PRESIDENT’S MESSAGE
By Leon E. Winget, Ph.D., P.E. / FCC President

As a reminder, the Columbus Engineer is in its 70th year. As mentioned earlier the Columbus Engineer facilitates the history of the Chapter. The history session presented later, covers the happenings 55 years ago or the 15th year of the Columbus Engineer.

I am taking this time to thank the officers, committee chairs and trustees for your contribution to our success this past year. Without your efforts, we would be just another paper organization. The Franklin County Chapter is not just another organization. We are very involved in all activities and we are the show-case of the Ohio Society of Professional Engineers. You all can be very proud. We are the Professional Engineer.

Congratulations to the elected officers, which will carry forward the efforts of those who have contributed so much in the past. I am very thankful for the very capable leadership of my predecessors, namely Devon Seal and Howard Jones. I hope that I have contributed to the expansion of our Chapter, which those two have moved forward, so adroitly.

(President’s Message continued on page 2)

FCC/OSPE & FCC Auxiliary Joint Officer Installation/Awards Luncheon Meeting

The Franklin County Chapter of Professional Engineers and its Auxiliary are having a joint meeting.

DATE: Tuesday, May 21
PLACE: Scioto Country Club
2196 Riverside Dr., Columbus
TIME: Registration 11:30 a.m.
Lunch 11:45
(Lunch will be buffet luncheon style.)
Following lunch officers will be installed.

The buffet luncheon will have soup, vegetable salad, fruit, chicken Marcela, Scioto mashed potatoes, choice of desserts, rolls & butter, and beverages. Cost is $23.00.

Chapter members must make reservations before May 14th. Send checks made out to FCC/OSPE Auxiliary to June Gray, 376 Shelby Ave., West, Powell OH 43065. Cancellation deadline for checks to be returned is Wednesday, May 16th.

Mrs. Gray of the Auxiliary will give the invocation and lead the pledge of allegiance. Jane Smith is to be hostess.

Installation of FCC-OSPE Officers by Howard Jones
President – Richard Smelker, PE, AEP
Vice-President/President-Elect - Steve Wilson, PE, American Electric Power
Vice-President - C.R. Weaver, PE, Gresham, Smith and Partners
Vice-President - Kevin Ernst, PE, Terracon Consultants, Inc.
Vice-President - Paul Junk, PE, Retired
Chapter Secretary - Michael Russ, EI, AEP
Chapter Treasurer - Steve Day, PE, Day Engineering LLC
PEPP Trustee Paul Junk, PE, PS, Retired
PEG Trustee Richard Irwin, PE, ODOT, Retired

FCC will be recognizing their award recipients for the year.

The Auxiliary Program at 1:15 p.m. is by Donna Lawrence of the Lancaster Ohio, Historical Society.

Chapter members are encouraged to bring spouses so that they can learn about the Auxiliary. Guests of Auxiliary members are always welcome.
To re-iterate what my predecessor wrote last year, following the Certificate Ceremony, I was reminded of our obligation to protect the health and welfare of the public above all else. To quote our illustrious MC when addressing the new PE license holders, “Congratulation, you now can be sued!” This simple statement highlights the power, significance and responsibility that we as professional engineers have. We must not take it lightly.

MATHCOUNTS – The four students are studying hard to represent Ohio at the National May 10, 2013. I have worked with them both in Cincinnati and Columbus. They are communicating very closely with each other. The four members are Varun Srikanth, an 8th grader, from Hilliard Memorial Middle School, Sara Wang, an 8th grader, from New Albany Middle School, Peter Zhu, a 7th grader, from Mason Middle School and Ju Hyan Park, a 6th grader, from Greene Middle School. Note that Sara’s sister, Vickie, represented Ohio at the National competition in 2010, and Peter and Peter’s brother, James, represented Ohio last year at the Nationals. Yes, this is Peter’s second year, and we expect to see him again next year, as well as Ju Hyan, our 6th grader.

