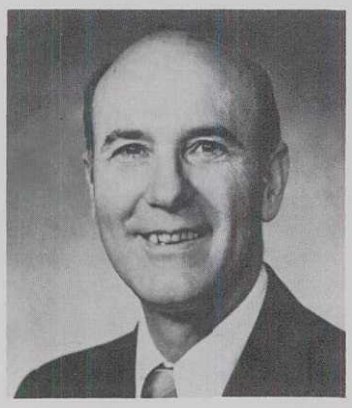
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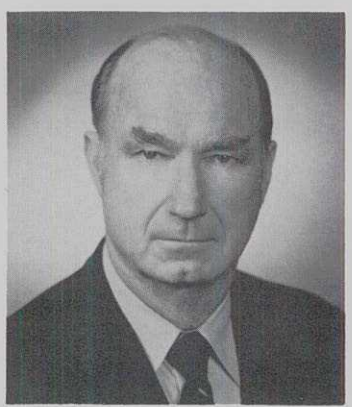
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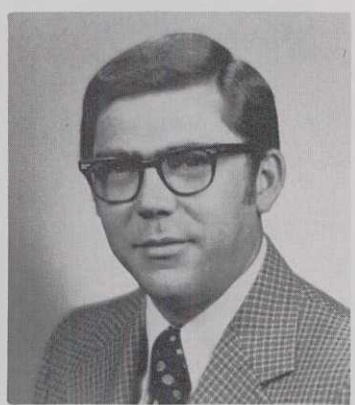
Andrew M. Moore



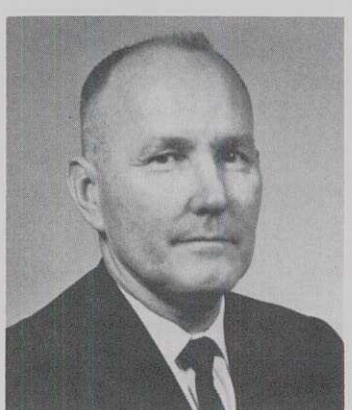
Dr. Frank W. Macdonald



Roy Sessums



E. Raymond Des Ormeaux



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Irwin R. Schneider

LES AWARDS

The days of depending on one fuel for Louisiana's power plants are over.

Tomorrow's needs will require a number of different fuels.

We're modifying and building plants to use those fuels now.

No longer can Louisiana's power plants depend on natural gas as the primary fuel for the future. The tight supply and increasing restrictions on natural gas have made its future use doubtful. So we are turning to other fuels, and we are modifying and constructing our power plants to use these other fuels and still meet environmental protection standards.

Some of us have chosen nuclear energy. Some of us have chosen low-sulphur oil. Some of us have chosen low-sulphur coal. And some have chosen all of these.

Whichever fuels are chosen, one fact is clear: it is costing much more to prepare for your future than ever before in history. All the alternatives are much more expensive than in the past. But without these alternatives, Louisiana's future would gradually dim as power supplies fall short of the need.

Each of your Louisiana investor-owned electric companies is determined to keep Louisiana bright and powerful. We are laying the plans and building the plants and other facilities to do just that.

We think that's what our customers want. And we're working to satisfy that want.

Louisiana Investor-Owned Electric Companies

Central Louisiana Electric Company • Gulf States Utilities Company • Louisiana Power & Light Company
New Orleans Public Service Inc. • Southwestern Electric Power Company

LES ANNUAL CONVENTION
April 19-20, 1974
Rowntowner Motor Inn Lafayette, La.

PROGRAM

FRIDAY, APRIL 19

10:00 A.M. - 5:00 P.M.
Registration—Hotel Lobby

1:15 P.M.
Speaker: E. L. "Bubba" Henry
Subject: CC73

2:15 P.M.
Coffee Break

2:30 P.M.
Introduction of Students

2:40 P.M.

PRESENTATION OF STUDENT PAPERS

Louisiana Tech University

Louisiana State University

Tulane University

University of Southwestern Louisiana

Southern University

4:00 P.M.

LES COMMITTEE MEETINGS

7:00 P.M.
Crawfish Boil

SATURDAY, APRIL 20

8:00 A.M.

PRACTICE SECTION MEETINGS

Engineers in Government
Engineers in Industry
Engineers in Education
Engineers in Construction
Engineers in Private Practice

9:00 A.M.

ALL PRACTICE SESSIONS

Speaker: Louis J. Michot, State Superintendent of Education
Subject: "Career Education and How It Affects Engineering"

9:45 A.M.
Coffee Break

10:00 A.M.

PANEL DISCUSSION

Art DeFraites, Legislative Committee Chairman, to moderate and outline the 1974 LES Legislative package.

Joe Keogh, attorney and lobbyist, to discuss lobbying aspects of the LES Legislative Program.

Waldemar S. Nelson, member of State Board of Registration, to give the State Board's evaluation of the program.

Bob Crisler, State Legislator, to give his and other legislators' probable reaction to the LES program.

Questions and Answers

12:00 Noon
Social Period

12:30 P.M.

LES AWARDS LUNCHEON

2:00 P.M.
General Society Business Meeting

2:30 P.M.

LES Board of Direction Meeting

LADIES ACTIVITIES

Friday, April 19

1:30 - 4:00 P.M.
Tour—Millie McKnight's Antiques & Arts (Broussard)

Saturday, April 20

9:30 - 10:00 A.M.
Hospitality Period

10:00 A.M.
Ladies Auxiliary Advisory Committee Meeting



COVER

Each year, LES recognizes outstanding engineers for their achievements. The complete story begins on Page 6.

CONTENTS

LES Annual Convention Program 3
Presidential Privilege 5
LES Awards 6
State Board of Registration Elects New Officers 11
Results on LES Legislative Survey 12
"Engineers — Our Greatest Energy Resource" 13
Potpourri 15
Engineers Week Chapter Activities 16
EngiNEWS 18

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Presidential Privilege



LES President
Dr. J. J. Thigpen

The beginning of the regular session of the Legislature in May brings us face to face with probably the most important single project of the year—passage of the Legislative program of the Louisiana Engineering Society. Those who have followed the formation of this program know that it is the result of much work, thought, and effort by Legislative Committee Chairman Art DeFraites, his Legislative Committee and others who worked with him, and, finally, serious consideration by the Board of Direction of the Louisiana Engineering Society.

While in the formative stage the program was given wide publicity both in the LOUISIANA ENGINEER and in mailings to all engineering and interested organizations for which information was available. Comments and suggestions were requested and the answers that were received had a marked influence on the final program that was adopted.

At the time of this writing no accurate tabulation has been made on the response of the approximately 12,000 questionnaires on the Legislative program that were mailed to all the engineers registered in Louisiana and the members of the Louisiana Engineering Society. About 3000 replies were received in the first ten days following the mailing which is a strong indication of the interest in the program.

Not only were comments requested from engineers in the state, Art discussed the proposed program with representatives of the industries that experience had shown would most likely oppose the principal item in the program. This item is the revision in the registration law which retains the Industry exemptions as they presently exist except for the Engineer in Charge of Responsible Professional Service. This change is not unfair nor will it work a hardship on industry.

Most industries already have Registered Professional Engineers in their employment who can be placed, and in many cases already are, in charge of Responsible Professional Service. If the persons practicing or offering to practice engineering in a public or private capacity are required to submit evidence that they are qualified to practice and to be registered as Professional Engineers, should not engineers in charge of Responsible Professional Service in industry be required to do the same? Is industry exempt from the primary justification of having a registration law, that is to "safeguard life, health and property, and to promote the public welfare"?

We are going to have opposition from industry and they have more resources and more expertise than we do but, it takes more than this to win. The winner is the side with the most votes and this is where we in the Louisiana Engineering Society have the advantage. The Senators and Representatives live among us, they are our friends, and they represent the people in the areas where we live. We must talk to these Legislators and explain our program. This should be done before the Legislative session begins and we must keep in regular contact with them after the session is underway.

This is a grass roots operation and the burden of carrying it out falls on the Chapters. The Chapter Presidents have set up organizations to carry out this operation but it is a big job and it will take time and effort and the support of the Chapter members. Even if you do not have an individual assignment you can be of great help by contacting the Legislators in your area and asking for their support of our program.

We can win if we work hard enough. Our program is a good one, it is justified and fair, and it is in the best interest of the public and the Engineering Profession.

Louisiana Engineering Society Honors Outstanding Engineers

The Louisiana Engineering Society will recognize outstanding members at the Spring Meeting Awards luncheon on April 20, 1974, at the Rowntowner in Lafayette.

ANDREW M. LOCKETT MEDAL FOR CIVIC ACTIVITIES

The Andrew M. Lockett medal is awarded for distinguished civic service by an engineer, in the public interest, without compensation for those services. The character and scope of the services rendered are the predominant criteria, rather than specifically engineering or scientific attainments.

Irwin R. Schneider

Irwin R. (Dick) Schneider attended public schools in Newark, New Jersey, received a BS degree in Chemical Engineering from Newark College of Engineering in 1943 and a MS degree in Industrial Engineering from Columbia University in 1947. He has done graduate work in Labor Relations, Finance, Human Relations and Management at LSU, SMU and Georgia Tech to keep abreast of current thinking.

All of Schneider's work experience has been with the Ethyl Corporation in Baton Rouge. He started his engineering career in June 1947 as a time study engineer and has moved steadily to General Manager, Environmental Control Division, his present assignment. This division is responsible for the manufacture and marketing of materials related to all areas of environmental improvement.

Schneider was commissioned an Ensign, U. S. Naval Reserve in April 1942. He was on active duty with the Navy until August 1946 and again from 1951 to 1953. He remained active with the Naval Reserve until his retirement with rank of Commander in 1970.

He has been very active as a member and officer in many civic organizations. Among them are: Civic Symphony, Boy Scouts, United Givers Campaign, Fire Prevention Committee, Community Advancement, Salvation Army, Cystic Fibrosis Association, American Red Cross, Citizens for Good Government and his church.

Dick Schneider's tremendous contribution to Baton Rouge has been his willingness to work enthusiastically with a number of struggling, sometimes poorly organized, agencies and to strengthen them with his knowledge of organization, management techniques, fund-raising procedures and community realities.

Among the many activities in which he has been involved, one major project does attest to Schneider's leadership. This is Camp Avondale, the 1500-acre local Boy Scout Camp. From the time the property was purchased in 1957 to date, Schneider has been most instrumental in the development of the camp as an A-rated facility where over 1500 scouts enjoy a full week of outdoor life in the summer and many thousands more participate in weekend campouts during the school year.

He has been awarded the "Silver Antelope" for noteworthy service of exceptional character to scouting.

Schneider is a registered professional engineer in Louisiana and has been a member of the Louisiana Engineering Society since 1968.

Most distinguishing of Schneider's high qualifications for this award is the fact that while pursuing these civic endeavors he has not diminished in his high degree of service to the profession of engineering. The character and scope of the services rendered are the predominent criteria for this award. It should be obvious to all that Irwin R. Schneider's service to his community is and has been outstanding.

LEO M. ODOM AWARD FOR PROFESSIONAL SERVICES

The Leo M. Odom Professional Service Award is presented to a registered Professional Engineer member of the Louisiana Engineering Society for distinguished service to the engineering profession in Louisiana.

Marshall B. Ewing

Marshall B. (Brook) Ewing has been an active Professional Engineer for many years, and his activities have not been limited to the pursuit of his profession for economic gain. Engineering has been his vocation and service to the engineering profession has been his avocation.

Ewing's professional career began upon graduation from Louisiana State University in 1934, when he joined the Aluminum Ore company plant in Baton Rouge as a construction engineer. Following his military service as a Naval Officer during World War II, he was employed by Reynolds Metals in Arkansas. In 1949, Ewing moved to Alexandria as Engineer and Manager for Air Conditioning Appliance Corporation. After about five years, he acquired ownership of the corporation, and continued with his practice until his retirement in 1972.

Ewing recognized his obligations to his profession as early as December 30, 1943, when he became a member of the Louisiana Engineering Society. He has been an active member of the Louisiana Engineering Society for almost thirty years and will become a Life Member this year. He became an active member of the National Society of Professional Engineers in 1958, the year LES affiliated with NSPE, and has continued membership

since that time. He is a member of ASME and ASHRAE.

Ewing has dedicated himself to the business of the engineering profession and has devoted many hours of his time to the betterment of the profession. It is fitting to show a chronological listing of his active service to the Louisiana Engineering Society, both at the chapter and state levels, since 1963:

1963-64—Vice President, Alexandria Chapter

1964-65 — President, Alexandria Chapter

1965-66 — Chapter Honors and Awards Committee Chairman

1966-67 — State Director, LES Board of Direction; Board Sponsor, Membership Committee

1968-70 — Chapter Membership Chairman

1970-71 — State Director, LES Board; Chairman, Alexandria Chapter, Ethics & Professional Conduct; Board Sponsor, Membership Committee

1971-72 — State Director, LES Board; Board Sponsor, Membership Committee

1972-73 — State Director, LES Board; Chairman, Alexandria Chapter, Ethics & Professional Conduct Committee; Board Sponsor, Membership Committee

1973-74 — State Director, LES Board; Board Sponsor, Constitution & Bylaws Committee

While working actively with the membership program of LES, he made a significant contribution to the design and publication of the Membership Application Form 100, which is still in use.

In addition to serving his profession, Ewing has been active in his community.

He is a member of the Master Plumbers Board for the City of Alexandria, and can present the views of professional engineers for increased public protection. He is a member of the Rotary Club of Alexandria and is on the Board of Handiwork Productions Sheltered Workshop, a nonprofit organization created for the benefit of helping the handicapped by providing job opportunities and income. He is also an active member of the Central Louisiana Art Association.

Ewing is a member of the Methodist Church and has served as Chairman, Board of Trustees of Trinity Methodist Church of Alexandria.

Marshall B. Ewing's achievements exemplify the outstanding leadership recognized and honored through this award.

A. B. PATTERSON MEDAL FOR AN ENGINEER IN MANAGEMENT

The A. B. Patterson Medal is awarded for distinguished service in management by an engineer.

Andrew M. Moore

Andrew M. Moore attended high school in Lafayette, Louisiana, the University of Southwestern Louisiana, where he received a bachelor of science degree in electrical engineering, and New York University. Moore served in the U.S. Air Force during World War II and was a meteorologist for Pan American Air Lines in 1943-44. He was employed as a cadet electrical engineer by Central Louisiana Electric Company (Cleco) in 1946 and saw rapid advancement with that company. He was promoted to Senior Engineer in 1952, to Senior Engineering Coordinator in 1960, to Chief Engineer in 1965, elected Vice President in charge of engineering in 1967, and elected a member of the Board of Directors, Cleco, in April 1973.

Registered as an electrical engineer in Louisiana, Moore was named the Outstanding Engineer of the Alexandria Chapter, Louisiana Engineering Society in 1961. He was appointed by the Governor to the Louisiana State Board of Registration for Professional Engineers and Land Surveyors, Vice Chairman of the Board in 1973 and assumed the Chairmanship of the Board in February 1974.

Moore is a member of the Institute of Electrical and Electronic Engineers, American Society for Testing Material, National Society of Professional Engineers, American Standards Institute, Louisiana Engineering Society and a charter member of the Alexandria Chapter, LES. He was president of the Alexandria Chapter in 1957-58.

In the field of management, Moore's many major accomplishments include acting as representative for Cleco on South Central Electric Company's Operation Committee and membership in Louisiana Engineering Education in Modern Electric Utility. He was program committee chairman in 1967; belongs to the Technology Committee of the Louisiana Electric Utilities Research; was manager, vice president and executive vice president of Louisiana Rural Electric Corporation; Cleco's representative to the Southwest Power Pool and is past chairman of Cleco's Electric Standards Committee. He served notably on Southeastern Electric Exchange, Power Coordination Committee, 1960-68, Engineering and Operations Section, 1968-70; State of Louisiana Civil Defense; and was chairman of the Red River Navigation Committee for the Alexandria Chamber of Commerce.

Moore has served many other organizations, among them the Boy Scouts of America, holding troop level and district jobs since 1958 and was awarded the St. George's Medal in 1969. He served as president of the Sierra Club of Alexandria; headed the March of Dimes campaign in 1965 and 1966; acted as Pastor's consultant and past president of Parish Council, Sacred Heart Church; is former member of

the Industrial Development Board for City of Pineville; charter member of the Cenla Toastmasters Club; and past member of the Civitan Club.

Moore has excelled in managerial ability; his donation of self to countless worthwhile causes while at the same time avoiding acclamation from others show the true character of this engineer. Those who encounter Moore, superiors, peers, and subordinates alike, demonstrate the utmost respect for this truly fine person.

TECHNOLOGICAL ACCOMPLISHMENT MEDAL

Awarded for technological advancement or discoveries as contributions to the advancement of engineering.

Frank W. Macdonald

Frank Whitmore Macdonald is Professor of Civil Engineering and Public Health, and Chairman, Department of Environmental Hygiene at Tulane University. He has BS and MS degrees in Civil Engineering, and a Doctor of Public Health degree from Tulane and a BS degree in Public Health Engineering from the Massachusetts Institute of Technology.

Registered in Louisiana in civil and mechanical engineering, Dr. Macdonald was employed by the Louisiana State Board of Health and the U. S. Public Health Service before coming to Tulane University where he has been for 25 years. In June 1972, Dr. Macdonald was appointed Acting Dean of the Tulane School of Engineering pending selection of the permanent Dean.

He is a Fellow, American Society of Civil Engineers; Fellow, American Public Health Association; member of the Louisiana Engineering Society and the National Society of Professional Engineers; American Water Works Association and various professional and social fraternities. He has held important offices in these organizations including President of LES and the Louisiana Section of ASCE. For 21 years he has served as Executive Secretary of the Louisiana State Board of Registration for Professional Engineers and Land Surveyors.

The technological advancements and discoveries of Frank Macdonald are many. His studies of designs of water systems, pollution control and sewage disposal plants prepared while serving as a sanitary engineer consultant have benefited many thousands of people.

Dr. Macdonald has communicated his findings in various publications since 1947. The LOUISIANA ENGINEER, as well as many technical journals have published outstanding features on drainage, engineering law enforcement, rainfall intensity, on site incineration and other methods of waste disposal authored by Dr. Macdonald.

One of the outstanding achievements by Dr. Macdonald was the pollution study for the Cauca River in Colombia, S. A. This study performed under Dr. Macdonald's direction included students and faculty of Tulane University and the Universidad del Valle, Cali, Colombia. The Cauca River serves as the source of water for several water treatment plants in the Cauca Valley. At the time of the investigation in 1963 no pollution surveys had been made on any of the streams in Colombia. The purpose of the study was to determine the source and quantity of pollution discharged to the Cauca River and to evaluate the bacteriological, chemical and physical condition of the stream. Information determined from the study is being used for a pollution abatement program for the Cauca River Valley.

Dr. Macdonald's technological accomplishments and published results in the field of pollution control will truly encourage and inspire other engineers to reach for greater heights of professional achievements.

CHARLES M. KERR PUBLIC RELATIONS AWARD

The Charles M. Keer award is given to an engineer for distinguished service in promotion of public relations for the engineering profession in Louisiana.

Roy T. Sessums

Roy T. Sessums, Vice President of Public Relations for the Freeport Sulphur Company graduated from high school in Pioneer, Louisiana. He has a BS degree in civil engineering from Louisiana Tech, an MS degree in civil engineering from Louisiana State University and one year of advanced engineering study at the University of Minnesota.

Sessums' professional experience includes Assistant Professor, Louisiana Tech University, 1937-40; Dean of the School of Engineering, Louisiana Tech, 1940-52; Director of Department of Public Works, State of Louisiana, 1952-55; Assistant to Vice President, Freeport Sulphur Company, 1955-61; and Vice President, Public Relations, Freeport Sulphur Company, 1961 to present.

His contributions to the engineering profession through public relations are best exemplified by the maintenance of a high degree of professional respect for registered engineers in Louisiana by other states through his active service and leadership on the Louisiana State Board of Registration for Professional Engineers and Land Surveyors, by insistance on high educational standards in Louisiana and the United States through his active participation in the American Society of Engineering Education, and by his work in recognizing companies with outstanding public relations programs in the U.S. as a National

Director and Chairman of NSPE's Industrial Professional Development Award program.

A recent example of Sessums' dedication to the progress of engineering is his unheralded service to the Louisiana Engineering Society, the engineering profession in general, and in particular, to those students wishing an engineering education in the New Orleans area at Louisiana State University at New Orleans. Prior to Sessums' involvement, all that was offered at LSUNO was an Engineering Science Degree under the jurisdiction of the Department of Science. It was apparent to the Louisiana Engineering Society and Sessums that both enrolled students and future students, industry and the general public wanted an engineering curriculum taught at LSUNO.

Petitions of the students expressing these desires were signed and respectfully submitted to LSUNO. The news media became involved and the students themselves turned to the LES for assistance. Thanks to Sessums' activities and personal interest, a school of Engineering was begun at LSUNO in 1973 (now University of New Orleans).

Sessums is a member of the American Society of Civil Engineers, Louisiana Engineering Society, National Society of Professional Engineers, Society of American Military Engineers, and the American Society of Engineering Education. He is a past president of the Louisiana Section, ASCE; Louisiana Department, Society of American Military Engineers; Louisiana Board of Registration for Professional Engineers and Land Surveyors and National Council of Engineering Examiners.

Interspersed with his other activities, Sessums fashioned an equally brilliant military record, both as an active and reserve officer. Entering the U. S. Air Force in 1942 as a First Lieutenant, he served with distinction on active duty. Upon discharge from active duty in 1946, he accepted a reserve commission as a Lt. Colonel. By 1962, he had achieved the rank of Major General. He was awarded numerous honors and medals, including the Distinguished Service Medal.

Sessums has contributed much to the engineering profession by his practice, promotion and untiring efforts in improving the image and identity of the professional engineer through good public relations.

LOUISIANA ENGINEER AWARD OF MERIT

This award is the Louisiana Engineering Society young engineer award. It is given to an engineer not over 35 years of age who has demonstrated to a high degree capabilities in his chosen field.

E. Raymond DesOrmeaux

E. Raymond DesOrmeaux attended New Orleans parochial schools and Holy Cross School for his primary and secondary education. He was graduated from the University of Southwestern Louisiana in 1963 with a BS degree in civil engineering.

DesOrmeaux's employment history began as an assistant engineer in the consulting firm of Domingue, Szabo & Associates in 1963. His work included various design projects. His last three years with the firm were spent as chief field engineer in charge of coordinating all inspection and control of construction projects designed by the firm. In 1969, he accepted a position as chief engineer and operations manager for Southern Structures, Inc., a manufacturing firm. In January 1970, he was elevated to General Manager, a position held until the formation of his present general contracting corporation.

He is president of E. R. DesOrmeaux, Inc., a firm that he organized in 1972. The firm's operation consists of constructing commercial buildings and other non-residential projects.

DesOrmeaux's professional and technical society memberships include The American Society of Civil Engineers, the Louisiana Engineering Society and the National Society of Professional Engineers. He has held various offices in the Lafayette Chapter of LES, including a term as president. He was selected as the first State Chairman of the newly formed Professional Engineers in Construction Practice Section of LES in 1972.

His community spirit and dedication is evidenced by his participation in various local organizations. He is an active member of the Greater Lafayette Chamber of Commerce, and held the position of trustee in his church. He recently was selected to chair the Economic Development Committee of the City of Lafayette. He is an active member of Toastmaster's International, and presently serves on the Lafayette Club's Board of Directors.

Two awards received by DesOrmeaux deserve particular mention. He was named "Salesman of the Year" in the New Orleans Junior Achievement Program, and, as a senior at the University of Southwestern Louisiana, he was selected as the "Outstanding Catholic Campus Leader." He was also the recipient of several local and regional ASCE awards for student paper presentations.

The Louisiana Engineering Society Young Engineer Award has as its aim a desire to recognize an engineer not over 35 years of age who has demonstrated to a high degree capabilities in his chosen field of engineering, thereby indicating potential and leadership as a professional engineer. Raymond DesOrmeaux has demonstrated those capabilities.

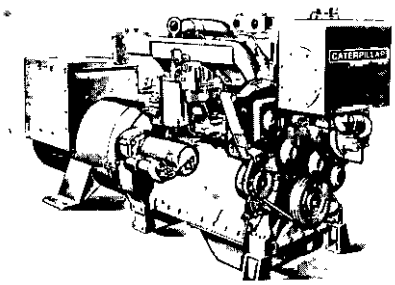
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State Board of Registration Elects New Officers

At its annual meeting held in New Orleans, the Louisiana State Board of Registration for Professional Land Surveyors elected new officers. Elected chairman was Andrew M. Moore, vice chairman was Larkin B. Agnew, and secretary was Sidney L. Polynard.

Other members of the State Board of Registration were Leo M. Odom, Ben T. Bogard, Calvin T. Watts, Roy T. Sessums, Waldemar S. Nelson and Jesse Coates.

Executive secretary to the State Board is Dr. Daniel H. Vliet.



Newly elected officers of the State Board of Registration for Professional Engineers and Land Surveyors are Vice Chairman Larkin B. Agnew, left, Chairman Andrew M. Moore, center, and Secretary Sidney L. Poleynard, right.



Members of the State Board of Registration pose with Executtive Secretary Daniel H. Vliet at their annual meeting in New Orleans. Pictured standing, from left to right, are Vliet, Leo M. Odom, Ben T. Bogard, Calvin T. Watts, Roy T. Sessums and Waldemar S. Nelson. Seated are officers Larkin B. Agnew, Andrew M. Moore and Sidney L. Poleynard. Not pictured is Jesse Coates.

LES Legislative Survey Results Given

The Interim Legislative Calendar of the House of Representatives, State of Louisiana has been published. The following four LES proposals as they appear in the calendar have been prefiled by Representative Morris A. Lottinger, Jr., from Houma.

House Bill 33 (LES Proposal making registration by long established practice permissive rather than mandatory) was prefiled March 8, 1974, and referred to the Committee on Commerce: **"To amend and reenact Subparagraph (c) of Paragraph (1) of Subsection A of Section 692 of Title 37 of the Louisiana Revised Statutes of 1950 relative to the registration of engineers and land surveyors and otherwise to provide with repect thereto."**

An interim report of the LES Survey (over 3100 individual returns) of all professional engineers registered by the State of Louisiana and including LES members shows 81 percent FOR the proposal, 14 percent AGAINST and 5 percent abstaining.

House Bill 28 (LES proposal #2) was prefiled March 7 and referred to the Committee on Commerce:

"To amend and reenact Subsection C of Section 698 of Title 37 of the Louisiana Revised Statutes of 1950 relative to professions and occupations, to provide that exemptions from the registration laws provided therein shall not apply to the engineers in charge of Responsible Professional Service or to the practice of civil engineering or land surveying."

The interim LES Survey shows 67 percent FOR the proposal, 20 percent AGAINST, and 13 percent abstaining.

House Bill 32 (LES Proposal #3) was prefiled March 8, and referred to the Committee on Commerce:

"To amend and reenact Sections 693 and 696 of Title 37 of the Louisiana Revised Statutes of 1950 relative to application and registration fees for professional engineers and land surveyors, to provide such registration fees and the renewal thereof shall be established at the discretion of the Board for Professional Engineers and Land Surveyors and otherwise to provide with respect thereto."

The interim results of the LES survey show 51 percent FOR, 41 percent AGAINST, and 8 percent abstaining.

House Bill 44 (LES Proposal #4) was prefiled March 20 and referred to the Committee on Commerce:

"To amend and reenact Subsection E of Section 23 and Subsection C of Section 304 of Title 12 of the Louisiana Revised Statutes of 1950 relative to corporate names and applications for a certificate of authority by foreign corporations, to provide that if the corporation seeking the issuance of a Certificate of Incorporation or the foreign corporation seeking a certificate of authority in this state shall include in its name the words "engineer," "engineering," "surveyor" or "surveying," the Secretary of State shall require prior to issuance of such certificate evidence satisfactory to him that written notice of such application shall have been delivered to the Louisiana State Board of Registration for Professional Engineers and Land Surveyors, and otherwise to provide with respect thereto."

Interim results of the LES Survey show 69 percent FOR the proposal, 10 percent AGAINST, and 21 percent abstaining.

Survey ballots are still being received and tabulated. The LES Board of Direction will have a final tabulation for their April 20 meeting. At that time, a decision will be made to continue legislative action on these or modified proposals.

Swampland Express Among 10 Best

The Atchafalaya Basin expressway was selected as one of the ten Outstanding Engineering Achievements for 1973.

The Louisiana Engineering Society nominee was picked by an LES ad hoc committee composed of James G. Atteberry, P.E., Kenneth Deal, P.E., and E. E. "Buddy" Moncla and submitted to the National Society of Professional Engineers in early January of this year.

Other Outstanding Engineering Achievements for 1973:

- Dallas/Fort Worth Regional Airport
- Earth Resources Technology Satellite Program
- Brookfield-LaGrange Rock Tunnel in Chicago
- Neuromuscular Assist Device Program
- Dworshak Dam and Reservoir in Idaho
- Louisville Gas & Electric Company Sulfur Dioxide Removal System
- Philadelphia Electric Company's Automatic Monitoring and Control System
- Sims Bayou Sludge Disposal Plant in Houston
- Inland Steel Company's Continuous Slab Caster and Water Pollution Control Facility in East Chicago, Indiana.

Congratulations to the Louisiana Highway Department, the LES ad hoc committee, and to the Louisiana Engineering Society. An interesting article on the Swampland Express is included in the February issue of the LOUISIANA ENGINEER.

Engineers — Our Greatest Energy Resource

This address was given by Leslie Moor, Jr. to the Baton Rouge Chapter during Engineers Week.

About a year ago I considered myself to be an expert on the coming energy crisis. Today, like many others, I find that I am only a **participant** in this crisis and that the experts are truly few and far between.

Today, the United States faces many, many uncertainties in the energy arena. To name a few, but certainly not all, there are uncertainties regarding supply, there are uncertainties regarding allocation procedures, there are uncertainties regarding legislation, and finally, and perhaps most importantly, there seem to be growing uncertainties and concerns over our ability to cope with this problem.

It is my belief that the energy shortage and its attendant crisis will not be solved by government decree or legislative action or some other dramatic stroke which will at some point remove the problem. I believe that the energy crisis will be dealt with by the concerted effort of thousands of Americans, each working to resolve his own particularly unique energy problem.

The uncertainties with respect to supplies of energy are manifold. It is clear from the headlines which have appeared in the last few months that there is lack of statistical clarity concerning the United States' supply position. It is also obvious that men of considerable stature having available to them detailed information concerning our situation, and being of good intention, can differ considerably in their assessment of our current situation. I would not even attempt to try to unscramble the many conflicting statistics which have been presented—or the charges and counter-charges that have been made by or attributed to knowledgeable individuals. I would, however, say that under conditions of uncertainty such as those that we face today, it might be well to back off and look at the work of learned gentlemen performed before the crisis became as acute as it is today.

In 1972 the National Petroleum Council published a report on the U. S. Energy Outlook, which report was published in many abridgements, the least of which was a small green bound pamphlet and the largest of which was a bookshelf full of books. The participants in the National Petroleum Council's report reached some basic conclusions regarding the nation's energy outlook.

Very briefly, these experts from many walks of life, determined that during the period 1970 through 1985 the energy requirements for the nation would approximately double. They further concluded that 95 percent of the additional energy required would come from conventional sources — these being oil, gas, coal and nuclear. The remaining 5 percent was to come from hydro-electric power and from some of the more exotic sources of energy which are now being considered such as tides, solar and geothermal sources.

While much mention is today being made regarding these new and rather exotic sources of energy, it was the studied opinion of these experts that the majority—95 percent—of our future energy supply would come from oil, gas, coal and nuclear.

They further concluded that the nation had three basic energy choices. The first choice was to import more energy, thereby increasing this nation's dependence on others. The second choice was to restrict demand for energy, either through more efficient operations, conservation, or rationing. The third choice was to vastly increase our own supply of domestic energy resources.

It probably comes as no surprise to find that the National Petroleum Council recommended that we (1) attempt to conserve, to become more efficient and further to develop our own domestic energy resources. While it may be necessary for a period of time, rationing certainly is repugnant to the American people.

The recent actions in the Arab world, have, I think, demonstrated beyond a shadow of a doubt the wisdom of pursuing a national energy policy which will free us, in substantial measure, from dependence upon foreign oil.

The National Petroleum Council observed that in order for the United States to pursue a course which would reduce its dependence upon others for energy supplies it must first bring to a satisfactory conclusion the environmental issues which, at this time, are delaying the development of our coal resources and delaying the development of nuclear power in the United States. The council offered no advice as to what specific steps needed to be taken, but did submit that we must reach an early resolution of the environmental issues which are delaying the development of these energy resources.

They further observed that in order to develop additional resources of fossil fuels, oil, gas, and coal, additional federal lands needed to be opened to exploration. This would include exploratory acreage in the Gulf of Mexico, on the Atlantic Coast and other offshore provinces. It would further require the opening of additional federal lands in the western United States for coal development. The council concluded by stating that in order to reduce to a minimum our dependence upon others for energy resources, we would need to establish appropriate economic incentives for the exploration for oil and gas and for the development of coal and nuclear energy sources.

In 1970 our imports of energy, expressed in equivalent barrels of oil, were approximately four

million barrels per day, while the council observed that over the next five years (1970-75) it was likely that these imports would increase to a level somewhere between five and ten million barrels per day. They, however, estimated that a vigorous domestic exploration program could, by 1985, reduce our importation of energy to something in the neighborhood of three million barrels per day or about 11 percent of our expected energy requirements in 1985. They further postulated that if we failed to satisfactorily resolve the issues which stand in the way of a vigorous domestic program, our need for importation of energy would rise to approximately 19 million barrels per day or about 38 percent of our energy requirement in 1985.

While one might quarrel with the numbers presented, it is apparent that the vigorous pursuit of the development of our domestic energy reserves can, and in all probability will, reduce our dependence upon foreign sources to a bare minimum. I submit to you that progress is being made in each of these areas today and energy resources which were not available in 1970 are beginning to enter the mainstream of our economy. Certainly, the economics of energy production have improved, the search for oil and gas has been vastly expanded in the last year. I am advised that footage drilled in the last quarter of 1973 was some 15 percent higher than the same period in 1972 and that gas well completions were 23 percent higher in 1973 than 1972. Today, it is difficult to obtain both drilling rigs and pipe.

My company, Gulf States Utilities Company, is a case in point. It is probable that during the period 1970 through 1985 that Gulf States will substantially more than double. It is also expected that during this period of time that Gulf States' primary energy sources will be oil, gas, coal and nuclear. This fuel mix represents a dramatic change for Gulf States. Our company, for many years, was entirely fired by natural gas. Initially, this gas was a waste material in Southeast Texas and Southwest Louisiana. Today, as you all know, it represents a very valuable commodity. It was not our intent to utilize any other fuel until sometime in the early 1980's. Today, we have one unit capable of utilizing residual fuel oil and have two other conversions underway. We expect that by 1975 approximately one-third of our energy will come from fuel oil.

It is very likely that during this period of time natural gas will become increasingly less available for use for generation of electric power and therefore by 1985 we expect to be fueled almost entirely by oil, coal and nuclear.

Now let me refer to the nuclear question. It is possible that by 1985 approximately one-half of the energy utilized by Gulf States will be in nuclear form. This, however, will not supplant more than a very small part of our current fossil-fueled generating stations. The nuclear and coal will be utilized to meet the expected growth in demand for time, and oil will take over a this area during that period of large portion of the current gas-fired units. We, like many other energy industries in this country, are making plans today to shift to domestic energy resources for our future growth to the greatest extent possible.

The most abundant of these two energy resources today are coal and nuclear. We believe that these resources will enter the mainstream of U.S. economic life through electric power.

I believe, at this time, in the midst of shortage and with uncertainty at its peak, you as engineers bear two principle responsibilities. One of which is, I think, obvious and that is that engineers will be called upon to use, to exercise your technical skills in the finding, producing, transporting and utilization of the abundant sources of energy still available to the United States from domestic sources. You will be called upon to provide the techniques, procedures, and knowledge necessary to drill for oil and gas in deep water, in hostile environments, and at depths heretofore not considered. You will be called upon to develop coal mining techniques that can bring to our nation these abundant resources in an environmentally acceptable manner. You will be required to bring nuclear power into full being in this country. You will be required to develop more efficient means for converting nuclear energy than are currently available to us. You will be required to develop new techniques for transporting coal and other materials across the country. You as engineers, together with the related sciences, will bear the full weight of the needed new technology to bring this country to an acceptable level of energy self-sufficiency, but there is another area which I believe equally important and about which little is said.

I believe that you as engineers bear a responsibility to communicate to the people of this nation a feeling of continued confidence in our technology. The proliferation of crisis in government and commodities has caused many of our citizens to lose confidence in our ability to solve the complex technological problems presented by the energy shortage. You engineers, as principal communicators of technology in our society, must both as engineers and individuals seek to prepare yourselves to communicate confidently to others the strengths of our system. In these two ways are engineers truly our greatest energy resource.

Potpourri

State Board to Remain Intact

A question had been raised regarding the limit of 20 departments in the Executive Branch, Article IV of CC 73. There was concern that the Registration Board for Professional Engineers and Land Surveyors could possibly be thrown into an umbrella licensing department of the state government. We in the Louisiana Engineering Society believe the professional aspects of engineering and the successful operation of the State Board of Registration dictates that it should never be consolidated with or merged into other boards or departments. The most efficient and economical method for registration of Professional Engineers and Land Surveyors is by utilizing the present board structure and rules of operation.

Joe Keogh, representing LES; Leo Odom, P.E., member of the State Board of Registration; A. E. Wilder, Executive Director CEC/L, and R. C. Spears, Executive Secretary LES, met with Jim Donelon, legal aide to the Governor, and Buck Vignes, administrative aide to the Governor, on March 22 to discuss the concerns of engineers in this aspect of CC 73. We were given strong assurance that no changes were anticipated or planned by the administration to change the present engineering registration board procedures.

Louisiana Highway Hall of Honor to Be Inaugurated

An organizational meeting was held March 20 to discuss the formulation of a Louisiana Highway Hall of Honor. The Louisiana Good Roads Association is sponsoring the event with LES, AGC, CEC/L, Louisiana State Police, Louisiana Municipal Association, and the Police Jury Association as co-sponsors.

The Hall of Honor will allow appropriate recognition of individuals who have made extraordinary contributions to Louisiana's highway and street programs.

It is planned to inaugurate the program in 1974. July 1 has been set for the deadline date to submit nominations from which four initial inductees will be selected.. The Hall of Honor will be housed in the first floor lobby of the Louisiana Highway Department Headquarters building in Baton Rouge.

A three-man selection committee has been named to screen the nominations, which will be referred to the Hall of Honor Board of Directors. Dr. J. J. Thigpen, P.E., President LES, has been named to the 1974 Screening Committee and James G. Atteberry, LES-PEG, is a member of the Hall's Board of Directors.

Thanks from Representative Long

Gillis W. Long, 8th District, Louisiana, has written and thanked the Louisiana Engineering Society for submitting views on conversion to the metric system. He stated our views were important to him and helped in the decisions that he must make.

The LES telegram submitted to Mr. Long early in March reads: "The Louisiana Engineering Society supports conversion to metric and the House Bill before the rules committee, would appreciate your support."

Promotion for Rod Mouton

Rodney A. Mouton, P.E., Secretary-Treasurer of the New Orleans Chapter, was named manager, Gas Engineering Division, New Orleans Public Service, Inc., effective November 1, 1973. Mouton's 20 years' service with the Company includes jobs as assistant engineer, electrical engineer, electric systems planning engineer and senior electric system planning engineer. Congratulations to a hard working, ever involved LES engineer.

Six OSHA Standards Are Cause of Most Citations

One of the most common complaints about the Occupational Safety and Health Act is that the standards promulgated thereunder are so lengthy and complex that the average employer can never understand them. However, OSHA reports that more than 70 percent of all citations issued in the manufacturing durable goods industry involved only six subparts of the safety and health standards: Machine guarding, walking and working surfaces, the National Electrical Code, materials-handling and storage, hazardous materials, and fire protection.

NSPE Board Approves Nominal Political Contributions

The NSPE Board voted at the Winter Meeting in Biloxi to support legislation to limit to a "nominal amount" political contributions by engineers or firms receiving public contracts for design services. After debate, the board vetoed the $100 limitation proposed by NSPE Task Force on Political Involvement in Awarding Engineering Contracts as too confining in working with state legislatures to get campaign financing bills passed.

The board also passed an amendment declaring "due process of law procedures will be required to establish guilt, assess penalties, and otherwise protect individual rights" in State Board of Registration proceedings against engineers accused of unethical conduct.

Engineering—A Career of Dedication and Responsibility

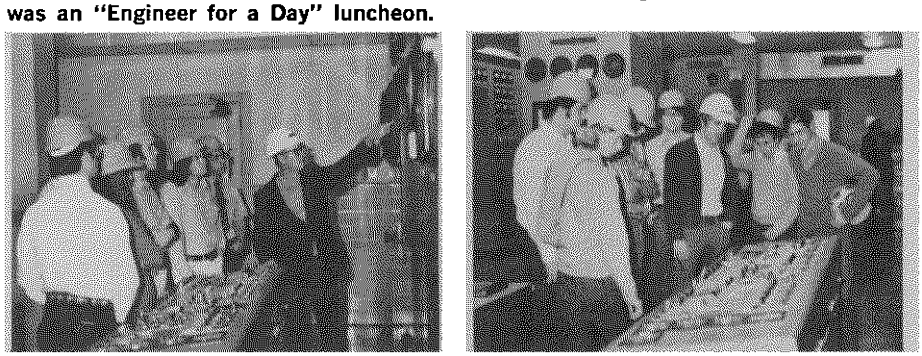
With the above title, NSPE has revised its standard item of guidance literature. This is a 10-page self-mailer booklet, designed primarily for the eighth-ninth grade levels, available without charge by request either from NSPE or ECPD.

The booklet answers questions: What is engineering? Is engineering a good career choice? What type of person will find satisfaction in an engineering career? What constitutes an engineering education? How can a person prepare for engineering education? What about branches of engineering? Where to study? What does it cost?

Engineers Week Chapter Activities



Monroe—Louis R. Soulier, left, of the Chemical Vocational Guidance Committee, and Charles F. Stubbs, President of Monroe Chapter LES, are pictured with Wayne Cottingham, Engineer for a Day selected from Ouachita High School. Also shown is Mrs. Louis Baker, Guidance Counselor from Ouachita High School. The occasion was an "Engineer for a Day" luncheon.



New Orleans—Tulane and University of New Orleans students tour the A. B. Paterson Steam-Electric Power Plant in New Orleans as part of the Engineering Week activities.

Alexandria

Engineers Week in Alexandria was well represented in the media. Several Alexandria chapter engineers participated in a radio program in which they were interviewed about key aspects of engineering. Periodic news releases appeared in the Alexandria newspaper, as did an article on the engineering profession, prepared by the Woman's Auxiliary.

Focus of the week's activities was on the banquet, which was reported on local television.

Baton Rouge

The Baton Rouge chapter started preparations early for Engineers Week this year. Several members witnessed the signing of an official Engineers Week proclamation by Governor Edwards on January 25. Signing of the Mayor's proclamation by W. W. "Woody" Dumas followed on February 11.

Eleven engineers organized into various committees and sub-committees coordinated activities throughout the week of February 17-23.

Publicity for the week was strong. At least seven newspaper articles appeared in the "Morning Advocate-State Times" reporting on local events sponsored by Baton Rouge area engineers. Eight radio stations and Baton Rouge's three television stations carried engineering subject spots at regular intervals, and engineers presented their viewpoints on Girl Talk, Morning Show, Sunday Conversations and Topics programs, which aired in the Baton Rouge vicinity. In addition, posters proclaiming Engineers Week were displayed in prominent locations throughout the city, including major banks, public schools, libraries, area industries and miscellaneous state and city parish offices.

Engineers Sidney Poleynard and Charles Hair spoke to Baton Rouge civic groups during the week, and Lee Savoy conducted an engineering symposium at Southern University, with newspaper coverage for each event.

Activities for the week culminated in the annual Engineers Week banquet, held February 20 at the LSU Union Royal Ballroom. Some 203 persons attended the banquet, which featured guest speaker Leslie Moor, Jr. Moor's direct involvement in energy production with Gulf States Utilities well qualified him to deliver his pertinent remarks on energy resources which rounded out Baton Rouge's Engineers Week. (A copy of his speech is printed in this issue.)

Bayou

Engineers Week in the Bayou area was launched in the first part of February as the Mayors of Thibodaux, Houma and Morgan City issued official proclamations citing engineers for their services to the community. The proclamations of each city noted the many contributions of engineers to the betterment of the community and their work in protecting life, health and property and to developing the resources of the area.

Pictures of the signing of the proclamations were run in Morgan City's "Daily Review," the "Houma Daily Courrier," and Thibodaux's "Daily Comet."

Engineers in the Bayou area participated in a number of activities celebrating the week.

Lafayette

Engineers Week in Lafayette was kicked off a week ahead of time with a speech by Dr. John J. McKetta, a chemical engineer from the University of Texas, and member of the National Energy Commission, who spoke to

an audience of students and public at USL. Both television and radio coverage of this event was provided.

USL was also the site of another address, given by a NASA engineer to members of the faculty, student body and other interested parties during Engineers Week. The news media also furnished thorough coverage of this speech.

The major event to celebrate Engineers Week was a banquet given by the Lafayette chapter of LES for Lafayette's other engineering societies. The banquet was well attended by engineers, wives and guests, including a large representation of area legislators.

Lake Charles

Lake Charles Engineers Week activities were conducted jointly with the McNeese Engineering Society. Both societies cooperated in sponsoring the annual Engineers Week banquet. Support for the banquet was solicited from area industries, 52 of whom agreed to purchase tickets to the banquet for engineering students unable to purchase their own. Over 300 engineers, wives and affiliates turned out for the festivities.

The Lake Charles chapter also sponsored a queens contest, which was programmed on local television. The winner, of course, was a student in engineering.

Engineers Week was well represented in all news media.

Monroe

Engineers Week in the Monroe chapter was heralded by a full-page ad in the Monroe paper, sponsored by local engineering firms, on the Sunday prior to the week's festivities.

Student "Engineers for a Day" were selected from high schools in the Monroe chapter vicinity by school guidance counselors. In Monroe, the student "engineers" were guests of a local firm for a day, and were honored at a luncheon, attended by the students, sponsor company representatives and guidance counselors. H. L. Henry, P.E., speaker for the occasion, emphasized the important function of engineering in life.

"Engineers for a Day" in the Ruston area were guests at Louisiana Tech for a day. They attended classes, met with the Tech faculty, and later attended a banquet held at the Louisiana Tech Student Center, at which they were awarded certificates.

An Engineers Week banquet, sponsored by the Ladies Auxiliary, featured speaker Clint Pray, executive assistant to Governor Edwards. Pray reported the efforts and frustrations of Louisiana to get relief for its citizens in the energy crisis.

The evening was highlighted by the presentation by Mrs. Albert G. McKee of the LESLA Scholarship for $200 to Roger Lynn Holtzclaw, a Tech student.

Other activities included plant outings held in the Monroe area for interested high school students. Host firms for the tours were Olinkraft, Louisiana Power & Light and Ford, Bacon & Davis.

Coverage from news media was obtained for most Engineers Week events, including news releases with photos and NSPE radio and TV spots, which were aired on local stations.

New Orleans

Engineers Week for the New Orleans chapter began with a gala dinner meeting which was co-sponsored with the Electrical Association of New Orleans. It was a joint celebration of National Engineers Week and National Electrical Week and was held at the Fontainbleau Motor Hotel on February 12. In addition to members of LES, members of other Professional Engineering Societies in the New Orleans area were invited to participate. Dr. A. L. Jones of the Standard Oil Company of Ohio was the guest speaker and his talk was centered around the energy crisis. Mr. Floyd W. Lewis, president of Middle South Utilities, presided over the meeting.

Other activities included a plant tour of New Orleans Public Service's A. B. Paterson Generating Station for engineering students of Tulane University and the University of New Orleans. A 30-minute film titled, "The Energy Challenge" was shown to the students in conjunction with the tour. This same film was shown and a talk was given by Mr. L. C. Grundmann of Systems Fuels, Inc., to a class of pre-engineering students at the University of New Orleans. In addition a proclamation was signed by Mayor Moon Landrieu proclaiming Engineers Week in New Orleans. Publicity displays and spot announcements by local radio stations were in effect during the week.

Shreveport

Engineers Week in the Shreveport area was sponsored by the Engineering and Scientific Council of Shreveport, an organization composed of technical societies, a scientific society, LES and NSPE.

Events this year included a film presentation to area high schools by engineers, an activity coordinated by the Ladies Auxiliary, and administration of the JETS (Junior Engineering Technical Society) test to 35 area high school students. The latter is an annual event sponsored by ESCS for several years.

The Shreveport Chapter Ladies Auxiliary also took part in promotion of a campaign begun during engineers week to collect and distribute badly needed periodicals to various high school libraries.

