

HIGH-PERFORMANCE HVAC TODAY™

If You Don't Measure, You're Just Guessing!™

Allergens
and Outdoor
Particulates

Lack of Air
Movement

Sick Building
Syndrome

Pressure
Imbalance

Carbon
Monoxide

Improving Indoor Air Quality

**With High-Performance
HVAC Solutions**



ALSO IN THIS ISSUE:

- System Performance and Indoor Air Quality
- Balancing Hoods: Go-to Instruments for Air Upgrades
- Selling to New Prospects Versus Existing Customers

**October is National
IAQ
Awareness
Month!**

LEARN THE LATEST ENERGY-SAVING TECHNOLOGIES

We offer free/subsidized HVAC/R in-person and online courses to help you maximize your customer's system performance and stay up to date with your certification.



NCI Duct System Optimization Certification Program (Two-Part Series)

October 18 & 19 | 8 a.m. – 5 p.m. | Orange County, CA

NCI Residential Air Balancing Certification Training – Testing & Balancing Residential Systems

October 20 | 8 a.m. – 5 p.m. | Orange County, CA

Beyond Freon™: A Closer Look at Low GWP A2L Refrigerants

October 26 | 1 p.m. – 3 p.m. | Online

NCI Commercial Air Balancing Certification Program (Three-Part Series)

October 25, 26 & 27 | 8 a.m. – 5 p.m. | Tulare, CA

ItsAboutQ.net On-Demand HVAC/R Programs & Courses

Available 24/7, 365 days a year



Register to take our classes and see all our HVAC/R offerings at on.sce.com/hvac or scan the QR code.

HIGH-PERFORMANCE HVAC TODAY™



TECHNICAL:
11 System Performance and IAQ
Indoor Air Quality Specialist John Ellis shares six key principles to follow every day to help quick-start your IAQ journey.

TECHNICAL:
15 Balancing Hoods: The Go-to Instrument for Air Upgrades
NCI's David Richardson explains how a balancing hood allows you to show the difference between what airflow is and what it should be.

SALES:
19 Selling to New Prospects Versus to Existing Customers
Which group represents the ones more likely to do business with you? Drew Cameron explains.



DEPARTMENTS

Today's Word	4
High-Performance Products.....	5
Contractor Spotlight: Bailey's Heating & Air, Inc.....	6
NCI Update	23

HVAC Smart Mart.....	24
Ad Index.....	25
One More Thing	26

Did You Know that October is National Indoor Air Quality Month?



Mike Weil is editor-in-chief and director of communications and publications at National Comfort Institute, Inc. Contact him at ncilink.com/ContactMe.

When it comes to indoor air quality (IAQ), according to the [National Library of Medicine](#), “The modern scientific history started in the 1970s with a question: ‘did indoor air pose a threat to health as did outdoor air?’”

Not too long after that, it became quite apparent that indoor air is **more** important, from a health point of view, than outdoor air.

In those early days, the world focused on the IAQ impacts of radon, tobacco smoke, and lung cancer. Later the U.S. targeted volatile organic compounds, formaldehyde, sick building syndrome, house dust-mites, asthma and allergies, Legionnaires disease, and other airborne maladies.

Then, new issues came to light regarding dampness/mold-associated allergies and concerns with what the U.S. National Institutes of Health call “modern exposures-modern diseases.”

Why do I bring all this up? Because October is

Factors that impact air quality include the lack of air movement, dirty or faulty heating or air conditioning equipment, damaged flue pipes or chimneys, unvented combustion from fossil fuel appliances, excessive humidity, and the presence of mold and mildew.

With cooler temperatures coming, now is the time to make sure customers’ furnaces work properly, so that carbon monoxide is not an issue.

The good news is that as High-Performance HVAC contractors, you actually play a pivotal role in the health and safety of people within indoor spaces. Because the high-performance approach focuses on airflow through measurement, testing, and diagnosing potential problems, you can see and document issues based on facts, not rules-of-thumb or guesses.

More High-Performance HVAC Contractors are becoming students of IAQ and go beyond [ASHRAE Standards 62.1 and 62.2](#). If you aren’t a student, maybe its time to consider becoming one, because IAQ is complicated and requires training and practice to get it right.

As IAQ Specialist John Ellis states, “*Prescription without diagnosis is malpractice.*”

One of the most important diagnostics you can perform is identifying **root causes** of the problem. Those culprits often are pressure imbalances drawing air into the home from a dirty attic, crawl space, or even a drop ceiling.

So we dedicate this issue to the pursuit of high Indoor Air Quality. Read John Ellis’ latest article on **selling the right IAQ solutions** and David Richardson’s focus on **accurate airflow measurements with airflow hoods** to get an idea of what I mean. Make IAQ part of your service offerings and be sure to promote those services to your customers.

Happy National IAQ Month. 

OCTOBER IS THE TIME TO FOCUS OUR ATTENTION ON THE AIR OUR CUSTOMERS BREATHE EVERY DAY IN THEIR HOMES AND WORK SPACES.

National Indoor Air Quality Month where organizations like the American Lung Association and others want to focus our attention on the air we breath everyday in our homes and workplaces.

When the pandemic was in full swing, according to the Environmental Protection Agency, more people began working from home than ever before. So the need to pay attention to IAQ became and remains more important than ever.

This month is all about broadening the public’s awareness and understanding of the importance of IAQ, as well as how to achieve cleaner air inside buildings.

Written by HVAC Professionals for HVAC Professionals

AirAdvice™ M5200 IAQ Monitor

The Model 5200 is a full-featured indoor air quality (IAQ) instrument for measuring dust/particles, chemical pollutants, CO₂, CO, temperature, relative humidity, and more. The **AirAdvice for Home** platform includes a monitor, software, and unlimited reporting.

At DiMarco and Associates, we use this monitor on every call every day. Air monitoring is part of our preventive maintenance contract.

The M5200 collects IAQ data continuously, stores it in one-minute intervals, and sends that data to the AirAdvice servers using a built-in cellular modem. When not connected, the monitor can store data for up to 14 days.

The best part of this product for us is that it is easy to use. You just plug the monitor in and let it run. Once the data is gathered, it produces colorful consumer-friendly reports that give our team third-party credibility.

Understanding how to interpret the data is a bit more involved. That is where outside training like that provided by **National Comfort Institute** (NCI) becomes so important.

By itself the M5200 connects the dots between what the monitor reads, and HVAC industry and government IAQ standards. Customers can see if their homes are in the green (all clear), yellow (potential dangerzone), or red (immediate

action required).

If your team is trained and practiced at finding IAQ issue sources, plus they are good at air balancing, and testing for combustion issues, then the M5200 is a fantastic tool to help them highlight IAQ problems and provide consumers solutions.



The more knowledgeable contractors are and the more tools they have to help communicate clearly to customers the better. AirAdvice monitors are such a tool.

Learn more about the AirAdvice M5200 IAQ monitor by visiting their website at ncilink.com/AirAdvice. **NCI**

— Ben DiMarco, president, DiMarco & Associates, Cleveland, OH

Arzel Zoning
Comfort College Plus

October 27th & 28th

SIGN UP

COVERED TOPICS:

- Recognizing Zoning Opportunities
- Product Familiarization
- System Design
- Proper Installation Techniques
- Sales & Marketing Tips
- Basics of ECM Technology
- ECM Efficiency
- Installation Requirements
- Variable speed technology
- Diagnose and replace various motors
- x13 Motors
- ECM outdoor fan motors
- Evergreen and retrofit ECM

www.arzelzoning.com | sales@arzelzoning.com | 800-611-8312 | Follow us!

