

The NEBB Professional

2017 – Quarter 3



TAB

S&N

CPT

RCX

FHT

BET

BSC

■ COVER STORY

The Founding of NEBB: It All Started with TAB

- 2018 Annual Conference Details
- NEBB Training Center Opens
- 2017 Spring and Fall Seminar Schedule
- New Instrument Requirement Lists
- YPN: Building a Solid Foundation
- Certification Deadline Reminder

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The NEBB Professional

2017 – Quarter 3

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8575 Grovemont Circle, Gaithersburg, MD 20877

Tel: 301.977.3698 | Email: communications@nebb.org



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President's Message: New Technology and Training Center Are Highlights of 2017 Accomplishments

By: Jim Kelleher

This has been an exciting year with plenty of good news about NEBB and our programs coming out all the time. I want to offer a huge thank you for all those who support NEBB. Being NEBB's president allows an even deeper understanding and appreciation for the level of support and technical contributions made by our volunteers and staff each and every day.

As announced at the 2017 NEBB Annual Conference, the Gaithersburg office has been expanded to include a training center. The first phase classroom build-out went extremely well and is ready to support discipline seminars this fall. The second phase will include a functional environment outfitted with equipment and instrumentation to support integrated hands-on training. We are currently working with our discipline committees to develop this aspect of the center. Continue to follow our progress as these hands-on training opportunities and seminars are sure to benefit you and your company.

Certelligence has passed its first year roll out and is showing a benefit to our affiliates. Approximately half of NEBB's firms utilized this electronic process when submitting their 2017 recertification applications. This interactive data base provides firms and individuals a more direct means of interacting with NEBB for (re)certification applications and registering for training events. The second half of NEBB's firms will commence their re-certification processes this fall. Thank you to all those who provided suggestions and comments on ways to improve our Certelligence applications process. We appreciate the input.

NEBB's Standards Council has begun work on their third and fourth ANSI projects assigned by the NEBB Board of Directors. NEBB is using the ANSI process in the development of a Cleanroom Procedural Standard, and new to NEBB, the development of a Compounding Pharmacy Standard. Both of these are challenging projects and we look forward to seeing the results our fine volunteers working on these respective project sub-committees produce.

The Certification Board has been instrumental in redefining our examination and certification programs. And that has continued with vigor. The level of detail that goes into preparing each program for a proper application and examination process is daunting. Maintaining so many programs in so many disciplines, and getting it right is the direct result of the hard work the Certification Board and associated volunteers put into the process.

Thank you again to all who volunteer regularly keeping our programs at the top of our industry. NEBB is strong because of our affiliates and our volunteers.

Jim Kelleher
NEBB President 2017



President Elect Message: Oh, The Places We're Going!

By: Don Hill

With NEBB, you never know what's around the corner since we always have something new in process. Sometimes the "new" happens fairly quickly, and other times, we wait for the details to fall into place.

Such is the case with NEBB's new training center, NEBB Tech. Those who have been around for a while remember our first venture into finding a standardized training location. Our first NEBB Tech was located in Arizona with Andy Nolfo, our Technical Advisor at the time, holding down the fort, making sure the facility ran smoothly. NEBB Tech started in 2003 and the doors closed in 2010 – with seven great years of experience under our belts. During and after that time, NEBB Leadership learned much about developing a training center, staffing it and ensuring the programs produced high quality training to augment the knowledge, skills and abilities required for approved Candidates seeking certification in any NEBB discipline.

We never lost our vision for NEBB Tech, but realized when again venturing down that road, we needed to learn from our past, incorporate the positive, and take what we know best to create the new and improved NEBB Tech. Funding, sourcing, planning, scheduling – everything required careful planning and a wise use of your association finances. What helped was having an ambitious Staff that could be hands-on and onsite to make the vision become a reality.

"A little progress each day adds up to big results." Certainly, that's how we feel about this training expansion. Planning for NEBB Tech has been in the works for months and we have a wish list from each committee to accommodate their specific requirements for training and education. During the Gaithersburg, Md office renovation conducted in late 2016, fortune smiled on NEBB. Two adjacent spaces to NEBB National became available which were the proper size and requirements needed to expand into a state-of-the art training center seating up to 36. Additionally, there is space for an updated hands-on training center for disciplines who require more intensive practical exams, such as TAB, BET, Sound, Vibration and others.

NEBB's Discipline Committees will conduct at least one of their training seminars yearly at NEBB Tech. Staff is doing recon on getting the best value at local hotels, transportation to and from the NEBB headquarters and preparing everything to make your experience great. And of course, exams will be conducted at the site, making the process even more streamlined for our Candidates, plus those attending NEBB Tech will have the opportunity to meet and work with our Staff.

At the core of NEBB, we are a certification agency, so everything we do is geared to educate and prepare our Candidates throughout the process of achieving their certification. NEBB Tech will definitely meet that challenge full throttle.

The maiden launch of NEBB Tech is the RCx-EB Training Seminar Exam in September 18-20, 2017. After that, a Sound and Vibration Seminar is slated for October 2017 and a series of seminars are already in the 2018 queue. Check out NEBB's website for detailed information. Consider sending yourself or staff members who are seeking certification to NEBB Tech to round out their study experience for certification. NEBB's training, given by experts in our respective fields, gives Candidates the well-rounded knowledge they need. That knowledge adds to their professional development experience and in the end, provides a better NEBB Professional or Technician.

Another goal of NEBB Tech is to have the ability to provide a week-long training session for several disciplines that is hands on. Many of us feel that giving the proper training to our technicians will allow us to cut them loose in the field sooner and reduce our firm's training time both in the office and in the field.

We're moving into the future, which right now, looks pretty bright.

Don Hill
NEBB President Elect 2018

The Founding of NEBB: It All Started with TAB

Todd Larson | ArchiText



In its 46 years of leadership in the testing, adjusting and balancing (TAB) of environmental systems, NEBB has evolved from America's premier TAB certification association to an international standard-bearer in many related facets of building utility/infrastructure efficiency: building systems commissioning (BSC), sound and vibration measurement (S&V); retro-commissioning (RCx); fume hood testing (FHT), cleanroom performance testing (CPT), and building enclosure testing (BET). NEBB's continuous development, revision and expansion of its standards manuals, course offerings, training sessions, and certification programs has made it the internationally recognized go-to group for assured quality in all of these disciplines.

The Early Years

It all began when members of the Mechanical Contractors Association (MCA) and Sheet Metal and Air Conditioning Contractors National Association (SMACNA) met on October 15, 1969, to create a TAB standards manual in reaction to members of a recently formed TAB organization overbidding for its services. The manual codified universal quality standards to deter underperformance and other irregularities in the field.

The next step was the establishment of a formal TAB certification program in another MCA-SMACNA joint meeting on August 20, 1970, to cast those standards in stone, apply them universally, and give TAB contractors visible credibility. The associations subsequently met in November of that year "to establish TAB standards...to set minimum standards of qualifications...to qualify our member contractors to meet the standards by education through a system of training centers across the country...to offer tangible assurance to specifying and awarding authorities of...competent performance...by certifying those qualified...and restoring the TAB work to the installing contractors."