Featured activity for Engineers Week was the festive annual banquet, held at the Sheraton-Bossier Inn, Saturday, February 23. Approximately 300 persons attended the banquet, with guest speaker Bud Fletcher, a popular Cajun dialect humorist. Focal point of the evening was the presentation of awards to the high scorers on the JETS test, and to two outstanding engineers, who were named for the Engineer of the Year Award.

Publicity during the week was handled by procuring radio and TV tapes from NSPE for use by local radio and TV stations. The Auxiliary was responsible for soliciting funds for the insertion of a nearly full-page-sized notice saluting Engineers Week.

EngiNEWS

NEW MEMBERS

Alexandria

PHILIP W. BEARD, P.E.
2826 Lee Street, No. 3
Alexandria, La. 71301

THADDEOUS W. HANSON
703 Fendler Parkway
Pineville, La. 71360

CECIL D. RAGGIO, P.E.
P. O. Drawer 5638
Alexandria, La. 71301

PIERRE B. VOORHIES, P.E.
P. O. Box 5244
Alexandria, La. 71301

Baton Rouge

DONALD D. HENDERSON, P.E.
8449 LaSalle Ave.
Baton Rouge, La. 70806

HARLAN B. LEE
P. O. Box 267
Baton Rouge, La. 70821

SIDNEY L. POLEYNARD, P.E.
1725 S. Tamarix Dr.
Baton Rouge, La. 70808

THOMAS L. REWERTS
483 Little John Drive
Baton Rouge, La. 70815

BHARAT C. SANGHAVI
282 Huntington Dr.
Baton Rouge, La. 70810

ANDREW G. THAILING, P.E.
P. O. Box 368
Baker, La. 70714

WILLIAM R. TRASK, JR., P.E.
Box 3517
Baton Rouge, La. 70821

Bayou

DAVID A. CANTWELL, P.E.
2707 Shaw Drive Apt. 2
Morgan City, La. 70380

M. CAREY DUKE, P.E.
207 Linda Ann
Gray, La. 70359

JOHN D. MONTEIRO, P.E.
P. O. Box 711, Station 2
Houma, La. 70360

CLIFTON A. OLIVIER, JR.
P. O. Box 705
Houma, La. 70360

F. EUGENE ROUSSEL, P.E.
P. O. Box 174
Luling, La. 70070

J. I. SEABERG, P.E.
Box 968
Thibodaux, La. 70301

Lafayette

MICHAEL R. BERGERON
Rt. 2, Box 73-B
Lafayette, La. 70501

ERNEST G. EVANS
P. O. Box 52369
Lafayette, La. 70501

FRED E. RUGG, P.E.
420 Kim Dr.
Lafayette, La. 70501

JOHN D. ZIEBA, P.E.
P. O. Box 52398
Lafayette, La. 70501

Lake Charles

JOHN D. HENDERSON, JR.
P. O. Box 1000
Lake Charles, La. 70604

NOLAN M. ROBICHAUX, JR.
Rt. 1, Box 469-E
Sulphur, La. 70663

DONALD E. SAVOY
734 Ashland Ave.
Lake Charles, La. 70601

GARY L. TEMPLETON
Box 1000
Lake Charles, La. 70601

Monroe

ROBERT WILSON BATES
Box 4131, Tech Station
Ruston, La. 71270

PATRICK L. BOOKER
P. O. Box 16
Monroe, La. 71201

JERROLD F. BRADLEY, P.E.
Dept. of Bldg. Constr.
Northeast La. University
Monroe, La. 71201

CHARLES H. BUTCHER, P.E.
2710 Marquette
Monroe, La. 71201

MICHAEL P. COLLINS, P.E.
c/o P. O. Box 156
Monroe, La. 71201

RUSSELL A. FRIEDRICH
2209 Liberty St.
Monroe, La. 71201

ROBERT D. GARRISON, P.E.
2209 Liberty St.
Monroe, La. 71201

WILLIAM L. GLASSCOCK
28 Northgate
Monroe, La. 71201

ROGER D. LEE (Student Member)
Rt. 5, Box 16A
West Monroe, La. 71291

WALKER, JR., E. L.
Houston, Texas
Civil

WARDER, ROBERT LEWIS
Dardanelle, Ark.
Electrical

WEATHERLY, III, JOHN WILSON
Baton Rouge, La.
Mechanical & Chemical

WILLIAMS, CHARLES DAVID
Cincinnati, Ohio
Civil

WILSON, DONALD LEWIS
Metairie, La.
Mechanical

YOUNG, JR., RUSSELL JOHN
Harahan, La.
Civil

CLYDE W. LIGHTFOOT, JR. (Student)
P. O. Box 6486, Tech Station
Ruston, La. 71270

C. RAY MULHERN
807 K Street
Monroe, La. 71201

ROBERT M. SAMUELS, P.E.
P. O. Box 1762
Monroe, La. 71201

Shreveport

CHARLES C. COLVIN
1008H Quail Creek Road
Shreveport, La. 71105

SAMMIE L. CRAFT, P.E.
2120 Benton Rd.
Bossier City, La. 71010

DOUGLAS L. FALEY, P.E.
8426 West Wilderness Way
Shreveport, La. 71106

PHILIP J. LINDSAY, SR., P.E.
421 Albert Ave.
Shreveport, La. 71105

ERWIN R. PARISH
325 W. Inner Loop #11
Shreveport, La. 71106

JAMES L. PECK, JR. (Student Member)
Box 81
Blanchard, La. 71009

JOHN J. SCOTT
515 Jamie Lane
Shreveport, La. 71106

JERRY P. THOMAS
7501 Red Fox Trail
Shreveport, La. 71109

KENNETH W. WINTERROWD
3602 Addison Ave.
Shreveport, La. 71107

New Orleans

MICHAEL J. ANGELICO
317 Baronne St.
New Orleans, La. 70112

THOMAS K. ARMINGTON
3012 Metairie Ct.
Metairie, La. 70002

ASHTON B. AVEGNO, JR.
1712 Manson
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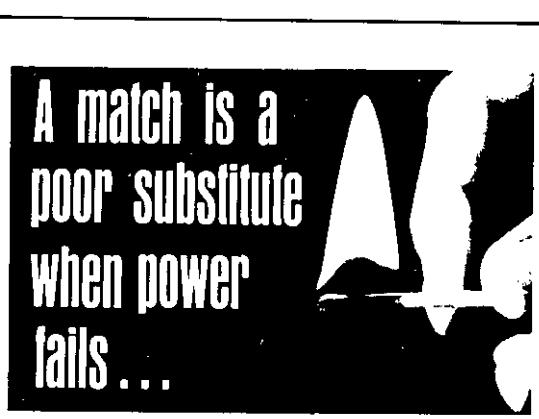
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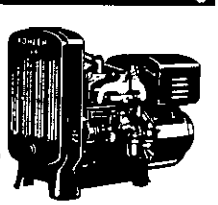
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"Footsteps in History"

Rolling fields of peppers cover the land in each direction, their red pods stirring in the summer breeze blowing in from the marsh. Over one hundred years ago this island was covered with sugar cane and virgin forest. But its biggest asset was a mine. Because Avery Island is actually the top of an edible mountain as big as Everest. A huge mass of rock salt that begins only 20 feet beneath the surface.

With the Civil War came Union soldiers, laying claim to the mine for the needs of the North. The inhabitants fled, and when they returned in 1868 the land was in shambles. The crops were ruined, the salt mine destroyed. The way of life they had known was gone. But the spirit they brought to the land was not.

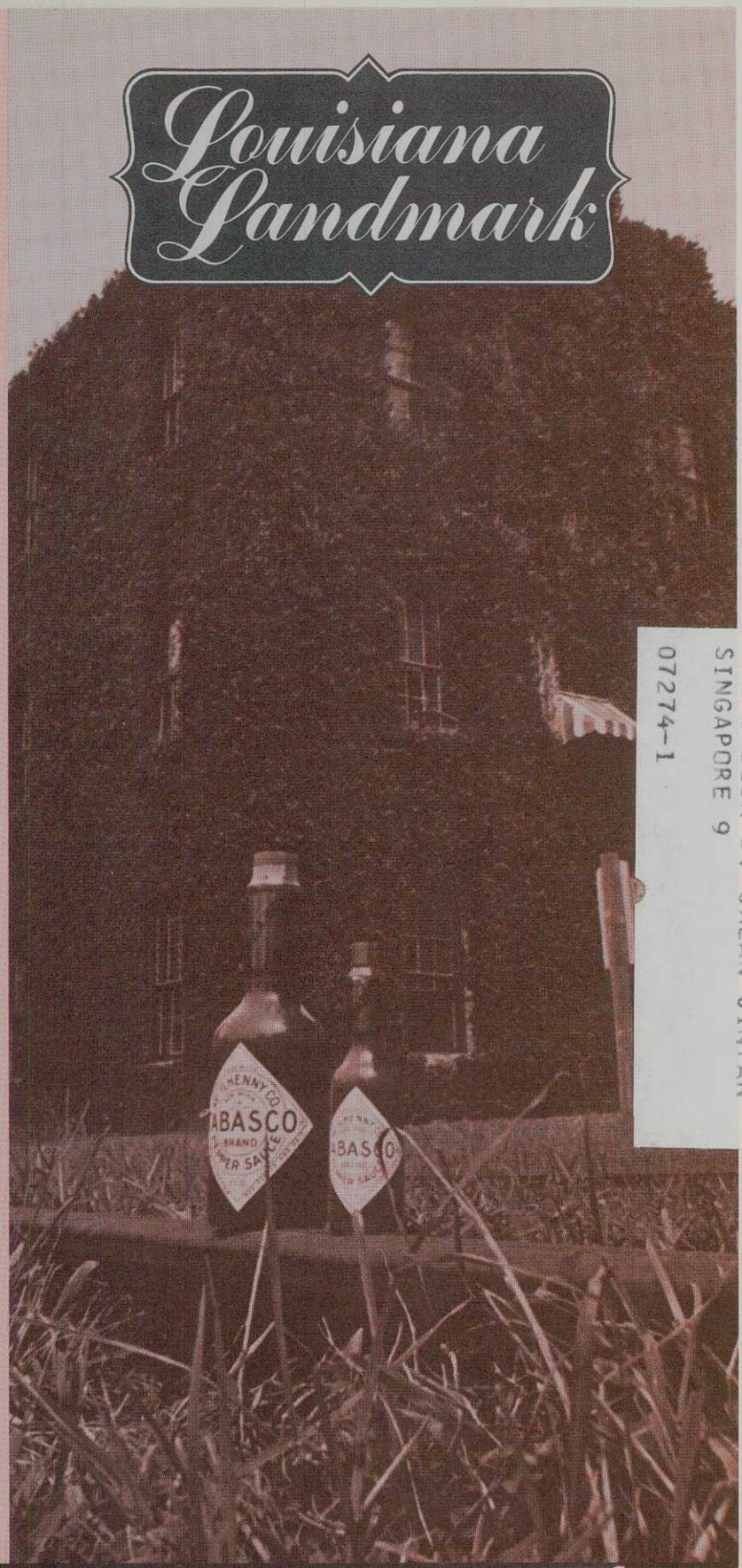
Edmund McIlhenny, a New Orleans banker married to Mary Eliza Avery, looked over the extent of ruin after he returned to the island. He noticed a few red pepper plants still growing in the kitchen garden. The peppers, a Central American spice known as Capsicum, had been carried to the island by a friend returning from Mexico. They had survived the rigors of floods, hurricanes, and war. McIlhenny began experimenting with the peppers. He built a laboratory and concocted a sauce which delighted the tastes of family and friends. He perfected his recipe and sent 350 bottles to carefully chosen recipients. Soon, orders began pouring in. Just four years later, in 1872, McIlhenny had to open an office in London to handle the European demand. His concoction was a success.

Today, TABASCO pepper sauce is exported to over 100 countries. Used by hundreds of thousands of good cooks all over the world, you'll find the label on the TABASCO bottle printed in several different languages. Because of requests from American servicemen in Viet Nam, the McIlhennys wrote a recipe book entitled "Charlie Ration Cookbook, or No Food's Too Good for the Man Up Front." It was given free to any man serving foreign duty.

The McIlhennys took a kitchen garden and made it a world-wide, highly successful industry. When faced with adversity, they did not give up in despair, because theirs was the spirit upon which this country was built. They looked to the future. And the factory they constructed for their own needs became a landmark for those who came after them.

The heritage we have from our forefathers we are building for our children today. Patterson-Redmond builds it strong, by serving well those who build for business, industry, education, health, and home.

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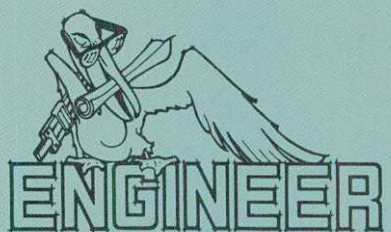
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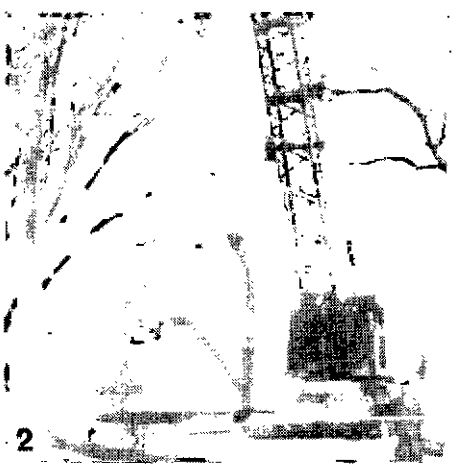
How to meet those ever-changing regulatory demands with a S&Lect Spec Wastewater Treatment System

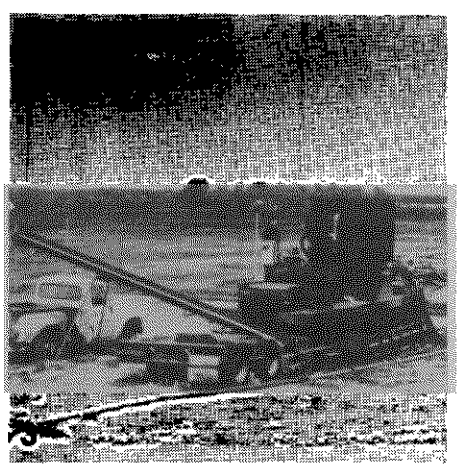
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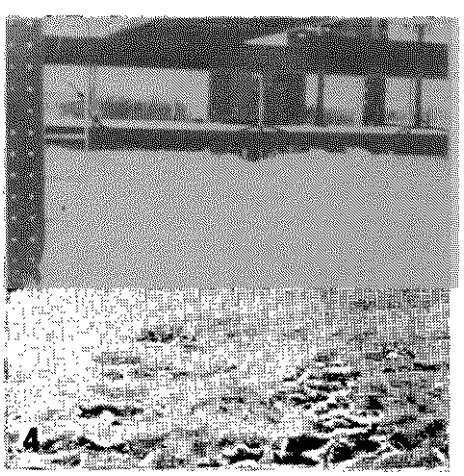


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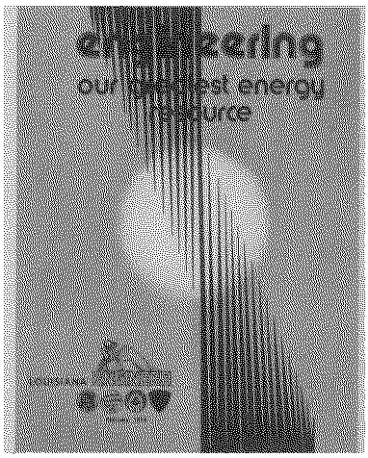
Our country is slowly and painfully coming to terms with a new truth: the impending lack of enough fuel to support Americans in the manner to which we have grown accustomed. The energy crisis in the United States could well do more to disrupt and change the lifestyle of Americans than any other ongoing domestic problem confronting the nation. Because of it we face, in the near future, severe restrictions in the areas of everyday life which Americans have regarded as inviolate: automobile travel, air travel, even home/office heating and cooling.

The engineering profession fully recognizes its role and challenge in research and development of new sources of energy. The nation's engineers also realize that a strong emphasis must be put on energy conservation. The scandalous waste of energy resources must end; the nation's technological brainpower must explore the full spectrum of energy possibilities, and must be fully supported in its endeavors.

The dimensions of U.S. energy problems demand nothing less than a full-scale national energy policy involving all segments of the energy industry and carried forward by strong and continuing administration and congressional leadership; massive utilization of technology manpower resources across a broad spectrum of scientific and technical knowledge and application skills; supportive funding commensurate with the national interests in energy conservation and source development; and significant alterations in the energy consumption habits of industry, the general public, and government.

At this time, it is appropriate that the engineering community direct its full attention during the National Engineers Week observance to solving crucial energy problems.

The engineering profession will confront the challenge with "Engineering—Our Greatest Energy Resource."



COVER

The public will look to engineers to help solve this country's energy problems, therefore it is appropriate that engineering is considered our greatest natural resource.

CONTENTS

Engineering—Our Greatest Energy Resource 3
Presidential Privilege 5
Engineering Opportunities Up—Enrollment Down ... 6
Swampland Express 8
LES 1974 Legislative Program Finalized 11
Put the ENGINEER in High School Libraries 13
Mississippi Hosts NSPE Meeting 14
European Trip 16
Potpourri 17
Engineering Societies 19
EngiNEWS 20

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LES President
Dr. J. J. Thigpen

Elsewhere in this issue of the LOUISIANA ENGINEER is an article on the legislative program that will be presented by the Louisiana Engineering Society at the regular session of the legislature in May of this year. Let me urge you to give special attention to the article if you have not done so. I believe we have a very fine program, one that will benefit the engineering profession and have the united and strong support of the engineers in the state.

We owe a debt of gratitude to Art DeFraites and his committee who worked so hard to prepare the proposed program. They did an especially good job in keeping the Society informed as their proposed program developed and in seeking input from all interested sources. The proposed legislative program was published in the December issue of the LOUISIANA ENGINEER for everyone's information and with a request for comments, suggestions, and recommendations. It was also sent to the presidents of 53 engineering and 12 non-engineering but related societies in Louisiana, again with a request for comments and suggestions.

The comments received were, in general, favorable to the program with the principal opposition being to the proposal dealing with the registration of all engineers as Professional Engineers. After considerable discussion by the members of the LES Board of Direction at their meeting on January 25, it was decided to drop this item from the legislative program in an effort to unify the engineers in the state in support of the legislative program.

Now that the program is set, we must join with the legislative committee in the next phase: selling the program to members of the legislature. We know that we will have strong opposition from some areas of industry, but that should only challenge us to work harder.

The first thing the legislative committee will need is an expression from the engineers in the state of their support of the program. Shortly after this issue of the LOUISIANA ENGINEER is received, each registered engineer and each member of the Louisiana Engineering Society will receive a card on which there will be an opportunity to express support or non-support for each of the items of the legislative program. Fill out the card and return it to the legislative committee. Let me urge each of you to do this as soon as possible. Art and his committee need this information to present to the members of the legislature to show them the attitude of the engineers toward this program.

I believe we have a good program, one which all engineers can support, and one that will be successful if we are willing to put forth the effort. Because of our obligation to serve the public and our fellow engineers, let us accept this challenge.

Engineering Opportunities Up–Enrollment Down

by Grover J. Trammell
Chairman
Professional Engineers
in Education

The opportunities for good, well paid jobs for engineering graduates seem to be at an all time high. Most seniors who are graduating this year are finding that they can choose from several good offers. The average starting salary for the B.S. graduate is around $1000 per month and students with high averages or previous work experience are being offered considerably more. Both private industry and governmental agencies have high quotas to be hired this year and in the forseeable future.

The fall 1973 issue of "Trends in Federal Hiring" reported that the largest increase in needs for most federal agencies is in the engineering field with hiring to be up 10-15 percent over last year. College placement directors throughout the country, and especially in Louisiana, report excellent opportunities in all branches of engineering. Some say that the situation is probably better than it was in the previous high of the mid-sixties.

With such unlimited opportunity facing the engineering graduate it would seem that enrollment in the engineering colleges should also be at an all time high, and that the number of graduates each year should be increasing. Such, however, is not the case. Engineering enrollment has gone down each year since 1968 as can be seen in Table 1. The information in this table, and also in Table 2, is taken from a survey of enrollments by the Engineering Manpower Commission of Engineers Joint Council. Final figures are not yet available for the 1973-74 school year but a preliminary report by the EMC estimates a 3.7 percent drop in undergraduate enrollment and a 10.3 percent drop in full time graduate enrollment.

The number of engineering degrees earned during the school year ending in June, 1973, showed a decrease from the previous year for the first time since 1966. Although the drop was not large, it occurred at all major degree levels. Table 2 gives the number of engineering degrees granted in the United States during the last ten years.

As can be seen, a steady growth in the number of degrees granted has occurred except for the slight decrease of 1966. This growth was just enough to keep pace with the growth in population and the increasing number of engineering jobs. The decrease of 1973 is the result of the declining enrollment of the last several years which is just now showing up in the graduating classes. Decreases will almost certainly continue for the next several years as the lower freshmen enrollments continue to be reflected and, unless the trend can be reversed, a serious shortage of engineers will occur which could vitally affect the welfare of the country.

Enrollments in the engineering colleges of Louisiana have generally followed the national trends. The figures for the beginning of the fall term for the last four years are shown in Table 3, and as can be seen, the numbers are decreasing each year. In the 1972-73 school year, Louisiana engineering schools graduated 747 with the B.S. degree, 167 with the M.S. degree, and 20 with the Ph.D. degree. These numbers will be considerably smaller for 1973-74 and, as with the national figures, will continue to reflect the decreasing enrollment of the last several years.

TABLE 1. Engineering Enrollments in Fall 1972 Compared with Earlier Years, All U.S. Engineering Schools

Engineering Students	Fall 1967	Fall 1968	Fall 1969	Fall 1970	Fall 1971	Fall 1972	Change From 1971 to 1972
Freshman Year, Full-Time	77,551	77,484	74,113	71,661	58,566	52,100	−11.0%
Sophomore Year, Full-Time	56,975	55,615	52,972	53,419	47,948	42,272	−11.8
Junior Year, Full-Time	50,483	50,274	50,039	49,855	48,543	45,874	− 5.5
Senior Year, Full-Time	47,551	50,736	51,738	51,983	51,377	49,895	− 2.9
Fifth Year, Full-Time	4,589	5,133	4,668	4,812	4,391	4,586	+ 4.4
Total Full-Time Undergrads	237,149	239,242	233,530	231,730	210,825	194,727	− 7.6
Part-Time Undergraduates	NA	20,754	20,984	18,445	18,222	14,149	−22.4
Master's Degree, Full-Time	34,231	24,469	20,014	23,216	22,405	22,877	+ 2.1
Doctor's Degree, Full-Time	15,376	15,768	14,298	14,802	14,100	13,460	− 4.5
Total Full-Time Grad Students	49,607	40,237	34,312	38,018	36,505	36,337	− 0.5
Part-Time Graduate Students	NA	27,246	32,645	30,802	27,302	24,940	− 8.7
Number of Schools Included	274	271	269	275	282	283	00.0

TABLE 2. Engineering Degrees, All U.S. Institutions, 1963-1973

Year Ended June 30	Bachelor's	Master's	Doctor's
1973	43,429	17,152	3,587
1972	44,190	17,356	3,774
1971	43,167	16,383	3,640
1970	42,966	15,548	3,620
1969	39,972	14,980	3,345
1968	38,002	15,152	2,933
1967	36,186	13,887	2,614
1966	35,815	13,677	2,303
1965	36,691	12,056	2,124
1964	35,226	10,827	1,693
1963	33,458	9,635	1,278

There are several contributing causes for these rather alarming enrollment figures though it is very difficult to pin-point any one as being the dominant factor. Certainly the end of the Vietnam war and the military draft has caused many prospective students to decide not to go to college or to delay it for awhile.

The influx of technology programs has caused some students to choose careers in these fields instead of engineering. There were 4402 bachelor of engineering technology and 2076 bachelor of industrial technology degrees reported to the Engineering Manpower Commission in the 1973 survey.

A rather large cause has been the poor press which engineering has received and the false representation of job opportunities in the field. Only a short time ago it was being reported that engineers were out of work, and that there were too many engineers. Of course this was never the case overall, although a few local and highly specialized situations did exist for a short time. Nevertheless, these stories appearing in reputable newspapers and magazines throughout the country caused considerable alarm among the youth and have no doubt contributed to decreasing enrollments.

Another more subtle cause may be the tendency of many of the general public to blame engineers for the undesirable side effects of modern technology such as energy shortages and environmental problems. Of course in truth the engineer is the only hope for solving these problems, but we have for the most part failed to make this understood by the public and especially by the young people who are prospective students.

The problem of decreasing enrollment in the engineering schools is, to a large extent, a problem of communication. In the past we as engineers have not done a very good job of maintaining good relations with the media or selling ourselves and our profession to the general public. Now is a time when we need to increase our efforts to sell the profession to the general public and to the young people in particular. Young people need to be informed of the true nature of the engineering profession and the many excellent opportunities available.

While the profession should not attempt to exert undue influence on prospective students, it should make sure that the proper information is made available and reaches the prospect. If presented in its true light the engineering profession will be much more attractive to the young, and enrollments will again increase.

With the many problems facing modern society, it is obvious that engineers will be in great demand for many years to come. Opportunities for challenging and satisfying jobs will continue to be almost unlimited in the forseeable future. But, we are already faced with a shortage of graduates to fill these jobs during the next several years due to the decreased enrollments in the engineering colleges. If the trend continues, the country will not have sufficient engineering manpower to meet and solve the many problems and challenges of our modern society.

Let us all reverse this trend, and also improve the engineering profession by doing a better job of selling our profession.

TABLE 3. Total Enrollment, Louisiana Engineering Colleges, 1970-1973

School	Fall, 1970		Fall, 1971		Fall, 1972		Fall, 1973	
	Undergrad.	Grad.	Undergrad.	Grad.	Undergrad.	Grad.	Undergrad.	Grad.
L. S. U., B.R.	1485	254	1427	240	1360	210	1315	177
L. S. U., N.O.	312	0	323	18	325	24	338	24
La. Tech	1018	84	882	94	758	88	689	70
McNeese	294	10	229	13	198	11	180	10
Southern	202	0	228	0	230	0	221	0
Tulane	465	167	467	198	437	174	427	165
U. S. L.	582	33	561	27	523	36	510	40
Totals	**4358**	**540**	**4117**	590	3831	543	3680	486

Swampland Express – A Tribute to Louisiana Engineering

When Louisiana engineers were given the task of closing the 36.9-mile gap between I-10 in Lafayette and I-10 in Baton Rouge, no one said it would be easy. But perhaps the greatest obstacle was an 18-mile stretch traversing the Atchafalaya Basin, the second largest swamp in the country.

Long known in Louisiana as a sportsman's delight, the basin with its moss-draped trees and hidden bayous provides a natural refuge for fish, fowl and game. And its rich layers of accumulated sediment play host to some of the state's greatest resources of oil, timber and gas.

Although appreciative of the basin's natural wealth, the engineers whose job it was to cross the basin with highway, were somewhat less appreciative of the difficulties encountered in bridging the swampy terrain.

The purpose of the I-10 Atchafalaya project encompassed providing a major low maintenance highway facility with a smooth-riding surface across the basin, while disrupting the natural resources of the swamp as little as possible. The decisions made and the difficulties surpassed in meeting these goals, combined to make the "Swampland Express" one of Louisiana engineers' outstanding achievements for 1973.

At the onset of the project, numerous studies were done, including a study of the geology of the area. The basin is a relative newcomer to the great Mississippi River valley, formed approximately 25,000 to 30,000 years ago at the peak of the late Wisconsin glacial stage. The mammoth glacier then covering the Southern U.S.A. gave way, slowly dredging backward, and leaving in its wake an entrenched valley system. In the thousands of years that followed, the sea level rose and deposits of sediment built up, bringing the valley to its current level about 5,000 years ago. The Atchafalaya Basin, a small part of the valley, was formed through a quirk of nature, when the capricious Mississippi veered from her Teche course to reroute her flow about 1,000 to 1,600 years ago.

The Atchafalaya River was also formed as a result of the meandering habits of the Mississippi, some 500 years after the basin came into existence.

Today, the Atchafalaya Basin extends from the convergence of the Red, Atchafalaya and Mississippi Rivers near Simmesport in the north to Morgan City in the south, a river distance of 140 miles. It is bordered on the east and west sides by flood levees, which stand an average distance of 18 miles apart.

Other preliminary studies decided the answers to major project questions: whether to construct an embankment or a bridge structure, choice of optimum location for the facility, whether to join the east - west highways or to leave the structures separate, and numerous other issues.

Due to the instability of the embankment structures on some sections of swamp ground, and to the scarcity of available suitable granular materials for the building of embankments, the engineers decided that a bridge structure would be more feasible. These reasons coupled with the grade requirements within the basin floodway, and the necessity of frequent waterway openings, swung the decision in favor of a total bridge structure.

The best course for the expressway connection was decided as being the most direct route between Baton Rouge and Lafayette. The east-west highways would be built apart, to facilitate installment of precast building structures, and to cut down on traffic glare, thus erasing the need for erection of a screening fence between lanes.

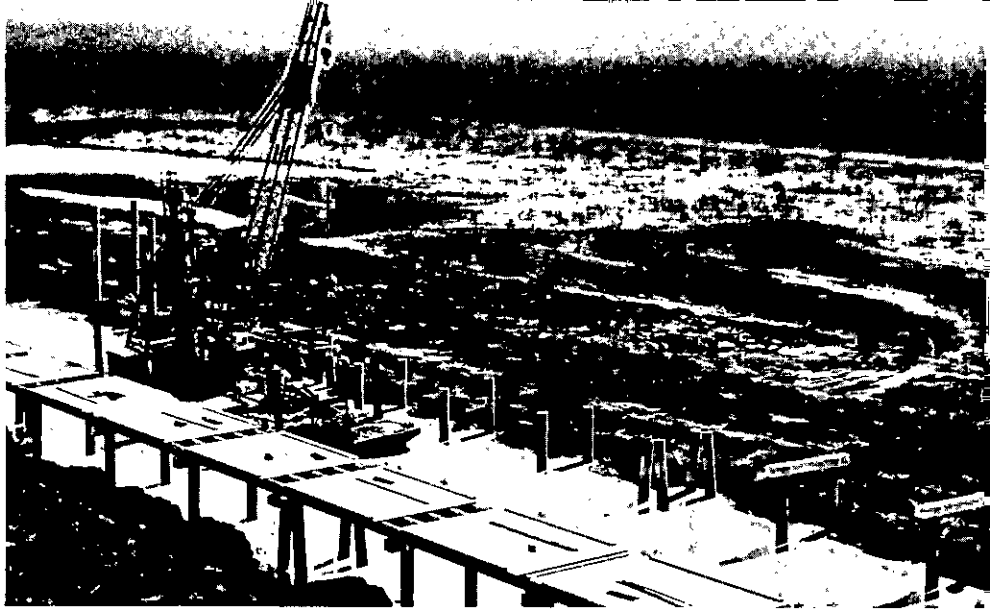
The work for the basin crossing was divided into six construction contracts and took approximately 11 months to complete, opening to traffic on March 12, 1973.

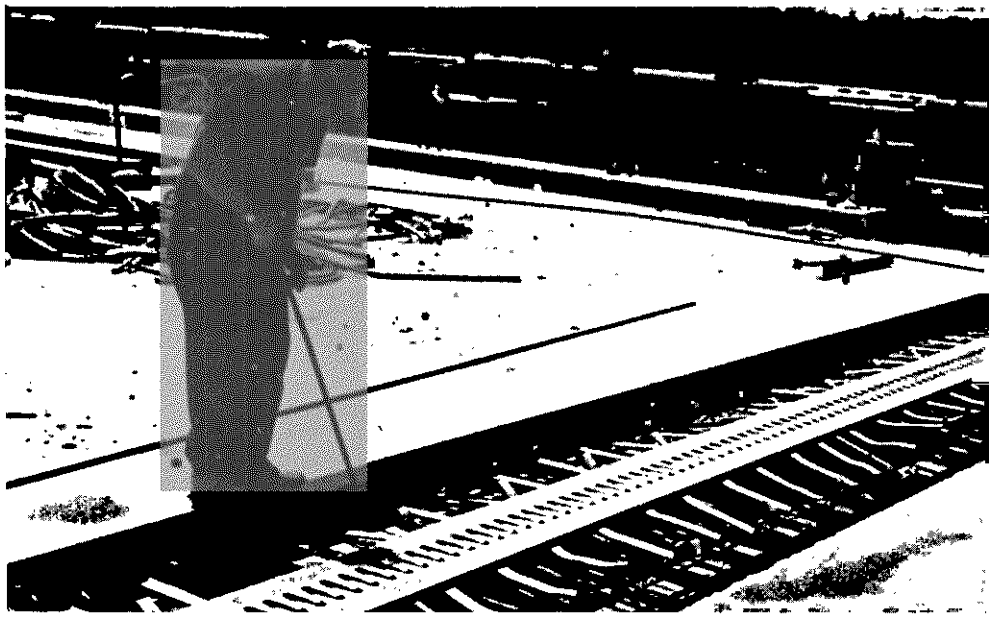
As the first contractors readied themselves for the first phase of the "Swampland Express" construction, a major problem remained unsolved. Construction of a bridge across America's second largest swamp provided the difficulty of inaccessibility to the site. The problem was solved by constructing a network of 30 miles of canals, 10 miles for access purposes, and 20 miles for a centerline construction canal. By agreement with the Corps of Engineers, the Department of Public Works and the Wildlife and Fisheries Commission, these canals would remain open for easy access for further maintenance and inspection. They would also serve the dual purpose of reservoirs during low water periods, thus offering greater refuge to the wildlife population, and would also afford sportsmen a water route to all but inaccessible fishing grounds.

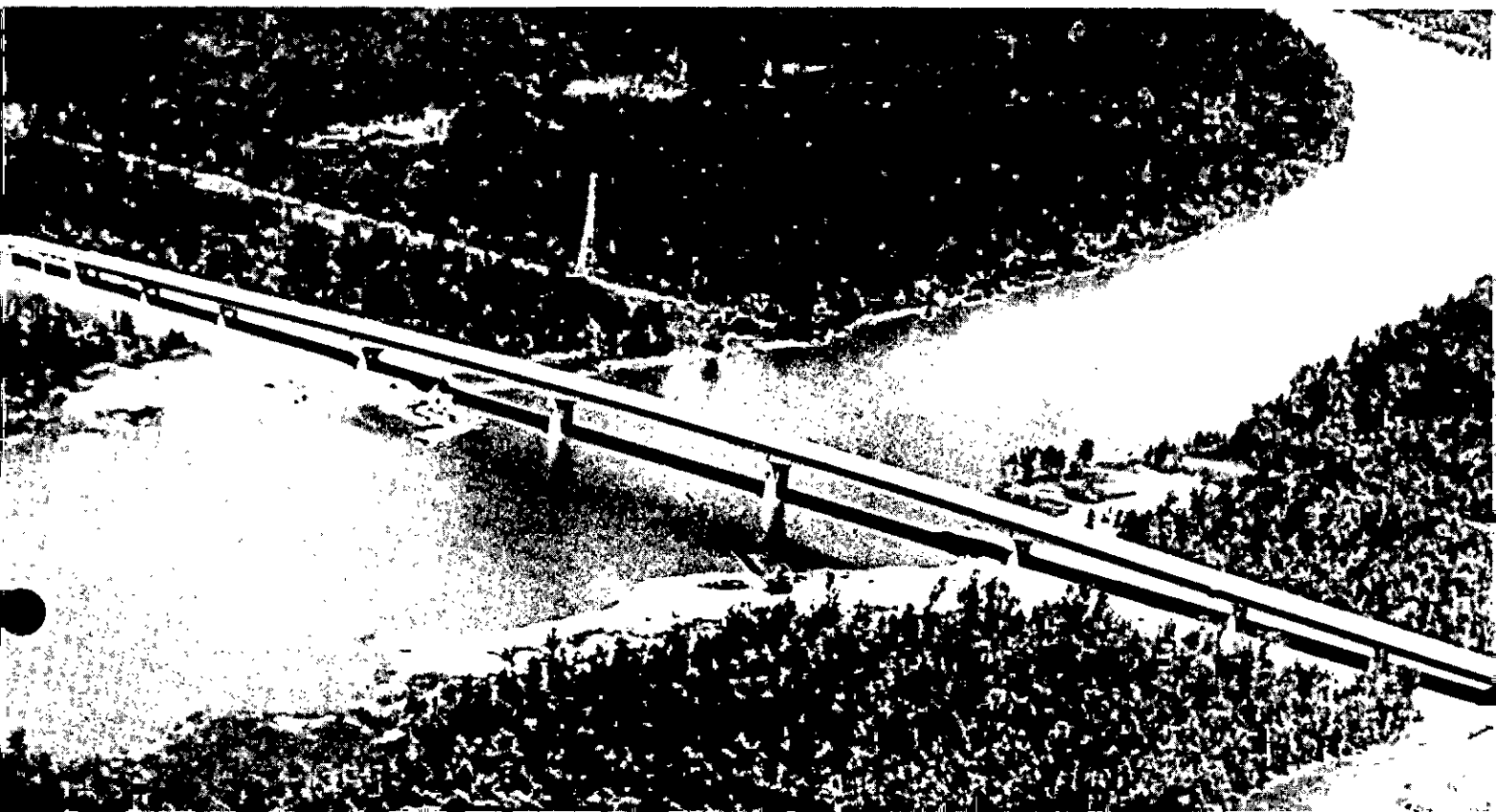
On-site construction and assembly of parts were rendered practically impossible in the spongy marshland. The only solution seemed to be prefabrication of as many fixtures as possible, to be barged in ready for installment. Nearly all materials, from foundation piling to roadway slabs, were delivered to the site, ready to be installed.

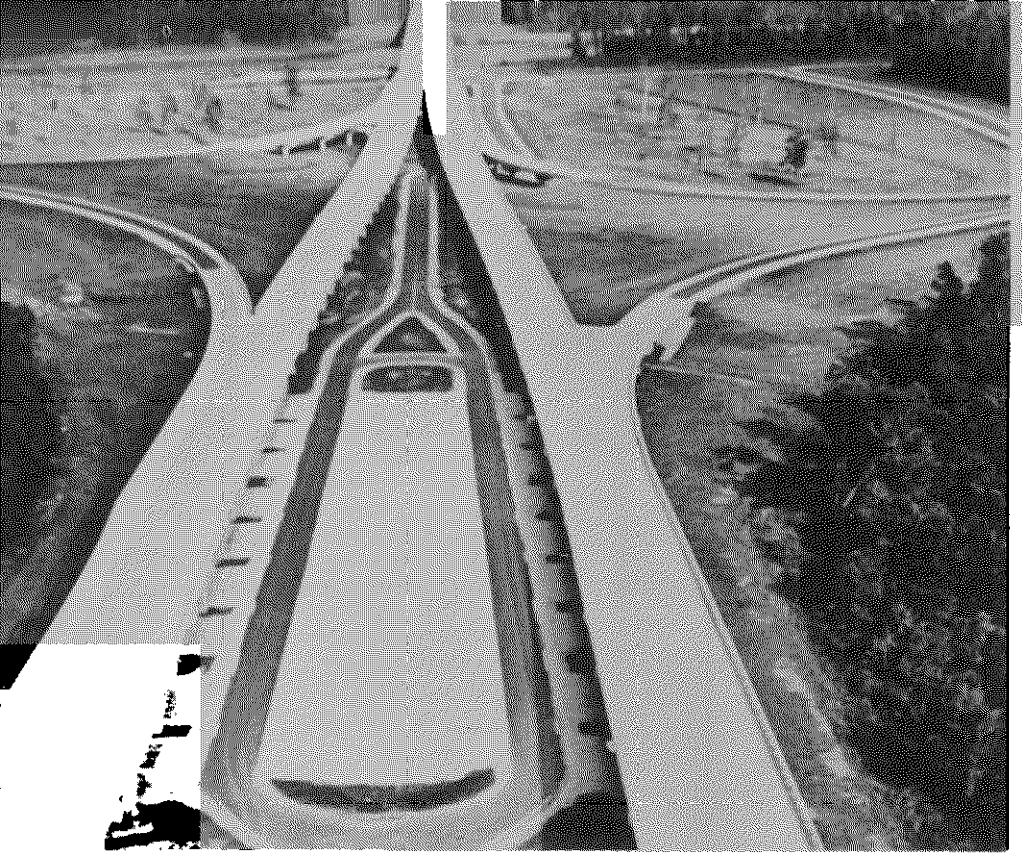
Three major operations made up the work: the driving of 2- and 4-pile bents at 70-foot centers along the separated eastbound and westbound roadways, capping them, then installing the roadway slabs. The only concrete poured on the site was for tying the piles and caps together, for closing the 12-foot gaps between slabs, and for guard rails—a small amount in comparison with the overall quan-











tity of concrete used for the precast structures.

The major machinery on the project consisted of two barge-mounted Clyde Whirley cranes, which drove the piles, and placed the caps and slabs, each precast to fit very close tolerances. The eastbound and westbound highway structures measured 168 feet apart from center to center, and the cranes operated in the center canal about a half mile's distance apart, each working on one of the highway structures. Other rigs were used to adjust line and grade and to pour the 12-foot closures between the slabs.

Driving the piles was no mean feat. The 54-inch prestressed cylindrical piles had to be lifted from the barge in a horizontal position, then stood vertically in the air and placed in the leads. They were then driven with a single acting steam hammer having a 40,000 pound ram with an energy rating of over 88,000 foot pounds, or cut off six inches low, so that the caps could be shimmed up to exact grade. Each rig was able to drive an average of eight piles per day.

The caps were no less easy to maneuver from off the barge onto the piles. As the prescast caps had steel cages jutting out below to extend into the core of the piles, they had to rest upside down on the barges, then rotated in the air by means of a roller hitch in the spreader arrangement on the crane before they could be set on the piles. Caps for the 2-pole bents weighed 30 tons each, while the caps for the 4-pole bents weighed 80 tons. The caps and piles were then banded tight and concreted.

On top of the caps went the slab sections, precast in 70-foot monoliths, each containing six girders. Each 70-foot span was made continuous for a 280-foot design unit. During installation, the girders in the slab sections fit between cap bolts as the bearing plates engaged and slid over them, coming to rest on the machined bearing pads. Once in place the slabs were tied down with screw nuts and lock nuts over each bolt. After the slabs were checked, the 12-foot gap between each slab was closed with concrete. The process was continued until a full 280 feet of the roadway unit was completely laid and level.

To provide a smooth riding surface, each slab unit was made continuous and steel finger assemblies were provided at the expansion joints located every fourth bent.

Reinforcing bars were placed at the bottom of girder ends to counteract live load stresses and the remainder of the creep stresses. The basic 280-foot slab unit was fixed at the center and at each flanking bent. The spans at these bents rested on the concrete diaphragm and the end spans rested on galvanized steam rollers, thus forming a double expansion bent. A steel cantilever finger joint was used at each expansion to reduce tire slap and result in the smooth surface, relatively free from noise.

But the Herculean task wasn't completed until the three bodies of water in the Atchafalaya basin had been bridged: the Atchafalaya River, the Opelousas Bay and the Whiskey Bay Pilot Channel. This was accomplished through the use of continuous steel girders on caissons at the river crossings and on concrete cofferdam pile piers over the navigation channel. The three crossings comprise approximately 1.2 miles of the 18-mile section. The remaining 16.8 miles were finished in the manner described above.

The Atchafalaya Basin Swampland Express represents a total investment of approximately $107 million, or $6 million per mile. It has achieved its goals set for it by Louisiana engineers of providing an economical, maintenance-free highway facility with a smooth riding surface — and its implications are vast. It is a major stepping stone in the east-west highway which, after completion of the 9.3 mile stretch from Grosse Tete to Baton Rouge, will run unbroken from Baton Rouge to Kerrville, Texas. But its achievements seem greater in that it represents man's use of nature, without his disruption of nature. Through sound planning, ingenious design and meticulous construction, the Swampland Express expresses the unity which man and nature may attain.

LES 1974 Legislative Program Finalized



In early December of 1973 the tentative Legislative program for 1974 was sent to 52 engineering societies and 12 architectural societies for their review and comment. In addition the program was published and circulated to all registered engineers in the state of Louisiana through the December issue of the LOUISIANA ENGINEER.

At the monthly meeting of the Board of Directors of the Louisiana Engineering Society held on January 25, 1974, a complete review was made of all comments and recommendations received as a result of this dissemination. Considerable time was spent reviewing all aspects of each proposal in the Legislative program and it was determined that a two-thirds vote of the Board of Directors present would be necessary before any proposal was included within the Legislative program.

The one proposal that did not receive complete acceptance from the engineering societies was the proposal that provided for registration as a Professional Engineer in addition to the present registration by branches. Even this proposal was acceptable to the societies commenting with but one exception providing that a minor change would be made specifying that the design of the seals be included in the act.

After due deliberation on this proposal it was felt that the unanimous support of the professional societies was necessary for a successful Legislative program and the Board voted to eliminate this proposal from the 1974 Legislative program. Each of the remaining proposals was approved and the revised program is presented below in its approved form.

The Louisiana Engineering Society will mail to each registered engineer in the State of Louisiana a ballot shortly after the February issue of the "LOUISIANA ENGINEER" has been circulated. The support of each registered engineer is solicited by requesting that this ballot be returned at the earliest possible date to assist the Louisiana Engineering Society in their Legislative efforts.

Financial support for this program is also a necessity. Contributions to the 1974 Legislative Fund will be accepted by the Louisiana Engineering Society and should be forwarded to the following address: Legislative Fund; Louisiana Engineering Society; P. O. Box 2683, Baton Rouge, Louisiana 70821.

PROPOSED CHANGES TO ACT 73 OF 1950 AS AMENDED AND COMMENTARY

1. A proposed revision to the registration law as it applies to a long established practice.

Commentary

A recent court order has ruled that the existing terminology of the registration act makes it mandatory for the Board to register persons on a basis of long established practice regardless of whether that person, in the opinion of the Board, has achieved the competence necessary to practice engineering and thus, "safeguard life, health and property and to promote the public welfare." On the other hand, there are occasions in which registration through this means are wholly justifiable. It is felt that the law as it is presently written, and interpreted by the court, does not allow the Board of Registration any latitude for judging the qualifications of the individual. By changing the mandatory provision from "shall" to a promising provision of "may," the judgment of the Board in particular instances could be administered.

Present Law:

Section 12 (37:69), Paragraph A. (1)(c), provides:

"The board **shall** register an applicant without written examination, who presents the written recommendations of five or more professional engineers registered under this chapter, and, who submits proof that he has had at least 20 years of successful practice, satisfactory to the Board, not less than 12 years of which shall have been in the responsible charge of important engineering work."

Proposed Revision:

The third word of this paragraph be changed from "shall" to "may."

2. A proposed revision to the Registration Law retaining the Industry exemptions as they presently exist except for the Engineer(s) in charge of Responsible Professional Service.

Commentary

The present Registration Law of the State of Louisiana provides, "to insure the safeguard (of) life, health and property and to promote the public welfare," all persons in either public or private capacity practicing or offering to practice professional engineering are required to submit evidence that they are qualified to so practice and to be registered as a professional engineer. The present Registration Law further provides that employees in industry are exempt from this requirement.

While industry has proposed numerous reasons why all of their employees need not be registered, i.e., the specialization of their work; the transfer of employees from state to state, etc., it is inconsistent with the intent of the Registration Law that absolutely no one in any industry submit evidence to the public that the industry is qualified to perform the professional engineering services they are rendering. Millions of dollars

are spent annually by industry in Louisiana most of which involves special knowledge of mathematical and physical science, the principals and methods of engineering analysis and design, professional education and practical experience. Certainly industry can not function without practicing engineering or being concerned or involved in the public welfare, or in the safeguarding of life, health or property.

For this reason, although every person in industry performing engineering tasks may not need to be registered, certainly each industry can designate at least one person as the Engineer in charge of the Responsible Professional Service and this person should be registered. This procedure is entirely consistent with the requirements of private practice.

Present Law:

Section 18 (37:698), Paragraph C., provides:

"This act shall not apply to affect, interfere with, or in anywise regulate employees of a person, firm, or corporation engaged in industrial operations, including, but not limited to, producing, processing, manufacturing, transmission, distribution, or transporation, when performing services in the course and scope of the business of said person, firm or corporation, or affiliates thereof; provided that this exemption does not apply to the practice of Civil Engineering or Land Surveying."

Proposed Revision:

The last part of the above section would be changed to read as follows:

"....provided that this exemption does not apply to the Engineer(s) in charge of Responsible Professional Service or to the practice of Civil Engineering or Land Surveying."

3. A proposed revision to the registration law allowing for an increase in the registration fee.

Commentary

The existing initial registration fees and renewal fees were established in the Registration Law in 1950. Everyone is aware of the increased cost of operating and administering all business since 1950. Additionally, the increased requirements of registration, including the provisions for testing, have imposed considerable increases in the operating cost of the State Board of Registration. It is for these reasons that an increase in the maximum allowed the State Board of Registration for registration of applicants needs to be modified. The State Board can not continue to provide the present day services required under 1950 financial provisions.

