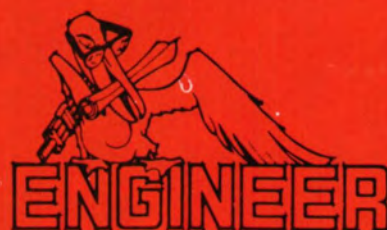




FEBRUARY, 1984
LOUISIANA



NATIONAL ENGINEERS WEEK



Feb. 19-25, 1984

ENGINEERS: PARTNERS FOR PROGRESS

Sponsored by: NATIONAL SOCIETY OF PROFESSIONAL ENGINEERS

Jobs

Louisiana needs more of them. And we're doing our best to help.

Louisiana needs jobs and new industry can help provide them. That's why our teams of industrial specialists are regularly talking to prospects throughout the nation about new sites available for plant expansion and re-location. But new industry means more than just jobs for our citizens. It means helping present industries and services. It means improving our communities and building new ones. It means boosting our overall economy and helping our state grow and prosper through additional taxes.

We have plenty of the natural and human resources necessary to attract new industry here. But among the basic necessities are additional supplies of electric energy to power new industries in the most efficient way. And your investor-owned electric companies of Louisiana are planning ahead and building the facilities to handle these demands.

New jobs are important to our area if we are to progress economically, and we're helping all we can.

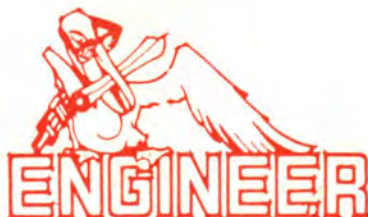


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Central Louisiana Electric Company Gulf States Utilities Company Louisiana Power & Light Company New Orleans Public Service Inc. Southwestern Electric Power Company

FEBRUARY, 1984

LOUISIANA



The LOUISIANA ENGINEER is the official publication of the Louisiana Engineering Society and the journal of the Louisiana State Board of Registration for Professional Engineers and Land Surveyors. The magazine is published in February, April, June, August, October and December. Subscription \$1.34 per year for engineers registered in Louisiana and non-registered members of the Louisiana Engineering Society. One dollar of each LES member's annual dues is set aside for six issues of the LOUISIANA ENGINEER. Second class postage paid at Baton Rouge, La. The Louisiana Engineering Society and the Louisiana State Board of Registration for Professional Engineers and Land Surveyors do not guarantee the accuracy of statements made or necessarily concur with opinions expressed in this publication. ISSN : 0024-6794

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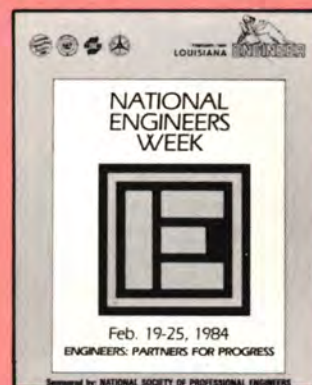
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ABOUT THE COVER

February 19-25 will mark Engineers' Week throughout the nation.

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State and Nation Celebrate Engineers Week

The National Society of Professional Engineers (NSPE), with a membership of more than 80,000 professional engineers from all disciplines of the profession, first sponsored National Engineers' Week in February 1951. The purpose of the week is to bring visibility to the profession.

In 34 years of NSPE sponsorship, the annual observance has grown from a few scattered proclamations, dinners and speeches to elaborate programs and week-long activities in urban and rural areas throughout the country. The activities, such as student toothpick bridge-building contests, paper airplane fly-offs or construction of playgrounds for handicapped children and sponsorship of exciting math tournaments for junior high schools, involve engineers in industry, government, construction, private practice and education. Governmental agencies, technical professional organizations and citizen groups honor outstanding engineers for their contributions to local communities.

Young people are an important part of the week. Thousands of students in junior and senior high schools and colleges are introduced to many facets of the engineering profession: tours and exhibits are staged in the nation's industrial and research facilities; scholarships are awarded to deserving and needy youngsters; local newspapers publish special sections calling attention to challenging careers in engineering; and radio and television panels discuss outstanding engineering achievements and explain what it takes to become a professional engineer.

National Engineers' Week is so important to the U. S. and its communities that for the past 34 years, the Presidents of the United States have sent Engineers' Week messages to the engineering profession through the National Society of Professional Engineers.

In 1984 National Engineers' Week will be celebrated from February 19-25. The theme for the Week is "Engineers: Partners for Progress." It is intended to highlight the need for partnerships among government, academia and the private sector to ensure America's status as the world's technology leader.

You may ask what is the significance of the theme: "Engineers: Partners for Progress." Educating our youth for a technological future. Competing in the global marketplace. They're tough problems that require creative thinking—and the forging of new partnerships among gov-

ernment, academia and the private sector. Engineers, who work in all three sectors, have a crucial role to play in these partnerships. That is why "Engineers: Partners for Progress" has been selected as the theme for National Engineers' Week, February 19-25, 1984.