Officially founded on March 26, 1971, the National Environmental Balancing Bureau (now simply known as NEBB) boasted six chapter areas by the end of the year: Georgia, Maryland, Missouri/Kansas, Texas, Washington, D.C., and Wisconsin. The association's first president was



Robert Miller

Robert B. Miller who served in that capacity in 1971, 1973 and 1975. Participation was open to all mechanical and sheet-metal installers and contractors that performed HVAC system testing, adjusting and balancing. In 1972, the 64-page first edition of the NEBB *Procedural Standards for Testing-Balancing-Adjusting of Environmental Systems* was published and sold for about \$4.00. The *NEBB Operational Guide* soon followed. The first NEBB national office was located within the offices of SMACNA in Arlington, Va. That fall, national written qualification TAB exams were developed and were taken by more than 136 individuals, and new chapters in Southwest Ohio, Kansas City, Philadelphia, Chicago, Detroit, and New Orleans came into being.



Steve Clark

"NEBB began as five guys who started it as an association of mechanical, sheet metal and air conditioning contractors," says NEBB TAB Committee member Steve Clark, vice president of Clark Balancing Ltd. in Milton, Ontario. "Now we have representation in not just the U.S., but also in Canada and Australia, and we have certified firms all over the world asking for training sessions in places like Thailand, India, Saudi Arabia, and the UK. Our international presence is our biggest milestone, which continues to grow."

National Recognition and More

To propagate the value of TAB certification through NEBB, in 1972 the association took out two full-page color ads in *Specifying Engineer*, *Consulting Engineer*, and *Building Operating Management*. The ads expressed NEBB's quality assurance mission and read in part: "The NEBB certification is a pre-qualification of a contractor's ability to do both the installation and the TAB work under the highest requirements."



An undated photo from the early years of NEBB.

He accepts responsibility for the whole job, and his performance is backed by the local NEBB Chapter. When a contractor brings in an outside specialist, he incurs higher costs... Other factors being equal, a contractor lacking TAB capability as required by project specifications must include a higher cost in his bid than does the TAB-qualified contractor..."

By 1973, NEBB was also making headway into academic circles. An article by hydronic systems instructor William J. Coad and air systems instructor Philip D. Sutherland at the NEBB Testing and Balancing School at Washington University in St. Louis stressed the HVAC contractor's responsibility to fully understand the system being installed so TAB services can be performed on the spot. "It is estimated that 80% of all problems relating to the proper operation of a system are caused by the lack of proper balancing and testing after the assumed completion of the installation... and it is the responsibility of the heating and cooling contractor to 'de-bug' the system... but it cannot be by a hit-and-miss method," observed Coad and Sutherland. "The procedures must be scientifically applied to achieve anticipated performance... [and] we would far rather write in our specifications that all testing and balancing be done by the installing contractor, than bring in a third party."

The following years brought more national NEBB publications, including the *Chapter Operational Guide* and the *National Directory of NEBB Certified Firms*. Construction Specifier published a Construction Specifications Institute monograph on "Testing and Balancing of Environmental Systems," which recognized NEBB as a model TAB agency. These publications lured firms who had lost business to "independent" balancing agencies in the 1960s and early 1970s back into the TAB field, now that they could apply the NEBB seal of quality to all of their work.

In 1977, the second edition of the NEBB *Procedural Standards for Testing, Adjusting, Balancing of Environmental Systems* was published with a new section on TAB equations in both English and metric units to make TAB standards more internationally applicable. Also appearing in 1977 was NEBB's first *Study Course for Testing, Adjusting, Balancing of Environmental Systems*. By then, NEBB's constituency encompassed 264 TAB Certified Firms, 339 TAB Qualified

Supervisors, and 29 chartered chapters, with more to come in Florida and Queensland, Australia, in 1981.

By 1982, the NEBB community had soared, due in part to NEBB's closer alliance with like associations, such as the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE), and NEBB's representation at the annual ASHRAE/ARI International Exposition and Trade Show and the Mechanical Contractors Association of America and SMACNA conventions. Growth motivated NEBB chapters to offer more training and recertification seminars, prompting updates in the *Operational Guide for Chapters* and the *Certification Requirements* brochure. Furthermore, NEBB was specified nationwide by most U.S. federal agencies and many large commercial organizations, prominent architects and consulting engineers, and CSI.

NEBB began a collaboration in 1984 with Tennessee Technological University in Cookeville when the university proposed to conduct an independent testing of field-measuring TAB instruments in its duct-flow laboratory to determine their accuracy according to NEBB criteria. A \$2,500 grant for this testing was secured in 1985. In addition, NEBB took out its first full-page ad in *Sweet's Catalog* on the value of employing NEBB-certified firms.

More new TAB-related publications and educational materials followed in 1986 including Bevirt's new edition of the *NEBB Testing, Adjusting, and Balancing Manual for Technicians* and its 40-page supplemental manual *TAB Mathematics and Equations*.



Jon Sheppard

Throughout the years, NEBB moved with the times by adding other disciplines (see future issues of *The NEBB Professional* for more on the history of these disciplines.) "Any time we add a discipline, it enhances the entire NEBB brand and broadens the scope of testing we can do for a facility," says TAB current committee chairman Jon Sheppard, a NEBB Certified TAB and Commissioning Professional at Atlantic Testing, a Virginia-based TAB/BSC/S&V specialist.

Other ways NEBB has extended its influence includes stronger alliances with other organizations such as the American National Standards Institute (ANSI). This 99-year-old non-profit accredits voluntary consensus manufacturing, production and other commercial standards affecting most business sectors, including NEBB-related equipment and services, to assure nationwide uniformity of standards for

optimal operational efficiency and safety, consumer health and environmental protection.



Andy Nolfo

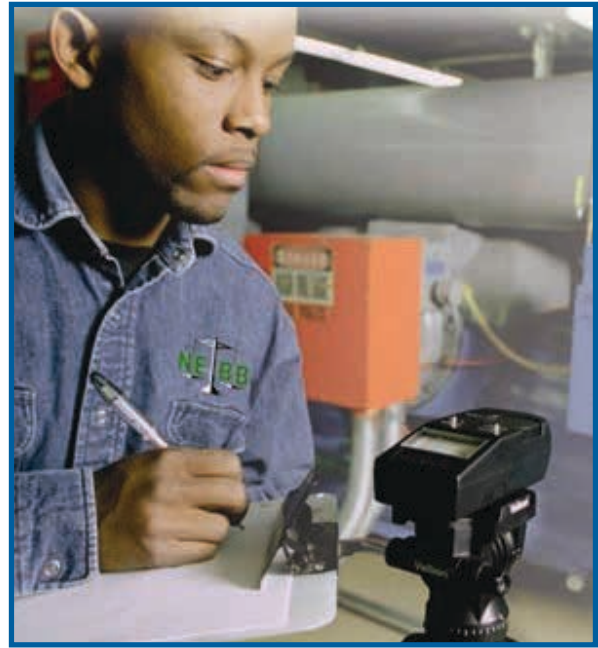
“By associating with ANSI, NEBB is moving in a direction to have more standards become ANSI-certified documents,” says TAB Committee member Andy Nolfo, a semi-retired NEBB-certified mechanical contractor with Murphy Company Mechanical Contractors and Engineers in St. Louis and Denver. “NEBB’s procedural stan-

dards and documents are now more in line with ANSI standards.” First proposed at NEBB’s 2014 Annual Conference in Ft. Lauderdale, Fla., the NEBB-ANSI alliance enables NEBB to receive ANSI accreditation for its certifications and standards so they have more national credibility.

The certification process for all disciplines improved with the establishment of NEBB’s Certification Board (CB) operating autonomously of NEBB to certify individuals. “Individual certification is separate from firm certification,” states Rick Farrington, Vice Chair of the Certification Board. “Individuals can achieve personal certification by following the prescribed course of action to become a NEBB Certified Professional, which includes meeting pre-requisite requirements, passing the various written and practical exams and adhering to the NEBB Code of Ethics. That certification stays with them for life as long as they remain in good standing.”