Present Law:

Section 13 (37:693), third and fourth paragraphs provide:

The registration fee for professional engineering shall be twenty-five dollars, which shall accompany the application. The registration fee for interstate registration as a professional engineer or land surveyor shall be twenty-five dollars ($25.00) and shall accompany the application.

Proposed Revision:

"The Registration fee for Professional Engineers and Land Surveyors shall be established at the discretion of the Board but shall not exceed fifty dollars ($50.00) and said fee shall accompany the applications."

Present Law:

Section 16 (37.696) provides:

"....Renewal may be effected at any time during the month of December by the payment of a fee not to exceed ten dollars ($10.00) at the discretion of the Board for professional engineers, and not to exceed five dollars ($5.00) at the discretion of the Board for land surveyors engaged in private practice or employment...."

Proposed Revision:

"Renewal may be effected at any time during the month of December by the payment of a fee which shall be established at the discretion of the Board but which shall not exceed fifteen dollars ($15.00)."

PROPOSED CHANGES TO SECTION 23, TITLE 12 LOUISIANA REVISED STATUTES OF 1950

4. A proposed revision to the business corporate law as it pertains to corporations using in their name the words "engineer," "engineering," "surveyor" or "surveying."

Commentary:

The present Registration Law of the State of Louisiana requires firms presenting themselves to the Public as Engineers or Land Surveyors to in fact be Engineers or Land Surveyors under the provisions of the Registration Law. At the present time there are no provisions for notification of the State Board of Registration of new corporations, either domestic or foreign, that may be applying for incorporation in the State of Louisiana and presenting themselves as Professional Engineers or Land Surveyors. It is, therefore, necessary to have some form of communication between the Secretary of States Office and the State Board of Registration for Professional Engineers and Land Surveyors concerning those corporations.

Present Law:

There is no such provision in the present law.

Proposed Revision:

Add to Sub-Section "E" of Section 23 of Title 12 the following additional paragraph:

"If the corporation seeking the issuance of a Certificate of Incorporation in this state shall include in its name the words 'engineer,' 'engineering,' 'surveyor' or 'surveying,' the Secretary of State shall require prior to issuance of the Certificate of Incorporation evidence satisfactory to him that written notice of such application for a Certificate of Incorporation shall have been delivered to the Louisiana State Board of Registration for Professional Engineers and Land Surveyors in writing not less than ten (10) days prior to the date of issuance of the Certificate of Incorporation. In the event that the applicant corporation shall with its application to the Secretary of State file a written waiver signed by the Executive Secretary or any officer of the Louisiana State Board of Registration for Professional Engineers and Land Surveyors waiving the requirement of ten (10) days written notice to the said Board, as set forth in the next preceding paragraph, the Secretary of State shall be authorized to proceed immediately with the processing of such application."

Add to Section 304 of Title 12 the following paragraph:

"C. If the corporation seeking the issuance of a Certificate of Authority to transact business in this State shall include in its name the words 'engineer,' 'engineering,' 'surveyor,' or 'surveying,' the Secretary of State shall require prior to issuance of the Certificate of Authority evidence satisfactory to him that written notice of such application for a Certificate of Authority shall have been delivered to the Louisiana State Board of Registration for Professional Engineers and Land Surveyors in writing not less than ten (10) days prior to the date of issuance of the Certificate of Authority. In the event that the applicant corporation shall with its application to the Secretary of State file a written waiver signed by the Executive Secretary or any officer of the Louisiana State Board of Registration for Professional Engineers and Land Surveyors waiving the requirement of ten (10) days written notice to the said Board, as set forth in the next preceding paragraph, the Secretary of State shall be authorized to proceed immediately with the processing of such application."

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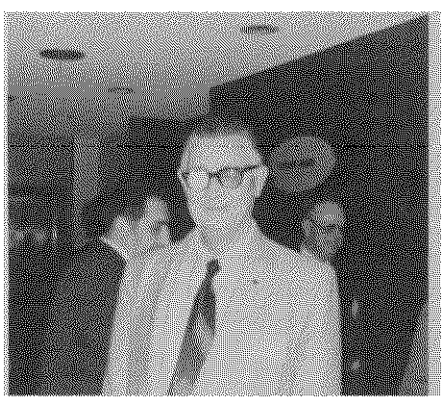
Mississippi Hosts NSPE Meeting

The Louisiana Engineering Society was well represented at the NSPE Winter Meeting in Biloxi, Mississippi on January 14-18, 1974. Both of our national directors, Waldemar Nelson, P.E. and A. J. Szabo, P.E. were present to discuss and vote on the varied issues brought before the delegates from almost every state and jurisdiction in the United States.

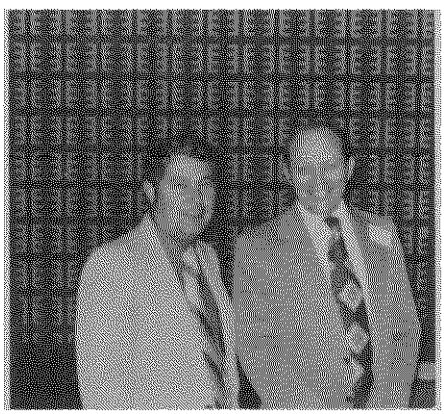
The practice sections and society administrator meetings were attended by Ken Deal, P.E., Private Practice; George Heller, P.E. and James S. Janssen, P.E., Industry; E. E. Buddy Moncla, P.E. and Fred C. Gulpepper, P.E., Construction; R. C. "Doc" Spears, society administrators; and Art DeFraites, P.E., legislative activities.



Waldemar S. Nelson, P.E., and A. J. Szabo, P.E., LES National Directors, in Biloxi at NSPE Winter Meeting.



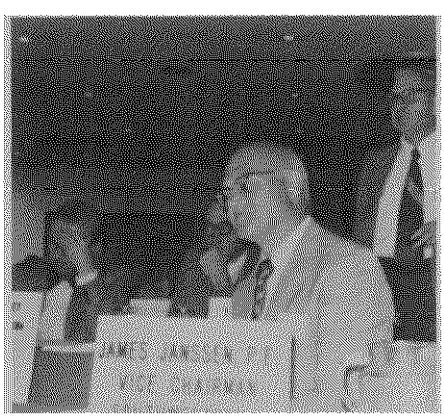
George L. Heller, P.E., LES-PEI Chair-Chairman.



Arthur DeFraites, P.E., LES Legislative Committee Chairman, and Ken Deal, P.E., LES-PEPP Chairman.



E. E. "Buddy" Moncla, P.E., LES-PEC Chairman.



James S. Janssen, P.E., Vice Chairman NSPE-PEI Southwestern Region.

PROFESSIONAL ENGINEERS IN CONSTRUCTION

Louisiana's Professional Engineers in Construction has doubled its membership in the past two months. While this practice division is just over one year old, we now have a 70-member division. A voluntary $2.00 contribution per member has been established. Our membership continues to benefit from our recent communication with 108 Louisiana contractors soliciting their membership and participation in PEC.

We have been asked by NSPE to review House Bill (HR) 9234 regarding concrete placement. We wish to report that we find the bill in its present form **not** to be in the best interest of the construction industry. Concrete placement is an area where problems have arisen and we are in agreement that possibly some action is necessary. All concrete structures must first be properly designed. As has been successfully developed in the oil and gas industry, proper Federal and State Code Requirements can eliminate the problems in concrete placement. Some of the suggestions are to require sampling of concrete poured with the necessary documentation of these samples from a qualified testing laboratory and to require that all false work for concrete placement be designed by a registered engineer or architect. Codes should also specify curing time before forms can be

removed based on conditions and design. To insure that all requirements are being followed, inspection and documentation must be given all concrete construction jobs by a competent person experienced in cement construction.

It is our opinion that the above requirements can be implemented without any difficulty and will prove to be safer than the present house bill. To require a registered professional engineer or architect who is experienced in this type of work to be on all concrete construction jobs on a full-time basis is a near impossible task. This would seriously hamper the construction industry because there are not that many qualified people available in this country.

PROFESSIONAL ENGINEERS IN INDUSTRY

The industry engineers had all kinds of things going at the annual NSPE Winter Meeting. Progress reports were received on the regular activities: PEERS —it continues to do a good job of finding positions for unemployed engineers; regional meetings, including our excellent one held in New Orleans last October for the Southwestern region; the PEI Budget—the largest of the practice divisions doesn't seem to be getting as much of the total as needed; and the national PEI newsletter —the problem is to give it wider circulation at no added cost.

The big issue in a number of states is the effort to eliminate the exemptions from registration for engineers in industry. There were indications that one industry employing engineers will not accept the proposed change in the Louisiana law which would require only those in "responsible charge" to be registered. Let's hope that the professional aspects of protecting the public will prevail. Arthur DeFraites, our legislative committee chairman, was there observing.

PROFESSIONAL ENGINEERS IN PRIVATE PRACTICE

Ken Deal, P.E., Chairman LES-PEPP, represented Louisiana at the NSPE-PEPP Board of Governors meeting. Louisiana PEPP has a membership of 89, which entitled Ken to 3 votes at the meeting.

The majority of the meeting time was spent on discussions relating to the "Maryland Situation" and methods to initiate stronger action to discipline unethical members of the engineering profession. Matters of concern included:

1. Approval of the recommendation contained in the *Report of the Task Force on Political Involvement in Awarding Engineering Contracts,* with the deletion of the $100 limit set forth in Recommendation 5. The complete text is printed in the December issue of PROFESSIONAL ENGINEER.

2. Recommendation that NSPE take stronger action in disciplining the members through a number of suggested actions.

3. It was reported that the Farmers Home Administration Liaison Committee is preparing a brochure on selection of engineers to be distributed through local FHA offices.

4. The 1974 edition of contract documents, Standard Conditions, Instruction to Bidders, Stipulated Sum Agreements and Cost-Plus-Free Agreement are in print.

5. It was reported by the Professional Liability Insurance Committee that premium increases for 1974 would average 25 percent. A number of program changes were discussed.

6. Milton Lunch, NSPE Counsel, reported that the trial date for the antitrust suit will be set following the April 1 pretrial motions hearing. He urged each state society to review their documents to ascertain that fee guides are advisory in nature and are not intended to be mandatory.

7. National PEPP is addressing itself to the energy crisis through forums. Expanded programs, workshops and conferences involving PEPP members are "on tap" in 1974.

STATE SOCIETY ADMINISTRATORS COUNCIL (SSAC)

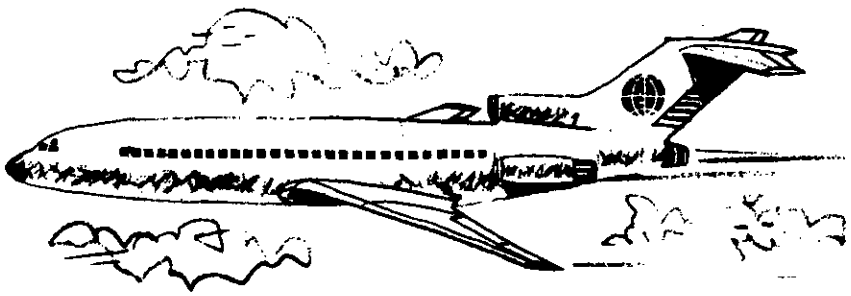
The SSAC meeting was held in conjunction with the NSPE Winter Meeting in Biloxi on January 14 - 15, 1974. Some 14 state directors and secretaries discussed successes and problems in managing the state societies.

R. C. Spears, LES Executive Secretary, attended and believed the meeting was well worth the trip. The communications of ideas and experiences between state societies, and a better understanding of the implementation of NSPE activities within state societies were well received. Highlights of the meeting were: a detailed review of NSPE legislative action by Robert H. Doyle, NSPE legislative counsel; roundtable discussion on membership; student involvement in NSPE by Dale Oatney, Executive Director, Ohio Society of Professional Engineers; and "nitty gritty" discussions with Paul H. Robins, Executive Director NSPE, and Robert L. Reitinger, P.E., President of NSPE.

OTHER ACTIVITIES

On the relaxation side, the ladies' program included lunch at Mary Mahoneys' Old French House; a Seafood Safari; Cruise and lunch at the Gulfport Yacht Club; candlelight tour of Beauvoir; and the Mississippi people arranged a plantation house tour, a visit by paddle wheeler to the Litton-Ingalls Shipyard plus a real Gulf Coast style seafood dinner aboard. All of this took place on the Pascagoula River where the little green men made a recent appearance; but they wouldn't come out for us.

Louisiana Engineers European Trip



Early returns indicate that there is sufficient interest in the Louisiana Engineers Delegation to Europe to meet minimum requirements as to the number of delegates. And the majority of those responding indicate that wives want to come along!

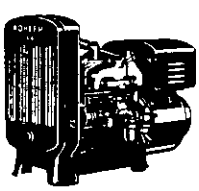
We can easily understand that when we consider that we will visit London, Brussels, Leningrad, Moscow, Vienna, Berlin, and Zurich. This will be the best time of the year to see Middle Europe, September 15 to October 6. We also plan to play a bit and see a few sights: English pubs, the Thames, the impudent Belgian Mannekin statue, Red Square and the palace-museums of Russia, the Berlin Wall, old Vienna and the Alps of Switzerland.

Additional information may be obtained by contacting James Janssen at 225 Bellaire Drive, New Orleans, La. 70124. Jim was named by the LES to coordinate this activity. If you can't make up your mind about this trip, ask your wife if she would like to go.

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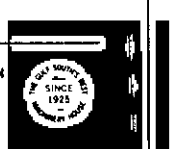


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Industrial Professional Development Award

The Central Electric Company, Inc., Pineville, has been nominated by the Alexandria Chapter for the 1974 NSPE Industrial Professional Development Award.

Nomination forms including detailed data on all pertinent aspects of the relationships existing in the company between the engineers and supervision have been forwarded to NSPE for consideration of the 1974 Award.

Some of the commendable policies and practices of the Central Electric Company, whose principal product is generation, transmission and distribution of electric power, are:

- The company encourages its engineers to become registered by granting time and study for the registration tests and reimbursing them for expenses incurred in preparing for and taking the tests.

- Forty-two of the 53 total company employees classified by job title as engineers are registered professional engineers and engineers in training.

- Thirty-six of the 53 engineers are members of the Louisiana Engineering Society.

- Engineering titles are assigned only to those employees who are graduates and actually working in engineering. The company goes all out to place an engineer in a position that matches his capabilities and interests.

- Salaries of engineers are influenced by the average rate of the same type industry. They are reviewed and compared to salaries that reflect the same responsibilities in the company. Engineers are treated as professionals and they are not bound to the salary scale of non-professionals.

LES congratulates the Central Louisiana Electric Company for their participation in this most worthwhile program and wish them every success in the national competition.

LES Spring Meeting

The LES Spring meeting plans are falling into place. Mark your calendars for April 19-20, 1974, Rowntowner Motor Inn, Lafayette, and attend.

Bill Klos, Program Chairman, and Malcolm Hurstell, Vice President LES, report a very interesting and educational program is being planned along these lines:

- Presentation by E. L. "Bubba" Henry (If obtainable) on CC73.
- Student paper presentations by engineering students from LSU, Tulane, Southern, USL and Louisiana Tech.
- Panel discussion on the LES Legislative Program. Art DeFraites to act as moderator and to outline the program; Joe Keogh, attorney and lobbyist, to discuss some of the lobbying aspects of the program; Dan Vliet or a State Board of Registration representative to give the State Board's evaluation of the program; a state legislator to give his and other legislators' probable reactions to our progress; and then a question and answer period.
- LES Awards luncheon where outstanding Louisiana engineers will be honored.
- Committee and Practice Section meetings.
- To top it all, a Crawfish Boil will be held Friday evening.

Energy Crisis: Facts

Dr. J. J. McKetta, professor of chemical engineering, University of Texas, Austin, addressed a large audience of USL engineering students and engineers on our present energy crisis Tuesday evening, January 22 at the USL Union, Lafayette. He believes the demand for oil, gas, coal and other energy sources will far surpass the supply for many years to come. Dr. McKetta is particularly well qualified to speak on the subject since he currently serves as chairman of the National Energy Policy Committee.

A summation of the hard hitting lecture is very pessimistic. We as a nation are in bad shape concerning our energy resources. In addition to the obvious need to discover and develop new sources of energy which will take many years, we are going to have to accept less than 100 percent pure air and water. Pollution control standards necessary in New York and Los Angeles need not be so stringent in less congested areas when the choice is between environmental consideration and jobs.

The attendants were presented a basis of information from which to intelligently discuss and evaluate some of the steps which may be taken to solve the apparent energy crisis.

Congratulations to the USL Student Section of ASME and the College of Engineering at USL for arranging this provocative lecture on such a timely issue.

Baton Rouge Auxiliary Award Dinner

Terry W. Sledge, a sophomore student in civil engineering at Louisiana State University, was recipient of the Woman's Auxiliary of the Baton Rouge Chapter scholarship award. The presentation was made at a dinner held Friday evening, January 18, at the Baton Rouge Country Club.

Mr. Sledge was accompanied by his wife of two weeks, a golden girl at LSU, and his parents.

(Continued from Page 17)

The presentation of the award was made by Mrs. T. E. Alexander, scholarship committee chairman, and Mrs. James C. Webb, Auxiliary President, moderated the enjoyable affair. Roger W. Richardson, P.E., Dean of Engineering, LSU, spoke at the gathering.

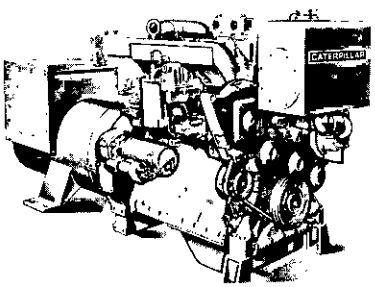
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Engineering Societies

The list of engineering societies and related groups in Louisiana is included as a convenience to our members and others and to promote inter-society cooperation and communications on professional, technical, social and other matters of mutual concern. It is recommended that chapters invite local members of the societies listed to participate in their activities. Programs in which these society members could participate with great success include National Engineers Week, legislative activity, public relations, joint publications, combined meetings and community programs.

We hope all the chapters will use the listings to initiate contacts with their counterparts in these societies.

Organizations wishing to be listed in future listings may contact the LES office: P.O. Box 2683, Baton Rouge 70821.

American Association of Cost Engineers
Louisiana Section
Donald B. Crawford
Ethyl Corporation
351 Florida Blvd.
Baton Rouge, La. 70801

American Institute of Aeronautics and Astronautics
Chairman, New Orleans Section
John Christopher
Box 29200
New Orleans, La. 70129

American Institute of Chemical Engineers
New Orleans Section
Charles Ray Cutler
2315 Lemon
Metairie, La. 70002

American Institute of Industrial Engineers
President, New Orleans Chapter
Charles E. Alexander
Rt. 3, Box 160
Picayune, Miss. 39466

Baton Rouge Chapter
Melvin Hopper
3154 Marydon Drive
Baton Rouge, La. 70814

New Orleans Chapter
George Piedrich
620 Decatur Street
New Orleans, La. 70130

Northwest Louisiana Chapter
John W. Storment
5909 Annette Street
Shreveport, La. 71105

American Society for Metals
New Orleans Chapter
Donald L. Sorensen
1322 Felicity St., Apt. 5
New Orleans, La. 70130

American Society for Quality Control
Shreveport Section
Herman R. LeJeune
Sperry Rand Corp.
P. O. Box 58 Staff House 23
Shreveport, La. 71130

New Orleans Section
Neil E. Wiseman
Boeing Co.
4832 Alphonse Dr.
Metairie, La. 70002

American Society of Agricultural Engineers
Chairman, Louisiana Section
Charles Severance
Louisiana Coop. Ext. Service
Knapp Hall, L.S.U.
Baton Rouge, La. 70803

Baton Rouge Chapter
F. E. Baker
187 Knapp Hall
Coop. Extension LSU
Baton Rouge, La. 70803

Louisiana Section
B. G. James
P. O. Box 1106
Southwestern Electric Power
Shreveport, La. 71102

American Society of Civil Engineers
President, Louisiana
John F. Grosch III 9/74
P. O. Box 66317
Baton Rouge, La. 70806

President, Shreveport Section
Robert R. Aillet
1055 Louisiana Ave.
Shreveport, La. 71101

President, New Orleans Branch
Blaise M. Carriere 9/74
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American Society of Heating, Refrigerating and Air Conditioning Engineers

Shreveport Chapter
Robert B. Hamm
Berg Mechanical, Inc.
P. O. Box 8428
Shreveport, La. 71108

Baton Rouge Chapter
William Heflin
4725 North St.
Baton Rouge, La. 70806

New Orleans Chapter
L. R. Tinto, Jr.
508 Coolidge
New Orleans, La. 70121

American Society of Mechanical Engineers
Chairman, New Orleans Section
Dr. D. C. Hamilton, Jr.
Mechanical Engineering Dept.
School of Engineering
Tulane University
New Orleans, La. 70118
Chairman, Baton Rouge Section
E. Wayne Albritton
Professional Lighting
9165 Baker Drive
Baton Rouge, La. 70809

Professional Liaison, Baton Rouge Section
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Baker, La. 70714

Monroe Subsection
Mike Wilkinson
202 Lou Anne Ave.
Ruston, La. 71270

S.W. Louisiana Group
Alvin R. Husdpeth
1710 Ford St.
Lake Charles, La. 70601

O. J. Dykes
Box 6150
Shreveport, La. 71106

American Society of Safety Engineers
President, New Orleans Chapter
Lawrence N. Hunsinger, C.S.P. 7/74
Engineers Club of New Orleans
546 Carondelet St.
New Orleans, La. 70130

President, Ark.-La.-Tex.
Lynn Maxwell
Box 1407
Shreveport, La. 71158

President, Baton Rouge
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762 Garonne St.
New Orleans, La. 70113

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Easton Stewart & Associates
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Baton Rouge, La. 70806

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Linfield & Hunter
1515 Melpomene St.
New Orleans, La. 70130

President, Shreveport Chapter
Robert K. Hawkins
3346 Youree Dr.
Shreveport, La. 71105
President, Lafayette Chapter
Terry Gaudet
Richard & Gaudet
225 Luke Dr.
Lafayette, La. 70501

Illuminating Engineering Society
T. M. Wilson
123 East 69th St.
Shreveport, La. 71106

Institute of Electrical and Electronics Engineers
Baton Rouge Section
Van H. Alford
3748 Churchill Ave.
Baton Rouge, La. 70808

Lafayette Section
Irving Manuel
207 N. University
Lafayette, La. 70501

Lake Charles Subsection
Dwight D. Chamberlain
4000 Woodcrest, Lot 4
Lake Charles, La. 70601

Monroe Subsection
David D. Rodgers, Jr.
South Central Bell Tel. Co.
316 Breard St.
Monroe, La. 71201

New Orleans Section
Edward P. Williamson
Tulane University
Dept. Of E.E.
New Orleans, La. 70118

Shreveport Section
Charles C. Clark, Jr.
Southwestern Electric Power Co.
P. O. Box 1148
Marshall, Texas 75670

Institute of Traffic Engineers
Jack C. Marcellis
Traffic Engineering Dept.
Room 222 City Hall
Chattanooga, Tenn. 37402

Instrument Society of America
President, New Orleans Section
Clark Mallard 9/74
P. O. Box 705
Harvey, La. 70058

Louisiana Society of Professional Engineers in Civil Service
President
Charles M. Higgins
P. O. Box 44311, Capitol Sta.
Baton Rouge, La. 70804

National Association of Corrosion Engineers
G. D. Taylor
Box 1407
Shreveport, La. 71158

Society of American Military Engineers
President
Col. Edmond L. Faust, USA (Ret.)
2514 State St.
New Orleans, La. 70118

Col. Richard M. Doyle
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Fourteen professional engineers took the obligation for "Order of the Engineer" at the NSPE Southwestern Regional meeting held in New Orleans on October 12, 1973.

Among the 14 were, L to R: E. E. "Buddy" Moncla, P.E., Chairman LES Professional Engineers in Construction; A. J. Szabo, P.E., NSPE Director; and J. J. Thigpen, P.E., President Louisiana Engineering Society.

MAINTENANCE MANAGEMENT SEMINAR OFFERED

The College of Engineering of Louisiana State University, Baton Rouge, will offer a seminar on "Maintenance Management for the Process Industries," April 1-3, 1974.

The purpose of the seminar is to acquaint all persons interested in maintenance management for the process industries with the newer methods and techniques for controlling maintenance.

Those expected to attend are maintenance schedulers and controllers, planners, maintenance supervisors, and all levels of management whose responsibility includes the maintenance function.

Topics to be discussed include Maintenance Organization and Systems; Preventive Maintenance; Maintenance Planning and Scheduling; Maintenance Work Measurement; Maintenance Labor Performance Measures and Spare Parts and Maintenance Material.

Featured lecturer is Dr. Lawrence Mann, Jr., professor of industrial engineering at LSU, who has had 10 years of working experience in the maintenance field in addition to his years with the university, and who has authored numerous publications in maintenance-related subjects.

As enrollment is limited to 20 registrants, all interested parties are encouraged to write for their applications as soon as possible to: Conference Registration, Short Courses & Conferences, Division of Continuing Education, L.S.U., Baton Rouge, La. 70803.

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"Footsteps in History"

Down the Bayou Teche, deep in South Louisiana in the community of St. Martinville, stands a magnificent oak, ancient and beautiful. Longfellow brought it to the world's attention in 1847 when, on his 40th birthday, he published his epic poem "Evangeline". It was the story of undying love and the fierce spirit of a brave people. It's a true story. And it happened under the Evangeline Oak.

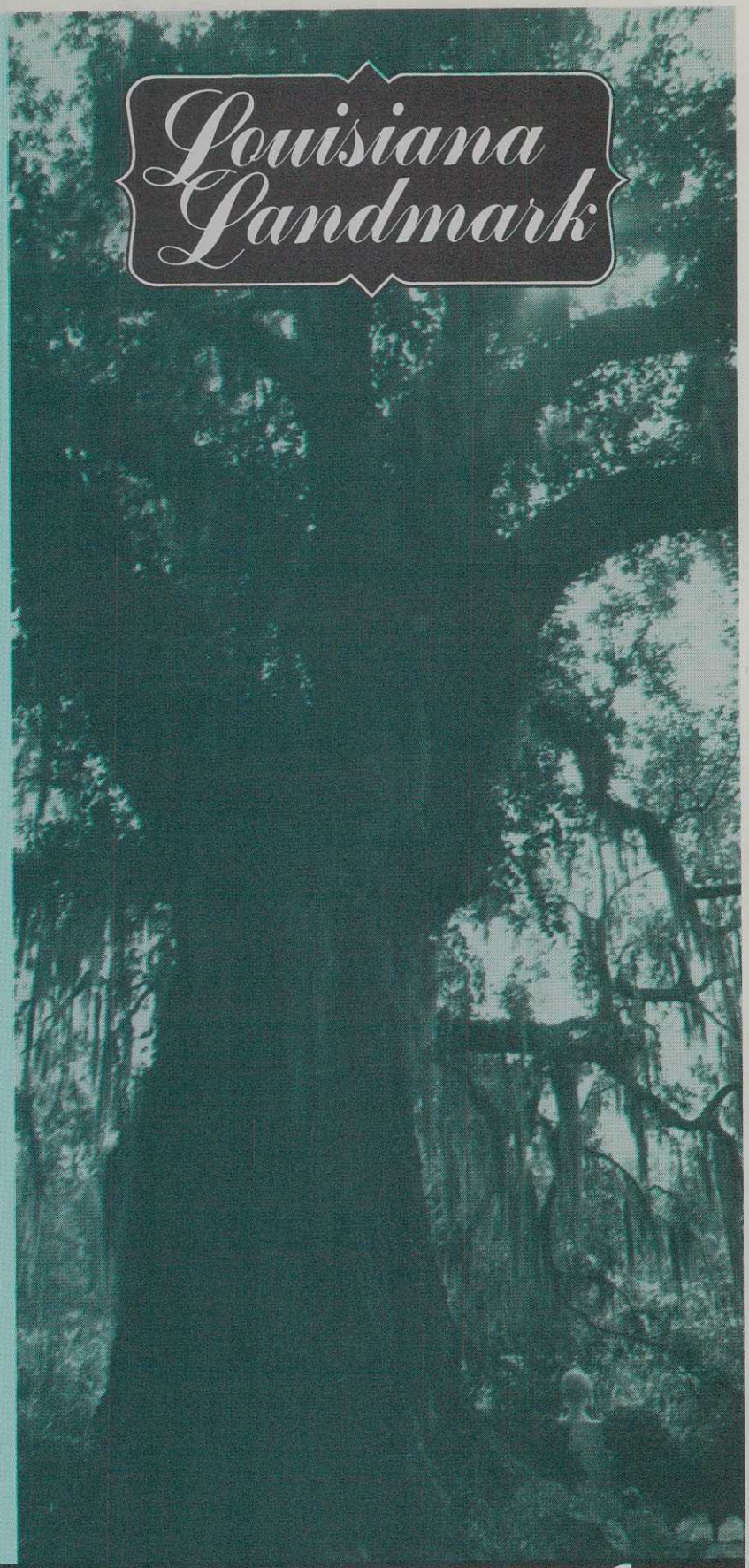
In 1604 a group of hardy French peasants, sent to colonize new lands in Canada, settled in the province of Acadia. Through hard work, they prospered. Then war came, and they were forced to swear allegiance to the Crown of England. The Acadians wanted peace, but the British wanted their farmland. So, the entire population of 16,000, forced from their homes and loaded into ships, was exiled to different parts of the New World. Families were torn apart. Starvation and disease took many, and 1 out of 5 perished at sea.

The Acadians wandered through the colonies looking for lost family members and a new home. Two of those separated were Emmeline Labiche and Louis Arcenaux, a young couple deeply in love and promised to each other. Their months of separation became years, but Emmeline never stopped searching for her beloved Louis. Finally, the two lovers met on the banks of the Bayou Teche under a tall, stately oak. But Louis, thinking his sweetheart lost, had married another. Emmeline's heart was broken. She died soon afterwards and was buried beneath the oak at Post des Attakapas (now St. Martinville).

Years later, a Harvard student from St. Martinville told the story to one of his professors -- Henry Wadsworth Longfellow. He spoke of the long struggle of the Acadians, of the beautiful new land they had settled in, their colorful folkways and customs. And, of Emmeline Labiche and Louis Arcenaux. From his story, the epic poem "Evangeline" was born.

It's the story of the people who helped settle Louisiana. Strong, determined people with an undying spirit. And the Evangeline Oak stands as their symbol.

The heritage we have from our forefathers we are building for our children today. Patterson-Redmond builds it strong, by serving well those who build for business, industry, education, health, and home.



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June, 1974



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Your Louisiana electric companies are searching for and finding fuels that will be available for your future needs. We are modifying and constructing our power plants to use these fuels and also to continue meeting environmental protection standards so Lovely Louisiana stays that way.

At the same time, we're helping to sponsor research to find new ways to generate electricity in the future.

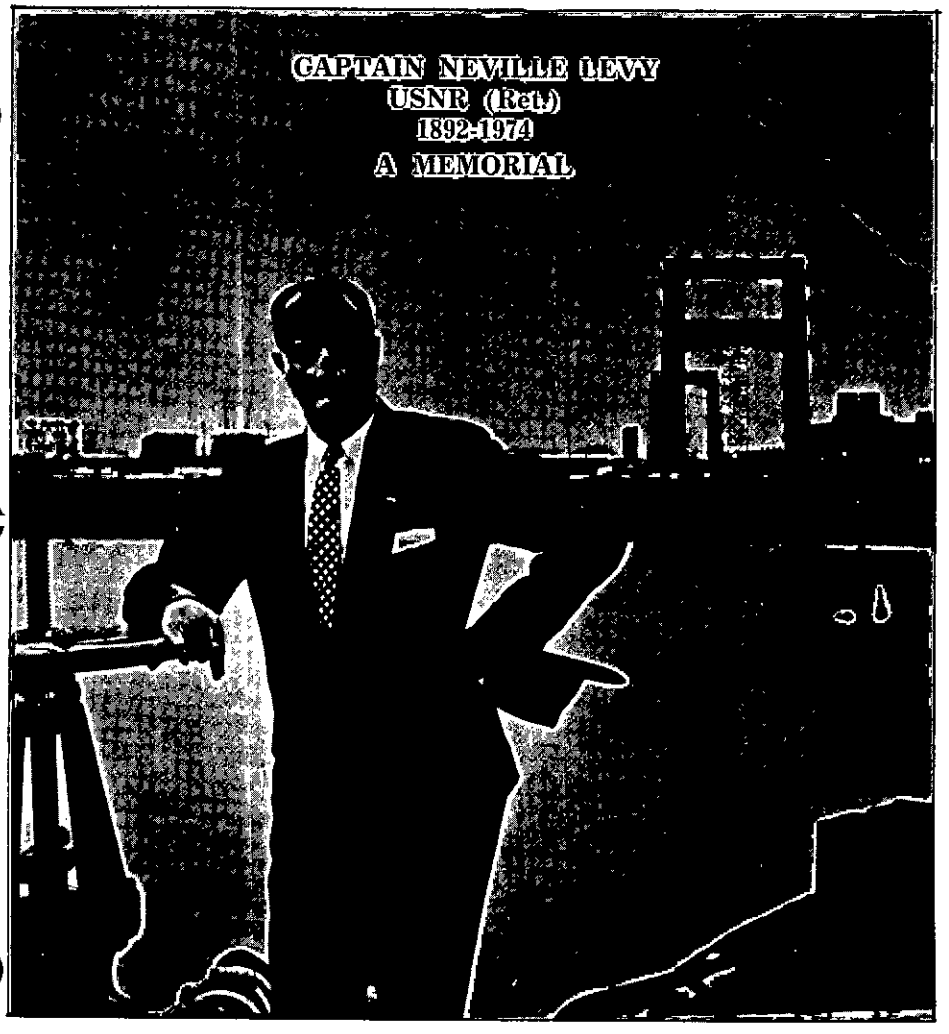
No, it isn't easy to make the decisions. And it isn't inexpensive to build for the future. But we're meeting the challenges of tomorrow's world.

We feel that we'll continue to have a bright and powerful Louisiana as a result.

And we think that's what our customers want, and deserve.

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It is both fitting and appropriate that the Louisiana Engineering Society take cognizance of the passing of a distinguished member of our Society on April 13, 1974, Neville Levy.

He was in his 82nd year, but one would never have known this because there never was any let-up in his activities as a citizen of this state. His concern went far beyond the needs of himself and his family. As an individual, and a leader he was a patron of the arts, a philanthropist, a patriotic citizen devoted to the advancement and welfare of his city, his state, and his country.

This was the Neville Levy that we knew and held in our highest regard and respect to the very end.

Almost 20 years ago Neville Levy stated in a speech that he delivered at the dedication of the Helen Adler Levy Health Center in New Orleans:

"Our family has lived in New Orleans for well over a century. Our forebears came from western Europe seeking a better life in this city and this state. New Orleans and Louisiana have been good to us. We have prospered in a community blessed with great tolerance and opportunity.

"We have felt strongly our responsibility and our debt to this wonderful land.

"Through the generations, we have tried to show our deep appreciation by working for our city, state, and nation.

"We have given and will continue to give our best efforts to help the community that has given us a full life. We are blessed to live in a city and land where a person's work is respected, and where everyone is judged by his actions."

Neville Levy did in a most outstanding manner live up to his stated responsibilities to his family, his city, his state and his country.

The Louisiana Engineering Society recognized Neville's services to his city and state by presenting to him the Society medal for "Civic Activities," the Andrew M. Lockett Award in 1957.

Neville Levy's success in the commercial world is well known, but not all may be fully aware of his services to his country, and the United States Navy.

He is known to all as Captain Neville Levy. This title and rank were well earned in the service of his country. It is further emphasized by three citations by three different Secretaries of the Navy. These citations prove the quality and worthiness of his services.

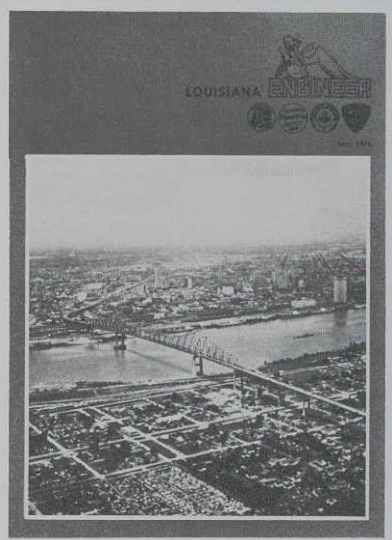
The citation which accompanied the "Reserve Special Commendation Ribbon," presented to him by The Honorable James Forrestal, Secretary of the Navy, is most comprehensive and self explanatory.

"In recognition of your faithful and meritorious service to the Government of the United States as Commanding Officer of the First Battalion, Eighth Naval District, United States Naval Reserve prior to World War II. During these years of peace, you patriotically looked ahead to a time of future need and by giving freely of your time and ability, often at great personal sacrifice, supervised the recruitment, administration and training of your Battalion to make it a valuable component of the Organized Naval Reserve. By your zeal and devotion to duty in maintaining your Battalion ready for mobilization, you performed a valuable service to the preparedness of your country and upheld the highest traditions of the United States Naval Service."

It is impossible to set forth in this memorial the details of a lifetime of service for such a man as Neville Levy from his graduation from Tulane in 1913 to April 1974—61 years of continuous effort and accomplishments in fulfilling his own strongly felt responsibility and debt to this wonderful land.

The Louisiana Engineering Society feels deeply the passing of a great man, and we are privileged and proud to have had him in our membership for many years.

Levy's dedication to his city, his state and his country will be an inspiration to many engineers and citizens of Louisiana for years to come.



COVER

The Greater New Orleans Bridge, dedicated in October 1958. Captain Neville Levy, who recently passed away, was the central force in seeing the bridge to completion. Story on page 3.

CONTENTS

Captain Neville Levy—A Memorial 3
Presidential Privilege 5
LES Spring Meeting 6
Life Members 10
New Standards for Round Timber Piles 12
EngiNews 16
Potpourri 21

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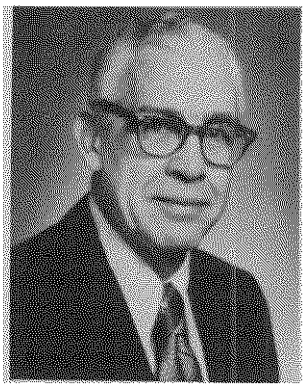
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Presidential Privilege



LES President
Dr. J. J. Thigpen

What do you write for your last chapter? A year ago I would have said that the last one would be the easiest but now I find it quite different. To be honest, not one of the Presidential Privileges has been easy for, as many of you are aware, the use of the English language either written or oral is not one of my strong suits. Yet each time, there was an item that I thought was particularly important about which I could express some thought and ideas. Now, with this being the last time, I can think of many important things that could be discussed but with less than a month left in this administrative year, it is too late. The next administration may have other ideas.

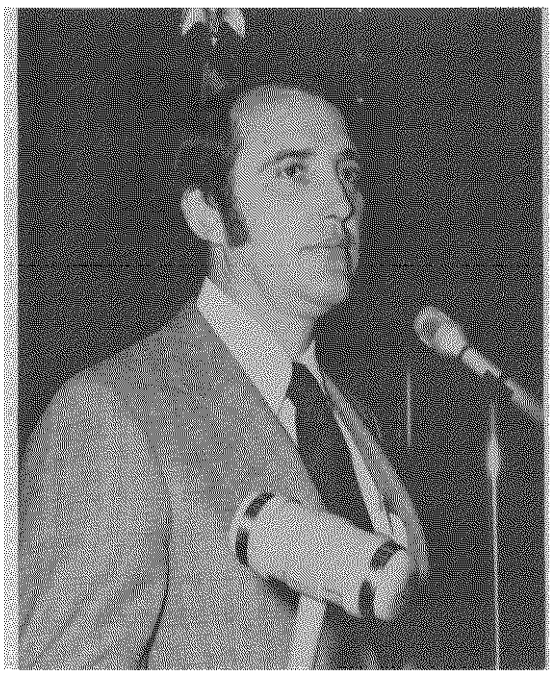
The one major item which has, is now, and will continue for several weeks to take our primary effort is the legislative program. At the time of this writing, the program has been introduced into the legislature. The status of the program when this issue of THE LOUISIANA ENGINEER is delivered is only a guess. I sincerely believe, however, that our program will be alive and in a favorable position for passage. I do know that the closer we get to final success, the harder we will have to work. To me one of the most heartening activities of the year has been the united effort that has been put forth by so many people in the legislative program.

I got out the August 1973 issue of THE LOUISIANA ENGINEER and reread my first Presidential Privilege. That was a mistake. It made me think of an expression that is attributed to Satchel Paige, that is, "don't ever look back, they may be gaining on you." I can't say that I understand exactly what the expression means, but I know in looking back I found disappointments. There are things that I hoped would be accomplished but just did not get done.

On the other hand, I believe that this year has been a good one for our Society. I believe that we have grown in strength and that we have served the Engineering Profession in our state. Many people have worked many long, hard hours for the benefit of the society, and to them we owe a deep sense of gratitude. I will not mention names, for to recognize all who deserve it would be impossible. Personally, I want to again express my thanks for giving me the opportunity to serve you. The past year has been a rewarding one and for it I am very grateful.

Finally, let me mention again an area of concern that I included in the first Presidential Privilege. This was one of the disappointments, as I did nothing to promote it. I am referring to the need for one organization for all engineers. We all agree that this is needed but efforts to bring it about do not have the support that they deserve. Although we hear and read a lot about unification it seems that at the national level our societies, both the technical and professional, are expanding their activities into areas that previously were the province of other societies. Competition and conflict result. If the engineering profession is to be the force it can and should be then we as individual engineers and as members of technical and professional societies must be more unselfish and statesman-like in our approach to this problem. The answer is not an easy one, but is certainly one we must seek.

LES Spring Meeting Lafayette



E. L. "Bubba" Henry, Speaker of the House, wielding the big gavel for the engineers in Lafayette.

Over 100 engineers and guests attended the LES Annual Spring meeting in Lafayette April 19-20.

E. E. "Bubba" Henry's talk on CC '73 just one day before the special election held for voting on the new constitution, gave a detailed insight into preparing the new constitution and urging all to vote for it. The engineering students from LSU, Tulane, Southern, Louisiana Tech and USL presented excellent papers on subjects of small town traffic problems, sugar mill waste water, reduction system, launching boat trailers and solar energy. Each student was presented a certificate and brief case at the close of the session.

Louis Michot gave the engineers an interesting talk on career education and its relation to engineering. The panel discussion with Art DeFraites, Waldemar Nelson, Joe Keogh and Representative Bob Crisler about the LES legislative program was well received.

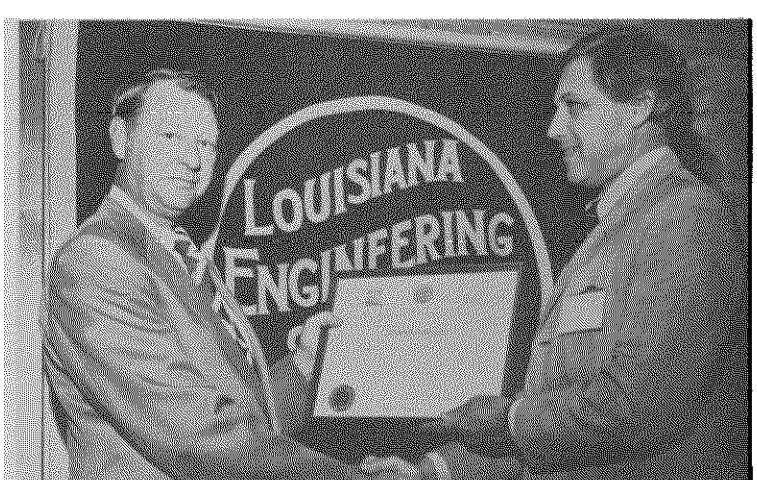
The Awards luncheon was lightful. All award winners were present. Bill Klos, P.E., chairman of the arrangements committee Jim Reeves, president of the Lafayette Chapter; and Malcolm Hurstell, P.E., General Meeting chairman, are congratulated for an outstanding job.



J. J. Thigpen, P.E., President LES, presents a Life Membership Certificate to Marshall B. Ewing, P.E., Alexandria.



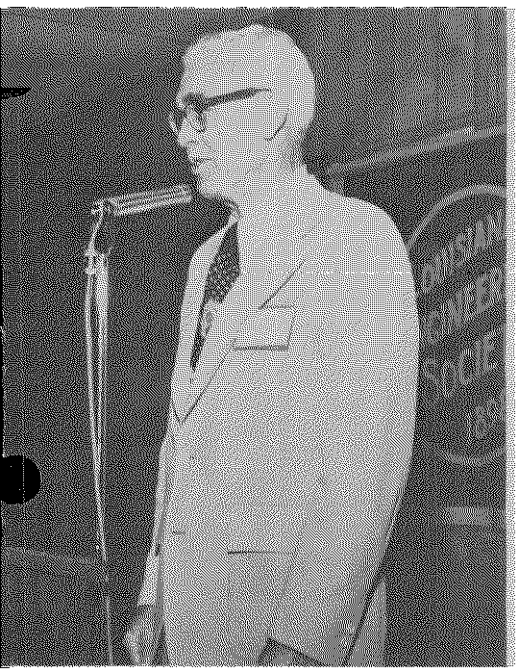
George Heller, P.E., right, 1973 winner of the Technological Accomplishment Medal, presents the 1974 medal and certificate to Fran W. Macdonald, P.E., New Orleans.



Fred C. Culpepper, P.E., President-Elect LES, presents the Andrew M. Lockett medal and certificate to Irwin R. Schneider, P.E., Baton Rouge.



Leo M. Odom, P.E., right, Baton Rouge, presents the Charles M. Ker Award plaque to Roy T. Sessums, New Orleans.



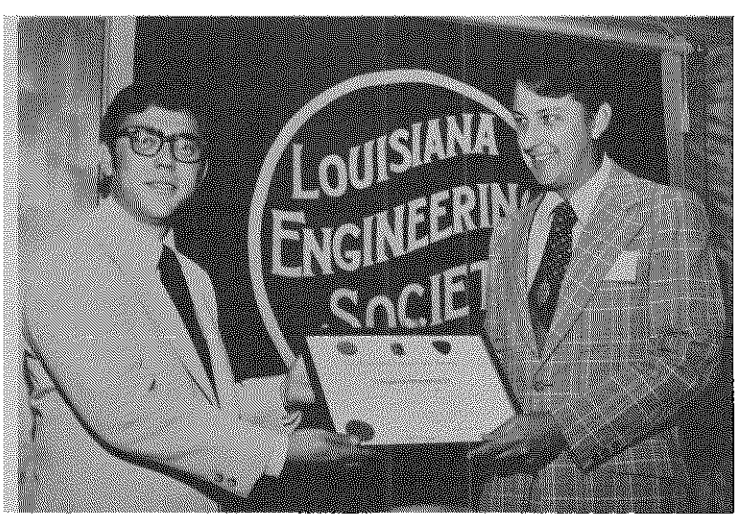
J. Thigpen, P.E., President LES, opens the
74 Spring meeting in Lafayette on April 19,
74.



Bill Klos, P.E., Lafayette Convention Chairman; R. C. "Doc" Spears, Executive Secretary LES; and James W. Reeves, P.E., President Lafayette Chapter.



J. Thigpen, P.E., President LES, left, presents the LES 1974 Industrial Professional Development Award to Andrew M. Moore, P.E., presenting the Central Louisiana Electric Company, Inc., winner e award.



Blaise Carriere, P.E., 1973 winner of the Louisiana Young Engineer Award, presents the 1974 key and certificate to E. Ray DesOrmeaux, P.E., Lafayette.



. J. Thigpen, P.E., President LES, right, presents the A. B. Patterson edal and Certificate to Andrew M. Moore, P.E., Alexandria.



Leo M. Odom, P.E., right, 1972 recipient of the Leo M. Odom Award, presents the 1974 certificate to Marshall B. Ewing, P.E., Alexandria.