All across the nation, engineers are working to make sure the U. S. is ready for a technological tomorrow. They're

engineers' Week at its inception by NSPE in 1951.

The Louisiana Engineering Society estimates some 475,000 persons are licensed by state registration boards to practice engineering. Registration laws, designed to protect the public from fraudulent engineering practitioners, establish minimum standards of competence and ethical conduct.



NATIONAL ENGINEERS WEEK

Feb. 19-25, 1984

ENGINEERS: PARTNERS FOR PROGRESS

looking for new ways to get our industries involved in supporting science, math and engineering education. They're working with federal, state and local government agencies to make sure our universities have the resources they need to train the nation's future scientists, technicians and engineers. Engineering educators are working hand-in-hand with industry engineers to improve the productivity of our factories and the quality of our products. Engineers from all sectors are providing the important technical information our legislators need to shape future public policy.

From the smallest local community action project, to programs that have raised millions of dollars in support of engineering schools, engineers are proving again and again what can be accomplished through a spirit of teamwork. They know that only through cooperation can our country hope to maintain its leadership role. They're truly "Partners for Progress."

Here are some short items, conveying facts about the engineering profession that we hope will cause you to pause a moment and salute the engineering profession.

LES became affiliated with NSPE in 1957, and LES began celebrating En-

National Engineers' Week, sponsored by NSPE and the Louisiana Engineering Society, was first observed in 1951. It is celebrated annually during the week of George Washington's traditional birthday, in honor of the first President, who was a noted military engineer and land surveyor.

The nation's first engineering school was established June 9, 1778, by General George Washington during the Continental Army's encampment at Valley Forge, PA., according to researchers of the National Society of Professional Engineers. In 1802 the school was moved to West Point, New York, where it became the foundation for the U. S. Military Academy, known as the first technical school in America. The U. S. Army Engineer School is now headquartered at Ft. Belvoir, VA., near Washington, D.C.

Pierre Charles L'Enfant, a French engineer who volunteered his services to the American Revolutionary Army, was the designer and planner of Washington, D.C. According to researchers of the National Society of Professional Engineers, President George Washington, an engineer-surveyor, worked closely with L'Enfant to make the nation's capital one of the most beautiful cities in the world.

President/Governor Proclaim Engineers Week

State of  Louisiana

David C. Treen
Governor

Proclamation

WHEREAS, National Engineers Week will be celebrated the week of February 19 through 25, 1984; and

WHEREAS, Engineers' Week has been observed annually since 1951 during the week of George Washington's traditional birthday, in honor of the first President who was a noted military engineer and land surveyor; and

WHEREAS, Engineers throughout Louisiana will conduct special activities emphasizing the 1984 theme: "Engineers: Partners for Progress"; and

WHEREAS, educating our youth for a technological future and remaining competitive in the global marketplace are tough problems for this country. They require creative thinking and the forging of new partnerships; and

WHEREAS, all across the nation, engineers are working to make sure the U.S. is ready for a technological tomorrow;

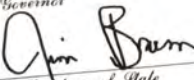
NOW, THEREFORE, I, DAVID C. TREEN, Governor of the State of Louisiana, do hereby proclaim the week of February 19 through 25, 1984, as

ENGINEERS WEEK

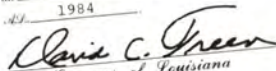
in Louisiana and urge all our citizens to honor the thousands of engineers working and living in our great state.



Attest By
The Governor


Secretary of State

In Witness Whereof, I have hereunto set
my hand officially and caused to be affixed the
Great Seal of the State of Louisiana, at the
Capitol in the City of Baton Rouge, on this
the 10th day of January
A.D. 1984


Governor of Louisiana

**Governor Dave Treen
presenting the 1984
Engineers Week
Proclamation to
LES President
Dudley Hixson, P.E.**

THE WHITE HOUSE
WASHINGTON
NATIONAL ENGINEERS WEEK

February 19-25, 1984

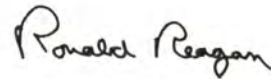
I am delighted to send warm greetings to engineers in industry, government, and universities throughout the country as we celebrate National Engineers Week.

This annual event presents an opportunity to reflect on the tremendous contributions engineers have made to American progress. All our citizens acknowledge the critical role engineers have played in maintaining our technological excellence through the years.

The decade ahead will be marked by growing competition in science and technology among the nations of the world. How well we respond to this challenge will affect both our national security and our economic progress. We know that our industrial base and research institutions are unmatched anywhere else in the world. We look to the engineering community, operating through the American free enterprise system that gave birth to the modern technological era, to utilize this nation's unique resources to create new industries and to strengthen old ones.

At the same time, I urge all of you to recognize the great importance of education, especially in science and technology, to our future. Each of us must do all we can to encourage excellence in education.

In commemoration of this special week, I want to extend my best wishes for a bright future to engineers across America. In addition, I also want to congratulate the National Society of Professional Engineers as they mark their fiftieth anniversary of service to the nation.





