



PRESIDENT'S MESSAGE

By Frank A. Newton

On January 13th an appreciation dinner was held at Deerfield Country Club to express appreciation to the DAPE Council and the members of its Committees. The DAPE Council depends heavily on the work of its Committees. Without them the Council would be very hard pressed to conduct its business without extensive delay. All of our Committee members serve as volunteers without compensation as does our Council. It was my pleasure to present Ana E. Diaz, P.E. a Distinguished Service Award for her long and effective service on the Law Enforcement and Ethics Committee and on the Finance Committee. She has been a great asset to the Council and the Committees she has served on. Ana works for the DuPont Company in its Engineering Department.

With the Delaware General Assembly back in session we are looking forward to submitting a couple of legislative initiatives that we feel are necessary to the Delaware Code that governs the DAPE Council. The Attorney General's office is helping us draft language that will simplify and clarify the ability to achieve a quorum when a vote on law enforcement questions comes before Council. Because of the number of Council members that must recuse themselves on such votes either because they have participated in the investigation or know the individual facing law enforcement, there are times when we have a problem meeting the

requirement of the current law to have a quorum. Other professional councils have similar problems and have developed language in their respective Codes that define a quorum that makes action by the Council timely.

Additionally, we are proposing a language change to the Code that more clearly defines the qualification of an out-of-state expert when providing testimony in Delaware Courts.

Council is considering a change to the Code that would provide for a retired status for Professional Engineers. A number of jurisdictions in the country provide for such a status and we are looking at the language used in their laws and what their experience has been in using and administering such a category.

The Northeast and Southeast zones of NCEES are going to hold a joint zone meeting in April. This is an unusual meeting in that the zones normally meet by themselves. In this case the two zones are meeting together to exchange ideas and share information that will be presented at the NCEES annual meeting this summer.

MESSAGE FROM THE EXECUTIVE DIRECTOR

By Peggy Abshagen

Following the April, 2010 exam administration, a major change in the administrations of future exams will take place. NCEES has developed an Examinee Management System requiring all examinees to obtain a unique identification

number during the exam registration process in order to sit for an NCEES exam.

This will permit boards to identify and track examinees from a central database system. Many states limit the number of exam attempts. Delaware law limits the exam attempts of the PE exam to four before an applicant must reapply with additional credentials (education or experience) that address exam deficiencies.

The new system will require approved examinees to register with NCEES, select an exam module, and secure a seat at a state's exam site. Boards will be provided with a master roster that will include all approved and registered examinees. Examinee seat cards, proctor rosters (with groups of examinees), online exam authorization notices, and online score notices are several of the features that may become available to boards.

In addition to the security advantages, there are others from the board perspective -- a registration window with a strict deadline to register for an exam; an exam order now generated by those examinees that have registered; master and proctor rosters, as well as pre-printed seating cards, exam authorization notices, and score notices -- all administrative tasks now accomplished by the individual boards.

NCEES has invited all Member Board Administrators to attend a meeting in their headquarters in Clemson to discuss this new system, as well as other pertinent agenda items. We have heard so much about the new system, personally, I'm anxious to delve into the details now. Will keep you posted.



LAW ENFORCEMENT ACTIVITY

DAPE's Engineering Practice Assessor, Frederick P. Schmitt, P.E., has been contracted to visit with building officials throughout the state to assist with potential violations of the law or Code of Ethics. He has been tasked with identifying specific practice issues the officials

are dealing with and sharing this information with the Law Enforcement/Ethics Committee for discussion and resolution.

Case Resolutions from 12/09 to present:

Certificates of Authorization issued:	2
Business license categories revised:	14
Administrative Orders issued:	2
Cases dismissed:	2
New cases opened:	5

Case 09/087 -- Moonlight Architecture -- A Cease & Desist Order was issued to this firm for the unlicensed practice of structural engineering for a pole barn structure, as this engineering was not considered incidental to the project. Case has been closed.