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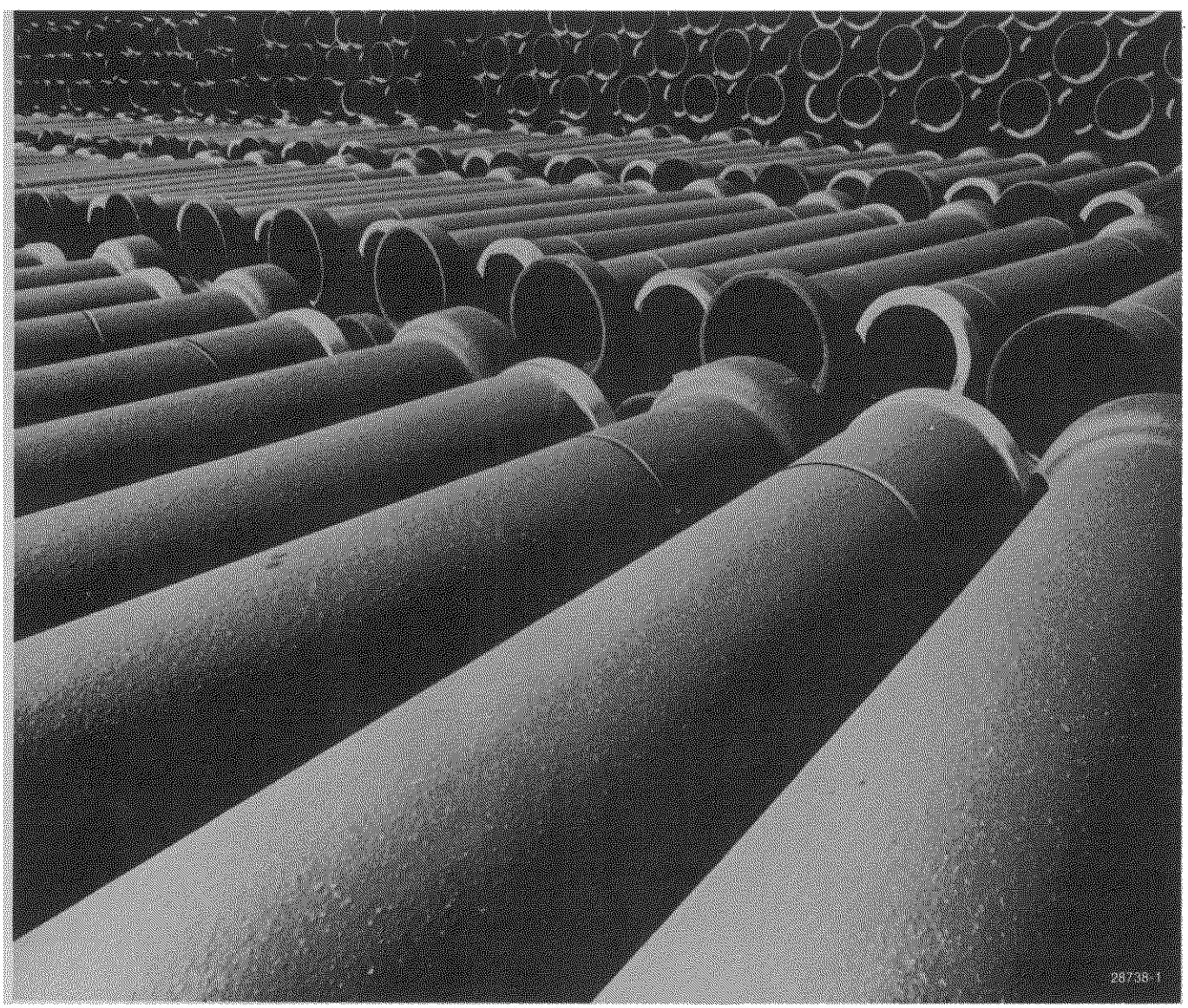
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FOURTH ANNUAL LES/MES CONVENTION

ROYAL SONESTA HOTEL, NEW ORLEANS **JULY 25, 26, 27, 1974**

"ENGINEERS QUESTION THE ENERGY CRISIS"

Thursday, July 25

Registration—12:00 noon to 5:00 p.m.

Afternoon:

1:00 p.m. MES Board of Directors Meeting
LES Committee Meetings
3:15 p.m. Joint Practice Section Meetings
6:00 p.m. Wine and Cheese Tasting
7:30 p.m. Evening Free

Friday, July 26

Registration—8:00 a.m. to 5:00 p.m.

Morning:

8:30 a.m. General Session LES/MES
8:30 a.m. Panel Discussion
"Engineers Question the Energy Crisis"
Moderator ..... Jack W. Pepper, P.E., President MES
The Government's
Answer ..... James Gill, Director Office of Allocation, Federal Energy Office
The Oil Industry's
Answer ..... S. M. Paine, General Manager of Production, Shell Oil Co.
The Coal Industry's
Answer ..... Cloyd D. McDowell, President, National Independent Coal Operators Assn.
The Environmentalist's
Answer ..... Bill Futrell, Secretary National Sierra Club
Questions and Answers
11:45 a.m. Lunch, Dutch Treat

Afternoon:

12:30 p.m. Men's Golf Tournament
Ladies' Golf Tournament
(Timberlane Country Club)
Men's and Ladies' Tennis Tournament
(New Orleans City Park)
7:00 p.m. Social Hour
8:00 p.m. Banquet
Presentation of Prizes
Installation of LES and MES Officers for 1974-75
Address: Harry Bovay, P.E., 1974-75 NSPE President-Elect

Saturday, July 27

8:30 a.m. MES General Meeting
LES General Meeting
9:30 a.m. LES Board of Direction Meeting
12:00 noon Adjourn

Ladies' Program:

Thursday, July 25

1:30 p.m. Ladies' Program (to be announced)

Friday, July 26

9:00 a.m. Ladies' Hospitality Room Open
9:30 a.m. Ladies' Program (to be announced)

Saturday, July 27

9:00 a.m. Ladies' Hospitality Room Open

REGISTRATION — LES/MES ANNUAL MEETING
July 25-27, 1974
Royal Sonesta Hotel — New Orleans, La.

DETACH AND MAIL TO LES, Box 2683, Baton Rouge, La. 70821.

Name _____

Address _____

City _____ State _____ Zip _____

Registration:

	Price	Number	Amount
Member	$25.00	_____	_____
(includes registration, wine and cheese party, social hour and banquet)			
Lady	15.00	_____	_____
(includes wine and cheese party, social hour and banquet)			
Guest Tickets:			
Cocktail & Banquet	15.00	_____	_____
Wine & Cheese	5.00	_____	_____
One Day Registration	3.00	_____	_____

How many in your party plan to play

Golf _____ Men _____ Ladies

Tennis _____ Men _____ Ladies

Payment for these functions will be made at Golf and Tennis Facilities.

MISSISSIPPI AND LOUISIANA ENGINEERING SOCIETIES

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July 25-27, 1974

Royal Sonesta Hotel — New Orleans, La.

Name _____
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Departure Date _____ Time of Departure _____

Room reservations are held until 6 p.m. date of arrival unless deposit is received in advance. Check out time is 1 p.m.

One Person	$27.00	☐
Two Persons (Twin)	$34.00	☐

Reservations must be received 15 days prior to open date of convention.

Life Membership

Back in 1930, the Louisiana Engineering Society approved an amendment to its Constitution, which stated, "members who have paid dues for thirty years shall automatically become Life Members and shall be exempt from dues." The present LES Constitution retains this provision.

LES Life Membership has grown steadily since 1930:

YEAR	No. Life Members
1930	6
1940	33
1950	56
1960	74
1970	164

We are proud of these gentlemen. By listing the roster below, we hope each reader of the magazine will make a point to congratulate these engineers as the occasion may permit. Thirty years of service to LES is a milestone of honor both by the engineers reaching it and to all those who follow:

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Frank Hugh Coughlin
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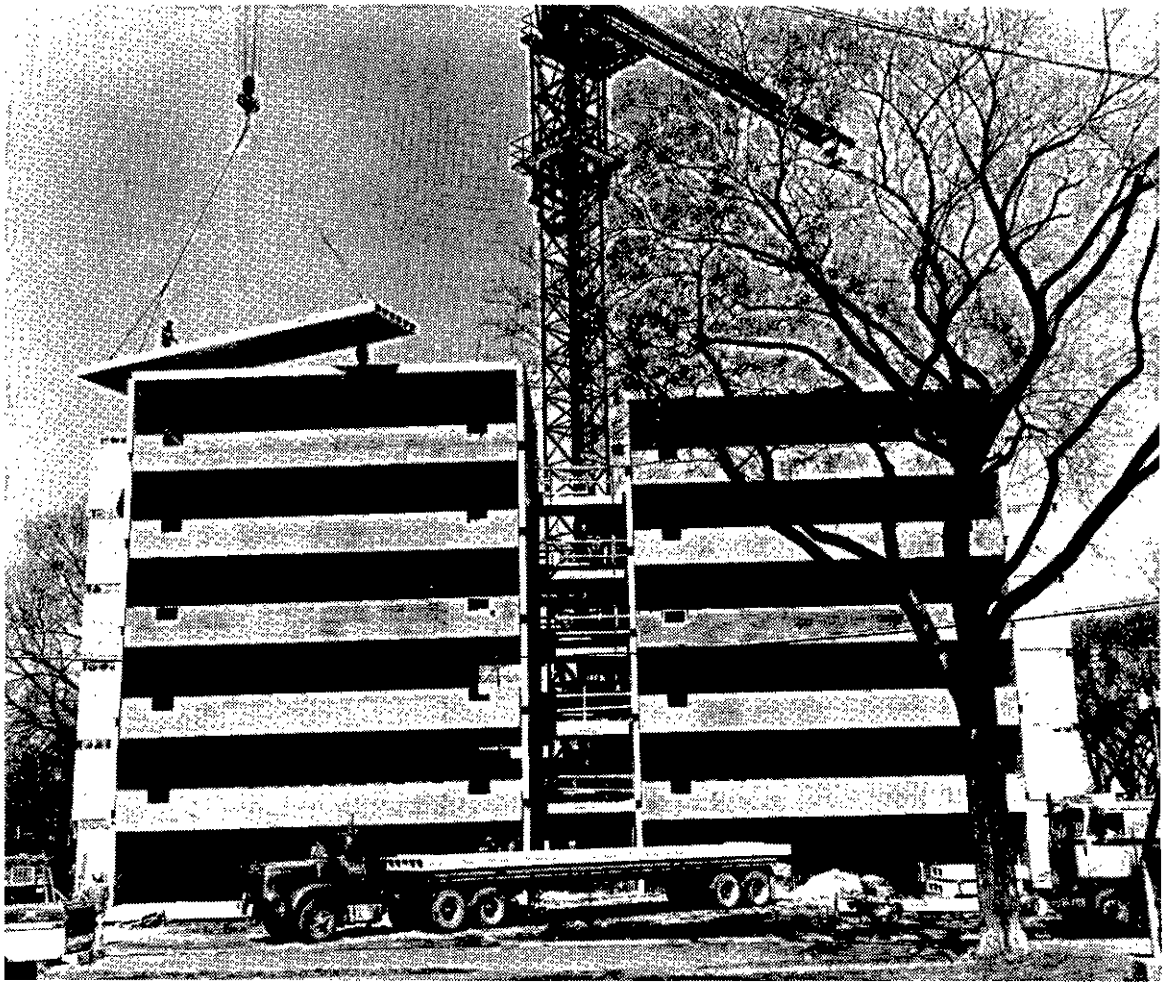
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New Standards for Round Timber Piles

A. H. DOUGLAS, JR.

Vice President—Sales

American Creosote Works, Inc.

About the Author: A. H. Douglas, Jr. is Vice President for Sales of American Creosote Works, Inc. of New Orleans. He is a registered engineer in the State of Louisiana and is a member of ASME, ASCE, LES and NSPE.

Though referred to as the ASTM Standard for Round Timber Piles D25-70, indicating introduction in 1970, this new standard has been somewhat slow in achieving acceptance and wide-spread use. Replacing the previous ASTM D25-58 standard, it goes much farther than previous revisions, in that it takes an entire new approach to wood pile use and therefore size. This great departure from the familiar classes A, B, and C, which the industry and design engineers have been educated to understand and specify, no doubt accounts for the moderate acceptance thus far.

Actually, the background for the development of D25-70 presents a very sound approach, both from the standpoint of use and better timber utilization. It really started with an effort by the ASTM Subcommittee to develop a reliable and technically valid "Method for Establishing Design Stresses for Round Timber Piles," which is now designated as ASTM Standard D2899-70T.

TABLE I. Specified Butt Diameters with Minimum Tip Circumferences

NOTE 1: Where the taper applied to the butt circumferences calculate in a circumference at the tip of less than 16 in., the individual values have been increased to 16 in. to assure a minimum of 5-in. tip for purposes of driving.

NOTE 2: Diameters are approximate. Circumferences are the specified requirements.

Specified Butt Diam., in.	7	8	9	10	11	12	13	14	15	16	18
Required Min. Cir. 3 ft. from Butt	22	25	28	31	35	38	41	44	47	50	57
Length, ft.	Min. Tip Cir. (in.) and Corresponding Diam. in Parentheses										
20	16.0 (5.0)	16.0 (5.0)	16.0 (5.0)	18.0 (5.7)	22.0 (7.0)	25.0 (8.0)	28.0 (8.9)				
30	16.0 (5.0)	16.0 (5.0)	16.0 (5.0)	16.0 (5.0)	19.0 (6.0)	22.0 (7.0)	25.0 (8.0)	28.0 (8.9)			
40				16.0 (5.0)	17.0 (5.4)	20.0 (6.4)	23.0 (7.3)	26.0 (8.3)	29.0 (9.2)		
50					16.0 (5.0)	17.0 (5.5)	19.0 (6.0)	22.0 (7.0)	25.0 (8.0)	28.0 (8.9)	
60						16.0 (5.0)	16.0 (5.0)	18.6 (5.9)	21.6 (6.9)	24.6 (7.8)	31.6 (10.0)
70						16.0 (5.0)	16.0 (5.0)	16.0 (5.0)	16.2 (5.1)	19.2 (6.1)	26.2 (8.3)
80							16.0 (5.0)	16.0 (5.0)	16.0 (5.0)	16.0 (5.0)	21.8 (6.9)
90							16.0 (5.0)	16.0 (5.0)	16.0 (5.0)	16.0 (5.0)	19.5 (6.2)
100							16.0 (5.0)	16.0 (5.0)	16.0 (5.0)	16.0 (5.0)	18.0 (5.8)
110										16.0 (5.0)	16.0 (5.0)
120											16.0 (5.0)

The subcommittee conducted several surveys of "woods run" material to determine growth characteristics and availability. Test programs were instituted on full size specimens at Oregon State University, Mississippi State University, U. S. Forest Products Laboratory and Law Engineering and Testing of Atlanta, Ga. The two species studied were Southern Yellow Pine and Douglas Fir, with more than 2,000 piles evaluated during the program.

The data collected was collated and reviewed by the U. S. Forest Products Laboratory at Madison, Wisconsin, then further reviewed by an ASTM Subcommittee, consisting of wood scientists, structural engineers, soils engineers, and representatives of the producing industry—31 members in all. It was readily apparent that the data provided the design criteria necessary to establish an entirely different approach to size selection of piles under different design loads and primary load carrying characteristics of the soil formations; namely, Friction or End Bearing.

Admittedly, the design occasions for purely one or the other are rare, particularly in the soils of Louisiana; however it is equally rare for design considerations not to represent predominantly at least one of these approaches.

Table I (Friction Type) and Table II (End Bearing), depending on the principal design consideration, have identical physical limitations on quality.

The resulting size selections available in the tables are considerably greater than that which was available under Classes A, B and C, which were selected for each length on the general bases of Heavy Construction (Class A), Foundation or Marine Piling (Class B), and Temporary or Light Construction (Class C).

Obviously, the new approach enables us to use the many varied diameters of trees found growing in any stand or timber to a much greater extent than formerly.

The problem for the design engineer under this system is to utilize this greater flexibility in selecting the most economical design for the structure being considered. Quantity, length, and diameter can create any number of design possibilities. With the very high demand for the products of the forest today, such as lumber, plywood, paper, fiberboard, poles, piling, etc., just to name a few; it is even more necessary that this new approach be utilized to insure an adequate supply of timber piles, both treated and untreated, long recognized as the most economical pile material for many applications.

In selecting either Table I or II for his design, the engineer must first determine the "Critical Section" of the piles (i.e.—that point along the pile length where the load divided by the cross-sectional area produces the maximum stress). A close analysis of the soil profile through which the pile is to be driven, and some calculation of estimated stresses along the pile, will provide the engineer with the proper determination as to whether the pile will be performing as primarily Friction Type or End Bearing.

Once this primary influence on the pile is thus developed, it may then be necessary to select several diameters and/or lengths from the appropriate table to determine the lowest cost per ton of loading.

Most wood treaters and foundation pile suppliers would be pleased to provide the design engineer with estimating prices and general availability of the various size piling to assist him in this cost analysis.

Insofar as the quality of the timber is concerned when comparing the new standard with the former, the differences are not major; primarily they consist of the elimination of minus tolerances in length and diameter formerly permitted and some adjustment in knot limitations. The quality limitations were selected only after considering the effect of the many variables on the strength of the pile and its ability to serve the use intended.

In conclusion, the American Society for Testing Materials Standard D25-70, Specification for Round Timber Piles, and its complimentary Standard D2899-70T "Tentative Method for Establishing Design Stresses for Round Timber Piles" provide the advantages of: 1. Better Timber Utilization, 2. Improved Availability, and 3. More Economical Foundation Designs!

TABLE 2. Specified Tip Diameters with Corresponding Minimum Butt Circumferences

NOTE—Diameters are approximate. Circumferences are the specified requirements.

Specified Tip Diameter, in.	5	6	7	8	9	10	11	12
Tip Circumference, Required Minimum	16	19	22	25	28	31	35	38
Length, ft.	Minimum Cir. 3 ft. from Butt (in.) with Diam. in Parentheses							
20	22.0 (7.0)	24.0 (7.6)	27.0 (8.6)	30.0 (9.5)	33.0 (10.5)	36.0 (11.5)	40.0 (12.7)	43.0 (13.7)
30	23.5 (7.5)	26.5 (8.4)	29.5 (9.4)	32.5 (10.3)	35.5 (11.3)	38.5 (12.2)	42.5 (13.5)	45.5 (14.5)
40	26.0 (8.3)	29.0 (9.2)	32.0 (10.2)	35.0 (11.1)	38.0 (12.1)	41.0 (13.0)	45.0 (14.3)	48.0 (15.3)
50	28.5 (9.0)	31.5 (10.0)	34.5 (11.0)	37.5 (11.9)	40.5 (12.9)	43.5 (13.8)	47.5 (15.1)	50.5 (16.0)
60	31.0 (9.8)	34.0 (10.8)	37.0 (11.8)	40.0 (12.7)	43.0 (13.7)	46.0 (14.6)	50.0 (15.9)	53.0 (16.8)
70	33.5 (10.6)	36.5 (11.6)	39.5 (12.6)	42.5 (13.5)	45.5 (14.4)	48.5 (15.4)	52.5 (16.7)	55.5 (17.7)
80	36.0 (11.4)	39.0 (12.4)	42.0 (13.4)	45.0 (14.3)	48.0 (15.3)	51.0 (16.2)	55.0 (17.5)	58.0 (18.4)
90	38.6 (12.2)	41.6 (13.2)	44.6 (14.2)	47.6 (15.1)	50.6 (16.0)	53.6 (17.0)	57.6 (18.3)	60.5 (19.2)
100	41.0 (13.0)	44.0 (14.0)	47.0 (15.0)	50.0 (15.9)	53.0 (16.8)	56.0 (17.8)	60.0 (19.0)	
110	43.6 (13.8)	46.6 (14.8)	49.6 (15.7)	52.6 (16.7)	55.6 (17.7)	61.0 (19.4)		
120	46.0 (14.6)	49.0 (15.6)	52.0 (16.6)	55.0 (17.5)	58.0 (18.4)			

Standard Specification for ROUND TIMBER PILES[1]

This Standard is issued under the fixed designation D 25; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last revision.

NOTE—Editorial changes were made in Tables 1 and 2 in December 1970.

1. Scope

1.1 This specification covers the physical characteristics of round timber piles to be used treated or untreated.

2. Species of Wood

2.1 Piles shall be of any species of wood for which clear wood strength values are given in ASTM Methods D 2555, Establishing Clear-Wood Strength Values.[2]

3. Use Classification

3.1 Timber piles, under this specification, are classified according to the manner in which their load-carrying capacity is developed. There are two classes and both have the same physical requirements, except for dimensions. These are:

3.1.1 FRICTION—Piles under this classification shall be specified when pile capacity is determined, primarily, by the friction developed in contact with the surrounding soil, along with the compressive strength of the timber piles used.

3.1.2 END-BEARING — Piles under this classification shall be specified

(continued)

[1] This specification is under the jurisdiction of ASTM Committee D-7 on Wood.

Current edition effective May 15, 1970. Originally issued 1915. Replaces D 25-58.

[2] Annual Book of ASTM Standards, Part 16.

PILING STANDARDS (continued)

when the pile capacity is determined, primarily, by the end-bearing capacity of the soil at the pile tip, along with the compressive strength of the timber pile used.

4. Quality Requirement—(All Piles)

4.1 Piles shall be of sound wood, free of decay and insect attack, except as herein allowed.

4.2 Piles shall be cut above the ground swell and have a taper from butt to tip.

5. Lengths

5.1 All piles shall be furnished in lengths specified, but may exceed those lengths as much as plus 1 ft. in piles 40 ft. and shorter, and plus 2 ft. in piles 41 ft. or longer.

6. Sizes

6.1 The diameter of the nominal butt or nominal tip may be specified. When nominal butt diameter is specified, the tip diameter shall not be less than that shown in Table 1. When the nominal tip is specified, the butt diameter shall not be less than that specified in Table 2.

6.2 The ratio of "out of round" of maximum to minimum diameter at the butt or the tip of any pile shall not exceed 1.2.

6.3 All circumference measurements must be taken under the bark.

6.4 The circumference at the butt may not exceed the circumference at 3 ft. from the butt by more than 8 in.

7. Sapwood

7.1 Wood piles for preservative treatment shall have sufficient sapwood to meet minimum penetration requirements.

8. Cutting and Trimming

8.1 Butts and tips of piles shall be sawed square with the axis of the piles and shall not be out of square by more than 1/10 in./in. of diameter.

8.2 All knots and limbs shall be cut flush with the surface of the pile, except that knots may be hand-trimmed flush with the surface of the swell surrounding the knot.

9. Peeling

9.1 Piles are classified according to the extent of bark removal as clean-peeled, rough-peeled or unpeeled.

9.1.1 Clean-peeled piles require the removal of all outer bark. In addition, at least 80 percent of the inner bark, well-distributed over the surface of the pile, shall be removed. Piles for preservative treatment shall have no strip of inner bark larger than 1 by 6 in.

9.1.2 Rough-peeled piles require the complete removal of all outer bark.

9.1.3 Unpeeled piles require no bark removal.

10. Straightness

10.1 A straight line from the center of the butt to the center of the tip shall lie entirely within the body of the pile.

10.2 Piles shall be free from short crooks that deviate more than 2½ in. from straightness in any 5 ft. length (see Fig. 1).

11. Twist of Grain

11.1 Spiral grain shall not exceed 180 degrees of twist when measured over any 20-ft. section of the pile.

12. Knots

12.1 Sound knots shall be no larger than one half the diameter of the pile located where the knot occurs. Cluster knots shall be considered as a single knot, and the entire cluster cannot be greater in size than permitted for a single knot. The sum of knot diameters in any 6-in. length of pile shall not exceed one third of the circumference at the point where they occur. Knots shall be measured in accordance with ASTM Definitions D 9, Terms Relating to Timber, and at right angle to the length of the pile.

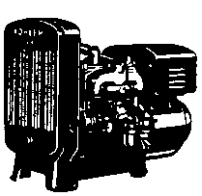
12.2 Piles may have unsound knots not exceeding half the permitted size of a sound knot, provided that the unsoundness extends to not more than a 1½-in. depth, and that the adjacent areas of the trunk are not affected.

(Continued on Page 20)

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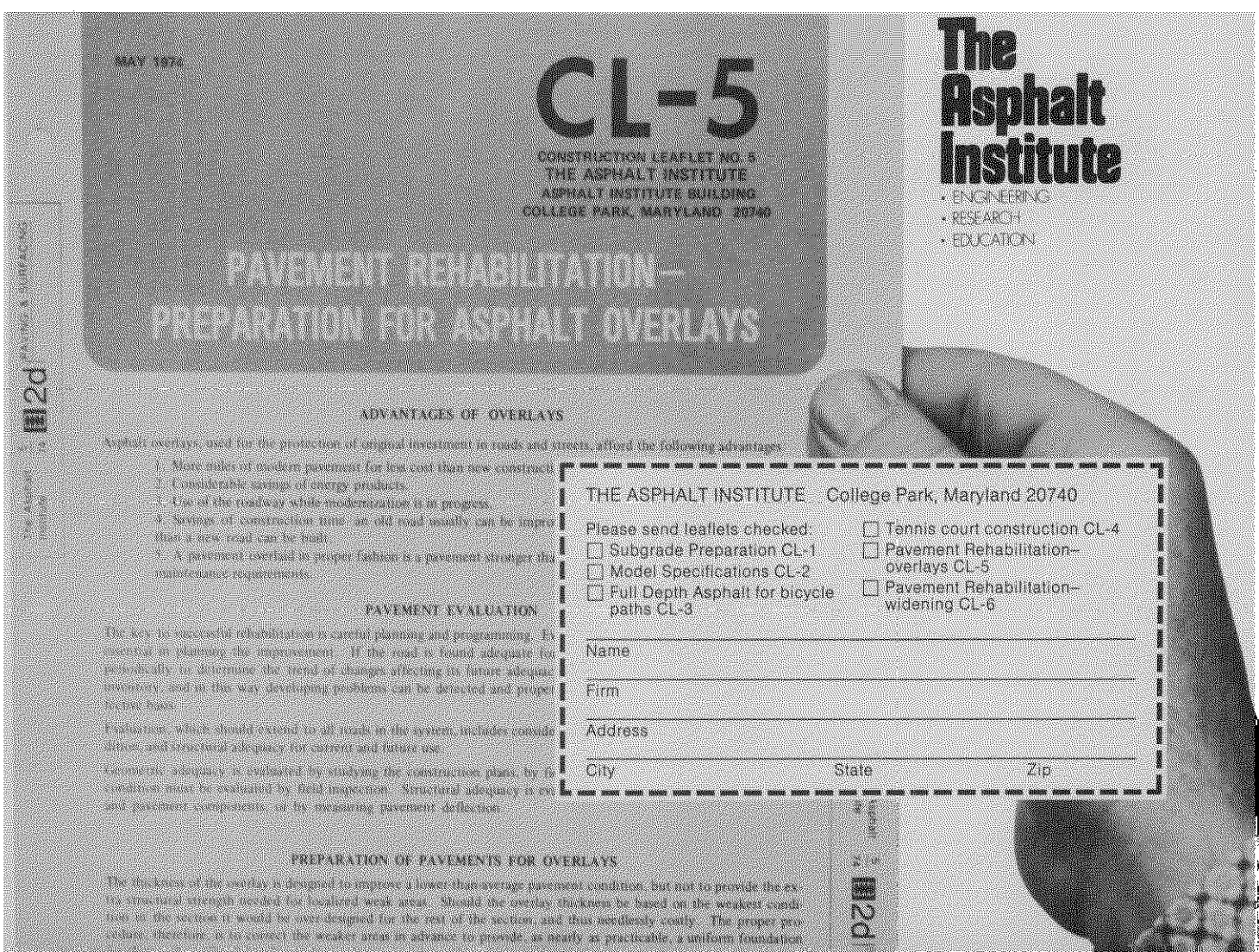
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EngiNEWS

AUXILIARY NEWS

N. O. Woman's Auxiliary

The Woman's Auxiliary to the New Orleans Chapter of the Louisiana Engineering Society elected the following ladies as their officers for the year 1974-1975:

President—
Mrs. John F. Vogt, Jr.

President-Elect—
Mrs. Lawrence C. Grundmann, Jr.

Vice President—
Mrs. Robert B. Anderson

Honorary Vice President—
Mrs. G. Elmer May

Recording Secretary—
Mrs. George W. Webb

Corresponding Secretary—
Mrs. Ernest Bonnoitt

Treasurer—
Mrs. Gary R. Jacob

Financial Secretary—
Mrs. Prosper L. Potin

N. O. Auxiliary Scholarship

The President of the Woman's Auxiliary to the New Orleans Chapter of the Louisiana Engineering Society, Mrs. Francis J. Favaloro, attended the Awards Day Convocation at the University of Southwestern Louisiana on Thursday, April 25, 1974, and presented Mr. Rennan J. Duffour a Samuel McCain Young Scholarship in Civil Engineering.

Four scholarships are awarded annually, one each to Southwestern, Tulane, Louisiana State University, and Louisiana Tech. The scholarships are provided through a bequest to the Auxiliary by the late Mrs. Samuel McCain Young in memory of her late husband to provide undergraduate scholarship support for engineering students from the New Orleans area with preference for students in Civil Engineering.

Editor's Comment Re Article in December 1973 issue—

"THE ENGINEER'S VIEWPOINT"

In the December 1973 issue of the **Louisiana Engineer** we published an article "Cantor Vs. The Koehring Company — The Engineer's Viewpoint" on a legal case involving engineers employed in industry which we thought would be of general interest to all engineers. The title of the article was taken from the legal title of the case which referred to the circumstances under which the suit was filed.

The Koehring Company has pointed out that the article fails to state the facts that Koehring Company and its engineers were not parties to the final decision in the case and that the verdict was against a co-defendant. The references to executives, engineers and employees in the article referred to employees of the co-defendant and not to employees of the Koehring Company.

There was no intent, of course, to reflect in any way on the Koehring Company.

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Mechanical

BECHLY, DAN SMILEY
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BENSON, ROBERT BRUCE
Overland Park, Kan.
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BILBAO, SILVERIO FRANCISCO
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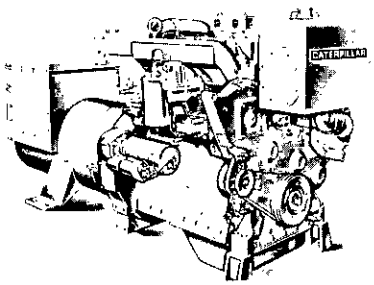
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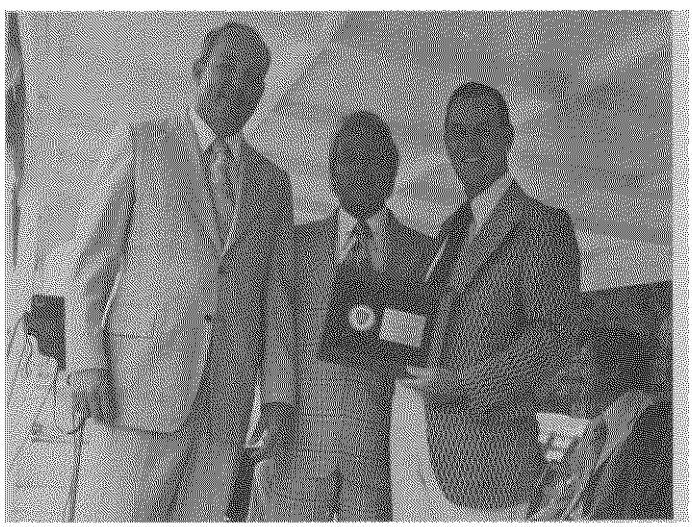
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Patricia Ann Colville, Ruston High School, being presented the NSPE-Boston University Scholarship by Louis Soulier, Chairman of the Monroe Chapter Guidance Committee. Charles F. Stubbs, P.E., President of the Monroe Chapter, left, and James S. Jones, counselor at Ruston High, right, observe the presentation.



The Atchafalaya Basin "Swampland" Expressway was selected as one of the ten Outstanding Engineering Achievements for 1973 by the National Society of Professional Engineers. At the opening of the I-10 expressway ceremony in Baton Rouge on May 31, James L. Meyer, P.E. (L), secretary-treasurer of the Louisiana Engineering Society, gave the outstanding engineering plaque to Governor Edwin Edwards, who presented it to W. T. Taylor, Jr., Director, Louisiana Highway Department.

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NEW PILING STANDARDS

(Continued from Page 14)

13. Holes and Scars

13.1 Holes less than ½ in. in average diameter shall be permitted in piles, provided the sum of the average diameters of all holes in any square foot of pile surface does not exceed 1½ in.

13.2 Piles having sound turpentine scars undamaged by insects shall be permitted.

14. Checks, Shakes, and Splits

14.1 A check shall not extend any deeper than to the pith. There shall not be any two or more checks extending to the pith which become contiguous at the pith, except as modified by 14.3. A check is defined as a lengthwise separation of the wood across the rings of normal growth, extending from the surface toward the pith, but not extending through the piece.

14.2 The length of any shake or combination of shakes in the outer one half of the radius of the butt of the pile, when measured along the curve of the annual ring, shall not exceed one third of the circumference of the butt of the pile. A shake is defined as a circumferential separation of the rings of normal growth.

14.3 Splits shall not be longer than the butt diameter. A split is defined as a lengthwise separation of the wood across the rings of normal growth, extending from one surface through the piece to the opposite surface.

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Slate of 1974-75 LES Officers

The LES Nominating Committee met on May 17, 1974 and presented the following slate of officers to the Board of Direction. A letter ballot containing this slate of officers will be mailed to the membership on or about June 1:

President . . . . . Fred C. Culpepper, P.E.
First Vice President . . . Malcolm L. Hurstell, P.E.
Second Vice President . . . . . James L. Meyer, P.E.
Secretary-Treasurer . . . . . Carl H. Thomas, P.E.
National Director . . . . . John F. Vogt, P.E.
State Directors . . . . . James W. Reeves, P.E.
Francis C. Roy, P.E.

Congratulations to Jesse Coates

Dr. Jesse Coates, P.E., member of the State Board of Registration for Professional Engineers and Land Surveyors and a long time member of the Louisiana Engineering Society, has been named a Fellow of the American Institute of Chemical Engineers.

Engineers Wages Up

According to the 1973 Income and Salary Survey conducted by NSPE, median income of engineers was $20,660, a 13 percent increase over the 1971 median income.

The NSPE salary report is the eleventh biennial survey based on a sample of 23,000 questionnaires returned from the membership. The survey helps the engineer to compare his earning position by age, branch of engineering, type of work, geographic region, and fringe benefits.

Copies of the NSPE "Professional Engineers Income & Salary Survey" are available at $10.00 each from NSPE, 2029 K. Street, N.W. Washington, D. C. 20006 ($5.00 to NSPE members).

Engineering Job Outlook

The demand for engineers appeared to be holding strong during 1973-74. The College Placement Council survey showed an overall increase of 31 percent over 1973 in the number of engineering graduates expected to be hired. As reported in various media, Dr. Frank Endicott, Northwestern University, indicates in his annual study an overall hiring increase of 13 percent at the BS level and 10 percent at the MS level, with engineers being the most sought-after group. A significant finding of Dr. Endicott's study was that most companies still intend to carry out their hiring plans despite the energy crisis.

The unemployment rate for engineers fell to 0.7 percent in the 4th quarter of 1973, and averaged 1.0 percent for the entire year, according to the latest Labor Department data.

Baton Rouge Chapter Outing

Over 75 engineers and guests attended the Baton Rouge Chapter meeting at the lovely home of Dr. and Mrs. Louis Capozzoli on Hoo Shoo Too Road May 18.

Fishing, softball, swimming and horseshoe pitching preceded a delicious boiled shrimp dinner. Following the "fun time," Carl Thomas, President of the Baton Rouge Chapter, introduced R. C. "Doc" Spears, Executive Secretary LES, who installed the 1974-75 Baton Rouge Chapter Officers:

President . . . . . Al H. Wehe, in absentia
President-Elect . . . . . Guy W. Miller
Vice President . . . . . John E. Ritter
Secretary-Treasurer . . . Harold R. Williams
Director . . . . . Larry A. McKee

Diane Westmoreland Resigns

Due to unfortunate circumstances and need tc assist her husband in a new position, Diane Westmoreland has left LES. Diane came to LES in September 1970 and has been working since that date. Her initiative and cheerful manner are going to be missed by the headquarters office.

A farewell office party was held May 22 to honor and say goodbye to Diane. The LES Board presented a parting gift and all of us wish her happiness and success in the new endeavor.

LES Legislative Program

The four LES legislative bills have been introduced into the Senate by Senator Bob Jones, Lake Charles. Senate Bill numbers corresponding to the House Bills are:

H.B. 33 (S.B. 504)—Registration by long-established practice to be permissive rather than mandatory.
H.B. 29 (S.B. 505)—Industry exemption except for Engineers in charge of Responsible Professional Service.
H.B. 32 (S.B. 507)—Increase of the initial and renewal registration fee ceilings.
H.B. 44 (S.B. 621)—Corporations using in their names engineers, engineering, surveyors or surveying.

Outstanding Engineering Achievement Plaque to Louisiana Highway Department

The nine-mile section of Interstate 10 from College Drive to Highland Road in Baton Rouge was dedicated during ceremonies on Friday, May 31.

The principal speaker for the event was Governor Edwards; his daughter cut the ribbon opening the new segment. An added attraction featured James L. Meyer, P.E. of LES giving the National Society of Professional Engineers (NSPE) "outstanding engineering achievement plaque" to Governor Edwards for presentation to W. T. Taylor, Jr., Director, Louisiana Highway Department. LES nominated the Swampland Expressway, a section of I-10 between Baton Rouge and Lafayette, for the NSPE award. The expressway was selected as one of the ten outstanding engineering achievements in the United States in 1973.

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Sixty-five miles north of Baton Rouge, where Old River connects the Mississippi with the Atchafalaya and its basin, man opposed the forces of nature . . . and won.

Normally, Atchafalaya water runs through Old River and into the Mississippi. But, during the spring and summer when rain and melting snows send down volumes of water from the North, the flow is reversed. During the 30's a strange development occurred. Each year, the Atchafalaya, with its 155-mile, nearly-straight path to the Gulf of Mexico, captured more and more of the Mississippi. Nature, slowly but steadily, was changing the course of the great river.

If this happened, our state's oil and shipping industry would be wrecked. The deep water ports of Baton Rouge and New Orleans would be located on a shallow, narrow river meandering down the middle of a cavernous, mile-wide bed. And if it happened suddenly, during an extremely rainy spring, flood waters would wipe out much of our rich farmland, animal life and natural resources.

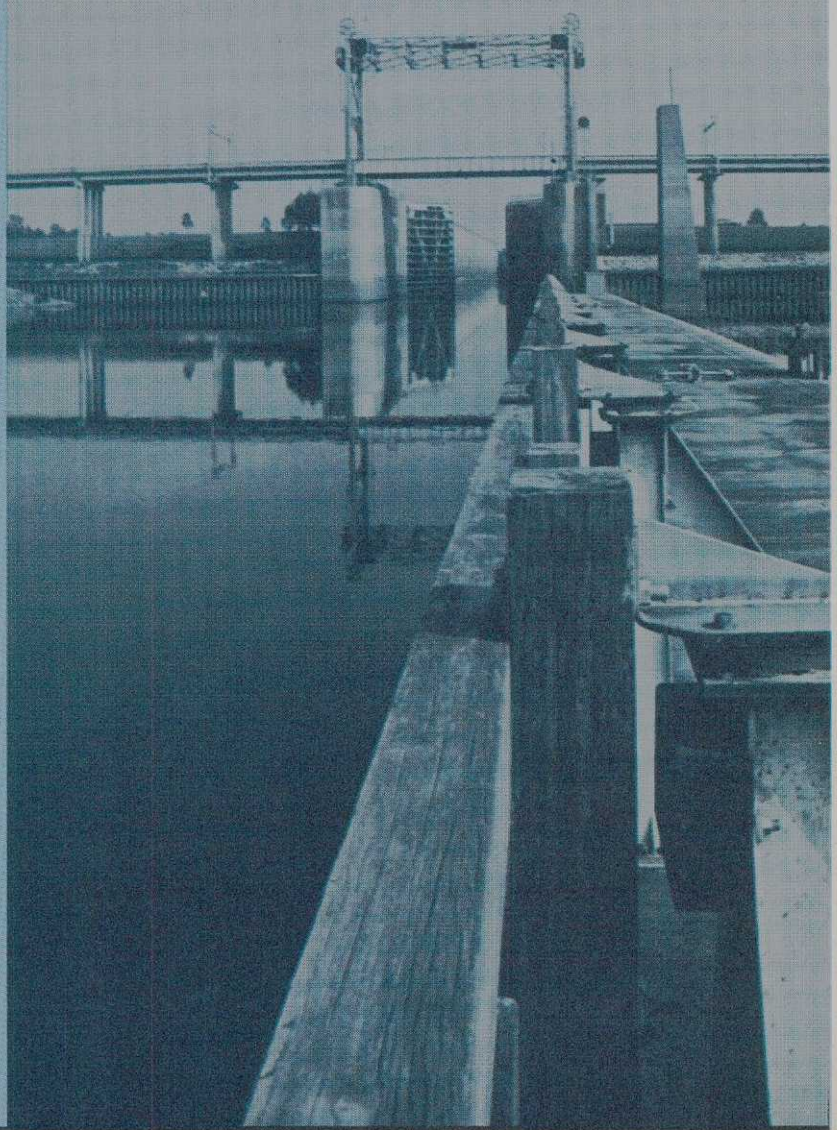
Louisianans went to work. For a temporary dam, a lumber mattress, wide as a football field is long and long as the Empire State Building is high, was laid across the mouth of Old River. Fifty men worked ten hours a day, seven days a week, weaving narrow pieces of lumber together. Slowly, 5 feet an hour, the mattress moved across the stream. Huge stones were piled on top, 126,000 tons in all. Dry season brought a drop in the river's height, and when the decreased flow stopped completely, workmen constructed a permanent dam of sand and clay.

But the job wasn't finished. Still needed was a system of locks to allow ships passage between the Mississippi and the Atchafalaya. Over 190,000 cubic yards of concrete and 28 million pounds of reinforcing steel went into the structure. Each lock door weighed 186 tons. After 5 years and 68 million dollars, the project was completed.

In the spring of 1973 the Mississippi rose to its greatest height in history. A flood of terrible proportions threatened our state. But the Old River dam and locks held. The mighty river was kept within its boundaries. Man had met the forces of nature in Louisiana, and was triumphant.

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LOUISIANA ENGINEER

August, 1974



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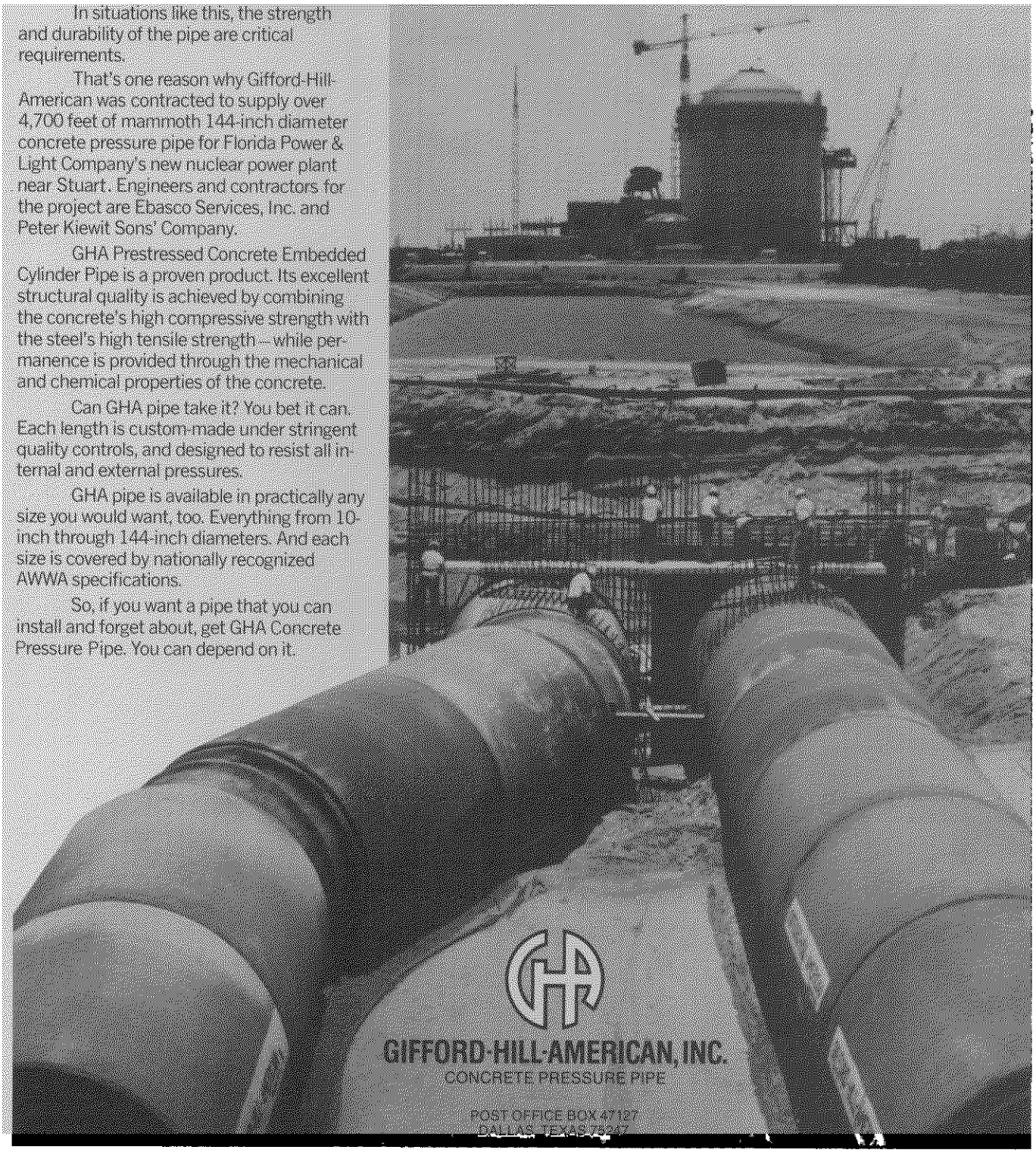
That's one reason why Gifford-Hill-American was contracted to supply over 4,700 feet of mammoth 144-inch diameter concrete pressure pipe for Florida Power & Light Company's new nuclear power plant near Stuart. Engineers and contractors for the project are Ebasco Services, Inc. and Peter Kiewit Sons' Company.

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Fred C. Culpepper, Jr., P.E. President, L.E.S.

Born on November 16, 1918, in Monroe, Louisiana, Fred Culpepper is the son of Fred C. and Elizabeth Schulze Culpepper. He was educated in the city school system of Monroe, and in 1940, he received his B.S. degree in Civil Engineering from Virginia Military Institute.

Soon after graduation from VMI, he joined United Gas Pipe Line Company as a party chief. One of his first assignments was to accompany engineering consultants from New York City, who had appeared on the scene at the request of United Gas to appraise properties and to make a report of their findings. Fred Culpepper did all the work, and the consulting engineers got the money! This proved to him that he was going to become a consulting engineer.

On June 1, 1941, he joined Ford, Bacon & Davis Construction Corporation as a junior engineer; then, he promptly took a leave of absence to defend his country. For four years he served in the armed forces, including two years in Europe. He was a parachutist in the 101st Airborne Division, where he was involved with the design of paracrates and parapacks for the newly-created airborne troops. He was captured by the Germans upon landing by parachute on the initial invasion in Normandy, but managed to escape the following day. The remainder of the war was involved with several major campaigns, including Bastogne. He was returned home after peace was declared and was detached from active duty with the rank of Major.

The pipeline business in the United States was booming by then, and since Ford, Bacon & Davis was a pioneer in this engineering industry, it was to be expected that they would be involved heavily in expansion. During the period 1945 to 1960, Fred Culpepper was assigned to projects in 20 states in various capacities — from field engineer to project manager. He was project engineer responsible for design and layout of one of the first large gathering systems and transmission lines, transporting natural gas from the vast Hugaton Gas Field from Kansas to Denver. This system consisted of 500 miles of high-pressure pipeline.

Culpepper's hard work and talents were recognized early. In 1961, he was elected vice president of Ford, Bacon & Davis Construction Corporation with responsibilities for business development. In 1963, he was named a member of the board of the parent company, Ford, Bacon & Davis Incorporated, as well as the Monroe-based firm. He assumed additional duties as manager of the operating divisions in Monroe. In June, 1968, he was elevated to senior vice president in charge of operations, and on February 2, 1970, he assumed the duties of executive vice president and resident manager of Ford, Bacon & Davis Construction Corporation. In the modern-day history of the Ford, Bacon & Davis companies, Fred Culpepper is the youngest man to have assumed these responsibilities.

He continues to serve on the board as a senior director of the parent firm, as well as Ford, Bacon & Davis in Louisiana, Texas, Utah, Canada, and Brazil. He is president and chairman of the board of Sealants International, Inc., a company that was formed to offer to foreign countries patented sealing methods for cast iron bell and spigot mains.

A licensed professional engineer in 12 states, he is a member of the National Society of Professional Engineers and is currently serving as chairman of the Professional Engineers in Construction Turn-Key, Negotiated Contracts Committee. He is a Fellow in the American Society of Civil Engineers and has served as chairman of the executive committee of the pipeline division of the society.

A member of the Monroe Chapter of the Louisiana Engineering Society, he has held the offices of secretary-treasurer, vice president, and during 1967-68, he was president of the chapter. Prior to assuming the presidency of the Society, he served on the board for two years.

Additionally, he serves as alternate member of the Piping and Process Equipment Standards Board of the American National Standards Institute, Inc. He served on the Advisory Council of the Small Business Administration for Louisiana, and was a member of the Department of Commerce's Louisiana-Mississippi Regional Export Council.

In January, 1970, he was elected to the National Constructors Association's Executive Committee. Today, he is a member of the Policy Committee and is the company's executive representative. He also represents Ford, Bacon & Davis in the affairs of the Distribution Contractors Association and the Pipe Line Contractors Association. In the latter association, he has been a member of the board of directors for two years, and in January, 1974, he was elected first vice president. The Southern Gas Association has appointed him to serve on the Membership Committee for Associate Members.