Highlights from LES Board of Direction Meeting

The Shreveport Chapter hosted the board meeting with 19 members and six guests present.

1. The October financial statement was accepted subject to annual audit.
2. The third membership report for 1983-84 was distributed by Eric Duck, P.E. With 38.8% of the contest time elapsed, the contest has signed up 61 new members. The Monroe Chapter is in 1st place with 44.0% of quota.
3. The LES President and Membership Committee Chairman are in the process of preparing a membership promotional letter and it will be mailed to 431 prospective members along with an application and dues invoice for both LES and NSPE membership upon completion.
4. The LES and LES/NSPE dues billing was mailed on October 28, 1983.
5. The Attorney General has rendered a decision (Opinion #83-223) which states that state officials and representatives of state agencies may not communicate with members of the Louisiana Engineers Selection Board or the Louisiana Architects Selection Board on behalf of an applicant for selection once the job is advertised and scheduled on the Board's agenda.
6. The state Mathcounts coordinator brought the board up-to-date on some contest rule changes by NSPE.
7. President Hixson has written a personal plea to Governor Treen for some action on appointing the members to the Governor's Engineering Advisory Council.
8. The Governor has not named a replacement to fill the expired term of Fred Culpepper on the State Board of Registration for Professional Engineers and Land Surveyors.
9. The Board approved two amendments to Bylaw 6 - Committees. They are as follows:
 - a. In the initial listings of Committees, 6(e) will read as follows:
 - (e) Engineering Education
1. 1. Career Guidance Sub-Committee.
(Note: Engineering Technicians Sub-Committee listing deleted)
In the description of the function of each committee, 6(e) will read as follows:
 - (e) The Engineering Education

Committee shall endeavor to encourage the teaching and promulgation of professional concepts in the engineering schools of Louisiana by conferring and cooperating with the institutions; seek continued improvement in the education of Engineers and Engineering Technicians; endeavor to encourage professionalism in the engineering educational institutions.

1. The Career Guidance Sub Committee shall develop and carry out a program designed to encourage qualified students to consider a career in engineering, and to pursue courses in high school fundamental to the foundation of a professional engineering education. The sub-committee shall work with the various career counselors in the schools to bring before them this information in an attempt to attract qualified students into the engineering colleges. The sub-committee shall encourage, and assist in, the formation of organizations whose purpose is to disseminate career guidance information and promote interest in engineering throughout the state. (Note: Sub-heading 2 is deleted)
- b. Refer to the first sentence of Bylaw 6(f) and immediately thereafter insert the following:
"In the event a vacancy exists, the President of the Society shall appoint a replacement from the body in which the vacancy exists."
10. The Board of Direction at the October and November Board meetings discussed at length campaign contribution limitations including how the public views campaign contributions from a professional engineering firm or individual. The State Board of Registration is deliberating as to whether the Board should adopt rules through the Administrative Procedures Act to limit campaign contributions by engineering

firms or individuals to the reporting limits as established in Louisiana Statute R.S. 18:1481 to 18:1511.11. The Code requires that the name of an individual or business that gives an amount exceeding the reporting limit shall be filed in a public report, thus available for public scrutiny. To aid the State Board of Registration in its deliberations, the LES Board of Direction officially adopted a unanimous position of support for establishing campaign contribution limitations in accordance with the published reporting limits of the Campaign Practices Act as adopted by the state legislature and as maybe amended by the legislature. The President will so inform the State Board of Registration as to its decision.

11. Rules for Employment of a Consultant by LDOTD - The PEPP Division met in Baton Rouge on November 10, 1983, to discuss the situation and decide what action, if any, should be taken. The division prepared a list of four things to bring before the Board and to instruct the PEPP committee members to act on as they deem best for the Society. The following is the list:

1. To request that the provision for negotiating lump sum contracts be added;
2. To ask DOTD and Mr. Pepper to request additional time from the courts for preparation of these regulations if it be required;
3. To request that the section headed "Requirements For Competitive Bidding" be removed from the procedure entirely, and if not entirely, be limited to such things as non-professional work;
4. To request concurrence of the highway department committee to respond to our request now and will they respond to any future request we might have for review; and also perhaps establish a joint committee of the highway department and the profession to meet on a quarterly basis to review any requirements.

The Board voted for the joint committee to continue with negotiations to include the above recommendations. The board also voted to instruct the LES attorney to prepare a draft of an anti-bidding law.

Continued on Page 18

Some Important Reiteration



Thomas Dudley Hixson, P.E.
LES President

My first Presidential Privilege as President of the Louisiana Engineering Society addressed the need for increased emphasis on membership in both new members and increased N.S.P.E. membership.

This same need remains somewhat unfulfilled, and the continued health and well-being of our Society is at stake. There is strength, stability and credibility in numbers.