In late 2016, the TAB Committee and the CB’s Exam Development Committee created a new TAB CP and TAB CT Body of Knowledge (BoK), which defines the knowledge, skills and abilities required for that discipline. From the BoK, the EDC developed a new TAB CP exam using a variety of scientific and psychometric principles, including but not limited to item analysis and the Angoff Scoring process. These processes are used in the development of all NEBB professional and technical exams. The TAB Body of Knowledge is also used for developing new curriculum used to develop TAB training seminars.

“NEBB’s way of doing things in the past was to have committees develop seminars, then write and grade exams. With NEBB’s new certification processes, there is a division between training and certification which keeps the process unbiased. Everything we do is based around the Body of Knowledge,” says Sheppard. “TAB Instructors develop materials and provide teaching seminars that are based on the TAB CP or TAB CT BoK and the EDC writes exams based off the BoK. We’re all working from the same document so the Candidate receives consistent information.”



NEBB’s capitalization on digital and online technology advancements may have been its most significant milestone since 2001. “Digital instrumentation has gotten more accurate than the analog instruments we used to use, so many things are done wirelessly by computers and tablets, compared to writing on paper,” says Nolfo.

“We have online training and interactive training through apps on cellphones,” adds Sheppard. “We’re looking at additional ways to introduce training to certificants of NEBB through the use of technology.”

Cloud technology has quickened the certification and recertification process through Certelligence, a credentialing management system allowing all participants 24/7 cloud-based access to documents sent through it. “Previously, firm recertification in testing, adjusting and balancing was a long process with lots of paper, and if there was an error, it was back to square one,” says Clark. “Now we upload everything into Certelligence, the chapter gets the notification and sends it to the technical committee chairman, who sends it back, then the chapter forwards it off, and it’s approved. It’s a streamlined process.” First announced in *The NEBB Professional* 2016, Quarter 1, Certelligence went live in early 2017.

The Discipline’s Future

As of this writing, there are collectively 2,582 firms and individuals NEBB Certified in TAB. So what’s on the horizon for the TAB discipline? Nolfo sees online engagement as NEBB’s educational wave of the future. “A lot more seminars will be done online—webinars, Internet broadcasts, self-directed learning courses, training modules—as opposed to everyone

flying into a location in Atlanta and meeting in a hotel like what we did in the 1970s," he states. "We have a start in it, but there's a lot more things that could be done. It'll take a lot of time to develop them."



Don Pittser

Web-based TAB reporting, or entering TAB data and generating reports through the Internet, is also changing the industry. "You enter data on iPads and Android devices so you have instant calculations, checkmarks, and checks and balances for improperly spelled words or improperly entered data," said TAB Committee member Don Pittser of JEDI Balancing, Inc., in Erie, Colo. "You upload the data via Wi-Fi, and anywhere in the world your management software on any computer on Internet Explorer can review and download reports. Now our company can send out our TAB reports before the technician can get home from the job, if he uploads the reports at the job site via his cellphone Internet connection."

But cyberspace won't totally replace the classroom or the physical plant. Now in development is a new training and

education center, NEBB TEC at NEBB's headquarters in Gaithersburg, Md., scheduled to be completed in late 2017. NEBB TEC will provide seminar attendees with the opportunity to view demonstrations and partake in hands-on learning all in one location. "We'll have air rigs, water rigs, and direct digital controls systems," says Sheppard. "We'll also have classroom-style seminars there."



Jeff Hill

Jeff Hill, TAB Committee member and NEBB Certified Professional at Airetech Corporation, an Arizona-based mechanical engineering firm, predicts increasing demand to train and certify more technicians and on-staff licensed engineers to perform and supervise the installation, testing, adjusting and balancing of systems that have been updated according to the latest NEBB standards.

Forty-six years and 25 chapters later, NEBB has made major strides in establishing, upgrading, and expanding standards for operational efficiency of mechanical systems all over the world. And it all started with a little TAB standards manual. ■

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New Instrument Requirements Lists Define Range, Accuracy, Resolution and More



Don Fedyk | NEBB Technical Director

Designers and manufacturers call them instruments but to Certified Firms, Professionals, and Technicians they are “tools.” These “tools” have changed dramatically from basic thermometers and gauges to sophisticated high-tech multiple-use instruments designed to meet the requirements of modern environmentally friendly building systems. Instruments like the portable infrared spectrophotometer, particle counters, and photometers help verify critical safety and cleanliness for operating rooms compounding pharmacies, and laboratories. These and all tools used by the Professionals and Technicians play a critical role in allowing the user to accurately measure and evaluate equipment and building systems for a variety of buildings -- whether an office building, school, hospital, or another structure. The need remains the same even if the use may vary.

The NEBB board of directors has approved a new comprehensive instrument (tool) requirements list from the recommendations and thorough review by each of the NEBB discipline committees. The instrument requirements, range, accuracy and resolution are listed for each as well as cross-reference to which discipline or multiple disciplines to which it applies or may apply. View the new list at http://www.nebb.org/resources/instrument_requirements/.

All instrumentation which have a NEBB calibration requirement must have a minimum three point NIST Traceable Calibration for firms in the US and/or North America. Note: Outside of North America, National Metrology Institutes exist in many countries maintaining primary measurements of standards, such as NPL in the UK, NIST in the United States, PTB in Germany, and many others which are approved for those regions and are required for instrumentation in those areas.

Each of the NEBB Procedural Standards have been updated by corrigenda for the instruments or in some cases where new Standards are being published such as the *Fume Hood Testing Procedural Standard, Second Edition*, already contain the new requirements as do the new ANSI Standards S120-2016 Rev. 1 and S110 Draft 2 which are currently under review.

Some of the changes affect multiple disciplines while others are discipline specific like CPT or FHT. A synopsis of the major changes is described here but it should be noted that Certelligence instrumentation lists (pull-down menus) have been updated to include approved instruments in each of the categories. While the lists are updated periodically and are extensive, they are not all-inclusive and may not contain all instrumentation that meet the requirements. Any instrument not on the list but meeting the conditions of the specific standard requirements should be added as “other” along with data specifications in the documentation/photo upload for review by the chapter. All approved instruments will be added to the updated list. Any instrumentation questions should be addressed to the chapter for resolution.

Some of the instruments commonly used by multiple disciplines that have undergone requirement change include:

1. **Air Volume Measurement** – Balancing hood requires digital instrumentation which does not allow the use of an analog instrument due to accuracy and resolution.
2. **Temperature Instruments** – Whether for air, contact, or immersion there is a change in the range, accuracy, and resolution. The instrument may be the same for all three with varying probes for the differing requirements.
3. **Rotation Measurement** – The requirement was changed to reflect a moderate basic range starting at 60 rpm.
4. **Hydronic Pressure Measurement** – Combined three separate range requirements into one basic criterion reflecting the new instrumentation available.
5. **Hydronic Differential Pressure Measurement** – Combined three separate range requirements into one basic criterion reflecting the new instrumentation available.