MEMBER NCI REWARDS

Become an NCI Member today and start earning NCI Bucks towards training and more!

Training Incentive Partner Program

Earn NCI Bucks based on your purchases from our industry **TIPP** partners, and use them any time to train your Performance-Based Contracting™ team.

Call 1-800-633-7058

Become an NCI Member today and start a TIPP bank for your High-Performance Team!

Leaving Customers' Homes Better Than You Found Them

Modesto, CA, is located on the Tuolumne River and is home to the world's largest, family-owned winery: The E&J Gallo Winery. The city and its surrounding environs are within the vast San Joaquin Valley – a fertile area which is home to a very large agricultural industry. Founded in 1870, Modesto was a railroad stop connecting Sacramento to Los Angeles.



Mitch Bailey, owner

It is also home to a family-owned HVAC company called [Bailey's Heating and Air, Inc.](#) Mitch Bailey is the second-generation owner of this residential-focused company that

achieved gross sales of \$3 million in 2021 and is on its way to surpassing that in 2022.

According to Bailey, the company was started by his father in 1976 after he retired from the military, then moved back to Modesto from Texas.

"In those days," Mitch Bailey says, "the company focused mainly on refrigeration in the new construction market. I was 14 or 15 years old at the time. My dad would pick me up after school, drop me off at a job site, and I'd install ductwork. Then he'd pick me up when the sun went down."

SOME HISTORY

Bailey says he grew up in the business as an employee with no special privileges. By taking on more responsibilities, he slowly began moving up the ladder. During the 1980s, 90s, and early 2000s, the company averaged 2,000 HVAC installations in new construction homes each year. In 1992, he bought the company from his father.

"We also did residential add-on-replacement and service on existing homes, but that was never our main concern. After taking over, I got out of the refrigeration business altogether and concentrated on residential new construction and residential add-on-replacement and service."

He says that the commercial refrigeration business required extremely long hours that often started at 3 AM because a walk-in freezer was down.

"The client would lose food product if we weren't there before they opened. Then those same techs had to put in a full day. That was too much stress on them and me. In the mid-2000s we left residential new construction and changed our focus to residential service and replacement, which remains our focus today," Bailey says.

THE COMPANY TODAY

Today Bailey Heating and Air employs 19 people, including six full-time service technicians, four installation techs, and four office personnel. They also operate their own sheet metal shop

supporting the company's field teams.

"I also have an installation manager who is an all-around person who can do pretty much anything needed."

With 16 vehicles on the road, Bailey says the company does around \$3 million in gross sales, 60% of which is residential retrofit and replacement work. He says they still do some (less than 2%) new construction, mostly in the custom home industry. The rest is all service work.

A PHILOSOPHY BASED ON TRAINING

Bailey explains that the changes he implemented could not have happened if it wasn't for his focus on learning and training.

"I believe we, as HVAC contractors, do a great disservice to our customers if we put technicians in the field without the best knowledge and skills. The only way we can avoid this is to train them. It's plain and simple."

Bailey takes that a step further. Not only does he invest in getting his crews trained, but he also invests in giving back by providing training to other contractors and technicians within the Central Valley area.

"I not only preach training," he says. "I also teach it. I teach through [IHACI](#) and have been doing that for around eight years."

He says he strongly believes in getting third-party certifications for himself and his field team. He sets goals



for techs to get trained and earn certifications and even pays spiffs if they attain **NATE** certifications (among others). Today more than half of his technicians are certified.

Furthermore, more than two-thirds of them have also taken airflow testing and diagnostics classes from **National Comfort Institute (NCI)**, and several have also been through that organization's combustion classes.

Bailey says that he knows some HVAC contractors don't offer the same

training options for their techs as he does because they fear those guys will leave and go to a competitor.

"That doesn't worry me too much. I've had people go through classes and begin using the new techniques, only to receive offers for more money elsewhere and leave. I had two techs leave this year, but they both wanted to come back after less than a few months.

"And I did take them back. These techs are good employees. The companies they went to couldn't keep their promises. Furthermore, the techs told me that the new companies didn't do things the way we did with all our testing and our focus on doing things correctly. They told me that they couldn't deal with that."

CALIFORNIA DREAMING

Of course, Bailey's Heating and Air, like every other small business in California, is subject to the regulatory whims of the government in a state that prides itself on cutting edge for just about everything. As such, Bailey takes advantage of training opportunities offered through the investor-owned utilities such as PG&E (Pacific Gas & Electric) and SCE (Southern California Edison).

In addition to training, Bailey has participated in all of the offered energy saving measures through PG&E's different programs over the decades.

These programs sought to incentivize homeowners to increase home energy efficiencies with goals of 30% or better in energy savings.

"PG&E's TECH Clean program offered two levels — Advanced and Basic. Bailey says, "They were totally different. The basic program was more prescriptive and required high efficiency equipment be installed, while the advanced program required the contractor and participants to model the home, replace windows, insulation, and other things. Then they had to show how much energy savings the customer would achieve as a result," Bailey explains. "The amount of incentive was based on the modeled savings and rebate dollars paid according to the model. Some models promised energy savings up to 50%.

"PG&E switched to a pay-to-play program a few years back so the utility could monitor energy use and look at prior year usage of the homes that participated in the advanced program. After several years, PG&E found they were only getting a 3% return on their money. Because of this they dropped the advanced program."

Bailey says his company participated only in the basic program, and most of his replacement and renovation jobs saved around 30% energy which PG&E was not getting from the advanced program. He says they were told that they



Using a balancing hood helps to make air visible in each room of a home. Bailey Heating and Air uses these instruments to test airflow before and after they work on a system.

consistently achieved the biggest energy savings in the program.

“They approached us and wanted to know how we did that,” he says.”

IT'S ALWAYS ABOUT THE DUCTWORK

“My key message to PG&E (through their third party implementer, Frontier Energy) was that it is always about the ductwork. I explained how we start every project by looking at the house, doing a load calculation to get the correct equipment size, and then measuring the existing system to see how it performs before we do anything else.



Bailey's techs are trained to test and measure HVAC systems on every job.

“This includes how much air the system delivers, how many Btus it puts out, and how much energy it consumes.

“Only after completing all that do we recommend changes,” he continues. “For example, if a room is supposed to have 180 CFM but is only getting 130, we know there is an issue. We need to either run more duct, fix the duct, balance it, or whatever else is necessary.

“And then we usually add attic insulation to most homes if it's lacking, and some other things we'd suggest. We don't do windows.”

The goal, according to Bailey, is to get involved. That way he can help utilities understand that a high-performance approach, like the one he uses in his company, would benefit the customer with a more comfortable home and lower bills. Results would also help utilities by reducing the energy needed to run the home, and help the entire state because they are lacking power for the grid.

END BOX SWAPPING

“Contractors can help consumers save so much more energy if they just sized even standard efficiency equipment properly,” Bailey continues. “Then take the rest of the money saved from not replacing it with an expensive higher-end unit and put it toward other improvements.

“We must stop swapping boxes. Our industry needs contractors to test in and test out. They should measure the house before they do any work on it. Once again, by measure, I am talking about taking static pressure readings, measuring airflow – total system and room-to-room, and doing load calculations. Help the customer see how their system operates before you make any changes and then show them what it is doing after your changes.”

SYSTEM PERFORMANCE AND AIR UPGRADES

From what Bailey talks about, he and his team take high-performance contracting seriously and are successful in their marketplace in providing his customers the comfort and efficiency they want.