Strength at the national level is manifested in the number of national directors we are allocated. For the past two years we have been authorized two national directors based on an N.S.P.E. membership which exceeded 1,500 members in Louisiana. The December 31, 1983 N.S.P.E. membership audit showed Louisiana with 1,452 N.S.P.E. members. As a result of our drop in N.S.P.E. membership, we were authorized only one national director at the N.S.P.E. annual winter meeting in January, 1984. In other words, Louisiana lost 50% of its voting power to effect change or to support items of interest to our profession at the national level.

Strength and credibility as reflected in

numbers of members is extremely important to our legislative endeavors. Growth in numbers of members is important to our effectiveness, and to our programs through the new ideas and energy that new members bring; and through growth in our budget, which directly affects our ability to address the many, important areas of concern to our profession.

It has been said before; it is being said now; and, I'm sure it will be said again - the life-blood of our Society and our profession is membership! I take this opportunity to again invite all engineers who are not now members of the Louisiana Engineering Society to become involved and participate in the decisions and efforts that guide the destiny of our profession. You are a professional and this is your professional organization. You can make positive things happen in your life and you must not relegate yourself to a position of non-participation where you only watch what is happening. You truly owe yourself, and your profession, more than that. Give yourself the satisfaction of professional association and participation in the Louisiana Engineering Society.



NÔTRE MÉTIER

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



ANNUAL REPORT

Louisiana State Board of Registration For Professional Engineers and Land Surveyors For 1983

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

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

Professional Engineers

Applications approved	591
Applications disapproved	58
Applications withdrawn	41

Land Surveyors

Applications approved	17
Applications disapproved	3
Applications withdrawn	0

Engineers-In-Training

Applications approved for certification	769
Applications disapproved	185

Land Surveyors-In-Training

Applications approved for certification	22
Applications disapproved	7

The following is a tabulation of the total number of Professional Engineers, Land Surveyors and Professional Engineers (Public Employees), Engineers-in-Training and Land Surveyors-in-Training holding registration and certification as of December 31, 1983:

Professional Engineers	14,515
Land Surveyors	2,849
Engineers-In-Training	3,467
Public Employees	15
Land Surveyors-In-Training	27

Below is a tabulation of the number of Professional Engineers registered in the various branches as of December 31, 1983. (Some persons are registered in more than one branch.)

Agricultural	155
Chemical	1,254
Civil	5,831
Electrical	2,293
Industrial	127
Mechanical	3,898
Metallurgical	36
Mining	33
Petroleum	1,241

A total of 1380 written examinations were administered in 1983. Of these, there were 946 examinations in the fundamentals of engineering, 38 in the fundamentals of land surveying, 333 in the principles and practice of engineering, 20 in the principles and practice of land surveying and 43 in the laws and procedures of land surveying in Louisiana. Engineering examinations were administered at examination centers in Baton Rouge, Lafayette, New Orleans and Ruston in April and November. On the same dates, land surveying examinations were administered in New Orleans.

Annual Report to the Governor

The following letter was sent to the Governor:

Dear Governor Treen:

Pursuant to the provisions of Act 568 of 1980, I submit the report of the transactions of the Louisiana State Board of Registration for Professional Engineers and Land Surveyors for the fiscal year 1983. A duly certified audit and financial statement showing the receipts and disbursements for the fiscal year ending June 30, 1984, will be sent to you at a later date.

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

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

A. J. Brouillette	09/14/84
James L. Meyer	08/02/85
Chris Demopoulos	07/31/86
James W. Reeves	01/24/87
Edward J. McNamara	07/31/87
Verdi Adam	02/07/88
Arthur R. Theis	07/29/88
H. L. Henry, Jr.	07/31/88
Francis C. Roy	08/24/89
Marion J. Chaney	11/21/89

At the annual meeting of the Board, held on January 24, 1984, the following officers were elected:

Arthur R. Theis	Chairman
Francis C. Roy	Vice-Chairman
Verdi Adam	Secretary

Very truly yours,

E. J. McNamara, P.E./PLS
Chairman of the Board, 1983

Members of the Board

Section 37:683 of Act 568 of 1980 specifies areas of professional practice for members of the Board. With reference to that section and in accordance with the Bylaws of the Board, the following list is presented:

Private Practice of Engineering:

Chris Demopoulos*, James L. Meyer and Marion J. Chaney

Engineers in Government Employment:

Verdi Adam and Arthur R. Theis

Engineers Employed in Industry:

Edward J. McNamara and Francis C. Roy

Engineers Employed in Education:

H. L. Henry, Jr. and James W. Reeves

Professional Engineer and Land Surveyor Engaged in Land Surveying:

Chris Demopoulos

Professional Land Surveyor:

A. J. Brouillette

Mr. Fred C. Culpepper's term on the Board

expired in September, 1983. Mr. Marion J. Chaney was appointed as his replacement.

Mr. A. J. Brouillette's term expires on September 14, 1984. His replacement, according to La.R.S. 37:683, . . . "shall be a registered Professional Land Surveyor who is engaged exclusively in the field of surveying" . . . The Louisiana Society of Professional Surveyors shall according to La.R.S. 37:683 C submit nomination to the governor for consideration.