Active in community affairs, he was 1971 president of the United Givers Fund. He is a sustaining member of the Boy Scouts of America, Ouachita Valley Council, serves on the Executive Board, and is National Council Member representing the Ouachita Valley Council. He is a director of The Ouachita National Bank of Monroe, as well as a director of the Monroe Chamber of Commerce. A member of the First Presbyterian Church of Monroe, he served as Clerk of the Session for two years and was chairman of the Building Commission. He is a member of several Masonic Orders.

In June, 1941, he was married to Mary Frances Moore, the daughter of the late Dr. and Mrs. Daniel M. Moore. They are the parents of a son, Dr. Fred C. Culpepper, III, and three daughters, Mrs. Carol Culpepper Smith, Mrs. Dorothy Culpepper Schween, and Miss Patricia Culpepper. They are grandparents of Fred C. "Pepper" Culpepper, IV, Shannon Elizabeth Smith, Scott Brady Culpepper, and Courtney Lynn Smith.



COVER

LES' New President—
Fred C. Culpepper, Jr., P.E.

CONTENTS

LES' New President 3
Presidential Privilege 5
LES/MES Joint Meeting 6
Year In Review 10
Creative Design Projects at USL 12
Engineer Management Course . . 14
EngiNews 17
Potpourri 21

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Presidential Privilege



Fred C. Culpepper, Jr., P.E., President, L.E.S.

It is a privilege to serve as the president of such a prestigious organization as the Louisiana Engineering Society. I approach the task with a great deal of trepidation since I will be following in the footsteps of a long list of able and successful presidents. I can only assure you that I will try to live up to the standards of accomplishment that they have already established.

Our Society, like similar organizations throughout the country, is feeling the bite of inflation. The budget approved at our July board meeting anticipates expenditures in excess of income. This is deficit financing and none of us likes it. Since practically all of our income is derived from dues, it seems mandatory that we must increase the number of members in order to balance our budget.

Increase in membership and retention of members will be of first importance during this year. I challenge each member to make membership acquisition his number one goal also. We now have approximately 1,600 regular members. If each member could get just one new member we could double our income and forget about any deficits in our budget. There are over 10,000 professional engineers registered in this state. This should certainly indicate that we have a large potential for new members.

New member acquisition, however, is only part of the story. We must also retain all of the members that we acquire. Unfortunately, our track record in this area has been very poor. As an example, in 1972, we had 1,599 regular members, and at the same point in time in 1973, we had only 1,566 regular members, for a net loss of 33. Obviously we must work very hard to provide programs and incentives that will encourage our members to continue their membership.

This brings us to the last and probably the most important phase of membership acquisition. We must provide imaginative and rewarding programs at the state and local levels that will encourage professional engineers in the state to become affiliated with our organization and to take an active part in its programs.

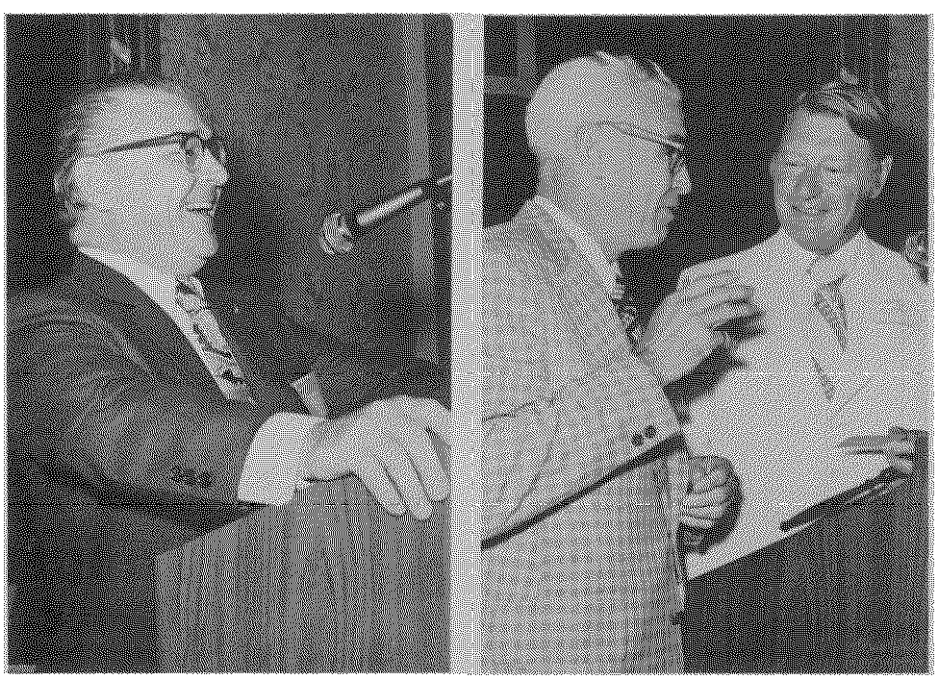
At the state level we can only give direction and general guidance. We cannot provide the programs that are essential to a growing and progressive Society. In other words, I feel that anything that we might accomplish during the coming year will be the result of good planning and active participation at the chapter level. I would encourage every chapter president to start now to setting his program for the year. I think it is most important that we involve new members in various committees so that these committee chairmen can give impetus to new programs we may have overlooked in the past.

We anticipate a planning meeting in Alexandria on September 14 and 15. Last year this meeting was well attended and was very productive. I hope that this year we will have an even better attendance by all of the chapter officers and committee chairmen. This program is designed to provide an exchange of ideas between chapters as to how we can best improve our service to our members. In addition it sets some guidelines for overall goals for the year.

LES/MES Joint Meeting Huge Success



Dr. and Mrs. Jack Thigpen and Mr. and Mrs. Fred Culpepper and Harry Bovay chat prior to the convention banquet.



NSPE President-Elect Harry Bovay entertains the banquet audience.

Outgoing LES President Jack Thigpen exchanges the gavel with incoming President Fred Culpepper.

Over 100 LES and 70 MES members attended the Fourth annual meeting at the Royal Sonesta, New Orleans on July 25-27.

The weather cooperated and the engineers, wives and guests enjoyed a wine and cheese party in the patio courtyard Thursday evening.

An outstanding panel discussion, "Engineers Question the Energy Crisis," was moderated by Jack W. Pepper, P.E., MES president. Giving the government's answer was James Gill, Office of Allocation, Federal Energy Office, Washington, D.C. For the Oil Industry, S. M. Paine, general manager of production, Shell Oil Company, New Orleans, answered. Cloyd D. McDowell, president of National Independent Coal Operators Association, Harlan, Kentucky, replied for the coal industry. The environmentalist viewpoint was presented by J. Ross Vincent, director of Ecology of Louisiana, Inc., New Orleans. The question period following the panelists' presentations brought a spirited response.

Thirty-nine golfers battled the Timberlane Country Club course and each other. New this year was a tennis tournament. The ten netters had a big time in spite of a two hour delay because of rain. Trophies were awarded at the banquet.

Harry Bovay, P.E., NSPE president-elect, was the principle speaker at the banquet Friday evening. NSPE Vice Presidents James Johnstone, P.E., Southwestern Region, and Robert M. Scholtes, P.E., Southeastern Region, assisted Mr. Bovay in installing the 1974-75 LES and MES officers.

The ladies auxiliary committee, composed of Mmes. Cressy, Vogt, Maldonado, Verges, Grundmann, Markel, Bergeron and Carriere, arranged and carried out a delightful ladies program that included a lecture by the Royal Sonesta Chef, a visit to the kitchens and a walking tour of the Vieux Carre.

This was one of our best meetings and if there were any adverse reactions, we haven't heard them. We are looking forward to the joint meeting in Biloxi next July.



Installation of new LES state officers. From left to right are Robert Scholtes, vice president of the southeastern region of NSPE; Harry Bovay; James Johnstone, vice president of the southwestern region of NSPE; President Fred Culpepper; President-Elect Malcolm Hurstell; Vice President James Meyer; Secretary-Treasurer Carl Thomas; National Director John Vogt; State Director Ken Deal; State Director Francis Roy; and State Director James Reeves.



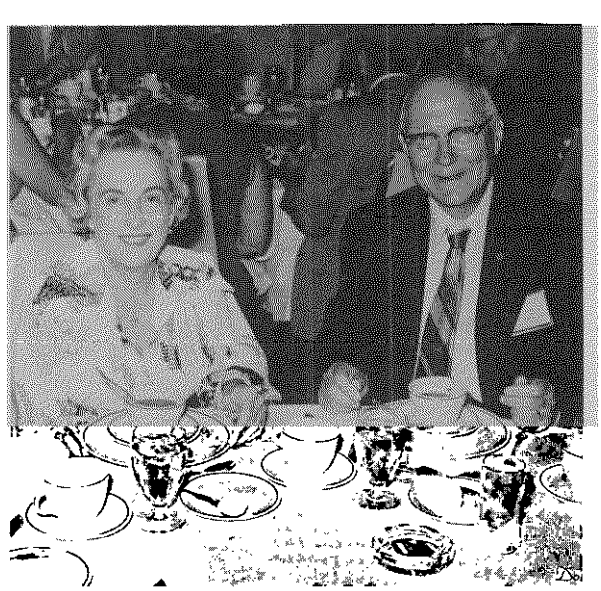
A portion of the headtable from left to right are New Orleans President Al Adoue, Mrs. Adoue, Nelson Douglas, Mrs. Douglas, Harry Bovay, Mrs. Thigpen and Dr. Thigpen.



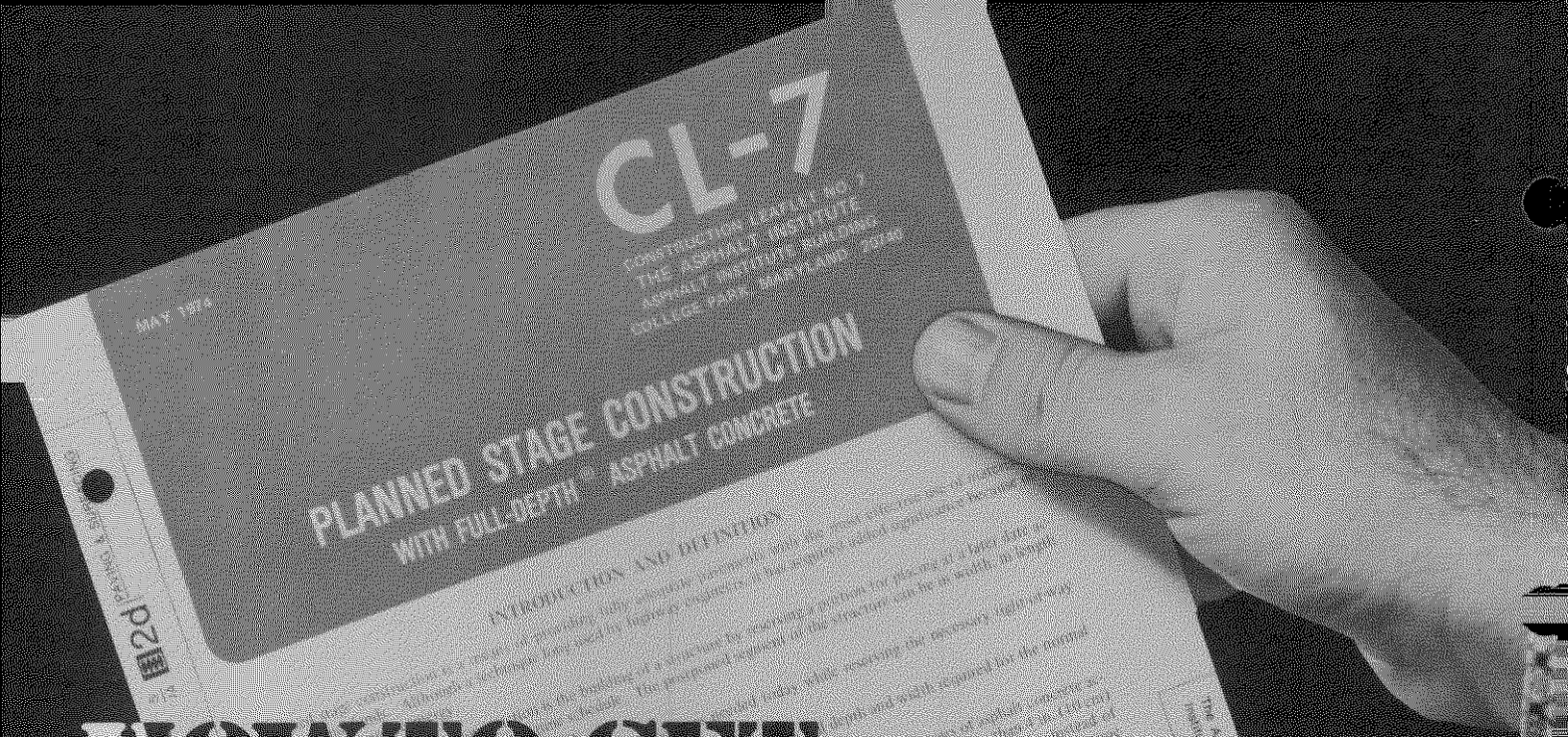
The other side of the headtable shows Jack Pepper, Mrs. Culpepper, Fred Culpepper, Mrs. Scholtes, Bob Scholtes, Mrs. Hurstell, Malcolm Hurstell and Jim Johnstone.



Some of the people enjoying the LES/MES banquet are Jim Meyer and his guests.



Member of the State Board of Registration and former LES President Leo Odom and his wife.



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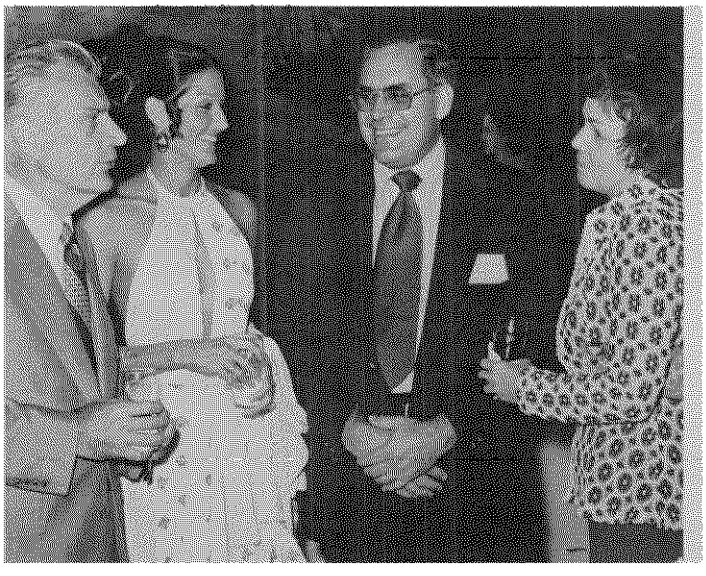
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LES/MES Joint Meeting



Dr. Thigpen awards a plaque to Arthur DeFraites for his legislative activities on behalf of the engineering profession.



LES Executive Secretary R. C. "Doc" Spears and his assistant Prudence Landry chat with Jerrell Freeman, who handled the convention arrangements, and Mary Sudduth, who assisted at the registration desk.



Awarding the "Parson's Nose" trophy to Billy Moore is former LES President Hoyt Brown.



David Fried presents the tennis trophies.



This poster gives credit to the sponsors of the social activities during the convention.

Year in Review

By J. J. Thigpen, P.E.
President

The affairs of the Louisiana Engineering Society moved forward in 1973-74. The year has had a number of successes and some disappointments, but overall it is considered a good year.

Highlights of 1973-74

1. The membership increased from a total of 2,422 in July 1973 to 2,495 in July 1974. We welcomed 194 new members during the year. Unfortunately, the loss of 121 delinquent members cut our net gain to 73.
2. Our greatest disappointment was the financial position. We ended the year with a deficit of $3,755.04. This was due primarily to the fact that our budgeted income was based on a substantial increase in membership that did not materialize. Actually, we reached our goal on number of new members, but the loss of 121 delinquencies made a balanced budget impossible even though we kept operating expenses $4,338.13 below the budgeted figures.
3. Six issues of the mimeographed Perspective were prepared in-house and mailed to all members. Every attempt was made to keep the membership informed on local and national programs of the engineering profession.
4. A program placing the LOUISIANA ENGINEER into high schools by gift subscription from members was inaugurated in November 1973. Our magazine is now going to 100 Louisiana high school libraries.
5. An excellent indoctrination of the chapter representatives by committee chairmen and officers was a part of the successful training session held in Alexandria on September 13, 1973. The Planning Conference on September 14 and 15, 1973 prepared the personnel and assigned activities for the coming year.
6. The Louisiana Engineering Society hosted the NSPE Southwestern Regional Meeting in October 1973.
7. The 16-hour examination was approved by the State Board of Registration for Professional Engineers and Land Surveyors. After June 30, 1978, each applicant for registration on the basis of graduation plus experience will be required to take 8 hours of written examination in the principle and practice of the branch of engineering in which he seeks registration in addition to the presently required 8 hour examination in fundamental engineering principles.
8. The LES Vocational Guidance Committee, chaired by Raymond E. Pillow, P.E., forwarded three outstanding Louisiana High School students' applications to NSPE for consideration of scholarships. Miss Patricia Colville, Ruston, Louisiana, was awarded the NSPE-Boston University scholarship.
9. The Atchafalaya Basin expressway was selected as one of the 10 outstanding engineering achievements for 1973. On May 31, 1974, James L. Meyer, P.E., acting for the LES president, presented the outstanding engineering achievement plaque to Governor Edwards who presented it to Mr. W. T. Taylor, director of the Louisiana Highway Department.
10. Life members in LES reached 214 in 1974. These gentlemen have been members of LES for 30 or more consecutive years.
11. Over 100 engineers and guests attended the LES Spring Meeting in Lafayette on April 19-20, 1974. Noteworthy activities were: Speaker of the House E. L. "Bubba" Henry's presentation on CC73 one day before the special election for voting on the new constitution; Louisiana Superintendent of Education Louis Michot's talk on career education and its relation to engineering; and the Awards luncheon.
12. The Society recognized and honored six outstanding engineers at the Spring Meeting in Lafayette on April 20, 1974: Irwin R. Schneider — distinguished civic service by an engineer
    Marshall B. Ewing — distinguished service to the engineering profession in Louisiana
    Andrew M. Moore — distintinguished service in engineering management
    Frank W. Macdonald—for technological advancement or discoveries as contribution to advancement of engineering
    Roy T. Sessums—distinguished service in promoting Public Relations for engineering profession in Louisiana
    E. Raymond DesOrmeaux — young engineer award
13. A surveyor-in-training classification was established by the State Board of Registration in September 1973. After January 1, 1974, persons may qualify to become certified as Land Surveyors in training on the basis of graduation plus examination, education plus examination, or experience plus examination. The movement for this action by the board was instigated by the Louisiana Land Surveyors Association and endorsed by LES and ASCE.
14. A list of officers of engineering societies and related groups in Louisiana was carried in the October, December 1973, and the February 1974 issues of the LOUISIANA ENGINEER. These were listed to promote inter-society cooperation and communications.
15. The six issues of the LOUISIANA ENGINEER, August, October, December 1973, February, April and June 1974 printed some interesting and provocative articles. Among them were:
    Industry and the University: An Uncertain Alliance—Robert M. Drake
    The Engineer's Image—Major General Charles C. Noble
    Louisiana Off Shore Oil Port Cantor vs Koehring Co.—The Engineer's Viewpoint—Wood Brown, III
    Engineering Opportunities Up —Enrollment Down—Grover Trammell

Swampland Expressway, A Tribute to Louisiana Engineering

Engineers—Our Greatest Energy Resource — Leslie Moor, Jr.

New Standards for Round Timber Piles—A. H. Douglas, Jr.

16. LES prepared four proposals for the 1974 legislative session. A survey of all registered engineers in Louisiana on each of the proposals was conducted to get the pulse of the profession. Each proposal received good majority support. Under the able leadership of Art DeFraites, LES Legislative Committee chairman, the bills were introduced. Three of the bills pertained to the registration law and one pertained to business corporation law. Three of the bills passed and were signed into law by Governor Edwards on July 12, 1974.

SB 504—Registration by long established practice

SB 505—Industry exemption modifications

SB 621—Revision to business corporated law as it pertains to corporations using in their names engineer and surveyor

The fourth bill, SB 507, to increase the initial and renewal registration fees died on the calendar.

17. We hired a new executive secretary on August 1, 1973. Gerald Simmons who had been with us almost 5 years left LES in June to become executive director of the Louisiana Dairy Products Association. The time between the departure of Mr. Simmons and the arrival of R. C. Spears was ably handled by Miss Prudence Landry.

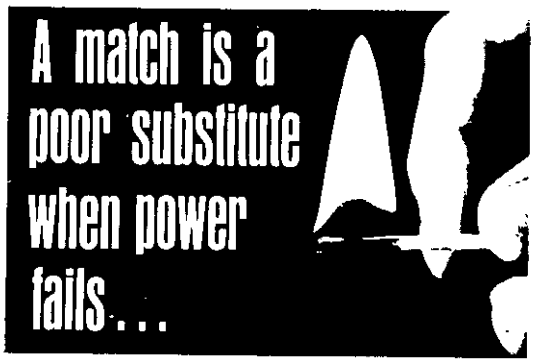
18. The August 1973 issue of the LOUISIANA ENGINEER was the last issue to carry the LES Board minutes. For financial reasons, the number of pages in the magazine was reduced from 32 to 24 and they were one of the features omitted. There have been no serious problems experienced by this change. The minutes have been made available on request from the State Office.

19. Advertising revenue for the LOUISIANA ENGINEER was slightly below budget. However, we have made a good start for 1974-75 as the figures below illustrate:

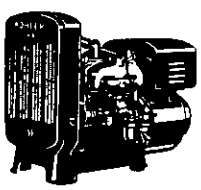
June 73	Aug. 73	Oct. 73
$1405	$1540	$1180
Dec. 73	**Feb. 74**	**April 74**
$1280	$1625	$1640
June 74	**Aug. 74**	**Oct. 74**
$2395	$1900	
Dec. 74	**Feb. 75**	**April 75**

Total $8670

20. Automobile identification plates to recognize Louisiana Professional Engineers are for sale by LES. These plates depicting the national P.E. logo and an outline map of the state of Louisiana are to be affixed to the front license frame. We believe the plate will demonstrate the pride P.E.'s have in their profession. Proceeds from this project will be used to purchase needed equipment for the State Office.



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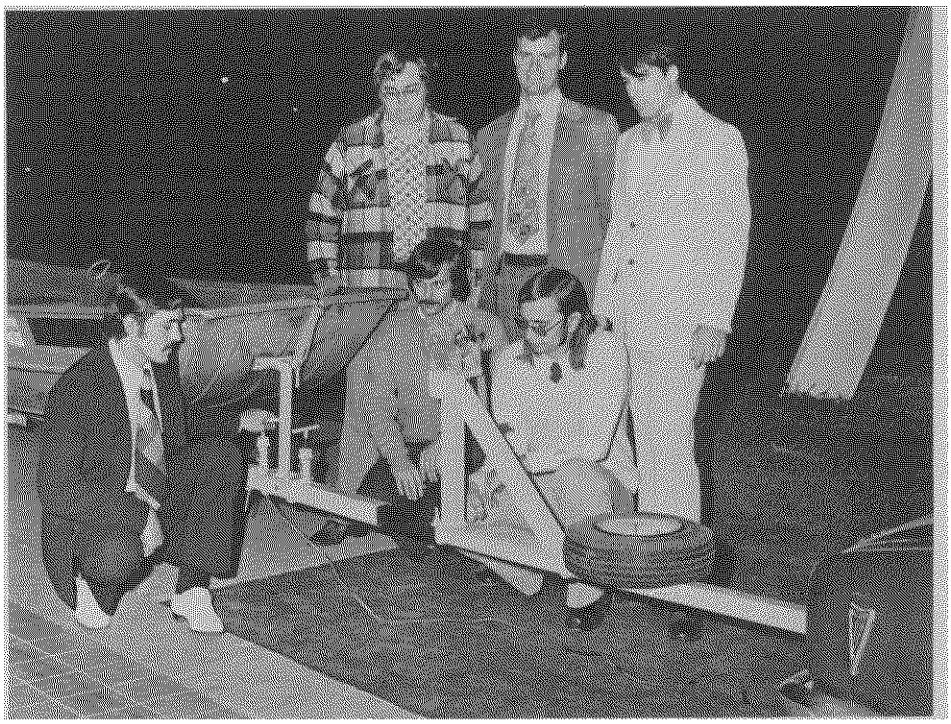
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Creative Design Projects at USL

WALTER E. RED, PH.D.



EXTENDABLE BOAT TRAILER

Kneeling (left to right)—William T. Clark, Jr., Joe Duck, and Herbert C. Vickers. Standing (left to right)—John Moreau, Dr. Edward Red, and Jerry Lewis, Chief Engineer.

Editor's Note: Walter E. Red is assistant professor of Mechanical Engineering at the University of Southwestern Louisiana, Lafayette.

Introduction

Engineering education is faced with a perplexing, almost overwhelming challenge—how to supply competent graduates in spite of the forced reductions in curricula. The tentacles of inflation reach out in all directions and, as the cost per engineering student is higher than most, justification is easily obtained. The irony of these measures is their obvious conflict with the demands of an ever-growing, rapidly expanding technology. More than ever, we require graduates with a conceptual understanding of the physical phenomena around them capable of rendering engineering decisions in a professional manner.

Where do engineering students obtain this conceptual understanding? For most, it must come by actual physical exposure to and manipulation with the physical elements of their trade. These experiences in the past were provided by a multiplicity of laboratories supplementing the usual course material. But alas, only a few of these remain. A substantial amount of maturity and professionalism is gained by osmosis through exposure to good example and the engineering process in action. The influence of the industrial community is invaluable here. Yet, the widening gulf between industry and the educational institutions is a topic of concern among educators and the subject of many papers. Fred J. Benson, dean of Engineering at Texas A & M, sums up our plight in Reference 1 as follows:

> "Our engineering students today have little contact with ethics, design, practical considerations, and those other aspects which distinguish the engineer from the scientist; and there is little evidence that these deficiencies are made up in the early years of his employment."

The purpose of this paper is *not to dwell* on these problems, but to present an approach initiated here in the fall of 1973, which hopefully will alleviate them.

Creative Design Projects

The basic concept of interdisciplinary creative design projects has been around for about 10 years. Originally, their purpose was to fill the engineering applications gap left by the reduction in the number of engineering laboratories. Widespread application throughout the nation signals the success of this new teaching tool. Creative evolvement of the original concepts now exposes the engineering student to the complete "engineering design process." Some current methodologies are found in the reports of Reference 2 from 11 schools participating in the Sloan Foundation's creative design grants.

The creative design projects initiated at the University of Southwestern Louisiana were modeled after the successful approach developed at Arizona State University. The stimulus comes from the author's involvement in the formative stages of the approach while a graduate student there. Although developed as a freshmen course, its "real world" approach makes it a candidate for any student level.

The objectives of the creative design projects are to provide the student with

1) opportunities to stimulate his creative abilities.
2) an introduction to common engineering practices.
3) practice at system modeling and analysis.
4) an opportunity to design, build, and test hardware.
5) practice at project management.
6) practice in written and oral communication.
7) opportunities to interface with practicing engineers.
8) an introduction to the economic and marketing aspects of engineering.

These objectives are accomplished in the following manner.

An imaginary corporation, Invention Development Engineers of Acadiana (IDEA) plans to invest funds to develop new inventions which show economic promise. IDEA requests each student to submit a proposal for a design, with the authors of the best appointed "chief" engineers. Design companies are then organized into teams comprised of one chief engineer and "associate" engineers selected by the chief engineer from the remaining students. In a class of 30, five or six design companies are usually workable.

It is important that IDEA make wise decisions regarding the selection of chief engineers and projects. In the early stages, the motivation level is not always high among all members of each company. Good leadership from the chief engineer is a must. Later the companies perform at full throttle with all members generally enthusiastic about their projects. Because the design period only encompasses one semester as a portion of one course, it is necessary that the projects be simple enough to accomplish all the listed objectives. Freshmen-level projects have the tendency of being less technical and more creative while senior-level technical work is much improved.

Companies usually organize themselves as to capabilities, with each associate engineer responsible for one phase of the project. Task schedules are prepared and bi-weekly company and individual progress reports are required. In addition, an oral report is delivered by a company member. Each member has this opportunity during the semester.

The semester's work is culminated by a design competition among the companies. Selection of winners is made on the basis of a company final written report and an oral report delivered by each company in the presence of invited judges composed of practicing engineers, generally from outside the university. The oral reports, when delivered competitively in a large auditorium in the presence of engineering faculty, other representatives from the university, parents, and engineers from industry, provide a source of personal development that could never be obtained from formal courses.

Evidence of economic considerations is important in the final judging and the companies usually take a marketing survey and present statistics of consumer acceptability. The final oral presentation also includes a demonstration of the working model. Students are encouraged to design, build, and test a working model when feasible, and most do. To aid them here, $50 is alloted to each company with the restriction that a complete accounting of expenditures is required. Initial funding for the design projects was provided by a grant from the Student Government Association at U.S.L. Future funding is unaccounted for, but a good suggestion utilizes local firms as company sponsors. So that the winning company can be recognized, an ongoing design plaque, with the names of the winning company members inscribed, is displayed in the engineering building lobby.

In order to establish desired communication between practicing engineers and students, a request for free consulting time is made. Consenting engineers are then aligned as to abilities and interests to provide technical aid to the companies. It is important that the lines of communication be established with proper guidelines and controls.

The winning senior design project was an extendable boat trailer. Other designs involved such problems as a secondary wind generated power source, an automatic converging conveyor belt system, an escape device for high rise buildings, and a redesigned automobile safety belt system. The winning freshmen design was a theft-proof bicycle rack. Some representative projects considered were a quick-cooling refrigerator compartment, an automatic locking car door, a safe light socket, and an automatic sprinkler system based on the ground moisture content.

Additional Benefits

A creative design project at the freshmen level enables the first year student to determine whether engineering is for him. Those remaining are better motivated and recognize the necessity of the many formal courses. In the past, exposure to real engineering was limited to junior and senior level courses. Consequently, many prospective engineers were lost in the first two years. Some students even decide in the upper division courses that engineering is not a suitable profession. A change in curriculum now becomes costly to him and the university.

For practicing engineers and their associated firms, involvement in the design projects is a chance to assess a student's performance, sometimes hard to discern from a grade point average or a short interview. Opportunities are also available for them to make constructive changes in engineering programs to reflect the evolving needs of industry. Finally, the favorable publicity surrounding the design projects reinforces community/university relations. This is invaluable in alleviating the poor image of engineering currently held by a large segment of our society.

Summary

The creative design projects initiated at U.S.L. embody the characteristics required to supplant the deficiencies lacking in our graduate engineers. With cooperation from our communities and the engineering professional, a mature, capable, engineering professional, aware of his impact on society, can be graduated.

References

1. Benson, F. J., "Should Colleges of Engineering Become Separate Professional Colleges?", Texas Professional Engineer, October, 1972 issue.
2. "Creative Design: The Sloan Experience," Engineering Education, February, 1974 issue.

Engineer Management Course

co-sponsored by

College of Business Administration
College of Engineering, LSU
Louisiana Engineering Society

DIVISION OF CONTINUING EDUCATION

Department of Extramural Teaching

OBJECTIVES

The program is designed to provide study in modern concepts of engineering management for members of the engineering profession. It is co-sponsored by the Louisiana Engineering Society, but all practicing engineers are invited to participate. The overall objective is to up-date the professional management competence and practice of Louisiana engineers.

SCOPE

The program, at present, consists of six courses, each of which extends over a University semester. To complete the requirement for the certificate a participant must take Course A, Course C, plus any two of the remaining four courses. This allows for some program flexibility. Each of the courses meets fifteen times during evenings and lasts two and one-half hours. Thus, a student could complete the entire sequence by attending the classes for four consecutive semesters. No courses are offered during the summer term. It is anticipated that the series will be repeated; thus, one could enter the program after the first course offering and complete the series of four courses. The courses can be taken in any order.

ADDITIONAL OFFERINGS

The objective of this program is the continuing of education of engineers in industry. The Engineering Management program coordinator will be happy at any time to schedule a special offering for any group of 20 or more people. Such offerings may be on any engineering or management related subject. (Special offerings will not normally apply toward the certificate unless they represent comparable material.) Persons interested in special offerings should contact the program coordinator for details (see attached form).

FACULTY

The courses will be taught by regular faculty members of the Colleges of Business Administration and Engineering or by able, qualified professors from other universities in the State.

CERTIFICATE

Upon completion of four acceptable courses the participant will be awarded a CERTIFICATE IN ENGINEERING MANAGEMENT by the Division of Continuing Education. Under certain conditions college credit also may be earned for the courses.

COST

The registration fee per participant is **$95** for each course, including the cost of textbooks. The Program is fully self-supporting.

REGISTRATION

To insure that each student will have an opportunity to participate in discussion, enrollment in each section will be limited to thirty students.

Class sessions will be held in the University Medical Center at New Orleans, on the Baton Rouge Campus, and in other cities throughout the state where there is adequate demand. To pre-register for the classes complete the attached form and return with $10 pre-registration fee. Fee is applicable toward the $95 total registration fee and will be refunded if class chosen is not offered.

PROGRAM OUTLINE

Course A—Concepts of Modern Management

1. Understanding an organization
2. The individual in an organization
3. Organizational objectives
4. Function of managers
   a. Creating b. Communicating c. Planning
   d. Motivating e. Organizing f. Controlling
5. Management thought in perspective
6. Principles of management
7. Improving productivity in your organization

Course B—Economics for Engineering

1. Economic systems and functions
2. National income determination
3. Price Theory
   a. Demand
   b. Cost
   c. Market structures
4. Income distribution
   a. Wage theory
   b. Interest and rent
   c. Profits
5. The money and banking system
6. Economic policy

Course C—Engineering Economy

1. Interest, the time value of money and the concept of equivalence
2. Interest formulas
3. Methods of evaluating alternatives

a. Present worth
a. Annual Cost
c. Rate-of-return
d. Capitalized cost

4. Benefit-cost ratio
5. Depreciation methods
6. Analysis of multiple alternatives
7. Income tax effects on investments
8. Replacement theory

Course D—Financial Decision Making

1. Money markets
   a. Money, credit, and banking
   b. US government obligations
   c. Interest rates
2. Financial management
   a. Form of organization
   b. Financial planning
   c. Working capital
   d. Fixed capital
   e. Bond financing and borrowing
   f. Corporate stock
   g. Dividends and surplus
3. Personnel investment planning
   a. Savings institutions
   b. Security markets
   c. Financial reports and analysis
   d. Security analysis

Course E—Operations Research for Engineers

1. Allocation theory
   a. Linear programming
   b. Transportation problems
   c. Assignment problems
   d. Branch and bound techniques
2. Queueing theory
   Finite and infinite population models with single and multiple channels
3. Inventory theory
   Finite and infinite shortage cost models (Probalistic and deterministic)
4. Learning curves

Course F—Basic Engineering Statistics

1. Probability
2. Probability distributions
   a. Normal
   b. Binomial
   c. Hypergeometric
   d. Poisson
3. Density functions
4. Data treatment
5. Statistical inference
   a. Inferences concerning means
   b. Inferences concerning variances
6. Curve fitting and regression
7. Analysis of variance
8. Factorial experiments
9. Sampling theory

Course G—Theory, Methods and Use of Accounting

1. Basic Accounting Relationships
2. Accounting Systems and Control
3. Structure, Preparation, and Analysis of Financial Statements
4. Accounting for Assets
5. Accounting for Equity Claims
6. Accounting for Revenues and Expenses
7. The Statement of Changes in Financial Position

ENGINEERING MANAGEMENT
PRE-REGISTRATION FORM

Please complete the following form and return it with the $10 fee to the address below if you are interested in the Fall 1974 Program. (Classes will begin during the week of Sept. 9, 1974.)

Address _____ **Phone** _____

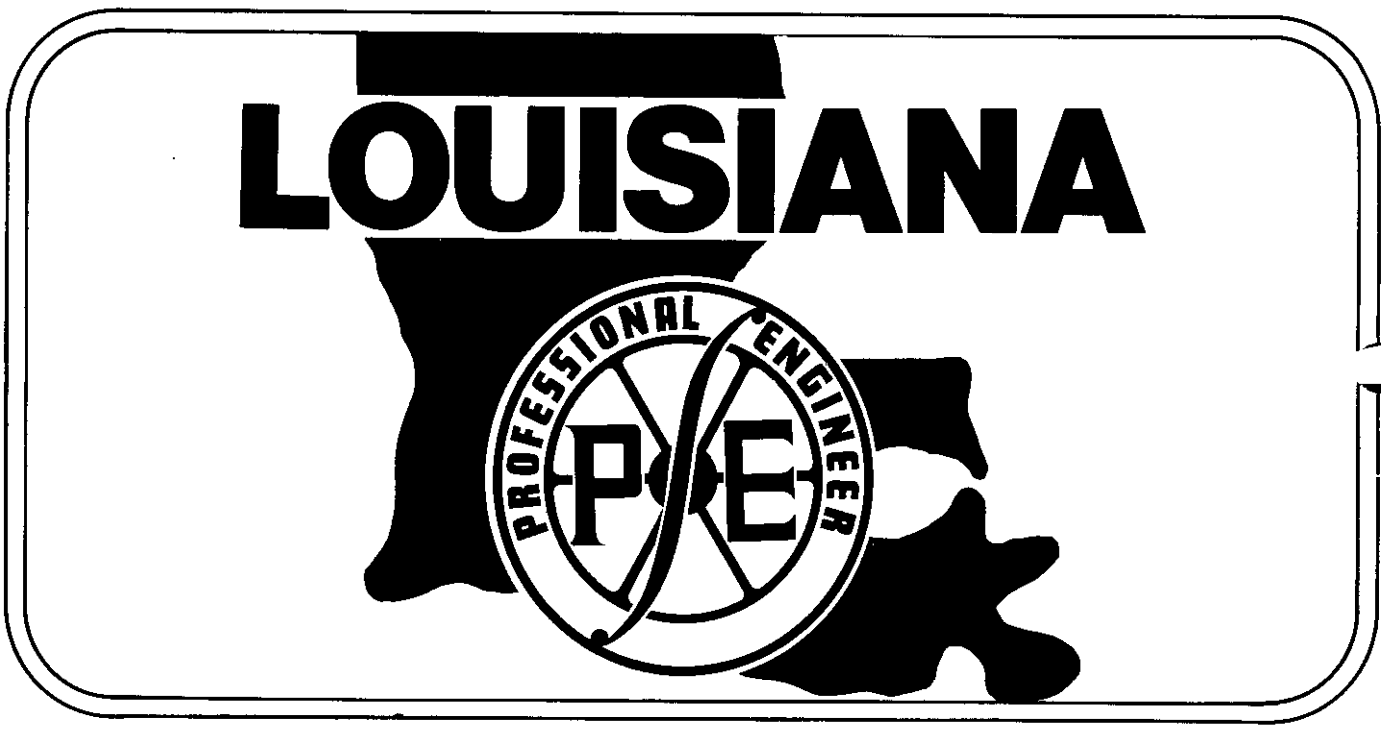
City & State _____ **Zip** _____

MAIL FORM TO: Dr. Thomas G. Ray
Mechanical, Aerospace & Ind. Engineering Dept.
Louisiana State University
Baton Rouge, Louisiana 70803

I wish to pre-register for the course indicated. (Please show your first shoice with a **1**, second with a **2**, etc. Show a single location choice only.) I understand if my first choice is not offered, I can request a refund of the $10 pre-registration fee. This condition also applies if the class is scheduled on a night I cannot attend.

Courses Offered, Fall '74	**Locations**
_____ Management	_____ Baton Rouge
_____ Engineering Economy	_____ New Orleans
_____ Operations Research	_____ Lake Charles
_____ Engineering Statistics	_____ Shreveport
_____ Accounting	_____ Alexandria
	_____ Monroe

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Before placing a manufacturing order, we need to know your interest in the project. Use the coupon below to indicate:

LOUISIANA ENGINEER LICENSE PLATE

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Baton Rouge, La. 70821

_____ I would like to order_____plate(s) as specified in the LOUISIANA ENGINEER.

_____ $5.00 per plate enclosed. _____ Bill Me.

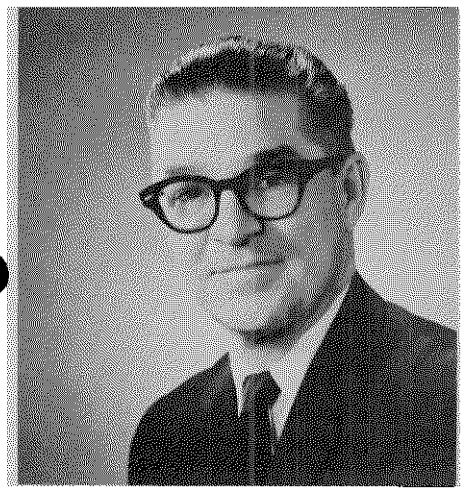
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Enginews

Harry E. Bovay, Jr.—New President-Elect of NSPE



Harry E. Bovay, Jr.

Harry E. Bovay Jr., president of Bovay Engineers, Inc., took office in July as president-elect of the 68,000-member National Society of Professional Engineers, (NSPE) at the organization's 40th annual meeting in Atlantic City, N. J.

A Houston resident, Bovay's firm includes offices in Baton Rouge, Houston, Spokane, Austin and Washington, D. C., with affiliate firms of Limbaugh Engineers in Albuquerque, N. M., and Dunbar & Dickson in Lake Jackson, Texas.

NSPE's membership is composed of professional engineers from all the engineering disciplines, including mechanical, chemical, civil, electrical, architectural and industrial.

Bovay is a past president of the Texas Society of Professional Engineers (TSPE) and the local San Jacinto Chapter. He has received the Engineer of the Year Award from TSPE and the Professional Engineers in Private Practice (PEPP) division award for outstanding service from NSPE.

Other professional activities include serving as NSPE Southwestern Regional vice president, as chairman of PEPP, and as chairman of the NSPE/PEPP awards committee.

A graduate of Cornell University in civil engineering, he is chairman of the board of Mid-South Telephone Company in Rienzi, Miss.; chairman of the board of Limbaugh Engineers, and a director of Astro Bank in Houston.

LETTER TO EDITOR

I wish to sincerely express my thanks for the honor of having been made a Life Member of the Louisiana Engineering Society.

My membership has been enjoyed throughout these many years and it is indeed a privilege to be so counted among the distinguished professionals of this Society.

It was with regret that I could not attend the LES Annual Spring meeting due to a business transfer, which has just recently been completed.

Many thanks and kindest regards.

Yours very truly,
Edward L. Schneider

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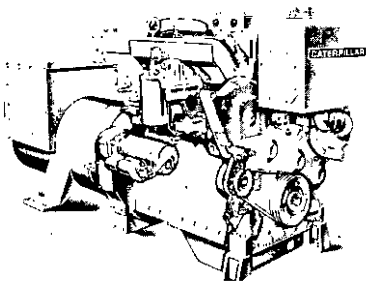
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Pyburn and Odom, Consulting Engineers, Baton Rouge, recently became the 100th active member firm of the Consulting Engineers Council of Louisiana, Inc. A. E. Wilder, Jr., Executive Director of the Consulting Engineers Council, is shown presenting Leo M. Odom with a special "Centurion" plaque honoring the occasion as Easton Stewart of Easton Stewart and Associates, President of the Baton Rouge Chapter, CEC, looks on.

PROFESSIONAL ENGINEERS GRANTED REGISTRATION

JUNE 18, 1974

By the Louisiana State Board of Registration for Professional Engineers and Land Surveyors

AHMED, NASEEM
Metairie, La.
Civil

ALAWADY, MOHAMED
Baton Rouge, La.
Civil

ANASTASIO, JR., FRANK LAWRENCE
Metairie, La.
Civil

APPLEGARTH, III, RAYMOND THURSTON
Metairie, La.
Civil

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- Williams Patent Crusher & Pulv. Co.

Application Engineers to Southern Industry

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New Orleans, La.
Civil

BELFORD, DON ROGER
Marietta, Ga.
Civil

BERGERET, JR., RENE JUSTIN
Shreveport, La.
Electrical

BORDELON, JR., BRUCE LACKEY
Duncanville, Texas
Electrical

BRANSON, JR., JOHN HEATH
Jena, La.
Mechanical

BREERWOOD, GREGORY ELMER
Metairie, La.
Civil

BROWN, BUCK FERGUSON
Ruston, La.
Electrical

BROWN, JR., SAMUEL JOSEPH
Akron, Ohio
Mechanical

BURCH, RONALD HYLON
New Orleans, La.
Electrical

BURROUGH, LARRY HENRY
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Potpourri

Marshall B. Ewing, P.E.

It is with a heavy heart that we report the passing of a friend and a giant in the engineering profession, Marshall B. Ewing, P.E.

Marshall has left something for us all. His life and example touched so many of us. We shall sorely miss his wise counsel and happy disposition. Engineering has been his vocation and service to LES and the engineering has been his avocation. We can all be grateful that he passed through our lives.

Our heartfelt sympathy to the Ewing family.

LES Bills Signed Into Law

The three LES legislative bills were signed by the Governor on July 12, 1974:

- Senate Bill 504, permits Board of Registration for Professional Engineers and Land Surveyors to register engineers of long established practice without written examination. This is Act 649.
- Senate Bill 505, requires industry operation in definition of engineering to be supervised by a professional engineer with certain exceptions. This is Act 650.
- Senate Bill 621, requires new corporations presented as engineers or land surveyors to notify Board of Registration for Professional Engineers and Land Surveyors. This is Act 685.

NSPE Committee Assignments

LES is represented on the 1974-75 NSPE committees by James S. Janssen, P.E., a member of the Industrial Professional Development Award Committee and Frank M. Heroy, P.E., a member of the Nominating Committee.

Dates to Remember

August 23, 1974—LES Board of Direction Meeting, LSU Union, 12:00 noon

September 12, 13, 14—LES Chapter Officers Training Conference and Planning Conference, Hotel Bentley, Alexandria

October 10-12—Southwestern Regional Meeting, Little Rock

November 1974—Young Engineers Month

November 1—NSPE Young Engineer of Year Award deadline for submission of nominations to NSPE Headquarters

November 30—Deadline for Chapter submission of scholarship nominees to State Office

December 20—Deadline date for sending state scholarship winners' files to NSPE

January 13-18, 1975—NSPE Winter Meeting, Tuscon, Arizona

April 10-12, 1975—LES Spring Meeting, Monroe

High School Students Take College Courses Under LSU Program

Twenty-five selected high school students, mostly from the Baton Rouge area, are taking college courses at LSU under a newly established Summer Engineering Program.

The nine-week program, which started June 10, allows the students to earn seven semester hours of credit toward a bachelor's degree in the College of Engineering or other curricula at the University.

"The program's basic purpose is to assist the more capable high school juniors who are interested in engineering or technology to better plan their educational goals during their last year in high school and to give them a chance to study in an engineering environment," says Dr. Clarence E. Hall, chairman of the department of engineeringraphics and program coordinator.

Political Contributions

A question unclear in earlier interpretations of 18 U.S.C. 611 was whether or not the law prohibited contributions to candidates for state and local office during the time the potential contributor held or was negotiating a Federal contract.

A letter from Assistant Attorney General Henry Peterson to Representative Paul Findley (R-Ill.) responds directly to this issue although he refers specifically to "Federal office." Please note, however, this is not an official Department of Justice opinion. "It is my informal opinion that Section 611 prohibits architects and engineers under Government 'contract' as well as other such Government contractors, from making political contributions to candidates for Federal elective office."

Salaries of Engineering Technicians

According to the Engineering Manpower Commission of the Engineers Joint Council salary survey for 1973, engineering technicians during the last two years have received annual salary increases ranging from 5.7 percent for those just out of school to 3.4 percent for those with 35 or more years since graduation.

Engineering technicians, both graduates and non-graduates, received a median salary of $7,800 in 1973 compared to $6,900 in 1971 and $6,800 in 1969. The small differences between 1969 and 1971 are a reflection of the economic recession, aerospace and defense cutbacks, and other conditions that caused a decrease in the demand for engineers and technicians in 1970 and 1971.

Graduate technicians start out at substantially higher salaries than non-graduates, but the advantage is reduced and even reversed with increasing experience. The median annual salary for graduate technicians in 1973 started at $8,150 with less than a year's experience, increased steadily to $11,500 ten years after graduation. Non-graduate technicians' median salaries in 1973 started at $6,850 and rose to a peak of $12,050 at about 25 years of experience.

Demand for Engineers

Highlights from a report, "Engineering Needs in the South," Eva C. Galambos, Southern Regional Education Board:

- Although changes in national priorities make it difficult to forecast the demand for engineers, projections are in agreement that the national demand for bachelors of engineering will exceed the available supply.
- The minimum projection of demand nationally for graduate engineers annually is 44,000. Yet with declining enrollments the expected annual supply in 1976 is only 28,000, and will not reach 40,000 during the remainder of the decade.
- At the Ph.D. level, however, it is expected that engineers will have difficulty in finding jobs that require such advanced training.