But it's not easy. Bailey says his competitors are the biggest impediment to his company's approach to testing,

measuring, and doing air upgrades.

“These are the guys who tell customers something totally different from what we do,” Bailey says. Competitors will ask a customer who has had a four-ton unit in their home forever why they'd want to replace it with a three-ton unit. Some will even say that a three-ton unit won't provide enough air for their home!

“I tell customers, based on my load calculations, system tests, and measurements, they only need a three-ton unit. Who will the customer believe? If the competitor is a better salesman or doesn't price their work right, we can lose that sale.”

IT'S A WRAP

Ultimately, Mitch Bailey says the secret to his success is hard work, training, and partnering.

“NCI has some of the best training. They not only train people, but they also show you why a system is operating the way it does. Then they show you how to fix what's happening, where to look, and what to do.

“I think it's the best training out there. It's better than any trade school you can send your techs to because it addresses real-world problems every day in this business.

“NCI training helps you be a better contractor doing a much better job for your customer. The whole goal of this is not only to make money, but also to leave the home better than we found it from a comfort and efficiency standpoint,” Bailey concludes.

For these and other reasons, **High-Performance HVAC Today** chose **Bailey's Heating and Air** as its *Contractor Spotlight*. Congratulations to the entire team.



EASIER, FASTER INSTALLATIONS, AND IMPROVED HVAC SYSTEM EFFICIENCY

The DS3 Duct Saddle is a one-piece, plastic, load distributing saddle that offers superior support in flexible ductwork, which is often plagued by kinking and sagging when using strapping alone.

It's never been so easy to do it RIGHT!

The Benefits of using DS3 include

- ✓ For the **CONTRACTOR**, reduced installation time which means reduced labor costs.
- ✓ For the **CUSTOMER**, shorter cycle times, lower utility bills, greater comfort.
- ✓ For the **HVAC UNIT**, less breakdowns and greater operating efficiency.



One SKU Fits
All Jobs
RNC & Retrofit
Applications

Call for FREE Homeowner Focused Sales Tools

559-658-1010

www.ductsaddles.com

APRIL 16 - 20, 2023

Save the Date

NCI's High-Performance Summit 2023 will be held in Branson, Missouri. REGISTRATION OPENS SOON!



NationalComfortInstitute.com • 800.633.7058 • GoToSummit.com



YOU ASKED. WE LISTENED.

WE ENHANCED OUR TEST EQUIPMENT
BASED ON YOUR FEEDBACK.



**SMART Air Hood®
Balancing Instrument**
SERIES SAH



**Hydronic Differential
Pressure Manometer**
SERIES 490W



**Wireless Test
Equipment Probes**
SERIES AP3, RP3, VP3



**Wireless Differential
Pressure Manometer**
SERIES DP3



System Performance and Indoor Air Quality

You should follow six key principles when dealing with HVAC system performance and its impact on Indoor Air Quality (IAQ) within homes, businesses, and other environmentally-controlled places. But first, we need to start with some definitions.

System Performance: This is the measured performance of a complete field-installed HVAC system compared to the manufacturer's laboratory specifications. The measurements will determine if the installed HVAC system operates as close to those specifications, including Btu output, airflow, and efficiency. The HVAC system includes all equipment, components, filtration, and air distribution.

Indoor Air Quality: The purity of the air in a specified area, especially as it relates to the comfort and health of building occupants.

Indoor Air Quality (IAQ) is a huge, **missed opportunity** for contractors to serve their clients well. That makes it an excellent prospect for the HVAC residential marketplace. In fact, a 2021 report by global market research firm Technavio on the [PR Newswire](#) predicts, "The global indoor air quality solutions market is poised to grow by \$10.27 billion during 2021-2025."

Take note: the report states "**solutions**," not just products. Identifying these value-added solutions-based opportunities for HVAC customers will drive up revenue for contractors. I believe the HVAC industry is in a perfect position to serve clients well in the IAQ field.

So, how do we accomplish this? We first need

to understand that IAQ is a very complex subject. And there is no cookie-cutter, one-size-fits-all fix. Each home and each customer come with their own unique set of challenges. Installing the latest gadget that your supplier is pushing may create more problems than the original issue. Remember: **prescription without diagnosis is malpractice**.

Working with clients and their IAQ problems requires a different approach. Most of the HVAC industry primarily focuses on selling new equipment and offers IAQ as an accessory, add-on, or afterthought.

We need a paradigm shift because, as an HVAC/IAQ professional, our primary focus needs to be IAQ and addressing the specific needs of the customer. Equipment will be the add-on. Listen to your customer and focus on their desired outcome. Doing this will undoubtedly separate you from all other contractors.

If you are not standing out, you are just blending in.

GETTING STARTED

The first step is always the hardest one, and education is vital. I remember taking my first air balance class from [Rob Falke](#) over 17 years ago and how that knowledge was a game-changer for me. Now, I have the privilege of teaching a two-day IAQ Principles Workshop for Daikin/Amana/Goodman. Getting educated is a good foundational place to start.

It's all about the process. We are a process-driven industry. We have processes for everything:



AirAdvice™ Air Monitoring System



how our CSRs answer the phones, how a technician handles a service call, how we do invoices, commissioning, installs, etc. How we approach IAQ is no different.

Through the years, I have developed a process for addressing customer IAQ needs: **I**nvestigate, **A**nalyze, and **Q**uote. You have to do all three, and you have to do them in order. Frequently, our industry goes right to the quote without fully understanding what's happening in the space and its effects on occupants.

INVESTIGATE

The first step should be the investigation process or discovery phase. It's during this phase that contractors go in and gather data. I start with sending a questionnaire to be filled out ahead of time. The answers to this questionnaire give me an idea of what direction to take the investigation. I take many pictures and always conduct a [system performance test](#) on the equipment.

More often than not, the HVAC system can have the biggest impact on the structure and its occupants. Getting information on delivered capacity,

sensible latent ratios, airflow, static pressures, filtration rates, air exchanges per hour, and leaky ducts, is a fantastic start.

Then we move on to investigating the structure. Using a blower door allows us to identify pathways for pollutants to enter the structure. It is very important to know infiltration rates. We want to keep inside air in and outside air out. Air is the medium on which all things travel. ***One CFM in equals one CFM out.***

Next, we need to measure and identify any pollutants in the space to "see the unseen." Measuring and identifying such contaminants requires some specialty testing equipment. An [Air-Advice™](#) IAQ monitoring instrument is a great entry-level tool for this purpose. By identifying what pollutants are in the space, we can also understand where they are coming from and how to get them under control.

ANALYZE

Having data is great, but we must understand that data compared to what the customer is experiencing. Examine your photos carefully. Review the customer's questionnaire

answers. At this point, things should start to make sense and become clear as to what direction you need to go.

QUOTE

We can now build our scope of work using the first two steps, investigate and analyze. This quote is customized for your client's specific needs. The scope of work will usually be multi-tiered to address many different issues. Take the time to explain how each option works, what upkeep is involved, and how much it will cost to provide the various solutions.

At this point, you can advise the customer on whether to replace the equipment to support the options you are offering. With some training, practice, and experience, you are on the fast track to becoming an IAQ professional.

SIX KEY PRINCIPLES

Here are six fundamental principles we should already use in our everyday HVAC businesses. These are foundational principles to help quick-start you on your IAQ journey.

- **Thermal Comfort:** We are in the comfort business. Thermal comfort

is essential to how your customer feels. Frequently, uncomfortable conditions can intensify their health issues.