*Indicates a secondary assignment



The Board Gives Recognition

The Board recognized John H. Stinson, III, P.E., at its annual meeting on January 24, 1984 . . . for his efforts in assisting the Board in its "Office Automation Project."

"Mr. Stinson's unselfish personal effort as a Professional Engineer and as the manager of the DOTD Computer Center was the key person responsible for timely installation and implementation of on-line computer terminals which became operational in October, 1983. The Board office personnel, completely unfamiliar with computers or video display terminals, were using and relied on the system within ten days of installation. In this very short period of use of this equipment and system, a decision could be made to discontinue the manual system it replaced."

This phase of the Board's office automation project for which Mr. Stinson was given recognition consisted of transferring the file of registrants (23,000 active and inactive) from a commercial computer where inputs were made indirectly thru IBM cards, to a computer where input and output is made directly from video display terminals located at work stations in the Board office. The timely installation of the system and the simplicity of its use by the Board office personnel made it possible for our recent change to "quarterly billing."

Your recent annual renewal notice may have been for a six, nine or fifteen month period instead of one year. This was the adjustment necessary for us to change to a "quarterly billing" system. "Quarterly billing" means that one quarter of the registrants are billed each quarter of the year.

I am very pleased to report that from the Board office point of view that the recent renewal cycle had fewer problems than the past. We still had a number of erroneous addresses for registrants. However, with the VDTs (video display terminals) giving us direct access to the registrants' files, the time delay in making address changes has been reduced to a few seconds (weeks and months in our older system).

John, my personal thanks for your contribution.

Disciplinary Action

Reprimand for Edward M. Alba, P.E. (#01466) 615 Baronne Street New Orleans, LA 70113

A hearing was held on November 21, 1983 at the offices of the Louisiana Board of Registration for Professional Engineers and Land Surveyors in the matter of Mr. Edward M. Alba. Mr. Alba is registered with the Board as a professional engineer in Mechanical and Electrical Engineering. Mr. Alba's firm, Edward M. Alba & Associates, Incorporated, is also registered with the Board.

Mr. Alba pled guilty in the United States District Court for the Eastern District of Louisiana on June 29, 1983 to a violation of 18 United States Code, section 371. This statute prohibits conspiracies to commit an offense against or to defraud the United States of America or one of its agencies. Mr. Alba received suspended sentence and was placed on supervised probation for five years and fined six thousand dollars as a result of his felony conviction.

In December of 1979, Mr. Alba contracted with the Housing Authority of New Orleans (HANO) to modernize the electrical design of the Iberville Housing Project in New Orleans. Part of the work to be performed under the contract involved an inspection of each unit in the project. Mr. Alba had fear and concern about sending his own employees into each of the 1200 units; thus he entered into a contract with the acting technical services supervisor for HANO to have these services provided by a private corporation owned by the supervisor. These services were performed and Mr. Alba paid for them by check.

This agreement between Mr. Alba and the HANO supervisor constituted a conspiracy to

defraud the United States of its right to have the contract administered by employees of HANO free from bias, corruption and conflict of interest, to-wit a violation of 18 United States Code, section 371. There are no allegations that Mr. Alba was awarded the contract with HANO due to his relationship with the technical services supervisor or that any portion of the work performed by Mr. Alba or his firm was deficient. However, Mr. Alba's agreement with the supervisor that a firm owned by the supervisor would perform part of Mr. Alba's contract constituted a violation of federal law and of an express provision of Mr. Alba's contract with HANO.

By a unanimous vote at its regular meeting on November 22, 1983, the Board of Registration for Professional Engineers and Land Surveyors approved a public reprimand of Mr. Alba for having committed this felony.

It should be noted that the name of Mr. Alba's firm, Edward M. Alba and Associates, Incorporated, was inadvertently and erroneously omitted from the roster of registered engineering firms for the current year. Edward M. Alba and Associates, Incorporated is currently registered with the Board.

BOARD MEETING NOTICE

The Louisiana State Board of Registration for Professional Engineers and Land Surveyors will hold its 1984 regular meetings at 1055 St. Charles Avenue - Suite 415, New Orleans, La. 70130 on the following dates:

1984

Mar. 27
May 22

July 24
Sept. 25
Nov. 27

EXAMINATION SCHEDULE

SPRING	FALL
Apr. 14, 1984	Oct. 26, 1985
Apr. 20, 1985	Oct. 27, 1984

Fundamentals of Engineering
Examination (8 hrs.)

X

X

Fundamentals of Land Surveying
Examination (8 hrs.)

X

X

Principles and Practices of
Engineering (8 hrs.)

Civil (Including Structural & Sanitary),
Mechanical, Chemical, & Electrical

X

X

Agricultural, Industrial,
Metallurgical, Mining &
Petroleum

X

Principles and Practices of
Land Surveying (4 hrs.)

X

X

Laws and Procedures of Land
Surveying (4 hrs.)

X

Apply at least six to eight months prior to an examination. Board approval *must* be given for anyone to be scheduled for an examination.