While most of the changes in the instrumentation do reflect minor “tweaks,” a few major changes affect either a specific

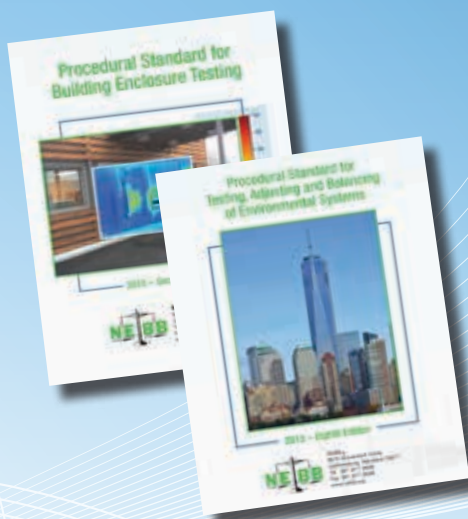
discipline or affect a few disciplines as the does the change from renting to ownership of sound instruments impacts the Sound Measurement (SM) and Special Electrical Cx. Since the availability of instruments to perform sound testing and calibration has increased while costs decreased dramatically, the ownership of the instrumentation for sound measurement does not present any undue hardship on the firms performing the task. Increased NEBB training at both the CT and CP level as well as more specifications requiring the SM necessitates knowledge and availability of the instrumentation to perform the tasks. This fits the NEBB model of ownership, knowledge, and proper usage of the instrumentation for a specific task.

Cleanroom Performance Testing has modified the instrumentation requirements for that discipline to reflect the field testing being performed in the various types of cleanroom environments. While the basic instrumentation requirements for airflow, pressure and particle counting remain the same, the methodology for leak testing depicts actual conditions, whether use of photometer or scan testing for compliance. Fume Hood Performance Testing instrumentation is per the ANSI standard for Fume Hood Performance Testing with the minimum range, accuracy, and resolution per that requirement.

One of the highlights of the new instrument requirements matrix is that it allows the user to virtually compare the requirements of multiple uses or disciplines in a single location to minimize costs and maximize efficiency with the ability of using a specific instrument for multiple functions and/or disciplines. The specifying of ranges and accuracies into more representative values that conform to the actual practices of the discipline reduce unnecessary costs or lessen the difficulty of obtaining instrumentation.

As previously mentioned, “tools” have evolved into highly sophisticated instruments with multiple functions and increased range accuracy-resolution meeting the more stringent requirements needed to test and verify the environmentally efficient buildings of today. Testing including Retro-Commissioning of Existing Buildings as well Commissioning of New Buildings requires the properly trained Certified Professionals and Technicians using calibrated instrumentation to perform tasks correctly and efficiently. NEBB, through its various Standards and educational opportunities, strives to provide individuals and firms with knowledge and validation through the Certification programs to afford their clients a project completed efficiently and with integrity. The instrumentation is only one of the many parts of the NEBB program. ■

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The topic of speaker abstracts must cover one or more of the specific core areas listed below.

- TAB
- Sound Measurement
- Vibration Measurement
- Building Commissioning
- Retro-Commissioning
- Fume Hood Performance Testing
- Cleanroom Performance Testing
- Business Practices
- Leadership Skills
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Calibration and Maintenance Issues of Energy-Related Testing Equipment



Frank Spevak | The Energy Conservatory

Commissioning agents and test and balance engineers and technicians are morphing into energy raters and auditors. Building codes for both residential and commercial buildings are starting to require tight building envelopes and duct work. By minimizing the leaks in these two main components of a building, energy savings will be realized by using smaller equipment that is more efficient. New diagnostic test equipment that is used to measure these leakage rates is different in some respects to the existing ventilation test equipment while at the same time being similar. In this article, you will learn more about the calibration and maintenance issues related to some of the new energy-related testing equipment being employed in the field. In particular, this article will cover two main pieces of diagnostic tools:

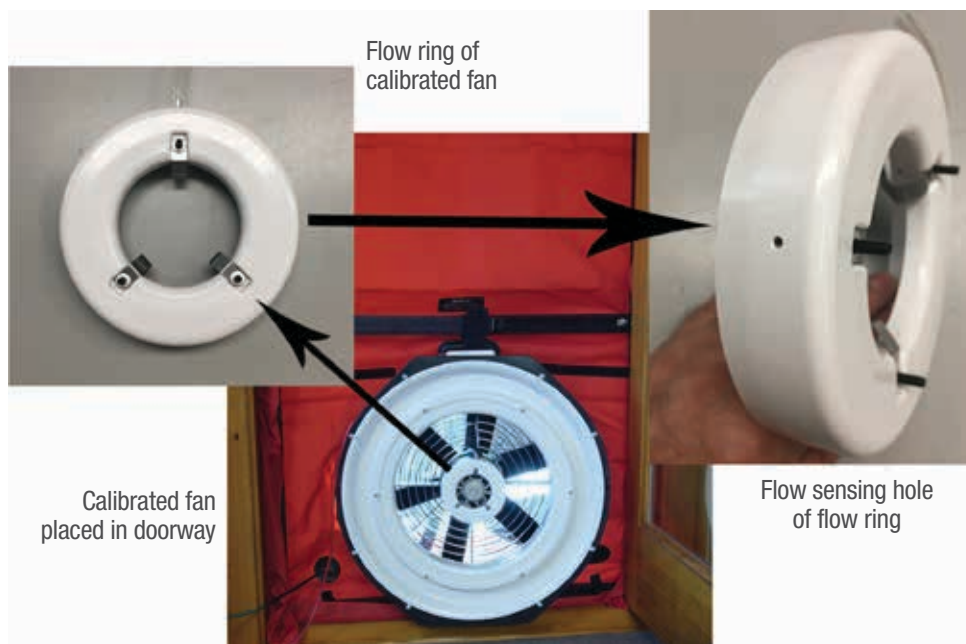
- The calibrated fan for testing buildings and ductwork
- The differential pressure device or manometer that is used to provide a reading

Calibrated Fans

Performing a building envelope or a duct leakage test requires pressurizing or depressurizing the space being tested. For a building envelope test, a fan is placed so that it is bringing air in or taking air out of the space. Usually this is in a doorway with a constructed panel that has a hole in it for the fan. To just add some air any fan, such as a box fan, would do. However, in a testing environment, you don't want air being recirculated through the fan or being let out by open areas in the fan housing. In a test, there also needs to be a way to measure the flow across the fan. A calibrated fan is one that has the fan blades as close to the fan housing as possible and has a way to determine flow through the fan. Image A (below) shows the calibrated fan placed in a doorway, a close-up of the flow sensor, and a further close-up of one of the pressure pick-up points around the perimeter of the flow ring.

The position of the flow ring relative to the fan housing is the critical measurement to ensure that the calibrated fan will

IMAGE A



measure according to the manufacturer's specification. Image B illustrates a cross section of the calibrated fan. The flow sensor, is placed on the inlet side of the fan motor, is checked on a regular basis by the user to ensure the flow sensor is in the desired location. As the fan and the flow ring are physical devices and the location is a physical measurement, no further calibration is needed to ensure an accurate measurement.

Each manufacturer of calibrated fans knows the dimensions of the fan housing, and of each of the restriction rings. The addition of restriction rings allows for a very wide range of flow measurements. The fan and its rings are placed on a flow chamber where flow values can be measured very accurately. Each manufacturer compares the flow on the chamber to the flow on the fan with and without rings to create a calibration formula. The comparison is done on many fans to ensure that the calibration formula is correct. This formula and its corresponding flow values based on the pressure measured at the flow ring are then shown on a chart or embedded into a flow measuring meter.

Typically a calibrated fan used for building envelope testing cannot be used for duct leakage testing. Fans used for duct leakage testing have different propeller geometry to work with the resistance built up in the ductwork. The same principles apply with attaching a flow sensing ring to the end of the fan motor and measuring the pressure across the fan. However, the small fans used for duct leakage testing can

be used for building envelope testing with the understanding that the small fans mean small total air flow.

Additional checks of the fan include checking that the flow sensor has no leaks other than the ones that are supposed to be there. All tubing that connects the fan to the gauge should also be checked periodically for leaks and for obstructions. If there are leaks or obstructions, either one will cause errors in the readings.

