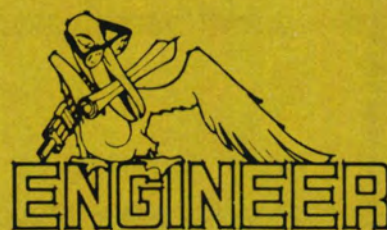




FEBRUARY, 1990
LOUISIANA



Edgar P. Benoit, P.E.



James S. Janssen, P.E.



Wayne E. Staton, P.E.



Donald C. Carter, P.E.



Jack T. Painter, P.E./P.L.S.



Geoffrey R. Say, P.E., Ph.D.

LES Honors Six Engineers

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FEBRUARY, 1990



ABOUT THE COVER

The Louisiana Engineering Society honors six outstanding engineers. Story begins on page 6.



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Presidential Privilege

For most of us, our Bachelors' degree in engineering was the true beginning of our engineering career. Many of us received our degree from a Louisiana institution. Today, there are six public, four-year colleges of engineering in our state: Louisiana State University, Louisiana Tech University, the University of Southwestern Louisiana, Southern University, the University of New Orleans and McNeese State University. In addition, there is one privately supported college of engineering, Tulane University.

In today's complex environment of technology, computers and the ever expanding world competition for goods and services, engineering education is essential to the well-being of our country and our state. Unfortunately, we find that the present and future of all of higher education in Louisiana, including engineering education, is confused and lacking in many aspects. This past summer, a special Federal panel of three judges found that Louisiana's system of higher education had fallen short of the conditions set out by the consent decree ten years ago. The multi-board system of management of higher education was determined to be a contributing factor to the failure of achieving a quality educational system that is open to all. The panel directed that a single board be formed to manage all higher education. As you probably know, before the ink was dry on the paper, appeals to this decision were filed from every direction. Our Governor supported the single board concept; the Attorney General, in defending our state, said that our constitution supported the multi-board system; and representatives of Southern and Grambling Universities believe strongly that the current multi-board system is best for those institutions. As a consequence of these appeals, the matter is again thrown into the judicial arena in what is expected to be a lengthy process.

For many years, higher education in Louisiana has been studied, discussed and cussed, but little forward progress has been achieved. In the area of engineering, LES undertook a study in 1985 and 1986 resulting in the publication of "Statements on the Crisis in Engineering Education in Louisiana and A Proposal for Maintaining Quality Engineering Education in the State, The Key to Future Economic Development." This study was presented in February, 1986 and specific proposals were made to the Legislature.



Blaise M. Carriere, P.E.
President
Louisiana Engineering Society

The program had four priorities:

- Improve faculty salaries
- Invest in laboratories and equipment
- Provide adequate space and facilities
- Increase academic support

Needless to say, given the dramatically declining conditions and mounting deficits of the 1986-1987 state budget, none of the above were favorably acted upon.

Also during 1986, the Louisiana State Board of Regents commissioned a statewide review panel on Undergraduate Engineering Education in Louisiana.

This panel was made up of the following individuals or representatives:

Professor J. Ray Bowen
Dean of Engineering
University of Washington
Seattle, WA

Professor Jon A. Brighton
Head of Mechanical Engineering
Georgia Institute of Technology
Atlanta, GA

Professor Carl Wilmsem
Chairman of Electrical Engineering
Colorado State University
Fort Collins, CO

Professor Lyman L. Handy
Chairman of Petroleum Engineering
University of Southern California
Los Angeles, CA

Professor Raymond J. Krizek
Chairman of Civil Engineering
Northwestern University
Evanston, IL

On November 11, 1986, the panel presented their report. This report stated that their "review of undergraduate engineering education in Louisiana has taken place during a period of unprecedented fiscal crisis." They state further, "Whether higher education can be a significant factor in economic development

depends largely on the state's ability to enhance the quality of its engineering programs and to create an environment which is supportive of university-industry collaborative efforts directed towards technological innovation."

After reviewing all six of the state's college of engineering programs, "the consultants did not view the present array of engineering colleges as an optimal use of resources. The consultants believe that Louisiana's interest would be best served if there were at most three engineering colleges in the State: one of which would have responsibility for doctoral-level education; the other two would offer predominantly undergraduate and masters' programs with opportunity for faculty research and graduate instruction at the masters' level, and, in selected cases, at the doctoral level."

Since submitting this report to the Board of Regents in November of 1986, the report has "sat on the shelf". Given the continuing fiscal crisis in higher education, it seems timely to now review the recommendations. We should look carefully at engineering education. Assume that Tulane University will continue its College of Engineering. Would not LSU be the major state College of Engineering through the doctorate-level? Based upon existing facilities and related university support, and in consideration of providing a geographic balance, the University of Southwestern Louisiana and Louisiana Tech University could provide strong undergraduate programs, masters' programs and an opportunity for faculty research. A possibility also exists that, given the population of the metropolitan New Orleans area, there might be sufficient base for a commuter undergraduate engineering college at the University of New Orleans, if technical diversification and increased NASA activity were to occur. However, given the continuing lack of state funds for higher education, we must look at phasing out engineering colleges and small, unproductive programs. Reductions in administrative costs, laboratories and equipment can produce dividends for the state's remaining three engineering colleges. Obviously, such a plan cannot take place overnight. We have an opportunity during the up-coming legislative session to start by significantly upgrading funding to the three designated colleges of engineering. The seriousness of this issue calls for the open and frank debate of the facts and a decision based on the long-term future of engineering education in Louisiana. **LE**

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LES Honors Outstanding Engineers

A. B. PATERSON MEDAL FOR AN ENGINEER IN MANAGEMENT

The Louisiana Engineering Society has a special award for an engineer who distinguishes himself in management. This is the A. B. Paterson Medal, which was first given in 1965. Albert B. Paterson, an active member of the Society from 1923 until his death in 1952, was an engineer, administrator, executive, banker, civic leader and humanitarian.



Edgar P. Benoit, P.E.

Edgar P. Benoit, P.E., was chosen because of his work as General Manager of the South Louisiana Electric Cooperative Association (SLECA), which serves electric energy to over 14,000 member/consumers in the Terrebonne, Lafourche, St. Mary, St. Martin, and Assumption Parish areas. SLECA is a \$55 million corporation with an annual revenue of over \$30 million. He reported to a nine member Board of Directors who are elected from districts by the members of the cooperative. As manager, his duties included the planning, organizing, staffing, directing and controlling of the cooperative organization.

As SLECA's manager, Mr. Benoit developed a cost control system by creating departmental cost centers. Reduction of cost was achieved despite the declining revenue in a poor local economy. The Cooperative was able to have rate de-

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LEO M. ODOM AWARD FOR SERVICES TO THE PROFESSION

The Leo M. Odom Award, named after its first recipient in 1972, is given for distinguished service to the engineering profession in Louisiana by a Registered Professional Engineer member of the Society who, over a period of long duration, has demonstrated leadership in technical societies and other professional engineering groups.



James S. Janssen, P.E.

James S. Janssen, P.E., was born in New Orleans and attended various schools there and in California, ultimately returning to attend Tulane University from which he graduated in 1931 as a Civil Engineer. His post graduate work included completion of the public utility course at Georgia Tech and the gas engineering extension course at Columbia University.

In his early career, his work with the U.S. Corps of Engineers took him from New Orleans; however, he returned home and in 1936 began his long and illustrious career as an engineer with New Orleans Public Service Inc. before retiring in 1973 as head of its Gas Division Engineering Department.

Mr. Janssen is a Registered Professional Engineer, and has always been actively associated with his professional societies. He served the Society in many positions, including the Presidency in

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ANDREW M. LOCKETT MEDAL FOR CIVIC ACTIVITIES

The Andrew M. Lockett Medal is the Society's civic activities award and was first given in 1951. It is named to honor Andrew M. Lockett, a member of LES from 1900 until his death in 1945.



Wayne E. Staton, P.E.

Wayne E. Staton, P.E., received his Bachelor of Science in Electrical Engineering in 1971 from the University of Southwestern Louisiana. Immediately after receiving his degree, he began his professional career with the Central Louisiana Electric Company, Inc., as a cadet engineer. He has advanced through the ranks to his present position as Supervisor of Budgeting and Scheduling for the engineering and construction divisions. Mr. Staton is a Registered Professional Engineer in Louisiana.

Mr. Staton was instrumental in forming the Central Louisiana Lions Charities to aid fund-raisers for local Lions Charities and assumed a lead role in writing the governing rules. The organization now consists of eight Lions Clubs and two Lioness Clubs in the Central Louisiana area. Since the organization was formed, it has raised approxi-

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F. HUGH COUGHLIN YOUNG ENGINEER AWARD

This award is given to an engineer not over 35 years of age who has demonstrated to a high degree capabilities in his chosen field. F. Hugh Coughlin was a member from 1944 until his death in 1979. His interest in, and support of, young engineers was very instrumental in the establishing of this award. His name was added to the award in 1975.

CHARLES M. KERR PUBLIC RELATIONS AWARD

The Charles M. Kerr Public Relations Award is given to an engineer for distinguished service in the promotion of public relations for the engineering profession in Louisiana. It was first presented in 1965 and was named to pay tribute to Charles M. Kerr, LES President in 1954. Kerr was very active in the business world in promoting his chosen profession, engineering.

JAMES M. TODD TECHNOLOGICAL ACCOMPLISHMENT MEDAL

The Technological Accomplishment Medal is given for distinguished services by an engineer for technological advancement or discoveries as contributions to the advancement of engineering.



Donald C. Carter, P.E.

Donald C. Carter, P.E., is a 1978 graduate of Louisiana Tech University having received a Bachelor of Science Degree in Agricultural Engineering. He is a Registered Professional Engineer in Louisiana and is certified by the National Institute for Certification in Engineering Technologies as a level II Technician in Automatic Sprinkler System Layout. Mr. Carter is also certified to supervise environmental testing and balancing procedures for Air and Hydronic Systems through the National Environmental Balancing Bureau for Testing, Adjusting, and Balancing of Environmental Systems.

Mr. Carter is Project Manager for Fitzgerald Contractors, Inc. a Shreveport, Louisiana, based mechanical contracting firm. As Project Manager, he is responsible for project management and reviewing all contract documents, detail-



Jack T. Painter, P.E./P.L.S.

Jack T. Painter, P.E./P.L.S., has been with the Louisiana Tech University in Ruston, Louisiana, since 1955 and is a Professor of Civil Engineering. He holds a Bachelor and Master of Science Degrees in Civil Engineering from West Virginia University. Additional graduate studies were performed at Purdue University, the Stevens Institute of Technology, and the University of Houston. He is a Registered Professional Engineer and Land Surveyor in Louisiana.

During the past 30 years, Mr. Painter has given hundreds of presentations about engineering and engineering's influence everywhere with such titles as: "The Wonderful World of Engineering"; "The World of Civil Engineering"; "The Circus and Engineering"; "The Landing on the Moon"; and, "The European Influence on Engineering". These presentations have been made to local, state,



Geoffrey R. Say, P.E., Ph.D.

Geoffrey R. Say, P.E., Ph.D., is Section Head and a Senior Engineering Advisor of the Exxon Research and Development Laboratories, Exxon Company, U.S.A., in Baton Rouge, Louisiana. He received his Bachelor and Master of Science Degrees in Chemical Engineering from Louisiana State University and his Doctorate Degree from the University of Texas. He is a Registered Professional Engineer in Louisiana.

Dr. Say is recognized as a co-inventor and co-developer of new technology which can significantly lower the cost and increase the reliability of handling hydrogen sulfide without compromising safety or the environment.

The removal of acid gases is practiced in petroleum refineries and gas plants to satisfy both downstream process requirements and product specifications. Dr. Say, along with two other Exxon

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EDGAR P. BENOIT, P.E.

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creases, which resulted in SLECA having one of the lowest rates among the thirteen Louisiana cooperatives. Costs targeted for reduction included the cost of purchased power, operation and maintenance expense, and interest expense.

The cost of purchased power was reduced by SLECA taking advantage of Cajun's high voltage rates by eliminating all but one of its low voltage metering points. SLECA now receives its electricity through a network of five bulk delivery points and one low voltage metering point. This has resulted in a downward variance of 1.84 mills per kWh from Cajun's average rate. Since 1984, SLECA has seen a three million dollar savings brought about by its conversion to bulk metering. SLECA also varied downward from Cajun's average rate by 1.18 mills per kWh due to its improved load factor. To help bring about this improvement, SLECA initiated a Voluntary Load Management Program in 1986. This program resulted in tremendous savings in demand charges in its first year. Also, the elimination of four low voltage metering points and the consolidation of their loads into fewer substations further improved SLECA's load factor. Finally, in 1987 SLECA began a successful heat pump marketing program. These more efficient heating and cooling devices are expected to significantly influence load factor over the next several years.

Operations and Maintenance Expenses have been lowered by 20.9% over the last four years. Reduction has been accomplished through a hiring freeze, early retirements, and less full-time employees. Additionally, insurance policies were carefully reviewed to adjust coverages as needed. In December of 1983, SLECA began a line inspection program that resulted in a tremendous saving by having maintenance completed during regular working hours avoiding maintenance costs that otherwise may have been done during overtime hours. Long-term interest expense was reduced by refinancing certain high interest loans. SLECA has avoided an additional interest expense by using current cash flow instead of borrowing.

All of these savings have not reduced service to SLECA consumers. In fact, service has improved. Evidence of that improvement is the remarkable reduction in outage time from 9.71 hours per consumer per year in 1985 down to 3.2 hours in 1988.

Mr. Benoit instituted the first Strategic Plan for the Cooperative, which dealt in long-range strategies to allow the Cooperative to survive the turbulent times. He instituted and organized a marketing department and planned a marketing system for ground water heat pumps. Mr. Benoit developed the Louisiana Cooperative Ratio Analysis, a system which allowed the co-ops to take a six-year history of Louisiana Electric Co-ops and compare cost ratios, thereby controlling costs and improving efficiency for all co-ops in Louisiana.

Mr. Benoit is a Registered Professional Engineer in Louisiana having received his Bachelor of Science Degree in Electrical Engineering from Louisiana State University in 1971. In May of 1984, he received his Master of Business Administration from Nicholls State University.

He is a member of the National Society of Professional Engineers, the Louisiana Engineering Society, the Institute of Electrical and Electronic Engineers, the Louisiana Association of Cooperative Engineers, and the Terrebonne Parish Utility Coordination Council. He was elected to the Board of Directors of the Houma-Terrebonne Chamber of Commerce, the Tri-Parish United Way, the Houma Rotary Club, and the Louisiana Engineering Foundation.

Mr. Benoit is married to the former Debbie Thomas of Schriever, Louisiana. They have two children and are members of the St. Bernadette Catholic Church. Edgar has recently taken a position as a Senior Engineer with Cajun Electric Power Cooperative, Inc., of Baton Rouge.

The accomplishments of Mr. Benoit as a manager and professional engineer make him a worthy recipient of the A. B. Paterson Medal for an Engineer in Management.

JAMES S. JANSSEN, P.E.

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1962, and was elected as an Honorary Member of LES in 1988. The National Society of Professional Engineers elected him PEI Vice Chairman of the Southwest Region in 1972-73. He is a Charter Member of the Engineers Club of New Orleans and was its President in 1967.

Mr. Janssen is a long-time member of the New Orleans Chamber of Commerce active on several important committees.

He was the recipient of the 1972 LES Andrew M. Lockett Award for Distinguished Civic Service and the 1979 LES Charles M. Kerr Public Relations Award.

Also, he received the award as the 1984 Outstanding Alumnus for the School of Engineering at Tulane University.

Mr. Janssen follows a natural instinct for journalism. He is editor of the *Consultant*, a house publication of Waldemar S. Nelson and Company, Incorporated, with a circulation of approximately 1450. He has prepared many articles for the *Louisiana Engineer* magazine.

His latest endeavor has been in the writing of a book. *Building New Orleans, The Engineer's Role* is a compilation of non-technical articles written in layman's terminology about the history of interesting and significant engineering feats in the development of New Orleans, a city whose natural features have challenged the engineering profession in many ways.

He served as a coordinator for a European tour during which U.S. engineers visited various foreign countries, meeting with engineers in those countries. He is a member of the Friends of the Cabildo and, in this capacity, occasionally conducts walking tours through the French Quarter.

He has willingly given his time and efforts on behalf of the United Fund, the American Red Cross, and the Boy Scouts, serving the latter for many years as a fund-raising speaker. He has held offices in many of the gas-trade organizations and associations. He is a member of the American Public Works Association and in 1950-51 was President of the Metropolitan New Orleans Chapter.

His most significant contribution to his community, however, are the fruits of his labors as a Member, and President in 1968-69, of the New Orleans City Park Board. Since being selected to serve on this Board in 1958, Mr. Janssen has given selflessly of his energies to the duties of this Board which is responsible for the facilities and operations of the 1500 acre New Orleans City Park, one of the largest municipal parks in the United States.

During his 31 year tenure on the Board, he has been instrumental in achieving substantial improvements to the physical plant including new clubhouses for both tennis and golf. The number of golf courses was doubled to four and the quality of the courses has been improved to among the finest public courses in the south. The tennis courts were also similarly expanded and improved, along with other sports and recreational facilities which are enjoyed by hundreds-of-thousands of people each year.

Mr. Janssen has been particularly involved in the development of "Bird Island" in the park, personally soliciting funds and trees to replace bird-food producing trees killed by hurricanes and the 1962-63 freezes. Another of his accomplishments on behalf of the park was the building of a 51-foot-high hill which is the highest ground point in New Orleans. Although the hill required thousands of yards of fill; through Mr. Janssen's efforts, the necessary fill and equipment for construction was provided at no cost to City Park.

As a further extension of his work on the local level, he is a member of the National Recreation and Parks Association where he served as a member of its Executive Board of Commissioners whose function is to formulate plans for the betterment of parks in the United States and Canada.

Most distinguishing of Mr. Janssen's high qualifications is the fact that while he pursued these civic endeavors, he has not diminished in his high degrees of service to his profession of engineering.

He is married to the former Dorothy Grundmann from New Orleans. They have three children, two daughters and a son, and numerous grandchildren.

WAYNE E. STATON, P.E.

Continued from page 6

mately \$1,000,000 for charity. This organization donated \$10,000 to the Alexandria Zoo to construct an educational building for school children in the name of the charter clubs. The \$100,000 raised annually is given by the Lions Clubs to such worthy causes as the Red Cross, the Salvation Army, Hope House, Shepherd Center, Day Care for the Elderly, Boy Scouts, Girl Scouts, Boys and Girls Clubs, the Diabetes Association, Drug Abuse Prevention, Crippled Children, eye conservation and work with the blind, and many more.

Mr. Staton served as a District Governor of Lions International in 1986-87 and has served three consecutive years as a Director to the Louisiana Lions League for Crippled Children and was elected Treasurer for 1989-90. He served as the 1988 Lions Multiple District 8 Convention Speaker and Entertainment Chairman and is currently serving as Chairman and Presiding Officer to the Louisiana Lions Council of Governors. In 1982-83, he was selected as Lion of the Year by the Pineville Lions Club and subsequently received the R. L. "Dick" Ward Life Membership Award in the Louisiana Lions League for Crippled Children and the Gold Life Membership Award in the Louisiana Lions Eye

Foundation. He was appointed to and elected as chairman by the Lions task force to consult with the Central Louisiana Chamber of Commerce "Gate Way" Committee. The Lions task force raised over \$2,000 in funds from area Clubs to assist in the beautification and welcome sign project for the Cities of Alexandria and Pineville. Mr. Staton was instrumental in organizing two clubs, the Alexandria-Rapides Metro Lions Club and the Pineville-Red River Lions Club, and received Extension Awards for his efforts. In addition to his local Club involvement, he has been recognized on numerous occasions by the Lions Club International including the 100% Club Presidents Award, the 100% District Governors Award, and the International Presidents Commendation Award.

Mr. Staton has been very active in the United Way serving as CLECO's Campaign Vice Chairman in 1986-87 and as Chairman in 1987-88. Contributions increased 27% and 19%, respectively. During the 1987-88 campaign, over \$100,000 was raised in Central Louisiana from employees. He has been a contributor to agencies since 1971, a fair share provider since 1983, a campaign speaker, solicitor, and a member of the 1989 Citizens Review Committee on agency budget allocations.

Mr. Staton is a member and ordained Ruling Elder in the Woodland Presbyterian New Church development of Pineville. He has served as Chairman of the Personnel Committee, the Nominating Committee, the Usher Committee, and the Budget and Finance Committee of the mother church, the First Presbyterian Church of Alexandria. He serves as a Sunday School teacher and participates in and conducts the lay portion of worship services.

Wayne is married to the former Janice Elam of New Iberia and they have one daughter, Catherine Ann, age 7. He served as President of the Alexandria Chapter of the Louisiana Engineering Society in 1976-77 and is a member of the American Association of Cost Engineers.

Mr. Staton's service to his community and profession has truly qualified him for the Andrew M. Lockett Award. His involvement is an inspiration to the engineering profession and the Louisiana Engineering Society is proud to honor this distinguished engineer.

DONALD C. CARTER, P.E.

Continued from page 7

ing, estimation, and smaller design work. Mr. Carter reviews and approves pricing of change orders and other items related to contract execution and

is in charge of purchasing materials and equipment, coordinating jobsite utilization of materials, equipment, manpower, and other project trades. He supervises the startup, testing and balancing of all mechanical systems installed by the construction department and certifies these installations in compliance with job specifications and guidelines as set forth by the National Environmental Balancing Bureau.

Most of Mr. Carter's professional career with FitzGerald Contractors, Inc., has been in construction of hospitals. Previously he was employed by Willis-Knighton Medical Center in Shreveport, LA. Mr. Carter was responsible for the overall engineering function of this 245 bed medical center and associated medical office complex. He designed, programmed, and implemented a Computerized Preventative Maintenance Program for the electrical and mechanical systems within the medical center and office complex.

Mr. Carter is a member of the Louisiana Engineering Society, the National Society of Professional Engineers, the American Society of Agricultural Engineers, and the American Society of Heating, Refrigerating and Air Conditioning Engineers.

Mr. Carter is a member of the Shreveport-Bossier Mechanical Contractors Association and is currently serving as the Chairman of the Joint Pipe Trades Apprenticeship Committee. He was recently elected as a Director of the Louisiana Tech Engineering Foundation.

He has been active in the Boy Scouts of America. Don is an Eagle Scout, God and Country recipient and a Vigil Honor Member of the Order of the Arrow. He is currently Cubmaster of Pack 25 at Shreve Island Elementary School. Mr. Carter was named one of the Outstanding Young Men of America in 1979 by the Jaycees.

Don is married to the former Audrey Lee Blouin of Shreveport, Louisiana, and they have two children, Bradley, age 9 and Sarah, age 4. Don is a member of the Sunset Acres Baptist Church where he is active in the church orchestra. He is a private pilot and he enjoys woodworking.

Donald C. Carter's outstanding contributions have demonstrated to a high degree capabilities in engineering indicating great potential for further advancement and leadership as a Professional Engineer, the ideals and criteria for the F. Hugh Coughlin Award.

JACK T. PAINTER, P.E./P.L.S.

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national and international groups throughout Louisiana and the United

States as well as The Bahamas and Europe. Groups have included junior and high school classes and organizations, college organizations ranging from engineering societies to history honor societies, religious and civic organizations, and to the Louisiana Engineering Society.

Mr. Painter has criss-crossed our state making presentations to schools both large and small. Frequently, if his initial presentation about engineering at a school has been early in the day, he has been asked to do a second, or third presentation to other groups or classes. He has the ability to motivate the students by using unusual examples and never talking down to them. Each presentation is geared to the level of the group. However, that groups level will be higher at the end of his presentation. His audience becomes a group of participants during the presentation, as they learn about engineering and find they enjoy the learning experience. Recognizing that our young people are a visually oriented generation, most of Mr. Painter's presentations are slides, movies, or live performances illustrated. His presentations might be characterized as "words of wisdom and inspiration presented in an interesting and entertaining manner". These presentations over the past 30 years have had a significant influence in making individuals aware of the professional side of engineering, and have influenced many secondary level students to enter the engineering field and ultimately the practice of professional engineering with Society involvement.

Mr. Painter has been a part of Louisiana Tech University's Tech-Rome program for eighteen years and its on-site director for three years. In this position, he has been a tour leader for groups throughout Europe and developed a course about engineering primarily for non-engineers. This course emphasizes the history of engineering and how it has helped shape our society.

For the past two years, Mr. Painter has been a co-director in establishing the Engineering Film Research Center (EFRC) on the campus of Louisiana Tech University. The purpose of the EFRC is to identify, locate, acquire, catalog and preserve records of engineering activities which have been documented on film and video tape. This archive of historical film about engineering has generated

much favorable publicity both in Louisiana and nationally. The center's valuable archive of engineering records will be a great resource for teachers and practicing engineers to use in the promotion of the engineering profession and the Society.

Mr. Painter is a member of the Louisiana Engineering Society, the American Society of Civil Engineers, the American Society for Engineering Educators, the American Congress on Surveying and Mapping, and the American Film Institute. Many honors have been bestowed on Mr. Painter including the National Science Foundation Science Faculty Fellowship; the Louisiana Gamma Chapter of Tau Beta Pi Outstanding Teacher Award on four occasions; the American Society of Civil Engineers (Louisiana Tech University) Outstanding Professor Award on ten occasions; the Louisiana Tech Engineering Foundation Award on four occasions; the first to receive the Louisiana Tech Alumni Foundation Professor Chair; and the first to receive the first national James M. Robbins Award for Excellence in Teaching presented by Chi Epsilon, the civil engineering honor society.

Jack is a member of the Episcopal Church of The Redeemer and is a licensed lay reader in the Episcopal Western Diocese of Louisiana.

Mr. Painter has given freely of his time, talents, and resources to improving the image and identity of the professional engineer through public relations. His outstanding contributions to LES and the profession are in keeping with the ideals of the Charles M. Kerr Public Relations Award.

GEOFFREY R. SAY, P.E., Ph.D.

Continued from page 7

Company engineers, invented and developed a family of FLEXSORB gas treating agents which offers significant advantages for the removal of H₂S and other acid gases. These advantages include significant investment and operating cost credits in grass roots designs and significant operating cost incentives in retrofits.

Two processes of particular value to petroleum refineries and natural gas plants are: FLEXSORB SE and FLEXSORB PS. FLEXSORB SE is a proprietary

gas treating agent developed by Exxon Research and Engineering Company for the selective removal of H₂S. FLEXSORB PS is a different formulation used for the bulk removal of acid gases such as H₂S, CO₂, COS, etc.

Gas treating is a complex subject because there are numerous processing requirements and treating agents. Some of these agents have been in service for many years. More recently, we have seen the development of new technologies, such as, agents which can carry out a specialized gas treating task more economically than the gas treating agents with which we are all familiar. The selective removal of H₂S from gases containing CO₂ is one such specialized task.

Technology for selective removal of H₂S is economically preferred when there is a need to remove essentially all of the H₂S and there is no process requirement to remove the other acid gaseous components such as CO₂. This type of service is encountered in both refinery and gas plant applications, including Claus sulfur plant tail gas cleanup units, FLEXICOKING low BTU gas desulfurization, enhanced oil recovery operations, natural gas sweetening and the enrichment of acid gases from natural gas plants.

Employing a selective amine treating agent, rather than a non-selective agent such as MEA or DEA, results in a lower amine circulation rate, smaller equipment and lower operating costs. This occurs because the amine preferentially absorbs H₂S. Hence, amine is not tied up in unnecessary CO₂ removal. Also, the acid gas would be concentrated in H₂S, thereby allowing usage of a conventional Claus sulfur plant.

FLEXSORB SE is an outgrowth of Exxon's research in hindered amine gas treating technology. The FLEXSORB SE amine was developed for the specific purpose of H₂S selectivity, that is, a strong tendency to react with H₂S and not other acid gases.

As stated previously, along with FLEXSORB SE, Exxon has developed hindered amine technology that can make substantial improvements to other areas of gas treating. One of these is the removal of both CO₂ and H₂S using an amine in an organic solvent called FLEXSORB PS.

FLEXSORB PS is an improvement over the conventional amine-solvent process.

Continued on page 18

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Larry A. McKee, P.E./P.L.S., Appointed to State Board of Registration



Larry A. McKee, P.E./P.L.S., Chairman and Chief Executive Officer of Professional Engineering Consultants Corporation of Baton Rouge, Louisiana, has been appointed by Governor Roemer to the Louisiana State Board of Registration for Professional Engineers and Land Surveyors. The appointment became effective October 22, 1989, and is for a six year period.

McKee replaces Marion J. Chaney, P.E., of Alexandria, Louisiana, who has been a member of the Board for the past six years.

McKee has spent the last twenty years of his professional career as engineer in charge of major municipal projects throughout the southeastern United States. Projects by Mr. McKee include raw water intake structures; raw water transmission mains; water treatment facilities; water distribution facilities; sewage pumping and treatment facilities, and sewage collection facilities. He has served as engineer in charge on major governmental projects including flood control structures for the Corps of Engineers; flood studies for the Federal Insurance Administration; major highway and bridge design, special studies and Environmental Impact Statements.

He is a graduate of Louisiana State University having received a Bachelor of Science Degree in Civil Engineering. McKee is a Registered Professional Engineer and Professional Land Surveyor in Louisiana, and is registered as an Engineer in Alabama, Mississippi, Missouri, and Texas.

Mr. McKee is a member of the Louisiana Engineering Society, the National Society of Professional Engineers, the Consulting Engineers Council of Louisiana, the American Consulting Engineers Council, the American

Society of Civil Engineers, the Society of Military Engineers, the American Water Works Association, the American Public Works Association, the Water Pollution Control Federation, and is a Honor Member of Chi Epsilon.

Frederic M. Chatry, P.E., Retires



Frederic M. Chatry, Engineering Division Chief of the U. S. Army Corps of Engineers, New Orleans District, and a life member of the Louisiana Engineering Society, was recently given the Department of the Army Decoration for Exceptional Civilian Service, 1988-89, in honor of his retirement from government service on December 30. The gold laurel leaf cluster medal is the highest award the Army gives to civilians. Col. Richard V. Gorski, District Engineer, presented the decoration to Chatry.

Chatry, a Tulane School of Engineering graduate, retires after 46 years of federal service, 44 of them at the New Orleans Corps of Engineers. He served in WWII and the Korean Conflict and joined the Corps of Engineers in 1946. In 1972, Chatry was named the district's first Planning Division Chief. Chatry organized the new division and led the district's implementation of the National Environment Policy Act.

In 1975, Chatry was selected Chief of the Engineering Division. As Chief, he has been responsible for all engineering and design work in the district for the past 14 years.

Commenting on his years at the Corps, Chatry said that he always followed one rule. "Find out what the Mississippi River wants to do and arrange for it to do it in a way that will be least disruptive, always keeping in mind the citizens of the area."

Chatry said that navigation will always be "tremendously important" in the future of the New Orleans District. "But",

he added, "concern for the environment will influence what we do in the Mississippi."

IN MEMORIAM

Humphreys T. Turner, P.E.



Humphreys Talbot Turner, professor emeritus in the Department of Civil Engineering at Louisiana State University, died on July 17, 1989, while on vacation in Maine. He was an LSU faculty member for 33 years. In his honor, the College of Engineering has established the Humphreys T. Turner Professorship Fund.

Professor Turner began his career at LSU in September of 1949 as an instructor. During his years at the University, he served as Acting Department Chairman, Assistant Department Chairman, and Chairman of the ad-hoc committee advising civil engineering students. He served as faculty advisor for all civil engineering students for many years.

Professor Turner was elected Favorite Civil Engineering Professor by the undergraduate students for several years. He received the Halliburton Award for Excellence in Teaching in 1970, and the Amoco Award of Excellence in 1977. He served on the LSU Faculty Senate. He was a member of the Louisiana Engineering Society and the American Society of Civil Engineers. His honorary organizations included Tau Beta Pi, Chi Epsilon and Sigma Xi. He also served on the Louisiana Engineers Selection Board in 1983-84.

After his retirement from LSU in December of 1982, Professor Turner joined the firm of Dawson Engineers as a consultant engineer, a position he held until his death.

Born in Arkadelphia, Arkansas on April 17, 1922, Professor Turner earned his Bachelor and Master of Science Degrees from Louisiana State University. He received an M.C.E. degree from Mas-

Continued on page 19

ANNUAL REPORT

Louisiana State Board of Registration For
Professional Engineers and Land Surveyors

For 1989

Regular meetings of the Board were held in January, March, June, July, September and November.

The tabulation that follows indicates actions taken by the Board on applications for the registration of Professional Engineers and Land Surveyors and for the certification of Engineers-In-Training and Land Surveyors-In-Training.

Professional Engineers

Applications approved.....	412
Applications disapproved.....	100
Applications withdrawn.....	2

Land Surveyors

Applications approved.....	7
Applications disapproved.....	30
Applications withdrawn.....	0

Engineers-In-Training

Applications approved for certification.....	492
Applications disapproved.....	232

Land Surveyors-In-Training

Applications approved for certification.....	25
Applications disapproved.....	20

The following is a tabulation of the total number of Professional Engineers, Land Surveyors and Professional Engineers (Public Employees), Engineers-In-Training and Land Surveyors-In-Training holding registration and certification as of December 31, 1989:

Professional Engineers.....	14,939
Land Surveyors.....	2,403
Engineers-In-Training.....	4,342
Public Employees.....	3
Land Surveyors-In-Training.....	92

Below is a tabulation of the number of Professional Engineers registered in the various branches as of December 31, 1989. (Some persons are registered in more than one branch.)

Agricultural.....	294
Chemical.....	1,180
Civil.....	6,212
Electrical.....	2,284
Industrial.....	138
Mechanical.....	3,846
Metallurgical.....	37
Mining.....	34
Petroleum.....	1,358

A total of 1072 written examinations were administered in 1989. Of these, there were 608 examinations in the fundamentals of engineering, 49 in the fundamentals of land surveying, 372 in the principles and practice of engineering, 21 in the principles and practice of land surveying and 22 in the laws and procedures of land surveying in Louisiana. Engineering examinations were administered at examination centers in Baton Rouge, Lafayette, New Orleans and Ruston in April and October. On the same dates, land surveying examinations were administered in New Orleans.

Annual Report to the Governor

Dear Governor Roemer:

Pursuant to the provisions of Louisiana Revised Statute 37:691 B, I submit the report of the transactions of the Louisiana State Board of Registration for Professional Engineers and Land Surveyors for the fiscal year 1989. A duly certified audit and financial statement showing the receipts and disbursements for the fiscal year ending June 30, 1990 will be sent to you at a later date.

The Louisiana State Board of Registration for Professional Engineers and Land Surveyors was created by Act 73 of the Legislature of the State of Louisiana at the regular sessions of 1950. The Act delegates to the Board the duty of registering qualified persons as Professional Engineers and Land Surveyors, and charges the Board with the responsibility of enforcing the provisions concerning violations.

The members of the Board and the expiration dates of their appointment are as follows:

Rodger D. Phelps, September 14, 1990;
Sam L. Sullivan, August 2, 1991; Robert D. Fenner, July 31, 1992; Ara Arman, January 24, 1993; Malcolm L. Hurstell, July 31, 1993; Albert J. Dunn, February 18, 1994; Randall F. Barron, August 24, 1994; Coan J. Bueche, August 24, 1994; William J. Thevenote, Jr., August 31, 1995; Larry A. McKee, August 31, 1995.

At the annual meeting of the Board, held on January 24, 1990, the following officers were elected:

Ara Arman, Chairman,
Sam L. Sullivan, Vice Chairman,
Malcolm L. Hurstell, Secretary.

Very truly yours,

Robert D. Fenner

Chairman of the Board, 1989



**Paul L. Landry, P.E.,
Executive Secretary
Louisiana State Board of Registration for
Professional Engineers & Land Surveyors.**



Members of the Board

Louisiana Revised Statute 37:683 A specifies areas of professional practice for members of the Board. With reference to that section and in accordance with the Bylaws of the Board, the following list is presented:

Private Practice of Engineering:

Larry A. McKee and
Robert D. Fenner

Engineers in Government Employment:

Albert J. Dunn and Coan J. Bueche

Engineers Employed in Industry:

Malcolm L. Hurstall and
William J. Thevenote, Jr.

Engineers Employed in Education:

Ara Arman, Randall F. Barron and
Sam L. Sullivan

Professional Engineer and Land Surveyor Engaged in Land Sur- veying:

Robert D. Fenner

Professional Land Surveyor:

Rodger D. Phelps

Mr. Francis C. Roy's term expired on September 6, 1989, and you appointed Mr. William J. Thevenote, Jr. as his replacement.

Mr. Marion J. Chaney's term expired on November 21, 1989, and you appointed Larry A. McKee as his replacement.

On September 14, 1990, Mr. Rodger D. Phelps' term expires. At least thirty (30) days prior to the expiration of his term, the President of the Louisiana Society of Professional Surveyors will submit nominations to you for consideration.

BOARD MEETING NOTICE

The Louisiana State Board of Registration for Professional Engineers and Land Surveyors will hold its regular meetings at 1055 St. Charles Avenue - Suite 415, New Orleans, La. 70130 on the following dates:

1990

Mar. 26-27
June 4-5

July 23-24
Sept. 24-25
Nov. 12-13

Notice of Intent

In the December 1989 issue of the *Louisiana Engineer* on page 11, the Board announced its Notice of Intent to consider adopting the following rule at its January 23, 1990 meeting:

"Registrants shall undertake to perform professional engineering or land surveying services only after having been selected on the basis of competency and qualifications. Registrants shall not solicit or submit fee proposals prior to selec-

tion." Comments regarding this rule change were received from a number of you. The Board continues to study this issue. Please continue to submit your comments or offer amendments to the proposed rule to the Board Office at 1055 St. Charles Avenue, Suite 415, New Orleans, Louisiana 70130-3997. The Board solicits your views on this most important issue. **LE**

Enforcement Corner

**by Registration Board Investigator
Benjamin S. Harrison**

Enforcement Problem-Practicing on An Inactive License

During the past year, the Board became aware of several situations wherein registrants of the Board had been offering to practice and/or actually practicing on an inactive license. Such acts are not only unprofessional, but are a clear cut violation of Louisiana Revised Statute 37:698 A (9).

Registration renewal notices are mailed by the Board to all registrants approximately 60 days prior to the expiration date of their license. Approximately 30 days after the expiration date of a license, registrants who have not returned their renewal notices and renewed their license are mailed a second notice of license renewal. Finally, six months from the license expiration date, registrants who still have not renewed their license are mailed a final notice of renewal.

The Board has not in the past routinely provided the final renewal notice to registrants by Certified Mail. However, beginning in April, 1990 the State Board of Registration will mail final notices of renewal to registrants by Certified Mail.

Any registrant who is brought to the attention of the Board and found to be offering or practicing engineering or land surveying on an inactive license, who has been properly provided with a notice in accordance with Louisiana Revised Statute 37:698 A (9), will be in violation of registration law and subject to disciplinary action by the State Board of Registration.

The Board is aware that this magazine goes only to active registrants and some engineers and land surveyors who should be aware of this notice may not receive it. It is therefore urged that all engineering employers and supervisors insist that their current and future engineer employees maintain their license in an active status. Recipients of this magazine are also asked to mention the importance of license renewal to technical and social professional engineering friends.

Frequently, excuses for license non-renewal such as: "I wasn't aware it had expired;" "I changed my address and mail wasn't forwarded;" "My secretary must have overlooked it;" etc., have been presented to the Board as reasons for failing to renew a license. These are not considered valid reasons for failing to renew a license. Registrants alone are responsible for seeing that their licenses are renewed in a timely fashion. A registrants pocket registration card clearly reflects the date his registration expires. Not to belabor the point, but timely registration renewal would appear to be just one of many actions by the professional which demonstrates true professionalism.

Please insure that you keep the Board informed of your current address. A change of address must be reported in writing to the State Board of Registration for Professional Engineers and Land Surveyors, 1055 St. Charles Ave., Suite 415, New Orleans, Louisiana 70130 in order to have such a change entered into the records.

Plan for Engineering in the 90's

The 1990's are here and a new decade prompts firms to think broadly and consider major issues that will shape their industry. Charles Keller, director of marketing, planning and development at Black & Veatch, presents the following key trends for A/E's:

- The environmental market will continue to grow, fueled by pressure to clean up.
- The energy market will explode, with A/E firms expected to provide services for new cogeneration plants: financing, siting, permitting, licensing, design and construction.
- Infrastructure must be rebuilt, creating a huge reconstruction market for engineers.
- The facilities market will falter, with military work shrinking and the commercial office market collapsing.
- The automated design factory will continue to develop. As design becomes more of a commodity, marketers will be challenged to differentiate their firms.
- A/E's will be sued more often. Firms must be choosier about which jobs to pursue.
- Industry consolidation will continue with brisk merger and acquisition activity between design and law firms.
- The source of firms' profits will change. The best profits will be in licensing, permitting, and construction management, lower in design.
- There will be a shortage of talent, resulting in fierce competition to hire, train, and retain quality staff.
- The successful firm of the future will be a multi-discipline team of architects, financiers, lawyers, engineers, environmentalists, economists and computer scientists.

(From ACEC's *The Last Word*, December 15, 1989)

NAAG Suspends Further Use of Its Design and Construction Documents

In a positive development for consulting engineers, further use of the contro-

versial owner-design professional, owner-contractor, and general conditions agreements of the National Association of Attorneys General (NAAG) has been discontinued. Yielding to heavy industry pressure and the realization of numerous fundamental flaws, NAAG, at its December meeting, voted unanimously to withdraw the contracts pending further review. The contracts had come under fire from the American Bar Association, sureties and the insurance industry as well as engineers and architects for being unbalanced in their distribution of duties and responsibilities.

(From ACEC's *The Last Word*, January 5, 1990)

CEC/MW Publishes Business of Consulting Engineering 1990

Salaries of consulting engineers and their support staffs, size of office space and rent paid, types of computer systems used, fringe benefits given, brands of photocopiers and fax machines, methods used to find new employees, and a wide range of additional information are included in a comprehensive new report published by the Consulting Engineers Council of Metropolitan Washington (CEC/MW). Titled *The Business of Consulting Engineering 1990*, the 42-page document relates data gathered through CEC/MW's biennial business practices survey. A near-200-item questionnaire was used and, according to CEC/MW Executive Vice President John P. Bachner, more than half of CEC/MW's 150-plus member firms responded. Answers given are broken down by disciplines in almost every instance.

Data on salaries of almost 20 different grades of technical personnel are provided, along with similar information for field personnel and nontechnical staff, including office managers, administrative assistants, typists, word processors, computer programmers, proposal writers, and a number of others.

Extensive detail is related about the fringe benefits given by firms, including bonuses, retirement plans, health/life

insurance, paid vacation, paid holidays, paid personal leave, compensation time, jury duty and military leave, educational assistance, association involvement, vehicle usage, tools, and company retreats.

Other issues examined include procurement methods applied for acquisition of design professional services, contracting practices, quality control, shop drawing review, and written materials such as reports and brochures.

The Business of Consulting Engineering 1990 may be ordered from the Consulting Engineers Council of Metropolitan Washington at a cost of \$25 per copy. Remittance must accompany an order. Orders should be addressed to CEC/MW, 8811 Colesville Road, Suite G-106, Silver Spring, MD 20910.

Infrastructure

Investment

The United States ranks fifty-fifth in the world in capital investment in infrastructure.

Estimates of annual capital investment shortfalls range from \$17.4 billion (Congressional Budget Office) to \$24.6 billion (Joint Economic Committee) to \$71.3 billion (Associated General Contractors).

The federal share of infrastructure spending for fixed capital formation declined from 1 percent in 1981 to 3.4 percent in 1986. From 1980 through 1987, federal aid to states and cities declined thirty-seven percent in real terms (adjusted for inflation).

- Federal funding programs for rural America have been cut by over sixty-seven percent since 1980
- Secondary highway systems lost over sixty percent funding since 1980
- Farmers Home Administration water and waste water disposal grants lost seventy-five percent
- EPA construction grant program cut $\frac{1}{4}$ since 1980
- Community Development Block Grants lost $\frac{1}{3}$ funding since 1980
- Since 1981, the federal spending for mass transit has decreased by forty percent.



Consulting Engineers Section Warren J. Wilder CEC/L Executive Director



Capital spending has dropped from 2.3 percent of GNP in 1960 to 1.1 percent today.

\$28.8 billion remains unspent user fee in federal transportation funds.

Traffic

If a worker is delayed 20 minutes each day by rush hour traffic, he or she will have wasted two year's time waiting in traffic and another six months waiting for red lights to change.

By the year 2000, approximately 7.5 billion gallons of gas will be wasted due to traffic congestion.

Passenger delays exceeded 2,000 hours per day in 1986 and cost consumers and air carriers over \$3 billion in 1987.

From 1980 to 1988, traffic growth has increased at an average rate of five percent annually. By the year 2005, U.S. highway travel is expected to top 3 trillion vehicles. In thirty years, total travel is expected to double.

FHWA shows that over 11 percent of labor work force hours are spent on the highways.

Operating costs for small cars are almost one-third higher on poor roads than on well maintained roads.

Every \$1 invested in highways reduces direct operating costs by \$3-\$4.

Over a million miles of U.S. highway will need to be resurfaced by the year 2000.

Air

Air travel continues to grow at such a rapid pace, the Federal Aviation Administration estimates that the number of "seriously congested" airports will increase to fifty-eight percent by the year 2000, impacting seventy percent of all passengers.

There has not been a U.S. airport built since 1974.

Bridges

Forty-two percent of the nation's estimated 575,607 bridges are structurally deficient or functionally obsolete.

There is one bridge collapse every two days.

Waste

An estimated 45,000 tons of waste are being generated every day, 95 percent of which are being disposed of in landfills that are rapidly reaching the end of their disposal capacity. One third are expected to exhaust capacity by the end of 1993.

The annual U.S. generation of 158 million tons of municipal solid waste would fill a convoy of 10-ton garbage trucks, 145,000 miles long, over half-way from here to the moon.

Each man, woman and child contributes an average of 1300 pounds a year to the growing mountain of garbage.

Approximately 30,000 potentially contaminated waste sites may pose a threat to human health or environment.