Offshore Corrosion Control Short Course

The biannual Offshore Corrosion Control Short Course at the University of Southwestern Louisiana will be held September 10-12, 1974. It is being co-sponsored by the Teche Chapter of the National Association of Corrosion Engineers (NACE) and the USL Department of Petroleum Engineers.

The program for the short course will include industry films, field trips to the McDermott Fabricating Yards, Morgan City, and Breaux Bay Craft, Inc. in Loreauville and lecture presentations, as well as entertainment.

Dr. Ray Authement, USL president-elect, will welcome participants to the campus at 10:00 a.m. Wednesday, September 10, following registration at 8 a.m. in Madison Auditorium (the engineering building).

Persons planning to attend should apply to: Offshore Corrosion Short Course, USL, P. O. Box 4690, Lafayette, 70501. Pre-registration is $50 and regular registration will be $60.

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Louisiana Landmark

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Spanning Lake Ponchartrain at its widest point and over its deepest water, a steel and concrete structure curves out of sight over the horizon. The Ponchartrain Causeway, a 23.8 mile engineering marvel and the longest highway bridge ever built, seems to stretch to the end of the world. Unique construction makes it one of Louisiana's great landmarks.

Since 1830, when Bernard Xavier de Marigny de Mandeville founded his estate on the lake's far shore, New Orleanians had dreamed of a bridge to his northern piney woods. Because the ground is higher there, the temperature is always 10° cooler, and for over 100 years New Orleans families ferried across each summer to escape the sweltering heat of the city.

Cool Ponchartrain breezes and the sweet scent of pine needles weren't the only attractions of the north shore. Hemmed in on one side by the lake and on another by the Mississippi River, New Orleans had little room for expansion. A bridge across Ponchartrain had long been recognized as a way to bring new areas of undeveloped land within easy driving distance, giving the Crescent City a direction in which to grow.

With this incentive, why did it take so long for the Causeway idea to become a reality? The answer was simple - - cost. A bridge of such great length had never been attempted because conventional building methods were impossibly expensive. In fact, the enterprise seemed so great in magnitude that most New Orleanians called it "just a dream." But some of them took the proposal seriously. A Causeway Commission was appointed, and they in turn contracted the engineering firm of Palmer and Baker, Inc. to study the problem.

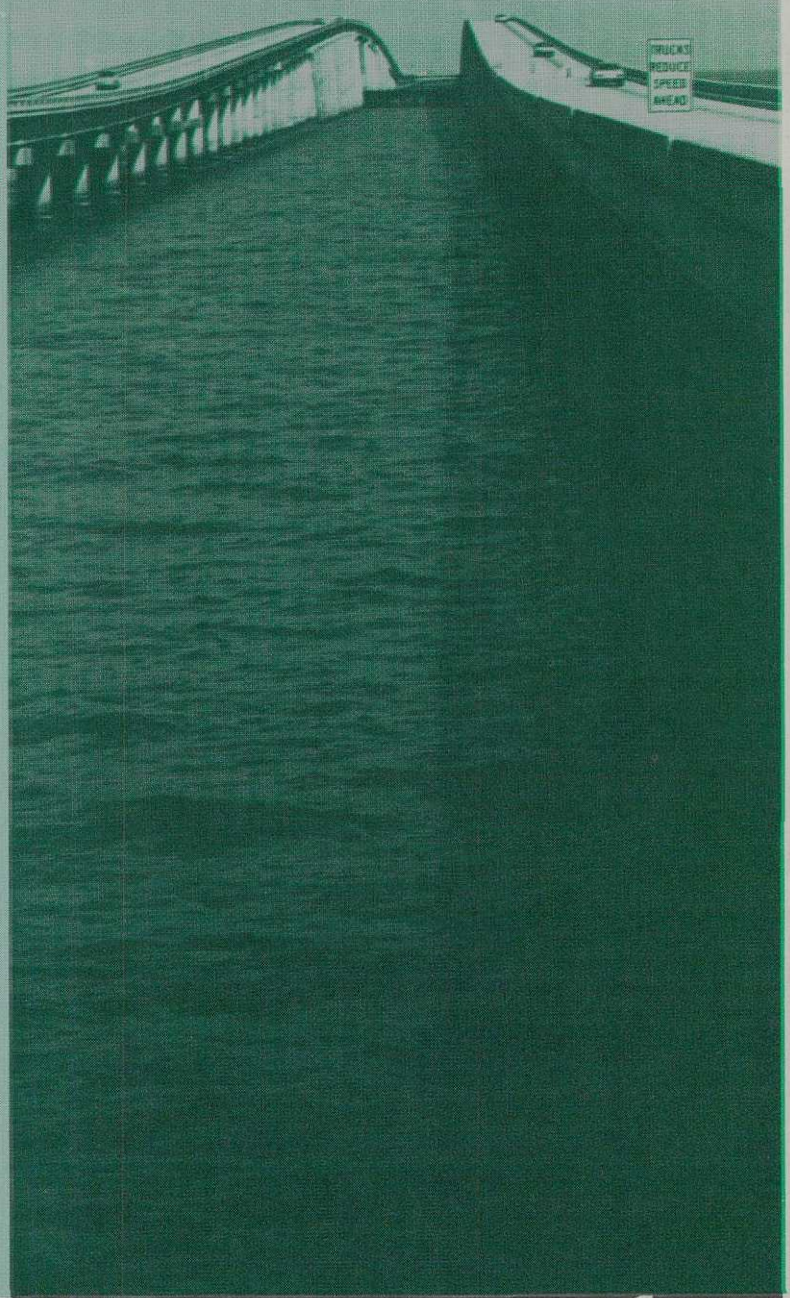
The engineers searched for a way to build the bridge at a reasonable cost. Finally, they conceived a design that would permit the contractor to use mass production methods. The bridge would be constructed in sections on shore, ferried across the water and placed in position.

First, huge dredges dug a long canal through a 40-acre cypress swamp near the bridge site. Spewing excavated dirt as they worked, the dredges raised the level of the land nearly seven feet to offer a sturdy foundation for a plant to manufacture the road sections. On the water, floating pile drivers began smashing concrete pilings down into Lake Ponchartrain's soft bottom. Later, giant crane barges followed, lifting the 185-ton concrete sections into place - - 2240 of them, one by one.

On August 4, 1956, less than 15 months after the first pile was driven, the last section of roadway was moved into position. Experts had criticised the mass production design, claiming the method would take too long. But the $46 million span was completed four months ahead of schedule, and before it was finished, thousands of engineers had come to marvel at the great feat of engineering skill.

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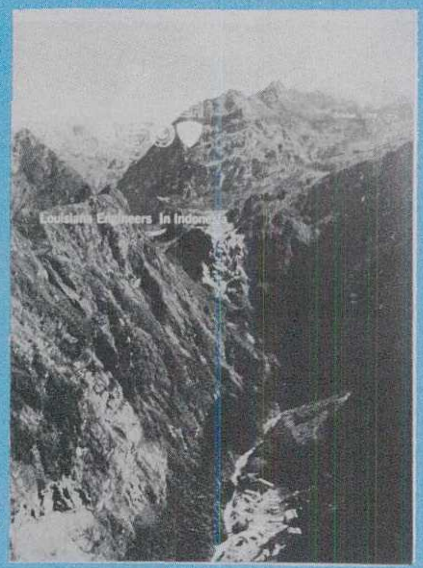
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COVER

A view of an ore deposit at Ertzberg (Ore Mountain), Irian Jaya, Indonesia. A number of LES engineers have worked in Indonesia. For full story, see page 6.

CONTENTS

Presidential Privilege 5
Louisiana Engineers in Indonesia 6
LES Financial Statement 8
1974 Legislative Program Successfully Concluded . . 9
LES Needs Support 10
"Roster of Land Surveyors" Addendum 11
Brook Ewing Leaves Lifelong Legacy 16
Potpourri 17
LES Awards Program 18
EngiNews 21

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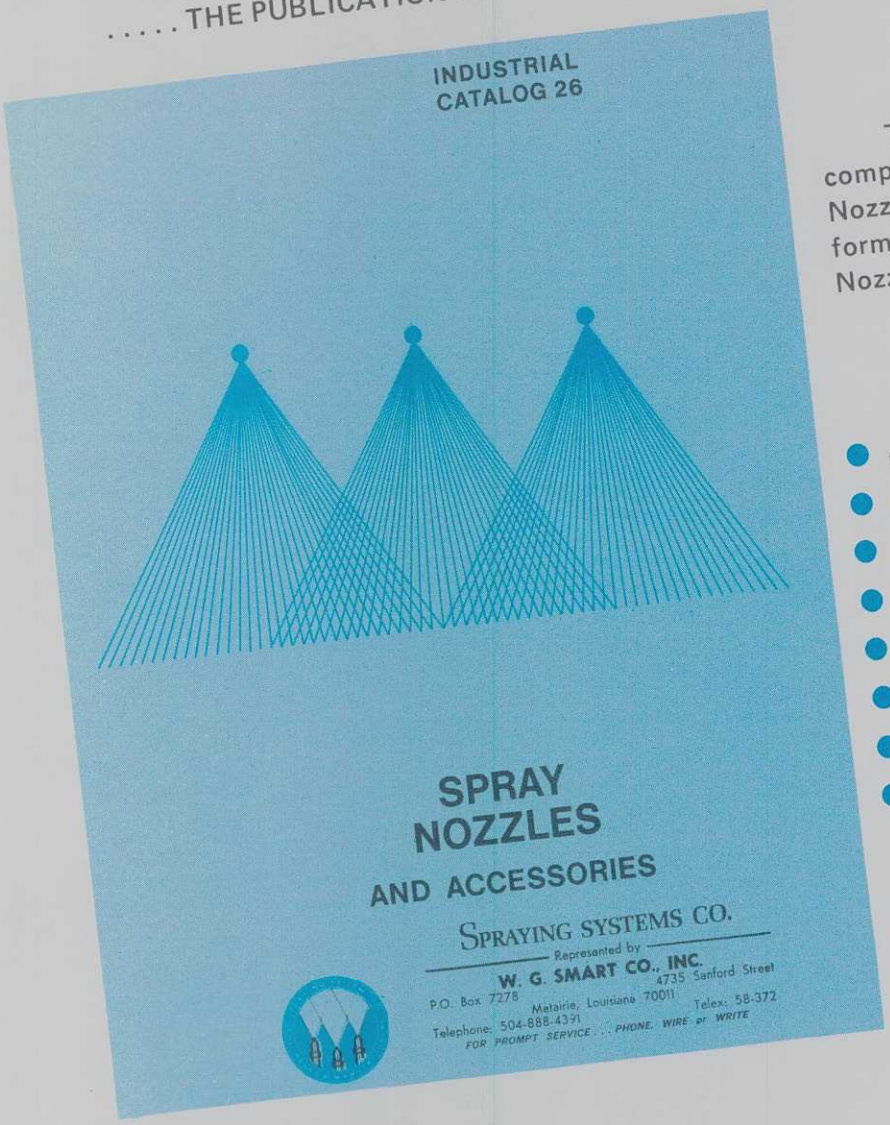
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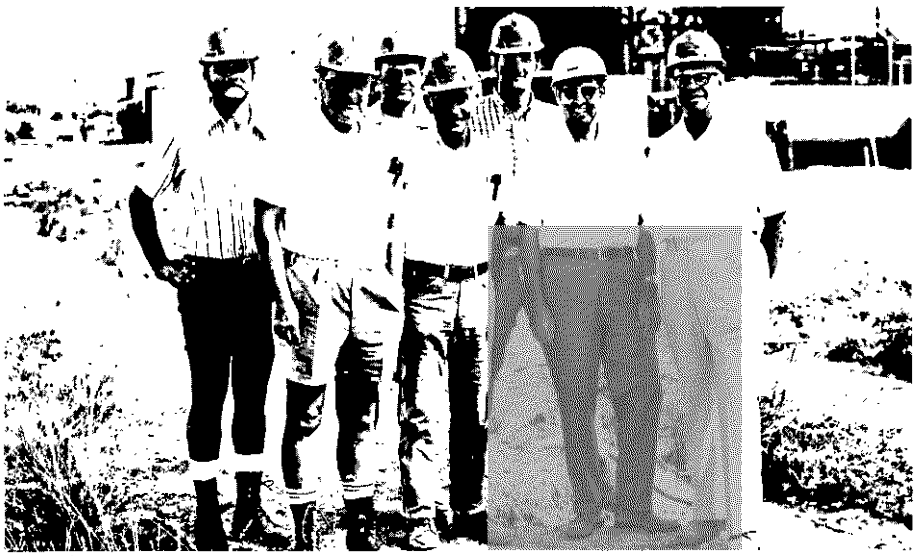
Presidential Privilege

In any activity, whether it be business or pleasure, involvement is the name of the game. If we are truly involved in any enterprise we can have a part in decision and policy making discussions. If we are members of a particular group but not actively involved in the day-to-day activities of that group we are not really getting our money's worth. If we aren't involved we really don't have the right to criticize decisions or policies promulgated by organizations to which we belong.

Your Louisiana Engineering Society has been and is now involved in many activities that affect you personally. In order to profit by your membership you should be involved in the activities of your local chapter. You should not only attend the regular meetings but also become involved in the work of the committees that reflect your personal interest. If none of the committee activities interest you, then you should become actively involved in the Practice Division that reflects your business interest. Each of these Practice Divisions is concerned with the business and professional problems unique to the individual in private practice, industry, government, education, or construction.

You see, your Society has something for every engineer. Actually, if you are interested in your personal, professional, and business development, you are doing yourself an injustice by not being an active and involved member of LES. Just being a member is not enough. We need your personal input in our deliberations in order that any decisions that we make or policies that we espouse will be truly reflective of the majority of the members of LES and not that of a minority of involved members.

Louisiana Engineers In Indonesia



LOUISIANA ENGINEERS—IRIAN JAYA TO AUSTRALIA—Left to Right: Les Harson, Sid Chalmers, Dave Singleton, Steele Ansley, Ted York, Bob Wernet, John Shaw.

EDWARD McNAMARA
Vice President
Freeport Minerals Company

(Editor's note: Mr. McNamara is a past President of the Louisiana Engineering Society and a graduate of Tulane University. He has been active in the profession since 1938.)

Freeport Minerals Company's interest in Irian Jaya (old Dutch New Guinea) commenced with the "rediscovery" in July 1960 of a copper deposit originally discovered in December 1936 by a Dutch geologist, Dr. Jean Jacques Dozy.

Dr. Dozy's report of his discovery, recorded in a Dutch mining journal in 1939, lay dormant in the journal's files throughout the German occupation of Holland and for 13 years thereafter until it was found in 1958 by the East Borneo Company during a literature search. On the basis of this report, Freeport Sulphur Company sponsored a joint expedition with the East Borneo Company to "rediscover" the deposit as reported by Dr. Dozy.

The expedition headed by Freeport's exploration manager, Forbes Wilson, and Del Flint, Chief Geologist, reached the deposit in July 1960 and confirmed Dr. Dozy's find.

No work on developing the deposit could be accomplished during the regime of President Sukarno. It was not until he was overthrown by a pro-west group headed by General Soeharto in 1966 that negotiations with the Indonesian government could resume. At the invitation of General Soeharto in June 1966, serious contract negotiations began, and in April 1967 a Contract of Work between the Government of Indonesia and Freeport of Indonesia was signed.

During 1967-68 the exploration drilling of the deposit was accomplished. In early 1969 an engineering contract was entered into with Bechtel-Pomeroy (a joint venture) of San Francisco to perform a feasibility study to develop the deposit. At the same time an adit (small ore shaft) was driven into the deposit to mine out a sample of the ore for milling and flotation tests. Three hundred tons of the sample were flown out by helicopter—(½ ton at a time, due to weight limitations on the helicopters at the 11,000-foot altitude). The sample was shipped to the U.S.A. for the tests.

Construction camps and clearing for the pilot road up the mountain were begun in late 1969. Construction of the mill and mine facilities were begun as soon as the road reached the 9000-foot level. The start-up of the mill and mine began in October 1972 and the first shipment of copper concentrate was made to Japan in late December 1972.

The Freeport Indonesia Copper Operations are situated in Irian Jaya, a part of the Republic of Indonesia. The mine itself is located at latitude 4°05′S — longitude 137°08′E. The new town of Tembagapura (Copper Town) is located some 6 miles south of the minesite. The portsite is on an estuary of the Tipoeka River at Amamapare some 74 miles south of the minesite.

This is a primitive, undeveloped area with no infrastructure or facilities of any kind. The indigenous people are stone age in development, living in small family groups at a subsistence level. Agriculture, art and other cultural pursuits are just beginning to emerge.

The geography, topography and climate are a picture of extreme contrast. The portsite area is situated in a coastal mangrove swamp cut by brackish estuaries and sluggish, meandering streams. The swamps give way to a dissected plateau area some 24 miles inland, covered by dense jungle and merging into the base of youthful mountains over a distance of 20-22 miles at an elevation of 1150 feet to 1650 feet. From this point rugged mountain country is encountered, deeply cut by canyons and marked by knife-edged ridges covered with tropical rain forest to the 8200-foot to 10,000-foot elevation. Higher elevations are glaciated, having steep-sided, U-shaped hanging valleys with spectacular cliffs and waterfalls. Above the minesite, which is at 11,500-foot elevation, glacier-capped topographic features rise up to 16,500 feet contrasting with wide intermountain valleys. Vegetation is largely alpine at these elevations.

The climate is as variable as the terrain. The townsite, at 6,800-foot altitude, enjoys a pleasant, temperate climate with frequent afternoon showers.

Rainfall ranges from more than 200 inches annually in the coastal plain and foothills to less than 100 inches at higher elevations near the minesite. The tropical heat and high humidity at the portsite (85-95°F) gradually

changes to cold and often fog-shrouded conditions at the mine-site (32-68°F).

Project Description

The plant was designed to have an operating capacity of 2.5 million short ton/year. The orebody as presently developed by diamond drilling contains about 33 million tons averaging 2.50 per cent copper plus .025 ounces of gold and .265 ounces of silver/ton. Mining operations were started at the top of the Ertsberg (elevation 12,150 feet) which, because of the rugged terrain, could not be fully drilled and evaluated during the 1967-68 drilling program and was not included in calculating the average grades of copper, gold and silver. While the gold and silver content of this top part of the deposit is about as anticipated, the copper content of this upper ore has been about 3.5 per cent. It is anticipated that this grade will gradually decrease to the ore body average as the mining proceeds to lower levels.

Mining operations are now working downward on a series of 20-foot benches. Ore from these benches is trucked about 2,000 feet to the primary crusher. The crushed ore is conveyed to a dual jigback tramway system operating over a single span of some 5,000 feet between towers. This system discharges the ore to a coarse ore stockpile at the millsite elevation of 9,500 feet. Coarse ore is reclaimed by a drag scraper and fed to the fine crushing section and thence to the fine ore bins. After conventional flotation milling, concentrates are thickened, batched and pipelined some 74 miles to the portsite. At portsite the concentrates are dewatered, dried and stored in a 35,000-ton storage building. Periodic shipments ranging up to 25,400 tons are made to Japanese and West German smelters. Due to limited draft at the port entrance, ships are partially loaded at portsite (9,000-11,000 tons) and are topped off at an offshore location by 2,000-ton lighters.

To man the Freeport Indonesia Copper Operations, Freeport called on many of its Louisiana engineers from its several operating properties in the state.

The first to journey to Irian Jaya with the Bechtel-Pomeroy group to begin the feasibility studies was M. A. Steele, P.E., from New Orleans. The author followed close behind and these two later formed the project engineering nucleus in the Bechtel offices in San Francisco. Next to follow Steele to Irian Jaya was Steele Ansley from the field engineering group of Freeport.

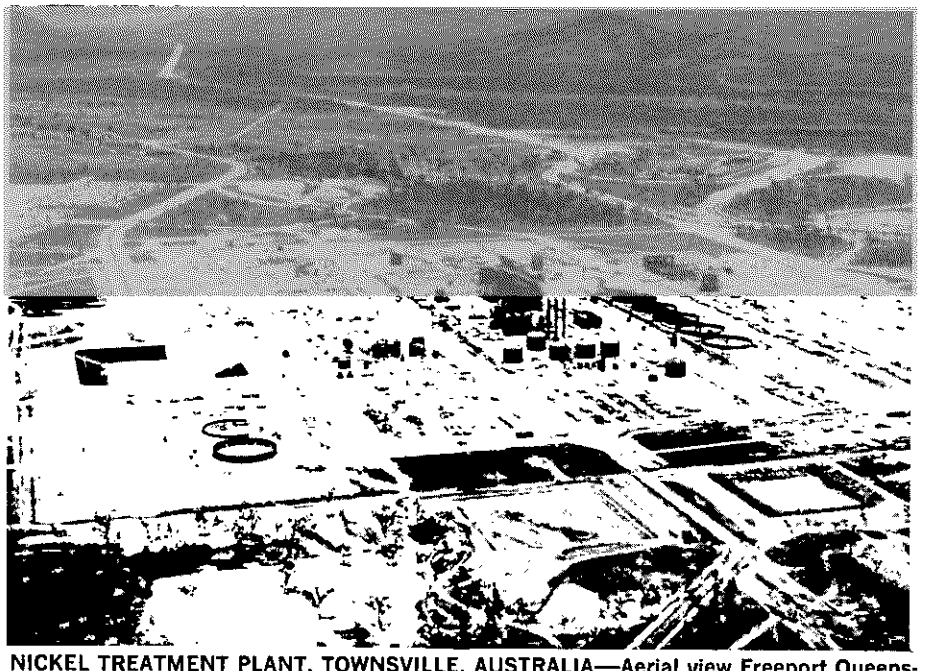
Subsequently, Bob Wernet, project manager at the Freeport Chemical Company's Uncle Sam Plant at Convent, La., moved his family from Baton Rouge to Brisbane, Australia and became resident project manager in Irian Jaya. Following him as his deputy was S. G. Chalmers, P.E. (also from the Uncle Sam Plant). Ted York, P.E., another civil engineer from the Uncle Sam Plant, moved his family out to Darwin to assist Sid Chalmers.

Moving to San Francisco late in the fall of 1970 were R. L. Williams (vice president of Freeport Sulphur Company) along with J. E. Shaw, Herman Zeringue, Clare Foreman, Val Pianka and Bob Shirley. Following the other pioneers to Irian Jaya were Dave Singleton from the Lake Pelto Mine near Houma and Les Harson from the Port Sulphur Handling Group. Phil Brock, another native Louisianian, followed the others.

The experience gained by Freeport's engineers on major sulphur and chemical projects in Louisiana has been put to excellent use in supervising work in foreign lands. Reflecting the emphasis being placed on mineral ventures (including a name change to Freeport Minerals Company) these same engineers, after completing their work with the Freeport Indonesia Copper Operations, have moved south to Townsville, Queensland, Australia, to supervise the construction of a nickel-cobalt refinery for Freeport Queensland Nickel. This refinery, along with the mine development and a 140-mile railroad, represents an expenditure of $390 million. Several other Louisiana engineers, particularly from the Research and Development Department, are playing a key role in the start-up work of the refinery.

Other Louisianians have been placed in key assignments in Irian Jaya. Morgan Mickleberry is vice president and general manager, Freeport Indonesia, Inc. replacing H. F. Askew, vice president, Freeport Indonesia, Inc. M. A. Steele, who started it all off, is now returning to the position of Chief Engineer. (He must have liked it!)

It is interesting to note that many of the engineers referred to in this article are active members of the Louisiana Engineering Society.



NICKEL TREATMENT PLANT, TOWNSVILLE, AUSTRALIA—Aerial view Freeport Queensland Nickel treatment plant, Townsville, Queensland, Australia.

State of the Budget - LES Finances

JAMES L. MEYER, P.E.

Money, money, money—there never seems to be enough, does there? Runaway inflation takes its toll everywhere, and the Louisiana Engineering Society is no exception.

Ballots are being prepared asking that the membership approve a dues increase. If authorized, the dues for all membership grades except Privileged and Student Members will be increased by $5.00, effective January 1, 1975, Procedurally, this proposed amendment to the L.E.S. Constitution was okayed for vote when the proposition was accepted at the September 14 general Society meeting in Alexandria.

Asking for a dues increase is never easy, and obtaining membership approval is even more difficult. By comparison, many other states which maintain a full time professional engineering program have a higher dues structure. For example, the present $25.00 Member dues for L.E.S. compare with $48.00 in Florida, $48.00 in Georgia, $34.00 in Iowa, $46.00 in Kansas, $30.00 in Minnesota, $32.00 in South Carolina, and $30.00 in Virginia. Even with the increase, L.E.S. would remain well below many of these states.

The 1974-75 Operating Budget for the Society projects a deficit of $5,900. In other words, the anticipated expenses for the period July 1, 1974 through June 30, 1975, total $96,400, while the budgeted income is $90,500. Obviously, no organization can sustain such an operation for too long.

For the three years, the net cash flow for the Society has been a loss of $1,883. Unless additional revenues are obtained, the four year deficit will be almost $7,800.

One may ask how these deficits have been financed. The Society had a cash reserve on July 1, 1974, of approximately $13,350. This surplus resulted from the first year income when the last dues increase was approved (January 1, 1970). Rising costs, plus an expanded program, leading to more and better services for the membership, dwindled the cash position of L.E.S. to the $13,350 level on July 1. This surplus is being used to finance the projected deficit for this fiscal year, holding the line on services provided. And this occurs at a time when there is a critical need for financing an expanded legislative program made necessary by the adoption of the new Louisiana Constitution.

A study of these figures shows that $27,000 of the dues collected is rebated to NSPE and the various chapters. Incidentally, the NSPE dues rebate is merely a transfer of dues paid by NSPE Members to the organization. No L.E.S. funds are involved.

The money received from the State Board of Registration for use of the LOUISIANA ENGINEER to publish the names of the newly registered Engineers and to distribute the magazine to all registered Engineers, coupled with the item for advertising, offsets the cost of the publication. The magazine does not provide an operating profit.

The balance of the dues available must, therefore, support the remainder of the operation of the Society which includes maintaining a full-time office in Baton Rouge as well as providing funds for an active professional program.

If the level of L.E.S. activity is to be maintained, more income is necessary. Additionally, more funds for monitoring the activities of the Louisiana Legislature, as the actions of this body affect engineers in the State, are needed—and this is not included in the totals presented.

Traditionally, the Legislative Program of L.E.S. has been a biannual undertaking, principally financed by the chapters. That is, the cost of monitoring the Louisiana Legislature when in session, as well as encouraging some legislation generated by the Society, has been borne by chapter assessments. There is a need to provide the finances for these activities on a continuing basis as a line item in the budget (note the absence of this line item in the 1974-75 budget above). This need is more pronounced, now that the Legislature will meet annually rather than every two years in a general session.

Simply stated, the financial status of L.E.S. is sound—at least for the time being. The state of the budget, however, is bad. This will lead to an unsound financial condition in the foreseeable future if more income is not obtained.

1974-75 ANNUAL BUDGET

INCOME	
Dues	$67,500
Advertising	12,000
State Board of Registration	10,000
Miscellaneous	1,000
Total	$90,500

EXPENSES	
NSPE	$20,000.00
Chapter Rebates	7,000.00
Salaries	25,600.00
Payroll Taxes	2,200.00
Rent	3,400.00
Telephone	1,800.00
Electricity	800.00
Supplies	4,500.00
Postage	2,000.00
Rentals	1,100.00
LOUISIANA ENGINEER	21,000.00
Travel	1,200.00
Committee Expenses	1,000.00
Awards	300.00
Insurance	700.00
Professional Services	1,000.00
Furniture & Fixtures	100.00
Miscellaneous	500.00
Dues and Periodicals	250.00
Auto	1,300.00
Newsletter	400.00
Interest	250.00
Total	$96,400.00

L.E.S. FINANCES

For Fiscal Years Ending:	
June 30, 1972	
Income	$87,940
Expenses	88,550
Net	(610)
June 30, 1973	
Income	$98,873
Expenses	96,391
Net	2,482
June 30, 1974	
Income	$87,752
Expenses	91,507
Net	(3,755)

1974 Legislative Program Successfully Concluded

ARTHUR DeFRATES, JR., P.E.

The Louisiana Engineering Society sponsored four major pieces of legislation during the 1974 session of the Legislature, namely: Senate Bill 504, dealing with registration by long established practice; Senate Bill 505, dealing with the industrial exemption; Senate Bill 507, authorizing an increase in initial and renewal fees for registration by the Board; and Senate Bill 621, which was a revision to the business corporation law as it pertains to use of the name "engineer," "engineering," "survey," or "surveying' in the corporate title.

The 1974 Legislative Session convened on Monday, May 13, 1974. All four bills had been prefiled and were assigned to the House Commerce Committee. It was not possible to have a committee hearing on the bills prior to the start of the session as originally intended.

The pre-filing of the bills brought forward the opponents of the legislative program and allowed the committee chairman and Mr. Joe Keogh to negotiate various aspects of the program with the opponents. These negotiations resulted in a modified version of the original bills. It was then judged prudent to introduce the negotiated version of the legislative program as Senate bills. It was the intent that if the Senate bills could be passed, the House bills would be dropped.

Prior to the session, our contact work with the Legislature revealed that Senator Robert Jones of Lake Charles would be willing to handle the Louisiana Engineerin Society legislative program in the Senate. Senator Jones introduced these bills and they were assigned to the Senate Commerce Committee of which he was a member. The committee hearing was held on Tuesday, June 4, 1974. This committee hearing resulted in further compromise on Senate Bill 505 with Louisiana Manufacturers Association which provided for the exemption of "Resident Industries Manufacturers Product within the State of Louisiana." All four bills were then reported favorably by the Senate Commerce Committee to the Senate.

On Monday, June 10, 1974, the four bills were passed favorably through the Senate without objection and were sent to the House Commerce Committee for hearings.

The House Commerce Committee heard the bills on Friday, June 21, 1974. Representative Morris Lottinger very capably handled the program in the House. Considerable discussion was held on Senate Bill 507, "Increase registration fees," and 621, "Changing Corporate Law." Successful lobbying resulted in no discussions of the Industrial Exemption Bill, and no objections whatsoever were voiced to changes in registration by long established practice. All four bills were reported favorably out of committee although Senate Bills 507 and 621 received negative votes.

On Monday, July 8, 1974, a phone call was received from the Legislative Committee chairman of the Louisiana Land Surveyors, Mr. Moody, advising that the land surveyors' bills had been hopelessly lost on the Legislative call calendar. The land surveyors proposed to put their bill, providing for a 10th member on the State Board of Registration to be a land surveyor, as an amendment to one of the Louisiana Engineering Society bills concerning the registration law. Dr. Thigpen was immediately notified and a meeting was set up for 8:00 o'clock Tuesday morning, July 9, 1974, in Baton Rouge, between Dr. Thigpen, Mr. Layman Moody, Mr. Joe Keogh, Mr. Tessier, Doc Spears and myself. It was finally agreed that the Land Surveyors would place their amendments on Senate Bill 507, allowing 504 and 505 to pass without controversy, but that the Louisiana Engineering Society would object to the amendment on technical grounds. These three bills came up for passage late Tuesday night.

The amendment proposed by the Land Surveyors was objected to by Mr. Morris Lottinger on technical grounds, but was adopted, 70 yeas to 9 nays. Mr. Hinkel of New Orleans then led a movement to oppose the increase in registration fees as a "matter of principles." The final vote on the bill as amended was 51 yeas, 33 nays, 20 absent. In order for the bill to pass, 53 yea votes were required. Mr. Lottinger moved for reconsideration. This meant the bill had to lay-over one day and would be placed on the "call calendar" for consideration on the last day of the session.

Senate Bill 621, concerning the corporate law, came up for consideration on Wednesday, July 10. This bill was passed without a dissenting vote.

On Thursday, July 11, the last day of the session, every effort was made to remove Senate Bill 507 from the call calendar, but Representatives Lottinger and Baker were unsuccessful and the bill died on the calendar.

The committee was advised on July 23, 1974, that the Governor had signed Senate Bills 504 (Act 649), 505 (Act 650) and 621 (Act 685) into law on July 12, 1974.

The Legislative Committee wishes to thank all members of the Louisiana Engineering Society, together with its auxiliary and staff, for an outstanding job of cooperation, communication and assistance. The success of the legislative program in 1974 must be considered as an outstanding success for the entire Society. It is sincerely hoped that the methods and procedures developed during this year can be refined and improved upon to better facilitate future legislative programs. It was the leadership of Dr. Thigpen and the State Board of Direction of the Louisiana Engineering Society that, in the final analysis, furnished the guidance necessary for the successful program.

LES Needs Membership Support

E. E. MONCLA, P.E.
State Membership Chairman

As your State Membership Chairman, I feel that there is much to be said about membership in the Louisiana Engineering Society. What prompted this article are the numerous questions I have received from non-members and members alike: "What does the Society do for me?"

My normal tendency is to answer this question with a question: "What have **you** done for your Society?" I know that the vast majority of the people who ask this question are not familiar with the Society and therefore, have limited involvement in the functions of their professional society. A true LES Member will of course explain and enumerate the Society's continuing work on salary studies, savings in personal automobile insurance cost, guidelines for contracts, engineering education, work in the State Legislature combating harmful legislation and obtaining passage of Society-sponsored legislation, assembling technical information, promoting young engineers, publicly recognizing the outstanding engineers of our Society, and fellowship with engineers on both a local and state level. Besides striving to upgrade the profession and keeping the engineer informed, LES has many enjoyable social functions for you, your wife, and your guests. We know that every engineer has a personal obligation to interest himself actively in matters of concern to his profession, and that the most effective way to accomplish this is by being a participating member of his professional society.

To serve all of the members better, our State is divided into chapter areas with chapter officers elected by local members. These chapters are: Alexandria, Baton Rouge, Bayou, Lafayette, Lake Charles, Monroe, New Orleans, and Shreveport. At the state level, the LES officers are elected by the membership with the president from each chapter serving on the Board of Directors. An office is maintained in Baton Rouge with a full-time executive secretary who administers Society affairs.

It is becoming more and more apparent to engineers that if they are ever to realize the professional, economic, and social goals which they desire, they must first attain unity. By way of comparison with other professions we find the following percentages on a national level who are members of their professional societies: Doctors 82%, Lawyers 44%, Dentists 95%, Accountants 70% and Engineers only 22%. Yet on dues comparison we do not find support for the above; yearly dues for these professions are as much as $145 above those for a member in the Louisiana Engineering Society. There are 2,184 members in our Society, but the disheartening fact is that there are 4,537 registered engineers residing in Louisiana who are not members of their professional Society, and you non-members are the ones with whom I am hoping to communicate. For those of you who are members of the Society, please assist your profession by giving this message to your non-member fellow engineer. You may be a member of your technical society, but you are desperately needed by the one society which represents all of us. You are all very familiar with the fact that in a democratic society, success is by numbers and we urgently need all professional engineers as member of one society. There can be no doubt that the greater the membership, the stronger the Society will be and the more the Society can do for the profession, the nation, the public, and you.

Engineers are basically individualists who exercise their individual preferences, but possibly the time has come when we can no longer afford the luxury of non-involvement. While we may not like the restrictiveness of membership, it is more desirable than to have engineering degenerate into a trade dominated by unions. Membership in our Society is reasonable and voluntary, as it should be, and not mandatory and expensive, as it might be. Let's all please join in to keep it that way. I am proud of my profession and will continue to give it my full support. Will you?

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The following is an addendum to the "Roster of Land Surveyors" published in the 1974 YEAR BOOK of the Louisiana State Board of Registration for Professional Engineers and Land Surveyors. The list includes names of persons omitted from the 1974 YEAR BOOK as well as those of persons who renewed their land surveying registrations before July 1, 1974.

	L. S. No.
A	
Adair, Jr., David L., 3815 Glenmore Dr., Houston, Tex. 77023	00376
Adams, George E., 4910 Fairford Dr., San Antonio, Tex. 78228	00380
Adkins, Joe L., 212 Royal Oak Dr., Chesapeake, Va. 23320	00389
Aiken, Samuel N., 1810 Winewood, Arlington, Tex. 76013	00395
Albert, Jr., Herbert C., 1917 Stumpf Blvd., Gretna, La. 70053	00401
Allegro, Joseph J., 6 Red Pine Rd., Hyde Park, Mass. 02136	00411
Allen, Jimmy H., 2891 Ticknor Ct., Ann Arbor, Mich. 48104	00416
Alvarado, B. R., P. O. Box 267, Benton, La. 71006	00245
Andrews, George T., 949 Stephenson St., Shreveport, La. 71104	00436
Atchley, Mimmie O., Box 2938, APO New York, 09130	00466
B	
Bailey, Kenneth M., Box 117, Livonia, La. 70755	00494
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Bankston, Jr., Carl, 6001 Lafreniere St., Metairie, La. 70003	00521
Barnes, Robert B., 1709 Hamilton Blvd., Jackson, Miss. 39213	00536
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Bell, John W., 136 Beverly Dr., Metairie, La. 70001	00592
Bellis, G. B., 3734 Imwood Ave., New Orleans, La. 70014	00594
Beresheim, James W., Ethyl Corporation Ethyl Towers, 451 Florida St., Baton Rouge, La. 70801	00604
Bergeron, Thomas W., General Delivery, Frisco, La. 70755	00608
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Boaz, Irvin B., 8160 Lichen Ln., Sprin, Tex. 77373	00663
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Bouis, Charles E., 1093 Dawn View Lane N.W., Atlanta, Ga. 30327	00695
Bowers, Martin J., 32 Highland Blvd., Lynbrook, New York 11563	00700
Brasher, Cecil K., C&S Realty Investors, P. O. Box 4065, 17 N. Ave., Atlanta, Ga. 30302	00727
Brashier, Kenneth L., 276 McKinley St., Houma, La. 70360	00728
Breaux, Robert L., 6643 St. Francis Ave., Baton Rouge, La. 70811	00227
Bredberg, Robert E., 230 Oak Lane, Mandeville, La. 70448	00736
Bridgforth, III, Austin S., 7475 Richards Dr., Baton Rouge, La. 70809	00746
Broadus, Sr., B. J., Univ. of Texas System, 210 W. 6th St., Austin, Tex. 78701	00756
Broussard, Steven J., P. O. Box 1450, Plainview, Tex. 79072	00774
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Brown, Daniel W., 142 Ivy Lane, Pineville, La 71360	00779
Brown, George J., 144 Belle Ave., Maywood, N. J. 07607	00783
Brown, J. T., 6708 128th N.E., Kirkland, Wash. 98033	00787
Bruns, Robert B., Intl. Hydronics Corp., Box 910 R-4, Princeton, N. J. 08540	00804
Buchanan, Spencer J., Box 672, Bryan, Tex. 77801	00810
Burkhart, Edsel J., Box 672, Bryan, Tex. 77801	00842
Burton, Bill H., 2712 Amy Lane, Tyler, Tex. 75701	04337
Busse, Ralph, P. O. Box 1632, 1923 Holly Lane, Pampa, Texas 79065	00854
Byram, A. L., 4550 Gladys, Beaumont, Tex. 77706	00864
Byrd, Kenneth D., 4 Office Park Circle, Birmingham, Ala. 35223	00865
Bywater, Jr., H. A., 413 Gen. Hodges N.E., Albuquerque, N. M 87123	00866
C	
Cabiro, Richard J., 4848 Loveland St., Metairie, La. 70002	04051
Cahoon, Robert C., 11825 Waples Mill Rd., Oakton, Va. 22124	00872
Cain, Robert H., c/o Anita Way, 233 Third St.--Pinehills, Springhill, La. 71075	00209
Callan, Francis B., Box 7218, Waco, Tex. 76710	00880
Camp, Charles M., 929 Eagle, Houma, La. 70360	00339
Capt, Jr., Emmett E., 105 Kate St., Longview, Tex. 75601	00898
Carpenter, Earl H., Process Services, Inc., 1874 Dallas Dr., Baton Rouge, La. 70806	04065
Carter, Jr., Thomas S., c/o KCS RY Co., 114 W. 11th St., Kansas City, Mo., 64105	00919
Carver, Dale R., 1645 Ingleside Dr., Baton Rouge, La. 70808	00921
Carver, John G., 3012 Rockbrook, Plano, Tex. 75074	00922
Cary, William E., 504 Lance Rd., Birmingham, Ala. 35206	00923
Cerny, Rodney A., 6423 Hamden Rd., Parma Heights, Ohio 44130	00938
Church, Richard H., P. O. Box 26343, New Orleans, La. 70186	00961
Cleveland, Robert L., 336 Elizabeth St., Lafayette, La. 70501	00979
Cobb, Jr., Elton L., 7818 Huntington Forest Dr., Hixson, Tenn. 37343	04053
Cohen, Eli W., 5 N. Wabash Ave., Chicago, Ill. 60602	00996
Cottrell, Earl L., 4400 Copernicus St., New Orleans, La. 70114	01051
Couto-Filho, Benjamin G., 2529 St. Nick Dr., New Orleans, La. 70114	01059
Crittenden, Jerry L., 4300 Ramona Dr., Pineville, La. 71360	04328
Cunningham, Paul R., Village Green Apartments No. 4114, 4180 Lakeshore Dr., Waco, Tex. 76710	01119
D	
Daigre, Louis J., Box 5638, 3006 Broadway, Alexandria, La 71301	01134
Damas, Nicholas E., 5 Irakhidon St., Halandri, Athens, Greece	01140
Daniels, Dubois J., 8120 Melba Avenue, Canoga Park, Calif. 91304	01147
Dantin, Elvin J., 1667 Pollard Pkwy., Baton Rouge, La. 70808	01151
Davis, Nelson H., 3203 Korte Ct., Falls Church, Va. 22042	01173
Davis, Tonia M., Route 2, Box 88, Carthage, Tex. 75633	01177
De Barros, Jonas S., 1167 Magnolia Woods Dr., Baton Rouge, La. 70808	01187
De Fraites, Arthur A., P. O. Box 327, Houma, La. 70360	01198
De Fraites, Jr., Arthur A., P. O. Box 327, Houma, La. 70360	01199
Debosier, Wallace T., 735 Nelson Dr., Baton Rouge, La. 70808	01191
Di Giovanni, Paul A., Box 212, Loreauville, La. 70553	01238
Diamond, Gilbert, 7860 S. W. 18th Terrace, Miami, Fla. 33155	01230
Didden, Clement A., 1310 Nantucket, Apt. 1, Houston, Tex. 77027	01233
Dietrich, E. J., 23 Hickory Ridge, Houston, Tex. 77024	01236
Dillon, Tom, 5530A Holly St., Houston, Tex. 77036	01242
Drawe, III, William J., 1200 First City East Bldg., 1111 Fannin St., Houston, Tex. 77002	01281
Eagers, Jr., J. A., 10958 Eight Bell Lane,	
Earl, Holmes, 27 Killdeer, New Orleans,	
Eaton, John A., 12 Elchester Dr., East N	
Edington, Donald M., General Delivery,	
Elkins, John C., Navy Taft, Box 2501, Al	
Elliott, James A., Box 974S, Jackson, Mi	
Ennis, Billy M., P. O. Box 151, Justin, T	
Evans, Arlie N., 2210 Ridgedale Dr., Arl	
Farrell, Philip J., 6226 Spruce Forest, H	
Farrow, David J., 923 Sinclair Dr., Bator	
Field, Melvin P., 10825 Beinhorn Road,	
Fisher, Jr., Lawrence R., 3602 Vondell C	
Flach, Jr., August C., 3943 Grove Avenu	
Flanagan, John W., Route 9, Box 802, A	
Flores, Johnny A., 1509 So. Post Oak Ln.,	
Fontcuberta, Jr., Ralph P., 2603 Roosevel	
Fontenot, Jr., S. A., 117 Elmora Ave., Han	
Foster, Charles W., 101 Walnut Dr., W. M	
Gagnard, Ralph L., 323 W. Bontemp, Ma	
Gamboa, Roger A., Somerville Engineeri W. Somerville, Mass 02144	
Gelpi, Jr., Sidney L., 4914 York St., Metai	
Genois, Edmond R., 316 Brett Dr., Gretn	
George, Gordon H., 2775 Mesa Verde Dr.,	
George, Nickolas C., 4230 Barby Ln., Ma	
Giering, III, E. J., 808 Warren Dr., West	
Gonzalez, Raul S., 5551 Corporate Blvd.,	
Goodgame, Paul B., 2814 Oak Knob, Tyle	
Goodman, Jr., Joseph S., Compania Cons	
Gordon, Joseph R., 6150 Riviera Manor	
Graves, James E., 1924 Cammie Ave., M	
Gray, Harry L., 2113 Kemp, Wichita Fa	
Guillory, Doward L., 118 Carson St., Vi	
Gurtler, II, Martin M., P. O. Box 13807,	
Haensel, Jr., William B., 7825 Primrose	
Hagens, Jr., Paul H., P. O. Box 800, Shr	
Hall, James L., 420 N. Pine St., DeRidd	
Hanchey, James R., Institute of Water	
Harper, Luther T., 2214 Beechwood Dr.,	
Harper, William J., 14464 Misty Meadov	
Hart, A. W., 305 Raymond Dr., Monroe,	
Hartl, Harold L., 14006 Taylorcrest Rd.,	
Haymaker, William J., P. O. Box 532,	
Haynes, H. J., 225 Bush, San Francisco	
Hernandez, Joseph S., 4816 Lake Louise	
Hill, John B., 205 Murray Ln., Richard	
Hines, James M., Route 1, Box 57, Nac	
Hogan, Thomas E., 948 Trabue, Shreve	
Hogg, Jr., Charles W., P. O. Box 14525,	
Holland, Clyde N., Route 1, Box 875, F	
Hollis, Thomas C., c/o Aramco, P. O. Bo	
Holstead, E. H., 1619 Lochmoor Blvd., C	
Houlder, Jr., Clifford J., 3208 Wytchwo	
Howe, William E., Route 1, Box 82-A,	
Hubbard, Robert A., c/o P. O. Box 92,	
Huey, Stanton E., P. O. Box 156, Monro	
Hughes, J. E., 20 El Patio Rd., Orinda	
Hunsinger, Jr., Lawrence N., 121 Corin	
Hunter, Homer A., 5630 Yale Blvd., Da	
Hurlbert, Dave G., P. O. Box 126, Hal	
Hutchinson, Arless E., 8255 Old Hamm	
Ivy, Rowland D., 410 Chestnut St., Su	
Jackson, Thomas L., 3725 Fran St., Mo	
Jefferson, Rolla R., RR No. 1, Box 280	
Johnson, G. H., 13316 Bluefield Ave., L	
Johnson, K. G., P. O. Drawer LL, Palo	
Johnston, Charles D., 2741 Iberia St.,	
Johnston, Lowell P., Crest Offshore, P	
Jordan, Jr., Brad B., P. O. Box 73, Pie	
Kahn, Donald R., 801 Shoquoquon, Bu	
Keen, Wm. H., 1215 Anchors Way Dr.,	
Kemp, Joe H., Box 626, Killona, La.	
Kerr, Raymond L., Route 5, Box 449,	
Kerrigan, Jr., John E., 5055 Canal St.,	
Khan, Fazlur R., 5201 S. Cornell, Chi	
Kiley, Mark M., Jerusalem Road Dr.,	
Killingsworth, Roy W., P. O. Box 1991	
Kimmel, Keith W., 6051 Fox Chase Tr	
Kimmons, Robert L., 300 East 40 St., A	
Kipps, Granville, 107 Silverwood Dr.,	
Kirby, O. C., 4541 Hyacinth, Baton Ro	
Koonce, Phillip A., P. O. Box 9997 M	
Koval, A. S., 985 Evergreen Ln., Beau	
Kuhlman, Robert H., 161 Peachtree St	

	L. S. No.
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Building, Fort Belvoir, Va. 22060	01749
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L

	L. S. No.
La Croix, Jr., Randolph B., 311 Tioga Road, Pineville, La. 71360	282
Lacy, Russelle R., c/o D. E. Britt Assoc., Inc., 433 Bel Air Blvd., Suite J, Mobile, Ala. 36606	2255
Larsen, Henry J., 1150 Century Building, Pittsburgh, Pa. 15222	2296
Lartigue, Honore J., 4176 Faronia Rd., Apt. 3, Memphis, Tenn. 38116	2299
Le Blanc, Larry A., 1454 McMichael Dr., Baton Rouge, La. 70815	2319
Le Blanc, Richard J., 8846 Wakefield Avenue, Baton Rouge, La. 70806	2321
Le Blanc, Jr., W. H., 6745 Goodwood Ave., Baton Rouge, La. 70806	2322
Lee, Douglas R., U.S. Geological Survey, Box 133, Rolla, Mo. 65401	2330
Lemke, Calvin A., Box 235, Ruston, La. 71270	2342
Lenahan, Daniel W., P. O. Box 701, Ft. Lauderdale, Fla. 33302	2344
Leonpacher, Alfred, P. O. Box 52005, Lafayette, La. 70501	2346
Levasseur, A. J., P. O. Box 67, Sulphur, La. 70663	149
Linck, F. E., P. O. Box 538, South Houston, Tex. 77587	2369
Lindsey, R. L., 3806 N. Texas, Odessa, Tex. 79762	2372
Little, Clyde, 2610 So. Burke, Pasadena, Tex. 77502	2381
Loup, Jr., Alfred J., 536 Thornwood Dr., Baton Rouge, La. 70806	2407
Luttman-Johnson, John D., P. O. Box 33, Greenbush, Mass. 02040	2426
Lyons, Richard E., P. O. Box 2511, Houston, Tex. 77001	2432

M

	L. S. No.
Maddox, C. E., B.P. 1578, Dakar Senegal, Africa	2447
Magner, Jr., Earl J., 426 John Hopkins Drive, Kenner, La. 70062	2451
Markham, Charles E., 15 Park Lane, Texarkana, Tex. 75501	2472
Martin, Thos. J., 9721 Kempwood Dr., Apt. 1355, Houston, Tex. 77055	2501
Mayes, Joe A., Rt. 1, Woodstock Rd., Roswell, Ga. 30075	2524
Mayeux, C. J., 788 Parkshore Dr., Apt. B-34, Naples, Fla. 33940	2525
McCaleb, Neal A., 72 E. 15th, P. O. Box 111, Edmond, Okla. 73034	2536
McCardle, Stuart, 191 Orchard, Harahan, La. 70123	2541
McClanahan, Edwin A., P. O. Box 20129, Univ. Sta., Baton Rouge, La. 70803	2547
McCoy, Clark B., 4029 Hyacinth Ave., Baton Rouge, La. 70808	2559
McCumsey, Charles W., 8131 Sholar Drive, Baton Rouge, La. 70809	2566
McDonald, Kenneth O., 1643 Imperial Crown, Houston, Tex. 77043	2574
McLaughlin, Robert E., 322 North Hardesty, Kansas City, Mo. 64123	2607
McNair, Jr., Stephen D., P. O. Box 528, Pass Christian, Miss. 39571	2619
McNamara, F. P., 1707 Indian Hill Road, Demopolis, Ala. 36732	2621
Merrick, Max M., P. O. Box 217, Cottonport, La. 71327	2651
Messina, Richard F., 3425 Ridgelake Dr., Apt. 103, Metairie, La. 70002	2653
Messinger, III, Frank L., 2007 Saturn Dr., Bastrop, La. 71220	4332
Metzger, Jr., John J., 2132 Broadway, New Orleans, La. 70118	2657
Meyer, Vernon F., 1414 Beech St., Westlake, La. 70669	2663
Miller, Dick M., V. P. Design & Construction, Roy F. Weston, Inc., Lewis Ln., West Chester, Pa. 19380	2674
Mills, Billie C., 816 No. 6th Avenue, Phoenix, Ariz. 85003	2690
Mitchell, G. B., 11462 Harry Hines Blvd., P. O. Box 8768, Houston, Tex. 75229	2703
Mitchell, W. H., 2514 Riata, Houston, Tex. 77043	2708
Montgomery, Charles J., General Delivery, Kaplan, La. 70548	2721
Moore, Danny R., P. O. Box 668, Homer, La. 71040	2737
Moore, F. L., 649 Devonshire Dr., Belleville, Ill. 62223	2738
Moore, W. K., 2036 Wooddale Blvd., Baton Rouge, La. 70806	2752
Moore, W. P., 1715 Mariposa Dr., Austin, Tex. 78741	2754
Mora, Raul L., 3230 S.W. 23rd Ct., Ft. Lauderdale, Fla. 33312	2756
Morales, Fred, 1509 Gordon Dr., Ruston, La. 71270	2758
Morris, Henry M., 200 Stovall St., Alexandria, Va. 22332	2769
Morrison, Sr., John L., P. O. Box 56, New Roads, La. 70760	2772
Movassaghi, Kambiz, P. O. Box 21988, LSU, Baton Rouge, La. 70803	2785
Munson, John H., 126 St. Marks, Sugar Land, Tex. 77478	2795
Murphy, Edward J., 306 S. Jahncke Ave., Covington, La. 70433	4246
Myers, Hewitt J., Old Landing Rd., Covington, La. 70433	2812
Myers, John W., 443 Centenary Dr., Baton Rouge, La. 70808	2816

N

	L. S. No.
Nachtsheim, Marvin G., 271 Southwood, Palo Alto, Cal. 94301	2819
Neal, Quincy A., 5446 Jasmine Cove, Memphis, Tenn. 38118	2829
Neaves, Walter A., 614 Little Creek Dr., Duncanville, Tex. 75116	2831
Nebolsine, Ross, 641 Lexington Ave., New York, N. Y. 10022	2832
Nelson, Floyd L., P. O. Box 768, Trent, S. D. 57065	2842
Nettles, Eugene H., 36 Allen Pl., Rt. 5, Vicksburg, Miss. 39180	2852
Nichols, Robert L., 811 Lamar St., Fort Worth, Tex. 76102	2861
Norckauer, H. R., 445 N. Parkview Pl., Baton Rouge, La. 70815	2870
Norris, Sidney S., 417 Ockley Dr., Shreveport, La. 71105	2876

O

	L. S. No.
Odom, Harold L. S., 1248 Belvedere, Baton Rouge, La. 70808	2895
Ogden, H. Nash, 308 Cornell Ave., Baton Rouge, La. 70808	2904

P

	L. S. No.
Pearson, Hugh R., 9083 Avalon Dr., Shreveport, La. 71108	2987
Peeler, L. F., 11311 Stemmons, Dallas, Tex. 75229	2989
Pekor, Charles B., P. O. Box 909, Columbus, Ga. 31902	2993
Phillips, Richard M., R. M. Phillips & Assoc. Inc., 746 N. Washington Rd., McMurray, Pa. 15317	3025
Phillips, Sam A., 5025 North 68th St., Scottsdale, Ariz. 85251	3026
Pittman, Thomas W., 1005 Sixth St., Morgan City, La. 70380	4333
Place, Jr., Frederick R., 142 Crapemyrtle Rd., Covington, La. 70433	3049
Plunkett, H. C., 1530 N. State St., Jackson, Miss. 39202	3058
Poe, William E., 12566 Westerly Ln., Houston, Tex. 77077	3063
Pogonowski, Ivo C., P. O. Box 393, Blacksburg, Va. 24060	3064
Pollock, Charles E., 529 Brentwood Blvd., Lafayette, La. 70501	3069
Porche, James E., Box 114, Melville, La. 71353	4259
Powell, Richard O., 1515 S. Carrollton Ave., New Orleans, La. 70118	4235
Power, Donald L., 300 Broadway, Apt. 23C, Dobbs Ferry, N.Y. 10522	3093
Pratt, Kern, Jr., Esso Australia, Box 372 Sale, Victoria, 3850, Australia	3099
Presley, Pat L., Route 1, Box 185-D, Rockwall, Tex.	4334
Pringle, William H., 2113 Cherie Drive, Hammond, La. 70401	3111

L.S. No.

