

The Cost of Balancing

Written By: *Fredrick Scafidi*
MAEBA Technical Committee Member

In order to describe the costs associated with balancing you first must understand exactly what balancing is. Balancing is the systematic approach of testing each and every component of the HVAC system installed.

Upon completion of the initial testing, an analysis is performed in order to determine what adjustments are necessary to attain "as close to" the design intent as possible. These adjustments could be a variety of things from a series of adjustments to the manual volume dampers in order to more evenly distribute the available airflow, to a sheave adjustment in order to increase system total airflow, or perhaps a sheave and motor change to attain design flow.

There are even times when all of the above fails

and a design review and system modification is necessary. The information gathered in this process is valuable to the design engineer, as he or she may want to know exactly how their design works.

Balancing is just one part of a multi-pieced puzzle. The balancer has the responsibility of reporting how the complete system performs after the pieces all come together. The end result is a function of every piece of that puzzle; just one deviation from the design will have a definite influence on the performance of that system. The balancer, with the technology of today's instruments, can report the exact results of these deviations.

There are many other parts to this puzzle, each as important as the next, starting with the building owner;

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Teacher, Innovator, Consultant, Designer, Engineer

These are just a few of the words that describe William G. Eads, P.E. But the accomplishments of Bill Eads, who died on Dec. 9, 2004, go far beyond words.

He was the author of "Testing, Balancing and Adjusting of Environmental Systems" manual published in 1974 by SMANCA which became the standard for the industry. Today the successor to that original manual is published by the National Environmental Balancing Bureau (NEBB) as the "Procedurals Standards for Testing, Adjusting and Balancing of Environmental Systems", now in its seventh edition (2005). He was also the author of the original teaching Syllabus for NEBB on the subject of Testing and Balancing of Environmental Systems.

He developed the curriculum of one of the first Testing and Balancing Training programs and he also wrote numerous papers on Testing and Balancing. He went on to teach Testing and Balancing from 1968

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William G. Eads, P.E.



PRESIDENT'S NOTES

As I begin my term as President of the MAEBA Board of Directors I would like to take this opportunity to thank the members of the Technical Committee for all of their support and efforts during my tenure as Technical Committee Chairman. With your help and support we were able to improve and strengthen many of the programs offered by the chapter. I especially would like to thank the Technical Committee for their help and outstanding effort to support our two day BACnet seminar held in Dover, Delaware. I would urge all members of the chapter to support all of the upcoming seminars and other industry educational programs which the Technical Committee has planned for 2005.

One of the initiatives for MAEBA in 2005 and beyond is to increase the number of NEBB Certified Technicians employed by our members firms. As of this writing there are only seven NEBB Certified Technicians among our forty-one member firms. This is somewhat discouraging to the Board of Directors and the Technical Committee given the educational opportunities which are provided locally through the chapter and on a national level at NEBB TEC.

The MAEBA Board of Directors and Technical Committee encourages all of our member firms to have as many of their technicians as possible apply, study and prepare to take the technicians written and practical examination. Successful completion of the technician's examination provides many benefits including increased professional credentials and recognition for both the technician and the member firms.

It has been suggested by several of our member firms that the MAEBA Technical Committee should be responsible to provide additional education and training for those technicians who apply for the examination. This request has been reviewed by the Board of Directors. It is the opinion of the Board that the primary responsibility for training and education of technicians is the responsibility of the NEBB Certified Supervisor who signs the technician's application form. As NEBB Certified Supervisors it is your responsibility to train your technicians and to know and ensure that the theoretical technical knowledge and practical hands on ability of your individual technicians has progressed to a level that they are qualified to take the NEBB Technicians examination.

NEBB has spent considerable time and effort to prepare an excellent Home Study Course for use by technicians in preparation for the technician's examination. MAEBA strongly encourages any technician applying for certification to obtain a copy of the Home Study Guide. This guide contains review information and several practice exams which can be sent to MAEBA for scoring.

Additional comments have been made that the exam is too difficult, for a "Technicians Exam". The MAEBA Technical Committee has reviewed the exam several times and conducts a review each time a new version of the exam is released by NEBB. The Technical Committee unanimously agrees that the content of the present exam is consistent with the technical and practical knowledge that is required to be a competent technician. NEBB has always promoted that their programs are of the highest standards and quality in the industry and the present technicians program is an extension of those standards and quality.

