

FROM THE FIELD

Service surprises: AC style

BY DAN FOLEY CONTRIBUTING WRITER

In previous columns, I have written about the challenges and issues I have run into servicing steam and hot water heating systems. We also service and install AC systems and servicing these systems can be just as challenging and perplexing. Every year, around this time in early June, as the first heat wave of the season hits, the phone starts ringing and the “no cooling” calls stack up. I thought back to the time when I was first learning to run calls under the gun on a hot day over 25 years ago.

I started running service calls in the late 1980s. I had some great teachers back then, and I learned by riding along with some of the lead techs at Arlington Heating & AC. It always seems easy when you are tagging along with a seasoned veteran with years of experience. The true test is when you are on your own and have to figure it out yourself.

Remember, this was before the days of the internet and cell phones. If you had to make a call for help, it was in your client’s kitchen, with your client listening in on every word. Even office communications were over a Motorola two-way radio with the entire company listening in.

I recall running a no cooling call on an old Bryant machine, the one with the blue rectangular chassis and the horizontal discharge condenser fan. I recall putting my gauges on it, but the pressures and temperatures were screwy. They were completely off the charts. I then went into the basement and checked the filter, evaporator coil and blower. All checked “OK.” The gauge pressures gave an indication of a low charge but the temperatures didn’t match up. I shrugged off the discrepancy and chuckled to myself. What you saw in the field didn’t always match what you learned in the books.

I grabbed a can of R-22 off of my service truck and pumped in one pound, then two pounds, then three pounds of refrigerant. The pressure and temperatures did not come close to matching up to where they should have been. How much refrigerant did this system hold anyway? I leaned over the unit to read the total refrigerant charge on the rating plate. The number 500 caught my eye.

“Oh sh**, I just pumped three pounds of R-22 into an R-500 machine!” I said to myself.

I did not carry R-500 on my truck. There was no easy way out of this one. I had to make the call in to the office to the service manager. The driver/parts runner was already out delivering parts so the service manager had to deliver the can of R-500 himself. We had to blow the charge (this was long before recovery machines were required), did a triple evac, and weighed in the proper charge of R-500. With the unit fixed and the system now cooling properly, I learned my lesson and was hoping that this gaffe would stay between me and the service manager.

No such luck. When I got to the shop the next morning to retrieve my first call and load up my parts, the snickering among the guys in the back of the shop

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indicated that my secret was out of the bag. I felt both shame and anger until an old timer put his arm around me and let me in on a fact of running service. One: those giggling and laughing at me had made the very same mistake at some point in their careers. Two: I was not going to make a mistake, error or call-back that had not been done a thousand times before. I still think back to those words of wisdom from Ed Irvin when either I or one of my techs makes a stupid mistake.

It's not your fault, but...

Back to last week, The phone rang just as I was about to leave the office around 6:00pm. One of my customers just got home from work and his house was hot. It had gotten up to 97°F that day and it was still in the low 90s outside.

“It is 78°F in my house and YOUR AC unit isn’t working,” the customer said.

Notice how it becomes my unit when it doesn’t work. “You guys just put this thing in. Why isn’t it working?” he said.

A quick check of the records indicated that we installed it in 2009 with no maintenance or service done by us since it was installed. But hey, why let facts get in the way when an angry client is on the phone.

Even though it was now after 6:00pm, I went ahead and asked one of my techs to go take a look. After braving DC rush hour traffic, he got to the job only to find the unit running and the temperature has dropped to 76°F with the thermostat set to 72°F. He ran through all the normal tests and checks: breakers, fuses, electrical connections, capacitors, start kits, thermostat, filters, float switches, condensate pump, and refrigerant charge. Everything checked out and was running to manufacturer specifications.

He did note that the client had elected to have a utility company load shedding device installed similar to the one that is pictured on page 52. In exchange for a lower electric bill, the utility can shut off the AC unit during peak electrical demand. Utilities pay top dollar for electricity on the open market when they cannot meet grid demand on peak days. The ability to shut down AC

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units during peak demand saves utilities significant dollars in demand service rates as well as infrastructure costs.

The problem is when the utility cuts the unit off for a couple hours on the hottest day of the year. The owner walks into a hot house and calls me, not the utility. We have no idea they have this device installed until we arrive at the call. In many cases, the owner has forgotten he has signed up for this or doesn't fully understand what he has agreed to. Often, one spouse signs up for the program without informing the other.

After spending over an hour at the call, it was well past 7:30pm. There was nothing mechanically wrong with the system. My tech then presented a bill for his time and suggested that the load shedding device was the cause of the warm house.

"No way that is the cause! That thing has been there for several years and has never been an issue. Something else is wrong with the unit," he said.

I told my tech to go home and I still haven't been paid. That scene was repeated two times the next day. At least those clients had the decency to pay for the service call. I understand why utilities use these devices and I understand that they serve the greater good of the public. But, I still hate them. Why should I have to bear the burden of a device that I did not install, have no control over, does not directly benefit me, and is the cause of a few more gray hairs poking out of my head last week.

With internet, smart phones and e-mail, you would think that the utilities could at least notify their customer when they disrupt service to their unit. Yes, I know they have blinking lights on the box but that doesn't help when service is restored and the AC system is back online but my client can't understand why their house is several degrees above setpoint.

Small problem, big headaches

Condensate drain issues are also a source of service problems. Often times, the client doesn't even realize there is a problem until there is a flood in the mechanical room, or worse, when the ceiling caves in from a leak in an attic system. Usually sediment in the drain line or trap is the culprit. A good flush with hot water usually does the trick. I like to use rubber ells on a condensate trap to allow for easy access for cleaning. We also use EZ-Traps

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with a float switch and a clear trap that shows when it is filled with dirt or debris.

Counter-flow systems and horizontal systems always cause the most problems. We see many systems with a horizontal air handler in an attic. Typically the drain line may run across the attic and drain through the gutter board into the gutter.

Two issues crop up that often cause callbacks. When the system is first installed, the PVC or ABS drain pipe may have good, steady pitch towards the termination. After several years in a baking hot attic, this piping can

sag creating pockets that trap condensate. Once that drain line becomes double trapped, it will back up no different than if someone plugged the end of a drain with a cork. It is perplexing because you go back and flush out the drain. You blow through the pipe and it is clear. But, no sooner do you get to the next call or get home that you get the



The client had elected to have a utility company load shedding device, as pictured here. In exchange for a lower electric bill, the utility can shut off the AC unit during peak electrical demand.

dreaded callback. The solution is to strap the drain line to maintain a steady pitch.

I have also seen clogged gutters cause the same problem. Everything is fine until it rains and the gutter fills up with water. As soon as the end of the drain line is covered with water, the condensate will back up. Again, if you blow through the line, it appears to be clear. The solution is to clean the gutters and downspouts so that they drain freely.

Fuses, contactors, capacitors and motors are easy problems to diagnose and fix. The hard ones make you think and second guess yourself. The callbacks are the ones you don't forget and you make sure to remember the solutions. If you run service, you are going to see these problems. How you deal with them differentiates the professionals from the hacks. ●

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