Twenty-five percent of the nation's schools have severe environmental problems, primarily asbestos and lead pipes. The cost of repairing the schools is estimated to be \$95 million.

There are approximately 16,000 wastewater treatment facilities in the U.S. which remove eighty-five percent of the pollution from wastewater.

Almost 29 million Americans are not served by modern sewage treatment facilities.

Shortage of Engineers

The number of engineering baccalaureates in 1996 will fall short of demand. By the year 2010 the shortfall will be 700,000.

Over the next five years, the college-age population will decline and the supply of engineers graduating from college will also decline, perhaps quite markedly. The demand for engineers may have to be met by non-traditional sources which may result in a diminution of quality and threaten the long-term international competitiveness of the United States.

Over five percent of bachelor's degrees were granted to minority students in 1985-86. In 1986, over 11,000 were earned by women, 6,300 by foreign nationals. By 1995, engineering baccalaureates earned by foreign citizens may increase to 9,000, accounting for thirteen percent of degrees awarded.

The number of women graduates in mathematics and computer science fields could drop from a high of 22,400 in 1986 to only 9,000 in 1989.

Japan trains 1,000 engineers for every 100 lawyers. The United States trains 1,000 lawyers for every 100 engineers. Two-thirds of the world's lawyers practice in the United States.

Between 1,300 and 1,800 engineering faculty positions at U.S. colleges and universities are currently vacant.

Employment of engineers rose substantially from 1972 to 1986, increasing from almost 900,000 to over 2.2 million (average growth rate of seven percent per year).

Foreign Competition

America is graduating 1,000 lawyers for every 100 engineers. In Japan, that statistic is reversed.

America is graduating half as many Ph.D.s in the physical sciences as we did in the 1970s — and half of those graduates speak English as a second language.

The average starting salary for graduate engineers exceeds that of graduate attorneys.

American women comprise forty percent of the work force — but only four percent of America's engineers are women.

The United States invests two percent of GNP in public facilities; Japan invests eight.

Japanese 4th and 5th graders spend 890 hours per year in classrooms while U.S. 5th graders spend 710.

During 1986 in West Germany, France, United Kingdom and Japan, thirteen to twenty-six percent of students obtained their first degree in engineering, while only seven percent of U.S. students obtained first degrees in engineering.

On a world-wide basis, the U.S. interest in engineering and science is declining to about eighteen percent of the world's total engineers and scientists while the Soviet Union has about thirty-six percent of the world's engineers and scientists. **LE**

(The figures and facts were gathered and presented by the American Consulting Engineers Council, Washington, D.C.)

General Program

Wednesday, April 25, 1990

11:00 a.m. - 5:00 p.m. Registration
 11:30 a.m. - 5:00 p.m. Golf Tournament, Mallard Cove Golf Club
 Lunch will be served at 11:30 a.m.
 6:30 p.m. - 7:30 p.m. Welcoming Party Hosted by Hotel
 Dinner On Your Own

Thursday, April 26, 1990

8:00 a.m. - 5:00 p.m. Registration
 8:30 a.m. - 12:00 Noon Seminar: "Motivation Workshop"
 Moderator: Joe Paul Jones, P.E.
 NSPE Southwestern Regional
 Vice President
 12:00 Noon - 1:30 p.m. Lunch On Your Own
 1:30 p.m. - 3:00 p.m. COMMITTEE MEETINGS
 Membership
 Young Engineers
 Engineering Education
 Scholarship
 Long Range Planning
 3:00 p.m. - 3:30 p.m. Break
 3:30 p.m. - 5:00 p.m. PRACTICE DIVISION MEETINGS
 Construction
 Education
 Government
 Industry
 Private Practice
 6:00 p.m. Dinner - Pat's of Henderson (Lake Charles)*
 8:00 p.m. Play - The Glass Menagerie by*
 Tennessee Williams
 Squires Recital Hall
 McNeese State University Campus

Friday, April 27, 1990

8:00 a.m. - 12:00 Noon Registration
 8:30 a.m. - 10:00 a.m. COMMITTEE MEETINGS
 Executive Committee
 Liaison State Board of Registration
 Public Relations
 Inter-Society Relations
 Political Action Committee
 LES Nominating Committee
 10:00 a.m. - 10:30 a.m. Break
 10:00 a.m. - 2:00 p.m. Council of Deans Meeting
 10:30 a.m. - 12:00 Noon COMMITTEE MEETINGS
 Legislative
 Ethics and Professional Conduct
 Constitution and Bylaws
 Honors and Awards
 10:30 a.m. - 12:00 Noon Louisiana Engineering Foundation*
 12:15 p.m. - 2:00 p.m. Luncheon - Speaker: Mr. Max Jones, Director
 of Chennault Airpark Authority
 2:15 p.m. - 4:15 p.m. Student Paper Presentations
 4:15 p.m. - 5:30 p.m. General Membership Meeting*
 6:30 p.m. - 7:30 p.m. Cocktails (cash bar)
 7:30 p.m. Awards Banquet
 The awards program will include presentations
 by the State Board of Registration

Saturday, April 28, 1990

8:00 a.m. LES Board of Direction Meeting

Spouses' Program

Wednesday, April 25, 1990

11:00 a.m. - 5:00 p.m. Registration
 11:30 a.m. - 5:00 p.m. Golf Tournament, Mallard Cove Golf Club
 6:30 p.m. - 7:30 p.m. Welcoming Party Hosted by Hotel
 Dinner On Your Own

Thursday, April 26, 1990

8:00 a.m. - 5:00 p.m. Registration
 8:00 a.m. - 10:15 a.m. Hospitality Suite Open
 10:15 a.m. Tour of the Hurley Home
 12:00 Noon Lunch at Cafe Margaux
 1:30 p.m. Cottage Shops
 2:30 p.m. - 4:00 p.m. Hospitality Suite Open
 6:00 p.m. Dinner-Pat's of Henderson (Lake Charles)
 8:00 p.m. Play - The Glass Menagerie

Friday, April 27, 1990

8:00 a.m. - 12:00 Noon Registration
 8:00 a.m. - 9:45 a.m. Hospitality Suite Open
 9:45 a.m. Galerie Melancon
 10:30 a.m. Imperial Calcasieu Museum
 12:00 Noon Lunch at the City Club - Fashion Show
 1:30 p.m. Shopping Spree
 2:30 p.m. - 4:00 p.m. Hospitality Suite Open
 6:30 p.m. - 7:30 p.m. Cocktails (cash bar)
 7:30 p.m. Awards Banquet

Saturday, April 28, 1990

8:00 a.m. - 12:00 Noon Hospitality Suite Open
 9:30 a.m. "Recipes for Romance" - Presentation by
 Mickey Rentrop Shannon

LES Sponsored Seminar for 1990

Joe Paul Jones, P.E., NSPE Southwestern Region Vice President, will conduct a motivation leadership workshop. The workshop will prepare state and chapter officers for leadership.

*Important Information Regarding the Program

The Dinner scheduled for 6:00 p.m. on Thursday, April 26, 1990, is not a planned menu. Each individual will order from the menu and pay his own check.

ALL RESERVATIONS for the Play, *The Glass Menagerie*, on McNeese State University Campus, must be made to the LES office no later than April 4, 1990.

The Louisiana Engineering Foundation meeting has been scheduled for Friday, April 27, 1990, 10:30 a.m. - 12:00 Noon.

The General Membership Meeting, generally scheduled on Saturday morning, will be held on Friday afternoon, April 27, 1990, 4:15 p.m. - 5:30 p.m. We invite all members to attend the General Membership Meeting.

The Board of Direction will meet on Saturday, April 28, 1990, at 8:00 a.m. All members are invited.

Spouses' Program

Tour of the Hurley Home in the Charpentier Historic District of Lake Charles. Built in 1901 by Calcasieu Parish Sheriff David Reid, the house has been restored by current owners, Monte and Ann Hurley. Ladies are asked to wear flat heels (no spikes, please) to protect the flooring.

Lunch at Cafe Margaux - Voted Louisiana's Best French/Continental Restaurant and Louisiana's Best Business Lunch by *Louisiana Life Magazine*.

Cottage Shops - A unique shopping tour featuring diverse shops with a flavor of true southern hospitality.

Galerie Melancon - A multi-media gallery featuring paintings, sculpture, jewelry, pottery; and crafts of wood, clay, metal, fiber and glass.

Imperial Calcasieu Museum - Houses and an extensive historical collection and fine arts gallery.

Lunch at the City Club - Located atop CM Tower, with an impressive view of the Lake Area. Fashion Show by Accessory Zone and Apropos.

"Recipes for Romance", presented by Mickey Rentrop Shannon, a favorite topic at the Mayor's Commission Fall Conference for Women.

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Lake Charles Hilton Inn-Lake Charles, LA
April 25-28, 1990**

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Thursday Dinner	Order from menu	_____	_____
Thursday Theatre ¹	\$ 6.00	_____	_____
Friday Luncheon	\$ 8.00	_____	_____
Friday Awards Banquet	\$12.25	_____	_____

Spouses

Thursday - Tour and Luncheon	\$12.50	_____	_____
Friday - Tour and Luncheon	\$12.50	_____	_____

TOTAL _____

*Prepaid discount applies only if registration & payment is received one week prior to convention

**Daily registration fee is applicable for one day attendees only

***Seminar FREE with daily registration

¹Reservations must be received by April 4, 1990.

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April 25-28, 1990**

THIS FORM MUST BE RECEIVED BY APRIL 10, 1990

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OUTSTANDING ENGINEERS

Continued from page 10

ses. It has higher acid gas capacity, thereby allowing smaller equipment and debottlenecking. It is very stable and resists chemical degradation. Hence, operating costs can be reduced because of lower amine make-up and no need to operate a reclaimer. It has superior acid gas removal capability and can achieve a high level of cleanup. Lastly, it is retrofitable and allows easy debottlenecking of existing gas treating plants.

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For his role in FLEXSORB SE technology development, Dr. Say was one of three Exxon Company employees to receive the 1988 Arthur Dehon Little Award for Chemical Engineering Innovation. This national award is sponsored by the American Institute of Chemical Engineers and recognizes outstanding chemical engineering contributions to successful innovation of commercial or social importance.

Dr. Say is married to the former Lorice Gill of New Orleans, Louisiana. They have two children. Dr. Say is a member of St. Patrick's Catholic Church.

Dr. Say's outstanding achievements in the "selective removal of H₂S" make him a worthy recipient of the James M. Todd Technological Accomplishment Medal. The Louisiana Engineering Society is proud to honor Dr. Say for his outstanding engineering achievements. **LE**

Celeste M. Hymel Receives LES Scholarship



Celeste M. Hymel, a freshman in Biomedical Engineering at Louisiana Tech University, was recently named to receive a \$1,000 Louisiana Engineering Scholarship for 1989-90. Celeste is from Luling, Louisiana.

Celeste is shown receiving her scholarship from Dr. James Nelson, Associate Dean for Academic Affairs, College of Engineering.



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EngiNEWS

Continued from page 11

sachusetts Institute of Technology in 1962. He is survived by his wife, Florence, one son, three daughters, and 13 grandchildren.

Donations are now being accepted for the Humphreys T. Turner Professorship fund at the College of Engineering, 3304 CEBA Building, LSU, Baton Rouge, LA 70803-6401. Checks should be made payable to the LSU Foundation-H. T. Turner Memorial.

Joint Meeting Scheduled

A joint meeting of the Professional Engineers in Government practice division of the Louisiana Engineering Society and the Louisiana Society of Professional Engineers in Civil Service will be held in conjunction with the annual meeting of the latter at 10:00 a.m., March 3, 1990, in Baton Rouge, on the Louisiana State University campus. There will be a luncheon and entertainment. Spouses are invited. For additional information and required reservations call (504) 379-1307.

Engineering Seminar Scheduled

The Shreveport Chapter of the American Society of Civil Engineers will host an engineering seminar on February 23, 1990. The seminar will be entitled "Pave-

ment Design" and will be moderated by Dr. William O. Hadley. The seminar will be held at the Holiday Inn Holidome, 5555 Financial Plaza, Shreveport, Louisiana 71106 (just west of intersection I-20 and Inner Loop or about three miles west of Shreveport Regional Airport). The seminar will be held from 8:00 a.m. to 5:00 p.m., Friday, February 23. The cost of the seminar will be \$65.00 for ASCE members and \$75.00 for non-members. This cost will include registration for seminar, lunch, refreshments, and material for seminar.

Seminar Slated on New ACI 318 Building Code

For design and construction of reinforced concrete buildings, the rules are the ACI 318 Building Code. And the rules just changed. For those working with the code, whether it is once a year or several times a day, this seminar is a not-to-be-missed opportunity. The ACI/PCA 318 Building Code Seminars are a joint effort of the American Concrete Institute and Portland Cement Association and will be cosponsored by local ACI and ASCE chapters and other local groups.

In an intensive 7-hour session, some of the most respected concrete designers in the world will guide civil and structural engineers, architects, building contractors, specifiers, inspectors, estimators,

and concrete materials suppliers through all the changes.

This program is being presented in New Orleans, LA, April 17, 1990, in cooperation with the Louisiana Chapter of ACI and ASCE.

The 1989 version of the 318 Code has many important changes, including: 1) new detailing requirements for reinforcing steel to enhance structural integrity, 2) significant changes in bond and development length for reinforcing bars including epoxy coated bars, 3) new requirements for skin reinforcement in large beams, 4) a new chapter that brings the seismic design requirements (formerly Appendix A) into the body of the Code.

The registration fee for this seminar is \$245 for nonmembers of ACI, and includes a complimentary six-month ACI membership. For members and employees of PCA member firms (including PCA employees), the registration fee is \$225. This includes a copy of the ACI 318-89 Building Code in its new format that combines the code and commentary into a parallel arrangement. Participants will also receive a copy of PCA's *Notes on ACI 318-89*.

To register, or for more information, contact the Seminar Registrar, ACI, P.O. Box 19150, Detroit, MI, 48219-0150, (313) 532-2600, or call Roy Galpion, ACI Louisiana Chapter, New Orleans, (504) 486-5901. LE

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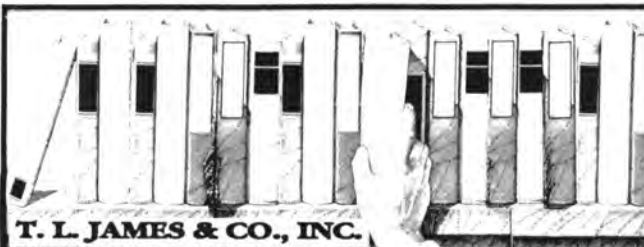
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Calendar of Events

We invite all technical and professional organizations to submit their meeting dates for publication in the *Louisiana Engineer* to: Editor, P.O. Box 2683, Baton Rouge, LA 70821

February 21, 1990

CEC/L Board of Directors Meeting
Alexandria, LA

March 24, 1990

State MATHCOUNTS Competition
Lafayette, LA

March 30-April 2, 1990

CEC/L Annual Meeting Cruise

April 18, 1990

CEC/L Board of Directors Meeting
New Orleans, LA

April 25-28, 1990

LES Awards Meeting, Lake Charles Hilton
Lake Charles, LA

April 28, 1990

LES Board of Direction Meeting
Lake Charles, LA

May 9, 1990

CEC/L Board of Directors Meeting
Lafayette, LA

May 13-17, 1990

ACEC Annual Convention
Honolulu, Hawaii

June 15, 1990

LES Board of Direction Meeting
Monroe, LA

July 15-21, 1990

NSPE Annual Meeting, Omni Hotel
Norfolk, VA

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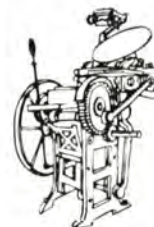
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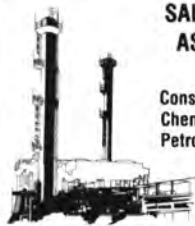


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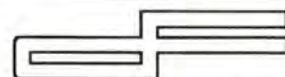
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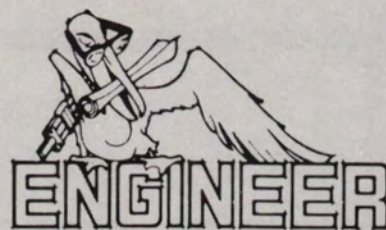
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Ara Arman, P.E./P.L.S., Chairman of the Louisiana State Board of Registration for Professional Engineers and Land Surveyors, is pictured on this month's cover.



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Presidential Privilege

In December, 1989, as required by Louisiana Statutes, the Louisiana State Board of Registration for Professional Engineers and Land Surveyors published a notice of intent to revise Chapter 21 - Rules of Professional Conduct Section 2105.C to read:

"Registrants shall undertake to perform professional engineering or land surveying services only after having been selected on the basis of competency and qualifications. Registrants shall not solicit nor submit fee proposals prior to selection."

Written comments with regard to this proposed rule were received during January, 1990 and public testimony was heard by the Board at its meeting of January 23, 1990. At the conclusion of the hearing, the State Board of Registration decided to take the matter under advisement and study the comments received.

As many of you may know the Louisiana Engineering Society supported the legislation which was approved by both houses of the Legislature and signed by the Governor which empowered the State Board of Registration to adopt the above quoted rule. The Louisiana Engineering Society is pleased with the actions of the Board in the development of the proposed rule and the timely manner in which the Board has advanced through the rule making process.

At this juncture, it would seem that the Board has several options. First, after reviewing all written and verbal comments the Board could find the proposed rule as presently worded is satisfactory and set an effective date for implementation of the rule. Second, the Board could find that although the basic intent and content of the rule are satisfactory some specific additional language should be added to provide for a period of transition to implement the rule. It would seem that such could be done within the prescribed final notice of rule making without the need for further hearings and written comments. Third, the Board could find that some substantive change or modification to the rule is required which would necessitate the republishing of the proposed rule to allow for appropriate comment on the substantive



Blaise M. Carriere, P.E.
President
Louisiana Engineering Society

changes. Subsequent final rule making procedures would follow. A fourth option would be to table any action on the rule at this time and reconvene the task force which helped draft the first rule attempt.

As an observation there seemed to be broad general support for the proposed rule. Some need for possible clarification was requested as to how the rule might be applied to Registered Professional Engineers in education who might submit proposals, including funding requirements, for research grants. Concern was also expressed from professional engineers in construction and industry with regard to design/build proposals which would include fees for the engineering and land surveying components of the project. In addition, it appeared that there may be some lack of knowledge or need for registrants of the Board and those in industry to examine R.S. 37:701. Public and Private Work; Application of Provisions, paragraph C:

"C. This Chapter shall not apply to, affect, interfere with, or in any way regulate employees of a person, firm, or corporation engaged in industrial operations, including, but not limited

to, producing, processing, manufacturing, transmitting, distributing, or transporting, when performing services within the State of Louisiana in the course and scope of the business of said person, firm, or corporation, or affiliates thereof. In the event any of the activities set forth in the Subsection shall fall within the definition of practice of engineering as defined in Paragraph (8) of Section 682 of this Chapter, such activities shall be under the supervision and charge of a professional engineer, duly registered under the provisions of this Chapter. However, the Subsection shall not apply to persons practicing civil engineering or land surveying, who must at all times comply with the provisions of this Chapter."

This section of the Louisiana law on registration is clear with regard to the requirement that all work including engineering work in industry be performed under the supervision and charge of a professional engineer registered in Louisiana. It also requires that all civil engineering and land surveying work be performed only by registrants of the Board. It would seem that these two provisions would couple closely with the proposed rule regarding selection of professional engineers based upon competency and qualification.

It would therefore seem that the proposed rule is truly in the overall interest of safeguarding life, health, property and the public welfare.

In the February 1990 *Louisiana Engineer* you may recall that the "Presidential Privilege" dealt with the colleges of engineering in Louisiana. Since writing that article, several written and verbal comments have been received which suggest that this subject requires more review and further consideration. In particular, factual aspects with regard to the report to the Louisiana State Board of Regents in November of 1986 have been raised and conditions in 1990 may be markedly different from 1986. In a subsequent article it is intended to revisit this subject. LE

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Splitting Up The Firm

Sidney B. Sanders, CPCU

Most business entities will eventually face ownership changes in the firm. These range from simple retirement buy-outs and addition of new principals, to split up of the firm with two or more entities emerging as new businesses. Some of these activities create ripples of activity hardly noticed, and others can be very complicated, creating many problems that must be solved in the best interest of all concerned. This paper addresses some of the possible situations that can and do arise as they relate to professional liability insurance coverage.

Try as you may, it seems inevitable that many business entities comprised of more than one person will eventually face disagreements that will lead to a split up of the firm. This is usually a traumatic experience for all of the parties involved, especially if one or more feel particularly aggrieved. In the best of circumstances, difficult times lie ahead; and in the worst of circumstances, those times appear impossible. It would be great if design professional firms had immunity from this problem, but they do not.

It is of utmost importance at times like these for each involved party to push personal feelings aside in favor of logical business thinking, devoted to a fair and equitable split. Something easier said than done, but nonetheless necessary if the myriad of unavoidable details is to be properly addressed. In more benign ownership changes, such as retirements and additions of principals, the transition requires much less detail. However, that does not mean there are no items for the involved parties to consider. Several points that follow could apply to any ownership change.

One of the very important details for design professionals involves professional liability insurance and the arrangements to be made to continue coverage for the firm's prior professional work, which in all likelihood, also translates into personal responsibility for the individuals involved. Other insurance coverages, i.e. general liability and workers' compensation also need attention. However, professional liability coverage is unique, and only that subject is discussed here.

Since architects' and engineers' professional liability is written only on a claims made basis, it is imperative for continued

protection that special attention is given to this insurance coverage. How the firm will split up, will there be a continuation of the firm, will jobs in progress go with different people, and who will be responsible for what are just a few of the questions that must be addressed. There are many variations, so there is no pat answer to solving the problems created due to the split. You will want to consult with your insurance agent early on in the process to see what options are available for continuing professional liability coverage for past as well as current work, and for obtaining professional liability coverage for new firms that result from the breakup.

The first option that might be considered is the purchase of a separate policy by the firm to cover prior acts of the firm. If there is to be no continuation by any of the parties as a consulting firm, this may be the only option. Don't be at all surprised if the first year premium quoted to provide just prior acts coverage is very close to the premium charged for your present policy. Most claims come from what you have already done and not from what you plan to do in the next twelve months.

Some insurance companies will offer this type of prior acts only coverage for more than one year at a time, and this longer coverage should be considered. Remember, it is still claims made coverage and must be continued in order to provide protection. The interested parties will need to agree on how the future premiums are to be paid and on how deductibles will be paid in the event of claims resulting from the past work. There can also be, heaven forbid, claims in excess of insurance limits to consider.

It is very likely that one or more of the principals will stay in business and continue the firm, or start a new firm. This means that the continued firm, and/or each new firm, must now have its own professional liability policy, in order to have protection for its future acts and to satisfy the requirements of the future clients it expects to serve. The combined cost of the new policies and the cost of a policy to cover the old firm's prior acts will very likely far exceed the firm's professional liability premium prior to the split up. This economic consideration often prompts the parties to seek alterna-

Are there other options? Perhaps, and they rest with your current professional liability insurance company and the agreements that can be made by the principals splitting up. If one or more principals intend to continue the firm, they may agree to continue the present professional liability policy and continue to provide prior acts coverage under that policy. Under these circumstances, all claims made during a policy year resulting from prior work or new work would have to be made against the same aggregate limit of coverage. In the previous arrangement two policies and two limits are available, one for the prior work and one for the new work. This is one reason for the increased cost. Any participation in future premiums or deductibles on claims from prior work would become subject to agreement between the continuing and the departing principals.

Another contingency is the distinct possibility that, should there be claims on the prior work, the renewal premiums are likely to increase. A word of caution: should the continuing principals decide to drop coverage in the future, the departing principals would also find themselves without coverage for the prior acts of the old firm. If the departing principal starts a new firm, he will also be faced with the purchase of separate professional liability coverage for the work of the new firm.

In some instances it may be agreed by the parties that a departing principal will take some projects in progress over to his new firm. What then? Depending on your negotiations with the insurance carrier and agreement between the parties, one possibility would be for the departing principal to obtain prior acts coverage on this new policy for only those transferred projects, and for the old firm to exclude those projects from their policy. The old firm would, of course, be placed in a position of having to rely on the new firm's coverage in the event of a claim, and should ask to be named insured on the new firm's policy as regards those transferred projects. In all instances where the interest of one of the parties is to be covered under a policy purchased by another, the agreement should provide that the party purchasing the policy will provide annual certificates

Continued on page 17

Highlights of NSPE's 1990 Winter Meeting

NSPE held its Winter Meeting in San Diego, Calif., January 27-February 3. Here's a round-up of action taken by the NSPE Board of Directors and other notable activities occurring during the week.

Unified Dues

In a move that will ultimately simplify the way NSPE bills its members and make all NSPE services automatically available to all members, the board voted in favor of a unified dues structure. The proposed constitutional change will require a ballot vote by the NSPE membership this spring to permit the necessary one-time dues adjustment needed to effect the change. NSPE's dues would be unified at a level of \$90 to include membership in one practice division and services from the Society's management and ethics institutes and other constituent bodies as determined by the Board of Directors. Additional practice division memberships would be available at \$10 each. To establish the appropriate dues level for the Unified Dues Structure, a one-time increase in dues of greater than 10% must be authorized through a constitutional change.

The NSPE board approved several dues-related changes that do not require constitutional amendments. One is to establish an Introductory Flat Dues Plan at \$90 for first-time members within one year after graduation, and \$140 for all other first-time members. Those entering the plan after June 3 will be granted membership for one full year and the remainder of the current year. Flat dues will be divided equally between NSPE and approving states. After the flat dues period, all members will pay the same amount regardless of age.

The board also voted to eliminate all Graduated Dues plans. In addition, the board will be urging state societies to simplify their dues as much as possible. All current "less-than-full-dues members" would be billed at the rate of the original commitment until they would normally be moved to full-dues status. The board charged the Dues Structure and Billings Procedures Task Force with preparing detailed plans for effectuating the approved changes. If the constitutional amendment passes, the changes in the dues structure could go into effect with the 1991 dues billing.

State Government Relations Program

Responding to the critical need for NSPE's active participation in state registration and legislative issues, the Society has established a state legislative network. The new program will help NSPE carry out one of its primary missions to encourage registration of all engineers and to ensure that the rights of professional engineers to practice in their chosen profession are protected.

In recent years there have been numerous attempts to encroach on the practice of engineering across the country. Such efforts are nearly always at the state level through attempts by other professions, technicians, and individuals to dilute state registration laws. To date, NSPE, through its state societies has usually responded to these challenges in a reactive method.

The new state legislative network is an initial step toward developing a unified proactive strategy and mechanism for the Society to coordinate and assist state societies in protecting the practice of engineering. The network will encompass all 50 states and give NSPE access to two computerized state legislative- and regulatory-tracking networks. The Government Relations Department will analyze the legislative data and then share the information with all states through periodic bulletins and briefings for individual state societies. The Government Relations staff will also be prepared to respond to state requests for help.

Specialty Certification

The board, after hearing wide-ranging discussion on the pros and cons of specialty certification, voted for NSPE to join the Council on Engineering Specialty Boards (CESB) as an associate member. The Council is an outgrowth of the National Conference on Engineering Specialty Certification held in 1988. As an intersociety entity, the Council aims to establish professional criteria and monitor qualifications of engineering specialty certification programs. Specialty certification is not without contention, however. Some members of NSPE's Board of Directors expressed belief that by joining the Council, NSPE may be giving legitimacy to organizations and individuals who do not support

engineering registration. The board majority concluded, however, that specialty certification is a fact and by joining the Council NPSE will be in a better position to influence the evolution of specialty certification in the future.

Space Program Support

NSPE continues to back U.S. initiatives in space. At the board's direction last July, the Society's Government Relations Department has investigated opportunities for engineering involvement in the space program and established a space subcommittee. At this meeting, the board approved a plan of action that calls for NSPE to join the following coalitions: National Space Society; American Astronautical Society; and the National Space Foundation. NSPE will also establish a group to provide congressional testimony in line with the Society's views on proposed programs.

International Practice of Engineering

One of the greatest challenges for the U.S. engineering profession is gaining acceptance in the global market. In San Diego, the Society's five practice divisions took up this challenge as they convened for a joint session on the international practice of engineering. NSPE President Walter LeFevre, who has worked extensively with the European Federation of Engineering Associations to establish reciprocal academic equivalency for U.S. engineers, moderated the plenary session. Robert Gibson, NSPE Immediate Past President, discussed the impact of the Canadian Free Trade Agreement on U.S. engineers. "We must strive for a vehicle to allow U.S. engineers true mobility and likewise allow international engineers to come [to this country]," Gibson noted.

Central and South America are vast resources that cannot be overlooked in the global market place, pointed out David Reyes-Guerra, executive director of the Accreditation Board for Engineering and Technology (ABET). Reyes-Guerra has served on the U.S. National Commission on UPADI (Pan American Union of Engineers) and the UPADI Committee on Education. He said that engineers are esteemed citizens in the Central and South American regions.

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Reyes-Guerra said efforts are now under way to compare engineering education in the U.S. and in Central and South American regions and to set up equivalency standards allowing engineers to practice in both regions.

The Office of Standards Services, within the National Institute of Standards and Technology, is the key link in U.S. trade with foreign countries. Stanley Warshaw, who appeared at this session, directs the Institute's activities in support of industry and trade relating to technical standards and standards policy. Noting that the U.S. does not have across-the-board standards for testing and certification of products and services, Warshaw said there will be great emphasis in the U.S. to adopt international standards in the future. The unification of the European Community in 1992 presents the most immediate challenge to U.S. trade, Warshaw said. "We need testing in U.S. labs to be accepted in the European Community," he stressed. Warshaw noted that a U.S. interagency task force on EC 1992 has set up 11 working groups to develop plans to make U.S. testing standards more cohesive and try to leverage U.S. standards internationally.

At a joint practice division luncheon following this session, Richard Johnson, Engineering Director of the Industrial & Electronic Sector for the 3M Corporation, spoke about the company's manufacturing and engineering operations in the global market.

Metric System Policy

The NSPE board adopted a new professional policy in support of U.S. conversion to the metric system of measurement. The policy parallels an amendment within the federal government's Omnibus Trade and Competitiveness Act of 1988, which declared that U.S. federal agencies are to use the metric system in their procurements, grants, and other business-related activities by the end of fiscal year 1992. By implementing the new professional policy, NSPE supports full compliance with the International System of Units of the International Bureau of Weights and Measures as adopted by the National Institute of Standards and Technology.

NSPE strongly urges each member, chapter, state society, and practice divisions to support the federal government's initiative and efforts to implement the metric system within the U.S. In addition, members are urged to provide leadership in education and training to help the U.S. private sector achieve a rapid conversion to the metric system.

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Engineering Student Conference

Sixty engineering students from across the country gained insights into their future careers when they attended NSPE's Student Conference. The three-day session included a career awareness seminar along with tips on job search skills and mock interviews. Students viewed NSPE's ethics video, "Gilbane Gold," which was followed up by a discussion led by renown ethicist Margaret Maxey. A joint breakfast with NSPE's national directors gave the students opportunities to learn first-hand information about the engineering profession.

Awards

NSPE presented the prestigious New Product Award to three companies this year. The winning products are the "Thermal Knife" Filler Removal System (which automatically clips excess filler material from insulated electric cords) from Automated Technology Systems in Winston-Salem, N.C.; PRAB Voice Command (a voice-controlled robotic workstation) from PRAB Command in Kalamazoo, Mich.; and the 9000 Perfusion System (an integrated heart/lung machine) from Sarns/3M in Ann Arbor, Mich.

The Society also presented the 24th annual Outstanding Engineering Achievement Awards to honor eight exceptional U.S. engineering achievements of the past year. The winners are the Morris Sheppard Dam in Palo Pinto County, Texas; the Dame Point Bridge, which links the northeast and southeast areas of Jacksonville, Fla.; an environmentally safe recoating system for concrete floors, engineered by the Tennant Company in Minneapolis, Minn.; the I-5 Capitol Boulevard Undercrossing in Olympia, Wash.; the Joliet Project, Conoco's tension-leg well platform in the Gulf of Mexico; the St. Johns River Coal Terminal in Jacksonville, Fla.; the I-90 Project, Phase I, from Seattle to Bellevue, Wash., which incorporates the world's largest-diameter soft-ground tunnel; and the Burlington Northern Railroad Bridge No. 5.1 in Portland, Ore.

Future Meeting Sites

The board backed the NSPE Meeting Site Selection Committee's choice of Houston, Texas, as the site of the NSPE Winter Meeting in 1995. The committee, citing the need for additional information, will wait until July to recommend its choice for the 1995 Annual Meeting site. LE



January 1990 Board Members & Staff

Top Row: (left to right) Benjamin S. Harrison, Board Investigator; Randall F. Barron, William J. Thevenote, Jr., Albert J. Dunn, Rodger D. Phelps, Coan J. Bueche. Bottom Row: (left to right) Paul L. Landry, Executive Secretary; Sam L. Sullivan, Vice Chairman; Ara Arman, Chairman; Malcolm L. Hurstell, Secretary; Robert D. Fenner. Absent: Larry A. McKee.

Report of Disciplinary Action

On November 14, 1989, the Board conducted a hearing regarding charges filed by a Louisiana Registered Architect alleging that Mr. Curtis R. Sewell, P.E. and Mr. John S. McDaniel, P.E., through their firm McDaniel - Sewell Engineers & Contractors, Incorporated, all registrants of the Board, may have been guilty of violating Louisiana Revised Statute 37:698 (A) (6), to-wit LAC TITLE 46:LXI, 1701 (C), (D), and (E), and 2103 (C) (1) and (2) which, in pertinent part, (1) require registrants to seal and sign drawings whenever presented to a client or any public or governmental agency, and (2) prohibits registrants from sealing the work of or taking the professional responsibility for any documents related to engineering or land surveying not performed by the registrant or under the registrant's complete direction and control. These alleged violations were in connection with the design and construction of a church addition and renovation for which an architect initially prepared design and working drawings, and McDaniel - Sewell Engineers and Contractors Incorporated subsequently utilized photostatic copies of the same drawings and plans, with some modifications, to significantly reduce costs of construction incurred by the church. After due consideration of the evidence, the testimony and credibility of the witnesses at the hearing and the hearing exhibits, the Board made Findings of Fact and Conclusions of Law, including the following.

1. In March, 1987, an architect was retained by a church to design and supervise construction of an addition and to design and prepare working drawings for a proposed renovation.
2. The firm of McDaniel - Sewell Engineers & Contractors, Inc. was one of four firms submitting bids for construction of the church addition. It was subsequently selected as constructor.
3. The cost of construction, per the plans of the architect, exceeded that which the church was willing to pay. Thus the architect and representatives of McDaniel - Sewell and others met to review plans prepared by the architect with the interest of proposing cost-saving revisions. One such meeting occurred on or about July 28, 1988.
4. After July 28, 1988, the church ceased dealings with the architect, although no formal termination could be fully proved. Subsequent thereto, McDaniel-Sewell commenced the performance of both design and construction duties by request of the church. McDaniel and Sewell believed, in good faith, that the church had formally and unequivocally terminated its relationship with the architect. They utilized the drawings and plans prepared by the architect, with some modifications made by them, to reduce the costs of construction, as requested by the church of forty thousand dollars (\$40,000) in construction costs.
5. The overwhelming majority of the changes were cosmetic and did not involve the application of engineering principles. McDaniel and Sewell revisions did not so significantly alter the architects plans that they could in good faith certify that the plans as filed with the permitting authority was work totally done by them or under their control.
6. Neither McDaniel or Sewell, nor anyone from their firm contacted the architect or consulted him regarding their use or revisions to his plans. The architect did not give permission to McDaniel - Sewell to utilize the plans he had prepared.
7. The plans filed by McDaniel and Sewell with the City of Shreveport were identical to, indeed photostatic copies of, the plans prepared

by the architect, with the following exceptions:

- (a) On the plans filed with the City, McDaniel and Sewell removed the seal of the architect and, on all but one of the plans, the title block of his firm.
 - (b) On the plans they filed with the City, Sewell and McDaniel removed the professional engineering seals of three engineers.
 - (c) On the plans filed with the City, McDaniel and Sewell added the seal of Curtis Sewell or John McDaniel.
 - (d) On the plans that they filed with the City, McDaniel and Sewell had marked several changes to the original drawings prepared under the direction and control of the architect.
8. McDaniel and Sewell failed to note near the changes that they made to the drawings that they were stamping and signing only those changes, i.e., that only those particular changes were prepared under their complete direction and control. Instead, Sewell and McDaniel sealed each entire drawing; yet the entire drawing did not represent work that had been done by them or under their complete direction and control.
 9. Sewell's and McDaniel's actions in stamping, and then filing with the City of Shreveport, the plans originally prepared by the architect constituted clear violations of Rules 1701 (C), (D) and (E) and Rule 2103 (C). The plans as filed did not represent work that was fully prepared under their complete direction and control. Although some of the changes they made to the architect's plans were work prepared under their complete direction and control, the entire set of plans that they filed was not. Fur-



**Paul L. Landry, P.E.,
Executive Secretary
Louisiana State Board of Registration for
Professional Engineers & Land Surveyors.**



ther, Sewell and McDaniel failed to place their signatures on the plans they sealed. Further, as the architect was not an out of state individual registrant [(See Rule 1701 (G))], Sewell and McDaniel could not seal his work or take professional responsibility for his work.

10. In attempting to please their church client, McDaniel and Sewell compromised their professional conduct and the regulations imposed upon them as registrants of the Board and professional engineers in Louisiana. It was improper for them to affix their seals to the plan drawings, because the entire set of drawings had not been prepared under their complete direction and control. Rather, the filed drawings were in large part photostatic copies of plans prepared under the complete direction and control of a registered architect, and three other registered professional engineers.
11. An analysis of the rules applicable to this matter shows that ownership of the plans is irrelevant, the wishes of one's client are irrelevant, and the motives of the architect for filing the complaint are irrelevant. Nothing excuses a Board registrant from the requirements of Board rules concerning sealing of plans; a Board registrant may not assume professional responsibility for plans not prepared under his complete direction and control.

The Board issued its Decision and Order on December 4, 1989 sustaining the charges against Curtis R. Sewell, P.E. and John S. McDaniel, P.E.

Mr. Curtis R. Sewell's professional engineering license was suspended for a period of six months from the date of the Board Order and he was assessed a \$1,000.00 fine and a public reprimand.

Mr. John S. McDaniel was given a public reprimand.

In light of the actions taken against the only two principals in the firm, it was decided that the charges against the firm not be sustained and no action was thereby taken against it.

The Board's Decision and Order in this matter was not appealed by either parties thereto and it is therefore final with all penalties as of December 4, 1989.

Two Doors Slam Shut In '91

A **window of opportunity** will slam shut for PhD. engineering graduates on January 1, 1991. Board Rule §1503.F states: "Until January 1, 1991, the board may allow the substitution of qualifying examination for the fundamentals of engineering examination for any applicant who has an earned doctorate from a college or university having an undergraduate curriculum accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology." In plain Cajun English what this means is that PhD. engineering graduates who qualify may be registered as professional engineers in Louisiana by presenting acceptable experience and taking *only* the eight (8) hour principles and practice of engineering discipline examination (civil, mechanical, electrical and so forth). These applicants may be exempt from taking the fundamentals of engineering examination.

Why this **window of opportunity** to PhD. engineering graduates? Because also effective on January 1, 1991 associate professors and those of higher rank employed by a college or university in the State of Louisiana teaching engineering design courses must be Registered Professional Engineers.

PhD. engineering graduates who qualify need to submit applications postmarked no later than December 31, 1990 so as to be given consideration under §1501.F of the Board Rules.

Door Slamming Shut for Land-Surveyor-In-Training Applicants

Land Surveyor-In-Training applicants who submit applications postmarked

December 31, 1990 will be given consideration under the current Board Rules which are:

high school graduates:

four (4) years of land surveying experience.

two (2) years of college:

at least six (6) semester hours of land surveying courses and two (2) years of land surveying experience acceptable to the Board.

bachelor degree graduate:

at least six (6) semester hours of land surveying courses acceptable to the Board, no experience required.

On January 1, 1991 and thereafter Land Surveyor-In-Training applicants must have "a baccalaureate degree from a curriculum of four years or more who has completed at least thirty (30) semester credit hours or the equivalent approved by the Board in land surveying, mapping, and real property courses —" it behooves all aspiring land surveyors who are not *currently* Land Surveyors-In-Training to apply **this year**. Many civil engineering graduates qualify under the current rule, but they **will not** qualify for consideration for land surveyors-in-training under the law and rules which become effective on January 1, 1991.

Sign and Seal Your Work

Q: When do I have to sign and seal my work?

A: Anytime you present your work to your client.

Q: Why?

A: Because §1701.C of the Board Rules say so.

Q: Why?

A: To protect the public.

Q: What do you mean?

A: If registered professional engineers and land surveyors would not have to sign and seal their work then anyone and everyone could be providing engineering and/or surveying services.

By law, only registrants of the Board, professional engineers and land surveyors are authorized to do so.

Q: What do I tell a client who tells me that he does not want me to sign and seal my work?

A: Give him a copy of Title 46, Part LXI, Subpart 1, Chapter 17 and refer him to §1701.C and tell him that you as a registrant of the Louisiana Board do not have an option on the matter. He may understand.

Q: What if he doesn't understand?

A: You've got a problem.

Q: Has the Board taken disciplinary action against registrants who have failed to seal and sign their work?

A: Yes on a number of occasions.

Unfinished Business

by: Ara Arman, P.E./P.L.S.
Chairman Louisiana State
Board of Registration

The Louisiana Board of Registration for Professional Engineers and Land Surveyors completed another year under the very able leadership of its chairman Robert D. Fenner. It was a busy year, much was accomplished, and as usual there was some unfinished business yet to be considered, discussed and reviewed for future action. One such item is the proposed board rule on Qualification Based Selection of Professional Engineers and Land Surveyors. As the incoming chairman of the Board I become the custodian of "Unfinished Business." During the last three months I devoted a considerable amount of time, as have many other members of the Board, to reviewing comments and recommendations received from Professional Engineers and Professional Land Surveyors on this topic. It appears that the concept of qualification based selection is embraced by a wide majority of professionals and industry leaders who communicated with us.

The Board, during this period, also received the critique of the document which has been under review, from various sources. These recommendations and concerns will be carefully discussed in the coming weeks. Board attorney's review and advice will be sought. The ten

Q: What has been the penalty?

A: It has varied from public reprimand, fine, and/or suspension of registration license. The Board considers it to be a serious matter when one does not seal and sign his work.

Q: How can I be assured that after I sign and seal my work that the client or someone later employed by the client doesn't alter the work that I have signed and sealed?

A: You cannot be assured that this will not take place.

Q: If that's the case then how can I protect myself?

A: Hey, you'd better keep a copy of the signed and sealed work that you have

professionals of the Board are charged". . . to safeguard life, health and property, and to promote the public welfare." It is in this context that all Board decisions are made. The decision on this issue will also be made on this basis after just and thorough consideration of all arguments and recommendations presented.

I expect that the Board shall neither rush nor unnecessarily delay its action. When the decision is finally made ten professionals and their support staff will have considered, researched and debated the merits of all that have been presented and will have cast their votes as guided by their conscience and their professional judgement.

The proposed rule, I am convinced, will not only provide additional protection to the public but will eventually elevate the professional engineer's and professional surveyor's standing in the society. It will highlight the fact that engineers and surveyors are professionals committed to delivery of services of the highest quality.

There is a public perception that any work performed or any services delivered by the "low bidder" is of low quality. The facts do not always bear this out, however, there are many unfortunate situations where this is the rule rather than the exception. As the cliché goes, more often than not, "you get what you pay for". . . I know of no individual that chooses a surgeon on the basis of the low

turned over to your client because situations can develop where you would have to prove the product of your effort.

Q: I can't think of any more questions, can you?

A: No, let's quit before you get in real trouble.

BOARD MEETING NOTICE

The Louisiana State Board of Registration for Professional Engineers and Land Surveyors will hold its regular meetings at 1055 St. Charles Avenue - Suite 415, New Orleans, La. 70130 on the following dates:

1990

June 4-5
July 23-24

Sept. 24-25
Nov. 12-13

bid, just as I do not know of any industry who choose their attorneys or CPAs on the basis of the low bid. Is engineering less important to the life and welfare of the public than medicine, law or accounting? Is the design of a pressure vessel or a high pressure pipeline, or a high voltage transmission system, or a hazardous waste containment facility less critical? Of course not. Then why should we make our selection of engineers on any basis other than qualification?

If and when such a rule is promulgated there most probably will be a transition period of learning for both the professional community, the clients, and the Board. Indeed there may be hardships, difficulties, and confusion resulting from a new rule. This is almost always the case. Nevertheless there will be a rule that reinforces and recognizes the commitment of a large majority of the professionals to perfection and quality. I as the incoming chairman am committed to bring this matter to a conclusion. The final approval or rejection of this rule, similar to all other decisions of the Board will depend on the majority vote of the Board. It is a challenge facing all of us.

I am looking forward to serving the Board, the public and our profession as chairman throughout the next twelve months. May God and our conscience guide us. LE

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LES Board of Direction Meeting Highlights

October 1989 Meeting

The October meeting was held in Baton Rouge with twenty-two board members, three guests, and the LES staff present.

1. A financial report for the fiscal year ending September 30, 1989, was accepted subject to the annual audit. It was noted that the Society is solvent and that some funds were placed in savings.

2. A budget of \$170,160 for 1989-90 was approved by the Board. The Executive Committee is reviewing a proposed retirement program for the LES staff. A program must be adopted prior to budgeting and funding.

3. The Baton Rouge Chapter is winner of the LES Membership Recruitment Contest. The Lake Charles Chapter is winner of the Membership Net Growth Contest. Due to the new mandatory NSPE membership rule for all new members joining after January 1, 1990, the Board adopted new rules for the Membership Recruitment Contest.

4. Amendments to the "Guidelines for Selecting Nominees to the State Board of Registration" were adopted.

5. The Ethics and Professional Conduct Committee concluded an investigation on two members of the Society and found no violation of the LES Code of Ethics.