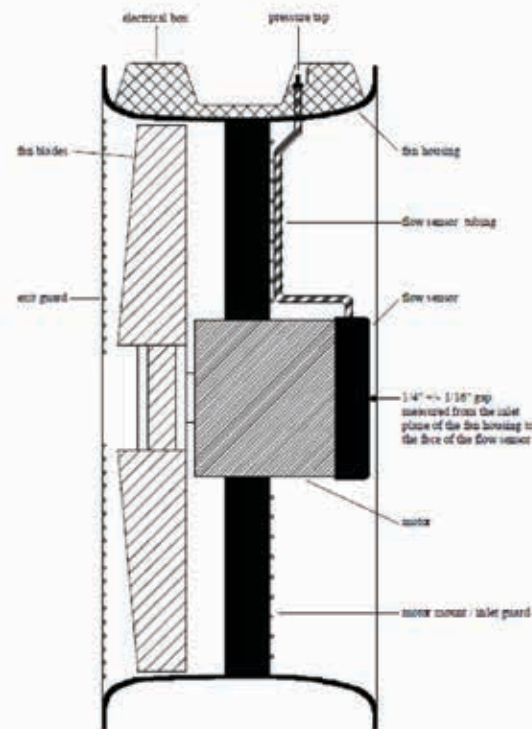
Manometer – Pressure and Flow Gauge

Each manufacturer of energy-related testing equipment has a specifically designed pressure and flow gauge. It is a standard manometer that has additional channels, better accuracy and different flow calculations built into the operating system of the gauge. The gauge can be used for standard pressure measurements, such as static pressure readings, as well for the specialized task of translating pressure from the fan and converting into cubic feet per minute (cfm). To ensure that the correct cfm value is displayed, it is necessary to tell the pressure and flow gauge which fan is being utilized and which of the flow restricting rings has or has not been added.

The electronic manometer is different than the fan as we are not just relying on physical measurements for proper calibration. An electronic manometer utilizes a pressure sensor, usually a piezo-electric type of pressure sensor, connected to other electronics to convert the force exerted by pressure into an electrical signal. The signal, as shown on the display of the manometer, is compared to a calibration standard and the raw signal of the gauge is changed to accurately show the proper value. We know that pressure sensors encased in a housing and subjected to fluctuating temperature inside the housing, especially when in use can cause the sensor over time to drift off its factory calibration correction. To ensure the most accurate readings we recommend frequent calibration checks that can be performed by the user in the field and regular factory recalibrations. For best performance the recommendation is a bi-annual factory recalibration.

A calibration check in the field is relatively simple. The user compares one recently factory calibrated gauge to another using a pressure source that is connected to each gauge. The pressure source can be a hobby syringe rated at 1 ml or it can be one of the calibrated fans. Checking on a regular interval and keeping a record of each gauge and serial number helps ensure accurate readings all the time. Calibration and maintenance can be time consuming and add more work to a busy work schedule. But to paraphrase a commercial from a number of years ago “you can pay me now for calibration or you can pay me more later.” ■

IMAGE B



Save the Date!



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2018 Annual Convention Registration
opens **October 2, 2017.**

Check www.nebb.org for updates!

Vacation? What Vacation? We're Certification!

Cynthia Hereth | NEBB Director of Certification



As we come back from vacations, gearing up for the back-to-school season and all that connotes, here at NEBB, it seems we're never really "out of school" or planning a vacation break. The Certification Board (CB) and its Exam Development Committee (EDC) keep going with a full head of steam as they blast through summer.

This year, the EDC, working under the auspices of the CB, took on some large challenges, completing major projects and heading into some new endeavors. The EDC, working in tandem with the TAB Committee, created a new Body of Knowledge (BoK) in late 2016 for both the TAB Certified Professional (CP) and Certified Technician (CT). A new TAB CP exam was developed and approved and is now available through Kryterion. Kudos go to the Subject Matter Experts (SMEs) who worked with the EDC to develop the new 100-question exam written from the TAB BoK: Andrew Boyd, Kevin Marinkovich, Mark Rusnock, Nick Muscolino, Ryan Chang, Brian Weldon, Curtis Smart, Mark Andrews, Richard Jarvis, Ron Landberg, Brent Hahn, Dave Wood, Glenn Putnam, and Mike Locke.

"The EDC worked tirelessly to ensure this new TAB CP exam is tuned and tightened to the Body of Knowledge," said EDC chair Brian Keller. "We're proud of the quality items put forth by our SMEs – they are the backbone of making any exam become a reality."

Additionally, the Certification Metrication Team is in the final stages of metricating the current TAB CP exam. Anticipated rollout of that new metric exam is late Q3.

A new sub-committee of the EDC, headed by CB vice chair Rick Farrington, will begin work on a new 100-item TAB CT exam. Estimated release is Q4. The TAB CT Sub-Committee is also considering developing practice exams for Candidates as part of the certification preparation process.

This past spring, select members of the EDC and the BSC Committee formed the RCx-EB CP BoK Team, meeting in February 2017 to create the new BoK document which was

completed and approved in late April 2017. The EDC, along with SMEs skilled in RCx-EB, is currently working on two new RCx-EB CP exams: an 80-question process management exam and a 100-question technical exam. Estimated roll-out of these two new products is late September 2017.

CPT Committee chairperson Patrick Law, the CPT Committee and SMEs Brian Weldon and Tiffany Russell are working together on the CPT CP and CPT CT BoK document which is nearing completion. With the assistance of this same group, the EDC has also refreshed and updated the CPT Certified Technician exam, categorizing items by content domains.

Forging its way through the certification highway are the BET and FHT disciplines. Both are in the process of completing their BoKs and once those projects are accomplished, the EDC, along with selected SMEs will create new exam items for those disciplines. Estimated delivery of the exams into Kryterion is expected in late 2017 and early 2018.

All this work is done by volunteers – both on discipline committees, the EDC and SMEs – for the NEBB organization, during off hours from work, many times meeting late in the evenings, or early in the morning. Their volunteerism runs the gamut from reviewing new items, refreshing existing exams or to vetting the latest version of a BoK to ensure that NEBB Candidates receive high-quality exams, geared to their knowledge, skills and abilities within their various disciplines.

"As a working member of the Certification Board and the EDC, this experience has given me such an appreciation for the work NEBB does," states Farrington. "The commitment of our SMEs, NEBB discipline committees, and volunteers is like none other. I'm proud to be a part of this group and to see NEBB's exam products increase and grow in quality and substance."

This is a busy group and getting busier. Maybe vacation can be scheduled in 2018? ■

Subject Matter Experts

CB Welcomes New SME Into the Fold



Rob Chopowick

NEBB's Certification Board (CB) recently approved the appointment of Rob Chopowick, FHT CP, as its newest Subject Matter Expert (SME)/Item Writer who will work with the CB's Exam Development Committee.

Chopowick is the general manager of Con-Test, Canada's largest national testing and certification company for biological safety cabinets, fume hoods, and cleanrooms. He has been testing fume hoods to ASHRAE 110 since 2004 and in 2012, was one of the first Canadians to be accredited as a NEBB Fume Hood Testing Certified Professional. He is a member of the ASHRAE 110 Technical Sub-Committee that published the updated version of the widely known fume hood standard in 2015. He is also part of the Canadian Standards Association z316.5 technical sub-committee that recently published an updated standard on fume hoods and associated exhaust systems. More recently Chopowick has become a corresponding member of the NEBB FHT Committee. Rob holds a bachelor's degree from the University of Ottawa, and an accounting diploma from Wilfred Laurier University, Waterloo, Ontario. He resides in Whitby, Ontario with his wife and two children.

