driest steam. Early in his career, Tony learned the art of the drop header. According to Caruso, this design captures condensate before steam travels to the near-boiler piping. This allows for the dryer steam to travel at a higher velocity to its point of use. “We like to use this design to increase the efficiency to a steam heating system, much like the railroad men tried to create super heated steam for their locomotive boiler efficiencies.”

Stark Contrast

“As neat as it is to look back at equipment of yesteryear, it’s exciting to compare it to today’s technology, and see just how far we’ve come,” said Caruso. “Every once and a while, we see the glaring differences in the same mechanical room.”

Last year, a 5,000 square-foot brick home from the 1920s offered the opportunity to compare. The home’s old natural-gas boiler had reached its point of no return. After Tony’s daughter, Monica

(31) took the no-heat call in the office, sons Michael (26) and Anthony Jr. (28), went to the job.

The home originally used a gravity water system, with a coal boiler in the basement and cast-iron radiators on all three stories. Over the decades, the monster boiler sat cold as several gas-fired units came and went. Circulators were eventually added as different zoning was desired. With some help from Steve Armstrong, a U.S. Boiler rep at Story Equipment Sales, they designed a new hydronic system around a high-efficiency boiler.

The high water volume, low head pressure, and a big delta-T begged for a condensing boiler. It didn’t take much to sell the homeowner on a 210 MBH Alpine once Carusos pointed out the benefits. The Alpine shares little with the original coal boiler aside from a grey exterior color. Today, the two units sit three feet apart.

“I’ve been using Burnham boilers since I started in the

industry over 30 years ago,” said Caruso. “The Alpine is like all their other products; it does what they say it’ll do. In this particular case, it took a monthly gas bill of \$2,500 and cut it down to \$500.” With such a large heat load, the 95 percent efficient boiler didn’t take long to pay for itself.

“Removing the old gas boiler took longer than installing the Alpine,” said Anthony Jr. “We re-piped the mechanical room, added new zone controls. The existing water heater was fairly new, but, we added an extra zone so we can add a Burnham Alliance indirect tank when the time comes.

Investing in People

AC recently moved into a 5,000 square-foot building. A training facility was a must, and a room specifically for that purpose was the building’s first add-on. Being a company that grew out of a firefighter’s background and mind-set, there was no ignoring the importance of being prepared for a task, or the necessity of team work.”

“I’m truly blessed to have the help of my wife and children,” said Caruso. “But I give tons of credit to the guys that I trust in the trenches. Our techs are educated in their fields, loyal and just a pleasure to have on our team. I’m lucky to call them my friends, and our company will continue to provide them with every training opportunity possible. With an education backing, there is no limit what we can achieve.”



Propane Shortage?

It's all in the Logistics.



by Mark Sahd

By late January, at least 24 states had declared an energy emergency, according to NBC News. The propane shortage and accompanying price hike were felt around the country, but the Midwest got hit harder than other places. A crucial supply pipeline that closed last fall, combined with the wicked winter, lead to prices nearing \$5/gallon delivered.

Wisconsin Gov. Scott Walker even allotted \$8.5 million to help ease the pain in his state. The money went to a program to help families buy fuel. Then he earmarked another \$8M in temporary lines of credit for propane distributors to make sure they were able to fill their own storage tanks. Walker did this because he – or someone on his staff – knows that LP is a unique fuel. Because of the way the liquid propane is produced, distributed and utilized, it's

often less available than fuel oil or natural gas.

How can it be that the safety of millions of Americans and their property is in jeopardy because of a fuel shortage? Why is this even an issue? The limited LP infrastructure makes its availability spottier than other energy sources.

Seasonal and Limited

Natural gas is produced at thousands of wells across the country. Through an expansive structure of hubs, pipelines and utility networks, it's delivered underground to both homes and commercial facilities for space heating. But more importantly, it's also used for industrial processes and electric power generation. The infrastructure that supports natural gas is massive and almost entirely underground.

While fuel oil isn't domestically produced in the volume that natural gas sees today, it's still more widely distributed than LP, with much steadier year-round use. Light to heavy road vehicles, agriculture machinery, trains and of course heating equipment all draw from a very well established oil distribution network.

Backyard barbeques aside, liquid propane is used almost exclusively as a heating fuel, and residential use accounts for much of it. This means that the amount of LP produced each year depends on speculation. Propane is one of several products derived from the oil "cracking" process at a refinery. When a refinery is cracking crude oil to produce LP, it's using time and materials that could be used to produce a more widely-consumed fuel, like diesel.

Then there's the issue of storage. Refineries, terminals and local wholesalers all store LP gas after it's produced. For every gallon stored, LP takes up space in a tank, and there's some liability assumed. Needless to say, beyond a small safety buffer, producers and wholesalers don't produce more than the country is expected to use in a heating season. It's the same reason a homeowner wouldn't install a 5,000 gallon tank in their backyard; they'd use it eventually, but that's a big tank to buy and to fill, and it would take up a big chunk of the yard.

Cost to Replace

Many people don't understand why the price of LP rose so much compared to other heating fuels this winter;

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– “Logistics”, continued

in Minnesota, it doubled between the first and third weeks of January, according to the U.S. Energy Information Administration.

Because of the factors we've already discussed, the cost for distributors to replace their own fuel stores was high, and the prolonged cold weather meant that all local tanks were already depleted in the areas where prices were the highest. So the only option was to truck in gas or bring it via railcar from areas that aren't feeling as much of the crunch. But that adds expense.

Which takes us back to why Gov. Walker offered \$8 million in credit lines to distributors; he knew that if there was any chance of getting some extra fuel into his state, it wasn't going to come cheap, and he didn't want to miss the opportunity to buy some because of limited funds.

But the panic is short lived. As you read this, delivered propane prices in Wisconsin and elsewhere are inching back down, soon to be half what they were in mid-January.

Mark Sahd is COO of Lititz, PA-based Tybec Energy Management Specialists, Inc. Sahd, has more than 22 years experience in the energy industry, including time as industrial and commercial sales manager for UGI Energy Services, Inc. Serving the entire mid-Atlantic region, Tybec Energy is an independent energy solutions company that helps industrial and commercial companies keep energy costs under control. He can be reached at msahd@tybecenergy.com



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Why Combis Can Leave Your Customers COLD

Combi boilers sound like a great idea. The promise of providing home heating and domestic hot water in the same package is an attractive one. The problem is that the delivery may fall short of your customer's expectations.

Simply put, most combi boilers cannot simultaneously keep up with the heating and hot water demands of the average American home. In cases like this, something's got to give: either the heating or the hot water performance is going to be compromised. In many cases, this means cool showers and very unhappy customers.

By utilizing the superior heating performance of the 95% AFUE Alpine boiler, with the capacity, recovery, flow rate, and extremely low standby heat loss of an Alliance SL indirect water heater, your customers will get efficient, comfortable heat AND a virtually limitless supply of hot water WITHOUT COMPROMISE.

Skeptical? Compare the ratings charts on the back of this sheet with those of a combi boiler and see for yourself.

We recently released two new promotions centered around the Alpine condensing boiler.

Response was so positive when we offered a free 10-year parts & labor extended warranty last summer, we brought it back. This offer is valid on Alpines purchased and installed from 2/1 through 5/15/14. The next promotion is for a \$300 contractor Visa gift card for the installation of an Alpine/Alliance combination. The promotion sheet also speaks to the advantage of this installation over combi boilers.

To take advantage of these promotions, contact your Sales Representative of Burnham brand products.

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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