6. The President was directed to write a letter to the National Attorneys General Association and the Louisiana Attorney General expressing LES's concerns on the model contract documents authored by the Attorneys General Association.

7. The Liaison Committee with the State Board of Registration submitted five names to the Board for consideration to replace Marion J. Chaney, P.E., a member of the State Board of Registration whose term expires in November. The nominees were accepted unanimously and will be submitted to the Governor.

8. Steven W. Brown, P.E., was appointed by the Board to serve as its ex-officio member to the LES/PAC.

December 1989 Meeting

The December meeting was held in Baton Rouge at the State Office with fifteen board members, four guests, and the LES staff present.

1. The financial report ending November 30, 1989, was accepted subject to the annual audit.

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2. The 1988-89 financial review prepared by the Certified Public Accountant was accepted.

3. Bueto will explore the possibility of purchasing a fax machine for state headquarters.

4. Markel reported that the Louisiana Investor-Owned Electric Companies will make their annual contribution of \$15,000 to the LES MATHCOUNTS program.

5. Recommendations for the 1990 LES awards were submitted by the Honors and Awards Committee. The six nominees were unanimously accepted by the Board.

6. Due to conflicts, the LES Membership Chairman had to resign his position. Wilfred Barry, P.E., will serve as Chairman for the remainder of the year.

7. The Spring Awards Meeting will be held on April 25-28, 1990, at the Lake Charles Hilton. The General Membership Meeting will be held on Friday afternoon.

8. The guidelines for the Associate Member Award were revised to include one year's membership in NSPE and to reduce the complimentary membership in LES from three years to one year.

9. The SEP Plan was accepted as a concept for the Executive Committee to consider and explore as a retirement program for LES employees.

10. The LES Board supported unanimously the Missouri's Society candidate, Daniel J. Watkins, P.E., for the NSPE Distinguished Service Award.

11. Nominations for two vacancies on the Engineers Selection Board are needed in the state office by May 15. The Nominating Committee consists of the five practice division chairmen.

12. Larry A. McKee, P.E., was appointed by Governor Roemer to replace Marion J. Chaney, P.E., on the State Board of Registration. He will serve a six year term.

13. A formal position to support the State Board of Registration's intent to revise the Louisiana Administrative Code (Chapter 21, Section 2105.C, Rules of Professional Conduct) was taken.

February 1990 Meeting

The February meeting was held in New Orleans with nineteen board members, two guests, and the LES staff present.

1. The January 1990 financial statement was accepted subject to the annual audit.

2. Dates for MATHCOUNTS competitions have been set by all nine chapters. The state competition will be held March 24 in Lafayette. President Carriere will present awards to the winning students.

3. A scholarship report was submitted by Robert Brossette, P.E., Chairman. Brossette stated that some chapters need to invest more time and energy into this most worthwhile program.

4. President Carriere will appoint a task force to explore the issue of establishing a policy position with respect to the Qualification Based Selection process in Louisiana.

5. The Executive Committee will meet in conjunction with the Awards Meeting to discuss the retirement plan for LES employees.

6. The State Board of Registration met on January 22, but no formal action was taken on the proposed revision to the Louisiana Administrative Code.

7. A Nominating Committee was appointed to select a slate of officers for 1990-91.

8. A properly executed petition was received in the state office to nominate Dr. Joseph J. Thigpen, P.E., as an honorary member. The appropriate ballots were prepared and distributed to the Honorary Membership Committee. Dr. Thigpen was elected unanimously as an Honorary Member of LES. He will be recognized at the Awards Meeting.

9. The General Membership Meeting agenda for the April meeting was discussed. Topics of interest to all engineers will be covered.

10. The National Director advised of a proposed change to the NSPE Constitution to allow for a one-time increase in dues of greater than 10%. If the constitutional amendment is approved, a member's NSPE dues will increase to \$90 annually which will include practice division dues.

11. In a positive development for consulting engineers, further use of the controversial owner-designer professional, owner-contractor and general conditions agreement of NAAG have been discontinued pending further review. LE

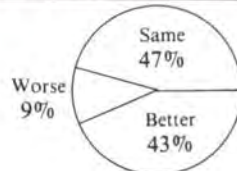
How's Business?

For over a decade, the American Consulting Engineers Council (ACEC) has surveyed its membership to determine the past performance and future business expectations of consulting engineers. This year's survey was mailed to 4,400 CEO's of member firms nationwide, and enjoyed a 43 percent rate of return. An independent accounting firm tabulated the results.

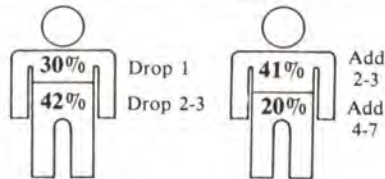
Business for consulting engineers in 1989 was average or better for 90 percent of respondents to ACEC's annual Business Health Survey. And 90 percent predict business in 1990 will be at least as good if not better. Lack of qualified personnel is the number one concern of ACEC members, followed by design build competition, foreign competition and profitability/overhead ceilings. The long standing strong concern about professional liability weakened in 1989, falling from the number one spot in 1988 to number six.

The percentage of firms reporting "good" business in 1989 increased proportionately with firm size. The largest firms, with staffs of 101 or more, most frequently said business was good in 1989. By region, the midwest and west had the highest percentages of firms reporting good business, registering significant increases over 1988. Business in the northeast and south fell slightly.

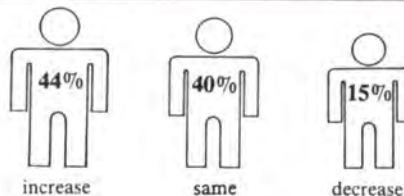
Do you anticipate your firm's business in 1990 will be better, about the same or worse than in 1989?



Do you expect to increase or reduce the number of your employees during 1990?



Compared to 1988, did your staff increase, decrease or remain the same?



What is your firm's primary field of practice?

Civil/Environmental	48%
Structural	16%
Electrical	14%
Mechanical	6%
Architectural/Engineering	6%
Other	6%
Geotechnical	4%

What client type was the major source of your firm's business in 1989?

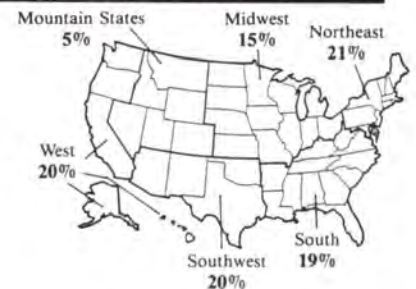
Commercial (private)	31%
Local government	27%
Industrial (private)	18%
State government	12%
Other	7%
Federal government	5%

What type of project provided most of your firm's work in 1989?

Transportation	19%
Commercial/Office	17%
Other	15%
Industrial Facilities	11%
Wastewater Facilities	10%
Water Supply/Resources	9%
Public Buildings/Housing	6%
Educational Facilities	5%
Hazardous Waste Cleanup	3%
Energy Conservation	0%

Business By Region

What region of the country do you feel holds the most potential for marketing your consulting engineering services?

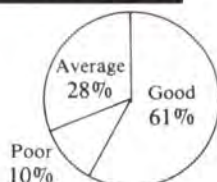


How significant were the following to your firm in 1989?

	1989	1988
Lack of Qualified Personnel	1	4
Design/Build Competition	2	8
Foreign Competition	3	10
Profitability/Overhead Ceilings	4	2
Excessive Government Regulation	5	5
Professional Liability	6	1
Competitive Bidding	7	3
Image of Consulting Engineers	8	6
Other	9	9
Taxes	10	7

For more information contact the American Consulting Engineers Council, 1015 15th Street, N.W., Washington, D.C., (202) 347-7474.

How would you describe your firm's business in 1989?



Percentage Rating Business Health as "Good" 1984-1989 by Region

REGION	1984	1985	1987	1988	1989
Northeast	80%	75%	73%	74%	60%
Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Vermont					
South	75%	75%	60%	64%	58%
Alabama, Arkansas, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia					
Midwest	74%	72%	64%	69%	74%
Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, N. Dakota, Ohio, S. Dakota, Wisconsin					
Southwest	84%	79%	35%	43%	41%
Arizona, New Mexico, Oklahoma, Texas					
Mountain	70%	76%	33%	40%	46%
Colorado, Idaho, Montana, Nevada, Utah, Wyoming					
West	75%	71%	60%	66%	72%
Alaska, California, Hawaii, Oregon, Washington					

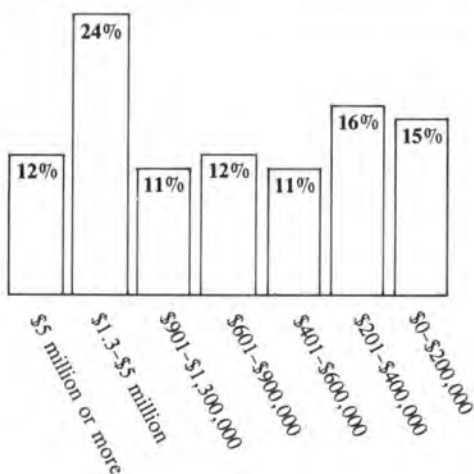
***There was no Business Health Survey released in 1987 (for the 1986 business year).



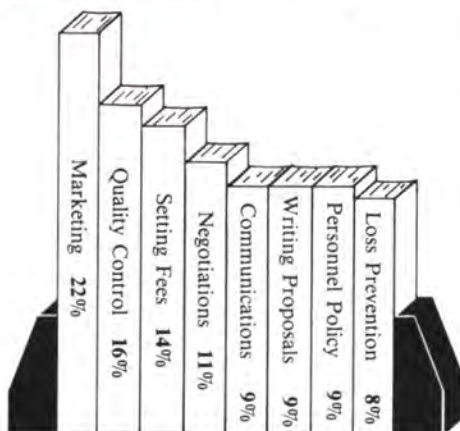
Consulting Engineers Section Warren J. Wilder CEC/L Executive Director



What is your approximate net revenue [gross minus subcontracts and reimbursables]?



In what areas do you feel you need more expertise?



Hey! Look Us Over!

Consulting Engineers Council of Louisiana, Inc. (CEC/L) is a voluntary, non-profit professional association exclusively serving engineers in private practice. CEC/L was founded in 1950 to improve and promote the practice of consulting engineering in Louisiana, enhance its image, and to protect the general public. With its 147 member firms, CEC/L is one of 50 Member Organizations which comprise the American Consulting Engineers Council, headquartered in Washington, D.C.

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CEC/L offers its members numerous publications and newsletters to keep them informed. Members may participate in a top notch life/health insurance program as well as a business insurance plan which includes automobile and general liability insurance. It also offers through the ACEC discounts on car rentals, fax machines, lodging at the Holiday Inn, and several other "perks."

CEC/L works consistently to benefit its members by maintaining liaison with a number of professional organizations, state agencies and parish and local government bodies.

Membership in CEC/L is limited to engineering firms in private practice with at least one principal having a Louisiana professional license to practice in the state. Prospective member firms must first be approved by the chapter in which area the firms are domiciled. IF YOU ARE INTERESTED IN RECEIVING MORE INFORMATION, PLEASE COMPLETE THE FORM BELOW AND RETURN IT TO CEC/LOUISIANA. P.O. BOX 1549, BATON ROUGE, LA 70821.

Please send me more information about CEC/L.

(Name) _____

(Firm) _____

(Address) _____

Please return form to
CEC/LOUISIANA
P.O. Box 1549
Baton Rouge, LA 70821

Shortage of Quality Personnel Number One Concern of Nation's Consulting Engineers Overshadows Liability Problems for First Time in Years

Lack of qualified personnel is the number one concern of the nation's consulting engineers, according to the

American Consulting Engineers Council's annual Business Health Survey. The top business concern is followed by design build competition, foreign competition and profitability/overhead ceilings. The long standing strong concern about professional liability weakened in 1989, falling from the number one spot last year to number seven.

Business for consulting engineers in 1989 was average or better for 90 percent of respondents to ACEC's annual Business Health Survey. And 90 percent predict business in 1990 will be at least as good if not better. "When business is good it's understandable that competition and quality people would become concerns," said ACEC Executive Vice President Howard Messner. "The survey results echo reports of a looming shortage of engineers. ACEC already has made this concern a top priority."

The percentage of firms reporting "good" business in 1989 increased proportionately with firm size. The largest firms, with staffs of 101 or more, most frequently said business was good in 1989. By region, the midwest and west had the highest percentages of firms reporting good business, registering significant increases over 1988. Business in the northeast and south fell slightly.

The 10 states reporting the best businesses, respectively, are Iowa (91% reported "good" business); Wisconsin (89%); Hawaii (88%); Nebraska (86%); West Virginia (83%); Michigan (83%); Nevada (82%); Illinois (79%); Washington (77%); and South Dakota (73%). The three states reporting the worst business are Idaho (45% reported "poor" business); Alaska (33%); and Texas (30%).

Looking ahead, the southwest was cited as the "hottest" market in the country by respondents asked to name the region of the country offering them the most potential for marketing their firms' services. The southwest was the region of choice for 31 percent, followed by the northeast with 22 percent. The west came in third with 19 percent. The south and the midwest tied, with 13 percent seeing the most promise there. Only three percent of the respondents think the

Mountain states hold out the most potential for increasing their business.

The American Consulting Engineers Council (ACEC), a federation of state and regional councils, is a national professional association representing over 5,000 private-practice consulting engineering firms employing 160,000 engineers, scientist, technicians and others who annually design over \$100 billion in constructed public works and private industry facilities.

The survey went to 4,400 CEOs of ACEC member firms and enjoyed a 43% response rate. For a copy of the complete results, contact Sally Keene at ACEC, 1015 15th St., N.W., Suite 802, Washington, D.C. 20005.

National Transportation Policy Released

President Bush and Transportation Secretary Skinner released March 8 the National Transportation Policy at an exclusive briefing for industry leaders. The President proposes to spend \$18 billion on infrastructure in fiscal year 1991, which is 68 percent of the Department's budget. The Federal Aviation Administration budget recommends a 78 percent increase over the next five years.

Though the Administration recognizes the need for improving the nation's infrastructure, the policy is shaped by the federal budget deficit. For example, the Secretary states that the Highway Trust Funds should be spent "over time in a fiscally responsible way." Future ACEC President Andrew Parker (EA Mueller, MD) representing the Council at the White House, congratulated administration officials on their commitment to reinvestment in the nation's infrastructure but argued the release of the funds collected officially for this purpose. The Administration policy will rely on user fees and encourage state and local governments to pay a greater share of infrastructure costs. The increased reliance on user fees will comprise 78 percent of the fiscal year 1991 budget. For more information, send \$2 and an address label to ACEC. Ask for #725/NTP.

Address request to ACEC, 1015 15th St., N.W., Suite 802, Washington, D.C. 20005

Business Practice Tip: Speaking Positively

Using these ideas may make employees feel more positive about their jobs.

- Cite specific activities. Say, "I appreciate the time and effort you put in on the ABC proposal," rather than, "Good job."
- Use the person's name. Link the name to something positive. Say "Pat, thanks for coming in early to the meeting."
- Use a standard. Say "Mary, your report looks like an award-winner."
- Recognize complimenters. Say "Thanks, Bob, for noticing. You've made my day." Don't return a compliment after you've received one. It diminishes the value of the first one.
- Ask people's advice or opinion. Say, "Mike, what do you think of this plan?" or, "We haven't heard from Mike yet. I'd like his ideas on this."

Source: communications briefings

(Both articles from March 16, 1990 issue of *The Last Word*, ACEC's newsletter)

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LOUISIANA ENGINEER/APRIL 1990



Leta Bueto
Executive Director
Louisiana Engineering Society



Robert Brossette, Jr., P.E.
Elected to Foundation
Board of Governors



Robert Brossette, Jr., P.E. of New Orleans, Louisiana has been elected to the National Society of Professional Engineers' (NSPE) Education Foundation Scholarship Division Board of Governors.

Mr. Brossette will serve a three-year term, beginning in July. The Board of Governors is primarily responsible for the administration of a volunteer-driven nationwide program providing scholarships and grants for the undergraduate study of engineering as well as fellowships for professional engineers returning for graduate study in management. It is also responsible for developing and maintaining uniform criteria for the selection of award winners.

This year, NSPE offered over 150 awards ranging from grants of \$500 for one year to full tuition scholarships for four years of study. The Society awards up to \$500,000 annually, making it the largest program of its kind for high school students who plan to study engineering.

Indemnification By Engineers
— A Warning

With increasing frequency, engineers are being asked — in some cases even compelled — to sign agreements which contain language requiring them to indemnify their clients against any loss the client may suffer in connection with projects they have designed. In an attempt to alert engineers and educate clients about the potential ramifications of these and

similar "hold harmless" clauses in design contract documents, the Engineers Joint Contract Documents Committee (EJCDC) has developed an important new publication. The document, *Indemnification by Engineers — A Warning*, developed by long time EJCDC Counsel John Clark, provides valuable insight on the meaning of indemnification, its historical background in engineering agreements, current trends in the use of indemnification clauses, and practical advice for engineers on what to do when confronted by a client with an indemnification clause. With engineers experiencing ever-increasing liability concerns, this document is a must for private practice engineers and their attorneys.

Indemnification by Engineers — A Warning may be obtained by sending \$15 (\$10 for NSPE/PEPP Members) per copy plus \$3 for shipping and handling to the National Society of Professional Engineers, P.O. Box 96163, Washington, DC 20090-6163. Virginia residents must add 4.5% sales tax. Please identify the document as EJCDC 1910-9-G (1990 Edition).

J. M. Drake, P.E., C.S.P.
Named Outstanding
Federal Engineer



J. Madison Drake, P.E., C.S.P. was selected as Defense Logistics Agency "Federal Engineer of the Year." Presentation of the award took place during Engineers Week at the National Society of Professional Engineers' Awards Banquet in Arlington, Virginia on February 22,

1990. He, his wife, Marlane and parents, Richard and Josephine Drake went to Arlington along with 34 other federal engineers to be recognized for their outstanding contributions to the federal government and their community.

Each of the 35 professionals from their separate federal agencies were chosen for professional, civic, and extra curricular activities as well as their job performance. J. M. was initially nominated to represent the Defense Contract Administration Services at Michoud Assembly Facility in New Orleans and has risen through successive competitions to represent DLA, which employs 51,000 persons within the Department of Defense.

J. M. has been employed for eight years at NASA Michoud as a safety, reliability and quality assurance engineer on the space shuttle external tank program where he is a lead aerospace engineer in the systems group. J. M. is Vice President of the New Orleans Chapter of the Louisiana Engineering Society, Treasurer of the 1991 NSPE Winter Convention Committee, and active in the American Institute of Aeronautics and Astronautics, and the Institute of Industrial Engineers. He is on the Federal Speakers Bureau, sings in his church choir, and is involved in a host of other charitable and professional activities.

J. M. was educated with a Masters in Aerospace Engineering from Georgia Tech, Class of '77. He attended Virginia Polytechnic Institute where he received his Bachelors degree in Aerospace Engineering, Class of '71.

NSPE Boosts
State Legislative Efforts

NSPE has begun subscribing to a state legislative network to help monitor registration and professional practice issues at the state level.

Specifically, this network service will bolster the efforts of state societies seeking to pass or defend legislation and regulations governing the definition and the practice of engineering.

A \$25,000 allocation from the Society's contingency fund is footing the initial costs. The new program will give NSPE

Continued on page 17

Five Engineers Receive The LEF Engineering Faculty Professionalism Award

The Louisiana Engineering Foundation awards the Engineering Faculty Professionalism Award annually to an engineering faculty member in each engineering school in Louisiana with EAC/ABDT accredited programs. All full-time Registered Professional Engineers in each school make the selections.

The 1990 recipients are Dr. John C. Nye, P.E., Louisiana State University; Dr. James W. Reeves, P.E., University of Southwestern Louisiana; Dr. Bobby E. Price, P.E., Louisiana Tech University; Dr. Frederick J. Brown, P.E., University of New Orleans; and Montrust Q. Burrell, Jr., P.E., Southern University. Each will be honored and presented a plaque at the Louisiana Engineering Society annual meeting banquet on April 27, 1990 in Lake Charles.

Dr. John C. Nye, P.E., Professor and Chairman, Department of Agricultural Engineering, Louisiana State University, is a Registered Professional Engineer in Louisiana and Indiana. He received his BS degree in agricultural engineering from Kansas State University, his MS and PhD. degrees from Purdue University. He joined the faculty of LSU in 1984.

He is a member of the American Society of Agricultural Engineers, American Society for Engineering Education, National Society of Professional Engineers, American Association of the Advancement of Science, Louisiana Engineering Society, and the Louisiana Academy of Science.

Dr. Nye has become a model in engineering by showing leadership to less experienced colleagues toward personal and professional development. It is especially noteworthy that a sense of service and professionalism has motivated him to serve as the director of the Louisiana Science and Engineering Fair since 1986. His success in this venture reflects well on the engineering profession.

Dr. Nye and his wife, Gloria Peterson, recently received the "Dream" award presented annually by the Martin Luther King, II, Commemorative Committee, to the person(s) who exemplify the ideals of Dr. King. Thus, Dr. Nye, by action and example, represents a true engineering professional and concerned citizen.

Dr. James W. Reeves, P.E., Dean of Engineering, University of Southwestern Louisiana, is a Professional Engineer and Land Surveyor in Louisiana. He received his B.S. and M.S. degrees in civil engineering from Louisiana State University and his PhD. from the University of Arizona. He joined the faculty of USL in 1959.

He has been a member of the Louisiana Engineering Society for 20 years and was recipient of the Leo M. Odom Award for Services to the Profession. He is a member of NSPE, ASME, ASEE, and the Council of Engineering Deans in Louisiana. Dr. Reeves is married and has two daughters.

Dr. Reeves has become a model in his field by showing leadership to less experienced colleagues toward a personal and professional development. He has instilled enthusiasm for the profession and has demonstrated to co-workers and the public, that registration is an important hallmark of the profession.

Dr. Bobby E. Price, P.E., Professor of Civil Engineering, Louisiana Tech University, began his service at Louisiana Tech in 1967. He received his B.S. degree in Civil Engineering from the University of Texas, Arlington, his M.S. degree from Oklahoma State University and his PhD. from the University of Texas, Austin.

He holds memberships in the National Society of Professional Engineers, Louisiana Engineering Society (past president), American Society of Civil Engineers (Fellow), the American Water Works Association, and the American Society for Engineering Education. He is a Registered Professional Engineer in Louisiana and Texas and a Registered Land Surveyor in Louisiana.

His ability to teach the fundamentals of engineering to students, in addition to instilling in them his own high ethical standards and respect for the engineering profession, have repeatedly won him the admiration of his peers and students. He has received numerous university, college, and department awards including the prestigious Louisiana Tech Alumni Foundation Professorship. He is a recipient of the LES Leo M. Odom Services to the Profession Award. He aggressively promotes professionalism within students.

He is married and has two children; a son and a daughter.

Dr. Frederick J. Brown, P.E., Associate Professor of Mechanical Engineering, University of New Orleans, is a Registered Professional Engineer in Louisiana, receiving his Bachelor, Master and Doctorate degrees in Mechanical Engineering from the Tulane University. In addition to his mechanical engineering degrees, he also received a M.S. degree in Electrical Engineering from LSU in 1967.

He is a member of the Louisiana Engineering Society, The National Society of Professional Engineers, American Public Works Association, the Edison League of New Orleans, and a charter member of the Optimist Club of Westbank.

Through his teaching and position as faculty advisor to the student chapters, he stresses registration and professionalism. As a minimum, using the most up-to-date techniques and procedures, he strives to improve his work until it becomes a model for those in engineering fields.

Montrust Q. Burrell, Jr., P.E., Professor of Mechanical Engineering at Southern University, Baton Rouge, LA. He attended Prairie View College, Texas, from 1943-46, and received his BSME degree in 1951 from Howard University in Washington, D.C. He received his M.S. degree in Mechanical Engineering from Tulane in 1968. He joined the faculty at Southern University in 1959.

Mr. Burrell is a Registered Professional Engineer in Louisiana and holds memberships in ASME, ASEE, and LES.

Burrell gives proper credit for work done and ideas developed by subordinates. He keeps active in his technical society in order to keep current in his field and encourages colleagues and students to improve their technical competence the same way. His participation in LES and ASME demonstrates to students and co-workers the technical and professional aspects of engineering are of equal importance. **LE**

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Continued from page 15

access to two computerized state legislative and regulatory tracking networks, which will be screened initially by an outside consulting firm. The network will encompass all 50 states. An outside consultant will review the data base daily and advise NSPE of any urgent situations. During peak legislative periods, the consultant will prepare a written weekly report. As a result of the network, NSPE will be able to obtain copies of proposed bills in those states that do not have a full-time society staff person.

NSPE's Government Relations Department, working with the NSPE General Counsel, Publications Department, and practice division staff, will analyze the data provided by the consultant and prepare a monthly state legislative bulletin for state society executives, state presidents, and the NSPE Board of Directors.

NSPE plans to tap into the network in early 1990. President-elect Neil Norman has pledged support for the new program during his administrative year, which begins this July. **LE**

SPLITTING UP THE FIRM

Continued from page 5

of insurance as evidence of continued coverage. Failure to receive such annual certificates would be an alert signal that coverage has not been renewed. If it has not, the interested parties should begin immediate negotiations to obtain coverage for their interest.

It is simpler to attempt these negotiations if only one insurance company is involved. It is also important to remember that there is another very important party to be considered on transfer of projects, and that is the client. Most contracts between design professionals and their clients specifically prohibit transfers without client approval. In all cases it would be wise to seek a novation of the contracts with agreement from the clients.

There are probably a great many other variations and complications that could arise. Each set of unique circumstances presents new problems to be considered and solved. Do all of the agreements, contract transfers and responsibilities discussed require legal advice from your

attorney, help and understanding from your insurance agent and company? You bet they do. Much of this can be accomplished only with assistance and cooperation from the firm's principals. In the long run, however, it is in the best interest of all parties concerned to provide an equitable agreement from the start, rather than experience bad surprises later on. **LE**

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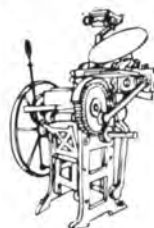
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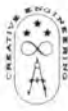
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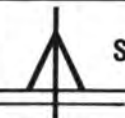
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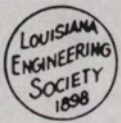
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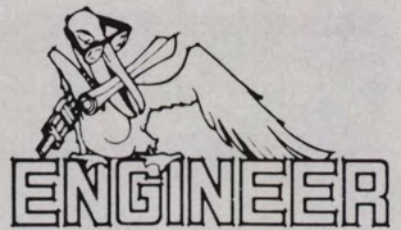


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Members of the Louisiana MATHCOUNTS Team are pictured on this month's cover. Story begins on page 5.



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The February edition of this column on engineering education resulted in several calls and letters concerning the past, present and future of engineering education. As you are aware, there are six public, four-year colleges of engineering in our state: Louisiana State University, Louisiana Tech University, the University of Southwestern Louisiana, Southern University, the University of New Orleans and McNeese State University. In addition, there is one privately supported college of engineering, Tulane University.

In 1986, the Board of Regents commissioned a statewide review panel on undergraduate engineering education in Louisiana. This study has sometimes been referred to as the "Bowen" report. In conjunction with the presentation of this report, the six colleges were given the opportunity to present their comments to the report. In addition, public hearings were held on December 11 and 12, 1986 to receive public comment. The report presented five (5) items entitled "Findings and Conclusions":

1. The quality of Louisiana's educational system is critical to economic revitalization and diversification of the state.
2. Louisiana's engineering colleges as a whole are underfunded.
3. The present distribution of engineering colleges results in less than optimal use of the state's resources for engineering education.
4. Data on freshmen attrition for each of the universities suggest that the state's open admission policy is more aptly described as a revolving door policy.
5. Several undergraduate engineering programs were found to have excessive enrollments of international students.

The report also presented eight (8) recommendations.

1. The Louisiana Board of Regents should, in consultation with the state's engineering colleges, develop performance standards for engineering programs and faculty and also budget targets for faculty, salaries, staff support, equipment, operations, and maintenance.
2. The admission standards of Louisiana's universities should be raised to require adequate high school preparation.
3. The fraction of non-resident students enrolled in the state's colleges of engineering should not be greatly different than the national norm.



Blaise M. Carriere, P.E.
President
Louisiana Engineering Society

4. Consistent with LSU's role as the primary doctoral institution in the state, its administration should develop and implement a plan to substantially enhance the quality of its undergraduate engineering programs.
5. On the presumption that the state wishes to increase the quality and efficiency of its undergraduate engineering programs, the Louisiana Board of Regents should identify two additional colleges which will be predominantly bachelors' and masters' degree programs.
6. As the consultants are convinced that the state's needs for engineering graduates at the bachelor level can be met by the college at LSU and two selected from the subset of colleges at LTU, UNO, and USL, the consultants have reluctantly come to the conclusion that the remaining two engineering colleges at MSU and SU-BR should be discontinued.
7. The state should, even in this period of austerity, provide the necessary funds to enhance its undergraduate engineering programs.
8. The faculty of each of the colleges of engineering have been dedicated and conscientious teachers. If the Louisiana Board of Regents were to accept the consultant's proposal and if program terminations were to eventuate, the affected faculty should be given special consideration for

positions for which they may qualify in the surveying engineering colleges.

The consultant's report was submitted on November 11, 1986, and was carefully reviewed, leading to the development of a report by the Committee on Academic Affairs. After review of the report, receipt of the various colleges' comments and the public hearings, the Committee on Academic Affairs of the Board of Regents met on December 17, 1986 and adopted resolutions on each of the six public engineering colleges. These resolutions recommended that the colleges be maintained and strengthened to address the weaknesses and problematic areas cited in the consultant's report. The recommendations of the Committee on Academic Affairs were presented to the Board of Regents at their meeting of December 18, 1986, where a single resolution was adopted to maintain and strengthen all six engineering colleges and address the weaknesses and problematic areas cited in the consultant's report. Therefore, it is under this resolution that the Board of Regents has proceeded for the past several years.

A significant common point, which seems to be supported by most, is that whatever funding level is currently being devoted to engineering education at present, cannot be reduced, regardless of the final configuration of the colleges of engineering. There is no possible reduction in what is needed to meet the engineering educational needs of our students and our society. However, this leads to a difficult determination of just how much we devote to engineering education. Here you will find no easy answers. In general, state funding is appropriated by the Legislature at the university level. Each year the legislative battles become more and more intense. This year may, in fact, be the most critical. Recognizing the critical need to fund higher education, many of the state's university leaders have come together to work with the Governor and the Legislature to direct needed funding to higher education. Because of the past several years of funding our total higher education system at amounts well below regional and national averages, our colleges have lost exceptional faculty and been unable to recruit new faculty. This was uniformly expressed by the six deans of our engineering colleges at a recent meeting of the Council of Deans.

Continued on page 17

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MATHCOUNTS

PASSPORT TO SUCCESS

by: Thomas R. Carroll, P.E.

Since its inception in 1983, the MATHCOUNTS program has touched and hopefully positively affected the lives of over 3 million students nationwide. NSPE chapters and state engineering societies take great pride in the success of this program which has addressed a critical nationwide need for improved math education.

As a result of the tremendous success of this endeavor, new frontiers, or literally borders, may be explored. In a cooperative effort with the Washington Society of Professional Engineers, the Association of Professional Engineers in British Columbia is investigating the possibility of the establishment of a Canadian MATHCOUNTS competition. The consideration of the implementation of this program in Canada serves as a testimony to those who have worked so diligently to initiate and continually upgrade our MATHCOUNTS program in the United States.

The continued success of the MATHCOUNTS program will provide tremendous challenges to the engineering community. The financial commitments to effectively administer a program of this magnitude are enormous. Expenses such as printing of tests and coaching materials, postage, scholarships, staff, travel, awards, and other items are ever increasing and straining the budget. Corporate sponsorships will probably continue as long as the success exhibited in past years is attained. The engineering community must rededicate itself to the objectives of providing an avenue for the teachers and students of mathematics in our country to elevate the standards of excellence in our educational system.

Changes made in the "question complexity" this year have been hailed as a true step forward in promoting participation in the program. Test results on the chapter level were notably higher prompting positive comments by participants. Teachers were also most complimentary of the changes made in the coaching materials. It is through positive steps such as these and dedication of our engineering, educational and technological communities that this program will not only survive but will rise to new levels in promoting mathematics competency in our country.

LOUISIANA ENGINEER/JUNE 1990

National Competition

The 1990 Louisiana MATHCOUNTS contingent comprised of Nathan Robson, Hubert Ho and Shamik Das, all of McKinley Middle Magnet School in Baton Rouge, Angela Greaves of Paul Breaux Middle School of Lafayette and Coach Claudia Allums of McKinley Middle Magnet School of Baton Rouge made their mark in the national competition held recently in Washington, D.C., by placing 13th in a field of 56 teams. This group of 56 teams was narrowed down from over 8,000 school teams representing the 50 United States, the District of Columbia, Puerto Rico, the Virgin Islands, the Department of Defense Dependent Schools, Guam, and the State Department School System.

This outstanding team showing was further accented by the 6th place individual finish of Louisiana mathlete Shamik Das of McKinley Middle Magnet School. On an even brighter note, Shamik is a 7th grader and will be eligible for the competition again next year. This year's top mathlete, Brian Jenkins of Arkansas, placed 5th last year as a 7th grader and we look forward to the opportunity for Shamik to duplicate Brian's feat in 1991.

The Louisiana Engineering Society takes extreme pride in acknowledging the accomplishments of these four outstanding young individuals and their leader and coach, Mrs. Allums. We also salute all teachers, mathletes and parents who participated in our program this year.

The trip to Washington for the competition also allows our team an opportunity to visit and tour our nation's capital and its many wonders. Included among the places visited where Arlington National Cemetery, the National Air and Space Museum, the Museum of Natural History, the Museum of American History, the Washington Monument, the Lincoln Memorial and the Vietnam Memorial.

State Competition

The Hotel Acadiana in Lafayette was the setting for this year's state MATHCOUNTS competition. The top three teams from each of the nine LES chapters as well as six other individual winners from chapter competitions battled for the right to represent our state at the national finals in Washington, D.C.

The mathletes were invited to attend Engineering Day on the campus of the University of Southwestern Louisiana on Friday afternoon and then were graciously treated to a crawfish boil and fish fry on Friday evening at USL Blackham Coliseum. Our special thanks for this event goes to organizer and MATHCOUNTS veteran, Warren Paul Boudreaux, P.E., and the other volunteers who made this meal a tremendous success, as evidenced by the sudden disappearance of 500 pounds of crawfish and 100 pounds of catfish.

The success of the competition on Saturday morning was the culmination of excellent planning, preparation and teamwork from the numerous MATHCOUNTS coordinators and volunteers including, but not limited to, the following:

Leta Bueto	LES Executive Director
Cindy Forbes	LES Secretary
Thomas R. Carroll, P.E.	State Coordinator
Robert Hughes, P.E.	Alexandria
Rhaoul A. Guillaume, P.E.	Baton Rouge
and Jon Juneau, P.E.	Bayou
W. David Pope, III, P.E.	Lake Charles
Melissa R. Jensen, P.E.	Monroe
Foy B. Gadberry, P.E.	New Orleans
Frederick J. Brown, P.E.	North Lake
Lawrence Dequay, P.E.	Shreveport
Eric Tillstrom, P.E.	Steering Committee
Kerry J. LaBauve, P.E.	
Warren Paul Boudreaux, P.E.	
	Past State Coordinator
Mark Dubroc, P.E.	Grading Supervisor
Blaise Carriere, P.E.	LES President
Barry Bleichner, P.E.	Past Lafayette Coordinator
Senator Armand Brinkaus	Honorary Chairman

Congratulations to the following top Louisiana teams and individuals:

TOP TEN SCHOOLS	CHAPTER
McKinley Middle Magnet School	Baton Rouge
Paul Breaux Middle School	Lafayette
Sherwood Middle School	Baton Rouge
Episcopal School of Acadiana	Lafayette
Mandeville Junior High School	North Lake
Jesuit High School	New Orleans
Caddo Middle Magnet School	Shreveport
Episcopal High School	Baton Rouge
Trinity Episcopal School	New Orleans
Pineville Junior High School	Alexandria

Top Ten Individuals for 1990 are:

NAME	SCHOOL
Nathan Robson	McKinley Middle Magnet School
Hubert Ho	McKinley Middle Magnet School
Shamik Das	McKinley Middle Magnet School
Angela Greaves	Paul Breaux Middle School
Jessica Fong	Sherwood Middle School
James Plummer	Jesuit High School
Camille Ristroph	Paul Breaux Middle School
Brian McMahon	Sherwood Middle School
William Goins	Cope Junior High School
Natalie Zerangue	Pineville Junior High School

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Qualified Based Selection (QBS) of Professional Services

The Board recently conducted a survey on QBS which may interest you.

Sixty-six Boards in these United States Register Professional Engineers and/or Professional Land Surveyors. Fifty-three of the Boards responded to our survey. The results are:

Thirteen Boards, by state law or Board rule, prohibit Procurement of **Engineering Services** by Competitive Bidding with price as a major factor in the selection of an engineer.

Ten Boards, by state law or Board Rule, prohibit the Procurement of **Surveying Services** by Competitive Bidding with price as a major factor in the selection of land surveyors.

The Board in the December, 1989 issue of the *Louisiana Engineer* announced its Notice of Intent to adopt a rule which would read, "Registrants shall undertake to perform professional engineering or land surveying services only after having been selected on the basis of competency and qualifications. Registrants shall not solicit or submit fee proposals prior to selection". I expect the Board will adopt a rule on the procurement of professional services at one of its official meetings this year.

Notice of Intent

In accordance with the Louisiana Revised Statutes 49:950, et seq, notice is hereby given that the Louisiana State Board of Registration for Professional Engineers and Land Surveyors intends to revise Louisiana Administrative Code 46:LXI as follows:

Chapter 1. General Provisions

§105. Definitions

...

A. - F. 2 . . .

G. "**Bona fide employee**" as used in these rules shall mean a person in the service of a registrant under a contract of hire, expressed or implied,

oral or written, where the registrant's employer has the power or right to control and direct the employee in the material details of how the work is to be performed and the registrant's employer pays wages or a salary directly to the employee, pays a share of social security and federal unemployment tax, withholds federal income tax, and the employee's share of social security payments, provides training, furnishes tools and materials, and sets hours of work. Generally such employees work full-time for the employer, perform work at a location assigned by the employer, and do not offer their services to the general public.

H. "**Bona fide established commercial marketing agency**" as used in these rules shall mean a business which is specifically devoted to public relations, advertising and promoting the services of a client, and which may be appropriately licensed as required by state statutes.

I. "**Practice of land surveying**" is defined in R.S. 37:682. The board recognizes that there exists a close relationship between land surveying and some areas of engineering, with some activities common to both professions. However, survey work related to property boundaries must be performed under the supervision of a professional land surveyor. Presented below are guidelines which shall be used as an aid in determining the types of surveying services which may be rendered by professional land surveyors or professional engineers.

1. Functions unique to **land surveying** which must be performed by or under the direct supervision of a Registered Professional Land Surveyor:

- a. boundary surveys
- b. subdivision surveys and plats
- c. public land surveys
- d. the following when they do require the establishment of the relationship of property ownership boundaries, i.e., fee title,

servitudes, easements, rights-of-way, leases, etc.

1. mine surveys
2. surveys for record drawings
3. topographical surveys
4. layout surveys for construction
5. hydrographic surveys
6. mapping

e. all other surveys that require the establishment of relationships to property ownership boundaries.

2. Functions common to **land surveying and engineering**, surveying which must be performed by or under the direct supervision of a Registered Professional Engineer or Registered Professional Land Surveyor. Such surveys do not require the establishment of the relationship of property ownership boundaries such as, but not limited to:

- a. topographic surveys
- b. horizontal and vertical control surveys
- c. layout surveys for construction
- d. surveys for record drawings
- e. profiles and cross sections
- f. quantity and measurement surveys
- g. cartographic surveys
- h. hydrographic surveys
- i. geodetic surveys
- j. mine surveys
- k. site grading plans

All of the above type surveys (2a through 2k), regardless of the method by which they are performed, including photogrammetric methods, must be performed by or under the direct supervision of a Registered Professional Land Surveyor or a Registered Professional Engineer.

3. Professional services which require the application of engineering principles and the interpretation of engineering data must be performed by or under the direct supervision of a Registered Professional Engineer.



**Paul L. Landry, P.E.,
Executive Secretary
Louisiana State Board of Registration for
Professional Engineers & Land Surveyors**



Chapter 3. Requirements for Certification and Registration of Individuals and Temporary Permit to Practice Engineering.

§303. Land Surveyor-in-Training Certification

A. - B. . . .

1. Graduation Plus Examination (Until January 1, 1991)

. . .

2. Education, Experience, Plus Examination (Until January 1, 1991)

. . .

3. Experience Plus Examination (Until January 1, 1991)

. . .

4. Baccalaureate Degree Graduate

The applicant shall be a graduate holding a baccalaureate degree from a curriculum of four (4) years or more who has completed at least thirty (30) semester credit hours, or the equivalent approved by the board, in land surveying, mapping, and real property courses approved by the board, who is of good character and reputation, who has passed the oral and written examinations required by the board, and who has satisfied the requirements of R.S. 37:694.

§311. Land Surveyor Registration

A. - B. . . .

1. Graduation Plus Examination (Until January 1, 1995)

. . .

2. Education, Experience, Plus Examination (Until January 1, 1995)

. . .

3. Experience Plus Examination (Until January 1, 1995)

. . .

4. . . .

. . .

5. Graduation Plus Engineering Registration (Until January 1, 1995)

. . .
6. Baccalaureate Degree Graduate

The applicant shall be a graduate holding a baccalaureate degree from a curriculum of four (4) years or more who has completed at least thirty (30) semester credit hours or the equivalent approved by the board, in land surveying, mapping, and real property courses approved by the board, who has had at least four (4) years or more combined office and field experience in land surveying, including two years or more experience in responsible charge of land surveying projects under the supervision of a Professional Land Surveyor registered or licensed by the appropriate authority, who has passed the oral and written examinations required by the board in the laws, procedures and practices of land surveying, who is of good character and reputation, and who has satisfied the requirements of R.S. 37:694.

7. Land Surveyor-in-Training

The applicant shall be a person who is certified as a Land Surveyor-in-Training by this board who has acquired at least eight (8) years or more of combined office and field experience in land surveying, including six (6) years or more experience in responsible charge of land surveying projects under the supervision of a Professional Land Surveyor registered or licensed by the appropriate authority, who has passed the oral and written examinations required by the board in the laws, procedures and practices of land surveying, who is of good character and reputation, and who has satisfied the requirements of R.S. 37:694.

Chapter 5. Rules Governing Corporations and Firms

§501. General Rules

. . .

A. Unless otherwise provided, unincorporated individual proprietorships which bear the full name

of the owner who is a Louisiana registered professional are exempt from the application of this chapter. Such firms are not required to be registered as qualified engineering or surveying firms with the board. Unincorporated individual proprietorships that do not bear the full name of the owner who is a Louisiana registered professional must be registered with the board as a qualified engineering or surveying firm and must comply with all the provisions of this chapter.

B. - C. . . .

D. Joint ventures that provide or offer to provide professional services will not be required to register as separate entities. Nevertheless, any firm (including those individual proprietorships otherwise excluded under [A]) that provides or offers to provide professional services in conjunction with its participation in a joint venture can do so only if it complies with the provisions of these rules. In addition, any supervising professional who participates in a joint venture shall be responsible for assuring that all professional services performed by the joint venture are rendered in conformity with the provisions of these rules.

E. A firm must be registered with the board before it may provide or offer to provide either professional engineering or professional land surveying services.

F. A firm which has in its title the word "engineering" or "surveying" or any derivative thereof shall be construed to be offering to provide engineering or land surveying services and therefore must be registered with the board before doing business in the State of Louisiana, unless it has in its title modifying or explanatory words which would, in their ordinary meaning, negative the inference of the professional practice of engineering or land surveying.

- G. A firm may provide or offer to provide both professional engineering and professional land surveying services; provided, however, that the firm must qualify separately as an engineering firm and as a land surveying firm, and the requirements of this chapter will apply separately to provision of or offers to provide professional engineering services and professional land surveying services.
- H. A firm may provide or offer to provide both professional services and related licensed professional services, such as architecture and landscape architecture; provided, however, that the firm must be registered under and comply with the provisions of this chapter.

Chapter 15. Examinations

\$1501. General

A. - E. . . .

- F. Any applicant found to have engaged in conduct which subverts or attempts to subvert the engineering or land surveying examination process may, at the discretion of the board, have his or her scores on the examination withheld and/or declared invalid, have disciplinary action taken as described in Louisiana R.S. 37:698 A and/or be subject to the imposition of other appropriate sanctions.
- G. The board may require applicants to demonstrate their knowledge of the law, rules of the board, and the English language by requiring either oral or written examinations.
- H. Applicants will be informed by mail only as to whether they passed or failed an examination. Numerical grades will not be released by the board.

1515. Re-Examinations

- A. A person who fails an examination will be eligible to apply to retake the examination six months after his last failure. The earliest such applicant could be rescheduled for an examination following a failed examination is one year after the last failure.
- B. Before an applicant is given approval to retake an examination, he may be required to appear before the board or a committee of the board for an oral interview/oral examination.

Chapter 17. Rules Governing the Use of Seals

\$1701. Seal Rules

. . . .

- A. Each Registered Professional Engineer or Professional Land Surveyor,

upon registration, shall obtain an official seal. The size and design of the seal shall conform to the specifications in subparagraph I of this chapter.

- B. The registrant shall affix his seal, sign his name, and place the date of execution on all engineering and surveying documents that have been issued by the registrant to a client or any public or governmental agency as completed work. A facsimile signature is not acceptable. Preliminary documents, so marked in large bold letters, shall contain a statement that the documents are not to be used for construction, bidding, recordation, conveyance, sales, or as the basis for the issuance of a permit. Preliminary documents are not required to have the registrant's seal and signature affixed, but must bear the name and registration number of the registrant, and the firm's name, if applicable.
- C. The application of the registrant's seal, signature, and date shall constitute certification that the work thereon was done by him or under his direct supervision.