"To have Rob join our SMEs is quite auspicious as we increase our rank and file in NEBB certifications with specialty expertise from SMEs like Rob," stated Brian Keller, NEBB exam development committee chair. "Rob comes with quite a background in fume hood and we're looking forward to tapping into that knowledge."

To learn more about becoming a Subject Matter Expert/Item Writer, email cindi@nebb.org.

Got an Article Idea?

Contact *The NEBB Professional* magazine (communications@nebb.org) with your story idea.

You don't have to write a word; just talk with the staff writer and your story will be put together for you. Ask any of the NEBB professionals who have appeared in this issue how easy their story was to write.



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NEBB Certified Firms, Professionals and Technicians

NEBB congratulates and welcomes the following Firms, Professionals and Technicians who achieved NEBB Certification between January and July 2017.

Name	Country	Discipline
FIRMS		
AC Goulding	Australia	TAB
Allegheny Balancing, LLC.	United States of America	TAB
Campos Engineering, Inc - Houston	United States of America	TAB
Cleantec Engineering (S) Pte Ltd	Singapore	CPT
CMD Services (SEA) Pte Ltd	Singapore	BET
CML International	United Arab Emirates	BSC
Consolidated Balancing Services Inc	United States of America	TAB
Delta-P Monitoring Technology Ltd	Ireland	CPT
EBCx Services	United States of America	BET, TAB
Es2-Arkansas, Inc	United States of America	BSC
Esco Micro Pte Ltd	Singapore	CPT
INCOMA ENGINEERING AND CONSULTANCY	Turkey	TAB
IND, LLC	United States of America	CPT
Invirosync, LLC	United States of America	TAB
J M Brennan	United States of America	TAB
KE FIBERTEC Mexico, S.A. DE C.V.	Mexico	TAB
Meza Engineering Inc	United States of America	TAB
Optimum Energy Solutions, Inc. - TU, Inc	United States of America	BSC, FHT, RCx-EB, SM, TAB, VM
Rehmtech Pty Ltd	Australia	TAB
Southeastern Environmental Balancing Inc	United States of America	TAB
Steele Engineering Limited	Canada	TAB
Technical Air Balance SW	United States of America	TAB
Tecnicaire Services Pte Ltd	Singapore	CPT
TecnicAire Services Sdn Bhd	Malaysia	CPT
The Lab (Asia) Ltd	Hong Kong	CPT
Thermal Air Balance, Inc	United States of America	TAB
PROFESSIONALS		
Bivins, Billy C.	United States of America	BET
Blankenship, Mark	United States of America	SM, VM
Capps, Jeffrey Chad	United States of America	TAB
Connelly, Steve	United States of America	CxPP
Costaggini, Eric Anthony	United States of America	CPT
Curtis, Paul Gregory	United States of America	TAB
Davis, Dean O.	United States of America	TAB
Derrick, Kevin J.	United States of America	BET
Gek, Loo Choey	Malaysia	CPT
Godden, Daniel Lee	United States of America	TAB
Goodman, Thomas Ricky	United States of America	SM, VM
Helmy, Mohamed Mounir Ibrahim	United Arab Emirates	SM, VM
Hines, Timothy Loyd	United States of America	TAB
Kelly, Ryan M.	United States of America	FHT
Kutschera, Eric	United States of America	TAB
Lankford, Christopher Scott	United States of America	TAB
Ligon, William P.	United States of America	FHT
Mathur, Ajay C.	Singapore	CPT
McGrath, Gerard	Australia	BET
Michels, Matthew L.	United States of America	TAB

Name	Country	Discipline
Mulder, Kyle David	United States of America	CPT
Nguyen, Davis D.	United States of America	TAB
Nolan, Timothy P.	United States of America	TAB
Omar, Amr Mohamed Mohamed	Qatar	SM, VM
Othman, Nairee	Malaysia	CPT
Rivera, Angel Luis	United States of America	SM, VM
Rosa, David A.	United States of America	SM, VM
Sadoff, Jeffrey A.	United States of America	CxPP
Salkin, Ted	United States of America	CxPP
Sam, David Hanlon	Australia	TAB
Seow, Poh Seah	Singapore	CPT
Stadheim, Dave A.	United States of America	SM, VM
Steele, Jarrett G.	Canada	TAB
Trevizo, Gabe	United States of America	BET
Venie, Daniel Robert	United States of America	SM
Warren, Sonny	United States of America	TAB
Wassum, William A.	United States of America	SM, VM
Webster, Daniel	Australia	BET
Wee, Gan Seow	Singapore	CPT
Winters, Brandon Wade	United States of America	TAB
TECHNICIANS		
Abedelqader Hamdan, Abdelqader Yousef	Qatar	TAB
Absood, Nader Safwat	United States of America	CPT
Anzalone, Todd	United States of America	TAB
Ashcraft, Eric B.	United States of America	TAB
Bandorf, Anthony Joseph	United States of America	CPT
Buchanan, Brian E.	United States of America	CPT
Burnett, Thomas Arthur	United States of America	TAB
Chavarria, Josue Conejo	Costa Rica	TAB
Chong, Cheng Kit	Singapore	TAB
Cicciari, Eric Scott	United States of America	CPT
Colomo, Reece A.	United States of America	TAB
Daniels, Collen Dean	United States of America	TAB
Emerson, Samuel R.	United States of America	CPT
Favre, Frederic Gilbert	Australia	TAB
Fritsch, Dan	United States of America	TAB
Gibson, Steven G.	United States of America	CPT
Griffith, Derek Weston	United States of America	TAB
Hall, James Tyler	United States of America	BSC, TAB
Halter, Travis Michael	United States of America	TAB
Hassan, Mostafa Ismail El Sayed	Egypt	TAB
Hedges, Gary Warner	United States of America	TAB
Jones, Jacob	United States of America	CPT
Karle, Richard Herbert	United States of America	TAB
Kim, Jae-Jin	Republic of Korea	TAB
Kleeman, Austin James	United States of America	CPT
Lillich, John Michael	United States of America	TAB
Mathur, Ajay C.	Singapore	SM
Maxwell, Michael Stephen	United States of America	CPT
McKnight, Justin Scot	United States of America	BSC
Moldovan, Florin	United States of America	TAB
Monday, Brett Wayne	United States of America	CPT
Noll, Cody Hirori	United States of America	TAB
Payne, Nicholas Marshall	United States of America	TAB
Plaehn, Stig	Denmark	CPT
Russell, Tiffany April	United States of America	SM
Shamrock, Blake William	United States of America	TAB
Thompson, Shelton Shane	United States of America	TAB
Villarreal, Carlos	United States of America	TAB
Wala, Yusuf Banduk	Qatar	TAB
Yong, Alice Wan San	Malaysia	CPT

NEBB NEWS

CHAPTER NEWS

Mid-Atlantic EBA: Trish Casey

The chapter's recertification seminar will be held September 24-25, 2017, at the Resorts Casino in Atlantic City, N.J. The event will kick off with a dinner reception on the beach Sunday evening at LandShark Bar & Grill behind the hotel.



Monday morning will begin with breakfast followed by a day-long seminar featuring topics including kitchen hood exhaust systems, predictive balancing, stack effect, the Facility Guidelines Institute's guidelines for designing and building hospitals and other health care facilities, and a brief presentation on NFPA 70E Arc Flash Electrical Safety.

For more information or to register, contact Trish Casey, MAEBA chapter coordinator, at tcasey@maebanet.org.