SO . . . WHAT DOES AN ENGINEER DO WHEN NOT ENGINEERING???

Who is that engineer riding like the wind???



Photo courtesy of Mary P. Koechert

None other than the 2010 Distinguished Service Award recipient Ana E. Diaz, P.E. #7099 on her 14-year old Portuguese bullfighting horse, Opalo, who she has trained since he was 4 years old.

If you would like to share with DAPE some of your interests, send us your photo and details!





**COMMON EXAMPLES OF
STRUCTURAL
ENGINEERING PROJECTS
THAT MANY DELAWARE ENGINEERS FAIL
TO BE PROFICIENT IN**

By Robert A. Chagnon, P.E., SECB

Several years back, an engineer colleague of mine said that "I would be surprised as to how many of our engineers practice outside their areas of expertise". I had a difficult time understanding that since I long felt that practicing in areas that you are knowledgeable of is enough of a liability challenge without having to deal with practicing in areas that you have little or no experience in. However, through my 12-year exposure to DAPE's Law Enforcement & Ethics (LE&E) Committee that followed, he proved to be absolutely right.

Over that 12-year period, DAPE has had to deal with a few disciplinary problems involving engineers that sealed building plans that they shouldn't have sealed, a couple pertaining to site engineering, none that I can recall that involved electrical, chemical or mechanical engineering, but most by far being structural engineering-related cases, except for perhaps ethics violations.

In due defense of you bonafide structural engineers out there (including myself), I must add that most of the cases I'm referring to involved non-structural engineers attempting to practice as one. Here are several examples of the types of projects that have proven to become tripping hazards to structural wannabe's.

Pole Buildings: Pole buildings, now being referred to as "Post Framed Buildings", were initially developed as farm structures for utility use and not for human occupancy. Over the years, their relative economy has been enhanced by builders substituting 6 x 6 posts in lieu of 12" diameter poles and embedding the 6x6's three feet, as compared to the 12"

diameter poles being driven in some 8 to 10-feet. Now, however, instead of providing enclosures for tractors and hay bailers, they're being used for institutional (churches), commercial (retail and office facilities), industrial (manufacturing) and residential occupancies. Engineer's seals appear on submitted plans (and in some cases, architects) without their having performed any lateral stability or up-lift resistance calculations. **When compelled to provide calculations, the results display a total lack of understanding as to how shear walls and horizontal shear diaphragms interact to provide lateral stability to such structures nor their knee bracing and cross-bracing alternatives.**

Code of Ethics, Provision 2.A: "The engineer shall undertake to perform engineering only when qualified by education or experience in the areas of professional engineering involved".

Basement Foundation Walls: All building codes, past and present, call for building structures to be designed and constructed to support safely all of the applied loads without exceeding the design limits of the materials involved. If an engineer is called upon to pass judgment on the structural adequacy of a structure, he or she would be prudent to analyze the structure for the loads acting thereon to determine if any of the material stress limits are exceeded. Equally relevant is the legal requirement for engineers to "*be completely objective and truthful in all professional reports, statements, or testimony, and shall include all relevant and pertinent information*" (*Code of Ethics, Provision 3.A*). Despite all, **many engineers go on record as declaring concrete masonry basement foundation walls that have developed horizontal mortar joint fractures as being structurally sound or that the cracks have not affected the strength of the walls, despite the fact that the allowable stresses of the materials involved have clearly been exceeded.**

Solar Panel Roof Supports: Most all solar panel distributors lay claim that their panels add less than five pounds per square foot (psf) to a roof that they're to be installed on. Many engineers take all this at face value, not recognizing that the ballast (in the form of

concrete blocks) that holds the panels down is located in clusters at localized areas of the panel base elements. The 5 psf is arrived at by dividing the total weight of the panel and its ballast by the base area of the panel to arrive at a uniformly distributed loading. However, the subject base is not structured such as to distribute the localized cluster of ballast so they're really dealing with heavy concentrated loads and not uniformly distributed ones. The plans get sealed anyway and the installation ends up overloading the roofs. Licensure law provisions 2823 (a) 2, *Misconduct along with Gross Negligence*.