1. Drawings and Plats - In case of multiple sealings, the first or title page shall be sealed and signed by the registrant or registrants in responsible charge. In addition, each sheet shall be sealed by the registrant or registrants responsible for each sheet. In the case of a firm, partnership or corporation, each sheet shall be sealed and signed by the registrant or registrants responsible for that sheet and the registrant(s) in responsible charge shall sign and seal the title or first sheet.

2. Specifications, reports, design calculations and information - In the case of specifications of multiple pages, the first or title page of each document shall be sealed and signed by the registrant or registrants involved. Subsequent revisions shall be dated and initialed by the registrant in responsible charge whose seal and signature appears on the first or title page. In the case of a firm, partnership or corporation, the registrant in responsible charge shall sign and seal the title of the first sheet.

- D. No registrant shall affix his seal or signature to reports, plats, sketches, working drawings, specifications, design calculations or other en-

gineering and land surveying documents developed by others not under his complete direction and control and not subject to the authority of that registrant, except as stated in LAC 46:LXI.1701.H below.

- E. Plans, specifications, drawings, reports or other documents will be deemed to have been prepared under the personal supervision and complete direction and control of a registrant only when:

1. The client requesting preparation of such plans, specifications, drawings, reports or other documents makes the request directly to the registrant, or the registrant's bona fide employee as long as the employee works in the registrant's place(s) of business;
2. The registrant supervises the preparation of the plans, specifications, drawings, reports or other documents and has input into their preparation prior to their completion;
3. The registrant reviews the final plans, specifications, drawings, reports or other documents; and
4. The registrant has the authority to, and does, make any necessary and appropriate changes to the final plans, specifications, drawings, reports or other documents.

- F. No registrant shall affix his seal or signature to documents having titles or identities excluding the registrant's name unless:

1. Such documents were indeed developed by the registrant under the registrant's personal supervision and direct control;
2. The registrant shall exercise full authority to determine their development; and,
3. Except as set forth in LAC 46:LXI.1701.H below.

- G. In the case of a temporary permit issued to a registrant of another state, the registrant shall affix the seal of his state of registration, his signature, the date of execution and his Louisiana temporary permit number to all of his work.

- H. In the case of an individual registrant checking the work of and taking the professional responsibility for an out of state individual registrant, the Louisiana registrant shall completely check and have complete dominion and control of the design. Such com-

plete dominion and control shall include possession of the sealed and signed reproducible construction drawings, with complete signed and sealed design calculations indicating all changes in design.

I. Seal Design Requirements

1. The design of the seal shall have the following minimum information:

State of Louisiana
Registrant's name
Registrant's Registration Number
Contain the words "Professional Engineer in _____ Engineering" or "Registered Professional Land Surveyor"

2. Indicated below is a sample of the seal design authorized by the board. Seals of two different sizes will be acceptable, a pocket seal, the size commercially designated as 1 1/2 inch seal, or a desk seal, commercially designated as a 2 inch seal. Rubber stamps or computer generated stamps of the same design and size are acceptable for use. Facsimile signatures are not acceptable (LAC 46:LXI.1701.B).

[Examples of Seal]



Chapter 21: Rules of Professional Conduct

§2101. Scope; Knowledge; Definition of "Registrant"

A. - C. . . .

- D. A registrant possessing personal knowledge of a violation of Statutes 37:681 thru 37:703 or the board rules found in LAC 46:LXI shall report such knowledge to the board in writing and shall cooperate with the board in furnishing such further information or assistance as it may require.

§2103. Registrants

A. - C.2

3. Registrants may not accept the responsibility for, nor review, revise, sign, or seal drawings when such plans are begun by persons not properly registered and qualified;

or do any other act to enable either such registrants or the project owners, directly or indirectly, to evade the requirements of Louisiana Revised Statute 37:681 through 37:703.

- D. Registrants shall submit to a client only that work (plans, specifications, reports, and other documents) prepared by the registrant or by a bona fide employee (or subordinate) of the registrant which is under the registrant's complete direction and control; however, registrants, as a third party, may complete, correct, revise, or add to the work of another registrant or other related design professional, if allowed by Louisiana Statutes, when engaged to do so by a client, provided:

1. The client furnishes the documentation of all such work submitted to him by the previous registrant(s), or other related design professional(s).
2. The previous registrants or other related design professionals are notified in writing by the registrant of the engagement referred to herein immediately upon acceptance of the engagement; and,
3. All work completed, corrected, revised, or added to shall contain a notation describing the work done by the registrant now in responsible charge, shall have the seal and signature of the registrant affixed thereto, the date of execution, and shall become the responsibility of the registrant.

Interested persons may submit written comments or offer amendments to the proposed rules to the Board Office at 1055 St. Charles Avenue, Suite 415, New Orleans, Louisiana 70130, at any time prior to July 20, 1990. The Board proposes to consider and take action on the adoption of these rules at a meeting in its office at 11:00 a.m. on July 24, 1990.

By order of the Louisiana State Board of Registration for Professional Engineers and Land Surveyors. **LE**

BOARD MEETING NOTICE

The Louisiana State Board of Registration for Professional Engineers and Land Surveyors will hold its regular meetings at 1055 St. Charles Avenue - Suite 415, New Orleans, La. 70130 on the following dates:

1990

July 23-24

Sept. 24-25

Nov. 12-13

Calendar of Events

We invite all technical and professional organizations to submit their meeting dates for publication in the *Louisiana Engineer* to: Editor, P.O. Box 2683, Baton Rouge, LA 70821

July 15-21, 1990

NSPE Annual Meeting, Omni Hotel
Norfolk, VA

July 27, 1990

LES Board of Direction Meeting
Bayou Chapter Area

September 7, 1990

LES Planning Conference
Alexandria, LA

September 8, 1990

LES Board of Direction Meeting
Alexandria, LA

October 10-13, 1990

LES Annual Meeting, Holidome
Lafayette, LA

October 13, 1990

LES Board of Direction Meeting
Lafayette, LA

October 18-20, 1990

ACEC Fall Conference
Dearborn, MI

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SEE Program Attracts Students to Engineering

by: Sally Keene

Six months ago Anthony, a student at a Washington, D.C., middle school, thought an engineer was that man who dwelled in the boiler room and only crawled up the windy stairs to scold him and his friends for flushing too many paper towels down the toilet. Today he knows that engineers designed the school he attends, the bus he rides, and virtually everything in his constructed environment. Six months ago Anthony thought that planning ahead was deciding which party to crash on Friday and what excuse to give to his parents on Saturday. Today he has a new vision. He now dreams of becoming an engineer.

Last year Anthony became involved in a school program that changed his attitude about the future. Like most of his friends, he attended the first engineering assembly to get out of math class, but surprisingly, he found that he was interested in what these engineers had to say. He marveled at the pictures of buildings that pierced the sky, subways that snaked beneath the cities, bridges that looked so delicate yet could withstand violent winds and constant traffic.

He forgot about the assembly a few days later, but the next month, the engineers returned. They taught a group of about 40 students some basic engineering techniques. Armed with this knowledge, the students began working on models made of toothpicks and balsa wood that could hold hundreds of pounds without breaking. They toured engineering firms' offices, museums, and project sites. They witnessed CADD demonstrations, touched bearing pads, and worked on computers. For the first time, engineering made an impact on these kids.

The program, SEE, or Students Engaged in Engineering, was established in 1988 by the Consulting Engineers Council of Metropolitan Washington. It substantiates the view that the personal touch is essential to an effective student outreach program. SEE brings together middle school students (especially

minorities and women) with engineers in the community. They conduct monthly activities using math and science skills to introduce the youngsters to the opportunities that abound in the engineering profession.

Why SEE?

The United States is facing a severe shortage of engineers - nearly 560,000 by the year 2010. This figure is frightening enough on its own, but when one considers that half of our nation's bridges are structurally unsound and highway construction is not meeting the needs of current population growth, it becomes even more evident that we need to attract more young people into engineering.

Much like the sunburn that doesn't show up until dark, America's lack of technical competence may not be painfully revealed until it's too late. The number of qualified engineers and scientists is waning, and there is a long time lapse between recognizing an increased need for engineers and training people to meet that need.

Nearly 2000 years ago Roman engineering genius Julius Frontius declared that "inventions have long reached their limitations." Whether it was pride or pessimism that prompted him to declare, "I see no hope for further developments," we do not know. What we do know is that science and technology will advance more from today until the year 2000 than in all recorded history.

The Bureau of Labor Statistics estimates that the need for science and engineering in the U.S. will increase by 36 percent by the year 2000 because of high technology industrial growth and the increasing use of high-tech goods in both the manufacturing and resource sectors.

At the same time, the U.S. demography is changing. The number of college-aged people is declining, as is the number of those who typically have pursued a career in engineering - white males. If the U.S. is to train adequate numbers of scientists and engineers to maintain its international competitiveness, it will have to reach out to traditionally underrepresented groups.

Everyone who will become a scientist or an engineer during the next 20 years has already been born. In fact, they are already in junior high school, hopefully taking courses that will prepare them for their future. If their future involves engineering, their present had better include courses in math and science.

There are countless opportunities out there, but many students are not aware that engineering is an option. What is lacking in many instances are positive role models for these impressionable youngsters. Unlike many other student outreach programs, SEE is fueled by people power. There are no elaborate curricula or activity ideas forced upon teachers. Instead, engineers step into the educational fray and develop ongoing relationships with students.

Why Middle Schools?

Research by the Office of Technology Assessment (OTA) indicates that students must be aware of science and engineering prior to high school in order to take the courses that will properly prepare them for the demanding college-level program. Activities in the SEE program take the fear out of studying math and science. Students in sixth through ninth grades find that using these skills can be fun. Thus when they move on to high school and can choose among electives, calculus and physics will not appear quite as daunting. SEE places a special emphasis on women and minorities, not only because both groups are severely underrepresented, but because in the year 2000, these groups will account for 85 percent of the new entrants to the nation's workforce. Given the complex reasons for female and minority underrepresentation in engineering, quick fix solutions are unrealistic. Programs designed to address the needs of these students can make a difference.

Throughout the business world, CEO's of major corporations are replacing annual "feel-good," tax deductible donations with people power. With a little research, it is easy to uncover some type of student outreach program in



Consulting Engineers Section Warren J. Wilder CEC/L Executive Director



almost every city in the U.S. Some work better than others, mainly because they were designed with two very important people in mind — the teacher and the student.

In its recent report, OTA notes the major components of successful student outreach programs in engineering. Programs should feature positive role models, peer support, hands-on experience and specific goals for minorities and women. All are elements of SEE. However, the program must have the support of the teachers if it is to be effective.

"Another program comes down the pike every day," said Elizabeth Davis, drafting teacher at the Friendship Learning Center in Washington, D.C., pilot school for the SEE program. Davis said she accepted SEE because it helps the students without creating more work for already overburdened teachers.

The looming shortage of engineers is directly related to another nagging problem that has besieged the profession for years — the engineers' image. "Engineers don't have an image problem," Dave Holbert, president of CEC/Metropolitan Washington quipped. "We don't have any image at all." The image issue had been a long standing concern of Jim Poirot, president of American Consulting Engineers Council. When his term commenced in May of 1989, Poirot made student outreach a top priority of the Council.

Having studied the SEE program, Poirot encouraged co-founder Dennis Kamber, president of Kamber Engineering in Gaithersburg, Maryland to chair the Council's Education/Registration Committee and expand SEE to the national level. In less than six months, several states adopted programs and more than 4,000 kits describing the program had been requested and distributed. Kamber went on a promotional tour, meeting with ACEC Member Organizations to explain the personal and professional benefits that accompany the program. The eventual goal: to have active SEE programs in every state. "One of these days, the SEE program is

going to be as widely known as the Boy Scouts," says an enthusiastic Kamber.

(From: *American Consulting Engineer*, May, 1990)

The Importance of a Written Understanding

Lawyers know about contracts. Contracts are their stock in trade. They generally explain them in terms of offer, acceptance, consideration, and competence of the parties. These tests are applied to determine whether a contract, in fact, exists.

If there is no contract, attorneys reason, no duty is owed. This is one way to denying responsibility. Your principal interest, however, is not in avoiding responsibility or walking away from an agreement, but in understanding how to formulate agreements which are fair and equitable and which withstand the test of time.

"I Said, He Said, She Said"

A contract does not have to be in writing to be enforceable. It does have to be in writing to be clear. In the event of a dispute over the obligations of the parties to an unwritten understanding, the courts will step in, if necessary, to determine the scope and intent of the agreement. They will do so based on the evidence at hand—existing documentation, firsthand testimony, and the actions of the parties.

You may have close, personal relationships with clients with whom you operate on the basis of an understanding none would ever consider breaching. Perhaps you have never had written agreements with these clients? Perhaps you have never encountered problems on their projects? Why would you want to disrupt long-standing relationships by suggesting a change now?

The real problem is, you may be betting your professional reputation and your personal assets against the doubtful probability that, years after the fact, both you and your client will have the same recollection as to exactly what it was you once agreed upon. Even with the best of

intentions going in, there is always the risk that your memories will be clouded by intervening events. There is also the risk that one of you may not be available at some future point in time to confirm what your original intent really was. You might explain to your client that, even though you may be the very best of friends now, your spouses or associates may not be later. Their attorneys certainly will not be if called upon to represent their diverging interests. You might also explain that others may step forward to claim that one of you has somehow breached a duty to them. The first place they will look to establish that duty is your agreement, and neither of you will want to have to rely on faded memories to assist the court in its efforts to discover just what that agreement encompassed.

What a Contract Can Do for You

The traditional legal explanation of a contract is this: A contract is a promise or a set of promises, for breach of which the law gives a remedy and for the performance of which the law recognizes a duty. From an attorney's point of view, a contract is a legally enforceable agreement. From your point of view, it is something much more tangible. A clear, written understanding between you and your client serves a fourfold purpose:

1. It is a reflection of your understanding of the scope of your work—what your obligations really are, what you expect of your client, and how much and when you will be paid.
2. It is also a reflection of your client's understanding of your responsibilities and of his or her obligations to you.
3. It is one form of communication between you, your consultants, and your project staff as to what has been promised—so that each, in turn, can contribute to the fulfilling of those promises.
4. Finally, it is a record of a meeting of the minds, one which, in the event of a later dispute, two hired guns will use in their efforts to explain to a jury of well-meaning citizens, most of whom know little or nothing about what goes on in a

Continued on page 17

Louisiana Engineering Foundation Awards Two Graduate School Fellowships



Brian S. Bourgeois

Brian S. Bourgeois, Tulane University, and Marc W. Losh, University of New Orleans, are recipients of the Louisiana Engineering Foundation's 1989-90 fellowships.

The Fellowships are presented annually to one or more graduate students of engineering who express a sincere desire to enter the teaching profession at the university level.

Brian S. Bourgeois was born in Aquadilla, Puerto Rico, son of Floyd E. Bourgeois (deceased) and Bertha B. Bourgeois. He received his Bachelor and Master of Science Degrees in Electrical Engineering at Tulane University. Mr. Bourgeois is single and enjoys hobbies in scuba diving, photography and automobiles.

From 1983-86, he served in the U.S. Navy aboard the USS McInerney, Mayport, Florida. Mr. Bourgeois is currently a lieutenant in the Navy Reserve.

He has an excellent academic record. His master's thesis in Distributed Systems resulted in several publications and technical reports at Tulane and NORAL.



Marc W. Losh

Marc W. Losh was born in Newton, Massachusetts, the son of John A. and Nancy L. Losh (mother deceased). He is a graduate of Bay High School, Bay Village, Ohio and the University of Maryland with a Bachelor of Science Degree in Government and Political Science.

Marc moved to Louisiana in 1982, where he was employed as an electronics technician until 1986, when he left that position to pursue an engineering education full time at the University of New Orleans. He is presently seeking a master's degree in engineering. His ultimate goal is a PhD. in Electrical Engineering. Marc was in the U.S. Air Force 1975-77.

He is married and his wife teaches 5th grade Language, Arts and Social Studies at the Academy of Sacred Heart, New Orleans. They have one child, Eric, age 2.

Mr. Losh is hard working and a personable young man. He is very mature and is viewed as a leader by other students. His test scores are among the top in his classes.

Both of these young men are outstanding recipients of the 1989-90 LEF Fellowships. James L. Meyer, P.E., President of LEF, will make the presentations later this year in New Orleans.

The Fellowships were made possible by the generous contributions from engineers throughout the State of Louisiana.

The Louisiana Engineering Foundation is a tax-exempt organization founded in 1978 by the Louisiana Engineering Society. Its goals are to provide opportunities to practicing engineering professionals for development programs; to provide fellowships to serve educational needs of young men and women pursuing a career in engineering; and to maintain a Center to serve all engineers. **LE**

"LES FORUM"

The LES Board of Direction recently approved an addition to the *Louisiana Engineer* magazine of a feature section to be called the "LES FORUM". The "FORUM" is not to be more than one page in which to publish comments on matters of interest to the profession. Comments should be brief, courteous, and timely, and will be edited by the Publications Committee for balance and pertinent content.

The *Louisiana Engineer* is published six times annually in February, April, June, August, October and December. Comments to the "FORUM" should be mailed to the LOUISIANA ENGINEER, P.O. Box 2683, Baton Rouge, LA 70821, no later than the 10th of the month preceding the month of publication.

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Ballot To Elect Louisiana Engineering Society Members To Engineers Selection Board

Act 721 passed in the 1975 Legislature amended Chapter 10 to Title 38 of the Louisiana Revised Statutes of 1950 by adding thereto a new Part VII, Selection of Professional Services for Public Contracts. Three Boards - Architect, Engineer and Landscape Architect Selection - are authorized under this Act. Each Board selects persons or firms to perform certain professional services for public contracts.

The Act refers to the Louisiana Engineering Society, specifying the following: The Louisiana Engineers Selection Board shall be composed of six members. Two members shall be named in an election conducted by the Louisiana Engineering Society at which all properly licensed engineers residing in the state of Louisiana may vote for positions to be filled. LES has two positions to fill this year, one with term ending June 30, 1991 and one ending December 31, 1991.

The LES Board of Direction nominates Clare M. Foreman, P.E., New Orleans, for the June 30 position and Kent A. Mudd, P.E., Baton Rouge, for the December 31 position.

Each Louisiana Registered Professional Engineer working and living in the state is eligible and urged to vote. Space on the ballot is provided for write-in candidates. A write-in candidate must be a Louisiana Registered Professional Engineer and must have agreed to serve if elected. No member or firm of which a member is an associate, employee, or stockholder shall be eligible to receive agency contracts during the term of his service, and for a period of six months thereafter.

LES ENGINEER SELECTION BOARD

1. Mark and return to LES, P. O. Box 2683, Baton Rouge, LA 70821, by July 13, 1990. LES is not responsible for late delivery of mail.
2. Make sure your name and address is on the envelope that forwards the ballot to LES. Ballot signature is not required.

Vote for One Candidate in Each Position

POSITION ONE (Term July 1, 1990 - June 30, 1991)

☐ Clare M. Foreman, P.E., New Orleans, LA

☐

For write-in

POSITION TWO (Term January 1, 1991 - December 31, 1991)

☐ Kent A. Mudd, P.E., Baton Rouge, LA

☐

For write-in

PLEASE VOTE. RETURN TO LES, P. O. Box 2683, Baton Rouge 70821 prior to July 13, 1990.

.....
PLEASE CUT ALONG THIS LINE

Ballot To Elect Consulting Engineers Council Of Louisiana Members To Engineers Selection Board

INDIVIDUAL PRINCIPAL'S BALLOT

Qualifications of voting eligibility.

Act 721, A (2) "The Louisiana Engineers Selection Board. It shall be composed of six members. Two members shall be named in an election conducted by the Consulting Engineers Council of Louisiana, Inc. at which all properly licensed engineers, who are principals of firms with offices in Louisiana, may vote for the same number of candidates as there are positions to be filled," . . .

One nominee will be elected to fill the position whose term begins July 1, 1990 and ends June 30, 1991.

One nominee will be elected to fill the position whose term begins January 1, 1991 and ends December 31, 1991.

The CEC/L Board of Governors has nominated the following engineers who have expressed a willingness to serve during the stated terms below.

Vote for One Candidate in Each Position

Mark this ballot and return to CEC/L, P. O. Box 1549, Baton Rouge, LA 70821. Replies must be received by noon, July 13, 1990 to be counted.

POSITION ONE (Term beginning July 1, 1990 and ending June 30, 1991)

☐ James E. Goodwin, P.E., Houma, LA

☐

For write-in

POSITION TWO (Term beginning January 1, 1991 and ending December 31, 1991)

☐ J. Larry Dufour, P.E., Baton Rouge, LA

☐

For write-in

Joseph J. Thigpen, Ph.D., P.E. Elected Honorary Member

Joseph J. Thigpen, Ph.D., P.E., was elected to the very prestigious Honorary Membership classification by his peers, the past presidents and Board of Directors of the Louisiana Engineering Society, on February 9, 1990. Dr. Thigpen was recognized at the LES Annual Awards Meeting held in Lake Charles, April 25-28, 1990, and presented an appropriate plaque.

Dr. Thigpen was born in Ruston, Louisiana, and attended schools in his home town, graduating from Louisiana Tech with a Bachelor of Science Degree in Mechanical Engineering in 1936. He entered the U. S. Military Academy in 1937 and was commissioned a second lieutenant in the Corps of Engineers in 1941. His six years of service as an officer in the regular army included 27 months in the Southwest Pacific Theater in the early part of World War II and three years as an instructor in military history at West Point. In 1947, he became a

member of the faculty of the School of Engineering at Louisiana Tech University. He became Head of the Mechanical Engineering Department in 1953 and Dean of the College of Engineering in 1976. He retired from the faculty in 1982.

On two occasions during his teaching career, he took academic leave to earn his Master's and Doctorate Degrees in mechanical engineering from the University of Texas. Dr. Thigpen also took military leave for two years during the Korean War and taught at the U. S. Military Academy.

Dr. Thigpen has been very involved in the engineering profession as a member and officer in the Louisiana Engineering Society, the National Society of Professional Engineers, the American Society of Mechanical Engineers and the American Society for Engineering Education. He was president of the LES in 1973-74, and the LES recognized him for the growth and accomplishments of the organization during his tenure as president. The Louisiana Engineering Society honored him with the Leo M. Odom Award

for Services to the Profession in 1978.

Dr. Thigpen received the Tau Beta Pi Outstanding Teachers Award in 1962, and the Engineering Achievement Award from the Engineering Scientific Council of Shreveport in 1970. He is a Fellow in the American Society of Mechanical Engineers and a member of the following honor societies: Tau Beta Pi, Pi Tau Sigma, and Sigma Xi.

Jack is married to the former Ruth Ensley of Alexandria, Louisiana, and they have two children, Jack Jr., assistant basketball coach at Louisiana Tech University, and Dr. Sally Freeman who teaches psychology at Louisiana State University in Baton Rouge.

The Society extends its congratulations to Dr. Thigpen.

Quarter of A Century Celebrated by Louis J. Capozzoli & Associates, Inc.

The 90's marks a quarter of a century for Louis J. Capozzoli & Associates, Inc., Geotechnical Engineers in Baton Rouge.

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The company celebrated with an open house at their office on Airline Highway.

Geotechnical Engineers evaluate soil for the design, construction, and maintenance of foundations for buildings, industrial plants, underground structures, levees, airports, and environmental projects.

The firm offers all phases of geotechnical engineering services and their work includes projects in Baton Rouge, both Premier Towers, the Centroplex, three 1749 foot high Television Towers and the Swaggart Worship Center. Local work has been in all Gulf Coast States and foreign projects were done in Asia, Africa, Europe, and South America.

The firm has been busy over the past several years with their design of horizontally drilled river crossings, developed by LJC&A's chief engineer, Charles W. Hair, III. Mr. Hair received the Technological Award from the Louisiana Engineering Society in 1989 for developing this technique, used on projects from California to South Dakota to Massachusetts, as well as close to

home. Dr. Capozzoli received the same award in 1977.

The Society extends its congratulations to Louis J. Capozzoli & Associates, Inc., and wishes them continued success.

IN MEMORIAM

Trudeau J. Hogue, Jr., P.E.

Trudeau J. Hogue, Jr., P.E., a member of the Society since 1949 and State President in 1971-72, expired on March 28, 1990. Mr. Hogue was 72, a native and resident of Baton Rouge. He was a retired South Central Bell Division Planning Engineer and a retired U.S. Army Colonel. T. J. was a U.S. Army veteran of World War II, having flown with B-29's in China, Burma, India, Tinian and Saipan.

T. J. was a member of St. Joseph Cathedral, a graduate of St. Vincent's Academy, Catholic High School and Louisiana State University. He was past president of the Louisiana Engineering Society, Baton Rouge Chapter; Capital City Kiwanis Club; Sons of the American

Revolution; Broadmoor Civic Association; and the Retired Officers Association. He was a member of the Military Order of World Wars, Sons of the Confederacy, Alpha Kappa Chapter of Sigma Pi Fraternity at Louisiana State University, Alhambra, Baton Rouge Country Club and other civic organizations.

The Society extends its sympathy to his wife, Lois Akers Hogue, and his son, Jay Hogue, III.

NSPE's Guidance Activities

The United States, long an unquestioned technological leader, is at risk of becoming a distant second in the international race for technological superiority. A decrease in both our competitiveness and capabilities will be felt in our nation's employment, productivity, and preparedness.

By now you have all read or heard of the National Science Foundation's predictions that by 1996 there will be a shortfall of 45,000 baccalaureate degrees

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in science and engineering. This shortfall will grow to 700,000 by 2010. Other nations, like Japan, are responding to the increasingly technological world by sending more students into the fields of science and engineering and spending more to support engineering research and development.

For its part in responding to one of the largest challenges our profession has ever faced, NSPE has an active Pre-College Career Guidance Committee (PCCGC). Its objective is simply to encourage more students to enter the field of engineering. The mechanism proposed to achieve our goal is a strong partnership between the NSPE national headquarters providing programs and materials to state societies and local chapters that can reach students directly.

Our initial activity has been to establish a delivery mechanism for guidance programs and materials as they are developed at national. Each state society has been requested to appoint a Guidance Coordinator. They, in turn, have been urged to identify coordinators for each local chapter to create working committees on a local level having ready access to students. To date, 27 states have responded by appointing Guidance Coordinators.

States and chapters can design their approach to a guidance effort based upon local characteristics. Those in close proximity to an engineering school can work with engineering students and NSPE student chapters in working with local junior high and high schools. This affords an interaction between closer age groups. Teacher colleges afford the opportunity of acquainting future educators with the mission we've undertaken so they in turn can impart it to their students. The majority of states and chapters, however, will select direct contact with high schools, hopefully attracting the younger engineer into an activity that is both satisfying and important.

To complement and support these programs, the PCCGC is developing a kit of guidance materials that may be tailored to the state or local chapter's needs. The first component, a new brochure designed in an upbeat manner, called "Engineering and You", is now available for chapter use. The PCCGC has been working with National Engineers Week staff in the development of a sample presentation for volunteers to use when visiting their local schools or at career days. Recognizing the tremendous guidance activity potential of National Engineers Week,

Guidance Coordinators are being encouraged to use the visibility of National Engineers Week to get the message out.

Additional projects include a guidance video geared to the 6th through 9th grade audience that will demonstrate the possibilities of engineering using a bicycle theme and an "Engineering Summer Adventure Kit" to encourage grade school children to continue to study math and science and educate them about what engineers do. Both of these require substantial outside funding support.

The challenge is upon all of us — every engineer in our nation. The technological ability of our country to not only move ahead competitively, but to maintain our current capabilities is in danger. The NSPE Pre-College Career Guidance Committee is geared to utilize the strength and efforts of the state societies and local chapters. Please join with us in our effort. We cannot afford to fail.

(This article written by Arthur Freed, P.E., Chairman, NSPE Pre-College Career Guidance Committee)

NSPE Student Programs Committee

The efforts of the Student Programs Committee have been focused on the 5th Annual Student Conference that was held February 1 - 3 in conjunction with the 1990 Winter Meeting in San Diego. This conference brought over 60 student members together from 15 states, Washington D.C., and Puerto Rico. It gave NSPE an opportunity to promote professionalism to its student members and provided the students contact with NSPE leadership.

The conference began on Thursday afternoon with an introduction to NSPE. President E. Walter LeFevre, P.E. opened the session with a few words about NSPE and introduced NSPE's latest video "NSPE Today". The video highlights NSPE's efforts in ethics, infrastructure, competitiveness, and international issues. The session continued with remarks from practice division representatives highlighting the current projects of each practice division. This session served to inform the students that NSPE is actively involved in the issues that will affect their careers.

The conference continued with a session on ethics. This session began with the viewing of the video "Gilbane Gold", produced by the National Institute for Engineering Ethics (NIEE). Following

the video, Dr. Margaret N. Maxey of the University of Texas at Austin and the incoming president of NIEE, lead the students in a discussion on ethics in engineering. This discussion allowed the students to explore their feelings on correct ethical behavior and to receive guidance for future ethical decisions. This discussion also prepared them to hold their own seminar on ethics when they returned to their school. Each NSPE student chapter has access to a copy of "Gilbane Gold" for this purpose.

On Friday morning the students had breakfast with NSPE's National Directors. This breakfast gave the students a chance to get to know and talk to some of NSPE's leadership. Contact between NSPE's students and practicing engineers allows the students to learn more about NSPE and what to expect from a career as a Professional Engineer. It also gives practicing NSPE members the chance to encourage professionalism in their future coworkers. The breakfast closed with an address by NSPE President, E. Walter LeFevre, P.E., on what NSPE can offer its student members now and as they continue into the workforce.

Breakfast was followed by a Career Awareness Seminar. The Career Awareness Seminar is a package that is available from NSPE to each student chapter. With help from their sponsoring local chapter, the students can organize their own seminar and present it to the engineering students on their campus. The seminar held during the conference was moderated by Deborah L. Grubbe, P.E. of E.I. DuPont De Nemours & Co. and member of the Student Programs Committee. Representatives from each practice division highlighted their own career paths and told the students what to expect from a career in each area of practice.

Deborah L. Grubbe, P.E. also presented an overview of NSPE's newly published book *Engineer Your Way to Success*. The book and the session were designed to give students and young engineers a better idea of what professional qualities are important to their success as an engineer. Alan Hippleheuser, P.E. of A.E. Staley Manufacturing Co. and member of the Student Programs Committee presented the students with information on what they should expect from their first year as a practicing engineer. This presentation emphasized what new graduates should expect from their jobs, workplaces, and supervisors instead of what would be expected of them. Finally,

Arlen L. Borgen, P.E. of CH2M Hill led a session on job search skills that included a series of practice job interviews. All three of these sessions encouraged the students to give more serious consideration to the level of professionalism, in addition to the level of technical knowledge, that will be expected of them when they begin their first jobs.

The final session held during the conference was an Idea Exchange. This gave students from different chapters a chance to hear new ideas and find out what has been successful and what hasn't. This year the students focused on the student chapter's relationship with its sponsoring local chapter, its state society, and NSPE. The Student Programs Committee is now in the process of summarizing the results of the exchange to distribute to the student chapters and to use in future planning.

The annual student conference is the forum used to provide guidance for students on professional issues, to develop their business skills, and to offer them contact with NSPE leadership. The student attendants then take their experience back to their schools and share it with other engineering students through their chapter activities. In this way, the NSPE Student Programs Committee is trying to better prepare young engineers for the professional challenges ahead of them and show them how NPSE can continue to serve them throughout their careers. **LE**

(Written by Alvin H. Meyer, P.E., Chairman)

PRESIDENTIAL PRIVILEGE

Continued from page 4

While it is hoped that the current session of the Legislature will develop the needed revenues to fund higher education, they must also look at the management and delivery of education. Our current system of four (4) boards consisting of the Board of Regents, the Board of Supervisors of the LSU System, the Southern University System and the Board of Trustees, can be viewed as four separate branches of education, each with some powers. The Board of Regents, for example, sets policy and can control programs, but they have little control over budgets. The other individual boards set budgets, determine funding levels within the universities that make up the system and essentially manage all of the affairs of the universities.

As a first step in the field of engineering, should we not establish the role and

mission of the College of Engineering? These should start with strong undergraduate program offerings that meet the needs of our state and country. Building on the undergraduate programs, should we not then establish the graduate and research programs to develop quality and leadership based upon properly placed and strongly supported graduate and research centers? Why is it so difficult to devise such a plan? Until we all look carefully at what we expect of our educational system and then agree to provide the funding necessary, we will forever be talking and not acting. As was done recently through the adoption of the Transportation Trust Fund, the problems of education will not be solved until we can demonstrate to the taxpayers of our state that their tax dollars will deliver a quality education. A dedicated educational funding source that brings stability to higher education with a responsible and direct management system is an essential first step.

You will note that elsewhere in this edition is a notice of the LES Board's

action to initiate a *Louisiana Engineer's* Forum. Starting with the next edition your comments and suggestions will be considered for publication through the Forum. **LE**

THE SPEC SHEET

Continued from page 11

building project, just what it was that each of you should have done.

It is this final use of an agreement with which lawyers most concern themselves. But, once you and your client have reached this stage, you have both lost. The only winners are the attorneys, who join your dispute with a certain amount of relish and walk away from it with most of the spoils.

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have included the estate of a deceased client, a new owner of the client's interests, and the general public.

More recently, the courts have found little difficulty in expanding your duties to include virtually anyone who may have a reasonable right to rely on what you do. Such duties have been extended to the general contractor, subcontractors, injured workers, sureties, and subsequent purchasers of the completed project.

Whether or not an expanded duty is actually found often depends upon the expectations you create, the responsibilities you assume, and the responsibilities you define in your agreement as belonging to someone else—responsibility for the means and methods of construction, for example, or for safety on the jobsite. If a dispute should erupt on the job, you can expect to find your contract called into service as a reference document by those seeking to determine whether or not you might be responsible for someone else's performance. All reference documents best serve their purpose in written form.

Using Available Tools

The American Institute of Architects (AIA) and the Engineers' Joint Contracts Document Committee (EJCDC) have invested enormous resources in the development of standard contract documents which attempt to address, fairly and equitably, issues of great importance to all parties to a construction project. Start with these documents. With the help of your attorney, use them as a foundation for tailoring your agreement to the specific project at hand. Your goal is a written understanding which truly reflects a meeting of the minds.

The negotiation of that agreement is the very best opportunity you will have to explain the limitations on your ability to control the risk of construction. You should be prepared to discuss each provision in the standard forms you use. If you are not comfortable in doing so, you might want to brush up on your skills. There are guides available to help.

Both the AIA and the EJCDC have published detailed commentaries on their standard agreements, and both have prepared abbreviated standard forms for use on projects of limited scope and complexity. If you understand these tools and use them well, both you and your clients will be well served. The very best agreements are those which never have to be called upon for resolution of a dispute.

(From: *The Professional Liability Perspective*, April, 1990. Furnished by Alexander & Sanders Insurance Agency, Inc., Baton Rouge, LA)

Strong Management Skills Key to Design Firm Success

Strong project management is the key to growth and success in every design firm. To help design firms impress clients, increase profits, and bring every project in on-time and on-budget, PSMJ is presenting its most popular educational program — "Turning Technical People into Strong Project Managers." This intense two-day program will be held September 14-15, 1990 in Tampa, Florida and September 28-29, 1990 in Seattle, Washington.

The responsibilities of today's project manager range far beyond the skills taught in a university's technically oriented curriculum. This program teaches the essential skills PMs need to meet those responsibilities. PSMJ guarantees that "Turning Technical People into Strong Project Managers" will improve each participant's ability to insure quality, timeless and profitability on design projects.

Topics covered in the first day of this information-packed session include: 7 steps to better delegation; 9 time-saving

tips on meeting participation; how to identify what makes a client/boss/subordinate 'tick'; how to collect from even the most stubborn client; and ten ways to improve your negotiating skills.

The second day is devoted to scheduling and budgeting, with emphasis on not only how to do scheduling and budgeting, but also how to recover when things go wrong. Attendees will have the opportunity to try out their new found skills in the case study projects that are an integral part of the curriculum.

Since the program concentrates on hands-on practice of techniques and the importance of staying in touch with management techniques, attendees receive a free project management video tape, a personal seminar implementation plan and the first twelve paid registrants receive a FREE 6 month subscription to *Professional Services Management Journal*.

The speakers at this program are David Burstein, from Engineering-Science, Inc. and Scott W. Braley, from Heery Architects and Engineers. Both are dynamic, informative speakers with extensive project management experience.

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Introductory rates do not apply. You will be invoiced.
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- ☐ I am 55 years of age or older and retired from full-time employment. Introductory Fee: \$70
- ☐ I am an engineering student. Introductory Fee: \$10 \$ _____

Student dues are not prorated. First year dues are prorated by 50% from April-September 30. From October 1-December 31, full payment provides membership for the balance of the current year plus the entire following year.

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The new member rates listed cover national, state, and chapter society dues for your first year. These rates do not apply in Alaska, Florida, Guam, Kansas, Maine, Puerto Rico, Vermont and Wyoming. If you live in one of these states, simply mail in the application and you will be invoiced.

Membership is open to all registered P.E.'s and EIT's, and graduates of ABET accredited engineering programs. Mail to: NSPE, P.O. Box 96107, Washington, DC 20077-4611. Dues include subscriptions to NSPE News (\$3), Engineering Times (\$10), and the applicable practice division newsletter (\$1)—PEC Reporter, PEEReview, PEG Times, Industry Forum, or Private Practice News.

For more information or to make reservations, contact Marni Correra at PSMJ Seminars, Ten Midland Avenue, Newton MA 02158 or call her at (617) 965-0055. **LE**

MATHCOUNTS

Continued from page 5

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Mind-Reading Machines, Mile-High Buildings On Tap for '90s?

Startling social and technological changes will take place in the 1990s and the early 21st century, according to a new book from the World Future Society.

"The 1990s & Beyond" includes chapters by 30 futurists. Among their forecasts:

- Skyscrapers in U.S. cities could rise over a mile high. Architects have already designed a 500-story building that would stand 6,864 feet tall;
- Mind-reading computers may be in use by the end of the 1990s;
- The early decades of the next century could see a war between generations as tomorrow's elderly attempt to compel the young to honor the Social Security debts and other obligations of the present era;
- All-plastic automobiles and airplanes will be common by the year 2000;
- Colleges and universities could disappear as a result of staggering cost increases, a declining pool of college-age individuals, and increased competition from business-sponsored schools;
- Medical breakthroughs in the treatment and prevention of heart disease, cancers, and strokes could dramatically increase life expectancy during the next decade. **LE**

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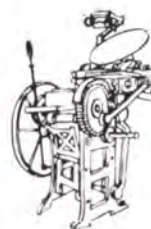
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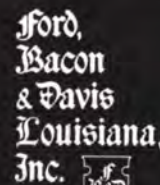
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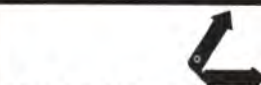
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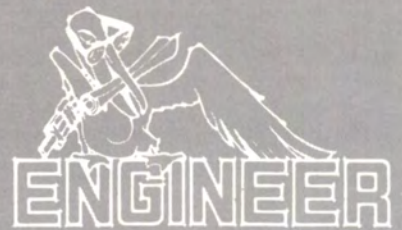


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Environmental

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Civil

Requires a traditional BS/MS in Civil Engineering with a minimum of 6 years' experience including earthwork, drainage, site development, landfill, highway (geometric systems), airport, bridges and design. Project management and a working knowledge of construction is essential.

Water/Sanitary

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Wastewater/Sanitary

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Our cover this month features 1990-1991 CEC/L President, Charles G. Coyle, P.E.



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Presidential Privilege

Have you ever heard the expression "time really flies when you are having fun?" Well, this is my last time to have the "privilege" to express my view on a particular subject. The strength of our Society is that this is not the end, but truly the beginning. Our chapter elections have taken place, our state election ballots have been tabulated and our new officers will soon be meeting in Alexandria for the annual training session. Our Society is involved in many things affecting all aspects of the practice of engineering. Our special responsibility is to provide examples through which our fellow citizens may have confidence in engineers and can depend on us in matters affecting their health, safety and welfare. We must fulfill the highest ideals of mankind so that the world will be a better place because we have lived here.

Many of you have become acutely aware of the decline of math and science in our schools and society. Significant efforts at national and local levels are vigorously being pursued through such programs as MATHCOUNTS and very successful projects like the introduction to math, science and engineering at the elementary school level conducted by the Baton Rouge Chapter. Our scholarship programs and efforts to seek out talented students continue to be another of our major contributions. None of these would be successful without the participation of the membership. Perhaps the most significant of all of these efforts is the giving of individual time and effort by the membership. Our Society is not one of "what is the Society going to do for me, but rather what can I do for my Society?" (Where have I heard that before?)

During the past several weeks, the Louisiana Legislature met in annual session. Although the Louisiana Engineering Society did not have any specific matters to present to the Legislature, we were, nevertheless, interested in many of the bills which could affect the practice of engineering. As many of you are aware, the future of higher education, its funding and management were the subject of several bills, including the lottery. As expressed in my last column, we have yet to put in place a stable funding source for higher education, a management system that has the authority to set policy and allocate funding, and a means for the citizens to judge the performance of the system.



Blaise M. Carriere, P.E.
President
Louisiana Engineering Society

We need to renew our efforts in this area.

Other legislative matters involved a proposed bill to extend the "industrial exemption" to any state agency that regulates industrial operations. The premise for this legislation was Louisiana's law on Professional Engineering and Land Surveying Registration which requires that engineering and land surveying work that is performed by industry only be done under the supervision and charge of a professional engineer. The proposed bill was drafted to permit a state agency to operate in the same manner as industry. It is the position of LES that persons practicing as professional engineers, whether in the public or private sector, exercise similar types of technical judgements. A high set of standards for the practice of professional engineering is required, regardless of whether the engineer works in the public or private sector. More than ever, the public health and safety are dependent on the professional expertise of licensed engineers. The simple truth is that engineering registration laws constitute the best protection of public health and safety. Only three states - Vermont, Colorado and South Dakota - remain as states with a blanket exemption for government engineers. Although there is a real problem in attracting and recruiting professional engineers into state government, eliminating the requirement of registration is not the

way to improve. This bill did not pass, but the problem of meeting the State's need for professional engineers has also not been met. The agencies of state government, the civil service system, the Board of Registration, and the engineering community must work together to resolve this situation. Such discussions are on-going.

Other legislative matters dealt with the procurement of professional engineering services by the Department of Transportation and Development. One bill, which brings all but the procurement of professional engineering services by the DOTD under the Division of Administration procurement code, was adopted by the Legislature. Another bill, requiring the DOTD selection of professional engineers through a QBS process, was again introduced but was not passed. Of importance also was a bill introduced by the land surveyors which dealt with the designation of one of the Board of Registration positions and the specified requirements of the individual to hold this seat. As a result of several recent meetings, the LES Liaison Committee is working with the Louisiana Land Surveyors Association and the Board of Registration to draft legislation for next year that would specify both the areas of practice, i.e. government, industry, private practice etc., and also have certain discipline requirements, i.e., civil, mechanical, chemical, etc., to insure a well-balanced Board.

Of continuing importance is the pending action of the Board of Registration on the matter of priced engineering and land surveying proposals and the meaning of qualifications based selection. An ad hoc committee of the Board of Registration is currently working on these subjects.

As we look to the future, I ask each of you to mark your calendars for the annual fall meeting of the Society to be held in Lafayette, October 10-13, 1990. Your attendance and participation in the General Membership meeting on Friday, October 12, 1990 is your opportunity to be heard and to vote on the issues of the day.

As you can see, these are exciting and challenging times in the practice of engineering. I look forward to seeing each of you in Lafayette and ask that you step forward in working for your Chapter and our Louisiana Engineering Society.

Where has the time gone? Its been fun! Thanks for the opportunity. **LE**

The "LES FORUM" invites comments on matters of interest to the profession. Comments should be brief, courteous, and timely, and will be edited by the Publications Committee for balance and pertinent content.

Dear Editor,

I am writing in response to the article published in the February 1990 *Louisiana Engineer* under the "Presidential Privilege" regarding Colleges of Engineering in Louisiana. The article was written by Blaise M. Carriere, President of LES. As noted in the April issue, he plans to review this subject based on oral and written comments submitted to him pertaining to the factual aspects of the report to the Louisiana Board of Regents.

At the time Blaise wrote his article, he was unaware of the written and oral rebuttals which were presented to the Board of Regents soon after the report was issued. . . .

In my written comments to Blaise M. Carriere, I highlighted 1.) the UNO portion of the report submitted to the Board of Regents by the Statewide Review Panel on Undergraduate Engineering Education in Louisiana was along with the rebuttal and 2.) the changes which have occurred at the UNO College of Engineering since the study was completed five years ago. A summary of my comments follow:

Report to Board of Regents with Responses

- a.) "The University of New Orleans' College of Engineering is in the early stages of development." **FACT** - UNO Engineering was initiated over 30 years ago and has grown in enrollment until it is at the national median among 296 engineering colleges.
- b.) "At present, there are only three degree programs in Engineering." **FACT** - The College of Engineering had four ABET accredited engineering programs, and still does.
- c.) "The addition of at least another major, e.g. chemical engineering, would be required for UNO to be a viable engineering college." **FACT** - We already had four disciplines. . . .
- d.) "The instructional load carried by part-time instructors brought in from local industry is too large a portion of the total teaching efforts." **FACT** - The ratio of undergraduate

courses taught by part-time instructors to the total courses offered in the College is less than 20%. The number of full-time faculty far exceeds the minimum ABET guidelines.

- e.) "Teaching loads are excessive and inconsistent with the research expectations of the faculty". This was not true four years ago when the report was issued and is assuredly not true today!
- f.) "During the same period (1981 - 1985), a total of 18 M.S. degrees were awarded. This is slightly over one per program per year, which is clearly on the low side." **FACT** - The total number of M.S. degrees awarded over this period was 55. (Some 33 M.S. degrees were awarded last year alone.)
- g.) "... and new laboratory equipment would be required." **FACT** - Since then we have a new 9 story, \$16.5 million building which houses extensive additional laboratory equipment. A recent ABET review found our laboratory equipment to be adequate for all programs.

