

# Leading Off



## IoAE

**A** while back I was talking to my grandson (he has been in the business now about five years and is working on an engineering degree) and I ask him what he thought would be the new cutting-edge technology. Without hesitation, he said magnetic refrigeration. For those that aren't familiar, it is based on the magnetocaloric effect or something such as that. What he said really got me thinking about our industry and the progress we have made. Those of you who know me well know that I'm not a trend setter nor am I a deep thinker but I did come up with an acrostic IoAE that represents "Improvement of Almost Everything." Think about some of these things.

**Compressors**—In my early years, almost every tech could calculate the compressor speed by varying pulley sizes for open drive compressors. A once routine discipline is now pretty much a thing of the past due to new compressor designs. Scroll, Discus, HE reed valve and rotary screw compressors have brought us higher efficiencies and greater reliability in a smaller footprint, not because they are new technologies but primarily because of improved manufacturing processes. How about large tonnage oil-less compressors that use magnetic bearings? Didn't see that one coming.

**Refrigerant Flow Control Valves**—Standard TXVs and PRVs are being replaced by EEVs and Electric Pressure Regulating Valves. Stepper motors and electronic controls are bringing higher efficiencies and reduced commissioning time to new systems. I speak from experience when I tell you that an electronic controlled supermarket starts up much faster than one that has standard valves, it runs better too.

**Heat Exchangers**—Several years ago I was talking with RSES Past International Presidents Bob Smith, CMS and Ron McCarthy, CM. They were amazed at the advancements

the industry had made in heat exchangers, primarily brazed plate heat exchangers. These devices have a big impact on our industry. Do you remember when 5/8 in. tubes were the standard for condensers and evaporators? The refrigerant charge in those old airside heat exchangers required more refrigerant than a typical rooftop unit does now. We can thank microchannel and minimum tube size technology for that savings.

**Tools and Test Equipment**—I had a set of three magnehelic gauges and an assortment of pressure gauges and brass fittings used to fit them up. The first electronic combustion analyzer I had was so cumbersome that you almost had to have a hand truck to get all the pieces in the boiler room. Now most of our service techs have more test and diagnostic equipment than most test and balance people did in the 1970s.

You can probably add to my list, I would love to hear them. I believe the next 50 years will see even greater change to our industry. Nostalgia is only useful if it validates that we are keeping the "main thing the main thing" and bring about progress and improvement in our life. My span of nearly 50 years in the industry has taught me if you quit learning you will fall behind quickly and 50 years will go by quicker than you can fall behind.

*Keep learning. It is vital for life. Keep improving yourself.* 📖

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