Again we encourage and challenge each of our member firms to challenge their technicians to apply for and complete the NEBB Technician Certification Program. There are no set testing dates for the written portion of the Technicians Exam, but the Technical Committee will make arrangement to conduct a written exam at anytime when we have at least three (3) applications. If you are interested in any additional information regarding the NEBB Technician Certification Program or to obtain an application please contact the MAEBA Chapter Coordinator Trish Casey at the MAEBA offices.

D. Timothy Roaten
MAEBA President

What is the Cost of Not Balancing!

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perhaps looking for a new space, to renovate an existing space, or has an existing building with exorbitant utilities he is trying to get control over. The building owner will know what the space is needed for but may not have a realistic idea of what it will cost to bring the project to completion. A million dollar dream on a half million-dollar budget usually leads to discourse. The next piece is the design engineer with his load calculations, equipment selection, pipe and duct system design, controls sequence, etc... Next is the installation of all the components and finally the testing, adjusting and balancing of these components. Unfortunately, in today's economy, the "lowest bidder" performs much of the above-mentioned work.

O yes what a brilliant idea, lowest bidder!!! Lets

see, you expect the highest quality for the lowest prices, a novel idea. When systems do not perform as intended, the end results are obvious; occupant discomfort, poor occupant performance, increased occupant complaints, poor indoor air quality, mold growth in schools, improper room pressurization in operating rooms, sick building syndrome, increased operating and maintaining costs, lawsuits!!! The balancer, being the last one on the job, is witness to all of the above. Perhaps balancing and engineering could work together, sold as a professional service, developing lasting working relationships between themselves and the client; the current system could be improved.

The cost of balancing? What is the cost of not balancing!

MAEBA Semi-Annual Meeting

Wednesday, April 13, 2005

"Show Me The Money" is the appropriate theme for the first presentation at the MAEBA Semi-Annual Meeting set for April 13.

John Adams, an attorney with the law firm of Susantin, Widman & Brennan, P.C., will make the presentation. The meeting will be held in the Spring Mill Fire House on North Lane across the street from the MAEBA offices.

Adams will discuss contracts, and the scope of work and concealed or unknown conditions.

Other issues Adams will discuss include:

- Insurance/Bonds – "Get a Copy of Bond", strictly comply with its terms.
- Delays
- Indemnification – What are you responsible for and what should you be responsible for?
- Arbitration Clause – Review your contract.
- Mechanic's Liens – can be a contractor's best tool for getting paid.
- Change Orders

Al Fudge, of the NEBB National Testing & Balancing Committee will point out changes in the recently revised "Procedural Standards for Testing Adjusting and Balancing of Environmental Systems" (Seventh Edition –2005) The manual has been rewritten to reflect current and emerging technologies. Substantial changes were made to the instrumentation and testing, adjusting and balancing (TAB) report requirements. Mr. Fudge will review these changes to the instrumentation requirements.

If you are interested in attending please contact the MAEBA office at 610-828-5738 for a registration form.



2005 MAEBA Board of Directors

(first class ever held) until 1983.

From 1963 to 1968, Mr. Eads also taught several evening courses at Temple University, including Air Conditioning Machinery and Controls, and Heating Systems Design, Air Conditioning Design, and Automatic Temperature Controls. He also made various presentations to national and local associations affiliated with the Industry.

Mr. Eads was presented with the Mel Wind Award in 1997 by the Sheet Metal Contractors Association. This prestigious award is given in recognition of those who have worked to advance the Sheet Metal Industry.

His career began in 1945 as a radio technician in the U. S. Navy. After graduating from the University of Pennsylvania in 1950, he joined a number of engineering and mechanical firms.

In 1975, he signed on with Daniel J. Keating as Vice President in charge of Mechanical Operations. One of the highlights of this position was the \$60 million renovation of the Dome Palace, Riyadh, Saudi Arabia. Mr. Eads retired from the Keating firm in 1988. He remained active as a volunteer with the local NEBB Chapter, the Mid-Atlantic Environmental Balancing Association (MAEBA) for many years.

Bill once said "It has been my privilege to have been a part of this evolution in the Testing and Balancing industry. It was an extreme pleasure teaching those classes for many years. The contacts and experiences I have had with all the SMACNA and NEBB people have been wonderful and I have many friends as a result."

Bill will be missed by many. He is survived by his wife Ann L. Eads; three children, William Jr., Ann Marie Lees, and Mary Kaye Polacheck; and seven grandchildren.