Luncheons - The Chapter had a very interesting presentation by Bill Lhota on “Ethics” and the lack thereof in the mine disaster three years ago in West Virginia. Bill is one of the most recognized experts in the field of ethics in engineering and his expertise was well demonstrated at this presentation. Thank you Bill! Our next luncheon will be at the Scioto Country Club, which will include the installation of the new officers. Please make your reservations, so that you can show your support of these fellow members as they direct the Chapter over the 12 months.

State Science Fair - May 11th. Jim Arnold, P.E. needs other PE’s to join him in judging the projects. Please contact Jim and let him know that you will help. This is our chance to interact with students interested in engineering. Jim’s contact information is 614-299-2133 or Jim@haslettmechanical.com.

History XI of FCC/OSPE – Satellites, Vice Presidents, Castro, and Mortgages

(This is the eleventh issue of the History of Franklin County Chapter, by L.E.Winget, Ph.D., P.E. The content is based on the Frank Geyer’s compilation “A History of FCC”, 1972.)

FY 1957-58 – Satellites and Vice Presidents – USSR announced the successful firing of an ICBM and the launching of the first artificial satellite, “Sputnik”. The US launched its first satellite the “Explorer” at Cape Canaveral. Nasser was chosen to head the United Arab. DeGaulle assumed power in France. US launched Vanguard I (Star Trek Fame) and Explorer III. USSR launched Sputnik III.

Closer to home, Ed Slowter, who was one of the OSPE members instrumental in establishing the EFO, was elected Vice President of BMI and the Chapter. Unfortunately, another member of our Chapter, a Vice President of Commercial Motor Freight, passed away.

The Chapter elected K.W. Cosens as President and E.E. Slowter as Vice President. There were 10 Directors and 18 Chairs/Trustees. The membership numbered 888, the largest in the state. The dinner meetings were held at the Cubbage Corners, Winding Hollow Country Club, Maple Grove Methodist Church, US Naval Air Station and Ohio Youth Center. Tours were made of North American Aviation facilities (Oct.), Columbia Gas Systems Corp (Apr 2nd), and the new Columbus Airport (Apr. 22nd).

Certificate presentations were held at the November and May meetings, at the Ohio Youth Center. Ohio Supreme Justice James G. Stewart spoke at the May certificate ceremony. The topics at the other dinner meetings were:

- Bridge Building in Today’s World (Dr. James Schmidt)
Computers for Engineers (N.P. Eichenberger)
- PROGRESS AND Engineering at Port Columbus
  (Jack Bolton)

(Dr. James Schmidt, Pastor of Indianola Luthern Church; N.P. Eichenberger, IBM Associate; Jack Bolton, Superintendent of Port Columbus.)

Significant accomplishments of our Engineers:
- Willis Holder, of the College of Industrial Engineering, was named Chief Engineer, Industrial Engineering Division of Directorate of Supply and Services, Dayton Air Force Depot.
- W.E. Chope was named “One of the Ten Outstanding Young Men of 1957” by the US Chamber of Commerce.
- Dean Carson was honored by the CTC as “Technical Man of the Year.” Later, Dean Carson was promoted to Vice President of Business and Finance at OSU. Associate Dean of Engineering, Hal Bolz, served as Acting Dean.

Items of Interest:
- Professor Kunkle masterminded the annual “Fall Round UP and Ox Roast” which was held in September at the Cubbage Corners. The dinner meetings costs, throughout the year, ranged from $1.50 to $2.50. Professor E.E. Kimberly of the College of Electrical Engineering and author of the Electrical Engineering Text for Mechanical Engineers, fell from his garage roof. (Double E’s with first initials EE should not work on roofs.) NSPE stated that the shortage of engineers was aggravated by the misuse of engineers in trivial positions.

The FCC Picnic for Professional Engineers was at the York Temple Country in June. The OSPE Annual Meeting was held in Cleveland, On March 20, 21, and 22. (3 days and no CPD’s.)

On the lighter side:
- A father to his hippy son, as he handed him the snow shovel, “Man, dig that Snow.” “Some folks think they are busy when they are only confused.” - Anon.

