

THE AIR SIDE

2014 AHR Expo: Part 2



by Jim Wheeler
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➤ At each AHR Expo I look forward to meeting with the people from Airgas — an important supplier of refrigerant reclaim services to our industry — because I can rely on what the company tells me.

During my chat at the 2014 AHR Expo in New York City, Airgas told me the Environmental Protection Agency allowed an unusually large amount of R22 production during 2013, which tended to lower the price.

However, this means there will be a lower supply available (at much higher prices) as we move toward 2019 when all production will cease. So don't be lulled into thinking there aren't going to be critical shortages. Remember that thousands of R22 residential air conditioners still will be in warranty the year after its production is stopped!

And what about the future of R410A — R22's replacement in new residential AC equipment? I talked to all the equipment manufacturers about this and the consensus is it will be around for quite a while despite the fact it has a high global warming potential. This doesn't mean it isn't under attack though. It's already being phased out throughout Europe and Asia.

Where is the refrigerant industry headed?

Of interest was the statement by Daikin (a major manufacturer of HVAC equipment, components and refrigerants) that it is committed to making the switch to R32 globally over the next 10 years. This, of course, would require changes in thousands of our local codes since the refrigerant is mildly flammable. However, it is currently allowed and in use throughout the rest of the world.

What are the advantages to using R32? It is about 20% more efficient than R410A (which means smaller, more efficient equipment) and it has a very low GWP and low ozone depletion potential. But like R410A, it is a very high-pressure gas and doesn't work well with mineral oils.

An interesting thing about R32 is that it is a single component gas (it isn't a blend) and is inexpensive to manufacture. I was told most major refrigerant manufacturers likely will be opposed to its use since



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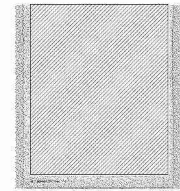
there isn't as much money to be made in its production. We'll see.

While I was at the expo, I took a few minutes to attend a meeting being put on by Refrigeration Service Engineers Society where the use of explosive refrigerants was being discussed. Yes, propane and butane! Apparently, many major chain stores, such as Ben and Jerry's, are now switching to the use of such very-efficient refrigerants in their smaller freezers. How are they getting away with this? The answer is by keeping the quantities extremely small. The speaker held up a cigarette lighter and said the amount of fluid in the lighter is about the same as is in their cooling boxes.

At another meeting I attended, CO₂ was discussed as a refrigerant in low-temperature boxes. In fact, it was pointed out a major chain of supermarkets in the New York City area currently is in the process of making the change to CO₂ refrigerators and freezers.

Also at the show, Australian manufacturer Sanden Corp. (www.sanden.co.jp.english/) touted a single-stage CO₂-based system for use in heating both indoor air and providing domestic hot water.

It's a changing world and a changing business, so it's best to keep an open mind and keep abreast of changing technology.



'Smart homes' and UV lamps

Back in the mid- to late 1980s when I started writing about our industry, I talked a lot about the future — not flying cars, but the “smart home” concept. In fact, if you go back to the 1920s and 1930s, people were already talking about houses where everything was automatic.

The problem, of course, always has been the expense of changing each of our appliances into “intelligent” devices and then wiring them all together or connecting them all through radio waves to some central station — though some people actually did it. The big question was why would anybody really want to do this? After all, most of our appliances and HVAC systems just had to be turned on and off.

Well, things have changed. Thermostats are programmable; induction ranges and convection ovens can do marvelous things; dishwashers, washing machines, clothes dryers, microwaves and even lighting are getting pretty sophisticated. And to top it all off, most of us already own a central station — our computer. However, none of our appliances (even the new ones) can interface with a computer yet. But it looks like that is about to change.

I guess that I wouldn't be so optimistic about such a concept were it not for a new thermostat that I was introduced to in New York City. The folks at Emerson showed me a realizable future in its moderately priced, remotely programmable Sensi thermostat.

Yes, it can be programmed from and send alerts to a smartphone. However, I'm not that progressive. What excites me is that it can be managed from and send alerts to my home computer through its wireless modem. The connection is made only one time through Emerson's free online program.

Don't get me wrong. I'm not acting as a spokesperson for Emerson here. I'm writing about this because I can see that the technology has arrived and it is now common, available and inexpensive enough to make the “smart home” concept a reality.

Inexpensive? Yes! I just bought a replacement wireless router on eBay for \$20 including shipping. The electronics for the appliances only requires a connection to controls already present on the new stuff. The Emerson connection is free and its thermostat retails for about what most programmables have been selling for. Note to appliance industry: It's time to step up to the plate! Wouldn't it be nice to receive an alert when your refrigerator door is left open?

Lastly, I wanted to mention not a new product but a new application and a possible new market for a common product — UV sanitizing lights.

As I was walking past The [Fresh-Aire UV](http://www.freshaireuv.com) (www.freshaireuv.com) booth at the expo, I noted that its lamps weren't shining on evaporator coils, but rather on icemakers. I didn't realize it, but apparently icemakers also get contaminated. This raises the bacteria count of fountain soft drinks (a health concern) and it damages their flavor.

As the folks at Fresh-Aire UV pointed out, Disney World (for example) has been spending huge amounts to clean its icemakers every few months to solve the problem. But now they no longer have to do this thanks to the installation of UV lamps. Who knew?

Of course, I only can touch on a few of the great new ideas I saw in my eight-hour stroll through this year's AHR Expo. Next year it will be in Chicago and I strongly urge you to attend if you can. <<

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Emerson's remotely programmable Sensi thermostat can send alerts to a home computer through a wireless modem connected through the company's free online program.