- **Filtration:** Every HVAC system should have some filter in place. Understanding how to design a filtration system into an existing or new mechanical system is essential.
- **Ventilation:** Ventilation is our industry's most overlooked part of an HVAC system. You will find that ventilation will become a vital part of almost every solution. And not always for the same reasons.
- **Humidity Control:** Give close attention to this aspect, whether there is too much or too little humidity. Too much humidity can lead to microbial growth and undesirable

comfort levels. Too little humidity can cause mucous membranes to dry out and cause high static electricity in the home.

- **Building Pressures:** This gets us into building science and is very important. Having a slight negative pressure in a home or building can cause undesirable results, such as gases, pollutants, or dust getting into the space. Even worse, negative pressure can cause combustible appliances to backdraft, bringing carbon monoxide into the space. Even when doing a load calculation, having an infiltration number is critical.
- **Pollutant ID and Source Control:** You can't address what you don't know. Using an instrument like the AirAdvice monitor is

always a good idea. I can't stress this enough: *source control, source control, source control.*

In closing, you can diagnose the whole house as a system using these six key principles and the latest testing tools and technology. Then, you too, will be able to design and implement safe, healthy, comfortable, and efficient environments for your clients. 



JOHN ELLIS is an IAQ Specialist who owns Dynamic Air Consulting company. He is also a training coach for The New Flat Rate and an instructor for the Daikin/Amana/Goodman manufacturing team. He can be reached at Dynamic-AirConsulting@aol.com.

[AirConsulting@aol.com](mailto:Dynamic-AirConsulting@aol.com).



R.E. MICHEL COMPANY

WHOLESALE DISTRIBUTORS • AIR CONDITIONING • HEATING • REFRIGERATION
PROPANE • EQUIPMENT • PARTS • SUPPLIES

— Since 1935 —

INVENTORY SOLUTIONS TO FIT YOUR BUSINESS



Contact your local branch or email sales@remichel.com

remichel.com

EVERGREEN TELEMETRY

Leading Edge **TAB** Tools!!!
Faster. Easier. Safer.

INNOVATIVE CAPTURE HOODS

15" Hood



100-2500 CFM

3LB Hood



30-3000 CFM

8" Low-Flow



15-150 CFM

Different Hoods for Different Applications

- Magnet frames
- No air gaps
- View up to 4 hoods on one Wrist Reporter

KITS
Available
Hood + Sensor + WR

Wireless sensing module sends continuous stream of readings to the Wrist Reporter

Unique Hood Accessories



- Custom skirt sizes
- Right-angle mounts for sidewall diffusers



Wrist Reporter™

Display 8 Different Locations Simultaneously

- View system-at-a-glance
- Store up to 100,000 readings
- Time / date stamp
- Wireless datalogging

Free Field Trials Available!

Call Today 602-574-6192
EvergreenTelemetry.com

Balancing Hoods: The Go-to Instruments for Air Upgrades

I'll never forget the first time I assembled a balancing hood more than 20 years ago. It was also the first time I met Rob Falke. He grinned as I walked into the room at the Energy Management Conference in Louisville, KY, and asked me, "Ever put a balancing hood together?"

I was at an interesting point in my life. I was preparing to leave the HVAC industry because I saw no future in the business. As Rob showed me how to insert the skirt poles and adjust the hood fabric, neither of us knew how life-changing this event would be.

Rob's presentation, *The Balancing Act*, changed my mind. It gave me hope for what our family company could achieve. The balancing hood played a big part in this. It's one tool that helped save our family company and kept me in the HVAC industry.

A balancing hood allows you to show the difference between what is and what should be.

This article was supposed to be Rob's. It's based on a presentation he put together for the [2022 NCI Summit in Scottsdale, AZ](#)—the last public presentation he would ever give. I hope I capture Rob's spirit here because I felt his influence the entire time I wrote this.

Let's look at air balancing hoods and why they are the go-to test instrument for Air Upgrades.

A SHIFT IN APPLICATION

In the early 1970s, an engineer named [Ernie Shortridge](#) built the first air balancing hood. It would revolutionize the testing and balancing

industry. The balancing hood boiled down measurements that used to take 15 to 30 minutes to just a few seconds. Its ease of use led to the balancing hood quickly becoming a trusted test instrument for commercial air balancers.

However, there was a shift in its application taking place. An air balancer named Rob Falke started using the balancing hood for something more. He transitioned the hood from air balancing and diagnostics to customer education and sales.

Rob used the balancing hood to make air visible to his customers. Remember this principle. It is one reason an air balancing hood is crucial to selling and performing [Air Upgrades](#).

A balancing hood allows you to show the difference between what is and what should be. You can also use it to help you and your customers visualize airflow. They connect the dots about why customers have uncomfortable rooms and what it will take to fix them.

You and your customers can make the right decisions with the correct information. However, before making the right decisions, you must know how to use a balancing hood.

BALANCING HOOD BASICS

You can use a balancing hood for supply registers or return grilles. It measures a series of velocity readings through a grid in the hood's base. The velocity readings are then averaged and multiplied by the hood's base opening area to calculate an airflow reading. The calculated airflow in cfm (cubic feet per minute) appears on the balancing hood display.

The formula a balancing hood uses to calculate airflow may look familiar.

It's **Area X Velocity = CFM**.

Most air balancing hoods are simple to use. As

I helped Rob assemble that hood, his first instructions were, “**cubba da ho and mash de button**” (Cover the hole and press the button).

Once you master the following steps, you will also be on your way to knowing how much air is really moving through a register or grille.

- **First:** position the hood, so it covers the grille or register completely. Rock the hood away from you to ensure a tight seal over the register or grille before taking your reading
- **Second:** allow the airflow reading on the hood display to stabilize
- **Third:** press the button on the hood to record an average airflow
- **Fourth:** record the measured airflow that shows the display screen.

As with any instrument you use, understand that every balancing hood has some limitations. Some of the most common balancing hoods read airflow over 30 cfm, but any reading less than this will show a zero on the display.

The maximum airflow limit that most balancing hoods can read is 2000 cfm. Make sure you read the instruction manual for your hood. Know

its limitations and how to best use it.

HOW MANY BOXES OF AIR WOULD YOU LIKE?

Once you have confidence in your ability to use an air balancing hood, it's time to use it to create a customer experience like no other. As you use the hood to teach your customers about their HVAC system, it becomes a differentiator. It helps you stand out.

For the hood to work most effectively with a customer, there must be pain. Getting your customers interested is much more challenging if there's no pain. Your questions often reveal pain points. Some are obvious. Others are not. Consider how doctors ask you, “Where does it hurt?”

Chuck Worley of [Worley's Home Services](#) in Yorktown, VA, has one of the best questions I've heard about getting to pain points. He asks his customers where they would like another thermostat in their home. The answer often reveals the most uncomfortable room and an opportunity to use the balancing hood.

This approach to questioning changes the conversation. It moves the discussion beyond equipment to the system and the repairs necessary to correct any problems. Another benefit is this process puts the customer in control of their buying decision instead of being at your mercy. They are in control. **They decide** based on data from **their investment**.

Before you take the



first airflow measurement with a hood, you need a target. An airflow measurement without one is useless. That's because there is no context for the reading.

NCI teaches a quick and easy way to estimate room airflow in our [Duct System Optimization](#) class. It helps the customer set airflow targets and then see how close the balancing hood measurements are. The entire process is fun and engaging. Contact me for a single-page report and procedure if you want to learn more about estimating room airflow.