The applicant and the Board depends upon information provided by third parties in the processing of an application, therefore no assurance can be given that one will be scheduled for a specific examination.

LES Spring Meeting - March 22-23-24, 1984

The 1984 convention is sponsored by the Lafayette Chapter.

MAKE PLANS TO ATTEND - USE THE HOTEL RESERVATION AND REGISTRATION COUPONS ATTACHED
(Block of rooms released March 8, 1984).

PROGRAM

THURSDAY, MARCH 22, 1984

11:30 a.m. - 5:00 p.m.	REGISTRATION (Lobby)
12:00 Noon	Golf Tournament, Acadiana Club
2:00 p.m.	Tennis Tournament, Acadiana Club
7:00 p.m.	Early Bird Cocktails & Dinner Pat's Restaurant, Henderson, LA

FRIDAY, MARCH 23, 1984

8:00 a.m. - 12:00 Noon	REGISTRATION (Lobby)
8:30 a.m. - 10:20 a.m.	Presentation of Student Papers
10:30 a.m. - 2:00 p.m.	Council of Deans Meeting
10:30 a.m. - 12:00 Noon	Committee Meetings
12:15 p.m. - 1:15 p.m.	Luncheon
1:30 p.m. - 3:15 p.m.	Practice Division Meetings
4:00 p.m. - 5:00 p.m.	LES Nominating Committee
4:30 p.m. - 5:30 p.m.	LES/Political Action Committee
5:00 p.m. - 6:00 p.m.	LEF Meeting
6:00 p.m. - 6:30 p.m.	Registration for Banquet
6:30 p.m. - 7:30 p.m.	Cocktails (cash bar)
7:30 p.m.	Awards Banquet

SATURDAY, MARCH 24, 1984

7:30 a.m.	Breakfast (Ladies & Men)
8:30 a.m. - 9:30 a.m.	LES General Membership Meeting
9:30 a.m.	LES Board of Direction Meeting

LADIES PROGRAM

THURSDAY, MARCH 22, 1984

12:00 Noon	Hospitality room open
12:00 Noon	Golf Tournament
2:00 p.m.	Tennis Tournament
7:00 p.m.	Early Bird Cocktails & Dinner

FRIDAY, MARCH 23, 1984

8:30 a.m.	Hospitality room open
9:30 a.m. - 2:30 p.m.	Tour Historic Washington, La. Lunch - Steamboat Restaurant
6:30 p.m. - 7:30 p.m.	Cocktails & Dinner
7:30 p.m.	Awards Banquet

SATURDAY, MARCH 24, 1984

7:30 a.m.	Breakfast
8:30 a.m.	Hospitality room open
9:00 a.m.	Color Analysis

Holiday Inn Central - Lafayette

REGISTRATION COUPON - LES SPRING MEETING Holiday Inn Central - Lafayette

Name _____ Spouse's Name _____

Address: _____

CLIP & MAIL TO:

City _____ Zip _____

LES

P.O. Box 2683
Baton Rouge,
Louisiana
70821

	No. Tickets	Amount
Registration (Member)	_____	\$17.00
Registration (Spouse)	_____	\$3.00
Early Bird Dinner, Thursday	_____	\$18.00
Friday Luncheon	_____	\$6.00
Awards Banquet, Friday	_____	\$16.00
Breakfast, Saturday	_____	\$5.50
Ladies Tour, Friday	_____	\$20.00
Golf, Thursday	_____	\$20.00
Tennis, Thursday	_____	\$7.00

☐ Payment Enclosed ☐ Will Pay at Desk

TOTAL _____

MAKE CHECKS PAYABLE TO LES

PLEASE PREREGISTER

HOTEL RESERVATION CARD LES SPRING MEETING - LAFAYETTE

CLIP & MAIL TO:

(Please type or print) _____ date of arrival _____

Holiday Inn Central
P. O. Box 91807
Lafayette, Louisiana
70509
(318) 233-6815

Name _____ date of departure _____
(Last) (First)

Type of Accommodation _____ Number in Party _____
KING LEISURE (IF AVAILABLE) DOUBLE KING (IF AVAILABLE)

Single - One
Person - \$49.00

Double - Two
Persons - \$55.00

Name of Group LOUISIANA ENGINEERING SOCIETY

Address _____

City, State _____ Zip _____

RESERVATIONS
MUST BE MADE BY
MARCH 8, 1984.

Estimated time of Arrival _____ Phone (a/c) _____

CHECK IN TIME 2 PM CHECK OUT TIME 12 NOON

Reservations held until 6 PM. If later arrival, we require a major credit card number or 1 nights deposit. To assure obtaining accommodations and rates guaranteed to your group, your reservation must be made on this card. Credit Card # _____

If Executive or King Rooms are not available. Twin Doubles will be substituted.
EACH ADDITIONAL PERSON \$5.00 (Maximum 4 in room).