Pre-Engineered Metal Buildings: These are proprietary designs provided by others with foundation systems designed by local engineers, which are based on building reactions furnished by the building manufacturers. The problems arise as a result of the building's loading requirements being generally established by the owners or their contractors, who are often the building manufacturer's franchisees. They've learned that if the client wants a building that's 40-feet wide with 24-foot bays, specifying a 24B40 building is more apt to get them the job than by specifying a 24E40 building. The reason is that the "B" designation indicates that the building is subjected to a 20 psf live load and 10 psf wind load as compared to the "E" designation indicating that a 30 psf live loading and 20 psf wind loading is involved. The anchor bolt setting plans with the buildings anchor bolt reactions come in from the building manufacturer, the engineer designs and seals the foundation plans based thereon and it's a done deal. A worse case scenario is when a pre-engineered metal building that's selected by the owner or his or her contractor is intended to be used in conjunction with a smaller, conventionally designed and constructed office building attached thereto. The bigger pre-engineered building has a drift ratio of h/75 while the conventional office building's drift ratio is in the order of around h/300. One sways a lot and it's up against one that doesn't. Last, but not least, larger metal buildings frequently end up with up-lift reactions that are greater than their gravity reactions. But, many engineers fail to design for the up-lift conditions. A little knowledge is a dangerous thing.

Decks: Elevated decks frequently fail and they do so because the decks are designed primarily for gravity loads and end up having little or no lateral bracing. As a result, they end up racking and pulling away from the building they're attached to. These results are often driven by the clients who do not want to see their decks encumbered with the sight of knee braces. In these cases, wind forces do not propagate the lateral displacement of the decks, occupants on the deck moving back and forth do. Better to be safe than sorry.

Guardrails: While on the subject of decks, their guardrails, and those around other forms of balconies, frequently make the news as having failed. Building codes call for such structural entities to be capable of sustaining a force of 200 pounds applied in any direction on the guardrail. Unfortunately, the attachment of a guardrail to its substrate is a construction detail that is frequently left up to the carpenters in lieu of being properly detailed as needed.

Retaining Walls: The design height of a retaining wall is the height of its stem, which is from the top of the retaining wall footing up to the top of the wall, except when designing for sliding resistance. Most Delaware permitting agencies however tend to consider the height of a retaining wall as being the height that the wall sticks out of the ground. In their mind, any wall that's 4-feet or less above ground does not need to be engineered. Unfortunately, that's totally wrong. Engineers should know better (most architects don't) and design according to the engineering analytical practices related thereto.

Billboards: The lateral analyses related to billboards deals primarily with the embedment dept of their vertical supports. Engineers frequently seal such designs provided by advertising agencies without bothering to analyze the conditions involved. When required to submit calculations, they often attempt to support their sealed results by placing the billboard in an exposure "B" category. When was the last time you saw a billboard hidden behind a bunch of trees?

Barns: The structural stability of a barn often needs to be documented, either to establish its value for adaptive re-use or for qualifying for a

change in occupancy. In most cases, their principal connections involve mortise and tenon joints, which rarely ever pass current day analytical scrutiny. Simply claiming that such is okay because the barn has stood up well for several decades doesn't cut it. A more rational explanation is needed in addition to working in supplementary forms of additional support, when needed.