FY 1958-59 – Castro and The Mortgage

President Eisenhower sent the US Marines to quell civil strife in Lebanon. Alaska and a year later, Hawaii, became states. (Yes, for one year we had a flag with 49 stars.) The US submarines, Nautilus and Skate crossed the North Pole under the ice cap. Two monkeys survive a space flight in the nose cone of a Jupiter Missile. Batista was overthrown in Cuba by Fidel Castro. Charles DeGaulle was elected President of France. Ex-Premier Nagy and General Maleefer were executed for their part in the Hungarian Revolution. Mr. Verwoerd, an extremist advocate for white supremacy, was elected as President of South Africa. (Two very close friends of mine left South Africa shortly after that time.)

Ed Slowter was elected President of FCC and Bob Tippett, Vice President. There were nine Directors and about 15 Chairs. (Unfortunately, data was missing.) The mortgage for the five and one half acres purchased for the OSPE Headquarters, north of Worthington, was paid off and “The Mortgage” was burned.

The FCC Annual Professional Engineers Picnic and Golf Tournament was held at the York Temple Country Club. The price for the dinner was a whopping $2.00.

Again, unfortunately, the data for Fiscal Year 1958-1959 was lacking, and we move on to the next chapter of FCC.

Next: Reconnaissance, Life Support Systems, Manned Space Flight and Murphy’s Law
**OSPE’s Continuing Professional Development (CPD) Conference and Annual Meeting**

The theme is “Socially Responsive & Responsible Engineering”. This year’s meeting is being held June 14-15, 2013 at Ohio University in Athens, Ohio. 12.5 CPD hours are available in Engineering Education. Be sure to mark your calendar for CPD education, fellowship and fun.

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**FCC-OSPE Membership Directory**

The 2012-2013 FCC-OSPE Membership Directory has been emailed to the members. The information listed in the directory is obtained from the NSPE database. This database is compiled from the information you provided NSPE on your dues statement. If any of the info shown is missing or incorrect, please make corrections on the NSPE website. Just login and navigate to the “My Account” page where you can add or edit your profile information. If you have problems NSPE Member Services can be contacted by dialing 1-888-285-NSPE (6773). If you would like a hard copy of the directory, please contact Joe Sullivan at 614-486-4383 or drop him an email at joe.sullivan@stantec.com.

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**Ohio Engineers Legislative Day**

Ohio Engineers Legislative Day is being held May 14, 2013 at the Capital Club in Columbus. Speakers and program begin at 9 a.m. and end at 1:45 p.m. Legislative visits from 1:45 p.m. to 4:00 p.m. Participants can earn 4.0 CPD hours. More details to come from OSPE.
The American Structurepoint Ohio Transportation Group and the Ohio Department of Transportation, District 5, have been recognized with a state level Outstanding Engineering Achievement Award from the Franklin County Chapter of the Ohio Society of Professional Engineers (FCC-O SPE).

**Project Description**

The reconstruction of Interstate 75 in the City of Dayton, Ohio, is one of the highest priorities undertaken by the Ohio Department of Transportation (ODOT) and the Miami Valley Regional Planning Commission (MVRPC). The I-75/US 35 interchange is a complex, fully directional interchange with four flyover ramps. Approximately 140,000 vehicles squeeze through this subcorridor every day. During rush hour, traffic backups have caused major congestion, idling, and accidents. Merging across lanes to exit used to be nearly impossible, and bumper-to-bumper traffic jams pushed impatient drivers to side streets, causing unnecessary wear and tear on local roadways. Several left-hand entrance and exit ramps existed in this section, along with inadequate ramp spacing. In addition, drivers were often confused, because there was only one continuous lane through downtown Dayton. To alleviate these problems, ODOT District 7 launched the $483 million I-75 Modernization Plan, a 3-phase project to ensure smoother, safer traffic flow through the city while creating one primary ramp to access downtown Dayton.