Mid-South EBB Chapter (MEBB): Ginger Slaick

MEBB's 2017 recertification seminar and annual meeting will be held September 23 and 24, 2017, at Marina Inn at Grande Dunes, Myrtle Beach, S.C. Help us celebrate MEBB's 45th anniversary! This year's seminar agenda is stacking up to be one of the best yet with guest speakers including Sarah E. Carson, Smith, Currie & Hancock, LLP; David Dougan, EBTRON; and Robert Turner, III, Smart Profitability Solutions, LLC. Seminar topics will include contract law, safety in the workplace, factors that affect outdoor airflow intakes, building pressurization, and demand control ventilation. In addition to the business and technical sessions offered, attendees will have the opportunity to visit and tour EBTRON's headquarters.

Jim Kelleher, NEBB president, will be a guest speaker during MEBB's annual business meeting. Kelleher will discuss the latest news from the association which will be followed by a Q&A session. In addition, Ginger Slaick, EVP/Chapter Coordinator, will give a presentation on Certelligence and the recertification process.

MEBB will also host a vendor exhibit which will give attendees an opportunity to speak directly with vendor representatives and see first-hand the latest in industry technology. MEBB is pleased to have the following participating in the exhibit this year: Gold level sponsorships: DP2, Evergreen Telemetry, Instruments Direct, and Retrotec; Silver level sponsorship: TSI; and Bronze level sponsorships: Ameritech Computer Consultants, Building Start, Dwyer, and Testo. At the conclusion of the seminar, attendees who have visited all the exhibitor booths will have the chance to win vendor-donated door prizes. Thanks to all of the vendors for their continued support!

This recertification seminar will provide attendees with a minimum of six CECs for NEBB Recertification. For additional information or to register for the seminar, visit our website at <http://midsouthnebb.com> or call the MEBB office at 678.407.2754.

COMMITTEE REPORTS

Building Systems Commissioning Committee

BSC The committee is currently working on revising the content of the RCx seminar, and is nearing the completion of the BSC Procedural Standard. An RCx seminar, to be led by Jim Bochat and Steve Wiggins, will be held in Gaithersburg, Md., on September 18-23, 2017.

Sound and Vibration Committee

S&V Committee members are currently working on researching vibration equipment which would be more cost-effective to Certificants. Sound measurement questions are currently being re-reviewed and modified to meet Kryterion requirements for online testing. A fall seminar is currently in the works.

Building Envelope Testing Committee

BET

The committee continues development of the BET Body of Knowledge. In addition, a BET seminar has been scheduled in on April 23-24, 2018 in San Diego, Calif., to coincide with NEBB's annual conference. A fall seminar is in the planning stages.

Cleanroom Performance Testing Committee

CPT

In May, a cleanroom seminar was held in Vancouver, Wash., where 16 individuals attended and 12 took exams. Committee members are nearing completion of the Cleanroom Reference Handbook for presentation to the Board of Directors for approval. They are also writing an ANSI Standard for Compounding Pharmacy Certification. Plans are underway for a fall seminar in North Carolina.

Marketing Committee

MKT

The committee continues to seek opportunities for NEBB to present at various conferences in 2017 and 2018. This information is being shared with the Board of Directors, other committee chairs, and the NEBB technical director for consideration. In addition, NEBB board member Allen King attended the BOMA show in Nashville, Tenn., June 25-27. NEBB will also be represented at ASHE in August and IFMA in October. Promotion of NEBB seminars continues with the development of brochures and the use of social media and e-mail marketing to draw in attendees.

TAB Committee

TAB

The committee has worked on updating the TAB seminar to be more in line with the recently completed TAB CP/CT Body of Knowledge. In addition, a well-attended TAB seminar was held in May in Gaithersburg, Md., with 15 persons attending and eight persons taking the CP exam.

The next TAB seminar is scheduled for October 9-11, 2017, at the IMI Training Center in Atlanta, Ga. Committee members are also reviewing the *TAB Technician Manual* and plan to include updated graphs, charts and pictures. The *TAB Procedural Standard* is also under review for update and the committee will work with both the NEBB technical director and the Standard Council to ensure consistency with all other Procedural Standards.

Standards Council

SC

The Whole Building Technical Commissioning of New Construction S110 draft is out for public review. Future work includes assisting the Cleanroom Standards Committee in formation activities and standards development activities. In addition, the council is developing a list of candidates for Standards Council membership and leadership positions for consideration by the Board of Directors.

Fume Hood Testing Committee

FHT

The committee completed its first draft of the FHT Body of Knowledge. In addition, committee members have worked with the NEBB Certification Board on the FHT written test, with all questions reviewed for clarity and updated based on the release of new industry specifications. The discipline's seminar presentation was updated to incorporate changes in the new Procedural Standard. The June FHT CP seminar in Kansas City, Mo., was attended by 13 individuals with eight of them taking the written and practical test. The next FHT CP seminar will also be held in Kansas City, Mo, November 13 – 17, 2017.

NEBB ON THE ROAD

In June, NEBB exhibited at the Building Owners and Managers Association (BOMA) 2017 International Conference & Expo in Nashville, Tenn. NEBB board member Alan King staffed the booth on behalf of the association. Up next:



International Facility Management Association (IFMA) World Workplace Conference & Expo

Houston, TX, October 18-20, 2017, Booth #717

AHR EXPO 2018

Chicago, IL, January 22-24, 2018, Booth #8328

WELCOME NEW NEBB STAFF



Tori Mitchell

Tori Mitchell joined the NEBB staff as meeting and events manager in November 2016. Her experience includes positions as banquet manager and assistant director of special events at Lakewood Country Club in Rockville, Md. She has an associate's degree in criminal justice from Kaplan University in Rockville, Md. Mitchell's duties include planning and coordinating NEBB's annual conference, as well as planning technical seminars and events.



Charles Gavin

Charles Gavin has recently joined NEBB as operations manager. Previously he was project operations manager and business development coordinator at Iverness Technologies in Annandale, Va., and membership services coordinator at A & A Communications, LLC in Rockville, Md. He earned his bachelor's degree in sociology from University of Massachusetts in Amherst, Mass. As operations manager, Gavin is responsible for Firm Certification and general oversight of office operations.

Welcome Tori and Charles!

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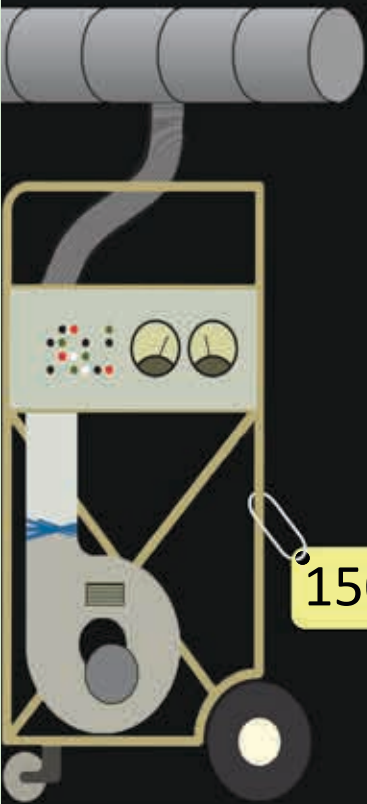
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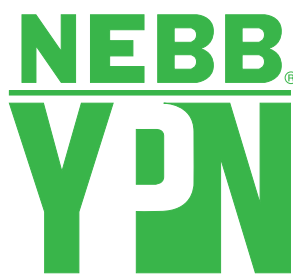
YPN: Building a Solid Foundation

Cynthia Hereth | YPN Ad Hoc Committee Staff Liaison



NEBB's Young Professionals Network (YPN) Ad Hoc Committee, headed by past president Jean-Paul Leblanc, has moved ground, dug, and poured ample footers since April, setting in place a solid foundation for upward growth. Over the past six months, the ad hoc committee has spread the word about YPN through articles in *The NEBB Professional*, launch of an email address (YPN@nebb.org), creation of a logo, an introductory session at the 2017 NEBB Annual Conference, and the creation and launch of a survey. Plans are in the works for a NEBBinar focused on software and apps that can assist NEBB Certificants as they work in the field (scheduled for release in Q4).