The rebuttal covered many other areas and clearly demonstrated that the consultants were not given adequate time or funding to properly study the situation in Louisiana. . . .

In an action taken by the Academic Affairs Committee of the Board of Regents after reviewing the Consultants' report and the rebuttals, on December 17, 1986, the committee "concluded" that the engineering programs at the University of New Orleans should be continued." They went on to recommend that "the B.S. programs in Civil, Electrical and Mechanical Engineering at the University of New Orleans shall be maintained and strengthened." The full Board of Regents met and voted to adopt the Academic Affairs Committee report of their meeting of December 17. The Board of Regents also took similar action regarding the other Colleges of Engineering and in effect refused to accept the recommendations of the Consultants' report. . . .

Changes Since the Board of Regents Study

- a.) A new nine-story, \$16.5 million College of Engineering Building was completed and occupied two years ago and all the laboratories meet ABET requirements.
- b.) The College of Engineering has been reaccredited by ABET and given the maximum period of accreditation in

three of the four programs with excellent accreditation in the fourth program. . . .

- c.) The College of Engineering admitted ten (10) National Merit Scholars and two (2) National Achievement Scholars last fall. Very few colleges admit even two in either or both categories collectively.
- d.) The teaching loads are competitive on any basis and the ratio of courses taught by part-time to full-time faculty is excellent.
- e.) We have a unique engineering program at UNO - Naval Architecture and Marine Engineering. It received an award of excellence from the Board of Regents recently.
- f.) UNO is an urban college with a Greater New Orleans population of 1.2 million to draw on. The large majority of students that attend the College of Engineering at UNO would not attend any of the other Universities in the State. This is true of both our undergraduate and our graduate students. This is due to both the high quality of our programs and the fact that most of our students work part-time in New Orleans and could not afford to attend universities away from New Orleans.
- g.) The College of Engineering has increased its extramural funding over the past three years to over \$1 million per year and plans to maintain or increase its funding level each year hence.

In closing, we need LES to get behind the concerted efforts to have the State properly fund education in Louisiana. The Consultants' report . . . has only done harm to engineering education in Louisiana. LES cooperation with the colleges will indeed build stronger engineering programs and help provide adequate funding at all levels.

John N. Crisp, Ph.D., P.E.
Dean, College of Engineering
University of New Orleans

Dear Editor,

In the February issue of the *Louisiana Engineer* President Blaise Carriere presented his views on what needs to be done regarding engineering education in the state of Louisiana.

Carriere had two major recommendations:

1. Reduce the number of state-supported engineering colleges from six to four. The two to be terminated would be McNeese and Southern.

With reference to the first recommendation, Carriere cites the November 1986 report of an out-of-state panel of six engineering educators who served as consultants to the Board of Regents. The consultants recommended that, in view of extremely limited state revenues, the state needed at most *three* engineering colleges. (Note Carriere is willing to go with four.) McNeese and Southern were to be terminated, with one more to be selected for closure by the Regents.

Carriere incorrectly states the report has "sat on the shelf" since then. In fact, the Regents rejected this recommendation on December 18, 1986, and voted 15 to one to "maintain and strengthen" the six state-supported colleges of engineering.

With reference to the second recommendation, Carriere assumes that if Louisiana had only four state-supported engineering colleges, students now enrolled as engineering majors at McNeese and Southern would enroll in one of the remaining colleges. This is an erroneous assumption.

"Going away" to college is out-of-reach financially for a majority of Louisiana families. In the case of McNeese, 87 percent of our students live within 50 miles of the campus. A recent survey of McNeese engineering students indicated 80 percent of them would not study engineering if MSU did not provide the program.

Carriere suggests Louisiana has too many colleges, too many programs. But LSU Chancellor William Davis, speaking before a group of LSU alumni in Lake Charles on March 12, had this to say: "It is a myth that there is too much duplication in the state's university system. ... Louisiana actually has fewer public universities than any other Southern state except Florida."

The recommendation to cut the number of engineering schools would lose its adherents if the state of Louisiana were to fund higher education as it ought to—and must—if it is to make economic progress. A recent study reveals the startling fact that Louisiana ranks 48th among the 50 states in the percentage of tax revenues

it dedicates to higher education.

If Louisiana were to raise the percentage of state revenues allocated for higher education from the present 5.9 percent to 9.1 percent (the average of the 14 Southern states) these "turf protection" battles would cease. It is time for all thoughtful citizens, members of the Louisiana Engineering Society included, to unite behind state Sen. Larry Bankston of Baton Rouge and other legislators to campaign for allocating more resources to all of Louisiana's institutions of higher education.

It is encouraging to see the presidents and chancellors of Louisiana's colleges and universities joining hands and cooperating with each other for increased funding for all institutions. This is the sensible program for us to follow. Let the Louisiana Engineering Society get on the bandwagon!

O. C. Karkalits, Ph.D., P.E.
Dean, College of Engineering
McNeese State University



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**LOUISIANA ENGINEERING SOCIETY
ONE-DAY PLANNING CONFERENCE
SEPTEMBER 7, 1990
ALEXANDRIA HILTON & CONVENTION CENTRE, ALEXANDRIA, LA**

PROGRAM

Friday, September 7

9:00 a.m. - 10:00 a.m.	REGISTRATION	
10:00 a.m. - 10:10 a.m.	OPENING SESSION	Kerry J. LaBauve, P.E.
	COMMITTEE MEETINGS	
	Ethics & Professional Conduct	
	Engineering Education	
	Scholarship	
	Long Range Planning	
	Membership	
	Young Engineers	
	Public Relations	
	Inter-Society Relations	
	Executive Committee	
	Liaison With State Board of Registration	
	Legislative	
	Constitution & Bylaws	
12:00 Noon - 1:15 p.m.	LUNCH (On your own)	
1:30 p.m. - 3:00 p.m.	PRACTICE DIVISION MEETINGS	
	Construction	
	Education	
	Government	
	Industry	
	Private Practice	
3:10 p.m. - 4:30 p.m.	GENERAL SESSION	
	Each Committee and Practice Division Chairman is requested to give a three to five minute presentation on his goals and objectives for the 1990-91 administrative year.	
4:45 p.m. - 5:30 p.m.	1990-91 CHAPTER PRESIDENTS' CONFERENCE	Kerry J. LaBauve, P.E.

Saturday, September 8

7:45 a.m. - 8:15 a.m.	BREAKFAST
8:30 a.m.	LES BOARD OF DIRECTION MEETING

**REGISTRATION COUPON - ONE-DAY PLANNING CONFERENCE
ALEXANDRIA HILTON / ALEXANDRIA / SEPTEMBER 7, 1990**

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LA 70821**

Registration Fee - \$10.00

Name _____ **P.E. YES** _____ **NO** _____

Chapter: _____

Breakfast (Saturday) Board Members - \$6.56

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LES Annual Meeting, October 10-13, 1990, Lafayette, Louisiana

General Program

Wednesday, October 10, 1990

11:00 a.m. - 5:00 p.m. Registration
11:30 a.m. - 5:00 p.m. Golf Tournament, Acadian Hills Country Club
Dinner "On Your Own"

Thursday, October 11, 1990

8:00 a.m. - 5:00 p.m. Registration
8:30 a.m. - 10:00 a.m. Seminar*
10:00 a.m. - 10:30 a.m. Break
10:30 a.m. - 12:00 Noon COMMITTEE MEETINGS
Membership
Young Engineers
Engineering Education
Scholarship
Executive Committee
Liaison/State Board of Registration
12:00 Noon - 2:00 p.m. Lunch "On Your Own"
2:00 p.m. - 4:00 p.m. PRACTICE DIVISION MEETINGS
Construction
Education
Government
Industry
Private Practice
4:00 p.m. - 5:00 p.m. LOUISIANA ENGINEERING FOUNDATION
6:00 p.m. Cocktails and Dinner - Entertainment
A. B. Henderson's Cypress Dining Room

Friday, October 12, 1990

8:00 a.m. - 12:00 Noon Registration
8:30 a.m. - 10:00 a.m. Seminar**
10:00 a.m. - 10:30 a.m. Break
10:00 a.m. - 3:00 p.m. Council of Deans Meeting
10:00 a.m. - 12:00 Noon COMMITTEE MEETINGS
Long Range Planning
Political Action Committee
Legislative
Constitution and Bylaws
12:15 p.m. - 2:00 p.m. Luncheon - Speaker: I. R. Schneider, P.E.
Vice President Political Action, LABI
2:00 p.m. - 3:30 p.m. COMMITTEE MEETINGS
Ethics and Professional Conduct
Public Relations
Intersociety Relations
MATHCOUNTS
3:45 p.m. - 5:30 p.m. General Membership Meeting
6:30 p.m. - 7:30 p.m. Cocktails
7:30 p.m. Installation Banquet

Saturday, October 13, 1990

8:00 a.m. LES Board of Direction Meeting

Spouses' Program

Wednesday, October 10, 1990

11:00 a.m. - 5:00 p.m. Registration
11:30 a.m. - 5:00 p.m. Golf Tournament, Acadian Hills Country Club
Dinner "On Your Own"

Thursday, October 11, 1990

8:00 a.m. - 5:00 p.m. Registration
8:00 a.m. - 10:30 a.m. Hospitality Suite Open
9:00 a.m. - 1:00 p.m. Vermillionville Tour
Lunch - "On your own" - "La Cuisine Maman"
6:00 p.m. Cocktails and Dinner - Entertainment
A. B. Henderson's Cypress Dining Room

Friday, October 12, 1990

8:00 a.m. - 12:00 Noon Registration
8:00 a.m. - 10:30 a.m. Hospitality Suite Open
9:00 a.m. - 12:00 Noon Jefferson Island Tour
Lunch - "On Your Own" - "Cafe by the Lake"
6:30 p.m. - 7:30 p.m. Cocktails
7:30 p.m. Installation Banquet

Saturday, October 13, 1990

8:00 a.m. - 12:00 Noon Hospitality Suite Open

LES Sponsored Seminars

**Water Quality Modeling Applications in Water Pollution Control"

Speakers: Dr. Paul A. Richards, P.E., Director of University of Southwestern Louisiana Center for Louisiana Inland Water Studies
Dr. Michael G. Waldon, Research Associate Professor, University of Southwestern Louisiana Center for Louisiana Inland Water Studies
Ms. Madeline C. Rogers, Research Associate, University of Southwestern Louisiana Center for Louisiana Inland Water Studies
Water Quality Models are used in determining discharge limitations and to support other water quality management decisions. This seminar will present examples of studies performed to develop the water quality models and address applications of the models.

***Geographic Information Systems: An Overview"

Speaker: Dr. Kam K. Movassaghi, P.E., Professor and Director of Engineering Management, University of Southwestern Louisiana
Recent advancement in computer technology such as increased processing speed, availability of large blocks of memory, efficient data base management systems and graphic capabilities have resulted in development of a new computer application area generally known as Geographic Information Systems (GIS). GIS is a system of computer hardware and software that allows the users to collect, manage and analyze large volumes of spatially referenced data. GIS fields such as engineering, architecture, business and physical, biological and behavioral sciences. This presentation introduces some basic concepts of GIS and its impact on today's technology and business.

Highlights

The Friday luncheon speaker is I. R. "Dick" Schneider, P.E., Vice President of Political Action, Louisiana Association of Business and Industry. Dick will address the political process, including fund-raising, lobbying, support for candidates and monitoring the legislative process.
The Golf Tournament will be held at the Acadian Hills Country Club. The fee of \$25.00 will include green fee, cart and refreshments. Tee-off time is 11:30 a.m.

A registration form may be obtained by calling or writing the LES State Office.

Following the Thursday Dinner, compliments of the LES Practice Divisions, *La Compagnie Louisianaise*, a Cajun Folklore Group will illustrate Cajun Heritage in a song and dance performance.

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 ***Seminar FREE with daily registration fee
 ****A registration form for the tournament may be obtained by calling or writing the LES State Office.

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	☐ King

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Charles G. Coyle, P.E. - A Profile

Charles G. Coyle, P.E., Bossier City, was installed as the 1990-1991 President of Consulting Engineers Council of Louisiana, Inc. (CEC/L) at the organization's recent Annual Meeting aboard the cruise ship, *Fantasy*.

Coyle is President of Coyle Engineering Co., Inc., Bossier City, Louisiana, an engineering firm offering services in the design of streets, roads, drainage, water and waste collection distribution and treatment facilities, surveying and foundation design and structural design. He has served on the board as President-Elect, Vice President, Secretary, and two years as Member-at-Large. He was graduated from Louisiana Tech University in 1968 with a Bachelor of Science degree in Civil Engineering and is licensed to practice engineering and land surveying in Louisiana and surveying in Texas. He is a member of the Louisiana Engineering Society, National Society of Professional

Engineers, the Society of American Military Engineers, and the Louisiana Society of Professional Surveyors. He and his wife, the former Sheila Wells, have two children, Charlie and Maggie.

Coyle is President of the Board of Directors of the Central Bossier Water System, Inc., Vice Chairman of the Greater Bossier Economic Development Foundation, and honor member of Chi Epsilon, National Civil Engineering Honor Society (Louisiana Tech Chapter). Active in his church, he is an elder in the Cottage Grove Memorial Presbyterian Church, Moderator of the Administrative Council, Presbytery of the Pines, and is an adult class Sunday school teacher.

"Charles Coyle has jumped right in and taken the steering wheel from his predecessor to continue to lead the Council in a positive direction," says Warren Wilder, Executive Director. "Charles is a mild mannered person yet surprisingly aggressive when it

comes to presiding at the board meetings. His board covers a lot of ground in a relatively short period of time. His dedication and loyalty to CEC/L are already apparent. His major goals include the reactivation of one of the North Louisiana chapters and increased visibility of CEC/L with proper public relations and special programs. These will be tied into involvement of the membership. He's already made several committee appointments and is expecting his committees to fulfill their responsibilities. Charles is serious about the Council and its future, but he's also a fun person. We've attended several national and state meetings and conventions together, and I can honestly say that he and his wife, Sheila, know how to pass a good time! He is a brilliantly determined individual. The membership can rest assured that CEC/L is in good hands with this year's board under Charles' leadership."

Biographical Sketches of the Board Members

RICHARD A. VAN WOOTTEN, P.E., is Senior Vice President - Engineering Operations of Walk, Haydel & Associates, Inc., New Orleans, Louisiana, a multi-discipline consulting engineering firm specializing in industrial plant designs, and the design of deep water terminals, fertilizer facilities, docks, paper and pulp mills. Walk, Haydel & Associates, Inc. maintains branch offices in Baton Rouge, Louisiana and Mobile, Alabama. A registered Louisiana civil engineer, Van Wootten was graduated in 1957 from Rensselaer Polytechnic Institute, Troy, New York, with a Bachelor of Science degree in Civil Engineering. He holds membership in the Louisiana Engineering Society, National Society of Professional Engineers, the American Society of Civil Engineers. Van Wootten is married to the former Linda McIlvain, and they have a son, Peter, and a daughter, Wendy. He has been elected President-Elect of the Council this year, having previously served on the board as Vice President, Treasurer, New Orleans Chapter President, and two years as Member-at-Large.

LOUISIANA ENGINEER/AUGUST 1990

MORGAN M. WATSON, P.E., has been elected Vice-President of CEC/L after serving six years on the Board of Governors as Treasurer, Secretary, two years as Member-at-Large, and two years as Baton Rouge Chapter President. He has served in various technical, academic and administrative capacities, including Associate Professor and Chairman of the Mechanical Engineering Department, and Assistant to the Dean of Engineering at Southern University, and President of MEL, Incorporated since its inception in 1972. His areas of technical expertise include design of HVAC systems, alternative fuels and energy sources, and energy management. MEL is a multidisciplinary firm offering civil and mechanical engineering, surveying and construction engineering services to government and private sector clients. Watson is a 1966 honor graduate of Southern University, and a 1971 graduate of Louisiana State University, receiving the Bachelor and Masters of Science Degrees respectively, both in Mechanical Engineering, and completed the coursework for the Ph.D.

Degree but left without graduating to enter private practice on a full-time basis. He has authored several technical papers, and is a registered professional engineer in four states, with membership in various professional societies including ASME, LES, NSPE, AEE, SAME, ASEE, and Pi Tau Sigma Honorary Mechanical Engineering Fraternity. He enjoys teaching, and is a part-time professor at both Southern University and LSU, teaching courses in Thermodynamics, Thermal Environmental Engineering, and Fluid Mechanics, to Engineering and Architecture students. Active in both the church and the community, he is a Deacon at Mt. Pilgrim Baptist Church, where he served as Sunday School Superintendent for thirteen years, Vice-President of the Baton Rouge Private Industry Council, member of Early Risers Kiwanis, life member of Southern University Alumni Federation, and member of Omega Psi Phi Fraternity, to name a few. Both Watson and his wife, the former Helen Johnson, are natives of Tensas Parish, and they are the parents of three grown children.

JAMES M. POCHÉ, P.E., has been elected Treasurer of the Council. Last year he served as Secretary after having served on the board as Lafayette Chapter President for two consecutive years and another term several years ago. He received his BS in Mechanical Engineering from the University of Southwest Louisiana, Lafayette, Louisiana, in 1970. Poche' is president of Poche' Associates, Ltd., a Lafayette engineering firm which offers services in energy management and mechanical and electrical engineering for private and public residential, commercial, educational, institutional and industrial buildings and complexes. He is also affiliated with ASHRAE, AEE, the Louisiana Engineering Society, National Society of Professional Engineers, and the Louisiana Architects Association. Poche' is on the Board of Directors of the Lafayette Chamber of Commerce, was United Givers Fund Section Chairman, and is an active member of the American Consulting Engineers Council's Energy Committee. Five years ago, he served as chairman of the Louisiana Engineers Selection Board, a board empowered to award state agency contracts to engineering firms. Poche' is married to the former Linda DeRouselle, and they have two teenage children.

JOE E. ROACH, P.E., is Vice President of BaLaR Associates, Inc., a Shreveport, Louisiana based consulting engineering firm offering general civil engineering services including structural and sanitary engineering. He has been elected Secretary of CEC/L after having completed a two-year stint as Member-at-Large and two years as Shreveport Chapter President. Roach is a graduate of Louisiana State University with a B.S. in Civil Engineering. He is a Registered Professional Civil Engineer in Louisiana, Arkansas and Texas and has been practicing civil engineering since 1960. After graduation, his experience background included the United States Corps of Engineers and the American Oil Company prior to joining J. S. Boyd and Associates, Consulting Engineers in 1962. J.S. Boyd and Associates was later reorganized as BaLaR Associates, Inc. in 1968, and at that time he became a partner in the firm. His specialties include structural design, water and sanitary sewerage facilities design, and paving and drainage design. He is a registered land surveyor in the State of Louisiana and is a member of the American Society of Civil Engineers, Louisiana Engineering Society, National Society of Professional Engineers, Professional Engineers in Private Practice, American Water Works Association, Water Pollution Control Federation, Construction Specifications Institute, and the Louisiana Conference on Water Supply and

Sewerage and Industrial Waste. He is currently one of two Louisiana representatives on the ACEC/EPA Region 6 Liaison Committee. Roach and his wife, Bea, have three children.

RALPH W. JUNIUS, JR., P.E., immediate Past President of CEC/L, will serve his final year on the board as National Director. Junius is Vice President of Linfield, Hunter and Junius, Inc., Consulting Engineers & Architects, a consulting engineering firm providing structural engineering services for all types of structures and foundations; civil engineering; services for material handling and waterfront facilities; incidental and general architectural services; and related forensic services to the legal profession and insurance companies. Junius was graduated from Tulane University in 1970 with a BS in Civil Engineering, University of Illinois in 1972 with a Master of Science in Engineering, and Louisiana State University Law School in 1974 with a Juris Doctor. Previously, Junius served on the Board of Governors as New Orleans Chapter President, Member-at-Large, Secretary, Treasurer, President-Elect, and President. He was chairman of the CEC/L Legislative Committee for four years and has served on the ACEC Contract Documents Committee. He is a member of the Louisiana Engineering Society, National Society of Professional Engineers, American Society of Civil Engineers, American Society of Testing and Materials, American Society of Military Engineers and Tau Beta Pi Association. He serves as an arbitrator for the American Arbitration Association. He is also a member of the Louisiana Bar Association and Southern Yacht Club. He and his wife, the former Sandra Perrone, have five children.

R.L. "RICK" NOWLIN, P.E., has been reelected a third consecutive year as Member-at-Large. Prior to that, he represented the Alexandria Chapter as its President for two years. He is President of Nowlin, Farmer & Associates, Inc., Natchitoches, Louisiana, a multi-discipline consulting engineering firm that offers general engineering services including feasibility studies, design, planning and supervision on all commercial, industrial and municipal projects, including power generation, transmission and distribution, and sanitary landfill facilities. Nowlin was graduated from Louisiana Tech University with a Bachelor of Science degree in Electrical Engineering in 1971 and a Master's degree in Business Administration in 1972. This past year, he chaired the CEC/L Legislative Committee and testified before a Senate committee in support of the CEC/L bill and was instrumental in rewriting the CEC/L Bylaws and Articles of Incorporation.

He is affiliated with the National Society of Professional Engineers, the Louisiana Engineering Society, and IEEE/PES. He is married to the former Brenda Barr, and they have two children. Nowlin is a member of the Natchitoches Rotary Club, Past Master and Secretary of Simcoe Walmsley Lodge No. 359, F.&M.A., Flora, Louisiana. He is on the Natchitoches Electrical Board, and is a member of the Natchitoches First Baptist Church. Nowlin's firm serves as City Engineer for Natchitoches.

F. BREN KRAMER, P.E., Baton Rouge, Louisiana, has been elected to serve on the CEC/L Board of Governors as Member-at-Large. He was graduated from Louisiana State University with a B.S. in Electrical Engineering in 1963 and a Master's degree in 1965. A member of the Louisiana Engineering Society, Kramer is licensed to practice engineering in Louisiana, Mississippi, Texas, and Maryland. He is president of Facility Management Services, Inc. of Louisiana, Baton Rouge, LA, a firm offering electrical engineering services. He is married to the former Susan Curtis, and they have three children.

KENNETH H. McLAUGHLIN, P.E., New Orleans, Louisiana, serves the board this year as Member-at-Large. A graduate of Louisiana State University, he received a BS in Electrical Engineering in 1973 and is currently licensed to practice his profession in Louisiana. He is a member of IEEE and the Illuminating Engineering Society, where he is treasurer of the New Orleans Chapter. McLaughlin is president of I.M.C. Consulting Engineers, Inc., New Orleans, a consulting engineering firm offering services in electrical and mechanical engineering for all types of commercial, industrial, institutional and governmental facilities. He is married to the former Mary Sue Stipe, and they have two children. McLaughlin served on the board several years ago as president of the New Orleans Chapter.

A. DARREL PRIMEAUX, P.E., will serve a second term on the Board of Governors following his reelection as Baton Rouge Chapter President. He is the head of Encor (formerly Ware Lind Furlow), Inc., a consulting firm providing services consisting of Preacquisition/divestiture environmental site assessments, ground water resource evaluation/ planning/monitoring, permitting, underground storage tank system evaluation, retrofit/removal, and monitor well drilling/installation and geotechnical borings for total site assessments. Primeaux was graduated from the University of Southwest Lou-

siana, Lafayette, in 1963 with a Bachelor of Science degree in Civil Engineering and in 1970, he received a Master of Science degree. He is registered to practice engineering and land surveying in Louisiana and Texas. He is affiliated with the American Water Resources Association, the Louisiana Engineering Society, National Water Well Association, and the Air and Waste Management Association. Primeaux is a lifetime member of Tau Beta Pi, Past President of the Sherwood Civic Association, and is a certified ground water professional with the NWWA. He and his wife, Nettie, have two children.

FRANK NICOLADIS, P.E., Metairie, Louisiana, serves on the board after having been elected president of the New Orleans Chapter by his peers. He is president of N-Y Associates, Inc., Metairie, a consulting firm offering services in civil, electrical, mechanical, and structural engineering, planning and surveying. He was graduated from Mississippi State University in 1957 with a BS in Civil Engineering and is licensed to practice in Louisiana, Mississippi, Texas, Arkansas, and Florida. Nicoladis is active in several other organizations including Water Pollution Control Federation, American Waterworks Association, The Society of American Military Engineers, American Public Works Association, Louisiana Engineering Society, National Society of Professional Engineers, American Society of Consulting Planners, American Planning Association, Louisiana Water Pollution Control Association. He is a Fellow of the American Society of Civil Engineers. He is a member of the Salvation Army Advisory Board of the Greater New Orleans Area and is listed in *Who's Who in Engineering*. Nicoladis is married to the former Peggy Yemelos, and they have three children.

DONALD W. CLAYTON, P.E., was reelected President of the Alexandria Chapter and will serve a second term on the Board of Governors. He is Executive Vice President of Ballard & Associates, Inc., an Alexandria consulting firm offering services in civil and mechanical engineering, surveying, construction management, laboratory analysis, structural engineering and building design. Licensed to practice in Louisiana, Georgia and Oklahoma, Clayton was graduated from Georgia Tech in 1973 with a Bachelor of Science degree in Civil Engineering. He is a member of the Louisiana Engineering Society, National Society of Professional Engineers, and American Society of Civil Engineers. He is married to the former Kathryn Byrd, and they have two children.

RONALD L. BOUTTE, P.E., will serve a second term on the Board of Governors, having been reelected by his peers as Shreveport Chapter President. He is Vice President of John J. Guth Associates, Inc., a consulting firm offering services in mechanical and electrical engineering for air conditioning, heating, ventilating, refrigeration, plumbing, fire protection, solar energy, energy conservation, and process piping, electrical and communication systems for commercial, industrial, institutional, municipal and military projects. He was graduated from Louisiana Tech with a BS in Electrical Engineering in 1963 and is licensed to practice in Louisiana. Boutte is a member of the Louisiana Engineering Society, National Society of Professional Engineers, ASHRAE, Society of Military Engineers, and the Society of Fire Protection Engineers. He is Past President of the Shreveport Chapter of LES; Past President of the Board of Directors, Volunteers of America, Shreveport Branch; member of the Board of Directors, Goodwill Industries, North Louisiana; and a past member of the City of Shreveport Electrical Board. Boutte is married to the former Susan E. Savoy, and they have two daughters.

JOHN WILLIAM "BILLY" MOORE, P.E., Ruston, Louisiana, serves on the CEC/L Board as president of the Monroe-West Monroe Chapter. He is manager of the branch office (Ruston) of Meyer, Meyer, LaCroix & Hixson, Inc., an Alexandria, LA based, multi-discipline firm specializing in energy audits, environmental studies, highways, railroads and bridges, industrial, solid waste and energy resource recovery. Licensed to practice in Louisiana,

Moore was graduated from Louisiana Tech University with a BS in Civil Engineering. He is an active member of the Louisiana Engineering Society, National Society of Professional Engineers, Water Pollution Control Federation, and the American Waterworks Association. He is the recipient of the Edmund Friedman ASCE Young Engineer Award, Hugh Coughlin Young Engineer Award by the Louisiana Engineering Society. Moore is a member of Chi Epsilon Civil Engineering Honor Society at Louisiana Tech University (Charter & Honor Member), National Eagle Scout Association, and a Senator of Jaycees International. He is married to the former Janet Miller, and they have two daughters, Monica (15) and Melanie (12).

L. JOHNNY AUCOIN, P.E., has been reelected to serve on the CEC/L Board of Governors as Lafayette Chapter President. He is Vice President of Aucoin and Associates, Inc., Eunice, Louisiana, a 39-year-old consulting engineering firm offering services in highway design, water and wastewater design, solid waste management, gas transmission and general land surveying. A Louisiana registered engineer and land surveyor, Aucoin received his Bachelor of Science degree in Civil Engineering from Louisiana State University in 1973. He is a member of the American Society of Civil Engineers and the Louisiana Society of Professional Surveyors. He and his wife, Joan, have two daughters. Aucoin has been involved with local civic clubs and has served as President of both the Eunice Jaycees and Rotary Club. During his spare time, Aucoin enjoys fishing, hunting and jogging. LE

Calendar of Events

We invite all technical and professional organizations to submit their meeting dates for publication in the LOUISIANA ENGINEER to: Editor, P. O. Box 2683, Baton Rouge, LA 70821.

September 7, 1990

LES Planning Conference
Alexandria, LA

September 8, 1990

LES Board of Direction Meeting
Alexandria, LA

September 24-25, 1990

State Board of Registration
Meeting
New Orleans, LA

October 10-13, 1990

LES Annual Meeting, Holidome
Lafayette, LA

October 13, 1990

LES Board of Direction Meeting
Lafayette, LA

October 18-20, 1990

ACEC Fall Conference
Dearborn, MI

November 12-13, 1990

State Board of Registration Meeting
New Orleans, LA

January 13-19, 1991

NSPE Winter Meeting, Inter-
Continental Hotel
New Orleans, LA

ENGINEERING IS ENGINEERING IS ENGINEERING LAND SURVEYING IS LAND SURVEYING IS LAND SURVEYING

In Louisiana and in most other states in these United States, the law of the land is explicit — "Engineer" or "Professional Engineer" is one of the same. The same also applies that "Land Surveyor" or "Professional Land Surveyor" is also one of the same. In either of these cases, it shall mean a person who is a *registrant of the Board*.

How many times have you heard someone say, "I'm an engineer but I am not registered". Have you ever heard your *medical person* say "I am a doctor of medicine (or whatever) but I am not registered". Has your barber ever said, "I'm a barber but I'm not registered".

Why do we in these United States have this situation and most other parts of the world do not. In Canada and Western Europe, engineers are engineers are engineers. In Germany, the title yes the title, of someone who is an engineer precedes his name. For example in Germany, I would be "Dipl. Ing. Paul L. Landry" meaning that I am a registered engineer. No one in Germany would dare use the title Dipl. Ing. unless he were once registered as such. Could it possibly be that most of the rest of the world is ahead of us when it comes to the understanding of the meaning, what is an engineer or engineering? If that is not the case then why do we have this dilemma.

The Board recently received an official letter from the Louisiana Section of the American Society of Civil Engineers. The stationery list names of the officers and directors of the society. Not one name is identified as an "engineer" or "professional engineer". I did not check the Board files but I believe that all are PE registrants of the Board. Why don't we identify ourselves as professional engineers in these United States? When we are able to answer that question maybe just maybe, we will be able to resolve many problems facing the profession.

You've heard it said, "I am one". Are you?

NOTICE OF INTENT

In accordance with the Louisiana Revised Statutes 49:950, et seq, notice is hereby given that the Louisiana State Board of Registration for Professional Engineers and Land Surveyors intends to revise Louisiana Administrative Code 46:LXI as follows:

Chapter 25. Minimum Standards for Property Boundary Surveys

§2501. General

- A. The following minimum standards of practice for land surveying in the State of Louisiana have been adopted to help ensure that surveys are performed in accordance with acceptable procedures.
- B. These standards are set forth to provide a means by which professional performance can be assessed and to enable the surveying profession as a whole to better protect the safety, health, and welfare of the public. It should be recognized that surveying practices now in place may vary from one region of the State to another, and these practices should be evaluated when at variance with these standards.
- C. It is intended that these be recognized as minimum standards of practice and that they not be relied upon by the professional surveyor as a substitute for the exercise of proper individual skill, professional discretion, and good judgement in fulfilling the legal or contractual requirements of any survey.
- D. When special conditions exist that effectively prevent the survey from meeting these minimum standards, the special conditions and any necessary deviation from the standards shall be noted upon the drawing. It shall be a violation of this rule to use special conditions to circumvent the intent and purpose of these minimum standards.

§2503. Definitions

Any terms not specifically defined herein shall be as defined in the most current publication of *Definitions of Surveying and Associated Terms* as published by the American Congress on Surveying and Mapping.

- A. **abstract of title** - A summary of all conveyances, such as deeds, or wills,

and legal proceedings, giving the names of the parties, the description of the land and the agreements, arranged to show the continuity of ownership.

- B. **adverse possession** - A method of acquisition of title by possession for a statutory period under certain conditions. It has been described as the statutory method of acquiring title to land by limitation. The possession must be actual; adverse; under claim of right; continuous; notorious; open; exclusive; and hostile. Although color of title is not essential, it is of great evidentiary value in establishing adverse possession.
- C. **corner** - A point on a land boundary, at which two or more boundary lines meet. Not the same as monument, which refers to the physical evidence of the corners location on the ground.
- D. **deed** - An instrument in writing which, when executed and delivered, conveys an estate in real property or interest therein.
- E. **description, legal** - A written description usually contained in an act of conveyance, judgement of possession etc., recognized by law which definitely locates property by reference to government surveys, coordinate systems or recorded maps; a description which is sufficient to locate the property without oral testimony.
- F. **description, metes and bounds** - A description of a parcel of land by reference to course and distances around the tract, or by reference to natural or record monuments.
- G. **encroachment** - Any structure or obstruction which intrudes upon, invades or trespasses upon the property of another.
- H. **monument** - A physical structure which marks the location of a corner or other survey point. In public-land surveys, the term "corner" is employed to denote a point determined by the surveying process, whereas the "monument" is the physical structure erected to mark the corner point upon the earth's surface. Monument and corner are not synonymous, though the two terms are often used in the same sense.



**Paul L. Landry, P.E.,
Executive Secretary
Louisiana State Board of Registration for
Professional Engineers & Land Surveyors**



I. **positional tolerance** - The difference between the actual position of a physically monumented boundary corner with respect to its reported position.

J. **prescription** - Title obtained in law by long possession. Occupancy for the period prescribed by the Louisiana Civil Code, as sufficient to bar an action for the recovery of the property, gives title by prescription.

K. **servitude** - A nonpossessing interest held by one person in land of another whereby the first person is accorded partial use of such land for a specific purpose. A servitude restricts but does not abridge the rights of the fee owner to the use and enjoyment of his land. The term easement is often used interchangeably with servitude and means the same thing.

§2505. Classification of Surveys

Presented below are categories which define the degree of accuracy which should be attained for surveys performed in Louisiana. These classifications are based upon 1) the purposes for which the property is being used at the time the survey is performed and 2) any proposed developments which are disclosed by the Client. Refer to this chapter for accuracy standards for each of the following classes of surveys:

A. **CLASS A SURVEYS** - Surveys which require maximum surveying accuracy. This includes, but is not limited to, surveys of urban business district properties and highly developed commercial properties.

B. **CLASS B SURVEYS** - Surveys of properties which justify a high degree of surveying accuracy. This includes, but is not limited to, surveys of properties and higher priced residential properties located outside urban business districts and highly developed commercial areas.

C. **CLASS C SURVEYS** - Surveys of residential and suburban areas. This includes, but is not necessarily limited to, surveys of residential areas which cannot be classified as Class A or Class B surveys.

D. **CLASS D SURVEYS** - Surveys of all remaining properties which cannot be classified as Class A, B or C surveys. This includes, but is not limited to, surveys of farm lands and

rural areas.

§2507. Property Boundary Survey

A. **DEFINITION** - A property survey which, after careful study, investigation, and evaluation of major factors influencing the location of boundaries, results in the deliberate location or relocation on the ground of one or more boundaries. When all of the boundaries of a parcel of land are surveyed, an area determination may be included if requested by the client. A Property Boundary survey shall only be performed by persons qualified to practice land surveying and registered in accordance with the provisions of R.S. 37:681, et seq.

B. **PURPOSE** - The purpose of a property boundary survey is to locate or relocate the physical position and extent of the boundaries of real property, and the discovery of visible evidence of prescriptive rights or adverse possession relating thereto. A Property Boundary survey may also include the location or relocation of the physical position and extent of political boundaries which define the perimeters of public or private ownership. In addition, the Property Boundary Survey is a means of marking boundaries for sufficient definition and identification to uniquely locate each lot, parcel, or tract in relation to other well recognized and established points of reference, adjoining properties and rights-of-way.

C. **PRODUCT** - A Property Boundary Survey will result in the establishment of monumented corners; points of curvature and tangency; and reference points. (See Paragraph E, "Monuments", this section.) In event that no plat of survey is required, the professional land surveyor must maintain adequate records to substantiate his professional opinion in reestablishing boundary lines and corners on a survey. If requested by the client, a Boundary Survey may also include the following:

1. A signed and sealed metes and bounds written description depicting the surveyed boundary. (See Paragraph H, "Descriptions", this section.)
2. A certified map or plat depicting

the survey as made on the ground.

3. A signed and sealed written report of the surveyor's findings and determinations.

D. **RESEARCH & INVESTIGATION** - A surveyor shall obtain the most recent recorded legal description and plats describing the property to be surveyed. The surveyor shall then evaluate the necessity to obtain the following data based on the specific purpose of the survey:

1. The most recent recorded legal descriptions and plats of tracts adjoining or in proximity to the property to be surveyed.
2. The recorded legal descriptions of adjoining or severing servitudes or rights-of-way, including, but not necessarily limited to, highways, roadways, pipelines, utility corridors, and waterways used for drainage or flood control. Where the purpose of a survey does not require nor include research and investigation of servitudes, a note to that effect shall be placed upon the plat of survey.
3. Grants, patents, subdivision plats, or other recorded data that will reference or influence the position of boundary lines.

E. **MONUMENTS** - Monuments set or called for, whether artificial or natural, represent the footsteps of the surveyor and his professional opinion as to the proper location of the points or corners of a property boundary survey. The following guidelines for monumentation of property boundary surveys shall be observed:

1. Natural monuments are objects which are the works of nature; such as streams, rivers, ponds, lakes, bays, trees, rock outcrops, and other definitive topographic features.
2. Artificial monuments are relatively permanent objects used to identify the location of a corner. Artificial monuments must retain a stable and distinctive location and be of sufficient size and composition to resist the deteriorating forces of nature.
3. The following guidelines apply to artificial monuments to be set:

- a. Monuments of a ferrous material must have at least a 1/2 inch outside diameter, and must be at least 18 inches in length (longer in soft or unstable soil)
- b. Concrete monuments shall be at least 4 inches in width by 24 inches in length, reinforced with an iron rod at least 1/4 inch in diameter, and shall contain a precise mark on top indicating the exact location of the corner.
- c. Marks on existing concrete, stone, or steel surface will consist of drill holes, chisel marks or punch marks and must be of sufficient size, diameter or depth to be definitive, stable and readily identifiable as a survey monument.
- d. It is unacceptable to set wooden stakes as permanent boundary monuments.
- e. Monuments must be set vertically whenever possible and the top should be reasonably flush with the ground when practical. Monuments subject to damage from earth-work, construction or traffic should be buried at a sufficient depth to offer protection.
- f. When physically impossible to set a monument at the corner, witness monuments shall be set when possible, preferably on each converging line at measured distances from the corner and identified as such in the description and on the plat of the property.

F. FIELD PROCEDURES - All field work shall be performed in accordance with accepted modern surveying theory, practice and procedures. Any person in charge of a field party shall be well trained in the technical aspects of surveying. Every registered professional land surveyor under whose direction a survey is conducted, is also required to adhere to the following:

- 1. All field measurements of angles and distance shall satisfy the closures and tolerances expressed in this chapter.
- 2. In performing resurveys, the surveyor shall, as nearly as possible, reestablish the original lines of any prior survey made under United States or State authority. In all townships or portions of townships where no survey has been made, the surveyor, in surveying or platting the township or portion thereof, shall make it conform as nearly as practicable to the lots and sections indicated upon the plats according to which the lands were granted by the State or by the United States. (R.S. 50:125)

- 3. Where applicable, surveys necessitating the division of a section, shall be performed in accordance with the instructions for the subdivisions of sections as published by the United States Department of the Interior, Bureau of Land Management, in its book entitled *Manual of Instruction for Survey of the Public Lands of the United States*, and all applicable Federal laws.
- 4. Special consideration shall be afforded the rules of evidence and "hierarchy of calls" before any decision is made regarding property boundaries. "... the legal guides for determining a question of boundary or the location of a land line in order of their importance and value are:
 - 1. Natural Monuments
 - 2. Artificial Monuments
 - 3. Distances
 - 4. Courses
 - 5. Quantity
 but the controlling consideration is the intention of the parties." (See citation in Meyer vs Comegys, 1920 La. Supreme Court, 147 La. 851 and 86 SO. 307, 309.)
- 5. A careful search shall be made for corner monuments affecting the location of the boundaries of land to be surveyed. Any evidence discovered shall be evaluated for its agreement in description and location with the call in the relevant deeds and/or plats.
- 6. All boundary discrepancies, visible encroachments, and visible indications of rights which may be acquired through prescription of adverse possession must be physically located. All evidence of servitudes that is visible without meticulous searching is to be physically located during the survey. Furthermore, non-visible servitudes need to be located only upon the client's specific request.
- 7. All field data shall be gathered, permanently maintained and shall satisfy the requirements of the following section on plats, maps and drawings.

G. PLATS AND MAPS - Every original plat or map of a Boundary Survey should be a reproducible drawing at a suitable scale which clearly shows the results of the field work, computations, research and record information as compiled and checked. The plat, map or drawing should be prepared in conformity with the following guidelines:

- 1. Any reasonably stable and durable drawing paper, linen, or film of reproducible quality will be considered suitable material for boundary survey plats and maps.

- 2. No plats or maps shall have dimensions less than 8 by 10 1/2 inches.
- 3. All dimensions, bearings or angle including sufficient data to define the curve shall be neatly and legibly shown with respect to each property or boundary line. When possible, all bearings shall read in a clockwise direction around the property.
- 4. Monuments shall be labeled as "found" or "set", with a brief, definitive description of the monument and relevant reference markers, if any, along with their positions in relation to the corner. This description should include the physical characteristics of the monument and its relevance to the survey.
- 5. All pertinent natural or man-made features located during the course of the field survey (water courses, streets, visible utilities, etc.) shall be labeled, dimensioned and referenced to the nearest property line or represented by a symbol on the map in its proper location. Each symbol must clearly indicate what is represented or shall be labeled for identification either individually or in a separate key to symbols (legend).
- 6. All maps or plats must show a north arrow and it is recommended that the drawing be oriented so that north is toward the top of the sheet.
- 7. A statement indicating the origin and method of observation of the bearings shall be made on each plat, map or drawing. The origin of the bearings should include one or more of the following:
 - a. Reference to true north as computed by astronomic observation within one mile of the surveyed site.
 - b. Reference to the Louisiana Coordinate System with the proper zone and controlling station(s) noted.
 - c. Reference to the record bearing of a well established line found ground as called for in a relevant deed.
 - d. When none of the above alternatives are practical, a magnetic bearing (corrected for declination) may be used.
- 8. If a coordinate system is used on a map, its origin must be identified. If that system is the Louisiana Coordinate System, the appropriate zone must be shown on the map.
- 9. Where the new survey results differ from the prior deed information in regard to course, distance or quantity, the plat shall indicate such differences or discrepancies.

10. Where separate intricate details, blowups or inserts are required for clarity, they shall be properly referenced to the portion of the map where they apply. This applies particularly to areas where lines of occupation do not conform to deed lines and to areas where a comparison of adjoining deeds indicates the existence of a gap or an overlap.
 11. Cemeteries and burial grounds known by the surveyor to be located within the premises being surveyed should be indicated on the plat.
 12. When the purpose of the survey dictates, properties, water courses and rights-of-way surrounding, adjoining, or severing the surveyed site shall be identified. Private lands or servitudes should be labeled with the name of the owner or with a reference to the deed under which ownership is held, provided that such information is furnished by the client.
 13. Original section, grant, subdivision or survey lines should be shown in proper location with pertinent labeling. A measurement of course and distance must be shown to a parent tract corner, block corner, section corner, subdivision or grant corner, and existing monuments shall be indicated..
 14. Differing line weights or delineating letters or numbers ("A", "B", "C", etc.) shall be used to clearly show the limits of what is being surveyed.
 15. Each plat, map or drawing shall show the following:
 - a. Caption or title.
 - b. Client and/or purpose.
 - c. General location of the property (or vicinity map).
 - d. The date of the survey.
 - e. The name, location and registration number of the surveyor.
 - f. Signature and stamp or impression seal of land surveyor under whose direction the survey was done.
 16. Final plats or maps issued to the client must contain a certificate signed and sealed by the registered professional land surveyor certifying its authenticity (that it represents his survey) and stating that the survey is in accordance with the applicable standards of practice as stipulated in this publication based on the current survey "classification" (see section on Classification of Surveys).
- H. DESCRIPTIONS** - A written legal description of the surveyed tract of land must provide information to

properly locate the property on the ground and distinctly set it apart from all other lands. The following guidelines apply:

1. When the surveyed property's dimension, boundaries and area are in agreement with the existing recorded deed or platted calls, the existing recorded description may be used if it approximates the standards contained herein.
2. When the property is an aliquot part of a rectangular section or a lot in platted subdivision, the aliquot method or the lot, block and subdivision method (including recordation data) of describing the property can be used. Metes and bounds descriptions of this type of property are optional.
3. Every aliquot description must contain the following basic information: aliquot part of section, township, range, parish, land district and meridian, (if applicable), and state.
4. Every subdivision lot description must also contain the following basic information: lot, block, unit (if applicable), name of subdivision, city (if applicable), parish and state.
5. Every metes and bounds description should be written in at least

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two parts. The first part, called the "General Description", should indicate the general location of the property by naming the particular lot or block, etc., within which it is located if in a subdivision or by naming the grant or aliquot part of a rectangular section within which it is located, along with the township, range, land district and meridian (if applicable), city (if applicable), parish and state. The second part called the "Particular Description", shall logically compile and incorporate calls for the following:

- a. Courses and distances of the new survey; preferably in a clockwise direction.
- b. Adjoining apparent rights-of-way or servitudes.
- c. Monuments, including description of type, size, material, reference monuments (if applicable), and whether found, set or replaced.
- d. Parenthetical deed calls where the deed calls differ from the new survey.
- e. The area, if stated, shall be in square feet or acres within the tolerances specified in this chapter.
6. The "Point of Beginning" should be the property corner that is most accessible and most easily identifiable by interested parties. This point shall be carefully chosen and described in a manner which will distinguish it indisputably from any other point. The "Commencing Point" shall be any identifiable point used to locate the "Point of Beginning".
7. It is recommended, for uniformity, that the metes and bounds description be written so that progression of courses is in a clockwise direction.
8. The courses in the written description shall be as brief and yet as explanatory as the author can construct. Brevity should not cause important locative information to be omitted, and explanatory phrases should not enlarge the description to the extent of confusion.
9. Curved boundaries shall be identified as tangent or non-tangent curves and sufficient data to define the curve shall be presented.
10. Each metes and bounds description must return to the point of beginning and close mathematically within the tolerances stated in this chapter.
11. A statement at the end of the description should connect the description to the specific survey

on which it is based and to the map or plat which depicts the survey. Such a statement may be phrased, "This description is based on the boundary survey and plat made by Registered Professional Land Surveyor, dated _____" or "This description is based on plat recorded _____"

(give recordation data).