With a total construction cost of $57.6 million, Phase 1B of the project included the addition of one through-lane on I-75 and the complete replacement of the existing pavement of the 1.33- mile section of I-75 at the US 35 interchange, which provides 3-lane continuity in both directions from just north of Edwin C. Moses Boulevard to just north of Fifth Street. This phase also included removing geometric deficiencies, replacing aging pavement, and updating entrance and exit ramps. The I-75 profile was lowered up to five feet. In addition, 13 new bridges were constructed along I-75 just south of the downtown area, seven bridges were rehabilitated, and three bridges were removed. The project also included relocation of an existing traffic signal at the intersection of Stewart Street and the southbound exit ramp from US 35, and the removal of two ramps at Albany Street.

American Structurepoint provided all road and bridge engineering services, as well as land surveying services, while CTL Engineering provided geotechnical testing and observation services, and AEC provided lighting design.

**The Buckeye Turnaround: Maintaining Ramp Traffic**

Due to limited width on the ramp flyover bridges, it was not cost effective to maintain traffic on most of these ramp bridges while portions of the bridges were being reconstructed. Maintenance of traffic on the mainline bridges was particularly complex on the single bridge over three railroad tracks. The proposed improvements reconfigured this bridge into a combination of a precast arch structure and two bridges with embankments in between them. The 50-foot-span precast concrete arch was considered to be proprietary, and therefore coordination with ODOT Hydraulic Section, Office of Structural Engineering, and the Federal Highway Administration was necessary to approve its use.

American Structurepoint used an innovative approach to detouring ramp traffic for the first time in Ohio, utilizing a continuous flow turnaround (the Buckeye Turnaround), to detour ramp traffic while US 35 ramps were closed. The Buckeye Turnaround allowed US 35 ramp traffic to be
diverted south on I-75, turn around under the Edwin C. Moses Bridge, and continue north on I-75 to their original destination. American Structurepoint was able to detour interstate ramp traffic without placing drivers on local streets or ever truly exiting the interstate system. The turnaround was opened to traffic in September 2010. Approximately 4,000 vehicles per day (normal ramp traffic, 20 percent of the ramp) used this turnaround during construction, significantly reducing detour traffic on city streets.

The project also included the first Maintenance-of-Traffic Alternative Analysis (MOTAA) prepared for a major ODOT project and is now included in ODOT’s Traffic Engineering Manual as an example for other designers to use. This MOTAA analyzed three alternatives for I-75 traffic: crossover, part-width, and contra-flow. QUEWZ software was used to analyze potential backups and determine the impact of closures on traffic in order to develop a mitigation plan with alternate routes and appropriate detours. A hybrid of the contra-flow and crossover alternatives, which maintained two lanes of traffic in each direction on the mainline, was implemented. A third lane was added when a turnaround was in use. Seven bridges along I-75 were temporarily widened. Special provisions were also made to accommodate special events, particularly at the nearby University of Dayton.

**Complex Bridge Design**

Bridge work on Phase 1B included construction of 13 new bridges, rehabilitation of seven bridges, and removal of three bridges. The new superstructures on the project included prestressed concrete beams, curved and dog-legged plate girders, and steel-rolled I-beams. Substructure work included new semi-integral and standard abutments on MSE wall-supported fill to eliminate many of the existing bridge end spans. In all, more than 2,000 feet of existing bridge length was eliminated with this project, for a substantial decrease in future bridge maintenance and a cleaner, more aesthetic-looking corridor.

At Cincinnati Street, the mainline bridge structures received new decks and were widened on different skews than the existing bridges to accommodate the geometrics and site distance on Cincinnati Street. There were single-span bridge replacements of 3-span structures over Stewart Street and Albany Street. The existing structures over US 35 had abutments and foundations integral with the flyover ramp structures’ pier columns. The superstructures were replaced and the existing counterfort abutments widened to accommodate the new superstructure. The existing 9-span structure with hinged steel girders and beams spanning Washington Street and three railroad tracks was separated into five new structures with the use of over 1,000 linear feet of MSE wall. A 236-foot-long precast concrete arch with a 50-foot span was constructed on 25-foot-tall pedestal walls over the CSXT spur track.

For the structures over Edwin C. Moses Boulevard and Fifth Street, three existing bridge spans ranging from 65 to 100 feet were eliminated. T-type piers were utilized to cantilever the northbound widened structure over the intersection of Looking northwest, vehicles utilizing Buckeye Turnaround at the IR 75 and Edwin C. Moses Blvd. interchange.