Are You A "Deal Maker" Or A "Deal Breaker"? Many building contractors, realtors, property owners, some architects and yes, even some lawyers seek out the "deal makers" in an effort to get their needed building permits or get their client off the hook. The "deal makers" are the frequent violators of the above mentioned deficiency examples. The "deal breakers" are the engineers and architects that value their reputation and honesty in providing designs and opinions based on valid and unbiased facts. **Which are you?**

2010 – YEAR OF RENEWALS

All current engineering licenses will expire **June 30, 2010**. Individuals and firms alike will be required to renew. Those individuals that have provided us with their email contact info will be advised electronically that the renewal period has commenced and will be afforded the opportunity to renew on our website at www.dape.org. All contact information (including email addresses) should be confirmed and corrected if necessary.

Once the license has been renewed, upon returning to the homepage, an updated wallet card may be downloaded. That's all there is to it!

For those licensees that have not provided email addresses, we will mail a paper renewal. Once our office staff has renewed your license, you may obtain an updated wallet card from our website.

2010 DISTINGUISHED SERVICE AWARD



The fourth annual Distinguished Service Award was presented to **Ana E. Diaz, P.E.** on January 13, 2010. This award is presented to the DAPE Committee member nominated for outstanding service to the committee, DAPE and the engineering community.

You've seen from a previous article that Ana is very talented, and we at DAPE certainly appreciate the many talents that she shares with us. Ana has been a very active participant in our Law Enforcement/Ethics Committee, and our Finance Committee. She recently organized a well-received enforcement program presented by the enforcement staff of the North Carolina Board for our enforcement committee.

Earning her BSME from Duke University and an MS-Metallurgy from the University of Florida, license #7099 was issued to Ana in 1987. She has spent 25+ years with the Dupont Company.

Her "other" life has included pursuits such as racing cars, flying planes and now horseback riding.

Congratulations, Ana!

CELEBRATE ENGINEERS' WEEK

By Gregory P. Pawlowski, P.E.



Everyone knows the significance of February 14 as being Valentine's Day. But how many of you know it is also the beginning of National Engineers Week this year? In 1951, the National Society of Professional Engineers commenced the week long celebration in honor of the birthday of George Washington, who is considered our nation's first engineer. We celebrate a week of events to bring attention to the general public the contributions engineers make in our world. It should be no surprise that mathematics and science are some of the key elements of this week's affairs. Public awareness is another important factor since everything around us is designed by engineers, even though we don't always receive the accolades.

This year's theme is *Engineers Make a World of Difference: Celebrate Volunteerism*. Over one million hours collectively of volunteer service to the public is donated each year by engineers. Locally engineers are called upon to judge the annual New Castle Science Expo held at Deltech's Stanton Campus a week after Engineer's Week. Students from both middle and high schools compete in 15 categories and are judged by nearly 100 engineer and science related professionals. Additionally, the Delaware Engineering Society holds its annual Mathcounts competition for middle school children the same week as the science expo. Mathcounts is one of the country's largest and most successful education partnerships involving volunteer engineers, educators, industry sponsors and students. Besides competitions, engineers are regularly called upon by schools at all grade levels to visit and explain to potential candidates what engineers do. Personally I have participated in the science expo for more than 10 years and given more than a dozen engineering presentations to our local schools.

Hopefully many of you will remember the various articles I have written on promoting women in engineering. Even the Philadelphia Chapter of the Society of Women Engineers picked up one and ran it in their newsletter. But I am not the only one encouraging women to enter the profession. February 18 is designated

as *Introduce a Girl to Engineering Day*. Businesses, government organizations and higher institutions with engineers will be hosting events this day, as well as dates before and after Engineering Week, for young women. Their purpose is to make them aware of a career in engineering, science and technology.

In the mood for a family outing during National Engineers Week? On Saturday, February 20, 2010 The National Building Museum in Washington, D.C. will be holding *Discover Engineering Family Day*. Visitors will be given free admission and an opportunity to become an engineer, a mathematician, or inventor for the day. There will be plenty of hands-on activities for children and adults both to discover how professional engineers turn ideas into reality. Robotics, electricity and thermodynamics are just some of the topics you can explore during your visit. Of course sparking an interest is just the beginning of a long and personally rewarding career in engineering. We at DAPE strongly encourage our young people to enter the profession and pursuing it to licensure. Efforts are made throughout the entire year by staff and committee members and National Engineers Week is merely the pinnacle.