Pritchard, E. H., 210 E. Maple Ridge Dr., Metairie, La. 70001 3112
Purinton, L. Bradbury, Public Works Dept. Bldg. 1005, Marine Corps Base, Camp LeJeune, N. C. 28542 3123

R

Rainey, David T., 5026 Indigo St., Houston, Tex. 77035 3137
Raman, Albert J., 91 Fieldston Terr., Rochester, N. Y. 14610 3139
Ray, Jr., Asa M., P. O. Box 4002, Monroe, La. 71201 3152
Reaves, Jr., Wilborn W., Rt. 1, 19 Cathy Dr., Luling, La. 70070 3160
Reusswig, Frederick W., 2005 Crestline Dr., Muscatine, Iowa 52761 3195
Richardson, Ronald C., 11806 Trickey St., Houston, Tex. 77067 3214
Ridley, Robert J., 4900 Metropolitan Dr., New Orleans, La. 70126 3221
Rimmer, Norman W., 1135 West 35th Terrace, Independence, Mo. 64055 3228
Ripperger, Jr., R. J., 3 Salem Ridge Dr., Huntington, N. Y. 11743 3229
Rockhold, Loyd J., 6705 Cezanne Ave., Baton Rouge, La. 70806 3258
Ruckstuhl, Bernard L., 12739 E. Robinhood Dr., Baton Rouge, La. 70815 3302
Russell, Jr., John J., 112 La Vista Dr., Los Alamos, N. M. 87544 3312
Ruyan, Masis Y., 928 Old Hickory Road, Pittsburgh, Pa. 15243 3320
Ryan, John W., 1132 Flora Dr., Arroyo Grande, Cal. 93420 3321

S

Salman, Samir S., 1733 Sharp Rd., Baton Rouge, La. 70819 3335
Sandker, J. D., Rt. 4, Quitman, Tex. 75783 3344
Saunders, H. W., 507 Pierremont Cir., Shreveport, La. 71106 3350
Schexnaider, Joseph E., Rt. 2, Box 626, Abbeville, La. 70510 3367
Schuck, Kenneth L., 3800 Shenandoah Ave., Dallas, Tex. 75205 3381
Sears, Frank D., 10006 Blackthorn Ct., Fairfax, Va. 22030 3393
Seghers, Sr., Guy J., 1483 Mirabeau Ave., New Orleans, La. 70122 3397
Semmens, James R., 29420 S.W. Serenity Way, Wilsonville, Ore. 97070 3415
Sendukas, V. E., 1730 Ashford Hollow, Houston, Tex. 77077 3417
Sessions, Ruth C., 2800 July St., Apt. 42, Baton Rouge, La. 70808 3421
Shah, Shashikant, 926 Wylie Dr., Baton Rouge, La. 70808 3430
Shoemaker, Leonard W., 127 Plantation, Houston, Tex. 77024 3454
Shriver, Donald A., 12267 Greenleaf Ave., Potomac, Md. 20854 3460
Sickler, Joseph R., 1032 22nd St. N.E., Auburn, Wash. 98002 3466
Smith, Andrew L., 1609 Bullard Ave., Metairie, La. 70003 3496
Smith, Austin B., 2525 Cherry St., Vicksburg, Miss. 39180 3498
Smith, Edwin S., 343 W. Gaywood Dr., Houston, Tex. 77024 3506
Smith, John W., Smith & Nash Inc., 2505 22nd Avenue, Gulfport, Miss. 39501 4267
Smith, Wilbur S., 4500 Jackson Blvd., Columbia, S. C. 29202 3536
Smith, William C., P. O. Box 2266, Houma, La. 70360 3538
Smoak, J. D., 3710 Granville St., New Orleans, La. 70129 3539
Stapleton, Jr., S. Ruggles, 20 Forest Ave., Metairie, La. 70005 3844
Stimac, Joe R., 1617 Akron Ave., Metairie, La. 70003 3611
Stone, Walter S., P. O. Box 2634, New Orleans, La. 70186 337
Storey, Arthur G., 5505 Frost Ave., Beaumont, Tex. 77706 3625
Strickert, Jr., Roy R., P. O. Box 61961, New Orleans, La. 70160 3633
Strohbeck, E. F., 6809 Willa St., Metairie, La. 70003 4068
Sullivan, G. Joseph, 5248 Marcia Ave., New Orleans, La. 70124 3643
Sullivan, J. W., 911 Perry St., New Orleans, La. 70118 3644

T

Teague, Robert A., 12943 Butterfly Lane, Houston, Tex. 77024 3684
Tenney, Jr., Shuble J., 207 Leonie, Lafayette, La. 70501 4335
Thomas, Claude B., P. O. Box 2819, Dallas, Tex. 75221 3699
Thomas, K. J., 8105 Franwood Dr., Baton Rouge, La. 70806 3701
Tilden, Douglas I., 18529 Marine View Dr., S.W., Seattle, Wash. 98166 3718
Toigo, S. Eugene, 7611 Larisa Drive, Dallas, Tex. 75240 3731
Tullier, Wilfred R., 5900 Jean St., Metairie, La. 70003 3756

V

Vanlandingham, Delbert, 114 White Oak Lane, Little Rock, Ark. 72207 3783
Vaughn, Lynwood, P. O. Box 761, Bogalusa, La. 70427 3789
Veley, Jr., C. A., 2130 N.W. 54th Terr., Gainesville, Fla. 3793
Volkert, D. G., David Volkert & Assoc., 5185 MacArthur Blvd., N.W., Suite 226, Washington, D. C. 20016 3799
Von Sprecken, John R., P. O. Box 2368, Mobile, Ala. 36601 3800

W

Walden, Ralph, 2220 Nixon Drive, Houma, La. 70360 3817
Wallace, Robert H., 308 Title Bldg., Birmingham, Ala. 35203 3829
Waters, Ralph L., 1233 Winnrose, Jackson, Miss. 39211 3854
Watkins, E. A., Phillips Petroleum Co., Bartlesville, Okla. 74004 3857
Webb, Jr., George F., 2206 Winnie St., Lake Charles, La. 70601 3870
Weed, Charlie F., 1002 No. John St., Tuscumbia, Ala. 35674 3877
Welch, Mack H., 2506 Moss Hill Dr., Houston, Tex. 77055 3888
Weldon, Joseph B., Route 2, Box 264, San Angelo, Tex. 76901 3889
Westbrook, Jack E., Sun Pipeline Co., P. O. Box 141, Tulsa, Okla. 74102 3898
Wetta, Charles F., 1512 Int'l Trade Mart Bldg., No. 2 Canal St., New Orleans, La. 70130 4261
Wetzel, Vernon F., 256 Lake Lucerne Way S.E., Calgary, Alta. Canada, T2J 3J4 3909
Wheelahan, Robert E., P. O. Box 7143, Metairie, La. 70002 3911
Wheeler, L. J., Route 2, North Branch, Minn. 55056 3913
Whitaker, Philip L., 102 Lauren Ln., Sulphur, La. 70663 3915
Wilkes, Kenneth G., 3747-61 Vista Campana S., Oceanside, Cal. 92054 3942
Williams, M. C., 4024 Wanda Lynn Dr., Metairie, La. 70002 3954
Wilson, Ned R., 1816 Jefferson St., Mandeville, La. 70448 4336
Wilson, III, Earle F., 113 Sherry Drive, Hammond, La. 3969
Wise, James D., 4103 Toney Cir., S.E., Huntsville, Ala. 35802 3984
Woodman, L. A., 3 Fernwood, Tuscaloosa, Ala. 35401 4002
Wyble, Francis H., P. O. Box 6, Leonville, La. 70551 4022

Y

Yoder, Warren G., P.S.C. Box 837, APO New York 09218 4300

Keeping the words "blackout" and "brownout" from Louisiana's working vocabulary is an expensive job.

But it's a job that your electric company is doing.

We are determined to keep Louisiana's electric energy flowing. We realize the importance of electricity to housewives and factory workers alike. So we're committed to continue providing enough power to go around.

The price of keeping ahead of the need is continuing to increase rapidly. Costs for construction materials, fuel, labor, and money itself are all up, and it's more expensive to do business today than at any time in history.

But the job of producing and delivering electricity must be done, and we're doing it.

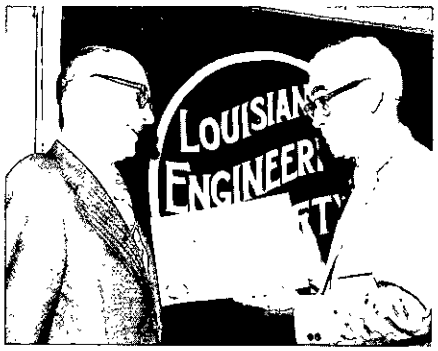
Each of us is committed to keeping "blackout" and "brownout" out of Louisiana. We're building the plants and making the plans for future electric supplies. It's an expensive job, but we feel that our customers want us to continue doing it. And we are.

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Brook Ewing Leaves Life-long Legacy



MARSHALL B. (BROOK) EWING
1910 - 1974

Brook Ewing died on Sunday, July 28, 1974, in Alexandria. He was only 64 but the years were so filled that those who knew him will not forget his contributions —will never forget him.

Brook was widely known as an Alexandria businesman, church and civic leader. He was better known to the Louisiana Engineering Society as one of our most dedicated engineers. His contributions to our Society span more than 30 years.

Alexandrians benefited from Brook's many interests, activities and hard work. He was a member of the Master Plumbers Board for the City of Alexandria, and a Rotarian. He was on the Board of Handi-Work Production Sheltered Workshop, a non-profit organization created to help the handicapped by providing job opportunities and income. He was also an active member of the Central Louisiana Art Association and was a committeeman on the Attakapas Council for the Boy Scouts.

Brook had a deep devotion to God and his church. He was chairman of the Board of Trustees and served as chairman of various other committees of Trinity Methodist Church. He was also a member of the Wynn Holloman Bible class there.

A native of Crowley, Brook Ewing graduated from Louisiana State University in 1934 with a Bachelor of Science degree in electrical engineering, and later in mechanical engineering at Tulane University. His life-long career in engineering, earlier this year, brought him the Leo M. Odom award for distinguished service to his profession.

It is appropriate that we pause again to review some of his accomplishments and contributions, as published in the citation which accompanied the Leo M. Odom award.

"Upon graduation from Louisiana State University in 1934, Mr. Ewing's professional career began as a construction engineer with the Aluminum Ore company plant in Baton Rouge. Following his military service as a Naval Officer during World War II, he was employed by Reynolds Metals in Arkansas. In 1949, Mr. Ewing moved to Alexandria as Engineer and Manager for Air Conditioning Appliance Corporation. After about five years, he acquired ownership of the corporation, and continued with his practice until his retirement in 1972.

Mr. Ewing recognized his obligations to his profession as early as December 30, 1943, when he became a member of the Louisiana Engineering Society. He has been an active member of the Louisiana Engineering Society for almost thirty years and will become a Life Member this year. He became an active member of the National Society of Professional Engineers in 1958, the year LES affiliated with NSPE, and has continued membership since that time. He is a member of ASME and ASHRAE.

Mr. Ewing has dedicated himself to the business of the engineering profession and has devoted many hours of his time to the betterment of the profession. It is fitting to show a chronological listing of his active service to the Louisiana Engineering Society, both at the Chapter and State levels, since 1963:

1963-64	Vice President, Alexandria Chapter
1964-65	President, Alexandria Chapter
1965-66	Chapter Honors and Awards Committee Chairman
1966-77	State Director, LES Board of Direction; Board Sponsor, Membership Committee
1968-70	Chapter Membership Chairman
1970-71	State Director, LES Board; Chairman Alexandria Chapter, Ethics & Professional Conduct; Board Sponsor, Membership Committee
1971-72	State Director, LES Board; Board Sponsor, Membership Committee
1972-73	State Director, LES Board; Chairman Alexandria Chapter; Ethics & Professional Conduct Committee; Board Sponsor, Membership Committee
1973-74	State Director, LES Board; Board Sponsor, Constitution & Bylaws Committee

While working actively with the Membership program of LES, he made a significant contribution in the design and publication of the Membership Application Form 100, which is still in use."

The profession will truly miss this man to whom engineering was a vocation and service to engineering was an avocation.

Potpourri

Major General Koisch Heads Engineers at Vicksburg

The Louisiana Engineering Society welcomes Major General Francis P. Koisch, who became the Lower Mississippi Valley Division Engineer with headquarters at Vicksburg on September 16, 1974. He succeeds MGEN Charles C. Noble.

General Koisch will be responsible for supervising and directing the major flood control and navigation projects for the lower Mississippi Valley Division, which includes the states of Missouri, Illinois, Kentucky, Tennessee, Arkansas, Mississippi, Texas and Louisiana.

Resolutions for Renaming Bridge for Capt. Levy

The Board of Directors of the International Trade Mart, International House, New Orleans Board of Trade and the Chamber of Commerce of New Orleans have passed resolutions that the Greater New Orleans Mississippi River Bridge be named in memory of the late Captain Neville Levy.

The LOUISIANA ENGINEER honored Captain Levy in the June 1974 issue. We in LES were privileged and proud to have him in our membership for many years.

Louisiana Fire Code Act 236

Act 236 enacted by the 1974 legislature called for the establishment of a Fire Code Board of Review to evaluate alternatives to fire prevention or protection laws and regulations. The Act specifies an 11-man Board, one member to be a registered professional engineer.

The Louisiana Engineering Society and the Consulting Engineer Council of Louisiana jointly submitted four engineers' names to the Governor on September 18 for his selection and appointment to the Board. They were Thomas A. Stokes, P.E., New Orleans; Neill P. Jeffrey, P.E., New Orleans; George A. Heft, P.E., Metairie; and Robert W. McKenzie, P.E., Baton Rouge.

Council of Louisiana Engineering Organizations (CLEO)

A. J. Szabo, P.E., LES National Director and member of the LES Board of Direction, has been appointed the Society's representative to CLEO.

Please note this change of assignment. E. Raymond DesOrmeaux, P.E., was named as representative in the September Perspective. Mr. DesOrmeaux will still be involved with CLEO through his chairmanship of the LES Inter-Society Relations committee.

Louisiana Highway Hall of Honor

Four prominent figures in the history of highway development in Louisiana were the initial inductees into Louisiana Highway Hall of Honor in ceremonies held September 25 at the State Highway Department Building.

The four honored were: Former Governor Huey P. Long, Thomas L. James, Sr., Harry B. Henderlite and Norman E. Lant.

The Highway Hall of Honor program in Louisiana is sponsored by The Louisiana Good Roads Association, Louisiana Department of Highways, Louisiana Department of Public Safety, Louisiana Highway Safety Commission, Associated General Contractors, Consulting Engineers Council of Louisiana, and the Louisiana Engineering Society.

The purpose of the Highway Hall of Honor program is to give appropriate recognition to individuals who have made extraordinary contributions to planning, construction, maintenance and safety of Louisiana highways, roads and streets.

The permanent Highway Hall of Honor is housed in the main lobby of the State Highway Building in Baton Rouge.

November Is Young Engineers Month

NSPE designates November as "Young Engineers Month." Chapters should use November as the time for special young engineer programs.

NSPE publication 2502 is available on request from NSPE. It lists several ideas and specific programs which can be developed by Chapters.

Energy-Saving Design Technique Conference

Both the technology and the business aspects of energy conservation through design will be discussed at an "Energy Utilization and the Design Professional" conference, November 4-5, 1974, at the Royal Sonesta Hotel in New Orleans. The conference is sponsored by NSPE-PEPP and the American Society of Heating, Refrigerating and Air Conditioning Engineers, Inc.

For details, contact NSPE-PEPP, 2029 K. Street N.W., Washington, D.C. 20006: Phone (202) 331-7020.

ASCE Announcement of Continuing Education Courses

The American Society of Civil Engineers announces the following continuing education courses for Dallas, Texas:

Operating a Consulting Firm		November 14-15, 1974
	$145/ASCE member	$174/non-member
Effective Marketing of Professional Services		November 15 or 16, 1974
	$75/ASCE member	$90/non-member
Cost Estimating		November 13, 1974
	$75/ASCE member	$90/non-member

For further information: write or call Miss Gail Bays, Manager, Continuing Educational Services, ASCE, 345 East 47th Street, New York, N. Y. 10017. (212) 752-6800, extension 771.

Gulf Coast School of Drilling

Fifty-three drilling experts are instructing working oil men registered for the 1974 Fall term of the 16th annual Coast School of Drilling Practices, which began September 30 on the University of Southwestern Louisiana campus. The first two weeks of the term ended October 11. The school reopens for the final two weeks of the Fall term on October 21 and ends on November 1.

The steady growth and demand for the school necessitated adding a Fall term in addition to the Spring term, which will be held April 21 to May 2 and May 12 to May 23, 1975.

Careful attention has been given to all phases of drilling practice in choosing the curriculum. In addition to the technical aspects, "The Supervisor's Position in Management," "Communications," "Economics" from the company's viewpoint as well as that of the contractor and "Contractor and Company Relations" are included.

For further information about the Gulf Coast School of Drilling Practices write to: Gulf Coast School of Drilling Practices, P. O. Box 635, USL Station, Lafayette, La. 70501.

IEEE Technical Seminar

The New Orleans Section of IEEE is holding its annual Technical Seminar on November 14, 1974, Sheraton Inn, Williams Blvd., at I-10, New Orleans.

The seminar will cover various topics in the Power Systems-Communication, Power Systems, Control Systems-Computer fields. Mr. Hugh Burney, luncheon speaker, will discuss "Super Dome's Instant Replay System."

For further details and advance registration, contact: Mr. Dale Caston, 1215 Prytania Street, Room 117, New Orleans, La. 70140, Tel: 529-8105.

NSPE Dues Ceiling Passes

Forty-nine percent of the eligible members of NSPE cast votes with 71.4 percent approving the dues amendment. The National dues ceiling for member grade will be $35 (prorated for other grades). NSPE membership dues for 1975 will be $30 for members, senior associate members, associate members and surveyor members; $15 for associate member under 30 years of age and $3 for student members.

Hoyt Brown Moves

Hoyt W. Brown, P.E., a past president of LES, assumes the position as District Manager, Combustion Engineering in Birmingham, Alabama. Hoyt has been very active in LES and his participation will be sorely missed. Fortunately, he plans to retain his LES membership.

LES Awards Program

HOYT W. BROWN, 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 they will receive public recognition of their attainments and inspire others.

The Society has six basic awards:

Andrew M. Lockett Medal

The Andrew M. Lockett Medal is the Society's civic activities award and was first given in 1951. It is named to honor Andrew Moore Lockett, a member of LES from 1900 until his death in 1945. Mr. Lockett lived a remarkably full life. In addition to founding the firm of A. M. Lockett & Company, Ltd. in New Orleans, he took a prominent part in many important civic and social activities in New Orleans. The Award is given annually to an engineer for distinguished civic service in the public interest without compensation for those services.

Technological Accomplished 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. It was first awarded in 1951.

A. B. Patterson Medal

The Louisiana Engineering Society has a special award for the engineer who distinguishes himself in Management. This is the A. B. Paterson Medal, which was first given in 1965. Albert Barnett Paterson was an active member of the Society from 1923 until his death in 1952. He was president of New Orleans Public Service, Inc. Mr. Paterson was an engineer, administrator, executive, banker, civic leader and humanitarian. His contributions to the city of New Orleans and the engineering profession were tremendous. The primary criterion for selection is achievement in management rather than engineering or scientific attainment.

Charles M. Kerr Public Relations Award

The character and scope of contributions to the Society's overall public relations program are also recognized to encourage other members to take a greater part in public relations on the chapter and state level. The Charles M. Kerr Public Relations Award was first presented in 1965 and was named to pay tribute to Charles M. Kerr, LES president in 1944. It is interesting to note that Mr. Kerr's father, Frank M. Kerr, was the Society's fourth president in 1901. Mr. Kerr was a member of LES from 1912 until his passing in 1964. He was very active in the business world and in promoting his chosen profession, engineering.

LES Award of Merit

It should not be thought that in order to receive recognition from the Society an engineer must have been practicing in the profession for a great length of time. Accomplishments of young engineers are acknowledged by the Louisiana Engineer Award of Merit.

Leo O. Odom Award

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 over a period of long duration, who has demonstrated leadership in technical societies and other professional engineering groups. Mr. Odom has been an active member of the Society since 1941. He is President of Pyburn & Odom and Odom Offshore Surveys, Inc. of Baton Rouge. His participation and love for the engineering profession is an inspiration to all engineers and especially those in Louisiana.

Nominations may be made by chapter or state officers, the Board of Direction, the Executive Committee or the equivalent body of any chapter, or by three or more members of the Society.

When nominations are submitted, they should be supported by:

a. A photograph of the nominee and a full statement of his

(Continued on Page 21)

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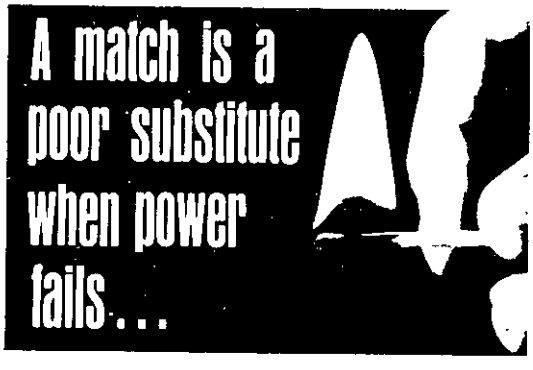
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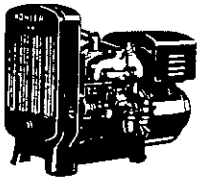
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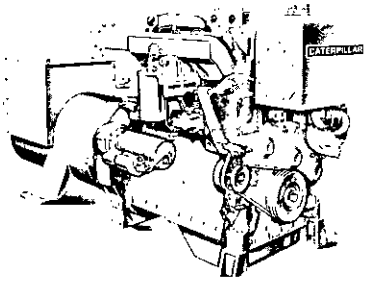
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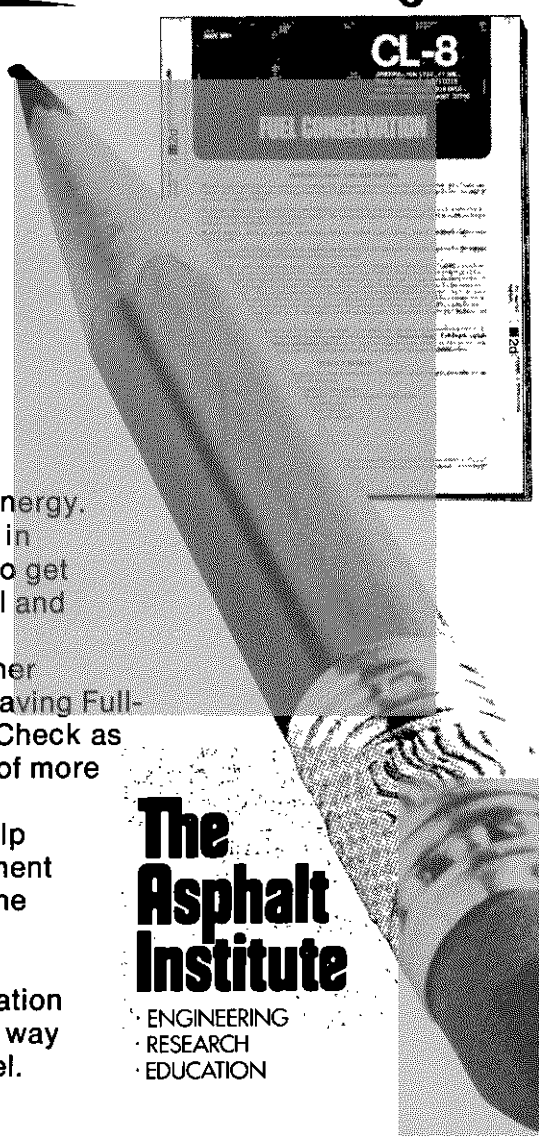
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LES AWARDS PROGRAM—

(Continued from Page 18)

training, experience and notable contributions.

b. A statement of the basic reasons for submitting the nomination and for believing the nominee eligible for the honor.

c. Such other information and references as may be of assistance to the Board of Direction.

d. It is essential that such nomination carry the current title and company connection of the candidate, or if he is retired, his present address.

e. Determine that the nominee is a member in good standing of LES.

Nominations for the awards must be in the hands of the Executive Secretary by December 1, 1974. Please note this change of date which should improve administration of the program.

Awards will be presented during the Society's Annual Spring meeting in Monroe scheduled for April 11-12, 1975.

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2	Alexandria	B. Moore	15	5	33.33	1	6	40.00
3	New Orleans	J. Riorda	88	18	20.45	4	22	25.00
4	Monroe	A. Ray	19	4	21.05	0	4	21.05
5	Lafayette	B. Bingham	17	3	17.65	0	3	17.65
6	Shreveport	D. Richardson	10	2	10.53	1	3	15.79
7	Bayou	T. Peterman	10	1	10.00	0	1	10.00
8	Lake Charles	T. Brassette	11	0	-0-	0	0	-0-
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In 1727, as the *Gironde* set sail for the far-away shores of the struggling French colony, Noveau Orleans, six nuns stood on deck watching their homeland fade in the distance. These women would bring help and comfort to thousands of sick soldiers and settlers of the new colony. As devoted nuns of the Ursuline Order, they would provide a home for orphans and educate the daughters of planters, laborers, slaves and Indians. To those who would love them and depend on their silent strength to survive the hardships of the colonial South, they were Les bonnes Meres - - "the good mothers".

The Ursulines arrived in New Orleans after a five-month sea voyage of violent storms under the constant threat of pirate attack. Twice their ship ran aground. Completing the last part of their journey by pirogue, the Sisters finally gazed upon their new home.

New Orleans in 1727 was a small village of saloons, military buildings and houses on stilts.

Rains came in torrential downpours, suddenly and often, and everyone suffered from heat, dampness and disease. Quickly the Ursulines made plans for a permanent residence and then began their work of mercy, starting with the army hospital. They scrubbed and scoured rooms and drained stagnant ponds. The high rate of illness dropped. Before, people had come to the hospital only to die. Now they came to be cured. With this beginning, the Ursulines prepared themselves for their main purpose in the colony - - to teach.

Daughters of rich planters and poor workers alike received instruction in religion, languages, mathematics and housework. Many of the village's Black and Indian women attended classes each day. And 30 young women, sent from France to provide wives for the colonists, boarded with the Ursulines until marriage. The files a la cassette, or "casket girls", owned nothing save a few possessions kept in a small wooden box. Yet, under the close direction of the good Sisters, they became the colony's respected, upstanding wives and mothers.

In 1734, after seven years of insufficient funds and delayed construction, the permanent nunnery was finally completed. But it was an occasion of sadness, too. Suffering the pain of another Moses, the Mother Superior who had courageously led them since their departure from France died a few months before seeing the completion of seven years of dreams, hopes and prayers.

Still the devoted work of the Ursuline Order went on; through two tremendous fires that destroyed the surrounding buildings, but spared the nunnery; under changing governments - - French, Spanish, French again, then finally the United States; and through the Battle of New Orleans in the War of 1812, which threatened destruction of the entire city.

But, by 1821, the Sisters had outgrown their downtown residence. The Order gave up its beloved convent on Chartres Street and moved down the river to a larger, more spacious site. The Sisters never saw the city again, for they remained within the walls of their new convent. But the Ursulines continued to serve its inhabitants, educating generations of Louisiana women and being "the good Mothers" to thousands of the sick and needy.

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LOUISIANA ENGINEER

December, 1974

Engineers' Creed

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I pledge:

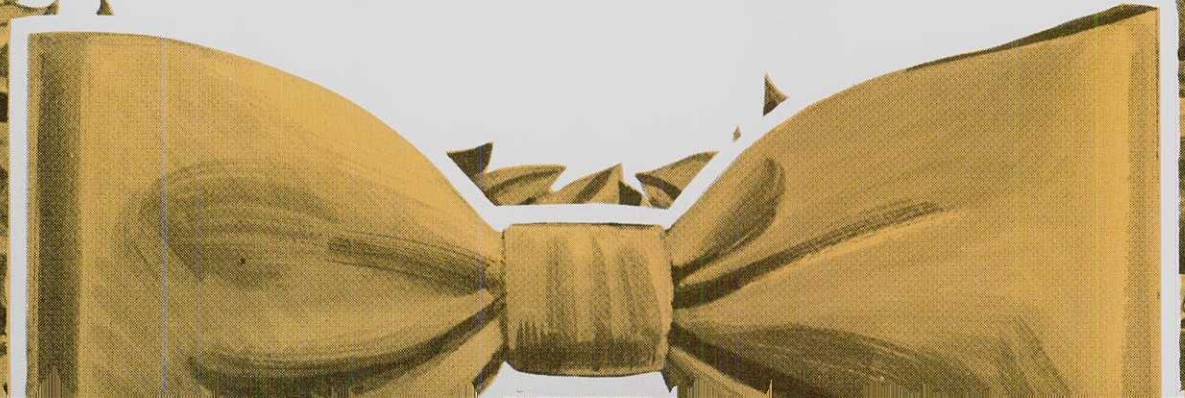
To give the utmost of performance;

To participate in none but honest enterprise;

To live and work according to the laws of man and the highest standards of professional conduct;

To place service before profit, the honor and standing of the profession before personal advantage, and the public welfare above all other considerations.

In humility and with need for Divine Guidance, I make this pledge.



LOUISIANA ENGINEERING SOCIETY

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Scandal Brings Unfavorable Publicity to Engineering Profession

LEONIDAS L. DENSON, P.E.

An article in a recent issue of a bar association journal related the shocked amazement of a Maryland attorney when a consulting engineer who was his client blurted out in agony, "I have been paying off the Vice-President of the United States!" Some of the scandals which have brought deserved and unfavorable publicity to the engineering profession have centered in the Baltimore investigations. Unfortunately, they have also surfaced in other states, warranting in many cases thorough investigation, prosecution of dishonesty and gross professional misconduct, and strengthening of discipline within the professional societies.

The Maryland Society investigation resulted in dropping with prejudice three members who did not appear, and expulsion of one other in the Agnew relationship. Four others were expelled for kickbacks to Dale Anderson, former Baltimore County executive who was convicted of extortion, bribery, conspiracy, and tax evasion.

We are all aware of the impetus which these investigations have given the trend by the General Accounting Office, the General Services Administration, and other governmental bodies toward engineering selection on purely competitive bidding.

This writer had the opportunity to observe a panel discussion in New Orleans at which the panelists were architects discussing revision of the procedure by which the State of Louisiana awards architectural contracts. As the present system of selection was discussed, together with alternative procedures, one panelist remarked that the architects themselves were the victims of the kickback system. He pointed out that necessity of receiving State professional contracts by returning a portion of the fee to members of the awarding agency resulted in less working capital for the architect, in inadequate design as a result of insufficient funds to properly design and check, and of unsatisfactory salary scales within the offices of the architects, again the result of insufficient working capital to complete the contract.

The architects are not the victims of the system, nor are their employees. Those architects and engineers who participate in bribery and kickbacks are equally guilty with participating governmental officials. If no architect or engineer would consent to return a portion of a professional fee, the kickback system in this instance would disappear.

I have been asked to discuss briefly with you the activities of your State and Chapter committees on ethics and professional conduct. This function of the Louisiana Engineering Society is —quite naturally—concerned primarily with members of the LES. In the case of non-members, the Society can assist in education in matters of professional conduct; and in cases of complaints refer inquiry to other organizations.

Primary function of your State committee, which is composed of members of the Chapter committees, is investigation of all complaints brought before it, with full review and reference to the Society code of ethics, and offering to the Board of Direction recommended action. All final actions are by the Board. In addition to reviewing complaints brought by others before the committee, each member of the State and Chapter committees should be alert towards violations of ethics and professional conduct.

A second and equally important function of the State and Chapter committees is education of both member and non-member engineers in matters of professional conduct. Toward this end, effective presentation of articles in *The Louisiana Engineer*, particularly dealing with cases investigated by the committee in Louisiana may be used, together with seeking opportunity to address local Chapter meetings, and those of other engineering groups, and to present brief articles in journals of those groups explaining function of the LES committee. Panels may be presented at Chapter meetings or may be offered to other engineering groups by which panelists comment on cases of interest which have been investigated by either the NSPE or the State committee, and then invite discussion from the floor.

Let me charge you with responsibility of organizing at the Chapter level your committees on ethics and professional conduct, each composed of at least a chairman and vice-chairman who will also sit on the State committee. Let me recommend also active participation on the State level, both in attending the State conferences and workshops and also responding to correspondence by which so much of the State activity is executed. Your charge at the Chapter level is to promote professional standards among all engineers, both members and non-members of the Society.

Your tools for measuring ethical conduct include "Opinions of the Board of Ethical Review," published in several volumes by the NSPE; the LES Constitution and Bylaws; the LES Code of Ethics; and the NSPE Code.

Typical activities of your State committee in recent years have included investigation of charges of misconduct in receiving and executing State contracts by a member; charges of unethical practices in securing a municipal contract by other members; and various complaints of advertising practices by members. One consulting engineer utilized classified advertising in seeking commissions "at reasonable rates." While the penalties meted at conclusion of these investigations varied with the most severe being a letter of reprimand by the Board of

(Continued on Page 20)



ABOUT THE COVER

Holiday greetings from the officers and staffs of the Louisiana Engineering Society and the State Board of Registration for Professional Engineers and Land Surveyors.

CONTENTS

Scandal Brings Publicity 3
Presidential Privilege 5
Louisiana Engineers in Europe 6
Culpepper Appointed 10
State Board Censures Engineer 11
Management Course 12
EngiNEWS 15
Potpourri 21

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Presidential Privilege



Fred C. Culpepper, Jr., P.E.
President, L.E.S.

I recently read a poem that I would like to share with you. The author is unknown to me but it poses a question that we engineers should always be asking ourselves.

I saw them tearing a building down,
A gang of men in a busy town.
With a "yo-heave-ho" and a lusty yell
They swung a beam, and the whole wall fell.
And I said to the foreman,
"Are these men skilled,
As the men you'd hire if you had to build?"
And he laughed and said, "Oh, no indeed,
The commonest labor is all I need;
For I can easily wreck in a day or two
What builders have taken a year to do."
And I thought to myself as I went my way,
Which of these roles have I tried to play?
Am I the wrecker who walks my town,
Content with the labor of tearing down,
Or am I the builder who works with care,
That my own town may be better,
Because I've been there?

I would hope that each member of LES would be known as the "builder who works with care."

Our Society has been called on by various agencies in recent months to provide professional guidance in matters pertaining to the engineering profession. In every case we have responded by appointing qualified representatives from our membership to serve on the various boards. This service is generally noncompensatory but each individual who serves can know "my town may be better, because I've been there."

In closing I wish for all of you a very happy Christmas and a healthy and prosperous New Year. I suggest that one New Year's resolution be that we each take a more active interest in the activities of LES. The more you do for your Society the more it can do for you.

Louisiana Engineers in Europe– Subways and Smoked Sturgeon

JAMES S. JANSSEN



Photo of Louisiana Engineering Society Delegation to Europe taken in Kennedy Airport in New York, Sept. 15. From left to right: James Janssen, New Orleans; Paul Rottmann, Shreveport; Dot Janssen, New Orleans; Hildur Rottmann, Shreveport; Jane and Sylvan Richard, Lafayette; Marvin Firmin, New Orleans; Eugene Sellers, Lafayette; Gloria Firmin, New Orleans; Phallie Sellers, Lafayette; Alvin Badeaux, Thibodaux; Walter Verlander, New Orleans; Ralph and Phyllis Caffrey, Lafayette; Gertie and Malcolm (Jack) Meyn, New Orleans; Edna and Clyde Earnest, New Orleans.

The Louisiana Engineering Society's delegation to Europe was one of the most successful extra-curricular projects that the Society has ever undertaken. The three-week trip, Sept. 15 to Oct. 6, had been carefully arranged in advance, accommodations were excellent in first class hotels, all meals for us and for local guests were thoughtfully provided and were great (although a bit weird in Russia), local transportation and local guide service (also provided) were of the best. And Herr Hendrick (Hank) T. de Vries, the tour manager, was tender, loving and patient with us. This was a People-to-People Goodwill Travel Program trip designed to promote international understanding between U. S. engineers and their foreign counterparts.

We left New Orleans together on Sunday, Sept. 15, and arrived in London (via New York) early the next morning. We were met and bused to the new Metropole Hotel where we stayed for several days. Here engineering visits included the London World Trade Center at the revitalized St. Katherine's Docks, the extensive Tilbury Docks further down the Thames with its container port, immense dry dock and liquefied gas handling facilities. Sightseeing consisted of lunch at Heneky's in High Halborn, a typical English pub, Changing of the Guard at Buckingham Palace, Madame Tussaud's Wax Works, Westminster Abbey, the Victoria Embankment with the Obelisk (Cleopatra's Needle) and assorted public squares, parks, statues, monuments and public buildings. As also in other cities visited, the engineers in the group participated in such of the sightseeing as did not interfere with the engineering visits. Some brave souls rode the underground (subway to you) and one even got lost there.

Then on to Brussels (i.e., Brussels to the French-speaking portion of the local population and Bruxelles to those that speak Flemish, a Dutch dialect. All public signs not in symbols must be in both languages.). While our wives were out seeing the Palace of the Royal Family, the Grand Place (the very old and principal square), the famous and mischievous "manneken pis," various churches and lace shops, the engineers had a conducted tour of the new Metro (subway to you). This included an extremely well done orientation film and talk, a visit to the ultra-modern underground central control room, several short rides on the Metro and views of the sections under construction. Several stretches are complete and in use, using the existing cars which surface at the end of the completed underground sections and continue their trip on the old surface tracks. This operation is appropriately called preMetro. New, faster and larger cars have been ordered and will be placed in operation as the underground lines are finished.

Several different techniques are employed in the excavation, principally either tunnelling (freezing the earth when necessary) or open cut using the Bentonite process. This procedure was new to many of us and consisted of digging a trench of great depth through a Bentonite slurry which prevents caving until the rebars and concrete can be placed down through the Bentonite which is salvaged for reuse. A sort of tongue-and-groove joint connection is made to the next section by the use of a large-diameter vertical cylinder placed at the end of each section. This is removed before the next section is poured so that the new concrete fills the void thus formed. A similar parallel wall is poured on the opposite side of the proposed structure and the intervening space excavated. This method is widely used in Europe.

Considerable effort was expended on the aesthetic aspects of the Metro, especially at the

stations; however, we were informed that these embellishments added only two percent to the total cost of the project. Perhaps American engineers could take a lesson from that. The next day we went to a hydraulic laboratory that tests models of rivers, basins and harbors of various parts of Europe and Africa as well as of Belgium itself. Tests were being run on the anticipated effect on existing coastlines and depths of proposed wharfs, groins, cutoffs and locks. After lunch we visited an atomic power plant under construction on the River Scheldt near Antwerp. While we were crawling through reactors, our wives were sightseeing, lunching and shopping in Antwerp (and falling in love with the charming, elderly local guide, Jean, who was more than half blind but who had memorized everything as his sight faded).

Perhaps the most interesting portion of the trip started when we landed in Leningrad the next day. We took the day off from engineering and went "tourist" in a big way, having a city tour in the morning, seeing St. Isaac's Cathedral, various palaces, squares and statues, some of which were especially fine. Lunch that day was the first of a long line of borsch (beef soup), smoked sturgeon and caviar. Then a one-hour ride down the Neva River and on the Gulf of Finland to Petrodvoretz (Peter's Palace). The small original palace and the larger one built later by Catherine II were great but the outstanding feature was the gardens with their great number and variety of fountains, truly magnificient and more impressive than the gardens at Tivoli near Rome. Better maintained too, but watch out for those trick fountains. Peter the Great's love of practical jokes is retained by his descendants. That night in Leningrad at the Maly (small) Theatre we saw a very well performed modern ballet called "Varoslavna" (the wife of Prince Igor, who put Russia together in the first place).

It was back to work the next day. We were extremely fortunate in having been able to arrange a trip through the modern Port of Leningrad, the former facilities having been largely destroyed by the Germans during the siege in World War II. The port director, Mr. O. Terekov, personally gave us a VIP tour on his official yacht through the various sections of the harbor. Here we saw huge freight handling facilities such as large gantry and other cranes, many containers, river boats and numerous ocean freighters, mostly U. S., British and Canadian. There is considerable traffic with Cuba, exporting machinery and importing sugar. We finished the day with a quick trip through the Hermitage (formerly the Czar's winter palace) which some people consider to be the finest museum in the world. Certainly it houses many fine collections of art.

After dinner we took the reasonably modern and comfortable night train, the Red Arrow Express, to Moscow. What little we saw of the countryside in the early morning was bleak and undeveloped. We understand that all tourists that take trains are moved by night. The porter served tea in the morning in glasses at four kopeks per glass, made in an old fashioned, traditional samovar. We were met and bused to the Rossia Hotel, another Intourist one where we had breakfast and a quick wash. This is the largest of three Intourist Hotels in Moscow, 3000 rooms. We then took a walking tour to see Red Square, the outside of the Kremlin and of Lenin's Tomb, both of which are being refurbished, the very large GUM department store and St. Basil's Cathedral. Later we were bused out to the Lenin Hills, an area under development, containing the multistoried Moscow University, a 100,000-seat stadium, and various other sports areas including structured ski jumps. Here there is an overlook from which you can see all Moscow and get an idea of its tremendous size. There were several bridal parties walking about. Traditionally the bride and groom have a quick wedding at a marriage bureau, then place flowers at the tomb of the Unknown Soldier, giving thanks to him and his comrades for preserving Russia. Then they walk about the paved walks of the Lenin Hills.

On the way back to the hotel we went down into the very deep and very modern subway during the rush hour and rode past a few stations. Quite an experience! This subway is even more ornate than the one in Brussels, perhaps even overdone. That night we went into the Kremlin for a performance of Don Quixote by the Bolshoi Ballet troupe at the modern Congress Theatre. It was superb in all aspects of choreography, execution, costume, scenery and audience appreciation. Our tour agency had provided us with excellent seats. The performances start early, 7 p.m., so the audience seems to skip dinner and then to eat all kinds of things (but mostly sturgeon and caviar) during the intermissions, the entire top floor being devoted to this activity. Some of our group went instead to the world famous Moscow Circus which they reported to be worthy of its fame.