Once you set the airflow target, it's time to let your customer discover a new side of their HVAC system. It's one that few in our industry look at – **delivered airflow**.

THE EXCITEMENT OF DISCOVERY

Your best use of a balancing hood is when you don't use it. That's right. Instead, **let your customer measure room airflow**. Put the hood in their hands and let them see how much



Let customers use airflow hoods. This puts them in control. It changes the conversation and allows them to make smart decisions.

airflow is coming into their problem room. Their responses are the best, so look for them. I've seen everything from puzzled looks to frustration. Be ready for anything.

After the first response, there's a transition you'll notice. You'll see the customer's excitement of discovery as they become a detective in their home. They realize they finally know why they're uncomfortable. You also realize they know more about their duct system than 95% of your competitors.

Keep the education process and explanations simple as you work with your customer.

Don't try to sound smart, clever, or techy. Remember, it's about them, not about you. If you do your job well, you'll get the sale. Once they buy, you can fine-tune your room airflow design values with more accurate, industry-approved design methods.

TRUST BUT VERIFY

The balancing hood has many uses, so don't limit it to sales. Remember the original use of a balancing hood? It was for diagnostics and balancing. You should still use it for these original purposes.

Use the balancing hood in air diagnostics to uncover hidden obstacles in a duct system. We've found a lot of duct systems that looked great from the outside. However, static pressure and airflow readings identified hidden issues invisible from the exterior.

An eye-opening way to use a balancing hood is to verify your work. You can assure your designs operate as intended and show improvements from your Air Upgrades.

My first experience with this process was uncomfortable. We found issues

in our installations that we had to correct before we could go out and repair other duct systems.

Show your install teams how much of an improvement the hood can measure on their duct repairs. It blew my guys away when they saw the results. It surprised them how much more airflow they could get from a flexible duct just by straightening and supporting them correctly.

Your install teams will see the value of their work and understand the difference they can make to a customer's comfort.

Finally, share your results with customers. Transparency breeds accountability. Hold your installers accountable to you. They will hold themselves accountable to each other. And your customer holds you accountable for your promises. That's a scary place to be if you have something to hide.

You create transparency when you



use the right tools, properly train your team, and make the customer part of the solution. You'll never need to worry about bad results. Can your competitors say that? **NCI**

David Richardson at NCI Summit 2022



This article is based on a presentation given by Rob Falke at National Comfort Institute's **2022 High-Performance HVAC Summit** in Scottsdale, AZ. David Richardson presents it here in memory of Rob, who passed away in May.

This session was titled, "*Balancing Hoods: The Go-to Test Instrument for Air Upgrades.*"

In this article, David shares how airflow hoods allow you to be more accurate in your room airflow calculations, but

also how it is a superb sales tool where you can get the customer involved.

If you didn't attend this year's Summit, this article should give you the key highlights of what Rob originally shared with those who were there.

Be sure to mark your calendars for the **2023 Summit, from April 16-20, 2023 in Branson, MO.**

David Richardson is NCI's director of training. You can reach him at [ncilink.com/ContactMe](https://www.ncilink.com/ContactMe) with any questions.



New
AND IMPROVED
TRAINING COURSE!



LARGE COMMERCIAL Advanced Air & Hydronic Balancing Certification

Learn the Principals of Quality Testing, Adjusting, Balancing, & System Diagnostics

This week long course is NCI's most advanced air and hydronics balancing class.

Experienced commercial balancers seeking advanced air and hydronics training will learn how to diagnose and balance larger and more complex HVAC systems.

You'll learn more than 60 practical procedures that ensure systems will be tested and balanced with integrity, accuracy, and repeatability of the test results.

After four days of advanced, intensive training where we review the principles of quality testing, balancing, adjusting, and system troubleshooting there are optional certification exams available on the fifth day to achieve NCI's Advanced Air and Hydronic Balancer certification.



**The next Advanced Air
and Hydronic Balancing
Certification class:**

SHEFFIELD LAKE, OH

DATES: October 31 - November 4, 2022

TIME: 8:00 a.m. - 5:00 p.m.

**LOCATION: NCI Training Center
4270 Lake Road • Sheffield Lake, OH 44054**

ncilink.com/AdvAir

**Register today for NCI's Advanced
Air and Hydronics Balancing.**

We look forward to seeing you in
NCI's Advanced Air & Hydronic
Balancing training!

HURRY!
**Limited
seats are
available!**

Learn More About NCI's Advanced Air & Hydronics Balancing!
NationalComfortInstitute.com • 800-633-7058

Selling to New Prospects *Versus to Existing Customers*

When it comes to selling to homeowners, salespeople are selling to new prospects or existing customers. There are valid reasons for selling to both.

New prospects offer the opportunity to serve a new home that is full of potential. This can lead to increased market share and a new referral resource.



Existing customers offer the opportunity to elevate your level of service, expand your relationships, sell more products, plus solve longstanding problems. Existing customers often cross-pollinate with other services you offer, with a higher probability of buying and spending more money. In other words, existing customers should never be taken for granted in favor of new prospects.

While new prospects may offer new revenue potential and the allure of a large purchase, there are no guarantees they will buy anything. While you invest money and time chasing prospects and not paying attention to existing customers, don't be surprised if those current customers leave you. Why? They may feel indifferent toward your company, or another company poaches them by offering to solve problems you miss.

Plus, if you choose not to offer high-performance products and services to pesky problems that present a lower-revenue opportunity on the surface, you miss the chance to turn those small money fixes into larger income projects. Such longer-term scenarios can help your customer build their perfect home environment over time.

SALES SHOULD BE LIKE CONSISTENT AT-BATS

In baseball, you cannot always swing for the fences, or you end up striking out more often and hitting fewer home runs. However, if you consistently put the bat on the ball, you will get on base more, drive in more runs, hit your fair share of home runs, and win more games.

In-home sales work much the same. The customers you serve consistently can eventually turn into a consistent string of base-hit sales, home run sales, or a referral to more base hits and home runs.

COST STRATEGIES

Regarding the effort to sell prospects versus customers, prospects require more marketing dollars to convert into a customer. High-performance home service contractors report the average cost to create a prospect can average \$400. That cost increases to an average of \$600


 WE OFFER
SOLUTIONS

to convert the prospect to a buying customer.

These costs stem from expensive marketing strategies that include direct letters, radius mailers, billboards, radio, television, over-the-top streaming, digital marketing, newspaper and magazine branding, direct response ads, and more.

Existing customers, on the other hand, cost very little to resell. Most companies can flip an opportunity to sell high-performance services from an email, text, phone call, postcard, letter, tech handout, newsletter, service visit, etc., each of which costs only pennies to a few dollars.

Existing customers also offer low-cost opportunities to create new prospects and customers through yard signs, branded homes (decals, grocery bags, and other in-home branded materials), referral rewards, mailbox/door hangers, as well as trucks (rolling billboards) in neighborhoods.

APPEALING TO BOTH CUSTOMER TYPES

How can you appeal to both prospects and customers to drive high-performance work?

Most HVAC contractors offer specials to drive business if weather conditions are not doing so. High-performance contractors realize that while special promotions can work, it is far better to be special and **stand out** rather than **fit in**.

These contractors promote their unique people, protocols, products, and processes to pinpoint and correct comfort problems, highlighting that homeowners do not even have to replace their equipment in many cases! Their custom solutions are

usually easier, quicker, and cost less than they think.