Six LES Members To Be Honored

Six outstanding LES engineers will be honored on March 23, in Lafayette, at the annual LES spring meeting:

George J. Groh, P.E., New Orleans, recipient of the A. B. Paterson Medal Engineer in Management.

Frederick J. Brown, P.E., New Orleans, recipient of the Charles M. Kerr Public Relations Award.

John E. Chance, P.E., Lafayette, recipient of the James M. Todd Technological Accomplishment Award.

T. Dudley Hixson, P.E., Alexandria, recipient of the Andrew M. Lockett Civic Activities Medal.

Arthur A. DeFraithe, Jr., P.E., Houma, recipient of the Leo M. Odom Award for Services to the Profession.

James A. Ragland, P.E., Baton Rouge, recipient of the F. Hugh Coughlin Award of Merit for Young Engineers.

The award winners will be featured in the April issue of the *Louisiana Engineer*.

NSPE Celebrates

The year 1984 is special for the National Society of Professional Engineers. NSPE is celebrating its golden anniversary with the theme "50 Years of Service - A Heritage for the Future." NSPE and its state and chapter organizations have planned a variety of special activities for the year.

In conjunction with National Engineers' Week, NSPE will sponsor two major events. During the week, NSPE chapters throughout the country will hold the first level of competition for MATHCOUNTS. MATHCOUNTS is aimed at fighting math illiteracy. Students have been coached since the start of the program in September. Teachers have used coaching materials distributed by NSPE chapters.

The local contests will involve teams of seventh and eighth grade students facing off in fast-paced oral math ciphering matches and written exams on such subjects as statistics, polynomials, linear algebra and probability.

Winners in the local competitions will progress to state matches in April. Finalists meet in Washington, D.C., May 19, for the national championship.

MATHCOUNTS is sponsored by the National Society of Professional Engineers, the CNA Insurance Companies, the National Council of Teachers of Mathematics and the National Science Foundation.

On Friday, February 24, NSPE will host a special Engineers' Week banquet in New York City at the famous Windows on the World restaurant in the World Trade Center. Currently NSPE and the Polytechnic Institute of New York plan to award President Reagan an honorary engineering degree, via a satellite video conference. Plans are underway to link as many engineering banquets around the country as possible via satellite, a first for the Society.

In addition to these National Engineers' Week activities, special anniversary plans include a kick-off celebration at the Society's Winter Meeting in San Francisco, January 16-21. At that meeting, NSPE will announce the results of a search for the most outstanding U.S. engineering achievements of the last 50 years.

During the Annual Meeting, to be held in Washington, D.C., July 9-14, NSPE plans a joint event with the National Park Service and U.S. Army Corps of Engineers marking the 100th anniversary of the Washington Monument and the presentation of a special gift from professional engineers to the American people. Washington's National Gallery Orchestra will premier an orchestral suite composed and directed by Conductor Richard Bales, specially commissioned by NSPE for the anniversary celebration.

September 19-21 in Kansas City a "mid-continent gathering" is being planned to commemorate the signing of the original charter.

In addition, NSPE's practice divisions have scheduled a number of events. For example, Professional Engineers in Private Practice will sponsor a colloquium at Purdue University on improved quality of engineering service. Special emphasis will be placed on the impact of computers and other electronic equipment.

The Professional Engineers in Industry have announced a \$10,000 contribution for completion of a major exhibit on the "Indus-

trialization of America" currently under development at the Museum of American History in Washington, D.C., a branch of the Smithsonian Institution. A special reception and behind-the-scenes tour will be held during the Society's Washington meeting.

Issues Opinion

The Attorney General has rendered a decision (Opinion #83-223) which states that state officials and representatives of state agencies may not communicate with members of the Louisiana Engineers Selection Board or the Louisiana Architects Selection Board on behalf of an applicant for selection once the job is advertised and scheduled on the Board's agenda.

Joseph Krebs Named To Chamber Chairmanship

Joseph J. Krebs, Jr., chairman and chief executive officer of J. J. Krebs & Sons, Inc., and a member of LES since 1976, will assume the office of Chairman of the Board of the New Orleans Chamber of Commerce on December 13.

As chairman, Krebs will strive to further the goal of continued economic growth through long-range planning. This goal will be based on regional trends information to be supplied by the newly formed Future Studies Committee, among other sources.

Krebs, a native of New Orleans, is a graduate of Tulane University in civil engineering and a registered professional engineer in

1984 Optimistic for Engineers

The 1984 Endicott Report, Northwestern University, reports that college graduates will have 20.3 percent more job offers in 1984. Two-thirds of the 262 companies polled by Northwestern's Endicott report said they will hire more graduates with bachelor's degrees in 1984. They plan to recruit 28,615 graduates, compared with 23,781 in 1983.

This will reverse the decline in campus job offers, which hit a 25-year low in 1983. In 1984, engineers will be the most-sought-after and offers to business and computer science grads will rise 28 percent.