12. The metes and bounds description shall then be signed and sealed by the surveyor.

Interested persons may submit written comments or offer amendments to the proposed rules to the Board Office at 1055 St. Charles Avenue, Suite 415, New Orleans, Louisiana 70130, at any time prior to September 17, 1990. The Board proposes to consider and take action on the adoption of these rules at a meeting in

its office at 11:00 a.m. on September 2, 1990.

By order of the Louisiana State Board of Registration for Professional Engineers and Land Surveyors.

Paul L. Landry, P.E.
Executive Secretary

BOARD MEETING NOTICE

The Louisiana State Board of Registration for Professional Engineers and Land Surveyors will hold its regular meetings at 1055 St. Charles Avenue - Suite 415 New Orleans, La. 70130 on the following dates.

1990

Sept. 24-25
Nov. 12-13

1991

Jan. 21-23
Mar. 25-26
July 22-23
Sept. 23-24

§2509. ACCURACY SPECIFICATIONS AND POSITIONAL TOLERANCES

CONDITION	D	C	B	A	
	RURAL	SUBURBAN	URBAN	URBAN BUSINESS DISTRICT	REMARKS AND FORMULA
Unadjusted Closure (maximum allowable)	1:5,000	1:7,500	1:10,000	1:15,000	Traverse Loop or between Control Monuments
Angular Closure (maximum allowable)	$30'' \sqrt{N}$	$25'' \sqrt{N}$	$15'' \sqrt{N}$	$10'' \sqrt{N}$	N=Number of Angles in Traverse
Accuracy of Bearing in Relation to Sours (maximum Allowable)	± 40 Sec.	± 30 Sec.	± 20 Sec.	± 15 Sec.	$1/\text{Sine Angle} = \text{Denominator in Err. of Closure (Approx.)}$
Linear Distances Accurate to: (maximum allowable)	± 0.2 ft. per 1,000 ft.	± 0.15 ft. per 1,000 ft.	± 0.1 ft. per 1,000 ft.	± 0.05 ft. per 1,000 ft.	$\text{Sin Ang.} \times 1000$ (Approx.) where = Accuracy of Bearing
Positional Error of Any Monument (Maximum)	.1' + AC/5,000	.07' + AC/7,500	.05' + AC/10,000	.03' + AC/15,000	AC = Length of Any Course
Calculation of area - Accurate and carried to nearest _____ (decimal places) of an acre.	0.001 .01 .1 .3	0.001 .01 .1 .2	0.001 .001 .01 .1	0.001 .001 .01 .1	1/1 acre 1/10 acres 1/100 acres 1/1000 acres
Elevations for Boundaries Controlled by Tides, Contours, Rivers, etc. Accurate to:	± 0.2 ft.	± 0.1 ft.	± 0.05 ft.	± 0.03 ft.	Based on Accepted Local Datum
Location of Improvements Structures, Paving, etc. (tie Measurements)	± 1 ft.	± 0.5 ft.	± 0.2 ft.	± 0.1 ft.	
Scale of Maps Sufficient to Show Detail but no less than	1" = 2,000'	1" = 1,000'	1" = 400'	1" = 200'	
Positional Error in Map Plotting not to Exceed: (Applies to Original Map only)	50 ft. 1" = 2,000'	25 ft. 1" = 1,000'	10 ft. 1" = 400'	5 ft. 1" = 200'	Generally 1/40th of an inch. National Map accuracy calls for 1/50th inch.
Adjusted Mathematical Closure to Survey (Minimum)	1:50,000	1:50,000	1:50,000	1:50,000	

Short courses in Categories "A" and "B" may generate Positional Errors of less than 0.01 feet. A minimum course distance of 200' should be used in calculating Positional Error.



Leta Bueto
Executive Director
Louisiana Engineering Society



Exemption for Government Engineers Unjustified

"Persons practicing as professional engineers, whether in the public or private sector, exercise similar types of technical judgments. A similar set of standards for the practice of professional engineering is required, regardless of whether the engineer works in the public or private sector."

A Virginia legislative committee recently made that conclusion on engineering licensing in a set of recommendations sent to the state's newly elected governor and general assembly. The panel argued that Virginia's blanket licensing exemption for government engineers cannot be justified in today's urban world of accelerated public works improvement and large public investments. More than ever, the public health and safety are dependent on the professional expertise of licensed engineers.

Although the recommendations in the report, one of the most comprehensive of its kind, did not go quite as far as they might have, they acknowledge the simple truth that the state engineering registration laws constitute the best protection of public health and safety. The study freely admits that the state's blanket exemption for government engineers can no longer be justified because of the blurred distinction between government and private-sector engineering functions. Similar judgments require similar standards—the blanket government exemption is outdated and should be abandoned. If the Virginia legislature and governor heed the subcommittee's advice, Vermont, Colorado, and South Dakota will remain as the only states with blanket exemptions for government engineers. It's time for those states to join the mainstream and place government engineers on par with their counterparts in the private sector.

(printed from Engineering Times)

Engineers' Salaries Chase After Rising Inflation

Engineers' salaries went up 4.7% last year but not quite enough to match inflation, according to the 1990 NSPE Professional Engineer Income and Salary Survey. The Consumer Price Index rose by 5.2% in 1989.

Survey respondents were asked to report their annual base salary from their primary employer as of January

1, 1990, plus additional cash income from that employer (excluding overtime pay) for the preceding calendar year. Income from secondary and/or part-time employment was excluded.

Individual incomes vary widely. The survey found 10% of the respondents earn under \$35,794, while 10% earn \$101,680 or more. As in past years, the highest median income by major branch of engineering goes to those respondents working in petroleum engineering (\$64,500). This group is followed by those in nuclear engineering (\$62,750), chemical engineering (\$60,000), architectural engineering (\$58,000), sanitary/environmental/pollution control engineering (\$57,000), and electrical & electronics, mechanical, metallurgical, and materials engineering (all in the \$56,000–\$56,567 range).

At the other end of the income spectrum are those employed in agricultural engineering (\$48,340). They are preceded by those in manufacturing engineering (\$48,680), and in aero-

nautical & aerospace, civil (primarily surveying), industrial, and safety engineering (all between \$52,000 and \$52,700). The remaining major branches of engineering have median incomes ranging from \$53,646 to \$55,675.

The salary survey contains a wealth of information, including salary breakdowns by job function, level of responsibility, education, length of experience, geographic location, registration status, and much more.

It also includes information on 401(k) practices, overtime compensation, and increases in base salary.

The survey is now available through NSPE. To obtain your copy, mail your check for \$40 (\$100 for nonmembers) to NSPE, P.O. Box 96163, Washington, D.C. 20090-6163. Or call the NSPE Orders Department at 703/684-2882 to charge to your Visa or MasterCard.

It's Official: CESB Begins Operations

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Engineering Specialty Boards (CESB) at CESB's recent first official meeting.

In the coming months the Council will continue to examine the role of specialty certification in serving both the public and the engineering profession. Specifically it will look at recommending minimum standards for certification and recertification programs in engineering and related specialty areas. CESB will assist other engineering groups wishing to establish certification programs and will organize workshops for developing and improving certification programs. CESB will also coordinate activities of member boards to resolve conflicts and problems.

Dr. Paul R. Munger, P.E., of the University of Missouri Rolla, will serve as CESB's first president. Kenneth K. Humphreys, P.E., who is Executive Director of the American Association of Cost Engineers, is president-elect. Dr. John Antrim is Executive Director. Antrim is General Manager of the National Institute for Certification in Engineering Technologies.

CESB Charter Member Boards include the American Academy of Environmental Engineers, American Association of Cost Engineers, American Society of Civil Engineers, American Society for Photogrammetry and Remote Sensing Instrumentation of America, Board of Certified Safety Professionals, National Academy of Forensic Engineers, National Association of Corrosion Engineers, and the

National Institute for Certification in Engineering Technologies. Associate Members are the Accreditation Board for Engineering and Technology, American Consulting Engineers Council, National Council of Examiners for Engineering and Surveying, and the National Society of Professional Engineers. The American Institute of Plant Engineers and the Instrument Society of America are Affiliate Members.

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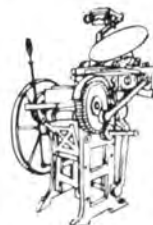
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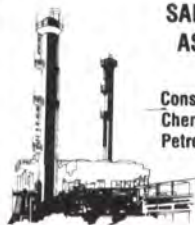
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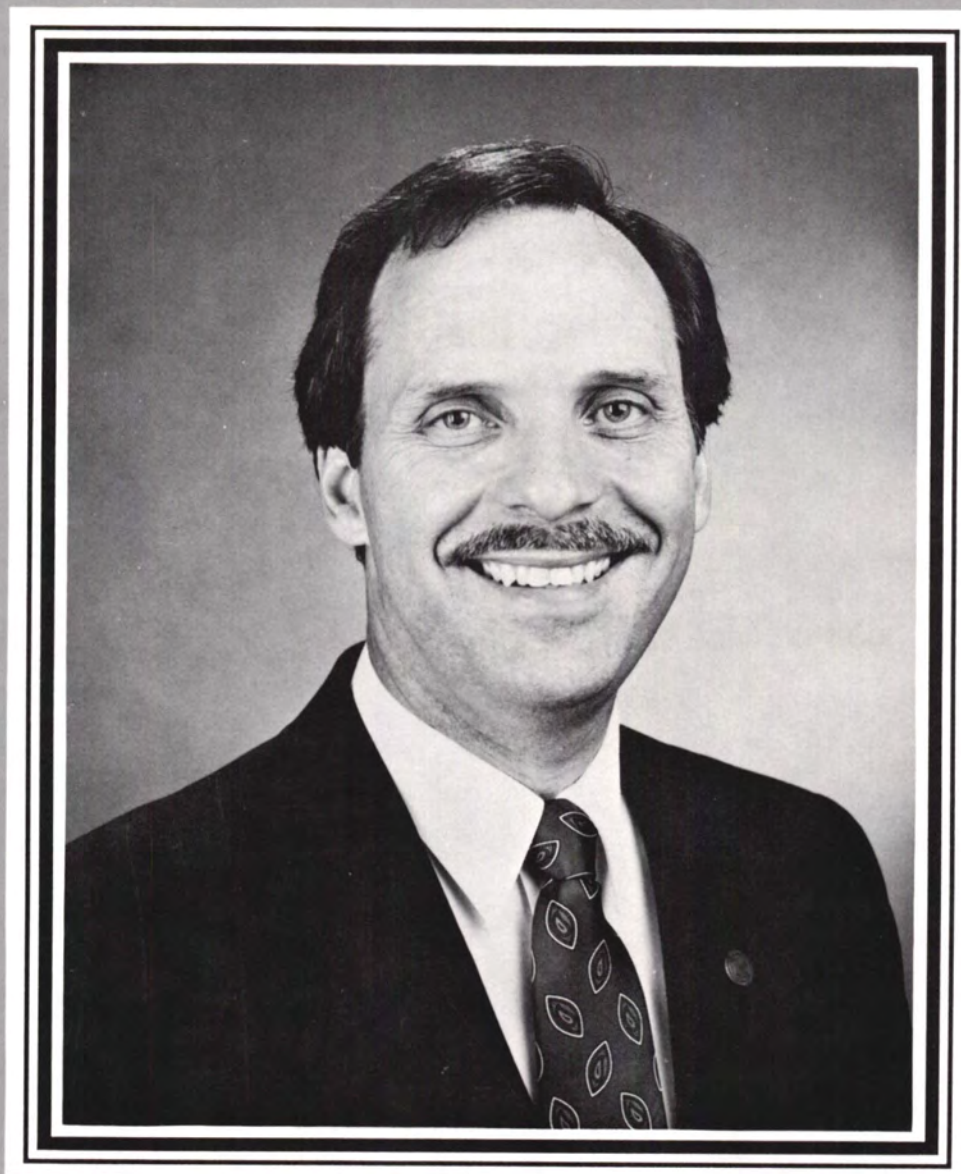
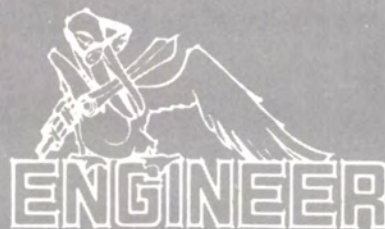
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Our cover this month features 1990-1991 LES President, Kerry J. LaBauve, P.E.

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Presidential Privilege

As the curtain closes on the 1989-90 term of the Louisiana Engineering Society, past President Blaise Carriere, P.E., and the regional Chapter Past-Presidents can reflect back on successful terms in office. Blaise's professionalism and courage to express his conviction on controversial and sensitive issues is indicative of the type of leadership our organization needs to move forward in these trying times. The Board of Direction and Committees that supported, followed, and worked with Blaise during the past year are commended for a job well done.

L.E.S. performed admirably in 1989, in both active and reactive postures. Two major active thrusts were initiated by members of our organization. First, support of the adoption of Qualifications Based Selection (Q.B.S.) procedures for the procurement of engineering related services by any government agencies, and private business was proposed. Second, support for the development of policies which would require Continuing Professional Development (C.P.D.) as a prerequisite for professional registration continuance was proposed. Both proposals met with mixed reactions from engineers and land surveyors in Louisiana. These responses prompted intense study and hearings which are currently on-going. On the reactive front, L.E.S.'s Legislative Committee and Executive Committee worked tirelessly through another legislative session in Baton Rouge. Several bills which would have adversely effected engineers and land surveyors were addressed and lobbied against successfully.

To lead the Louisiana Engineering Society into the 1990's is indeed an honor and a privilege for me. I believe the president's responsibility to faithfully and honestly represent the views and opinions of the membership in all endeavors is of paramount importance. Having served our profession for fourteen years, seven of which have been associated with the Board of Direction, and having worked in all five practice divisions during the past twenty years, I accept this responsibility as president, and am confident that the personal experiences gained during the administrations of past-presidents, Carriere, Reeves, Price, Blanche, Forte, Markel, and Hixson will aid me



Kerry J. LaBauve, P.E.
President
Louisiana Engineering Society

in directing the society.

During the past few years, it has become evident to me that the image the public perceives of our engineering profession is one of a divided organization. Too often we are segregated into separate groups waving flags and sending conflicting signals and messages for others to see and interpret. On several occasions, the Louisiana Engineering Society has made sincere efforts to formulate meaningful positions on issues effecting many engineers in Louisiana. Time after time we suit up our president and send him into battle only to have him experience cannon fire from our own members, as well as the folks we are trying to persuade. Some might say this opposition is in response to most engineers's philosophy, "Hell, there's more than one way to skin a cat!". Others might say that the stimulation for the opposition is self-service. I believe that if those individuals with opposing views, both members and spectators, had been actively involved in the formulation process, those views would certainly have been considered in molding the final opinions presented. The bottom line is that Louisiana engineers must strive to unite forces and consistently represent themselves in unity.

The Louisiana Engineering Society can be the catalyst for a collective voice. Through the Practice Divisions and nine Regional Chapters, opinions of all

members and interested individual engineers can be heard, recorded and presented to the Board of Direction. In this manner, important issues can be thoroughly studied and researched before L.E.S. takes a stand.

It appears that the most important long range goals of our engineering society should be to increase membership, strive to retain veteran members, and develop good communications within the membership so that it becomes confident that its actions represent the unified voice of our profession.

How can we accomplish these goals? During the recent Planning Conference held in Alexandria, sixty or so active members of the society's Chapters, Practice Divisions, and standing Committees pledged their efforts to achieve two basic objectives.

First, each of the individual chapters will focus its efforts upon accelerating regional activities, but more importantly, enhance the quality of the programs and numbers of members involved in those programs. The intent here is to improve member retention and develop an active, exciting atmosphere which will attract many new members.

The second objective involves the development of an effective communication network between the regional chapters. The state and chapter Presidents have committed themselves to better communications by organizing the new President's Council. The intent here is for the first tier of leadership of L.E.S. to meet routinely to participate in a workshop environment and share ideas and achievements. The leaders of each of the practice divisions and standing committees presented excellent proposals for immediate action and long-range plans to accomplish the stated objectives.

The team of engineers who have been elected by their peers or have volunteered their time to L.E.S. are committed to the betterment of our organization and our engineering profession. I would like to thank them in advance for joining with me to serve you. We challenge the 2600 L.E.S. members, the other 12,000 readers of the *Louisiana Engineer* who are not members, and the 20,000 non-registered engineers who live and work in Louisiana to join our team and take an active role in OUR PROFESSION.

LES Forum

The "LES FORUM" invites comments on matters of interest to the profession. Comments should be brief, courteous, and timely, and will be edited by the Publications Committee for balance and pertinent content.

Dear Editor:

This letter is in response to Dean Crisp's and Dean Karkalits' rebuttals to Blaise Carriere's "Presidential Privilege". We may all agree that the management and funding of higher education in Louisiana is a shambles. Until Louisiana does something significant and positive in both areas, it makes little difference if we limp along with 2, 4, 6, 8 or 10 state funded engineering schools. Engineering schools cannot be accountable to the State because the State is not in the position to act with resolve based on understanding the problems. For the same reason and a lack of priority, the State does not fund the existing engineering programs to a level that would likely support one or two, good quality, engineering schools with a full complement of programs to

accommodate those who would take advantage of them.

Louisiana has neither the population base nor the obligation to provide an engineering school convenient to every citizen. Compared with 8 other states in the southeast region, Louisiana has the second highest number of total engineering programs per capita and the highest number of the six most common engineering programs per capita. Louisiana has approximately twice the number of engineering programs per capita as the regional average and from approximately 2 to 5 times the number of engineering programs per capita as North Carolina and Georgia, states that are noted for their exceptional engineering programs.

To conform to the regional average, Louisiana would support no more than 17 of the most common engineering programs compared to the 31 it has and 25 total engineering programs compared to the 40 it has. Considering Tulane, Louisiana would need only two state supported engineering schools to conform to the per capita average in the southeast region. This is not to suggest that Louisiana could not successfully support 8 to 10 quality engineer-

ing schools. It simply becomes a matter of providing adequate funds to duplicate and triplicate the facilities and faculties needed to support a more reasonable number of engineering schools and programs. However, this obvious inefficiency would gnaw at common sense in any attempt to adequately fund a well managed, quality, higher education system. In the absence of good management, efficiency and quality are meaningless.

In the presence of no effective management, an argument to reduce, maintain or enlarge the number of state supported engineering schools and programs can be easily supported. A legislature like those we have recently seated is our ally if it is our desire to perpetuate what we have. More funding for higher education will result in more scrutiny, something I believe all of our engineering schools and programs cannot survive intact if common sense prevails.

James C. Porter, P.E.



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Major Sulphur Discovery Benefits Louisiana

Freeport-McMoRan Resource Partners, Limited Partnership (NYSE: FRP), an affiliate of Freeport-McMoRan, Inc. (NYSE: FTX), has made a major sulphur discovery and is developing a world class sulphur mine on Main Pass Block 299 in the Gulf of Mexico. FRP is operator and major partner with IMC Fertilizer Inc. and Homestake Mining Company, as joint venturers, in the Main Pass lease.

Freeport McMoRan, Inc., with domestic and worldwide operations, has its home office in New Orleans and has stated that they intend to develop this mine with maximum benefit to Louisiana.

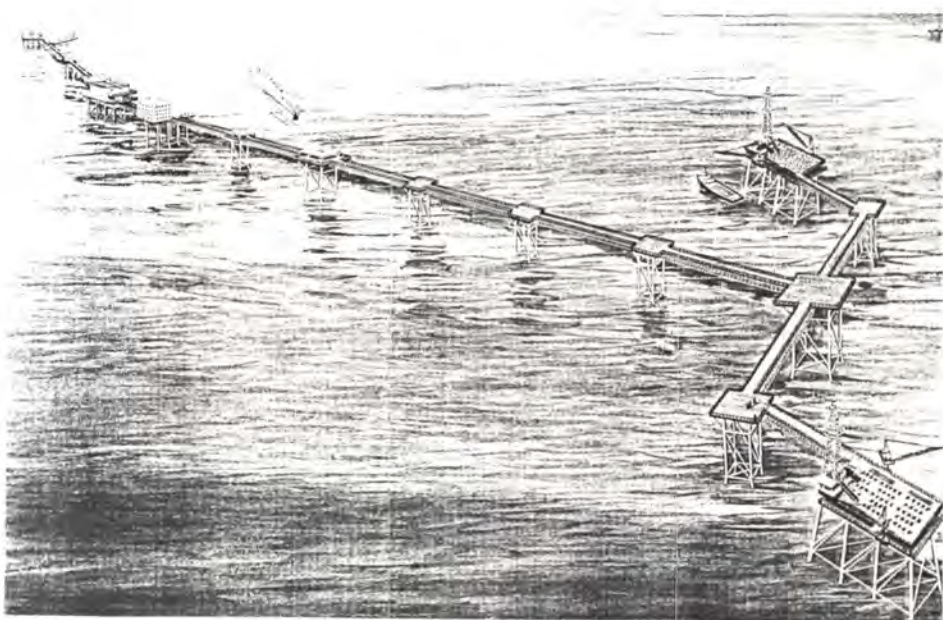
Contracts have been awarded to the following Louisiana-based engineering firms: Waldemar S. Nelson and Company, Incorporated, for engineering design and procurement of mining facilities; McDermott, Inc. for design, fabrication and installation of the support structures; Walk-Haydel & Associates, Inc. for project management, coordination and quality control; M. S. Benbow and Associates for communications; and Petro-Marine and Keystone Engineers for oil and gas production-related services, all Louisiana companies.

Numerous Louisiana sub-consultants are also involved, including Fugro-McClelland Engineering for offshore geotechnical; Eustis Engineering Company for onshore geotechnical; John Chance and Associates for offshore surveying; Griff Lee, Inc. for CVA services, and Construction Services, Inc. for fabrication inspection. Tulane University and the University of New Orleans Engineering Departments have also supplied consulting services for the project.

Procurement of equipment is being done by Waldemar S. Nelson and Company, Incorporated from the project office in New Orleans, through more than fifty Louisiana suppliers and factory agents.

The Main Pass Block 299 sulphur deposit is tremendous. FRP reports it is larger than the existing Garden Island Bay, Grand Isle and Caminada mines of FRP combined, and constitutes the largest known Frasch process sulphur reserve in North America. The formation is nearly circular, with an average diameter of 10,000 feet, and contains over 67 million long tons of proven reserves. It is located approximately 17 miles east of the mouth of the Mississippi River in a water depth of 210 feet.

The Frasch process for sulphur mining is unique in that sulphur, a natural element which melts at approx-



imately 246 Degrees F, is mined by pumping superheated water down a system of concentric pipes into the sulphur-bearing formation. The sulphur is melted in place, collected by gravity in a pool at the bottom of the sulphur well (sulphur is almost twice as heavy as water) and pumped to the surface in molten form. The sulphur is kept molten in insulated steam-heated tanks, barges and ships until ultimate delivery to the end-user.

FRP has unique experience in designing sulphur mines, which extends over more than 78 years. During this period, its engineers have worked on the design of eleven sulphur mines. Designs proven at the onshore mines opened between 1912 and 1979 and modified for the offshore mines opened in 1957 and 1968 are now being adapted and upgraded for the Main Pass operation.

The Main Pass Block 299 sulphur mine installation will include a power plant, two drilling and production platforms, a bleedwater platform, a shop/warehouse and living quarters platform, a sulphur storage and loading platform, and 13 inter-connecting bridges carried on nine bridge support towers and the operating platforms. The entire array of structures will be over a mile long. (See accompanying illustration)

As at previous sulphur projects, several unique features are being developed in conjunction with the Main Pass mine. The power plant has been designed to produce 11,000,000 gallons of minewater per day, twice the production of any previous Freeport-

McMoRan mine. The mine air supply, steam supply and electric generating plant are all being increased in proportion. The power plant will measure 110' x 220' x 70' and will be completely prefabricated onshore. At over 5,500 tons dry weight, it will be one of the heaviest deck lifts in the Gulf of Mexico.

Another unique feature of Main Pass will be the 40,000 sq. ft. office/living quarters building, also designed as a completely prefabricated unit. This facility will accommodate 146 personnel during operation of the mine, indicative of the complex nature of operating and maintaining a sophisticated thermo-chemical mining operation on a non-stop, 24-hour basis over the anticipated 40-year life of the mine. The office/quarters module will weigh over 2,500 tons during lift.

A third unusual feature of this sulphur mine is that FRP and its joint venturers will be producing sulphur and oil simultaneously from the property. Typically, in Gulf Coast geology, sulphur occurs in the caprock on top of subterranean salt domes, and oil and gas are usually found against the flanks of the dome where the salt pillar forms a trap for the hydrocarbons. In this case, when prospect drilling was done on top of the dome to define the sulphur deposit, the 23 exploration wells defined a substantial volume of oil above the caprock. Through agreement with Chevron, which has been extracting oil and gas from around the dome, FRP has purchased the oil and gas reserves, and FRP will produce these hydrocarbons on top of the dome

and also coordinate sulphur and oil production. An additional turbine generator in the power plant will provide electric power for the oil production operation, and office, quarters and support services will be provided. As at previous onshore and offshore sulphur mines, extensive co-generation techniques will be applied, leading to high process efficiencies and low operating costs.

Besides the unique metallurgy, process equipment design and chemistry needed for mine operation, a state-of-the-art supervisory control and data acquisition system will be linked via fiber optics between platforms. A dual redundant satellite communication system will provide FRP management with real-time production data, both at the mine's control room and corporate headquarters onshore.

Initial studies and estimates of the cost of the Main Pass Block 299 mine were made beginning in January 1989 and a team of engineers has been working actively on the project since then. Detailed engineering design was officially approved in December 1989 and is vigorously under way. Procurement of over \$90 million of major production facilities equipment, including boilers, mine air compressors, turbine generators, pumps, drilling rigs and the digital control system has passed the purchase order phase, and routine fabrication inspection is tracking the completion of manufactured equipment throughout the United States.

Fabrication of structures is under way by several Louisiana contractors, including McDermott, Inc. in yards at Morgan City and New Iberia; Team Services, Inc. and Gulf Island Fabricators at Houma; Strike-N-Arc at Harvey, Welding and Manufacturing Company at New Orleans; TCB at Venice; Dill Construction at Belle Chasse; and Landry Brothers at Covington, all Louisiana fabricators. Field inspection is under way at the contractors' yards. As the project progresses, additional local and regional suppliers, fabricators and construction contractors will become involved. Upon completion in 1992, the total installed value of all Main Pass mine facilities will exceed \$550 million.

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1991 NSPE Annual Meeting January 13-19, 1991 Inter-Continental Hotel, New Orleans, Louisiana

The New Orleans Chapter of the Louisiana Engineering Society will host the 1991 NSPE Annual Meeting, January 13-19, 1991, at the Inter-Continental Hotel, New Orleans, Louisiana.

In addition to a full program of meetings, a wide selection of organized tours, dinners, and sports activities have been arranged. Many other options for entertainment and recreation are available for you and your family to explore New Orleans.

For more information on the meeting contact the Louisiana Engineering Society (504) 344-4318. Louisiana, let's support this national meeting and our profession.

Fraud Bill Signed ...

Senate Bill 908 of the 1990 Regular Session of the Louisiana Legislature, commonly referred to as the "fraud bill," was signed by Governor Buddy Roemer on July 9, 1990, and became ACT 712 with an effective date of September 7, 1990.

The very important bill maintains the integrity of the 10-year Statute of Limitation presently enjoyed by Louisiana architects, consulting engineers, land surveyors and contractors, after which time these professionals are not held responsible for deficiencies in design or construction once the structure is substantially complete or occupied by the owner.

This Act was initiated as the result of the Louisiana Supreme Court's judgement to reverse the lower court's decision in *Bunge v GATX*. The supreme court found that the Louisiana statute of repose was a "pre-emptive" rather than a "prescriptive" statute and therefore a cause of action would survive a breach of duty which occurs outside the statutory 10-year period. The court went on to hold that the classes of persons protected by the statute of repose have a "duty to warn" the owner where the person "acquires knowledge that a hazardous condition exists" in connection with the project. In the Act, the failure to warn the owner of any dangerous or hazardous condition, regardless of when knowledge of the danger or hazard is obtained or should have been obtained, is specifically included as part of the definition of *deficiency*, which is preempted within the ten-year period.

Senate Bill 908 was passed as the result of a unified effort of the design professional and construction organizations, and a copy of the Act is printed for your information. This is a monumental piece of legislation, and you are urged to keep this copy in your files.

Act 712

Regular Session, 1990 **ENROLLED**
SENATE BILL NO. 908
By Mr. Bankston and
Representative Donelon

AN ACT

To amend and reenact the intro-

ductory paragraph of R.S. 9:2772 (A) and to enact R.S. 9:2772(B)(5), (H)(3), and (1), relative to the liability of contractors; to provide that failure to warn is a cause of action subject to preemption; to clarify the meaning of fraud; and to provide for related matters.

Be it enacted by the Legislature of Louisiana:

Section 1. The introductory paragraph of R.S. 9:2772(A) is hereby amended and reenacted and R.S. 9:2772(B)(5), (H)(3), and (1) are hereby enacted to read as follows:

§2772. Peremptive period for actions involving deficiencies in surveying, design, supervision, or construction of immovables or improvements thereon

A. No action, whether ex contractu, ex delicto, or otherwise, including, but not limited to, an action for failure to warn, to recover on a contract or to recover damages shall be brought against any person performing or furnishing land surveying services, as such term is defined in the first paragraph of R.S. 37:682(9), including but not limited to those services preparatory to construction, or against any person performing or furnishing the design, planning, supervision, inspection, or observation of construction or the construction of an improvement to immovable property:

B. The causes which are preempted within the time described above include any actions:

(5) Deficiency, as used in this action, includes failure to warn the owner of any dangerous or hazardous condition, regardless of when knowledge of the danger or hazard is obtained or should have been obtained.

H.

(3) Fraud, as used in this Section, shall have the same meaning as provided in Civil Code Article 1953.

I. Nothing in this Section shall be construed as limiting or modifying the non-liability of contractors for destruction or deterioration of, or

defects in any work, as provided in R.S. 9:2771.

PRESIDENT OF THE SENATE

SPEAKER OF THE HOUSE OF REPRESENTATIVES

GOVERNOR OF THE STATE OF LOUISIANA

APPROVED: _____

Who Is An Expert?

by William A. Woolford, P.E.

Editor's Note: There has been much debate about the practice of forensic engineering. Some say it is a low risk discipline that can be easily practiced by a skilled engineer. Bill Woolford disagrees. Bill has been a successful forensic engineer for almost 40 years. He feels that forensic work is as much an art as a science. In this article, Bill talks about what makes an expert. We found his advice on courtroom decorum useful not only for experts but for any design professional called upon to give testimony.

All the world loves an expert. So, why can't I be an expert? Becoming a forensic engineering expert entails more than just a solid background of knowledge and an inquiring mind. It entails an entire mind-set and way of life.

The path of the Expert is strewn with thorns, stumbling blocks, shards and booby-traps. The Expert is called upon to understand the difficult, unravel the tangled and set straight the path to understanding, at the same time interpreting the vagaries with which he is presented.

The basic qualifications of the true Expert begin with broad knowledge of the subject matter at hand. He must have the technical knowledge of why and how the pneumatic wrench (for example) works: What makes the air motor work? How are the impacts delivered to the shaft? What ergonomics are involved in the design of the tool?

Once the mechanics of the tool (or structural failure...or whatever) are understood, the Expert can reach a conclusion as to the mechanism of the incident, be it a structural failure, misuse of a tool or highway accident. Once all the causative factors are understood and evaluated, it is fairly



Consulting Engineers Section

Warren J. Wilder

CEC/L Executive Director



straightforward for the Expert to draw a reasoned conclusion regarding the cause and effect relationships surrounding the incident. Then, once the report is written and delivered, all the Expert has to do is sit back and wait to be called to testify. Right? . . .WRONG!

The writing and delivery of the report, correct and expert as it may be, is only the start of a long process. This report will be scrutinized, dissected, analyzed and examined by attorneys and experts for the opposition, and you, the Expert, will be subjected to searching inquiry and examination regarding the sources of your opinions and the nature and extent of instructions which may have been provided you by your own Counsel. If that is not enough, you may be held up to examination in front of a jury of citizens with good intentions but little or no knowledge of your subject. At that time, you may be subjected to all sorts of insinuating questions by opposing Counsel. This is no occupation for a person with a thin skin.

Some Experts find great satisfaction in the challenges involved in forensic engineering. The broad spectrum of problems encountered, the variety of circumstances which are found, and the many differing personalities met add spice to an already-interesting endeavor. Once the case reaches the litigation stage, the give-and-take between the Expert, his Client's Counsel, and opposing Counsel provides a state of exhilaration which is difficult to describe. Nevertheless, this is not a profession for the fainthearted or shy.

In order to be successful, the Expert should be:

- Unflappable. Clearly in command of what is happening and not subject to goading. The Expert must be able to turn the other cheek and maintain equanimity in spite of personal or professional attacks by opposing Counsel.

- Patient. In depositions, the Expert may be asked the same question five times, each time in a different context. He or she must be able to understand what is happening, and to patiently explain that this is the same question that was already asked, and that the answer has not changed.

- Understanding. In cross examination, opposing Counsel may want the Expert to agree to certain

facts. If those facts are reasonable, the Expert should not argue with Counsel, even if the direction of questioning indicates that something unfavorable will be introduced. The Expert's attorney has the opportunity to restate the offending questions in language which will be more suitable to your position.

While there is a substantial demand for competent forensic engineering experts, there are actually relatively few engineers who have both the desire and the abilities requisite to the task. Engineers are essentially "things" people, as opposed to salespeople, for instance, who are essentially "people" people. Most engineers inherently resent being questioned regarding their professional opinions. After all, $2 + 2$ always equals 4; there can be no other answer. However, in legal matters, there are shades of differences and varieties of circumstances which defy accurate and precise quantification. It is in these areas where the forensic engineer is most valuable - and it is the same area where precise answers are difficult or impossible to find.

Forensic experts normally work under deadlines. When a lawsuit is filed, a period is allowed for "discovery." This period will vary between judicial jurisdictions, but at some point a cut-off point is reached after which no exchange of material is permitted. Many states require that a written report must be prepared by the Expert if he is going to be permitted to testify. This written report must set forth the information studied and the conclusions reached together with the reasoning which led to those conclusions. The report must be provided to Counsel in a timely manner in order to permit opposing Counsel to review the material and schedule a mutually convenient time at which to take the Expert's deposition.

In the deposition, the Expert will be questioned closely regarding the content of his or her report, and particularly the methods used in reaching the conclusions. The conclusions must be plausible, the mathematics must be correct and the Expert must not contradict the report during the course of the deposition.

Usually, the Expert is permitted to read and sign the transcription of his or her testimony before the transcript is filed with the Court. The Expert

should always take advantage of this opportunity, in order to assure that the transcript is correct and that no errors have crept into the testimony. Again, time is of the essence since the transcript is ordinarily filed with the Court thirty days after notification has gone out that the transcript is ready for reading and signing.

Some time prior to trial, Counsel will want to meet with the Expert in order to go over the report and to prepare questions for direct examination. It is essential that the Expert and Counsel fully understand one another and particularly that Counsel understand the engineering principle on which the report is based. The responsibility for this education lies with the Expert.

The details of the Expert's investigation, reasoning and conclusion will be placed in evidence by means of a series of questions and answers. Here the Expert is permitted rather wide latitude to explain to the court what is involved in the engineers aspects of the case. Nevertheless, it is essential that the Expert be fully cognizant of the questions that are going to be used and the order in which they will be asked if the direct testimony is to be most effective.

Once the direct testimony is in, opposing Counsel is permitted his day at the races. It is his or her job to discredit the Expert's testimony, and to convince the jury that the Expert's version of the case is in error. He will do his utmost to achieve this goal. It is here that the Expert's patience and equanimity are tested in the crucible of fire.

Once the Expert's testimony and cross examination are completed, he or she should seek to be excused and leave the courtroom immediately. This action will preserve the appearance to the jury that the Expert has no personal interest in the case other than being helpful to the court.

Careful adherence to ethical standards and strict observance of good manners will lead the Expert to a position of respect in the legal community. If the practitioner has the technical knowledge, the equanimity of personality and the patience to observe and draw careful conclusions, the role of forensic Expert can be interesting, challenging, and provide both intellectual and monetary re-

wards. The key to it all is the wisdom to seek and find the truth.

(Reprinted from the July, 1990 issue of *Communique*, published by DPIC Companies, Inc., Monterey, California)

Calendar of Events

We invite all technical and professional organizations to submit their meeting dates for publication in the LOUISIANA ENGINEER to: Editor, P. O. Box 2683, Baton Rouge, LA 70821.

October 18-20, 1990

ACEC Fall Conference
Dearborn, MI

October 27, 1990

NCEES Exams

November 12-13, 1990

State Board of Registration
Meeting
New Orleans, LA

December 14, 1990

Honors and Awards Selection
Meeting
State Headquarters
Baton Rouge, LA

December 14, 1990

LES Board of Direction Meeting
Baton Rouge, LA

January 13-19, 1991

NSPE Winter Meeting, Inter-
Continental Hotel
New Orleans, LA

January 21-23, 1991

State Board of Registration
Meeting
New Orleans, LA

April 25-27, 1991

LSPS Annual Convention
Hotel Acadiana
Lafayette, LA

Outlook '91 Forum

Consulting Engineers Council of Louisiana, Inc. will conduct a day-long forum on:

WEDNESDAY, OCTOBER 24, 1990

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The main objective of the forum is to enhance communication between the various agencies and the consulting engineer.

Representatives from the following state and federal agencies will present proposed plans for the coming year, particularly as they would relate to the consulting engineering community, including selection procedures where applicable:

Department of Environmental Quality

Division of Administration, Facility Planning and Control

Department of Transportation and Development

U.S. Department of Commerce, Economic Development Administration

Farmers' Home Administration

State of Louisiana, Division of Administration

AGENDA

8:00 a.m. - 9:00 a.m.

- Registration

9:00 a.m. - 9:15 a.m.

- Welcome Remarks

9:15 a.m. - 10:30 a.m.

- Agency Presentations

10:30 a.m. - 10:45 a.m.

- Break

10:45 a.m. - 12 NOON

- Agency Presentations

12 NOON - 1:15 p.m.

- Luncheon/Keynote Speaker

1:30 p.m. - 4:00 p.m.

- One on One Sessions

Each agency representative will make a 25-minute presentation during the morning session. After lunch, they will be available to discuss specifics with you, on a one on one basis, and to answer your questions.

REGISTRATION FEE (INCLUDES LUNCH \$20.00 (CEC/L MEMBER)

AND REFRESHMENTS AT BREAKS) \$30.00 (NON-MEMBER)

Please complete the form below, include your check made payable to "CEC/L", and return to CEC/L, P. O. Box 1549, BATON ROUGE, LA 70821, BY NO LATER THAN MONDAY, OCTOBER 22, 1990. IT IS MOST IMPORTANT TO PRE-REGISTER SO THAT WE CAN DETERMINE AN ACCURATE COUNT FOR THE LUNCHEON.

CEC/L OUTLOOK '91 FORUM REGISTRATION

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(FIRM)

(ADDRESS)

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BATON ROUGE, LOUISIANA 70821

Deadline to Register - MONDAY, OCTOBER 22, 1990



Highlights of NSPE's 1990 Annual Meeting

NSPE met in Norfolk, Va., for its Annual Meeting July 14-21. A new slate of officers was installed and the Society charted its course for the coming year. A summary of actions taken by the NSPE Board of Directors and other highlights of the week follows.

Women in Engineering — Recruiting and retaining women in the engineering profession is an old problem that needs new answers. At a joint plenary session NSPE's five practice divisions, led by a panel of professional engineers, confronted some of the obstacles that women face in the profession and explored solutions.

Panelist Lynn Betuglia, Marketing Projects Consultant for Kansas City Power and Light Company, noted that the lack of women in engineering can still be traced to "ill-informed" high school guidance counselors who continue to steer young women away from technical and scientific careers. The engineering community, therefore, must provide schools with substantive and factual information about engineering careers, she said. Guiding young women from grade school into the engineering workplace requires teachers who instruct math with passion, Betuglia noted. She emphasized that young women need role models and support from their own gender to enter the engineering field.

Retaining women in the academic environment becomes the next challenge, said Russel Jones, research professor at the University of Delaware. Bail-outs occur most often in the upper division of the engineering program. Jones attributed the retention problems to the scarcity of women faculty, cultural clashes between female students and foreign-born faculty, and the attractiveness of other academic fields that are hospitable to women such as pre-med, pre-law, and computer science. Improving the situation requires positive college experiences for women through co-op opportunities with engineering firms, intensive recruitment of women as graduation approaches, and corporate support for M.S. studies.

The engineering workplace is improving for women, noted Deborah Grubbe, Project Manager, Diversified Business Engineering Section, E.I. du Pont de Nemours & Company. Numerous companies are setting up formalized mentoring networks to ensure professional interaction between men and women, Grubbe noted. Training courses in gender sensitivity and ha-

arrassment and bias are also appearing in the workplace. "Women are helping other women," she said, through networking and exchanging knowledge about the workplace. Grubbe urged her fellow engineers to educate themselves on gender bias and to be role mentors for young women.

John White, Assistant Director for Engineering at the National Science Foundation, said the engineering profession is "losing the brightest half" by failing to attract and retain women. "This is not a women's problem. It's our problem and we need to take it on," he emphasized. "Start with your company. Hire more women and arrange for their professional development." White challenged NSPE to set goals to increase its percentage of women officers, women award winners, and women appointments to state registration boards.

New Product Development — The board approved a major study conducted jointly by the National Institute of Standards and Technology and NSPE. The project has produced definitions for the engineering stages of development that new products undergo. The definitions have multiple use possibilities within NIST and the Department of Energy to help improve competitiveness and foster commercialization of new technology. Engineers, inventors, and small businesses will also likely benefit from the NSPE/NIST project as they seek technical and financial support to bring energy-saving ideas to the marketplace.

Architect-Engineer Joint Practice Accord — Ongoing discussions between NSPE and the American Institute of Architects (AIA) have yielded a draft national accord between the two organizations. The two groups agreed last year to forge better working relationships between engineers and architects at the organizational level and within individual work environments. The agreement followed dissension and turf battles between A/E's at the state level. NSPE and AIA plan to finalize the accord in the coming months.

NSPE Visual Image — As NSPE and its affiliated groups continue to expand through national and community programs, the Society aims to achieve the maximum public relations impact by presenting a consistent visual image. In Norfolk, the board passed a new operating policy charging the NSPE Communications Department with

managing and implementing approved guidelines for achieving a harmonious visual presentation.

The visual image spectrum includes printed matter, audiovisuals, press releases, and stationery. This policy covers NSPE headquarters, committees, practice divisions, foundations, institutes, and the NSPE-PAC. Guidelines are being developed to allow reasonable creative freedom to practice divisions and other NSPE entities within an overall coordinated visual image. The Communications Department will issue and maintain a graphics guideline manual for those involved in preparing and reprinting written or audiovisual materials. State societies and chapters should utilize the guidelines as practical for their own materials to enhance and reinforce the visual image of the total organization.

NSPE Education Foundation — All NSPE members are now automatically members of the NSPE Education Foundation following a change in the Foundation bylaws effective July 1990. The Foundation also restructured its activities to focus on guidance, scholarships, and fund-raising.

Quality Communications — NSPE is launching a coordinated Communications Plan to convey news and information to internal and external audiences. The plan is an outgrowth of the Communications Quality Project Team, which completed a one-year study of NSPE communications and made its final report to the Board of Directors. The plan calls for NSPE committees, divisions, institutes, and foundations to create key message statements for newsworthy projects that require communication to specified audiences and warrant emphasis from the Communications Department.

Quality Customer Service — Continuing its focus on in-house Total Quality Management, the Society launched a new quality project concentrating on member/customer service. The quality team, made up of NSPE members and staff, will be studying staff configuration and procedures to best achieve "one-stop" member/customer service.

NSPE Electronic Bulletin Board — NSPE President Neil Norman unveiled enhancements to the Society's computer bulletin board and encouraged national directors to increase their use of this electronic means of communi-

Continued on page 18

Louisiana Engineering Society 1990-91 Board of Direction



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LES has five practice divisions, which provide the means for engineers to develop professional relationships with others in the same field of employment.



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Professional Identification

Why should you as a registrant of the Board identify yourself as a professional? You should identify yourself as a PE, PLS, EIT, or LSIT because the public has no other way of knowing that you are either an Engineer, Land Surveyor, an Engineer-In-Training, or a Land Surveyor-In-Training unless you tell them. As a registrant of the Board, you represent less than one-third of all of the people which the public may perceive as being Engineers or Surveyors. Unfortunately, well over 50 percent of those individuals who receive bachelor of science degrees in engineering are not registrants of the Board.

Those individuals who are not registrants of the Board fall into two (2) general categories. The first category are those who are not capable of becoming registered. They may have an engineering degree but they are not capable of passing either the Fundamentals of Engineering Examination or the Principles and Practice of Engineering Examination. Twenty-five percent of the first time examinees of the Fundamentals of Engineering Examination fail the examination. Approximately, 50 percent of the first time examinees of the Principles and Practice of Engineering Examination fail the examination. The failure rate for those who retake the examination is even higher. I estimate that approximately one-third of those individuals who have received bachelor of science degrees in engineering are not capable of becoming registrants of the Board because they are not able to meet the experience requirements for registration or they are not able to pass the examinations.