Looking east, final 50’ Conspan arch placement on IR 75 southbound side.

Looking west, construction of IR 75 northbound bridges over Washington St, Railroad tracks, Edwin C. Moses Blvd. and Fifth St.
Edwin C. Moses Boulevard and Fifth Street. To accommodate these roadways, the skews of the proposed structures varied from about 25 degrees to over 40 degrees in the opposite direction, and the spans varied from 25 to 125 feet. Three of the I-75 and US 35 flyover ramp structures were modified, eliminating and replacing portions of the structures and constructing abutments on MSE embankment. MOT-35-1516N, in particular, is a 9-span, 1,198.5-foot-long structure spanning Norfolk Southern and CSXT tracks. The alignment of its dog-legged girder was revised to accommodate the widening of I-75. Two spans of the structure were replaced, and one was eliminated. One end of the existing structure was previously supported at a hinge on another bridge. This hinge was eliminated, and the modified structure terminates at an MSE wall abutment.

One of the greatest challenges encountered by the project team was construction of the proposed bridges while maintaining traffic. There are only inches between the existing and proposed northbound and southbound structures, and several of the structures required part-width construction to accommodate traffic. Over 1,000 linear feet of temporary MSE wall, along with tied-back soldier pile and lagging, and sheet pile shoring was utilized to accommodate the tight construction. Aesthetic treatments on the proposed bridges and walls were coordinated with the City of Dayton and included the use of color, form liners, and aesthetic lighting.

Additional objectives included achieving adequate vertical clearance under flyover ramps and over the railroad, eliminating the interchange at Albany Street, eliminating three bridges over an abandoned railroad, and widening the median from 24 to 28 feet. The project also involved utility coordination and relocation, including relocation of a 36-inch water main between Edwin C. Moses and Fifth Street and avoiding a 60-inch storm sewer along Albany Street. ODOT performed the environmental services. The project team coordinated on the visual appeal of the project with the City of Dayton by using form liners, color, and aesthetic lighting. The project team followed Best Management Practices (BMPs) on the post-construction work to improve the quality/quantity of stormwater flowing from the site. BMPs included ex-filtration pavement trenches. The water is treated and the volume of runoff is now contained so it slowly releases from the site.

Phase 1B of the I-75 modernization subcorridor project was substantially completed by October 31, 2012. The project has reduced traffic congestion, thereby reducing vehicle idling time, which has also reduced atmospheric pollution. There is more continuity and easier access to the interstate. In addition, three bridges were removed, resulting in less maintenance cost over time for the District. The Buckeye Turnaround has kept more drivers off side streets, which will extend the life of the pavement, resulting in less maintenance operations and, therefore, less pollution in the City of Dayton.

Other Recognition
The project has also received national recognition from the American Council of Engineering Companies (ACEC) during the 2013 Engineering Excellence Awards Gala on April 23 at The Grand Hyatt Washington Hotel in Washington, DC. The project was also an Outstanding Achievement award recipient from ACEC Ohio.

Installation of 50’ Conspan over CSX spur railroad.
## 2013 CALENDAR

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<tr>
<th>Date</th>
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<tr>
<td>May 14</td>
<td>5:30 p.m.</td>
<td>FCC Board Meeting @ Korda Nemeth</td>
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<tr>
<td>May 14</td>
<td>9 a.m.-4 p.m.</td>
<td>Ohio Engineers Legislative Day</td>
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<tr>
<td>May 21</td>
<td>11:30 a.m.</td>
<td>Joint FCC-OSPE/Auxiliary Annual Spring Banquet / Officer Installation</td>
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<tr>
<td>June 11</td>
<td>5:30 p.m.</td>
<td>FCC Budget Meeting Location to be announced</td>
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<tr>
<td>June 14-15</td>
<td>8:30 a.m.</td>
<td>Annual Spring Leadership Conference</td>
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Korda Nemeth Address: 1650 Watermark Dr Ste 200, Columbus, OH 43215