The week's highlight will be the Engineers Banquet, held each year, on Thursday, February 18. Attendance consists typically of around 300 guests and the event will convene at the DuPont Country Club. At the banquet, awards will be presented to local engineering firms for designs they submitted on projects completed this past year and judged by their peers. Scholarships are presented to upcoming engineering students, while one veteran engineer is honored with *The Engineer of the Year* award. And finally, engineers who successfully passed the Principals and Practices of Engineering exam this past October will be presented their license certificate. But most important will be the opportunity for all Delaware engineers to meet their fellow colleagues and celebrate the career path they all chose. On behalf of DAPE, we hope to see you there.

NEW PROFESSIONAL ENGINEERS

Approval of licensure was granted to the following individuals on January 13, 2010 with the successful passage of the October 23, 2009 Principles & Practice of Engineering examination:

Baez, Hector	#16065
Breisch, Michael	#15492
Caffrey, Jennifer	#14642
Canzanella, Rino	#15732
Carrick, Kyle	#16158
Changlee, Victor	#15675
Cimo, Eric	#15813
Connolly, Maggie	#16131
DiGiovanni, Danny	#15825
Gettings, Michael	#16274
Greenwald, Eric	#14703
Halteman, Justin	#16412
Ho, Dion	#15932
Jariwala, Jayesh	#16450
Jordan, Andrew	#16127
Jovanelly, Nathan	#15648
Lander, Mark	#16164
Lugar, James	#15886
Lynch, Eric	#15168
McCloskey, James	#15701
McCluskey, Jason	#16272
McCreary, Sierra	#15963
Melvin, Angela	#16435
Micka, Amy	#16219
Monaghan, Stephen	#16417
Olaiya, Segun	#15919
Probert, Dana	#15877
Queirolo, Maria	#14675
Richardson, Stuart	#16334
Ross, Robert	#16246
Sands, Nicholas	#16415
Sawka, Karen	#15937
Schmidt, Alexander	#16139
Sengupta, Anindya	#16201
Sharhan, Hazim	#16179
Showler, John	#16484
Song, Byung	#16456
Taylor, Joshua	#14064
VanSciver, Eric	#16439
Whitty, Jeffray	#16264
Williams, David	#14921
Winterling, Jason	#16408
Yohe, Jacob	#15096

CONGRATULATIONS!

NEW ENGINEER INTERNS

After successful passage of the October 24, 2009 Fundamentals of Engineering examination, the following Engineer Interns have been added to the ranks:

Adams, Benjamin	Hines, Timothy
Agostini, Ryan	Hofmann, Alexander
Ambrose, Kelly	Hwang, Janice
Autz, Kyle	Iskra, Jennifer
Balsam, Anthony	Jay, John
Barbis, James	Jayne, Brian
Bercy, Lukas	Jensen, Wesley
Berihun, Abebaw	Keenan, Matthew
Bischoff, Walter	Kelmartin, Patrick
Blake, Casey	Kern, John
Bocchini, Peter	Lambertson, Katherine
Bossen, Samuel	Landesberg, Jason
Bozenhardt, Erich	Landstreet, Cordelia
Brask, Julie	Lange, Corey
Bryan, Victoria	Levis, Jeffrey
Bustard, Mark	Lichliter, Andreas
Cender, Thomas	Locetta, Kimberly
Chertock, Guy	Lomei, Alexander
Colavecchio, Thomas	Loughery, Scott
Cordaro, Christine	Luff, Allison
Dalton, Sarah	Luka, Abram
Damtoft, Bradley	Maddalo, Mark
Davis, Sean	Mahon, Gabriel
Dean, Nicholas	Malkin, Chance
DeRocco, Allison	Massa, Jason
Dielmann, Charles	Massey, Jason
Dobbs, Nicole	May, Alyssa
El-Deiry, Maurice	Mayercsik, Nathan
Elgamal, Ahmed	McBrearty, Dennis
Elliott, John	Miller, Sara
Endres, Konrad	Mills, Jason
Faucher, Justin	Morrissey, Nicholas
Fazio, Vincent	Muller, Joshua
Feist, Benjamin	Mullin, Kara
Ferenchiak, Rebecca	Nam, Jung
Fortunato, Steven	Nauman, Michael
Fote, Kyle	Nodland, David
Gacka, Thomas	O'Boyle, Rory
Geddish, Michael	Ohotzke, Lauren
Giannaula, Kyle	Okorie, Ekenedilichuk.
Gilchrist, Christina	Oronzio, Jake
Gradischer, Jennifer	Oven, Clare
Gregory, Daniel	Overmiller, Dustin
Gurusamy, Lincy	Pardini, Joanna
Hagan, David	Paviadaila, Andrei
Harris, Jason	Perfitt, Adam
Hastings, Gregory	Popyack, Lauren
Henn, Nicholas	Porter, Kevin