You do this by pointing out that you are the **ONLY** contractor in your area qualified and certified with the proper tools, training, and technology to diagnose and correct these annoying issues that plague customers' lives.

Taking the "House Doctor" approach allows your company to be a premium service provider for the discerning homeowner with distinctive tastes who desires better quality, peace of mind, and a higher standard of living.

PAMPER YOUR CUSTOMERS

In this economy, with prices soaring and inflation causing mortgage rates to rise, people stay in their homes and invest in making them the way they want. Many such homeowners wish to be catered to with unique, innovative, problem-solving remedies. Many want pampering with extraordinary service and a caring attitude. In other words, provide an impactful life experience that shatters the expectations.

Most homeowners want value, affordability, and less risk. They want contractors to do what they say they are going to do. It's in your best interest to be the professional the customer needs you to be and do the right things the right way the first time. Then guarantee your work and customer happiness 100% in writing or provide a full refund if you fall short.

Be the company that says: "*Let us help make your home feel as good as you and your family deserve for your largest investment.*"

HIGH-VALUE COMFORT SPECIALISTS

Position your company as the

high-performance, high-value solution specialist, and the local expert at fixing unsafe, unhealthy, uncomfortable, energy-wasting homes. Talk about the common problems most homeowners experience that other contractors neglect in favor of chasing equipment sales. Address pre-existing conditions that led or will lead to equipment failure. Some problems you should speak to include:

- Rooms that get too hot or too cold
- Can't maintain consistent comfort
- Uneven temps between areas
- Equipment cycles frequently or runs all the time, and the house is still not comfortable
- Poor temperature control
- Occupant thermostat wars
- Drafts or stuffiness
- Not enough airflow
- Noisy equipment or airflow
- High utility bills
- Clammy, muggy, musty, etc.
- Too humid in summer
- Too dry in winter
- Odors in the house when the system runs
- Poor air quality
- Dusty
- People suffering from allergy, asthma, respiratory conditions
- Equipment problems since the equipment was installed or since you moved in
- Frequent equipment breakdowns
- Other contractors say problems cannot be fixed.

As a high-value, high-performance comfort specialist, you can help homeowners understand why new equipment won't solve their problems and may make matters worse. Quick fixes can damage their investment.

Temporary fixes usually address a

symptom rather than providing a permanent solution to a root cause. The High-Performance approach of testing and measuring can transport occupants from purgatory to paradise when it comes to living a good life in a safe, healthy, comfortable, energy-smart, responsible, and sustainable home.

MORE THAN CUSTOMER BENEFITS

As you can see, the benefits to the customer are many, but being a high-performance HVAC company also benefits the contractors and their co-workers. Most typical HVAC contractors wait for the weather to generate service calls to create equipment leads and sales.

Then they sell standard entry-level products or promote high efficiency and advanced technology equipment as a panacea for comfort and efficiency problems without addressing the duct system or building envelope.

Such a limited business strategy provides for erratic workflow, revenue, and profitability, which creates work overload and shortages.

Neither of these circumstances are conducive to maintaining steady work for co-workers and may even result in layoffs in slow times or people quitting when they are expected to put in overtime to cover for staff shortages.

THE SERVICE DIFFERENTIAL

High-performance contractors have a better way to leverage weather to drive business year-round. They know it's not that customers stop spending money during the shoulder seasons. It's that other contractors have nothing to offer.

High-performance contractors have an arsenal of products and services

to keep their entire team working, which allows for a shared workload, so no one is overwhelmed. This means co-workers can still live a quality life with full-time employment.

Following below is a list of services that can help convert an HVAC contractor into a High-Performance Contractor. These services help customers create their perfect home environment by combining HVAC, IAQ (Indoor Air Quality), and both home/system performance.

This creates several new revenue streams to fill in seasonal gaps and expand scopes of work to more significant income. These longer-term jobs typically have no competition and are highly profitable:

- Insulation (all types & areas of the home)
- Envelope air sealing
- Windows
- Attic/crawlspace encapsulation
- Attic hatch insulator
- Duct repairs
- Duct renovation
- Duct replacement
- Duct sealing
- Duct insulation
- Duct cleaning
- Filtration
- Humidification
- Dehumidification
- Air purification
- Home performance testing
- System performance testing
- System performance monitoring
- Air quality testing
- Air quality monitoring.

High-performance HVAC contractors know that HVAC and IAQ equipment will only work as effectively and efficiently as the design, installation, duct system, equipment-tuning, and



building envelope allow.

They know that installing high-efficiency advanced-technology equipment on a poor duct system and in an archaic building envelope is a recipe for wasting energy more efficiently (the equipment is more efficient, but the energy bills will not benefit from its full potential) and shortening the life of that equipment.

Their creed of doing no harm, making things better, leave people happy would never allow them to do so.

The above reasons are why high-performance contractors relentlessly pursue existing customers over new prospects. When these contractors find problems that an antiquated industry has long neglected, they cannot turn their backs on the suffering people.

Instead, they apologize on behalf of the industry and commit to being better by genuinely serving the people. 



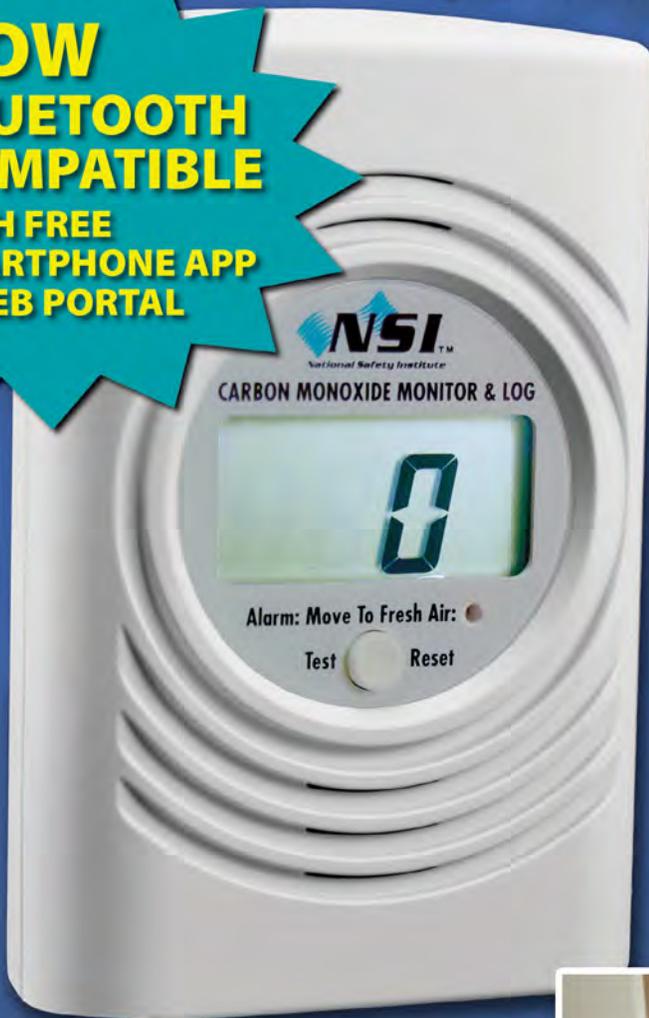
Drew Cameron is the founder and CEO of [Flow Odyssey](#) (formerly HVAC Sellutions) and president/co-owner of Energy Design Systems, LLC. The combination of his two companies creates an industry alliance providing leading-edge

technology with complementary marketing and sales consultative support, recruiting, training, and more. Drew is an HVAC Industry-recognized author, speaker, educator, coach, consultant, software developer, philanthropist, and an International Consultant Award Winner. Contact Drew at 610-745-7020 or drew@flowodyssey.us.