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NEBB Annual Meeting

November 3 - 5, 2005

San Antonio, Texas at the Hyatt Regency

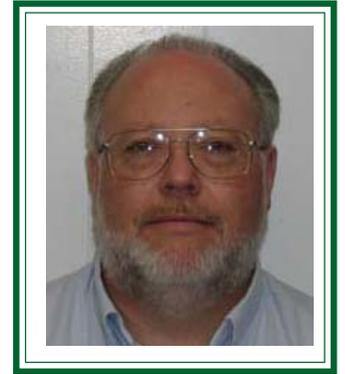
The Annual Meeting will again feature technical sessions and prominent guest speakers to enhance the professional capabilities of NEBB contractors and staff members. There will also be a golf outing, table top displays by instrument manufacturers and open committee meetings.



**Visit the Alamo or take a
stroll on the Riverwalk**

MAEBA Says Thanks

There is an old saying that goes ‘If you want something done ask a busy man” (in this day and age I guess we have to say ask a busy person). It is the busy people who know how to get things done. Well, include Vincent Del Vacchio in this group. Not only does he know how to work but he is generous with his time and talents. He is a willing volunteer, ever ready to offer his services. Vince, Owner of Keystone Balancing and Commissioning Services has just completed three-years as President of the Mid-Atlantic Environmental Balancing Association (MAEBA), which is the local affiliate of the National Environmental Balancing Bureau (NEBB).



He has more than 33 years experience in the HVAC field. Twenty five of these years have been exclusively devoted to testing, balancing and adjusting environmental systems. For the past 10 years he has concentrated on work with the pharmaceutical industry. His experience varies from the testing and balancing of the simplest small split systems, to large multi-story VAV systems, to the exacting requirements of clean rooms and pharmaceutical validated facilities.

A brief scan of his activities will give you an idea of just how busy a busy man can be. Here is a partial list of some of his activities. In addition to his term as President of MAEBA, he served two years as Technical Committee Chairman and altogether he served over 10 years on the Technical Committee.

Del Vacchio is certified as a supervisor by both NEBB and by the Testing, Adjusting and Balancing Bureau (TABB). He also was a member of the Buildings Systems Commissioning Committee as part of the NEBB organization. In addition he is a contractor member of TABB Task Force committee from 1998 through 2001.

This committee was a joint labor contractor committee developed by the Sheet Metal and Air conditioning Contractor’s National Association and the Sheet Metal Workers International Association to study the future of testing and balancing.

Del Vacchio is an advocate of training and more training. Whether he is on the receiving end or whether he is teaching others. He is a graduate of the testing and balancing program operated by the Philadelphia area Joint Apprenticeship Training Committee (JATC). Additional training includes safety courses offered by area Pharmaceutical companies including Merck Wyeth and Dupont.

Del Vacchio is an instructor for the testing and balancing program offered by JATC. He also an instructor for the Philadelphia area ASHRAE advanced duct program and has been guest instructor for various programs given at the Iowa Energy Center in Ankeny.

As if there is not enough to keep him busy Del Vacchio has been a member of the Marple Township Ambulance corps since 1970. Vince and his wife of 32 years, Kathleen are parents of two grown children, Vincent and Benjamin and two dogs Brownie and Penny.

The MAEBA Chapter would like to thank Vince for all of his hard work and dedication to the Mid-Atlantic Environmental Balancing Association and NEBB.

2005 MAEBA Technical Committee

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MAEBA

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Conshohocken, PA 19428

**MAEBA
Semi-Annual
Meeting
April 13, 2005**

CALENDAR OF EVENTS

April 13, 2005
MAEBA Semi-Annual Meeting
Spring Mill Fire House, Conshohocken, PA

June 1, 2005 New Applicant Deadline

September 11-12, 2005
MAEBA Recertification &
Educational Seminar
Seaview Marriott, Galloway, NJ

September 17, 2005
NEBB Written Exams - Given at Chapter
Technicians & Supervisors

September 17, 2005
NEBB Supervisors Practical Exams

November 3 - 5, 2005
NEBB Annual Meeting - San Antonio, TX

MID-ATLANTIC ENVIRONMENTAL BALANCING ASSOCIATION

Chapter of the
National Environmental Balancing Bureau

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MATTHEW SANO - T.C.C.
TRISH CASEY - CHAPTER COORDINATOR

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