The second category of individuals who do not become registrants of the Board are those individuals who have the appropriate academic credentials to become registered; however, they do not see the need for registration. These individuals have the academic credentials needed for registration, they have good engineering experience, and they could probably pass the examinations but they choose not to apply for registration because they see no need for it. In many cases, these individuals are employees where the employer could care less about registration and sees no

need for it. The employer would prefer that the employee not become registered because he has a captive employee. These employees are typically career employees of a large industrial corporation. The employee is satisfied to work for this successful corporation until such time as an early retirement program is announced. Then the individual is faced with the problem, "Where do I go from here?" To present himself to the public as an engineer, he must be a registrant of the Board. When one has been out of school for 20 to 30 years, it becomes somewhat difficult (not impossible) to take and pass the examinations. Not being registrants of the Board, these individuals cannot present themselves to the public as professionals.

Section 507 Professional Identification of the Board Rules states:

"Letterheads, business cards, advertisements and other similar identifying items issued by firms providing or offering to provide professional services in the State of Louisiana shall reflect clearly that such firms have full-time employees who are registered professionals in this state. In the ordinary case, the name of the professional engineer related to the firm should appear on business cards, letterheads, and similar material with initials P.E. following the name to indicate his professional status, or with the initials to indicate the branch in which he practices such as C.E., M.E., etc. In the ordinary case, the name of the professional land surveyor related to the firm should appear on business cards, letterheads, and similar material with initials P.L.S. following the name to indicate his professional status. In the case of large firms which contain a considerable number of registered professionals, compliance with this regulation may be accomplished by the use of the registered professional's seal or by his signature with the identifying initials thereafter on correspondence or other similar materials which do not require the seal."

Examples which are appropriate for professional business cards or a signature block for letters are:

John Doe, E.I.T.
Project Engineer
Mechanical Engineer or
Civil Engineer, and so forth

John Doe, L.S.I.T.
Land Surveyor or
Surveyor, or Party Chief
etc.

John Doe, P.E.
Project Engineer
Mechanical Engineer or
Civil Engineer, and so forth

John Doe, P.L.S.
Land Surveyor or
Surveyor, or Party Chief
etc.

The public has the right to know who registrants of the Board are. Identify yourself as a professional — don't hide the fact that you are a professional.

Those individuals who are not registrants of the Board presenting themselves to the public as engineers or land surveyors are in violation of the statutes. The Board is charged with the duty of insuring that the provisions of the statutes are enforced. As a registrant of the Louisiana Board, you also have a responsibility. Section 2101 D of the Board Rules states that you are to report violations to the Board. It's a simple matter for you to mail to the Board a business card of an individual who presents himself as an engineer or a land surveyor when he's not a registrant of the Board. The Board will discharge its responsibility but it needs your help. You can help by first identifying yourself properly and secondly, report violators.

Notice to All Board Registrants

All Board registrants, this includes Engineers, Land Surveyors, Engineers-In-Training, Land Surveyors-In-Training, Engineering Firms and Land Surveying Firms registered with the Louisiana Board of Registration for Professional Engineers and Land Surveyors are hereby notified of an official change to the Board Rules.

Background

The Board's Notice of Intent to change the Rules of the Board was officially announced in June 1990 issue of the *Louisiana Register* (page 561, volume 16, number 6) and on pages 6 through 9 of the June 1990 Issue of the *LOUISIANA ENGINEER* Magazine. The Board formally approved these rule changes at its July 24, 1990 Meeting and were published in the September 20, 1990 issue of the *Louisiana Register*, page 772, volume 16, number 9. To obtain a complete copy of the revised Board Rules, please call or write the



**Paul L. Landry, P.E.,
Executive Secretary
Louisiana State Board of Registration for
Professional Engineers & Land Surveyors**



Board Office (See page 3 for address and telephone number).

Summary of the significant changes to the rules:

§105.I - Definitions

(New) --- The Board has established guidelines which shall be used as an aid in determining the types of surveying services which may be rendered by professional land surveyors or professional engineers. Hopefully, this rule will clarify what type of surveying a land surveyor may do versus the type of surveying an engineer may do.

§303 - Land Surveying-In Training Certification

(New) --- Effective January 1, 1991, the Board will be able to consider only applicants who have received a baccalaureate degree from a curriculum of four (4) years or more who has completed at least thirty (30) semester credit hours or the equivalent approved by the Board, in land surveying, mapping, and real property courses.

§311 - Land Surveyor Registration

(New) --- Effective January 1, 1995, the Board will only be able to consider applicants who have a baccalaureate degree from a curriculum of four (4) years or more who has completed at least thirty (30) semester credit hours or the equivalent approved by the Board, in land surveying, mapping, and real property courses.

§1515 - Reexaminations

(Change) --- A failed examination may be retaken one year or later after the last failure.

§1701 - Seal Rules

(Change) --- This rule has been modified to help registrants determine when and how to seal and sign and date their work. In general if the work is engineering, it must be done by or under the supervision of a registered professional engineer of the State of Louisiana. The registered professional engineer must sign, seal, and date his work. The same applies to land surveying. If the work is land surveying, the

work must be done by or under the direct supervision of a professional land surveyor. The professional land surveyor is required to sign, seal, and date his work. The Board Rule also now requires that each registered professional engineer or professional land surveyor upon registration shall obtain an official seal.

§2101 - D Scope; Knowledge Definition of "Registrant"

(New) --- A registrant possessing personal knowledge of a violation of statutes 37:681 through 37:703 or the Board Rules found in a LAC 46:LXI shall report such knowledge to the Board in writing and shall cooperate with the Board in furnishing such further information or assist as may be required. It appears to me that all registrants of the Board have become "whistle blowers" by this rule.

§2103.C.3 - Registrants

(New) --- How does a registrant

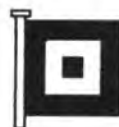
amend, change, or modify engineering or surveying work for a client (work done by another registrant of the Board)? This rule will be helpful to registrants placed in this sometimes very difficult predicament.

Registrants are to consider this notice as the official notice of the Board for rule changes which became effective September 20, 1990. Complete revised copies of all the rules may be obtained by calling or writing to the Board Office.

BOARD MEETING NOTICE

The Louisiana State Board of Registration for Professional Engineers and Land Surveyors will hold its regular meetings at 1055 St. Charles Avenue - Suite 415 New Orleans, La. 70130 on the following dates.

1990	1991	
Nov. 12-13	Jan. 21-23	July 22-23
	Mar. 25-26	Sept. 23-24
	June 3-4	Nov. 11-12



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State Requires Prior Approval for Construction of Medical Facilities

Attention: Primary Designers

Minimum standards promulgated in accordance with Title 40 of the Louisiana Revised Statutes require that the State of Louisiana, Department of Health and Hospitals, review plans and specifications before any Hospital, Nursing Home, Ambulatory Care Center, Community Group or Residential Facility, Juvenile Detention Center, Day Care Center, Child Shelter or Alcohol and Drug Abuse Facility is licensed or before any alterations or expansion can be approved.

It is possible that certain project categories, such as business occupancy or teaching facility will not be subject to this requirement. Under such circumstances, it is the obligation of the designer to communicate with the Department of Health and Hospitals by submitting a letter of justification to this effect to avoid confusion and possible delay of construction.

Plans and specifications, as well as other communication, are to be submitted to the Department of Health and Hospitals, Bureau of Engineering and Consulting Services, P. O. Box 94215, Baton Rouge, LA 70821.

Francis C. Roy, P.E., Recognized by NCEES

Francis C. Roy, P.E., of Lake Charles, LA, and a past president of the Louisiana Engineering Society, received the Distinguished Service Award from the National Council of Examiners for Engineering and Surveying during the Council's Annual Meeting in Milwaukee, WI, on August 4th.

This award is presented in recognition of dedicated and outstanding contributions to the advancement of professional engineering and surveying registration through service to the regulatory boards and NCEES. Roy was cited for 10 years of service to the Louisiana Board of Professional Engineers and Land Surveyors, to the Southern Zone, and to the Council.

Organized in 1920, NCEES presently serves all state/jurisdiction regulatory

boards for engineering and surveying registration by preparing uniform examinations and encouraging uniform standards of practice and qualifications for registration.

NAAG Model Contracts Put In Deep Freeze After A/E Fire

The National Association of Attorneys General (NAAG) has permanently suspended model contract documents that had encountered controversy in the design and construction communities.

Following the association's summer meeting, NAAG staff counsel Lisa Wells said that the NAAG Model Design and Construction Documents are permanently suspended and that NAAG will no longer disseminate copies to the public. At that meeting, NAAG's Executive Committee decided that an information exchange will be maintained within the association to allow states to share construction contract and litigation issues.

The decision to suspend the documents follows more than a year of debate between NAAG and design and construction entities. Professional groups, including NSPE, the American Institute of Architects and the Associated General Contractors of America, were opposed to what they perceived as changed responsibilities for construction team members and increased liability risks. One clause within the owner/design professional agreement would have required the design professional to supervise construction.

Professional liability insurers and surety companies had predicted a tightening of the insurance marketplace if the documents went into widespread use.

NAAG maintained that the documents, which included model agreement forms between owner and design professional, owner and contractor, and standard general conditions were intended as sample forms for state agencies to use at their discretion. The association also argued that the documents were developed to represent the owner's point of view.

Throughout the controversial introduction of the documents, not one state adopted the model forms for use in its contracting procedures. Instead,

state attorneys general and state agencies appear to be handling costly construction claims on a case-by-case basis. Many states develop their contract documents internally and update them periodically to reflect case law.

Reprinted from "Engineering Times"

Civil Service Makes Way for Disenfranchised Engineers

By: James C. Porter, P.E.

Louisiana's engineers' registration law that establishes the Board of Registration for Professional Engineers and Land Surveyors (board) was one of the first such state laws in the United States. (Wyoming's was the first and Louisiana's was the second.) The purpose of this law, as are most other professional regulatory laws, is to protect the citizens of our state from incompetent practitioners of a profession that has a significant impact on their health, safety and welfare.

For most legislation to be enacted into law, the political hurdles of compromise must be cleared in our pluralistic political environment. The engineers' registration law is no exception. There were two exemptions granted in the law for those practicing in government and industry at the time. One of these exemptions is permanent and may have outlived its usefulness.

The government exemption was necessary to accommodate several employees in government that were already serving in engineering positions that were not eligible to be registered under the provisions of the law. This was accomplished by issuing them a limited license to practice engineering only as a state employee on a one time basis. Normal attrition in the work force will eventually eliminate this exemption and the dislocation that would have occurred in the state's engineering work force at the time was avoided.

The industry exemption came about as the result of intense lobbying by the state's politically powerful industries. The rationale for this exemption was that the engineers practicing in industry do not offer services to the general public and their practice is limited to the property of their employer on



Leta Bueto
Executive Director
Louisiana Engineering Society



which the general public normally is not allowed. It logically followed that the citizens of Louisiana are not exposed to their work. Therefore, the state has no need to regulate industry employed engineers. This exemption remains with the exception that an engineer registered in the state must be employed and considered technically responsible.

The corruption of this rationale, not apparent at the time, has become acutely obvious in the last two decades. The industrial pollution of Louisiana's air, water and land and industrial disasters such as the recent explosion at the EXXON facility in Baton Rouge are all conditions that have their origins in the engineering management of industrial facilities. The health, safety and welfare of the citizens of Louisiana are indeed affected by the engineering management of its industries. The engineers responsible for the management of industrial facilities should possibly be subject to the same regulations that hold all others that practice engineering (registered or not) responsible to the state through the board.

An important, mitigating factor for the many unregistered engineers (those whose practice is not regulated by the state) in industry has been its recognition that good engineering is the key to a competitive edge. Because of this, most industries aggressively recruit the best students with premium salaries. Consequently, the industrial work force has generally represented the most talented people graduating from engineering schools.

Though many engineers in industry exercise their option to become registered out of a sense of professional responsibility to their community, many do not. If there is a shortcoming in the engineering work force in industry, it is this; a demonstrated lack of commitment to the public's interest. The registered engineers appear on the surface to be no different from other

good employees or agents that sense the obligation to their employer to faithfully perform their expected duties. However, there is a difference. Through the act of registration, they demonstrate a higher responsibility and legally accept this responsibility to the citizens of Louisiana. This is to ultimately protect their health, safety and welfare above all other interests through their practice of engineering. And if they falter in this commitment in deference to the interests of their employer, client or anyone or anything else, the state through the board can hold them responsible for an inappropriate act.

The engineers employed in industry including those who have opted not to become registered and are essentially disenfranchised from the remainder of the engineering profession, have become perceived as an important commodity to the State's Department of Environmental Quality (DEQ) and the Department of Natural Resources (DNR). Their experience in industrial process management, for example, is directly applicable to the requirements of the positions in these agencies necessary to pursue the state's regulation of industrial process emissions and to achieve pollution abatement goals.

In their attempt to hire these qualified individuals, the DEQ and the DNR were unable to find a viable, Civil Service job description that allowed the practice of engineering by unregistered engineers. The state is and has been an employer of only registered engineers at a premium salary for taking the responsibility for engineering work. The immediate solution sought by DEQ was an administration sponsored bill (HB 1350) to partially dismantle the engineers' registration law. As if to draw on the industry exemption through association, the bill proposed to exempt government employed engineers from registration that act in an industry regulation role.

The corruption of the justification for the industry exemption in itself appears to be a good argument not to extend an exemption to other persons by association or by any other similarity. If this is not a sufficient argument, consider the position of the government employed engineer in a regulatory role. This is the practice of engineering in public and in the public's interest and not on private property and an employee of the proprietor. It would be difficult to demonstrate a more critical need for the registration of the persons responsible for the direction and control of the engineering associated with government regulatory needs. The exacerbating condition here is that the engineers in industry are also not responsible through registration.

Representatives of the board, the Louisiana Engineering Society and others were invited to confer on the matter to seek some concurrence if possible. An interesting and viable alternative to HB 1350 was forged that may prove beneficial to all state agencies using in-house engineering services. A precedent in the practice of engineering allows engineering to be practiced by other than engineers so long as all engineering is under the "complete direction and control" of a registered engineer. This precedent was used to forge an agreement. It was proposed and Civil Service agreed to create nonengineering, supervisory and managerial positions comparable in salary to those for registered engineers (GS18 through GS24). These positions will require several years of engineering experience and a degree in engineering from a school with an accredited engineering curriculum. The only limitation on their practice of engineering is the same as it is in other areas of engineering practice, a registered engineer must be in complete direction and control of the engineering work.

A spin off benefit to all the state's agencies is that they can possibly take

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better advantage of the competent engineering work force through the new, competitive positions and salaries. They are consistent with the positions and compensation normally available to graduates of accredited engineering curricula that are not registered but have substantial engineering experience and ability. This is a significant part of a market to which state agencies have been essentially denied access because there were no comparable, classified positions and salaries.

HIGHLIGHTS

Continued from page 11

cation. Data now available on the system include the annual operating plan, NSPE publication listing, government affairs bulletin, NSPE Code of Ethics, NICET test dates, new member applications, and special conference directories for practice divisions and others. Additions this fall will include state and chapter membership records, NSPE officer names and telephone numbers, and model chapter bylaws.

National Institute for Engineering Ethics — Renowned ethicist Margaret Maxey, of the University of Texas, was installed as the institute's president at the Norfolk meeting. Formed as a self-supporting entity within NSPE, NIEE has recently established the Profes-

sional Ethics Liaison Council, which thus far includes the American Association for the Advancement of Science and the American Association of Engineering Societies. NIEE also has published the third edition of its quarterly newsletter, "Engineering Ethics Update." The institute is planning an international conference on engineering ethics in the fall of 1991.

National Institute for Engineering Management and Systems — The NIEMS Board of Governors voted to increase representation in the institute by appointing one seat for each of NSPE's practice divisions. NIEMS' successful Quality Management Seminar series will be offered again in 1990-91, and the institute is responding to requests from engineering firms to conduct such seminars in-house. The American Society for Engineering Management and the Institute for Industrial Engineers are now represented on the NIEMS board, and several other organizations have expressed interest in the institute. NIEMS continues to provide leadership education to NSPE officers, members, and staff and has published the first issue of its "Quality Management Portfolio," a quarterly update on a variety of Total Quality Management topics.

Bilateral Communications with Federal Agencies — The Professional

Engineers in Private Practice (PEPP) division hosted a symposium in Norfolk evoking candid discussions between engineers and six federal agencies. Representatives from the Department of Veterans Affairs, Federal Aviation Administration, General Services Administration, Naval Facilities Engineering Command, and U.S. Army Corps discussed engineering practice issues from both a policy and implementation standpoint. The symposium covered such topics as A/E involvement in construction, agency limits on overhead and profit, and quality assurance plans.

NSPE-PAC — An engineer by training, Lewis Payne (D-Va.) told NSPE-PAC luncheon attendees that he had witnessed "precious little planning, prioritizing, and budgeting (the stock-in-trade of the professional engineer)" during his two years in Congress. A member of the House Public Works and Transportation Committee, Payne supports removal of the infrastructure trust funds from the federal budget. He noted that the ongoing budget summit negotiations could result in all trust funds coming off the federal budget. "Once the funds are free of the present budget, we must be sure we are optimizing their use," Payne said. To produce the

Continued on page 20

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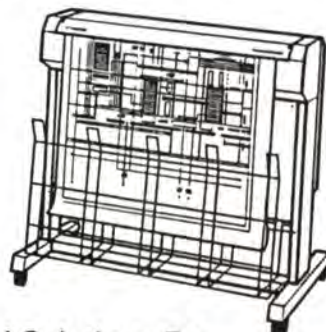


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LES Awards Program

James W. Reeves, Ph.D., P.E., Chairman
Honors and Awards Committee

Recognition of fellow engineers has always been an important program of the Louisiana Engineering Society. It is the Society's feeling that honors and awards should be given deserving members so that public recognition of their attainments will inspire others.

The Society has six basic awards:

- The Andrew M. Lockett Medal for Civic Activities
- The A. B. Paterson Medal for an Engineer in Management
- The Charles M. Kerr Public Relations Award
- The James M. Todd Technological Accomplishment Medal
- The F. Hugh Coughlin Young Engineer Award
- The Leo M. Odom Award for Services to the Profession

Nominations may be submitted to a member of the Honors and Awards Committee, or to the Honors and Awards Committee in care of the State Office, no later than November 12, 1990. Nominations for the awards must be submitted on the appropriate form. These forms were delivered or mailed to each Chapter on September 7. The nomination forms should be supported by:

1. A full statement of the formal academic training, experience, progress, and notable technical or engineering contributions made by the nominee.
2. A statement of the basic reasons for submitting the nomination, and for believing that the nominee is eligible for the honor.
3. Such other information and references as may be of assistance to the Board of Direction in considering and acting upon the case.
4. It is essential that such documentation carry the present title and company connection of the nominee, and set forth clearly and concisely why he should be named for the award recommended.
5. A photograph of the nominee.

It is time for the Chapters to screen and select worthy candidates. Nominations for the awards must be in the hands of the Executive Director by November 12, 1990.

Awards will be presented during the Society's spring meeting in Shreveport.

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HIGHLIGHTS

Continued from page 18

most infrastructure per federal dollar spent, the congressman favors the seed money approach involving combinations of federal, state, local, and private funding. "The most productive federal role may be to start and enable a design and financing process once a locality has identified a need, and the federal government has prioritized that need from a national productivity perspective," Payne said.

Awards — NSPE members paid tribute to three distinguished peers at the State of the Society banquet in Norfolk. Professional engineer and academician Herbert Woodson received the NSPE Award, the highest honor bestowed by the Society. Dean of the College of Engineering at the University of Texas, Woodson is an accomplished electrical engineer. His contributions include

founding the MIT Electric Power Systems Engineering Laboratory, the University of Texas Center for Energy Studies, and the Center for Fusion Engineering.

Rosanne Frandina, a 30-year-old civil engineer from New York, received the Young Engineer of the Year Award. She is the director of the Division of Development for the city of Buffalo. Frandina has been active in NSPE since becoming a student member in 1978. She was the New York State Society's and the Erie-Niagara Chapter's Young Engineer of the Year.

The NSPE Distinguished Service Awards were presented to Carl Weber and Daniel Watkins, both of Missouri. Weber is the retired President and CEO of Midwestern Joists. His research in the field of steel joists has influenced the design of floors and roofs of all types of buildings. Watkins is a retired partner of Howard, Needles, Tammen & Bergendoff and is considered an authority on toll road design.

NSPE also presented Professional Development Awards and Awards for Chapter Excellence at the Annual Meeting. Additional coverage of award winners will be featured in the fall issue of *NSPE News*.

New NSPE Affiliate — The NSPE Board of Directors unanimously approved the extension of NSPE affinity status to the National Academy of Building Inspection Engineers.

Future Meeting Sites — The board approved the NSPE Meeting Site Selection Committee's choice of Louisville, Ky., as the location for the NSPE Annual Meeting in 1995.

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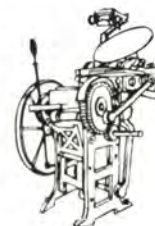
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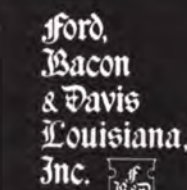
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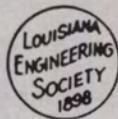
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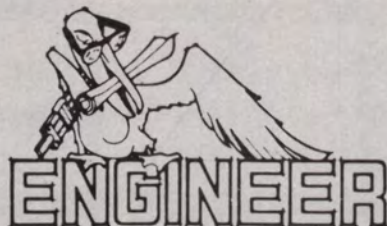
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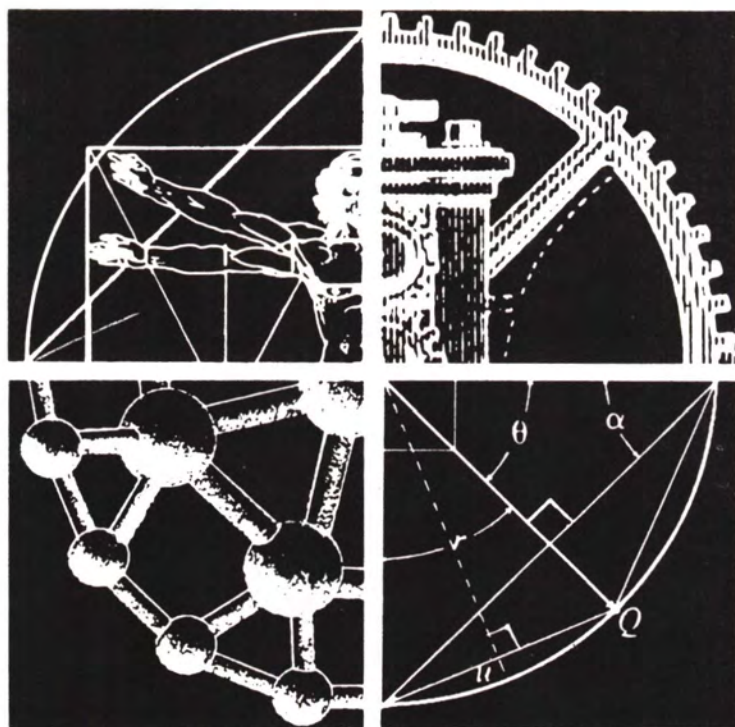
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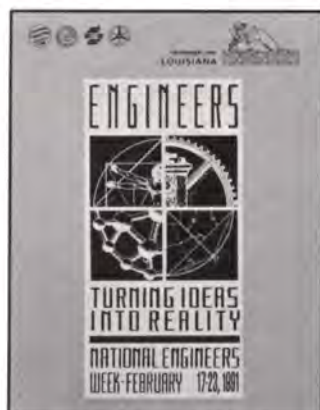
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DECEMBER, 1990



ABOUT THE COVER

February 17-23, 1991 will mark Engineers' Week throughout the nation.



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(Please note: Receipt of Louisiana Engineer Magazine does not necessarily mean that you are registered with the Louisiana State Board of Registration for Professional Engineers and Land Surveyors, or that you are a member of the Louisiana Engineering Society.)

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Presidential Privilege

How to get a job without experience? How to get experience without a job? These questions formulate an issue being contested by many engineers today. Engineering graduates face a career-long challenge of convincing someone that they are technically qualified to be considered for a job. From inauguration to retirement, each of us working in the engineering profession as an employed engineer or as a business owner is constantly proving our qualifications as professionals.

This issue being vigorously debated by engineers throughout America, and especially in Louisiana, focuses on two opposing concepts or methods of procurement of professional engineering services. The traditional Request for Qualifications solicitation process is constantly being challenged by the revolutionary Request for Quotation solicitation process. The former procedure seeks to match engineering talent, qualifications and available experienced resources to the needs of the soliciting individual and the complexity of the project. Fees for the engineer's work are derived and/or negotiated after the selection of the professional is made. On the other hand, the latter procedure weighs the proposed cost of the engineer's work in the primary decision for selection of the professionals. The weighting factor may vary from twenty percent (20%) used by some state agencies to one hundred percent (100%) used by some private concerns.

There must be some benefits and detriments to each of these systems for them to coexist and be considered effective by the solicitors that utilize them. Let's examine each side of the coin and attempt to delineate the pros and cons of each process.

The Request for Qualifications process, referred to as "Qualification Based Selection" (Q.B.S.) pits professional experience and peoplepower against a project's task complexity. It can be argued that the cost of this high level engineering is proportionately greater than a lesser qualified and experienced engineering service. Considering that any engineering firm,



Kerry J. LaBauve, P.E.
President
Louisiana Engineering Society

government agency, research institution and/or university desiring to be considered for proposed projects under the Q.B.S. system must staff its organizations with highly qualified, experienced, and salaried engineers or scientists, it is agreeable that their respective operating costs would be higher. This scenario is true regardless of the actual size of the individual organization on a unit basis, but weakens as the efficiency of larger organizations is taken into account. Considering these factors, the solicitor should get the best designed, most economically constructed, and most efficiently operating facility practical. The Q.B.S. system does pose somewhat of a problem to the solicitor of professional services. The interpretation of qualification statements received for a proposed project requires a certain knowledge and experience level related to the engineering discipline sought. This situation could require in-house engineering staff or consultants to assist in the evaluation of the applicant's submittals.

The Request for Quotations process, referred to as pricing or bidding, opens the doors for a wide variety of experience and qualification level organizations to apply for a proposed project. It can be argued that competitive bidding will minimize the cost of engi-

neering to the solicitor without affecting the constructed project's quality. However, if there is a minimum engineering process or a well-defined scope of work required to execute a project, something has to be done to reduce costs in order for an applicant to be competitive. It is conceivable that this cost control could be achieved by assigning the least experienced, qualified, and salaried staff members to the project, reducing the normal quality control effort budgeted for similar projects, and minimizing the illustrations provided in the contract documents. Alternately, a firm could elect to reduce staff billing rates, minimize the time budgeted to the project, minimize or eliminate its profit, or just not bid. Obviously, these measures could reduce the up-front engineering costs to the solicitor, but the impact of these steps is certainly questionable regarding the quality of the engineering performance, as well as the constructed project.

The preceding narrative is the opinion of the author, based on twenty years of engineering practice and observations of business practices involved in the procurement of engineering services. The observations made do not necessarily represent the views and policies of the Louisiana Engineering Society, or any of its Practice Divisions.

The Louisiana Engineering Society has adopted an official policy regarding the procurement of professional engineering services. The following resolution was accepted by the L.E.S. Board of Direction on October 13, 1990, after adoption by a majority vote of members present at the annual General Membership Meeting of the Society on October 12, 1990. Although the attendance at the meeting was excellent, it did not provide a majority of the 2500 members of the Society. Please review the resolution and evaluate its effect on you and your business. You have an opportunity to express your opinion through your Chapter President, your Practice Division Chairman, or directly through the *Louisiana Engineer* Forum section of this publication.

Continued on next page

LOUISIANA ENGINEERING SOCIETY POLICY ON QUALIFICATION BASED SELECTION

WHEREAS, the Louisiana Engineering Society is the single professional organization that represents all registered professional engineers in the State of Louisiana, and
WHEREAS, engineering is the creative art of turning ideas into reality,
WHEREAS, by training, engineers use their judgement, engineering skills, experience and flexibility to provide successful solutions to problems, and
WHEREAS, protection of the public through high standards of care and quality is the duty of engineers and the engineering profession, and
WHEREAS, the needs, scope, expectations, limitations and constraints of engineered projects are often unknown when project ideas are conceived, and
WHEREAS, the diverse experience and creativity of the engineering profession is unbounded by our ever changing world, and
WHEREAS, the fulfillment of engineering's mission relies on engineers performing only those tasks for which they are competent and qualified, and
WHEREAS, Qualifications Based Selection (QBS) is a fair, equitable and flexible process to compatibly match engineering talent with projects and owners on the basis of competency and qualifications.
NOW, THEREFORE, BE IT RESOLVED that the Louisiana Engineering Society supports "QBS" as an essential part of engineering practice.

QUALIFICATION BASED SELECTION (QBS) is:

- A process that is fair, equitable and flexible;
- A process that seeks to match qualifications and competence to the needs, scope, expectations, limitations and constraints of a project;
- A process that encourages a productive team effort;
- A process that is a logical, efficient and organized approach to the establishment of compatibility in the early stages of a project;
- A process that holds paramount the safety, health and welfare of the public;
- A process that recognizes qualifications and competency above other considerations;
- A process that is adaptable to all projects.

The foregoing having been duly presented at the October 12, 1990, Annual Meeting of the Society, voted on and adopted.



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Nuclear Engineering

The Louisiana Board examines and registers engineers by branches. Chapter 9 of the Board rules provides for the registration in the following branches:

- | | | |
|-----------------|---------------|------------------|
| A. Agricultural | D. Electrical | G. Metallurgical |
| B. Chemical | E. Industrial | H. Mining |
| C. Civil | F. Mechanical | I. Petroleum |

Section 907 Branch Criteria permits the Board to add branches in accordance with the following criteria:

- There must be a provable need in the State of Louisiana for specialized engineering expertise in a new branch area.
- There must exist at least 15 engineering curricula in the United States accredited by the Engineer Accreditation Commission of the Accreditation Board for Engineering and Technology (EAC/ABET) corresponding to the new branch area.
- Examinations in the Principles and Practice of the branch of engineering must be offered on a regular basis for by the National Council of Examiners for Engineering and Surveying (NCEES), or by at least 15 state boards.

Following this criteria the Board has announced its attention to add Nuclear Engineering as a branch of engineering acceptable for registration in the State of Louisiana.

Other branches, from time to time, have been considered by the Board. In the recent past the Board, responding to individual request, has considered adding safety, fire protection, and instrumentation engineers. These branches did not meet the criteria for favorable consideration by the Board.

Notice of Intent

In accordance with the Louisiana Revised Statutes 49:950, et seq, notice is hereby given that the Louisiana State Board of Registration for Professional Engineers and Land Surveyors intends to revise Louisiana Administrative Code 46:LXI as follows:

\$902 Branches Added

- Nuclear - 1991

AUTHORITY NOTE: Promulgated in accordance with R.S. 37:693.

HISTORICAL NOTE: Promulgated by the Department of Transportation

and Development, Board of Registration for Professional Engineers and Land Surveyors, LR _____.

Interested persons may submit written comments or offer amendments to the proposed rules to the Board Office at 1055 St. Charles Avenue, Suite 415, New Orleans, Louisiana 70130, at any time prior to January 17, 1991. The Board proposes to consider and take action on the adoption of these rules at a meeting in its office at 11:00 a.m. on January 22, 1991.

Notice to all Board Registrants

All Board registrants, this includes Engineers, Land Surveyors, Engineers-In-Training, Land Surveyors-In-Training, Engineering Firms and Land Surveying Firms registered with the Louisiana Board of Registration for Professional Engineers and Land Surveyors are hereby notified of an official change to the Board Rules.

Background

The Board's Notice of Intent to change the Rules of the Board was officially announced in the July 1990 issue of the *Louisiana Register* (page 648, volume 16, number 7) and on pages 14 through 18 of the August 1990 issue of the *Louisiana Engineer Magazine*. The Board formally approved these rule changes at its November 13th Meeting and were published in the December 1990 issue of the *Louisiana Register*.

Chapter 25 Minimum Standards for Property Boundary Surveys

This new rule was approved by the Board as published in the *Louisiana Register* and the *Louisiana Engineer*.

Registrants are to consider this notice as the official notice of the Board for rule changes which become effective on December 20, 1990. Complete revised copies of all the rules may be obtained by calling or writing the Board Office.

EXAMINATION SCHEDULE AND APPLICATION DEADLINE DATES

Examination	SPRING		FALL	
	Application Deadline Date	Examination Date	Application Deadline Date	Examination Date
Fundamentals of Engineering Examination (8 hrs.)	Jan. 15, 1991	Apr. 13, 1991	Aug. 1, 1991	Oct. 26, 1991
Principles & Practice Engineering (8 hrs.) Civil (Including Structural & Sanitary), Mechanical, Chemical & Electrical	Jan. 15, 1991	Apr. 13, 1991	Aug. 1, 1991	Oct. 26, 1991
Agricultural, Industrial, Metallurgical, Mining & Petroleum	NOT AVAILABLE		Aug. 1, 1991	Oct. 26, 1991
Fundamentals of Land Surveying Examination (8 hrs.)	Oct. 15, 1990	Apr. 13, 1991	May 1, 1991	Oct. 26, 1991
Principles and Practice of Land Surveying (4 hrs.)	Oct. 15, 1990	Apr. 13, 1991	May 1, 1991	Oct. 26, 1991
Laws and Procedures of Land Surveying (4 hrs.)	Oct. 15, 1990	Apr. 13, 1991	NOT AVAILABLE	

Apply at least six to eight months prior to an examination. Board approval must be given for anyone to be scheduled for an examination. The applicant and the Board depends upon information provided by third parties in the processing of an application, therefore no assurance can be given that one will be scheduled for a specific examination.

Application Deadline date means that an application must be postmarked prior to or on the date specified so as to be given consideration for the examination. The Board may schedule an applicant for an examination later than that requested by the applicant. The Board cannot guarantee that the applicant will be scheduled for the examination initially requested.



**Paul L. Landry, P.E.,
Executive Secretary
Louisiana State Board of Registration for
Professional Engineers & Land Surveyors**



Enforcement Corner
by Registration Board Investigator
Benjamin S. Harrison

The professional engineer and land surveyor who with some regularity reads the *Louisiana Engineer* will without doubt be exposed to the cold, hard facts associated with the negative side of law enforcement, i.e. reports of disciplinary action taken against registrants. While the reporting of this information is believed to serve the purpose of deterrence and is intended to be instructional to the profession, there are many other educational efforts by the Board which are positive in nature which the profession may never realize is being undertaken.

How many of you are aware that the Board has initiated a briefing program that will bring about more communication and contact with Building Officials, Parish Police Jury Officials, Permitting Agencies, and Clerks of Court? This briefing program is geared to acquaint its receiver(s) with certain restrictions/requirements of the registration law. These agencies are essentially the first line of defense in protecting the public from the engineer or land surveyor who may violate code requirements or registration laws and rules. It is unrealistic to expect these agencies to be intimately familiar with the registration laws and rules, but by being generally aware of the existence of registration statutes and rules, as well as some of the more common violations that occur, these agencies may be able to reduce potential violations through timely advice. If that doesn't work, then hopefully they will report such situations to the Board. This is a large undertaking by the Board since there are sixty-four parishes and any number of separate cities and towns to be briefed. The briefings are being accomplished by Board Members, Former-Board Members, the Executive Secretary and by myself. It may take a year to complete the above project, but it has already reaped some dividends.

While the above project is a longer term project, one of a much shorter duration is also ongoing. A letter to industry has been developed which addresses the so called "industrial exemption" statute of the law, La.R.S. 37:701(C). This letter explains the restrictions of the statute and hopefully will help remove some common misconceptions that industry may have regarding the practice of engineering behind their own doors. The letter encourages industry to comply with the statutes and asks that they identify professional engineers who are responsible for engineering within their respective facilities. Response to this letter has been very positive for the most part. It will take approximately four months to complete mailings to a majority of the industrial facilities as we are only mailing about 100 a month.

Should any of you have suggestions that may improve the Board's enforcement education attempts, please let us know.

BOARD MEETING NOTICE

The Louisiana State Board of Registration for Professional Engineers and Land Surveyors will hold its regular meetings at 1055 St. Charles Avenue - Suite 415 New Orleans, La. 70130 on the following dates.

1991

Jan. 21-22	July 22-23
Mar. 25-26	Sept. 23-24
June 3-4	Nov. 11-12

Calendar of Events

We invite all technical and professional organizations to submit their meeting dates for publication in the *LOUISIANA ENGINEER* to: Editor, P. O. Box 2683, Baton Rouge, LA 70821.

January 13-19, 1991

NSPE Winter Meeting, Inter-Continental Hotel
New Orleans, LA

January 21-22, 1991

State Board of Registration Meeting
New Orleans, LA

February 1, 1991

LES Board of Direction Meeting
Bayou Chapter Area

February 17-23, 1991

"Engineers Week"

March 9, 1991

State MATHCOUNTS Competition
Lafayette, LA

March 22, 1991

LES Board of Direction Meeting
North Lake Chapter Area

March 25-26, 1991

State Board of Registration Meeting
New Orleans, LA

April 13, 1991

NCEES Exams (PEs, EITs, LSs)

April 24-27, 1991

LES Awards Meeting
Holiday Inn
Shreveport, LA

April 25-27, 1991

LSPS Annual Convention
Hotel Acadiana
Lafayette, LA

May 3, 1991

National MATHCOUNTS Competition
Washington, D.C.

Shreveport Engineer Wins ACEC National Design Contest...

Quality through Peer Review

Wreyford and Associates, Inc. of Shreveport, Louisiana is the winner of a national logo design contest sponsored by the American Consulting Engineers Council (ACEC). Lauren L. Wreyford submitted the winning design. The logo will be used by ACEC to promote Quality in engineering. ACEC encourages and promotes Quality engineering in member firms through its Peer Review program. This program provides trained peer reviewers to evaluate the operations and Quality control in member firms. This service is available on request to all firms that are members of ACEC.

Peer Review team members are experienced consulting engineers with

fifteen or more years of experience in the design professions including at least five years in management of an ACEC member firm.

Lauren Wreyford is president of Wreyford and Associates, Inc. and was a charter member of the Peer Review training program. He is past chapter president of the Consulting Engineers Council of Louisiana and now serves as vice-president of the Arkansas Academy of Electrical Engineers, University of Arkansas at Fayetteville.

The logo submitted by Mr. Wreyford emphasizes quality and may be used on the letterheads and documents of all ACEC firms that have had a Peer Review.

Various Peer Review Programs

ACEC Organizational Peer Review - seeks to raise the level of a firm's

professional practices by determining its objective, policies, and procedures and then examining its compliance with these policies and procedures. Reviews 6 areas of practice: overall management, business development, financial management, human resources management, project management and professional development. Voluntary program for all design firms.

CASE Technical Peer Review - study of a structural engineering firm's technical practices and procedures. Its purpose is to control the liability exposure of structural engineers. This review is not intended to duplicate ACEC OPR. CASE TPR attempts to point out if and where the firm's practice may be unclear or inconsistent with those broad national guidelines. Voluntary program for all structural engineering firms.



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SERMC Technical Peer Review - very similar to CASE TPR. Mandatory for all DPIC insureds that are members of the SERMC program.

Combination ACEC Organizational and CASE Technical Peer Reviews - unites two programs into one review. Firm has the opportunity to have all 6 areas of management reviewed as well as a more in depth study of their projects relating specifically to their structural practices. Available to all structural engineering firms.

ASFE Organizational Peer Review - an organizational review of practices and procedures. Its focus is on loss abatement. Similar to ACEC; used as a model for ACEC's program. Has been in operation since 1978.

ASCE Organizational Peer Review for Public Agencies - practices and procedures review with design services functions. Reviewers are other government employees with design operations, plus experience, plus reviewer training. ACEC has provided heavy support with manual and reviewer training. The objective is to give all public sector engineering and/or construction agencies a means to improve the management of quality of their engineering services.

ACEC/ASCE Project Peer Review - outgrowth of the 1983 Structural Failures Conference. Draft manual has been completed and waiting approval by both groups. Project Peer Reviews encompass 2 types of reviews: project management review (process) and project design review (technical results). Intended only for projects beyond certain thresholds.

ACEC - American Consulting Engineers Council

ASCE - American Society of Civil Engineers

ASFE - Association of Engineering Firms Practicing In the Geosciences

CASE - Coalition of American Structural Engineers

SERMC - Structural Engineers Risk Management Council

the quality of consulting engineering services. The need became evident as the definition and scope of consulting engineering firms and the marketplace changed. More complex projects and tighter scheduling brought about design failures, and thus increased litigation and increased insurance premiums for professional firms. Clearly, some tool was needed to improve the quality of design services in firms.

In May, 1985, Peer Review was made available to all ACEC members. The program was modeled after the successful program of the Association of Soil and Foundation Engineers (ASFE). By 1987, The American Institute of Architects, The American Society of Civil Engineers, The California Council of Civil Engineers and Land Surveyors, and the National Society of Professional Engineers/Engineers in Private Practice became endorsers of the Program along with two major liability insurance underwriting companies, Design Professionals Insurance Companies (DPIC) and Victor O. Schinnerer, Inc..

Peer Review hit the international market in 1988, when it was introduced to several member countries of The International Federation of Consulting Engineers Council (FIDIC). South Africa and Canada are two countries with Peer Review Programs currently in effect. Interest has been shown from New Zealand, Australia, England and Sri Lanka.

Technical Peer Review was created by The Coalition of American Structural Engineers (CASE) for structural firms that wanted a more specific review of the technical aspects of policies and procedures. Since the CASE Peer Review, The Hazardous Waste Action Coalition (HWAC) has created a technical review for HWAC firms as well. In the future, it is intended that several design disciplines will develop technical review programs to complement the Organizational Peer Review.

In 1989, the Shand-Morahan insurance underwriting company became an endorser of the Peer Review Program. A task force was set up, in 1989,

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History

ACEC Organizational Peer Review Program was developed to improve

to evaluate the Peer Review Program. Recommendations were issued and an operating plan for the next ten years was created.

The program is stronger than ever, is utilized with increasing frequency and continues to receive praise from all participants.

(For more information on the ACEC Peer Review program, ACEC members may call PAM FRYE at 202/347-7474)

ACEC/AGC Approve "Damage For Delay" Language ...

An ACEC/AGC Joint Committee agreed to a draft position implementing one of the principles identified in its jointly published risk assignment brochure. The Associated General Contractors of America (AGC) has become increasingly concerned that many clients are including "no damage for delay" clauses in the general conditions of construction contracts. ACEC Co-chair Ted Lutge (Brown and Caldwell, Walnut Creek, CA) expressed similar concern during the discussion, "Consulting engineers must take the lead with clients to assure that discriminatory provisions are not included in the contracts. We seek fairness for all parties." The position statement will be reviewed by ACEC's contract documents and executive committees before submission to the Board of Directors in May, 1991. For a copy of the proposed joint position, send a self-addressed label to ACEC, 1015 15th Street, N.W., Suite 802, Washington, D.C. 20005, requesting document #NDFD. For more information, contact ACEC's Larry Bory at the same address or call him at (202) 347-7474.

(From *The Last Word*, 11/09/90, the newsletter of the American Consulting Engineers Council)

Earthquake Aftermath: Lessons from Loma Prieta Discover What Worked and What Didn't

A new ACEC video, *Earthquake Aftermath: Lessons from Loma Prieta*, is a powerful depiction on what engineers learned as a result of the devastating earthquake. Discover what worked, what failed and how to design and construct various facilities and systems in the future.

As the country braces for the predicted consequences of the New Madrid Fault in the midwest, now is the time to study the lessons of Loma Prieta. With stunning color visuals, four seismologist experts discuss seismology and faulting, recordings of earthquake motion, *building damage*, masonry, previously strengthened structures and soft stories. In addition,

public policy decisions, reconstruction requirements, proposed *earthquake legislation* and effects of social fabric are covered.

All professionals involved in making critical decisions, such as utility managers, transportation directors, and environmental directors, will benefit from this video. And this program is not just for the western United States,

but for the east and central as well. For them, the question is *not if, rather when*.

The lessons learned aren't restricted to technology. Showing a slide of his trashed office, one panelist regretted his firms' lack of a disaster plan, particularly in communications. "When my clients needed me most, they couldn't reach me. Never again."

ORDER FORM

____ Yes, please send me *Earthquake Aftermath: Lessons From Loma Prieta*. I have enclosed \$125 (\$155 non-member). Mail my video to:

Name: _____ Firm: _____

Address: _____

____ Please send me more information on the American Consulting Engineers Council's publications.

Return this form to: American Consulting Engineers Council, 1015 15th Street, NW, Suite 802, Washington, D.C. 20005, Atten: Publications Department.

DATEC, INC.

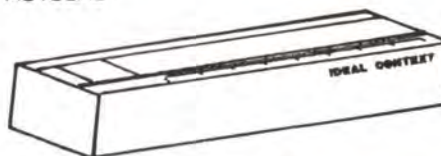
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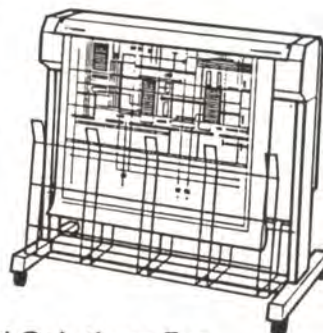


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Roster of Engineering And Surveying Societies

The Inter-Society Relations Committee of the Louisiana Engineering Society is responsible for compiling a roster of chief executive officers for the other engineering and surveying societies located in the state for publication in the *Louisiana Engineer*, on an annual basis. The purposes of this effort are to identify contacts and improve communications among the entire engineering and surveying communities in Louisiana for such inter-society activities as coordination of legislative actions, technical seminars, Engineers' Week seminars, etc. If your engineering and or surveying organization is not listed and you wish to be included in next year's roster, please make that request through the LES at P. O. Box 2683, Baton Rouge, LA 70821.