The Only
LOW-LEVEL CARBON MONOXIDE MONITOR

Sold Exclusively Through Professional Contractors
Certified by National Comfort Institute

**NOW
BLUETOOTH
COMPATIBLE**
WITH FREE
SMARTPHONE APP
& WEB PORTAL



**THE NSI 6000 OFFERS
REAL PROTECTION:**

Protection for all age groups and situations, especially infants, babies, the elderly, and highly sensitive people. Other monitors barely provide minimal protection for healthy adults.

Uses the same electrochemical sensor technology found in professional CO analyzers. They're calibrated using CO, not electronic guesswork!

Sell one or more on every service call and with every service agreement!

**CALL ABOUT OUR
RESELLER PROGRAM
AND START OFFERING
THE SAFETY AND PEACE
OF MIND THAT THE
NSI 6000 PROVIDES TO
YOUR CUSTOMERS NOW!**



800 633-7058 • NCILink.com/NSI6000

NCI Preparing for Summit 2023

NCI's **High-Performance HVAC Summit Week** is slated for April 16-20, 2023, in Branson, MO. The event will take



place at the [Cha-teau on the Lake Resort and Spa](#), just minutes from downtown Branson on the shores of beautiful Table Rock Lake.

The 2023 theme, "Service: High-Performance Starts Here," focuses on building the foundation of a High-Performance HVAC business through your service department. The general conference and breakout sessions will drill down into the exact steps for building a solid maintenance agreement program.

In addition, sessions address generating profitable leads from your service and maintenance visits through testing and diagnostics, then handing them off to ensure high closing rates and happy customers.

Session titles include:

- Testing and Diagnostics to Generate Leads for Replacements and Upgrades
- Keep Customers Safe and Generate Leads with CO Safety and Combustion Testing
- Service Lead Hand-off to Sales and Follow-through
- Setting Up A High-Performance Maintenance Agreement Program
- High-Performance Hands-on Diagnostics in Performance Town 2023.

In addition, NCI will feature special General Sessions on this topic, as well as partner breakouts, our first-ever **Measurement Technology Pavilion** featuring our test instrument and software

partners, and so much more!

Registration and hotel reservations will be open soon, so mark your calendar for Summit Week 2023 - April 17-20. We can't wait to see you there!

New Static Pressure Testing Package

National Comfort Institute (NCI) is pleased to announce a new member **Tech Tip** download called, "Start Here on Your Path to High Performance." This six-page package will help demonstrate how to perform total external static pressure testing as well as how to select the right equipment. The PDF includes links to articles to help you implement testing into your business.

Links will point you to a video, "Total Static Pressure: A Step-by-Step Guide," presented by NCI's David Richardson. In this video, David explains total external static pressure, where to take measurements, and what instruments to use.

Another link will take you to the NCI Store, where you'll find static pressure test port installation kits necessary to take correct tests and recommended manometers (digital and analog).



Other links will take you to articles that provide more detailed information on static pressure measurements, diagnostics, and how to avoid four basic static pressure mistakes.

And last, but not least, the PDF contains detailed illustrations showing where to install test ports on several

different gas-fired furnace equipment types and configurations.

For a limited time, register at ncilink.com/SPTest to download this PDF.

New High-Performance Talk Forum

Great News! NCI recently launched its new **High-Performance Talk Forum**. It is the only forum dedicated specifically to the High-Performance HVAC contracting method. Here contractors can



talk to their peers about everything from specific testing issues to tips on how to implement some aspects of the performance approach into their businesses.

Right now, **High-Performance Talk** is divided into four key areas:

- Welcome
- Airhead Avenue
- CO and Combustion Court
- NCI Member-Only Forum.

Each area can contain an unlimited number of pertinent topics and discussions started by you, and you can follow (or subscribe) to any topics you want.

Though this forum is moderated and there are a few rules – it is a user-driven platform and will be as useful and "happening" as you make it.

So why not give it a try? You can visit highperformancetalk.com and check it out. If you'd like to post on the site, you will have to register. That is easy enough to do. Just [click here](#) and fill out this basic form.

Registration is free, so it should be simple to sign up today. We look forward to seeing you online at **HighPerformanceTalk.com** today.

For information on advertising in

High-Performance HVAC Today

email: advertising@hvactoday.com

TO YOUR *Success*

The #1 gifting service for home service companies

CUSTOMIZED GIFTS & AUTOMATION

WWW.TOYOURSUCCESS.COM

Simplify Your Pricing!

THE **NEW** **FLAT RATE**

info@menupricing.com

Baker
Distributing Company

ARE YOU #2023READY?

Stay in the know at Bakerdist.com/doe-regulations

Here's What's Changing

The Department of Energy (DOE) is increasing the minimum efficiencies for central air conditioners and heat pumps. The testing procedures for determining those efficiencies are changing as well.

GRANDAIRE
Heating & Cooling Products

NOW is the time to check out NCI's fall training schedule and plan ahead!

GO TO ncilink.com/ClassSchedule or call **800.633.7058** for a class near you!

Advertiser Index

Arzel Zoning Technology, Inc. www.ArzelZoning.com	5
Baker Distributing Company www.BakerDist.com	24
Duct Saddles www.DuctSaddles.com	9
Dwyer Instruments, Inc. www.Dwyer-inst.com	10
Evergreen Telemetry www.EvergreenTelemetry.com	14
Goodman Manufacturing www.GoodmanMfg.com	27
Lazco Corp. www.LazcoCorp.com	25
R.E. Michel Company www.REMichel.com	13
Southern California Edison www.on.sce.com/hvac.com	2
The New Flat Rate www.TheNewFlatRate.com	24
To Your Success www.ToYourSuccess.com	24

To Subscribe to High-Performance HVAC Today:

ONLINE: Visit HVACToday.com/subscribe for a FREE digital subscription.

PRINT: 1 year/\$72; single copy \$7. Canada: 1 year/\$92; single copy \$9. Payable in advance with U.S. funds. Prepaid subscriptions may be sent to: High-Performance HVAC Today, PO Box 147, Avon Lake, OH 44012. Phone: 440-949-1850; toll free 800-633-7058; or visit HVACToday.com/subscribe to order online.



HIGH-PERFORMANCE HVAC TODAY

Publisher

Dominick Guarino

Editor-in-Chief and Associate Publisher

Mike Weil

Art Director

Judy Marquardt

Online Development Director

Brian Roseman

Circulation Manager

Andrea Begany-Garsed

Go to ncilink.com/ContactMe with your comments and questions.

Turn Your Surplus & Used HVACR Equipment Into WORKING CAPITAL!

SAVE 25% - 50%

on the manufacturer brands that you are currently selling.
WE WILL QUOTE ANY PROJECT WORLDWIDE.