The following morning the engineers went to the 650-acre Exhibition of Economic Achievement on the outskirts of Moscow. After a circular driving tour of the numerous pavilions—oil, gas, agriculture, manufacturing, space, etc.—we separated and went into various of the pavilions which were well designed and executed. Later we rendezvoused to see a 20-minute panorama film of the glories of Mother Russia! It was well done and, of course, showed only the better places and things. We were interested to learn that this exhibit area is used to educate people from other parts of Russia as well as from the satellite nations. For instance, farmers are brought in and given a week of intensive training at the agricultural center plus maybe a little indoctrination and sent home full of information and enthusiasm. There is even an adjacent recreation area for relaxation when the training becomes too intense. A special Metro line

(Continued on Page 8)

SUBWAYS AND STURGEON

(Continued from Page 7)

runs from downtown Moscow so that the exhibit is readily available to all. After lunch (they went all the way this time with sardines, salmon **and** sturgeon with a little red **and** black caviar on the side) we went to the Lenin Museum, a whole building near Red Square devoted to the wonders of Lenin. We sidestepped a movie of the life aud times of the Father of the Revolution by pleading that we were due at the U. S. Embassy, which we were. There we were received most cordially and given a short talk by Mr. Engel, a member of the administrative staff. Mr. Walter Stoessel, the ambassador, was in the United States on leave. After the talk we asked lots of questions and received answers, gathering some interesting information about the Russian system, philosophy and thinking.

We went back to the Kremlin the next day to see several of the many churches and cathedrals. We also saw some cannons that Napoleon left behind when he got frozen out of Moscow. After this we separated, some of us wandering back past the Tomb of the Unknown Soldier of World War II, observing the succession of brides placing flowers there, then past Red Square and into the crowded and shoddy GUM department store. A word about the shops in Russia. Most of the shops are for the Russians, naturally, but foreigners may shop there also if they have right money. There one uses only Russian money; rubles and kopeks. In addition there are special shops called Barioska (meaning birch tree, the national tree) or B.S. shops where only foreign money, called "hard" money, is accepted. Prices and quality are higher and Russians are not allowed in. These shops are in tourist areas such as Intourist hotels. Another fiscal control exists in the system of being required to list your money and jewelry when you enter and when you leave the country.

We went into the weird St. Basil's Cathedral, which was not like any church that any of us had ever seen, being divided into numerous small chapels or rooms with no large areas. You wondered how it was used. It had onion topped domes or spires, of course. There are many of these onion tops in Moscow and almost none in Leningrad, which is a much younger and more western type city. Most of the domes are in gold leaf, but some are gray.

In the afternoon we had an arranged roundtable meeting with local engineers, an economist who is a specialist in U. S. economy and several educators. There were several women in the group and they were disappointed that we had no women engineers with us. We discussed general matters such as national economics and education rather than technical problems. Basically the Russian educational system embodies 10 years of required basic education with long hours and much homework for all. Thereafter those that wish may take examinations and, if successful, may go on to higher education, either a technical school or the university. College is for five years except for medicine, which is for seven. Further study is available for those who qualify. There are many women in the professions.

That night we went back to the Kremlin's Congress Theatre (officially the Palace of Party Congresses) for a performance of Puccini's "Madame Butterfly," billed as "Cio Cio San." An Italian opera, based on a Japanese girl, sung in Russian for a partly American audience! It was adequately performed but not great, and the discriminating Russian audience was chary in its applause. Next morning we made a quick trip back to the Kremlin to see what we had missed, namely the Armory. Here there is a vast collection of medieval armor plus tremendous wealth in the form of jewels, thrones, costumes, crowns, scepters and similar things formerly owned by royalty and nobility.

A few additional thoughts on leaving Russia. We were constantly told that the Russians, while admittedly behind the free world in most things, are still much better off than they were under the czars. True, but isn't everyone else in the world much better off than before 1917? With unlimited labor available there is no excuse for the shoddy construction and operation that we observed. Why should a new hotel have such poor elevator service that people walked four or five flights of stairs rather than wait? And floors under carpets were noticeably rough as though spalled or honeycombed.

We had been told that tips were considered insults and would be refused, but actually they were gratefully, though surreptitiously, accepted. And above all, if the natives are happy, why the iron curtain to keep them in?

Later that morning we flew to Budapesht where we took a three-hour local tour by bus. The two cities of Buda, which is hilly, and Pesht, which is flat, across the river from one another were united to form the present city of Budapesht. Would you believe that we needed Hungarian visas for this short visit? Well, we did, proving that some countries have more red tape than we do. Fortunately our ever-provident travel agency had secured these visas. We saw the beautiful blue Danube (same color as the Mississippi), St. Mathias Church, the Fisherman's Bastion and the citadel, none of which was spectacular, yet it was a pleasing ancient city. There are hot springs and baths there, one dating back to the days of the Turkish occupation, literally a Turkish bath. It is said that the "best" people live in Pesht but that the "cleverest" people live in Buda. Compare this with the right and left banks of the Seine in Paris.

Back to the airport and a short flight to Vienna. We checked into the interesting Am Parkring Hotel which is on the eleventh, twelfth and thirteenth floors of an office building with separate elevators. It was a good location with compact rooms that were clean, which the Russian ones were not. We all enjoyed drinking large quantities of the excellent city water after avoiding

the doubtful water in Russia. After a good western-Europe-type dinner many of us went beer drinking and waltzing in the Karsalon in the park across the Parkring Strasse from the hotel. Viennese beer is infinitely better than Soviet beer, thus marking up another score for free economy over totalitarianism.

Next day we were up early and at St. Stefan's Church so that we could get to the Sunday morning performance at the Spanish Riding Academy. A fine show by the famous Lippazaner horses and their equally well trained riders. There was standing room only for many but, as usual, we had the best seats in the house. We finished the day with a sightseeing tour including the Schönbronn Castle of Marie Therese. Instead of fireplaces this palace was formerly heated with ornate woodfired ceramic stoves, fired by a servant from between the double walls. Then we went to Prince Eugene's baroque Belvedere Palace. We were entranced here, as elsewhere in Europe, with the attractive paving using cut granite stones laid in patterns.

A full schedule of engineering visits the next day included a trip to the United Nations complex under construction (rent to be one Austrian mark per year); a view of a canalized portion of the Danube (still not blue), the old stretch of the river and the areas between the old and the new being used for recreation; and an inspection of a ground water collecting system for city water and a view of low land reclaimed for park purposes by sanitary land fill methods. (South Louisiana could profitably copy this.) Vienna's gas distribution system is being converted, area by a r e a, to natural gas, now available in ample quantities. About one third of the city has been changed over with the remainder on low BTU cracked natural gas instead of the manufactured gas of former years. It is reported that electrolysis is a major problem with underground metal structures because of stray currents from the D. C. transit systems. It was of interest to learn that the older subway lines were originally in open cuts and were steam powered. Some very light, almost diesel, oil from Austria is used in industry and is naturally preferred to the heavier oils obtained from Russia. It was repeatedly noted that our discussions with European engineers were complicated by the difference in units. For instance in discussing gas we had to convert from c u b i c feet to meters and for oil from gallons to litres, plus going from Fahrenheit to centigrade for temperatures. Life will be simpler for all of us when we go metric.

We went underground to see the extension of the U-Bahn (subway to you) system. Again the Bentonite trench system is used, this time down to depths 125 feet below street level! Tunnelling is also used and in a few cases was complicated by the presence of ancient tunnels made by the Turks hundreds of years ago in mining under the city wall during two sieges.

Several of the Austrian engineers with whom we visited that day were our guests for dinner that night in a wonderful old restaurant. It was here that "Ach du liber Augustin" was written, but the pianist played "You Are My Sunshine" for us instead.

In the morning we took the Vindobono (the name of the Roman settlement that became Vienna) all-day train to Berlin, passing through Austria, Czechoslovakia and East Germany with much passport inspection en route. Through the manipulations of our omnipresent travel agency we had a car to ourselves plus surprisingly g o o d meals served with all the grace of the old time U. S. dining car style. The train arrived in East Berlin so that we had to make a quick transfer of our baggage and ourselves to another train for a short ride into West Berlin. That is, it would have been short except for the usual passport procedure supplemented by a search for possible refugees from East Germany. (The writer aged a whole year on that day's trip. That is, he had a birthday that day.) Our Berlin rooms were in the elegant Kempinski Hotel which was destroyed and rebuilt after the war. It is in West Berlin, of course, and is right next to Kurfurstandamm Strasse and is really the western extension of the famous old Unter den Linden which was the center of Berlin for hundreds of years. In West Berlin we saw the very large Siemons Stadt electric factory. This immense corporation m a k e s everything electrical from household appliances to large generators. West Berlin also produces pharmaceuticals and fashions. We saw the Olympic Stadium and the beautiful Charlottenberg S c h l o s s. Near this castle there is a statue of the Goddess of Fortune that turns with the wind, a bit of Teutonic humor.

In cleaning up B e r l i n after World War II, the rubble was bulldozed into a hill supposedly 600 feet high, now used for skiing and other recreation. Believing the Germans to be honest folk, at least the West Germans, we neither climbed nor measured this hill. The separation of Berlin into East and West sectors created m a n y problems with the utilities. Electric lines, water and gas mains had to be cut and transit lines separated. The electric generating plant was in East Berlin, which meant that West Berlin was without power until new plants could be built with flown-in equipment. The water system, fed by wells, and the manufactured gas systems were more easily separated and kept activated. West Berlin, being entirely surrounded by East Germany, d e p e n d s on airplanes, highways and waterways for its contact and commerce with West Germany a n d elsewhere. The West Berlin technical and scientific university is reputed to have 10,000 students.

Before the *WALL* was built (on a single Sunday) as many as 3,000 persons per day moved from East to West Berlin. Now we are told an average of one per day makes it alive to freedom. Unfortunately much of the housing and most of the historical and public buildings are in the East

(Continued on Page 10)

SUBWAYS AND STURGEON

(Continued from Page 9)

sector. West Berlin has built 450,000 dwelling units to offset this loss of housing and has expanded its subways to serve these new buildings. There are towers from which West Berliners and tourists can see into East Berlin, so we climbed up and took a look at the guards, the barbed wire and the tank traps on the other side. Needless to say, there are no such towers on the other side. We took a bus trip through Check Point Charley into East Berlin where we saw numerous public buildings, the famous Unter den Linden Strasse and the Russian War Monument built to honor those who lost their lives defending Mother Russia from the Fascists. No mention is ever made of the U. S. participation in that fracas. Anyhow we didn't start any arguments, so they let us go back to West Berlin where we went out to see the new airport, Berlin-Tegel, now under construction. It is ultramodern in all respects, perhaps the most modern in the world. We were struck by the high quality of the materials and especially by the workmanship, which was far superior to what we had seen in Russia. The cabins for the control towers were completely prefabricated in two halves, including the electronic elements and were then lifted into place by an enormous crane. The runways are electrically heated to melt snow and ice, the city electric system being backed up by 100-percent-capacity standby diesel powered electric generators.

Our next stop was Zurich in Switzerland, a heavily industrialized city. Here we visited the very large and very modern Sulzer diesel engine factory (Herr Rudolf Diesel, though a German, did his early work here), the adjacent gas turbine factory and the experimental and exhibition rooms of Sulzer's textile mill machinery. We had lunch in the plant's executive dining room and then we drove several miles to Birn to see the Brown Boveri steam turbine factory, which is immense. Both of these factories supply equipment to all parts of the world as well has having component parts made by subsidiaries or contracted plants in various other countries. One interesting sidelight is the labor practice known as "gliding time" wherein the employee is allowed, within limits, to set his own working hours. Then on Fridays he can make up any time that he is short or he can leave early if he is ahead.

This concluded the engineering portion of our trip. The next day we were taken to Lucerne for a full day of sightseeing (Lake Lucerne, medieval covered bridges, the ancient city wall and watch towers, the famous Lion Statue) and shopping (clocks, watches, music boxes, linens) with lunch on the mountainside reached by a cable car. Back to Zurich by a different route via Albis Pass, we saw much typical Swiss mountain scenery and architecture. Sunday we flew back to New Orleans via New York.

In all aspects it was a very successful trip. We had a fine time, we learned a lot about European engineering and we met some wonderful people. And we feel that we made a substantial contribution to goodwill and understanding between the United States and the countries that we visited.

* *

Editor's Note: Mr. Janssen is a past president of the Louisiana Engineering Society who has been active in professional and civic affairs throughout his career.

Culpepper Appointed to State Board



Fred C. Culpepper, Jr., P.E.

Fred C. Culpepper, Jr., P.E., president of the Louisiana Engineering Society, has been appointed by Governor Edwin Edwards to the Louisiana State Board of Registration for Professional Engineers and Land Surveyors. The appointment became effective Oct. 16 and is for a period of nine years.

Culpepper replaces Calvin T. Watts, P.E., the 1964 president of the Louisiana Engineering Society, who completed his nine-year term in October.

Culpepper was born in Monroe, Louisiana. He attended elementary and secondary schools in Monroe and received his B.S. degree in Civil Engineering from Virginia Military Institute in 1940.

In 1941, he joined Ford, Bacon & Davis Construction Corporation as a junior engineer. Of the four years he served in the armed forces during World War II, two were in Europe as a parachutist with the 101st Airborne Division. After the war he returned to Ford, Bacon & Davis. During the period 1945 to 1960, he was assigned to projects in 20 states in various capacities from field engineer to project manager. He was elected vice president of the firm in 1961. In June 1968, he was made senior vice president in charge of operations, and in 1970, he assumed the duties of executive vice president of Ford, Bacon & Davis Construction Corporation and resident manager in Monroe.

Culpepper is a licensed professional engineer in 12 states, a member of the National Society of Professional Engineers and a Fellow in the American Society of Civil Engineers.

The Louisiana Engineering Society and its members are especially proud of his appointment to the State Board. Fred Culpepper believes in involvement and he is setting an example for all engineers in Louisiana.

State Board of Registration Censures Civil Engineer

Louisiana State Board of Registration for Professional Engineers and Land Surveyors

STATEMENT OF FACT AND FINDING

In Re

MARCO I. PICCIOLA II

This matter was initiated by a complaint filed by Mr. Carl E. Heck (registered civil engineer) against Mr. Marco J. Picciola II (registered civil engineer). The substance of the complaint was that Mr. Picciola had traced or copied certain plans prepared by Mr. Heck or Mr. Heck's office, and had sealed them and presented them as his own, without disclosure of their source and without obtaining Mr. Heck's permission. The complaint was presented to the Board in affidavit form. Under its authority as specified in R.S. 37:700 the Board ordered a hearing to be held at its office in the City of New Orleans on July 24, 1974, which, in compliance with the wishes of the defendant, was closed to the public. At the hearing both complainant and defendant were present and testified, as well as did other witnesses.

It was established at the hearing that:

1. Mr. Heck, the complainant, several years ago, while under contract of employment as an engineer by Lafourche Water District, prepared or supervised the preparation of certain plans for construction of a pumping station to be located between the towns of Golden Meadow and Leeville, Louisiana.

2. Mr. Heck's contract with the Water District provided among other things, that all plans prepared by his firm would continue to be the property of Mr. Heck.

3. Approximately two years prior to the hearing, negotiations were under way between this Water District and the Lafourche Port Commission looking toward the construction of another pumping station which was to be operated by the Water District. At that time Mr. Picciola was directed by the Lafourche Port Commission to design and prepare plans for the proposed pumping station.

4. Mr. Picciola testified at the hearing that he was instructed in the preparation of the plans for the new station to try for uniformity with other similar installations in the Parish, and that Mr. Eldon J. Breaux, an employee of the Water District who also testified at the hearing, had provided him with a set of the plans (above identified) which had been prepared by Mr. Heck. This testimony was not contradicted at the hearing.

5. Mr. Picciola acknowledged that he copied in large part the plans originally made by Mr. Heck with only slight variations, without requesting the permission of Mr. Heck to do so. He had also placed his name on the copies in such a manner as to indicate that he had prepared them. Mr. Picciola, in admitting that he had copied the plans in question, as charged, stated that he was sorry but was not aware at the time that he was violating the law. (See transcript page 62, and also transcript pages 64 and 65.)

After weighing these findings which were based on a careful examination of the record of the hearing and the exhibits presented thereat, the Board has reached the unanimous opinion that Mr. Marco J. Picciola II, having admitted the substance of the charges herein, was guilty of misrepresentation within the meaning of R.S. 37:700 B (2).

The Board further declares that under the authority granted in R.S. 37:700 Mr. Picciola is hereby publicly reproved and censured for this action, and directs that this reproof and censure be made public by being published in the LOUISIANA ENGINEER, the official journal of this Board.

The Board further concludes that no further disciplinary action shall be taken.

New Orleans, Louisiana, September 30, 1974.

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

Engineer Management Course

co-sponsored by

College of Business Administration
College of Engineering, LSU
Louisiana Engineering Society

DIVISION OF CONTINUING EDUCATION

Department of Extramural Teaching

OBJECTIVES

The program is designed to provide study in modern concepts of engineering management for members of the engineering profession. It is co-sponsored by the Louisiana Engineering Society, but all practicing engineers are invited to participate. The overall objective is to update the professional management competence and practice of Louisiana engineers.

SCOPE

The program, at present, consists of six courses, each of which extends over a University semester. To complete the requirement for the certificate a participant must take Course A, Course C, plus any two of the remaining four courses. This allows for some program flexibility. Each of the courses meets fifteen times during evenings and lasts two and one-half hours. Thus, a student could complete the entire sequence by attending the classes for four consecutive semesters. No courses are offered during the summer term. It is anticipated that the series will be repeated; thus, one could enter the program after the first course offering and complete the series of four courses. The courses can be taken in any order.

ADDITIONAL OFFERINGS

The objective of this program is the continuing of education of engineers in industry. The Engineering Management program coordinator will be happy at any time to schedule a special offering for any group of 20 or more people. Such offerings may be on any engineering or management related subject. (Special offerings will not normally apply toward the certificate unless they represent comparable material.) Persons interested in special offerings should contact the program coordinator for details (see attached form).

FACULTY

The courses will be taught by regular faculty members of the Colleges of Business Administration and Engineering or by able, qualified professors from other universities in the state.

CERTIFICATE

Upon completion of four acceptable courses the participant will be awarded a CERTIFICATE IN ENGINEERING MANAGEMENT by the Division of Continuing Education. Under certain conditions college credit also may be earned for the courses.

COST

The registration fee per participant is $110 for each course, including the cost of textbooks. The program is fully self-supporting.

REGISTRATION

To insure that each student will have an opportunity to participate in discussion, enrollment in each section will be limited to 30 students.

Class sessions will be held in the University Medical Center at New Orleans, on the Baton Rouge campus, and in other cities throughout the state where there is adequate demand. To preregister for the classes complete the attached form and return with $10 preregistration fee. Fee is applicable toward the $110 total registration fee and will be refunded if class chosen is not offered.

PROGRAM OUTLINE

Course A—Concepts of Modern Management

1. Understanding an organization
2. The individual in an organization
3. Organizational objectives
4. Function of managers
   a. Creating b. Communicating c. Planning
   d. Motivating e. Organizing f. Controlling
5. Management thought in perspective
6. Principles of management
7. Improving productivity in your organization

Course B—Economics for Engineering

1. Economic systems and functions
2. National income determination
3. Price Theory
   a. Demand
   b. Cost
   c. Market structures
4. Income distribution
   a. Wage theory
   b. Interest and rent
   c. Profits
5. The money and banking system
6. Economic policy

Course C—Engineering Economy

1. Interest, the time value of money and the concept of equivalence
2. Interest formulas
3. Methods of evaluating alternatives

a. Present worth
b. Annual cost
c. Rate-of-return
d. Capitalized cost
4. Benefit-cost ratio
5. Depreciation methods
6. Analysis of multiple alternatives
7. Income tax effects on investments
8. Replacement theory

Course D—Financial Decision Making

1. Money markets
   a. Money, credit, and banking
   b. U. S. government obligations
   c. Interest rates
2. Financial management
   a. Form of organization
   b. Financial planning
   c. Working capital
   d. Fixed capital
   e. Bond financing and borrowing
   f. Corporate stock
   g. Dividends and surplus
3. Personnel investment planning
   a. Savings institutions
   b. Security markets
   c. Financial reports and analysis
   d. Security analysis

Course E—Operations Research for Engineers

1. Allocation theory
   a. Linear programming
   b. Transportation problems
   c. Assignment problems
   d. Branch and bound techniques
2. Queueing theory
   Finite and infinite population models with single and multiple channels
3. Inventory theory
   Finite and infinite shortage cost models (Probabilistic and deterministic)
4. Learning curves

Course F—Basic Engineering Statistics

1. Probability
2. Probability distributions
   a. Normal
   b. Binomial
   c. Hypergeometric
   d. Poisson
3. Density functions
4. Data treatment
5. Statistical inference
   a. Inferences concerning means
   b. Inferences concerning variances
6. Curve fitting and regression
7. Analysis of variance
8. Factorial experiments
9. Sampling theory

Course G—Theory, Methods and Use of Accounting

1. Basic accounting relationships
2. Accounting systems and control
3. Structure, preparation, and analysis of financial statements
4. Accounting for assets
5. Accounting for equity claims
6. Accounting for revenues and expenses
7. The statement of changes in financial position

ENGINEERING MANAGEMENT PREREGISTRATION FORM

Please complete the following form and return it with the $10 fee to the address below if you are interested in the Spring 1975 Program. (Classes will begin during the week of Jan. 20, 1975.)

Address _____ **Phone** _____

City & State _____ **Zip** _____

MAIL FORM TO: Dr. Thomas G. Ray
Mechanical, Aerospace & Ind. Engineering Dept.
Louisiana State University
Baton Rouge, La. 70803

I wish to preregister for the course indicated. (Please show your first choice with a **1**, second with a **2**, etc. Show a single location choice only.) I understand if my first choice is not offered, I can request a refund of the $10 preregistration fee. This condition also applies if the class is scheduled on a night I cannot attend.

Courses Offered, Spring '75

_____ Management
_____ Engineering Economy
_____ Operations Research
_____ Engineering Statistics
_____ Accounting

Locations

_____ Baton Rouge
_____ New Orleans
_____ Lake Charles
_____ Shreveport
_____ Alexandria
_____ Monroe

I cannot meet on the following nights:
M_____ T_____ W_____ Th_____

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- ☐ Model Specifications CL-2
- ☐ Full-Depth Asphalt for Bicycle Paths CL-3
- ☐ Tennis Court Construction CL-4
- ☐ Pavement Rehabilitation—Overlays CL-5
- ☐ Pavement Rehabilitation—Widening CL-6
- ☐ Stage Construction CL-7
- ☐ Fuel Conservation CL-8

Name _____

Firm _____

Address _____

City _____ State _____ Zip _____

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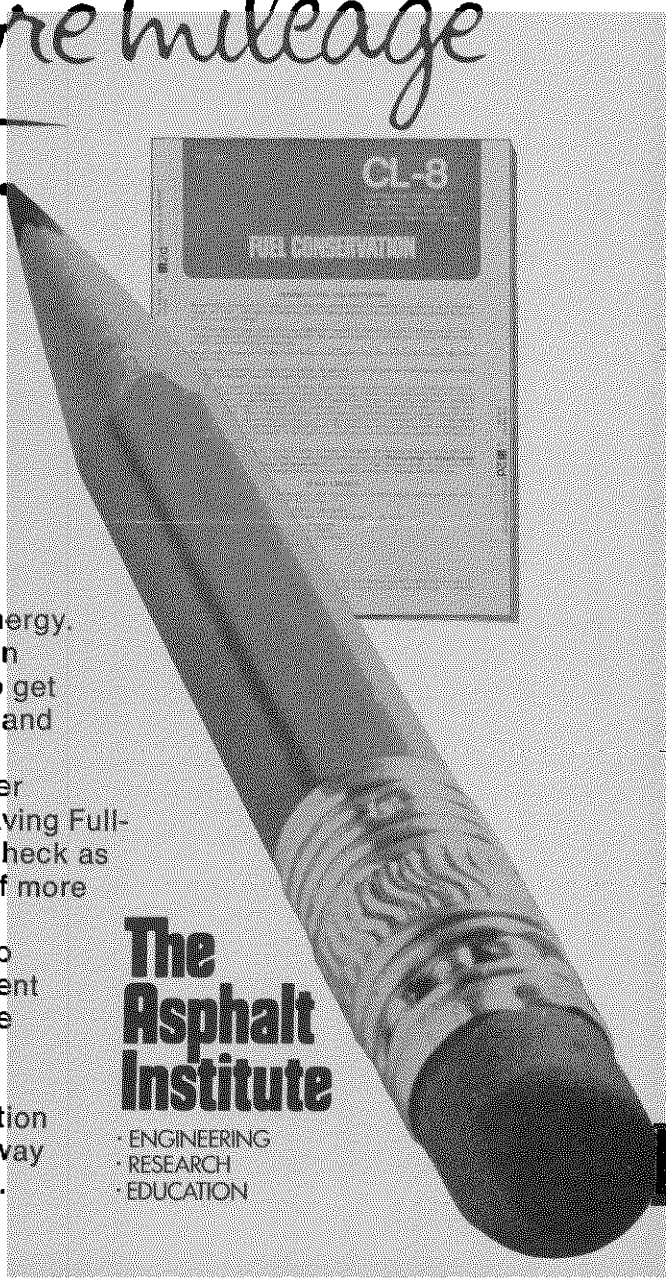
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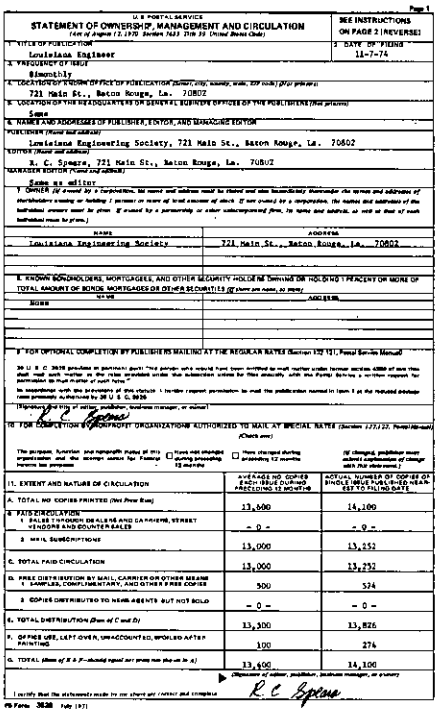
Wave Phenomena Explored At International Symposium

Engineers and scientists from many nations participated in an International Symposium on Wave Measurement and Analysis Sept. 9-11 at Braniff Place Hotel in New Orleans. The conference was cosponsored by the American Society of Civil Engineers, the Department of Public Works of Canada, and the U. S. Army Corps of Engineers.

Dr. Billy L. Edge of Clemson University and Orville T. Magoon, U. S. Army Engineer Division, South Pacific, were cochairmen of arrangements and John G. Housley of the Chief of Engineers Office, U. S. Army, was vice chairman. Waldemar S. Nelson, Consulting Engineer, and Fred Chatry of the U. S. Corps of Engineers handled local arrangements.

Papers reporting research on wave phenomena were presented and an exhibit of wave instruments and apparatus was displayed. A field trip was made to the National Data Buoy Office near Bay St. Louis, Miss., where a special program was presented on the activities of that organization. Attendance was above expectation and the many foreign guests declared the conference well worth their journeys to the United States.

During the conference Dr. Walter E. Blessey, National Director of the American Society of Civil Engineers and Head of the Department of Civil Engineering at Tulane University, awarded the J. James Croes Medal of the ASCE to Dr. Subrata Chakrabarti for his outstanding contributions to engineering sciences.



STATEMENT OF OWNERSHIP, MANAGEMENT AND CIRCULATION

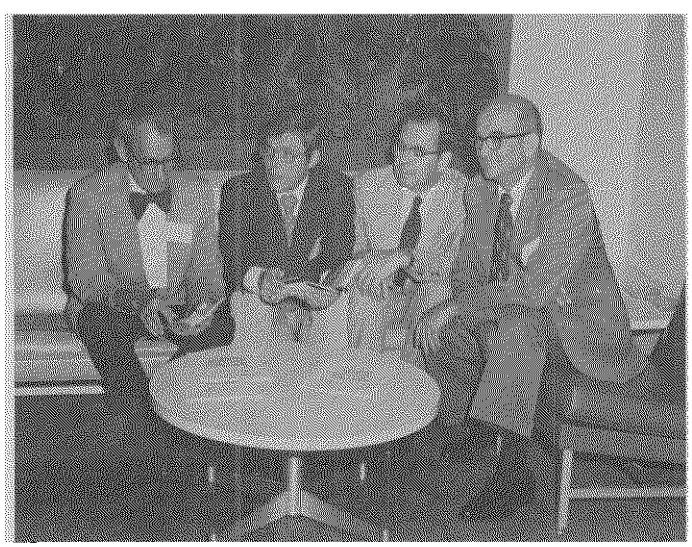
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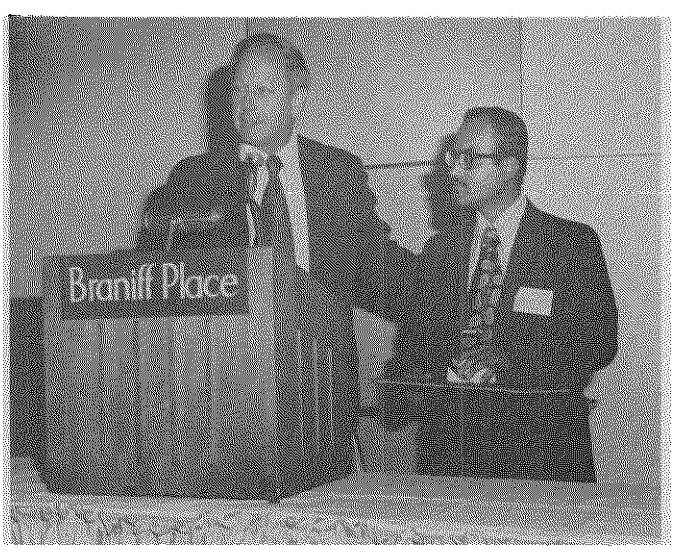
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I certify that the statements made by me above are correct and complete. — R. C. Spera

PS Form 3526 July 1971





Taking a short break during the International Symposium on Ocean Wave Measurement and Analysis, sponsored recently by the American Society of Civil Engineers, the U.S. Army Corps of Engineers, and the Department of Public Works of Canada, are some of the organizing committee, (from left) Fred M. Chatry, U.S. Army Engineer District, New Orleans; Dr. Billy Edge, cochairman of the conferences; John G. Housley, Office of the Chief of Engineers, U.S. Army; and Waldemar S. Nelson of New Orleans.

For his outstanding contributions to engineering sciences, Subrata Chakrabarti (right) is awarded the J. James Croes Medal by Dr. Walter E. Blessey, national director for the American Society of Civil Engineers, at the International Symposium on Ocean Wave Measurement and Analysis held recently in New Orleans. Dr. Blessey also heads the civil engineering department at Tulane University in New Orleans. Chakrabarti is an engineer with Chicago Bridge and Iron Co. in Illinois.

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IN MEMORIAM

Richard P. Ballard

It is with regret we report the death of Richard P. Ballard on Jan. 16, 1974 at the Bethesda Hospital, Cincinnati, Ohio. At the time of his death, Mr. Ballard was associated with A. M. Kinney, Inc., as a project manager. Mrs. Ballard has requested that we include this notice so Mr. Ballard's many business associates in Louisiana would be informed. Mr. Ballard was registered as a Civil Engineer in Louisiana.

IN MEMORIAM

Marion C. Berbenzer, P.E.
1898-1974

The Louisiana Engineering Society and his community have been deprived of the services of an excellent engineer, his family has lost a devoted father, and his friends a loyal associate, with the death on Oct. 14, 1974 of Marion Christian Berbenzer.

Mr. Berbenzer joined the Texas Society of Professional Engineers and the National Society of Professional Engineers in 1938. He became a member of the Louisiana Engineering Society in 1952 and was active in the Shreveport chapter, becoming president of that chapter in 1962. He was a member of the executive committee of the Louisiana Tech Engineering Foundation, Inc., the Petroleum Club and Noel Memorial United Methodist Church.

Mr. Berbenzer was a native of Bunkie and a resident of Shreveport for 45 years. He was a 1918 graduate of Louisiana Tech University with a degree in engineering and did post graduate work at the University of Chicago.

The Louisiana Engineering Society extends its sympathy to his wife, one daughter, Mrs. John L. Rhea of Clinton, N. C., and one sister, Mrs. H. M. Stagg of Dallas, Tex.

Pavement Design Conference Set in June in Atlanta

The ASCE Committee on Structural Design of Roadways is sponsoring a "Pavement Design Specialty Conference" June 1-3, 1975, at Georgia Institute of Technology, Atlanta, Ga. A call for papers is issued to engineering educators, to practicing engineers, to representatives from government, industry and others concerned with pavement design.

Papers are invited on topics related to the conference theme, "Pavement Design for Practicing Engineers." Topics of interest are: flexible pavement design, overlay design, effect of ecology on pavement design, rigid pavement design, performance of rigid and flexible pavements, and materials and material specifications.

Those wishing to present papers are asked to send an abstract (approximately 200 words) by Jan. 15 to:

Committee on Structural
Design of Roadways
P. O. Box 80730
Atlanta, Ga. 30341

Finished copies of accepted papers (typed on available model paper) will be due March 1 for publication and distribution prior to the conference. Proceedings will be published.

Professional Engineers Granted Registration

CONWAY, JR., JOHN E.
Westford, Mass.
Mechanical

DeLUNA, JOHN LAWRENCE
Bronx, N. Y.
Electrical

DeVUN, KENNETH ANTHONY
Baton Rouge, La.
Chemical

FOX, JACK JUDD
Bartlesville, Okla.
Mechanical

GATTO, ALFRED WARREN
Metairie, La.
Civil

MALEK, NICOLAS G.
Metairie, La.
Electrical

MELANCON, ROGER DALE
Baton Rouge, La.
Civil

MILLER, HARVEY A.
Tequesta, Fla.
Electrical

PABST, ROB ROY
Bogalusa, La.
Chemical

PARRO, DAVID LEROY
Oakland, Calif.
Mechanical

SPILLER, MILLARD HARLAN
Englewood, Colo.
Mechanical

THOMPSON, JR., GARRIS ARCHIBALD
Orangeburg, S. C.
Mechanical

UNZELMAN, GEORGE HERMAN
Baton Rouge, La.
Chemical

VOGT, MARTIN FRANZ
Metairie, La.
Chemical

WAXHAM, THOMAS JAMES
Shreveport, La.
Civil

WRIGHT, ROBERT WILLIAM G.
New Orleans, La.
Petroleum

TAYLOR, JR., RICHARD PURSER
New Orleans, La.
Electrical

TERRY, CHARLES FRANCIS
Dallas, Texas
Civil

THOMAS, RICHARD DALE
Cherry Hill, N. J.
Electrical

TODD, JERRY FOCH
Oklahoma City, Okla.
Mechanical

TRAUGHBER, EWING BERKLEY
New Orleans, La.
Civil

TURNER, CHARLES DANIEL
Shawnee Mission, Kan.
Civil
Mechanical

WALLIS, CHARLES FREDERICK
Metairie, La.
Electrical

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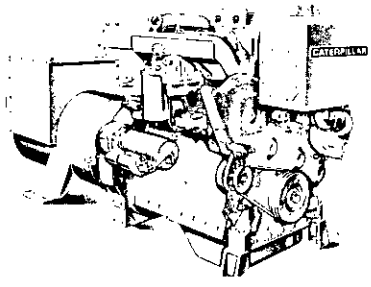
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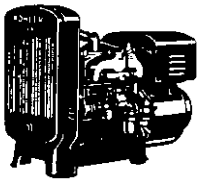
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A fee of $125.00 per person is charged to cover the costs for the course. Early registration is possible by mailing a check for the fees to: Dr. Frederick J. Brown, School of Engineering, UNO, New Orleans, Louisiana 70122.

Coverage will include topics from mathematics, statics, dynamics, strength of materials, fluid mechanics, thermodynamics, electricity and engineering economics. All notes and problems will be furnished during the course. Theoretical considerations are kept to a minimum and over 400 solved problems are discussed.

For additional information, contact Dr. Edwin P. Russo or Dr. Frederick J. Brown at UNO or call (504) 288-3161, ext. 327.

SCANDAL

(Continued from Page 3)

Direction, these penalties are not so gentle as they may seem. To the writer, it is no light matter to have your practices investigated and to be found in ethical violation by your fellow engineers.

The subject of ethics and professional conduct is vital to our profession. And despite the detailed requirements of our code of ethics, in the end it is simply a matter of honesty and personal integrity.

William Shakespeare spoke through Polonius as he advised his son Laertes on secrets of successful living:

"This above all — to thine own self be true,
And it must follow, as the night the day,
Thou cannot be false to any man."

Potpourri

Meeting College Costs

An excellent guide to help parents and students determine their eligibility for financial assistance, sources of aid, and estimated college costs has been published by the College Scholarship Service of the College Entrance Examination Board. Copies of "Meeting College Costs, A Guide for Parents and Students" are available without charge from College Board Publication Orders, Box 2815, Princeton, N. J. 08540.

1975 Engineers Week

The 1975 theme for National Engineers Week will be "Engineering—Exploring New Energy Frontiers." The week will be celebrated Feb. 16-22.

National Engineers Week kits for the 1975 observance were mailed to chapters by NSPE in October. Order forms for promotional materials were enclosed with each kit. Place your Engineer Week orders with NSPE headquarters as soon as possible.

A/E Selection Board Executive Order

On Nov. 15, the Governor signed Executive Order 76 setting up three boards: Architect Selection, Engineer Selection, and Landscape Architect Selection. It is felt that the public interest will best be served by a nonpolitical system applicable impartially to those architects and engineers who perform professional services for the state and its agencies. All agencies intending to contract for architectural, engineering, or landscape architectural services shall notify the Division of Administration, which refers proposed projects to the appropriate board.

LES members and interested parties attending the Governor's press conference to witness the signing of the executive order were Fred C. Culpepper, T. J. Hogue, Mr. and Mrs. Arthur DeFraites, Asa M. Ray, Leo M. Odom, C. Carter Brown, Robert Freeman, Landon Miles, Joe Keogh, and R. C. Spears.

The AE executive order is a bold step for the State of Louisiana. It becomes effective Jan. 1, 1975. The Louisiana Engineering Society appoints two of the five-man Engineers Board, with CEC appointing two and the Governor one. The Governor explained this as a trial run and hopes to follow it up with legislation in the 1975 session.

Some thoughts for consideration:

1. What projects are pure architectural? Pure engineering? The Division of Administration will determine, but it appears a vast gray area will emerge.

2. How can the Division of Administration properly determine the fee before there are detailed negotiations between the parties as to scope of the project, the time frame, what specialists are needed, etc.?

3. The state of Louisiana or any board, commission, department, corporation, institution, or other agency of the state which may require capital outlay projects for the construction of buildings, plants and related facilities is the definition of "agency" included in the executive order. These words supposedly exempt the Louisiana Highway Department from the order.

Baton Rouge Chapter Meeting

The Baton Rouge chapter meeting on Nov. 12 at the LSU Nelson Memorial Center was well attended. Al Wehe, president of the chapter, conducted a brief business meeting prior to the formal panel program arranged by J. E. Ritter, P.E.

George Ferguson, LSU professor, discussed "Demand and Supply of Engineers." The demand for engineers is greater than the supply at this time and it appears will remain so for the next few years. Logan Price, recruiting coordinator for Exxon, spoke on "Recruiting Problems and Techniques." Recruiting is difficult because there are so many openings and the supply of engineers is limited. R. C. Spears, LES executive secretary, reviewed the engineer salary situation. The median salary for engineers according to the 1974 NSPE survey is $20,660. Salary compression was discussed and salaries were compared with other professions and the trades. A lively discussion developed and most attendees appeared to enjoy the meeting.

NSPE 1975 Winter Meeting

The 1975 NSPE winter meeting will be held Jan. 13-18 at Braniff Place Tucson Hotel, Tucson, Ariz.

A brief schedule:

Jan. 13-14-15 ..... Practice Division Meetings
Jan. 15 (evening) ..... "State of Society" Dinner
Jan. 16,* 17-18 .... Board of Directors Meetings

* The Thursday afternoon session of the Board of Directors will be devoted to a review and evaluation of NSPE's goals and objectives and consideration of NSPE's role in the profession during the next decade.

Aid to Honduras

Mrs. Elaine Edwards, wife of the Governor, requested the Louisiana Engineering Society, along with many other organizations in Louisiana, to participate in the Aid to Honduras program.

The Sept. 17 hurricane, Fifi, created vast destruction and suffering for thousands of people in Honduras. There was a dire need for cash to purchase medical supplies.

The officers and committee members of LES were requested by letter to donate $10 or more for this worthy cause. As of Nov. 19, the close of the drive, LES forwarded $135 to Mrs. Edwards' committee. Our results were not overwhelming, but every little bit helps and sincere thanks have been expressed to the Society.

Donate Those Old Map Files

New Orleans City Park needs several flat drawer map files, either steel or wooden. Such a contribution should be tax deductible. The park can arrange to pick up any files within a reasonable distance. If you have any that you care to donate, please contact Ellis Laborde, General Manager, New Orleans City Park, Administration Building, City Park, New Orleans, La. 70124, phone 482-4937.

Salt Dome Study Begun at LSU

The feasibility of using salt domes for storage and disposal of radioactive waste is the subject of a study now being conducted by LSU's Institute for Environmental Studies. The study is being made under a $90,000 contract from the nuclear division of Union Carbide Corporation.

Dr. Joseph D. Martinez, LES member and director of LSU's Institute of Environmental Studies, is one of the key LSU personnel assigned to the project.

Rock salt, both as bedded and domal deposits, has properties that make it potentially useful for storage of radioactive wastes. Neither liquids nor gases can flow through salt because of its impermeable characteristics, states Dr. Martinez.

LSU has been a center for saline studies for many years, and much of the early work on salt domes has been done by LSU faculty members and graduate students. The study is expected to be completed in one year.

ASEE Meeting

The American Society for Engineering Education will hold its annual College-Industry Conference in New Orleans Feb. 13-14. The planning committee of ASEE extends an invitation to all professional engineering organizations to participate.

More details will be forthcoming, or you may write or call K. L. McManis, Delgado College, 615 City Park Ave., New Orleans, La. 70119; (504) 486-5403.

ASCE National Structural Engineering Convention

The American Society of Civil Engineers will hold its National Structural Engineering Convention in New Orleans

(Continued on Page 22)

POTPOURRI

(Continued from Page 21)

April 14-18 at the Fairmont Hotel. There are 54 technical sessions scheduled that will cover a wide range of topics of interest to all engineers. There will also be a large number of exhibits of major engineering interest. The Louisiana Section of the American Society of Civil Engineers is the host section and invites your attendance. Further details will be furnished as the program develops.

Occupational Outlook for Engineers

The Bureau of Labor Statistics, U. S. Department of Labor, has issued a new long-range projection of future manpower needs. The projections are given in terms of "average annual openings" between 1972 and 1985. A few extractions from the Labor Department estimates are listed for your information:

Engineering Occupation	Estimated Employment 1972	Average Annual Openings*
Civil Engineers	177,000	8,500
Electrical Engineers	231,000	11,000
Mechanical Engineers	208,000	8,900
Chemical Engineers	47,000	1,500

* Due to growth and death, retirement, and other separations from the labor force. Does not include transfers out of occupations.

Professional Listing

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"Footsteps in History"

At the turn of the century, most of the 1500 inhabitants of Jennings made their living growing rice. There was nothing really distinguishing about the town, except for an unusual geological feature in a nearby field. There, the land rose gradually for over a mile, then formed a marshlike depression. In several places, gas seepages sent bubbles up through the shallow water. "Marsh gas," the local residents told each other. They were wrong. The unusual land rise was actually a salt dome; the marsh seepage really petroleum gas. Below the rice fields lay vast pools of rich, black oil.

After the giant Spindletop oil field was discovered near a similar gas seepage in Beaumont, Texas, several Jennings businessmen, acting on a strong hunch, formed a partnership, leased two large tracts of land around the bubbling pools and headed for Beaumont to hire an experienced oil man who could confirm their guess. They returned with W. Scott Heywood, who had just brought in the record-setting Spindletop No. 2, a gusher spewing 148,000 barrels of oil a day.

Heywood wasn't a typical oil man. As a boy, he formed a musical troupe with his brothers and played to audiences all over the nation. Later, he searched for gold in Alaska. When funds ran out, he played his cornet for donations before crowds of miners. He then drifted to the California oil fields, organized a drilling company and became a successful promoter. Now, at 29, he had just brought in the nation's greatest gusher.

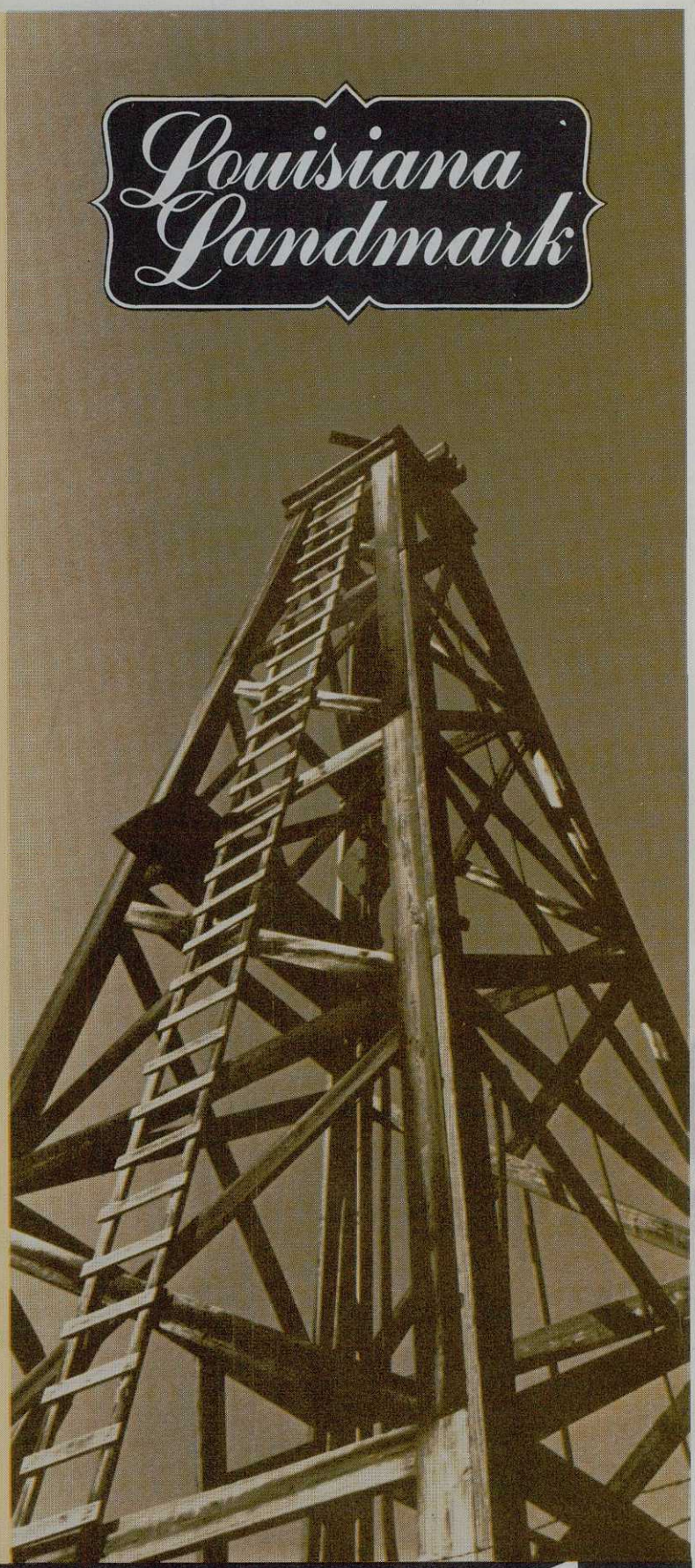
In Jennings, Heywood quickly signed a contract to drill. He had held a match to one of the marsh bubbles and watched it burn the red flame and black smoke of petroleum gas. But, trouble arose when Jules Clement, Sr., the property owner whose land was under lease, had second thoughts about the agreement. Afraid of the damage to his cattle, he padlocked the gates to keep the drillers out.

Heywood reassured Clement that his cattle would be safe, and that any dry hole would be filled so a cow wouldn't step in it and break a leg. "This well will cost about $10,000," he said, "and believe me, Mr. Clement, we won't be drilling too many $10,000 holes." Still not satisfied, Clement remarked, "What the hell do you know about oil? You're nuthin' but a kid!" "I might look like a kid," Heywood replied, "but I've found oil before, and I am going to find it on your land and make you rich. When I do, I will make you pay for that remark by ducking you in your own oil."

On September 21, 1901, the first well drilled in Louisiana hit oil at 1,810 feet. True to his word, Heywood and two of his huskiest drillers grabbed Clement, who was watching from a nearby rice levee, and dragged him, fighting and kicking, back to the derrick. They all stood under the gusher, showering and soaking themselves in the thick, black, crude petroleum.

Scott Heywood had kept his promise, and a new industry that changed both the history and economy of Louisiana was born.

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