John J. Bergeron, P.E., Chairman, Inter-Society Relations Committee

American Association of Cost Engineers

Leonard Enger
4683 Lancelot Drive
New Orleans, LA 70127
(504) 734-4684

American Concrete Institute

Donald F. Meyn
Wayne Petersen, P.E.
P. O. Box 8787
Metairie, LA 70011
(504) 486-5595

American Institute of Aeronautics and Astronautics

Carol Webber
P. O. Box 29304
New Orleans, LA 70189

New Orleans Section

Pam Zolcer
755 East Airline Highway
Kenner, LA 70062
(504) 465-0757

American Institute of Plant Engineers

Chapter 67 (New Orleans)
Donna Knezevich
P. O. Box 29304
New Orleans, LA 70129
(504) 257-2445

American Institute of Chemical Engineers

New Orleans Section
Nolan Bodin
Walk Haydel, & Associates, Inc.
600 Carondelet Street
New Orleans, LA 70130
(504) 586-8111

Baton Rouge Section

Armando B. Corripio, P.E.
Department of Chemical Engineering - LSU
Baton Rouge, LA 70803
(504) 388-3061

American Society of Agricultural Engineers

John W. (Bill) Branch
Cooperative Extension Service
Knapp Hall - LSU
Baton Rouge, LA 70803
(504) 388-2229

American Society of Civil Engineers

New Orleans Branch
James Danner, P.E.
210 O'Keefe Ave., Suite 250
New Orleans, LA 70112
(504) 561-1131

Baton Rouge Branch

Darren B. Carriere, P.E.
100 St. James St., Suite J-200
Baton Rouge, LA 70802
(504) 346-0006

Lafayette Branch

Paul L. Miers, P.E.
101 Beechwood Drive
Lafayette, LA 70503
(318) 989-8047

Shreveport Branch

Paul Demopoulos
330 Marshall St., Ste. 700
Shreveport, LA 71110
(318) 221-7117

American Society of Heating, Refrigeration & Air Conditioning Engineers

New Orleans Chapter
Katty LeVasseur
Landis & Gyr Powers, Inc.
30 Veterans Boulevard
Kenner, LA 70062
(504) 466-9300

Baton Rouge Chapter

Joseph R. (Bill) Thibodeaux
8239 West Darryl Drive
Baton Rouge, LA 70815
(504) 927-6140

Shreveport Chapter

Nancy Simonton
P. O. Box 9130
Shreveport, LA 71109
(318) 686-4183

American Society of Mechanical Engineers

Baton Rouge Section
Scott Edwards
3048 Richwood Circle
Baton Rouge, LA 70816
(504) 359-4387

New Orleans Section

Ray Ronquillo
800 Hickory Avenue, Suite 100
Harahan, LA 70123
P. O. Box 10067
Jefferson, LA 70181
(504) 467-8992

American Society of Plumbing Engineers

Ollie French
2720 Metairie Lawn Drive
Metairie, LA 70002
(504) 831-375

American Society of Quality Control

"Red" O'Laughlin
850 South Clearview Parkway
Harahan, LA 70123
(504) 734-4982

American Society of Safety Engineers

David Tortorich
P. O. Box 61610
New Orleans, LA 70116-1610
(504) 831-2900

Consulting Engineers Council of Louisiana, Inc.

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Coyle Engineering Co.
P. O. Box 6177
Bossier City, LA 71171
(318) 746-8987

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208 Milam St.
Shreveport, LA 71101
(318) 221-8638

Illuminating Engineering Society

Baton Rouge Section

Andrea M. Daugherty
Interior Design - Room 401
New Design Building - LSU
Baton Rouge, LA 70803
(504) 388-8422

New Orleans Section

Parker Stewart
8433 Oak Street
New Orleans, LA 70118
(504) 866-1806

**Institute of Electrical and Electronic Engineers
New Orleans Section**

Dr. Russell E. Trahan, Jr.
Department of Electrical Engineering
University of New Orleans
New Orleans, LA 70148
(504) 286-6650

Monroe Sub-Section

Joe Kenwright
319 Bell Avenue
Monroe, LA 71203
(318) 345-1840

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Ken Hymel, P.E.
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Baton Rouge, LA 70898
(504) 923-1641

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4636 Orleans Avenue
New Orleans, LA 70119
(504) 436-9100

Instrument Society of America**New Orleans Section**

Bill Hannon
3337 Maryland Avenue
Kenner, LA 70065
(504) 443-1458

Monroe Section

John Ray Jordan
P. O. Box 13446
Monroe, LA 71213

Louisiana Engineering Foundation

Robert P. Blanche, P.E.
9969 Professional Blvd
Baton Rouge, LA 70809
(504) 292-9901

Louisiana Engineering Society

Kerry J. LaBauve, P.E.
504 Belleau Wood Blvd.
Alexandria, LA 71303
(318) 445-8910

Louisiana Society of Professional Engineers in Civil Service

Richard L. Savoie, P.E.
P. O. Box 94245
Baton Rouge, LA 70804-9245
(504) 379-1384

**Louisiana Society of Professional Surveyors
President**

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440 Rue de LaPlace
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(504) 766-4422

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Adrain Bruley
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New Orleans, LA 70161
(504) 569-3714

National Society of Black Engineers

Karl Queirzerge
P. O. Box 50879
New Orleans, LA 70155
(504) 586-6013

Society of American Military Engineers

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(Code-08)
4400 Dauphine Street
New Orleans, LA 70146
(504) 948-5354

Shreveport Post

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2nd CES, Barksdale Air Force Base
Bossier City, LA 71110
(318) 456-2133

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224 Oakwood Lane
Pineville, LA 71360
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Roger Bourgeois, President
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Houma, LA 70368

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"Red" O'Laughlin
850 S. Clearview Parkway, EF-27
Metairie, LA 70123
(504) 734-4982

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Arnold P. Moore
P. O. Box 149
Pascagoula, MS 39567
(601) 935-4774

Society of Petroleum Engineers

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1 Canal Place, Suite 3100
New Orleans, LA 70130
(504) 523-5581

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1312 Rue Crozat
Baton Rouge, LA 70810
(504) 355-5655

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Greater New Orleans Section**

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Exxon Co. USA
P. O. Box 61707
New Orleans, LA 70161-1707

Shreveport Chapter

Annette Romano
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Mansfield, LA 71052
(318) 429-4300

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Norwela #159**

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Morton Thiokol, Inc.
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Shreveport, LA 71130
(318) 459-5201

Louisiana State University #827

Charles M. Parks - Faculty Advisor
LSU - Department of IE
3128 Ceba Building
Baton Rouge, LA 70803
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New Orleans #74

Gerry Logreco - President
1313 Melody Drive
Metairie, LA 70002
(504) 257-3741

Louisiana Tech University #826

Dileep R. Sule - Faculty Advisor
Department of IE
P. O. Box 10348 Tech Station
Ruston, LA 71272-0046
(318) 257-3394

Baton Rouge #41

Kenneth Lee - President
3128 Ceba Building - LSU
Baton Rouge, LA 70803
(504) 388-5369

National Society of Professional Engineers

1991 WINTER MEETING

Hosted by the Louisiana Engineering Society

January 12-19, 1991

Inter-Continental Hotel

New Orleans, Louisiana

We appreciate your cooperation in forwarding your registration in advance indicating the various functions, meals and other activities you plan to attend during this Winter Meeting. In order to qualify for the discounted early registration fee, ALL fees for registration and ticketed events must be received not later than December 21, 1991. Attendance to some functions will be limited. Please return this registration form and a check, covering your registration fee and the cost of your selected ticketed events, as soon as possible. Please make your check payable to NSPE 1991 WINTER MEETING and mail this registration form and check to:

NSPE 1991 Winter Meeting
c/o Denson Engineers, Inc.
Suite 1401, 225 Baronne Street
New Orleans, LA 70112

PERSONAL INFORMATION

Date _____

☐ Mr. ☐ Mrs. ☐ Ms. ☐ Dr. ☐ Rev. ☐ _____

Name _____
Last First Middle

Registered Professional Engineer ☐ Yes ☐ No

Street Address _____

City/State/Zip _____

Employer _____

Telephone _____

Spouse/Guest Name _____

Nickname(s) _____
(You) (Spouse/Guest)

Special Dietary Requests _____

ARRIVAL DEPARTURE INFORMATION:

Will arrive by
☐ Airline ☐ Automobile ☐ Other _____

Arrival Date _____ Approx. Time _____

Airline & Flight # (if known) _____

Lodging (Indicate Hotel if confirmed) _____

Departure Date _____ Approx. Time _____

PROFESSIONAL DATA: (Please Check)

☐ NSPE Officer ☐ Chapter Officer
☐ National Director ☐ Student Engineer
☐ State Officer ☐ Member
☐ SSEC ☐ Other _____

☐ NSPE Title _____

☐ State Title _____

MEMBERSHIP CLASSIFICATION: (Please Check)

☐ Construction (PEC) ☐ Industry (PEI)
☐ Education (PEE) ☐ Private (PEPP)
☐ Government (PEG)

NSPE Region: ☐ NE ☐ C ☐ SW
☐ SE ☐ NC ☐ W

HOTEL RESERVATION:

Room rates at the Inter-Continental are \$98 single and \$115 double occupancy. A hotel reservation request is enclosed for your convenience. Please note that your room reservation must be made before December 21st, directly to:

Hotel Inter-Continental New Orleans
444 St. Charles Avenue
New Orleans, LA 70130
(504)525-5566

AIRFARE:

Travel Services Group (TSG) is the official travel coordinator for the NSPE 1991 Winter Meeting. Continental has been designated the official airline. Contact TSG at 1-800-336-0227 or Continental at 1-800-468-7022. Be sure to identify your travel request by NSPE's Easy Access Number: EZ1P26.

ADDITIONAL INFORMATION:

For additional information contact the

Winter Meeting Chairman
Charles E. Prewitt, P.E.
(504) 561-1131

NSPE 1991 WINTER MEETING

Name _____
Last First

REGISTRATION	Number	Price	Total	Com Use
MEMBER before Dec 21	_____	\$50	_____	1
MEMBER after Dec 21	_____	\$75	_____	2
SPOUSE before Dec 21	_____	\$30	_____	3
SPOUSE after Dec 21	_____	\$45	_____	4
NAFE(only) before Dec 21	_____	\$25	_____	5
NAFE (only) after Dec 21	_____	\$40	_____	6

TICKETED EVENTS	Number	Price	Total	Com Use
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SUNDAY, JANUARY 13

Spouse/Guest Tour: Longue Vue Gardens				
11:00 am - 6:00 pm	_____	\$23	_____	11
NSPE Welcome Reception				
6:00 pm - 8:00 pm	_____	hosted	_____	12

MONDAY, JANUARY 14

Spouse/Guest Tour: City Tour			
9:00 am - Noon	_____	\$21	_____ 21
PEPP Golf & Dinner			
11:30 am - 8:00 pm	_____	\$60	_____ 22
PEPP Dinner Only			
5:00 pm - 8:00 pm	_____	\$21	_____ 23
PEC/PEE/PEG/PEI Dinner			
7:00 pm - 10:00 pm	_____	\$30	_____ 24

TUESDAY, JANUARY 15

Order of the Engineer Breakfast & Ceremony			
7:15 am - 8:30 am	_____	\$30	_____ 31
Order of the Engineer Breakfast (only)			
7:15 am - 8:30 am	_____	\$15	_____ 32
Spouse/Guest Tour: Plantations & Creole Fare Luncheon			
9:30 am - 4:30 pm	_____	\$48	_____ 33
Joint Practice Division Luncheon			
Noon - 2:00 pm	_____	\$20	_____ 34
PEG Tour: Superdome & Mardi Gras World			
2:00 pm - 6:00 pm	_____	\$26	_____ 35
PEC Dinner: Cajun Party			
7:00 pm - 10:00 pm	_____	\$35	_____ 36
PEPP Dinner			
7:00 pm - 10:00 pm	_____	\$35	_____ 37
State Presidents Dinner			
6:00 pm - 9:00 pm		\$36	_____ 38

TICKETED EVENTS	Number	Price	Total	Com Use
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WEDNESDAY, JANUARY 16

AEEE/NAFE Breakfast			
7:30 am - 9:00 am	_____	\$15	_____ 41
NAFE Seminar/Luncheon			
9:00 am - 5:00 pm	_____	\$75	_____ 42
Spouse/Guest Tour: Breakfast at Brennan's			
8:15 am - 10:30 am	_____	\$42	_____ 43
NSPE Awards Luncheon			
Noon - 2:00 pm	_____	\$20	_____ 44
Spouse/Guest Tour: Garden District			
2:00 - 4:00 pm	_____	\$24	_____ 45
State of the Society Banquet			
6:00 pm/Reception/Cash Bar			
7:00 pm/Dinner		\$38	_____ 46

THURSDAY, JANUARY 17

Regional Breakfast			
7:30 am - 9:00 am	_____	\$15	_____ 51
Executive Club Luncheon			
Noon - 2:00 pm	_____	\$20	_____ 52
Tour: French Quarter			
1:00 pm - 4:00pm	_____	\$22	_____ 53

FRIDAY, JANUARY 18

National Directors/Students Breakfast			
7:30 am - 8:30 am	_____	\$15	_____ 61
Auxiliaries Officers Breakfast			
8:00 am - 9:00 am	_____	\$15	_____ 62
PAC Luncheon			
Noon - 2:00 pm	_____	\$20	_____ 63
Riverboat Cruise & Dinner			
7:00 pm - 10:00 pm		\$50	_____ 64

TOTAL REGISTRATION FEE DUE \$

*Please double check for accuracy and to assure correct addition.
Only U.S. monies accepted.

*Make checks payable to "1991 NSPE Winter Meeting."

*Tickets for meals must be purchased 72 hours in advance due to hotel guarantee requirements.

- o Most dinner prices do not include cocktails.
- o Convention Registration Desk is open Saturday Noon - 4:00 pm; Sunday 10:00 am - 5:30 pm; Monday through Wednesday 7:30 am - 6:00 pm; Thursday through Friday 7:30 am - Noon.
- o Spouse Hospitality Room is open Sunday Noon - 3:00 pm; Monday through Friday 8:00 am - 3:00 pm (except Thursday morning it will be closed); Saturday 8:00 am - Noon.
- o **CANCELLATION POLICY:** Advance registration fees will be refunded if written cancellation is received by December 21, 1990. **No refunds for tours and/or off site functions after December 21, 1990.** For meal functions at the hotel, a cancellation form, available from the Registration Desk, must be filled out 72 hours before the function. All refunds will be mailed following the Convention.
- o If you, as a NAFE attendee, participate in ticketed events other than the Wednesday night State of Society Dinner, the AAEE/NAFE breakfast and the Wednesday NAFE Seminar/Lunch, the full fees for Member apply.

NSPE 1991 WINTER MEETING
Week-At-A-Glance

SATURDAY January 12	SUNDAY January 13	MONDAY January 14	TUESDAY January 15	WEDNESDAY January 16	THURSDAY January 17	FRIDAY January 18	SATURDAY January 19
A.M. PEPP Committees (8am-Noon) NIEMS BoG (8am-5pm)	A.M. Mbrship Comm (7:30-10am) PEPP Committees (8am-Noon) Edumenical Svc (8:30-9:30am) PEE Con Ed Com (8:30-10:30am) Quality Council (9:30am-Noon) Industry Rel Com (10am-Noon) PEE Mbrship Com (10:30am-Noon)	A.M. PEPP BoG (7-11am) PEG BoG (7:30am-5pm) PEE BoG (8am-4:30pm) PEC BoG (8:30am-5pm) PEI BoG (8:30am-5pm) NAFE Committees (9am-5pm) SSEC Cont Ed (10am-Noon) PEPP Golf & Dinner (11:30am-8pm)	A.M. Ed Council (7-8:15am) Order of Engr (7:15-8:30am) PEG Prof Dev Com (7-7:30am) Mtg Sites Select (7am-Noon) PEG BoG (7:30am-Noon) PEPP BoG (8-9am) NSPE 2000 TF (8am-Noon) PEI BoG (8am-5pm) PEE BoG (8am-4:30pm) PEC BoG (8:30am-5pm) Scholarship Ex Com (8:30am-Noon) SSEC (8:30am-5pm) PEPP Topicals (9am-Noon) NAFE Committees (9-11am) NAFE Bd of Dir (10am-5pm)	A.M. Ed Council (7-8:15am) AAEE/NAFE Bklt (7:30-9am) PEPP BoG (7:30am-Noon) PEG BoG (7:30am-Noon) St Pres Conf (8am-Noon) PEI BoG (8:30am-Noon) PEC BoG (8:30am-Noon) Mathcounts Vol (8am-5pm) CPD Committee (8:30am-Noon) Ed Fd Trustees (8:30-Noon) NAFE Mtg & Smnr (9am-5pm)	A.M. Student Hosp Rm (7am-11pm) Regional Bkts (7:30-9:15am) NAFE Const Smnr (8am-5pm) Aux Gen Mtg (8:30-11am) NSPE Bd of Dir (9:15am-Noon) Student Conf (9:30am-5:30pm)	A.M. Student Hosp Rm (7am-11pm) Students/Natl Dir Breakfast (7:30-8:30am) Past Natl Pres Bklt w/Students (7:30-8:30am) Past Natl Pres Mtg (8:30-10:30am) Aux Officers Bklt (8-9am) NSPE Bd of Dir (8:30am-4:30pm) Student Conf (8:30am-5:30pm)	A.M. Student Hosp Rm (8am-3pm) NSPE Bd of Dir (8am-Noon) Student Conf (8:30am-12:30pm)
P.M. PEPP Ex Bd (Noon-5:30pm) PEG Plan/Opts (4-6pm)	P.M. PEC/PEE/PEG/PEI Ex Bds (1-4pm) PEPP Seminar (1-3pm) Cust Svc TOM (1-5pm) PEPP BoG (3-5pm) Prac VP's (4:30-6pm)	P.M. SSEC (1-5pm)	P.M. Scholarship BoG (1-5pm) St Pres Conf (2-5pm) PEPP Caucuses (2-5pm) PEG Tour (2-6pm)	P.M. L&GA (Noon-5pm) NSPE Metric Convs (12:30-2pm) Aux Nominatg(1-2pm) PEG Emp Rel(1-3pm) Aux Bd (2-4:30pm) NSPE Ex Comm (2-5pm) Student Hosp Rm (3-11pm)	P.M. New Prod/Svc Dvl (Noon-2pm) Pre-College Guide (Noon-5pm) PAC Trustees (Noon-5pm) NSPE Nominating (12:30-5pm)		
			LUNCH Pract Div Lunch (Noon-2pm)	LUNCH NSPE Awards Lunch (Noon-2pm) PEI Ex Bd Lunch (Noon-2pm) NAFE Luncheon (12:15pm-1:30pm)	LUNCH NAFE Luncheon (12:20-1:15pm) Ex Club Lunch (Noon-2pm)	LUNCH PAC Luncheon (Noon-2pm) Student Luncheon (Noon-1:30pm)	
	DINNER Welcome Recept (6-7:30pm) HQ Auto Comm (7:30-8:30pm)	DINNER PEPP Golf Dinner Only (5-8pm) PEC/PEE/PEG/PEI Dinner (7-10pm)	DINNER St Pres Dinner (6-9pm) PEPP Dinner (7-10pm) PEC Dinner (7-10pm)	DINNER State of Society Recept (6-7pm) Dinner (7-10pm)	DINNER Past Natl Presidents Dinner (6-9:30pm)	DINNER Fun Night (7-10pm)	DINNER NIEE Dinner** (6:30-8:30pm)

SPECIAL EVENTS HIGHLIGHTS

Welcome to Louisiana

The Louisiana Engineering Society and the New Orleans Chapter invite all members to attend the NSPE 1991 Winter Meeting in the unique city of New Orleans. The Local Arrangements Committee is looking forward to serving as your host for your visit to the Crescent City, a city of great music and great food. It is a city with its eye on the 21st century and its heart in the 19th century, and it manages to beautifully blend the old and the new. During your stay in New Orleans you will find there are many things to do and see.

The Committee wants to make your stay in New Orleans an enjoyable experience. If you have special needs or would like additional information, please write or call the committee chairman, Charles E. Prewitt, P.E. His address and telephone number are listed on the Registration Form.

MEETING HIGHLIGHTS

Sunday, January 13

- o **Ecumenical Service**
(8:30 - 9:30 a.m.) All members and their families are welcome to attend this nondenominational service in the hotel.
- o **PEPP Seminar: Negotiating With the Government**
(1:00 - 3:00 p.m.) A mock telephone interview between the Corps of Engineers and a consulting engineering firm that will highlight information the Corps is looking for in a potential client.
- o **Spouse/Guest Tour: Longue Vue House and Gardens and the Historic Pitot House**
(1:30 - 4:30 p.m.) Visit the Longue Vue House and Gardens which blends the old with the new, the classical with the whimsical, the exquisite with the inviting. Then on to the Pitot House built in the last quarter of the 18th century, it is one of the few West Indies style houses in New Orleans.
- o **NSPE Welcoming Reception**
(6:00 - 8:00 p.m.) Enjoy a taste of Mardi Gras as we kick off the 1991 Winter Meeting with the traditional Sunday evening Welcome Reception. Hors d'oeuvres will be hosted by the Local Arrangements Committee at the Hotel Inter-Continental. After the reception, savor some of the world famous cuisine of New Orleans with dinner on your own at one of the city's many fine restaurants.

Monday, January 14

- o **Spouse/Guest Tour: City Tour**
(9:00 a.m. - Noon) Begin your week in New Orleans with a history-filled ride through the city. Your ride will take you through the Vieux Carre (the French Quarter), through the City Park with its curving bayou, along St. Charles Avenue with its graceful mansions, and into the Garden District.
- o **PEPP Open Golf Tournament**
(11:30 a.m. - 8:00 p.m.) Join fellow golfers for golfing at one of New Orleans' finest golf courses. Transportation provided.
- o **PEC/PEE/PEG/PEI Dinner**
(7:00 - 10:00 p.m.) Four practice divisions will enjoy an evening of dining accented by a panoramic view of the city and the Mississippi River from the Petroleum Club of New Orleans situated atop the Energy Centre.

Tuesday, January 15

- o **Order of the Engineer Ceremony and Breakfast**
(7:30 - 9:30 a.m.) The Engineer's Ring will be presented to new members of the Order of the Engineer in an induction ceremony at this breakfast. Current members of the Order are invited to attend in support of the new members.
- o **Spouse/Guest Tour: Plantations and Creole Fare Luncheon**
(9:30 a.m. - 4:30 p.m.) The excitement, beauty and drama of the Old South will come alive for you as you visit two of Louisiana's plantations from the past. Colonial architectural excellence is found at Bogache, the "Shady Retreat," built in 1801 by a wealthy Frenchman for his 14 year old bride. Then dine at Nottoway, the architectural dream of John Hampton Randolph. Glide through the famous White Ballroom while visiting the 64 rooms of the South's largest plantation home.
- o **Joint Practice Division Awards Luncheon**
(Noon - 2:00 p.m.) Armand V. Feigenbaum, P.E., will be the featured speaker at this joint practice division luncheon. Recipients of the New Product Awards and the NIEMS Distinguished Service Award will be recognized.

- o **State Presidents Conference**
(Tuesday 2:00 - 5:00 p.m. and Wednesday 8:00 a.m. - Noon) State presidents and NSPE leaders will discuss major issues affecting the profession and the Society.
- o **PEG Tour: The Louisiana Superdome and Mardi Gras World**
(2:00 - 6:00 p.m.) Visit the Superdome, world's largest (in diameter, 680 feet) building, which rises 27 stories. The next stop will take you to Blaine Kern's Mardi Gras World, home of the largest float building firm in the world. Building and staging over 38 parades during the Mardi Gras season. Refreshments will be served.
- o **State Presidents Dinner**
(6:00 - 9:00 p.m.) This dinner at the Hotel Inter-Continental will provide state presidents and NSPE Regional Vice Presidents an additional opportunity to share regional concerns and ideas.
- o **PEC Dinner: Michaul's Cajun Fais Do-Do**
(7:00 - 10:00 p.m.) Fais Do-Do means "make sleep" and is what big Cajuns told their baby Cajuns before one of their rollicking parties. Two-stepping couples, a feast of traditional Cajun foods, and plenty to drink has become the hallmark of the Fais Do-Do. PEC members and guests will experience authentic Cajun music, culture and food during this fun-filled evening.
- o **PEPP Dinner: Plimssol Club**
(7:00 - 10:00 p.m.) Experience the charm, elegance, and the impeccable cuisine and service of the Plimssol Club. Located on the 30th floor of the New Orleans World Trade Center, the Club offers a breathtaking view of the city, especially at night.

Wednesday, January 16

- o **AAEE/NAFE Breakfast**
(7:30 - 9:00 a.m.) Participants will hear an update on Specialty Certification.
- o **Spouse/Guest Tour: Breakfast at Brennans**
(8:15 - 10:30 a.m.) A visit to the Crescent City is not complete without this truly unforgettable New Orleans tradition. Turn back the clock to the time when the French aristocrats dined in leisurely elegance, when an unhurried breakfast was served in the patio amidst the soft rustle of exotic plants.
- o **NSPE Awards Luncheon**
(Noon - 2:00 p.m.) Recipients of the NSPE Outstanding Engineering Achievement Awards will be recognized at this luncheon to be held at the Hotel Inter-Continental.
- o **NAFE Meeting & Seminar**
(9:00 a.m. - 5:30 p.m.) An all-day seminar featuring presentations by professional engineers on current issues critical to the discipline of forensic engineering.
- o **Spouse/Guest Tour: The Garden District**
(2:00 - 4:00 p.m.) After your leisurely breakfast at Brennans, enjoy a relaxing ride to the Garden District, former sugar plantation of Jacques Livaudais and a residential haven of pre-Civil War architecture. You will visit two historic private homes opened especially for our group.
- o **State of the Society Reception and Banquet**
(6:00 - 7:00 p.m.) A cash bar reception at the Hotel Inter-Continental precedes the banquet.
(7:00 - 10:00 p.m.) This important event will feature the State of the Society address by NSPE President Neil A. Norman, P.E.

Thursday, January 17

- o **Regional Breakfast Meetings**
(7:30 - 9:00 a.m.) Take advantage of the opportunity to share issues of common interest with neighboring colleagues from your region at one of the Regional Breakfast Meetings.
- o **National Auxiliaries General Meeting**
(8:30 - 11:30 a.m.) All spouses are welcome to attend the general membership meeting of the NSPE Auxiliaries. Officers for 1990/91 will be installed and Most Active Auxiliaries awards will be recognized during the meeting.
- o **Executive Club Luncheon**
(Noon - 2:00 p.m.) This luncheon provides an opportunity for past national officers to continue their vital role as leaders of the Society.
- o **Spouse/Guest Tour: The French Quarter Strolling Tour and Visit to Hermann Grima House**
(1:00 p.m. - 4:00 p.m.) Journey under balustrades of Spanish wrought iron, through French portecochers into fountains Creole gardens. Learn the lore of the oldest section of the city. You'll love Vieux Carre with all of its Old World shops and buildings.

Friday, January 18

- o **National Directors/Students Breakfast**
(7:30 - 8:30 a.m.) NSPE National Directors are invited to join the Student Conference attendees for a joint breakfast before the Board Meeting begins. This breakfast will be the only opportunity students have to meet and talk with NSPE leadership.
- o **National Auxiliaries Officers Breakfast**
(8:00 - 9:00 a.m.) This breakfast meeting affords past and present national officers of the Auxiliaries a chance to visit with one another.

- o **PAC Luncheon**
(Noon - 2:00 p.m.) A prominent Federal legislator will be the featured speaker for this luncheon program.
- o **Fun Night: Dinner, Gambling and Jazz on the Mississippi River**
(7:00 - 10:00 p.m.) Experience an exciting evening on the Riverboat Cajun Queen. The Cajun Queen is an authentic reproduction of a late 19th-century passenger vessel. This ride down one of the world's mightiest rivers will present New Orleans in a unique way.

New Orleans, The Crescent City

New Orleans is a special city, often regarded as the least "American" of any in the United States. It is best known for its regional cuisine, remarkable amalgam of architectural styles, and boisterous Mardi Gras festivities, and as the birthplace of jazz music.

Known to generations as the Crescent City, and more recently as the "Big Easy," New Orleans is a city whose magical names conjure up images of a Gallic-Hispanic and Caribbean heritage in a predominantly Anglo-Saxon culture, an amalgamation that forms a unique city and people. It was founded by the French on the banks of the Mississippi River in 1718, taken over by the Spanish in 1762, regained by Napoleon in 1800, and sold to the United States in 1803.

During most of its 272 years of history, New Orleans has survived yellow fever and cholera epidemics, Indian wars, slave uprisings, economic depressions, revolts, conspiracies, hurricanes, floods, the American and French revolutions, the Civil War and Reconstruction, racial riots, and political corruption. Today its jazz, Vieux Carre (the French Quarter), cuisine, Mardi Gras, and port are known worldwide.

New Orleans is a city whose mystique has captured the imaginations of generations of writers and motion picture and television producers, a city of tourists, beignets (French doughnuts), Creoles, and aboveground cemetery tombs. It could be considered the most northern Caribbean city. It has been characterized as a cross between Port-au-Prince, Haiti, and Paterson, New Jersey, with a culture not unlike that of Genoa, Marseilles, Beirut, or Egyptian Alexandria.

Hotel Inter-Continental

The Hotel Inter-Continental is located on historic St. Charles Avenue in the city's central business and financial district, yet only a short walk from the famous French Quarter.

The Hotel offers several dining alternatives: *Les Continents* features elegant dining with international and American cuisine; *The Veranda* offers delightful informal all-day dining with a buffet or a la carte menu featuring Southern specialties; and *Pete's Pub* is a 30's re-creation offering hearty drinks and "Pub" snacks.

Engineers and Organization

By

DR. IRA N. HOLLIS

President of the American Society of Mechanical Engineers.

Delivered Before the Society, January 13, 1917

It was suggested by members of the Society that I might say something tonight to you as engineers on the subject of engineering societies and in general of those organizations that tend to give the profession more adequate representation before the public. There are some sides of engineering that rarely have a hearing. You know as well as I that for a long time we have been classified as among the utilities, as contrasted with the higher things of life, the utilities that enable men to live on this planet, but nevertheless utilities.

Some writer has said that no inspiring emotions are ever derived from a machine and that no inspiring thought can come from a utility. That forms a fair text for engineers, particularly as there is no truth whatever in it. It is a one sided statement from literary men who have no conception of the ideals and thoughts of those who are educated for applied science. For twenty years I was associated very intimately with the great faculty in the oldest university of this country, and I listened from time to time to the doctrine that applied science should not be taught in a university for general education. It seems to me then that the engineer will never come to his own until he is in a position to speak for himself, until he has learned that power of expression which will enable him to state clearly and adequately his own ideals. The truth of the matter is that there is much inspiring emotion from a machine and from every invention, no matter what the reason for its development may have been.

The modern writers have written more or less satisfactorily regarding engineering. One, Rudyard Kipling, has appealed to the profession through some of his poems. McAndrews' hymn alone will refute the claim that there is no inspiring emotion from a machine. Another writer, Mr. H. G. Wells, has approached the subject of engineering in his book, "The World Set Free," and he has made a sound statement in his

first sentence, when he says, "The history of mankind is the history of the attainment to external power." I want to call your attention to the significance of this statement in relation to your profession. The book itself is a piece of fiction, representing the world set free by mechanical and chemical invention; nevertheless, the prologue expresses the plain truth. The word "history" here is used in the sense of the evolution or the growth of man on this planet. It is far more than the record of wars and political changes, as it means man's development from the time the first creature who took a club in his hands began that long process by which human reason has grown to its present state. What does he mean by external power? He explains it somewhat in the prologue, yet in such a way as to prove that he does not understand the full force of his finding. External power may mean energy wholly external to man, or it may mean the appliances that enable man to use his own energy more effectively.

Invention may be classified into three types. The first type reaches far back into the history of man. It involves the use of his energy without any external advantage whatever. It enables him to put into a moving body, such as a hammer or club, the kinetic energy derived from his muscular strength and to deliver that energy at some point where it may have a maximum effect. The sword is an example, and all kinds of hand tools which are constantly being invented today belong to the same power. The club which has been mentioned afforded man a tool or a weapon for offense and defense and thus enabled him to replace his claws and teeth in defense and attack. When he took a club in his hand, he had crossed that shadowy zone separating the creature of instinct from the being with the potential power of reasoning.

The second type of invention is that which does not offer a man power outside of himself, but gives him an ad-

vantage by the reduction of external resistance. A man has a certain amount of energy within his own body, and the effect may be increased by reducing friction, as for example with the roller carrying a weight. The wheelbarrow, for instance, is a very good example of reduction in external resistance. Before its invention, two men were required to carry a burden. Whoever replaced the man in front by a wheel enabled, by that invention, one man to do as much work as two previously had been able to do; not by supplying external energy, but by reducing external friction. The wheelbarrow, therefore, was a great labor-saving invention. If any of you have read Laird's book on "The Monuments of Ninevah," you will recall therein some pictures of bas-reliefs found beneath the sand that buried the ancient city. One of them represents the transportation of a stone lion, which was to be placed at the side of an entrance to the library. It is a bas-relief, very lively in character, indicating how heavy weights were transported from place to place. The stone is placed on a sled with two runners beneath which are rollers similar to those used for moving modern houses. There are the rollers coming out at the rear, and men hurrying forward to place them under the incline at the front of the sled. Two men are at the rear of the sled with levers to jolt it for the reduction of initial friction; wrapped around the stone are great ropes which lead forward, divided into many Y's, so that a thousand men could be placed on the drag. A boatswain standing on the front end of the sled to direct the work completes a very good picture of the whole process. The work was wholly manual; no external power being supplied by any means. Someone has credited DaVinci with the invention of the wheelbarrow, but I believe this to be an error, inasmuch as the wheel and the roller were common many centuries before DaVinci was born.

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The third type of energy is perhaps what Mr. Wells had in his mind when he referred to external power. It represents what in modern engineering is called the prime mover and supplies energy wholly external to man's body. The first example is to be found in the use of a sail, although undoubtedly previous to the sail domesticated animals had been employed in transportation. The kinetic energy of moving air was applied to the propulsion of boats and subsequently to wind-mills. It is not necessary here to go into detail, for every engineer knows the progress of invention to the modern steam-engine. Between the sail and the steam engines would come the water wheels of all types and the explosive engine, now represented by the gasoline and oil engine for all kinds of purposes. The steam-engine, however, is the culmination of a period during which comparatively little advance was made. In 1760, transportation on land was nearly as crude as it had been in the time of Christ. Transportation at sea had been advanced by the improvement in ships and sail-carrying capacity. Watt's improvement of the steam-engine thus made a complete change in the outlook towards the emancipation of mankind and the possibility of freeing him from hard toil.

That sentence of Mr. Wells' may be stated in a different way by saying that the history of mankind is the history of engineering. In this sense, engineering is the application of science to the uses of mankind for the purpose of enabling him to live under the hard conditions imposed by nature on our planet. It was the first of the sciences, although the name itself did not come into use until the nineteenth century. As a matter of fact, every effort of man towards his physical welfare may be classified under engineering until we come to the science of preventive medicine, and even that involves a large amount of engineering. Every instrument, every utensil, every weapon however simple or complicated that we have today was invented at some time in the history of man; and external power which has been of very slow growth from the beginning of man on the planet to the dawn of history and again from the dawn of history to James Watt has been enormously accelerated by the use of energy stored in the ground or found in the sun's rays and in water. Consequently, with a proper understanding of the word "history" and of the word "engineering," Mr. Wells would have been right in saying that the history of mankind on this planet is a history of engineering.

I might go further by saying that the use of external power as we now understand it means an accelerated growth. Is it fanciful for an engineer to believe that if reasoning power began to develop with the invention of the first weapon that man took into his

hands, the spiritual power may have a like development in the future of steam and water powers? The instrument of defense or offense used by man in the primitive state separated him entirely from the animal that had only its teeth and claws to maintain its place in nature. It did not, however, relieve him from the hard daily toil necessary to maintain life. The proper understanding of external power and energy may be the means through coal and the sun's rays of relieving man from many of the hard conditions of life, and thus open out a development of which we have no conception. The human family will have ideals and successes that are entirely beyond our imagination.

Is it true that no emotion is to be found in a machine? Emotion is more or less based on an appeal to the imagination and in that sense every invention is a fruitful appeal to the emotions. One of our Massachusetts writers, Gerald Lee, has called attention to this side of engineering. One can not look at a locomotive hauling a train of cars at high speed without emotion. It carries the hopes and fears of many; and beyond it, if one has the power to see, lies the whole history of mechanical invention. The average writer would see only a heterogeneous mass of metal composed of what the engineer would call the cylinders, the boiler, the furnace, the drivers and the frame, but he would be blind to the elements that go to make the machine. The truth of the matter is that writers are in most cases very one-sided in their education and experience, just as many engineers are one-sided. The only difference between the two classes of men is that the engineer's attention is often called to literature, while the writer's attention is rarely or never called to invention and its products. In the locomotive lies the thought and the toil of many thousands who have brought the machine to its perfection and it is, therefore, a picture of man's struggle on this planet. Mr. Lee has called attention to Millet's "Angelus," where we see two people standing on a plowed field with their heads bowed reverently at the sound of the bells from the shadowy towers beyond the fields. Any man who looks at that painting and sees nothing but a splash of color representing this man and woman upon a plowed field is blind, because there is in the picture the whole struggle of humanity. After all, we derive our lives from the soil and we go back to the soil, and these two people represent, as one looks on the picture, the hard struggle of life that has been going on for centuries and that must go on if we are to maintain our place. It also represents the futility of life. These people have come and will go, like the leaves in the spring and in the fall. A plow lying in a field represents, to one who has the capacity to see, the same futility of life

and the same sadness that comes over one in looking at Millet's "Angelus." How can any human being, whether he be non-literary or literary, look at any great invention, whether it be a painting or a plow, without an inspiring emotion?

Our trouble as engineers springs out of the fact that we never have been quite willing to learn to express ourselves. We have been so busy in developing all kinds of invention towards the well-being of mankind, and, as this war proves, towards the destruction of mankind, that we have forgotten some of those things that make this world better to live in. Comfort is not always best for men, especially if it tends to promote a worship of material success. Our own profession, if approached from the point of view of service and unselfish devotion to mankind, has in it all the capacity for inspiring emotion that is desired. But when careless and reckless of the finer things, it has also the capacity to enslave. The engineer has been used in the great war for the construction of a Frankenstein trampling the life out of Europe. It may be that the cessation of all wars will depend on him.

Was the invention of the steam engine the opening of a new day to mankind; was it the sun rising over a world set free, or was it the beginning of a new slavery? Are we following it as poor lame humanity to that land promised to the children of Hamelin when they followed the pied piper to the hill, or are we the cripple left behind? I often think of the lame boy's mournful complaint, after his companions had gone, and I am tempted to quote this little poem because it carries with it the suggestion that men who have the capacity to see beyond the picture on the canvas or the locomotive on the track see visions of something better for mankind. You will all remember that in this poem Mr. Browning has painted the revenge of the pied piper who summoned the children away to follow his reed pipe, after the city fathers had refused to pay him for getting rid of the rats. That flute must have sounded thin and reedy and yet to the children it carried a different story. The little boy who was lame told what he heard and what was promised him in this poor music. Here it is:

"One was lame,
And could not dance the whole of
the way;
And in the after years if you would
blame
His sadness, he was used to say,—
'It's dull in our town since my
playmates left!'
I can't forget that I'm bereft
Of all the pleasant sights they see,
Which the Piper also promised me.
For he led us, he said, to a joyous
land,
Joining the town and just at hand,
Where waters gushed and fruit

trees grew,
 And flowers put forth a fairer hue,
 And everything was strange and
 new;
 The sparrows were brighter than
 peacocks here,
 And their dogs outran our fallow
 deer,
 And honey bees had lost their stings,
 And horses were born with eagles'
 wings:
 And just as I became assured
 My lame foot would be speedily
 cured,
 The music stopped and I stood still,
 And found myself outside the hill,
 Left alone against my will,
 To go now limping as before,
 And never hear of that country
 more!" "

I think of James Watt as the pied piper, the music of whose wheels is summoning all mankind to the world set free, if only humanity does not limp too much, if only the engineer can learn the power to make the way possible for all who follow.

A writer has often the wrong impression of the engineer. While his profession is that under which our manufacturing is carried on and under which an enormous amount of money is made from the sale of manufactured articles, nevertheless most invention has something of an unselfish purpose. Even the man who is counting the dollars he is going to gain from some patent he has taken out really has in his heart a desire to benefit mankind. Behind the dollar is an element of unselfishness; exactly the same as in the case of the Jesuits who explored the Great Lakes and the Mississippi River. They had a hope of saving mankind and many of them thus went to obscure and miserable deaths from a high motive. Our own country is one of ideals wherein most individuals will sink private interest for the public good. I remember many years ago in Cambridge a professor who had been sent over as exchange lecturer. He had been the leader of the imperial orchestra in Berlin and he was giving a course of lectures in Harvard. He had previously visited the United States. I asked him one evening what struck him most forcibly about the United States. He answered, "I can answer that very quickly, because it is a thing that has surprised me. I had always heard that America was dollar-mad, or, as we call it in Europe, the country of the dollar; but I have found that the American people are fundamentally a people of great ideals and I have had some examples of that. Some years ago I was in Madison, Wisconsin, during the celebration of a football victory and the streets were full of men. I think some of them had been drinking. It was a long towards midnight, and the town was in a wild uproar over the success of

the local university. Suddenly a door opened in a building and fifty or sixty girls who had been attending a lecture came walking down the street. At once the drinking men were pushed to the rear, the noise ceased, until these ladies had been permitted to pass. After they had gone, the uproar began again." "No country," he said, "but one of ideals could have shown such respect for women."

To come back now to what we have been talking about in relation to the engineer and his ideals, what is the best method by which the engineer may acquire the power of expression which will place his profession adequately before our people? I know of only one way and that is by organization, in which men will help one another, not only to commercial success, but to that interchange of views that will enable them to express themselves. That organization can take two or three directions. Every engineer who is eligible ought to belong to a national engineering society. He owes it to his country and to his profession. He ought also to belong to a local society of engineers as a means of promoting that good fellowship and helpfulness without which the profession can not succeed in doing for a community what is within its power to do. Every man who is eligible to membership in the society which I am representing here should belong to it, not because he will get fifteen dollars' worth of benefit for the fifteen dollars dues, but because he is thereby giving the whole profession the power of serving the country, and of representing to the country not only that the profession has power to serve, but that it is willing to serve. I am not asking you gentlemen to join the National Society of Mechanical Engineers, but to join one of the engineering societies; the Electrical, the Mining, or the Civil Engineering. They all have the same motive, that is the promotion of what is to the good of the country and to the good of the engineering profession. Hence the message that I bring tonight, if I bring any at all, is that every man here owes it to his community to pay his tax towards the possibility of better service. The future of democracy depends upon us as it does upon all other individuals of our country. Perhaps it depends more upon us than upon the law-makers, because, after all, it is our profession that, along with preventive medicine, constitutes the constructive forces of modern life.

Sections of the national societies do not interfere in the slightest with the growth of a local engineering society. An excellent illustration of that is afforded by the Boston Society of Civil Engineers, where the sections of the Electrical Engineers and the Mechanical Engineers have flourished for years. The Boston Society has continued to grow and, if I am not

incorrect in my figures, it has gone from 600 members to 1,000 members since the section of the Mechanical Engineers was established in Boston. There is absolutely no conflict between the local section of a national society and a local engineering society. They can all work together under reasonable conditions. It is not at all necessary that an organization should be exactly the same in every locality. I can well imagine that the conditions would influence the organization and the sections, and there is no reason why New Orleans should have exactly the same system as Chicago or Detroit.

There is one thing about all this, however. We must remember that no local section can speak for an entire society any more than it can speak with authority for the individuals in its own section. We are prevented by our own constitution from taking part in partisan politics, and that seems wise, because a scientific society would lose its character if it went too much into politics. We are permitted, however, to go into public activities which the engineering profession can assist. If I were called upon to give an exact definition of the line which should be drawn, I should encourage local societies to construe their privilege liberally, with the understanding that no body of men can speak for the entire society, nor use the name of the society unless a referendum has been sent out throughout the country for the purpose of getting the views of every member. The boundary that seems on the whole the best is that which includes all subjects in which a conclusion can be reached by scientific investigation as the province of national societies and their sections. Any subject that can not be developed by investigation and that can not be determined by scientific methods is questionable. For instance, no section of our society should step in between the employers and the employees in any industry, inasmuch as the labor question involves many things that can not be worked out by investigation, such as would be proper to a scientific society. In the matter of standards, however, which involve conventional methods necessary to enable us to carry on business, our society can perform a real public service. The boiler code is one instance of that. Every variety of organization is possible, under a very free construction of our constitution and bylaws, if we only use ordinary good sense. I would advise any section that has some discussion that my involve political questions to write to the Council for information and advice. Let us all remember however, that we are working together for the continuance of democracy and towards the greatness of our country.

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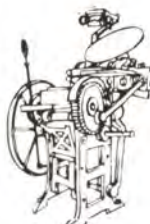
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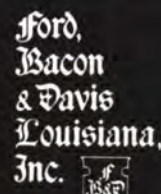
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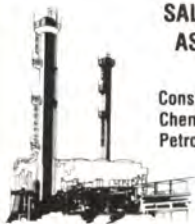
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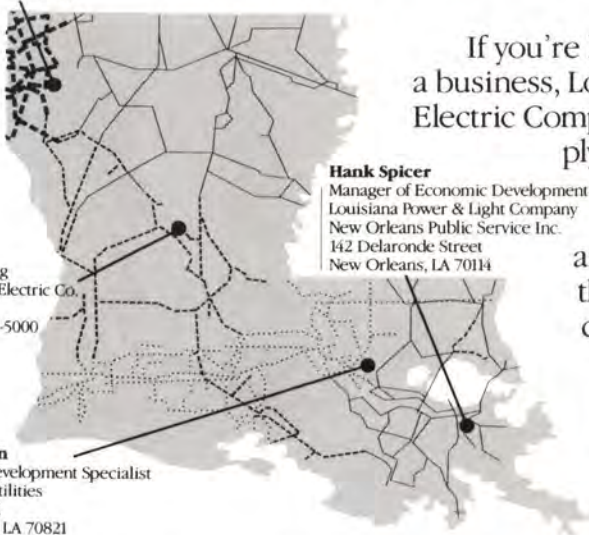
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