HVAC EQUIPMENT SPECIALS:

- 3 New Trane 115 ton Gas Roof Tops 460 volt Top Discharge \$77,000
- 1 New Trane 120 Trane Down Flow Gas Roof Top 460 volt \$77,000
- New Trane 120 ton Chilled Water Air Handler \$18,000
- New Daiken 70 ton 6 stage Cond Unit 230 volt 3 phase with Matching Coil \$22,000
 - Mini Split Sale: 9k \$440 • 12k \$570 • 18k \$620
 - 18 K Multi Zone \$640 • 24k Multi Zone \$740

Lazco Corp.

www.lazcocorp.com • Fax: 866-437-3531

Send your Requests to buy or Sell to Lazcocorp@gmail.com

LAZCO CORPORATION Buys & Sells Surplus... HVACR EQUIPMENT

- Compressors
- Controls
- Chillers
- Cooling Towers
- Roof Tops
- Boilers
- Generators
- Liebert A/C Units

Why NCI Only Sells CO Monitors to Professionals



Dominick Guarino is publisher of *High-Performance HVAC Today* magazine and CEO of National Comfort Institute, Inc. He can be reached at ncilink.com/ContactMe

Consumers often try to buy NSI 6000 low-level CO (Carbon Monoxide) monitors directly from National Comfort Institute (NCI), but we have a steadfast rule that these monitors are only available through professional resellers.

There's no doubt we could sell more product if we marketed and sold directly to consumers. But there are some very important reasons why, for more than 20 years, we only sold CO monitors through trained professionals.

MONITOR VERSUS ALARM

First, it's important to understand the difference between a low-level CO monitor and a CO alarm that you can purchase at any retail outlet.

A UL-Listed CO alarm does not sound until unsafe levels of 70+ ppm (parts per million) are present for up to 3 ½ hours. By then most people already have been exposed enough to feel the effects of CO poisoning.

If consumers didn't have a local HVAC professional to call, they would likely contact emergency services. Most first responders would have no idea what to do, and chalk it up to a false alarm.

What's even worse is if the level drops below 70 ppm the alarm will reset for up to another 3 ½ hours! That means your customers could be living in 69-70 ppm without ever getting an alarm.

At 70 ppm they may start to feel lightheaded, nausea, or even have convulsions. The symptoms are worse in young children and the elderly. Any space should be evacuated at ambient CO levels of 70 ppm or higher.

PROFESSIONALS DO IT RIGHT!

The NSI 6000 begins reading 5 ppm after 30 seconds. The first audible alert is at 15 ppm after five minutes of exposure to CO. While it may not be cause to evacuate, the home or building should be tested by an NCI-certified technician.

These techs are trained with the correct equipment to safely diagnose and pinpoint the source of CO. They then work to correct the issue so the combustion appliance(s) can run safely.

Customer education is the key to being that first line of defense against CO poisoning and the first phone call the homeowner makes.

When a certified technician first installs an NSI 6000, he or she explains the difference between the monitor and a store-bought alarm, and how the customer should respond at each level of CO in the home, if the situation does arise.

MOST FIRST RESPONDERS AREN'T TRAINED IN LOW-LEVEL CO

If NCI were to sell direct to consumers, it would be difficult to teach them the difference between low-level monitors and standard alarms. If they didn't have a local professional to call, they would likely contact emergency services. Most first responders would have no idea what to do, and chalk it up to a false alarm.

In addition, certified professionals know where to place the low-level monitor, in which room -- and in the correct location.

They also spend the time to educate their customer on how it works and what to do at the different alert levels.

For these reasons, NCI will continue to only sell through trained professionals. More information on the NSI 6000 is available at nationalsafety-instruments.com. If you'd like to learn more about NCI's reseller program, [click here.](#) 

Connected? Goodman has a solution!

Introducing the easy Goodman® trifecta



For more info visit www.goodmanmfg.com/products/controls/goodman-nest

*The full text of Goodman limited warranty on this product may be viewed at www.goodmanmfg.com/products/controls/, or may be requested in paper by contacting us at 19001 Kermier Road, Waller, TX 77484. Our continuing commitment to quality products may mean a change in specifications without notice. ©2022 Daikin Comfort Technologies North America, Inc.

Are you ready for a new career with an organization with a true mission to improve the HVAC Industry?

**NCI is
HIRING!**

As nationwide demand for our advanced HVAC classes grows **National Comfort Institute** continues to expand its training team.

We are actively seeking candidates for both full-time and part-time instructor positions!

Qualifications:

- Extensive field experience with NCI airflow and combustion testing and diagnostics, and air balancing.
- Strong vocation and desire to teach
- Past HVAC training experience a plus!
- Willing to travel and teach multi-day classes at locations around the country
- Commercial HVAC Diagnostics, Testing and Balancing experience a plus!

We offer great salary and benefits including healthcare, 401K program and more!



**Click Here To Inquire About
Joining the NCI team
ncilink.com/instructor**

Cutting-Edge Training

From The Industry Leader In High-Performance Contracting™



Think you know airflow? Think you know carbon monoxide safety? Think you know how to solve your customer's comfort issues? Be sure. Don't guess. Find the training and expertise you need from the National Comfort Institute (NCI). Only at NCI will you find certification courses like Duct System Optimization and Combustion and Carbon Monoxide Safety, taught by leaders and innovators in the HVAC industry. Find out why NCI says, *"If You Don't Measure, You're Just Guessing!"*™ Visit the link below or call **800-633-7058** to find classes near you.

UPCOMING NCI TRAINING SCHEDULE

PUBLIC LIVE TRAINING

Duct System Optimization and Air Balancing Certification Program

October 4-6: Carrollton, TX
October 11-13: Lawrenceville, GA
October 18-20: Sheffield Lake, OH
October 25-27: Tampa, FL
October 25-27: Columbus, OH
November 1-3: Orlando, FL
November 1-3: Missoula, MT
November 8-10: Las Vegas, NV
November 29-December 1: Sterling, VA
November 29-December 1: Golden Valley, MN

Combustion Performance and Carbon Monoxide Safety Certification Program

October 11-13: Louisville, KY
November 1-3: New Hudson, MI **SOLD OUT**
November 8-10: Austin, TX
November 8-10: Knoxville, TN
November 15-17: St. Louis, MO
November 15-17: Columbus, OH
November 29-December 1: Lenexa, KS

Residential HVAC System Performance and Air Balancing Certification Bundle

October 11-13: Glen Burnie, MD
October 18-20: Salt Lake City, UT
October 25-27: Mobile, AL
November 8-10: Monroeville, PA
November 15-17: Marietta, GA

Commercial System Performance Program

October 18-20: West Allis, WI

Advanced Air & Hydronic Balancing Certification

October 31-November 4: Sheffield Lake, OH

Performance-Based Selling™ Bootcamp

November 8-10: Pompano Beach, FL

Hydronic Testing, Adjusting, & Balancing

November 29-30: Sheffield Lake, OH

*SCE SPONSORED LIVE TRAINING

Combustion Performance & Carbon Monoxide Safety Certification Program

October 11-13: Los Alamitos, CA

Duct System Optimization & Air Balancing Certification Program

October 18-20: Los Alamitos, CA

*SCE SPONSORED LIVE TRAINING (Cont.)

Commercial Air Balancing Certification Program

October 25-27: Tulare, CA **SOLD OUT**
November 16-18: Los Alamitos, CA

Residential HVAC System Performance and Air Balancing Certification Bundle

November 1-3: Los Alamitos, CA

Test and Certify Ventilation Systems and Economizers Certification Program

November 8-9: Los Alamitos, CA

**TECH CLEAN CALIFORNIA TRAINING ncilink.com/TECHCleanCA

Residential HVAC System Performance and Electrification

October 18-20: Paso Robles, CA
November 29-December 1: Indio, CA

HVAC Design Redesign

December 14-16: Paso Robles, CA
December 19-21: Indio, CA

* NCI training sponsored/subsidized by Southern California Edison (SCE) for qualified local contractors.

** NCI training sponsored by TECH Clean California for qualified local contractors.



Visit NCIlink.com/ClassSchedule to view the latest schedule.