Ramer, Kyle	Sumner, John
Reuther, Matthew	Thomas, Brian
Roberts, Kyle	Tiseo, Kevin
Robinson, Brandon	Toone, Tompall
Roddy, Ian	Vanarelli, Evan
Rogers, Zachary	Vellia, Ryan
Roman, Michael	Vennard, James
Ryan, John	Wallace, Lindsay
Sargianis, James	Walsh, III, Richard
Schultz, Kevin	Watson, Nicholas
Seeney, Justin	Wessner, Kristina
Sethuraman, Rajamani	White, Maura
Sharhan, Hazim	Widlake, Douglas
Shovestul, Sarah	Wienke, Bret
Squeo, Christopher	Wilbert, Evan
Stables, Scott	Zagobelny, Megan
Stevens, Andrew	Zeller, Michael
Stewart, Melissa	

CONGRATULATIONS!!

INTERESTED IN SERVING ON COUNCIL?

Four seats on the DAPE Council will be open for election in 2010: Civil, Mechanical (for the remainder of the original term thru 2012), Industry, and New Castle County.

If you meet the qualifications to serve the respective constituencies and are interested in serving, petitions must be received in the DAPE office by **May 1, 2010**. Petitions may be requested by contacting the DAPE office.

Council Executive Committee

Frank A. Newton
President
 Gregory G. Pawlowski, P.E.
Vice President
 Keith R. Kooker, P.E.
Secretary
 Charles L. McAllister, P.E.
Treasurer
 Guy F. Marcozzi, P.E.
Immediate Past President

Council Members

Daniel P. Barbato, P.E., "Other" Eng.	8/31/13
David G. Clark, P.E., Chemical Engineering	8/31/13
W. Zachary Crouch, P.E., Sussex County	8/31/12
Alfred S. DeLuca, P.E., Electrical Eng.	8/31/11
Keith R. Kooker, P.E., Kent County	8/31/11
Guy F. Marcozzi, P.E., Private Cons.	8/31/11
Charles L. McAllister, P.E., Industry	8/31/10
Robert W. McClure, P.E., New Castle Co	8/31/10
Hans M. Medlarz, P.E., Government Employment	8/31/13
Frank A. Newton, Kent Co.-Apptd.	1/30/10
Gregory G. Pawlowski, P.E., Civil Engineering	8/31/10
Vincent Robertson, Esq.—Sussex Co.—Apptd.	10/13/12
Annette D. Shine, P.E. – Education	8/31/12
John E. Tracey, Esq. New Castle Co.-Apptd.	8/31/13
Richard M. Walsh, P.E. – Mechanical Engineering	8/31/12

Council Staff:

Peggy Abshagen	Donna Weaver
Executive Director	Administrative Asst.

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