YPN Logo



Young Professionals Network

The concept behind the new YPN logo was best articulated by ad hoc committee member Dane Richards: "When thinking about the overall design, we wanted to emphasize that NEBB is above the YPN committee; all YPN efforts will be focused on supporting NEBB. We recognize the work and legacy of others who built NEBB to what we see today and we want to support NEBB and 'cultivate the growth of NEBB for generations to come', as our mission statement says. The line denotes the YPN underpinning of NEBB, and the continuum of the green and white gave the logo the aesthetic we needed." The logo was recently approved and will be unveiled on the YPN's new website landing page currently in development.

YPN Survey

To learn more about NEBB as it pertains to the young professional, the ad hoc committee created a survey. The project, headed by Nick Muscolino, touched on key issues and launched in late June to over 7,000 NEBB email contacts.

Results from the survey will be shared in the Q4 issue of *The NEBB Professional*.

"As we continue grow the YPN, I felt it would be beneficial to know more about the group we're trying to serve and get context as well," says Nick Muscolino. "Developing the survey was rewarding and we're looking forward to seeing what the responses yield." ■

YPN Chapter Liaison Program

Now that these fundamental elements are in place, the YPN is starting another initiative, branching out at the grassroots level. The YPN Chapter Liaison Program's goal is to connect a selected individual with an interested NEBB chapter coordinator to reach YPNers at the local level. It's important to find professionals with the right skills, connections and charisma to lead and make the YPN thrive. YPN chapter liaisons must have the time to commit and perform to the standards NEBB leadership sets forth for this group. Most of all, the program needs people who have a desire to see NEBB grow.

YPN chapter liaisons will be selected from NEBB young professionals who are willing and interested in submitting an application, which will be reviewed by the ad hoc committee and approved by NEBB leadership. The selected YPN liaisons will be trained about the YPN and assigned to his or her chapter coordinator to develop meaningful opportunities for their area.

"The YPN Chapter Liaison Program is finding its way and anything new takes a while to set in motion. YPN is evolving, but we know that to grow and get young professionals active and interested in NEBB, we must think of new ways of approaching them," says Leblanc.

If you're a YP between the ages of 20 and 39 and are interested in the YPN Chapter Liaison Program, or a chapter coordinator interested in participating, email YPN@nebb.org.

YPN Mission Statement: *Serving as a resource for young professionals to cultivate the growth of NEBB for generations to come.*

NEBB Training and Education Center Nears Opening

NEBB is just a few months away from opening the NEBB Training and Education Center (NEBB TEC). The organization has leased space directly next to the office headquarters to create a 3,000-square foot location to conduct seminars and other learning activities. NEBB TEC's grand opening is expected to take place in October of this year.

NEBB president Jim Kelleher announced the establishment of NEBB TEC during the 2017 annual conference and it has been full speed ahead in the renovation of the space which will feature full A/V capabilities and hands-on training labs. NEBB discipline committees will be able to reserve the space for their required annual seminars and exams and other programs for groups as large as 36. It is anticipated that the NEBB TEC will eventually be available for other industry groups and organizations to rent for educational activities.

NEBB technical director Don Fedyk and meetings and events manager Tori Mitchell will manage the site including booking of space, furnishings, and overall operation of the Center. Manufacturers, suppliers and installers are currently being canvassed for potential equipment donations and assistance with training lab development which will be recognized on a special wall in the Center.

"NEBB is able to meet the needs of its constituency under one roof, with state-of-the art equipment and technology," says Tiffany Suite, NEBB's executive vice president. "It's been an exciting time seeing everything come together." ■

For more information about NEBB TEC, contact training@nebb.org.



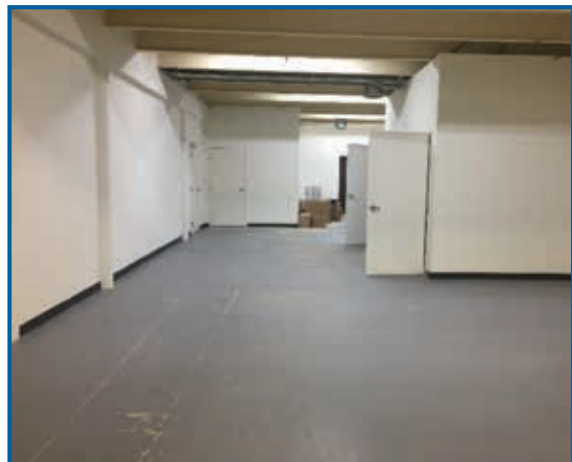
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Fall Technical Seminar Schedule

For complete details, email training@nebb.org. Schedule subject to change.

September..... **RCx CP Seminar: September 18-20, 2017**

NEBB TEC, Gaithersburg, MD

Registration Deadline: September 4, 2017

Optional RCx Certified Professional Written Exams Dates: September 21-22, 2017

October..... **TAB Seminar: October 9-11, 2017**

IMI Training Facility, Roswell, GA

Registration Deadline: September 25, 2017

Optional TAB CP & CT Exam Date: October 12, 2017

Sound and Vibration Measurement Seminar: October 25-27, 2017

NEBB TEC, Gaithersburg, MD

Registration Deadline: September 25, 2017

Optional Sound Measurement Technical Exam Date: October 25, 2017

Optional Vibration Measurement Technical Exam Date: October 27, 2017

November..... **Fume Hood Seminar: November 13-14, 2017**

Labconco, Kansas City, MO

Registration Deadline: October 30, 2017

Optional Fume Hood CP Written Exam Date: November 15, 2017

Optional Fume Hood CP Practical Exam Dates: November 15-16, 2017



Certification Reminder: Stay Ahead of the Game!

For Certified Individuals (CPs or CTs) whose certificate end date reads March 31, 2018, two requirements must be met to stay in compliance with their certification:

1. Annual payment of the recertification fee and
2. Submission of continuing education credits (CECs) obtained within the current two-year cycle running from January 1, 2016 through December 31, 2017.

The Details:

1. Annual Recertification Renewal Fee

- a. Annual recertification invoices will go out September 1, 2017.
- b. Deadline for payment of the invoice is **December 31, 2017**.

2. CEC Verification Documents

- a. **Uploading** of verification documents for CECs to the Certelligence profile **can be done any time throughout the year**.
- b. **Submission** of the CEC verification documentation will be accessible October 1, 2017.
 - i. Remember to download, sign and upload both the Code of Ethics document AND Arbitration Agreement to your CEC section.
- c. CEC Verification documentation must be completed before **December 31, 2017**.

3. January 1 through March 31, 2018 is NEBB's Certification "Grace Period."

- a. Recertification payments and CEC submissions sent in during this time are considered **late and will be subject to late fees**.
- b. Certificants who are not compliant with both requirements of recertification by March 31, 2018, will automatically go into Certification Suspension as of **April 1, 2018**.

4. Haven't checked your personal profile in Certelligence or don't have one?

- a. Email support@nebb.org.
- b. You'll be sent a password reset email so you can access your profile on Certelligence.



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