Below are the average starting salaries that the 262 U.S. companies say they plan to offer graduates in the following fields who start work in 1984:

Bachelor's degrees

Major	Salary	% Increase from 1983
Engineering	\$26,844	3.5%
Accounting	20,172	3.7
Sales and marketing	19,620	4.2
Business administration	19,416	1.5
Liberal arts	19,344	4.2
Computer science	24,864	5.8
Chemistry	24,192	2.9
Mathematics or statistics	22,416	8.5
Economics or finance	20,484	4.6
Other fields	23,136	4.2

Master's degrees

Engineering	\$30,960	2.1%
Other technical fields	29,160	4.4
M.B.A., technical B.S.	28,428	5.4
M.B.A., non-technical B.A.	28,764	4.2
Accounting	24,480	4.3
Other non-technical fields	27,372	4.3

Source: 1984 Endicott Report, Northwestern University



Leta Bueto
Executive Director
Louisiana Engineering Society

Louisiana and Mississippi, as well as being a licensed land surveyor in Louisiana.

"Finger Walking" Made Easier For Potential Clients

Beginning in 1984, engineers will be listed in the Yellow Pages under the heading Engineers — Professional. The new heading structure is similar to those available to doctors and lawyers and replaces the 126 national and regional headings currently used by engineers throughout the country. In addition, engineers may opt to be listed in a separate guide to professional specialties, which calls out some 38 engineering disciplines.

The heading structure and specialty guide format were developed by Bell Telephone in conjunction with NSPE. Together, the innovations are expected to give engineers "more consistent and more organized" representation in the Yellow Pages.

William R. Ratliff Receives PEPP Award

William R. Ratliff, P.E., has been named recipient of the 1983-84 Professional Engineers in Private Practice (PEPP) Chairman Award from the National Society of Professional Engineers (NSPE). The award, which will be presented at NSPE's Winter Professional Meeting in San Francisco, goes to an individual of the NSPE/PEPP Chairman's own choosing. PEPP Chairman Howard B. Sherman has selected Ratliff "primarily because of his PEPP-like adherence to the principles of professional selection, one of the focal issues in this year's PEPP program."

Ratliff is principal owner of Bucher, Willis & Ratliff Consulting Engineers, Planner & Architects, Mount Pleasant, Texas. Before taking on that responsibility, he served as Senior Vice-President of Turner, Collie & Braden, Inc., and was Founding Partner of Knowlton-Ratliff-English-Collins.

Among Ratliff's many professional accomplishments are his 1983 chairmanship of the Committee on Federal Procurement of A/E Services (COFPAES), as well as his 1981-82 tenure as President of the American Consulting Engineers Council, and his past service as President of the Consulting Engineers Council of Texas. He is an active member of various professional societies including the American Society of Civil Engineers, the National Society of Professional Engineers, the National Construction Industry Council and the Quality Improvement Task Force.

Ratliff resides in Houston, Texas, with his wife Sally and their three children.

University of Missouri Wins NSPE Award

The National Society of Professional Engineers (NSPE) recently announced its selection of the University of Missouri-Columbia (UMC) as recipient of the 1984 Koerber Award for engineering professionalism. The University has 3,361 full-time and part-time graduate and undergraduate engineering students.

"UMC has a long, active history of support for professionalism," Dean William R. Kimel, P.E., pointed out in the submission. As early as 1904, the Engineering Department heads were "not only able educators but . . . imparted to their students that professional consciousness which had just begun to be felt by practicing engineers."

Among the reasons for the selection of the University of Missouri-Columbia for the

award are the following:

- The concepts of professional and ethical practice are a fundamental part of each of the design courses at the school.
- There are 22 student engineering organizations active on the UMC campus.
- A lecture and discussion on "Professional Registration and Professional Ethics" was a

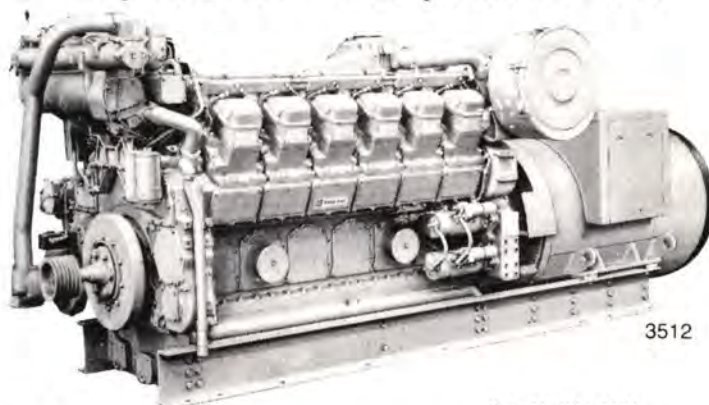
Continued on Page 17

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The Spec Sheet

Consulting Engineers Section

Warren J. Wilder
CEC/L Executive Director

IN MEMORIAM

**Alfred G. Rayner, P.E., F.ACEC
(1920 - 1983)**

Mr. Alfred G. Rayner, Baton Rouge Consulting Engineer, died Sunday, December 18, at his home at 1331 Knollwood Drive. He is survived by his wife, Pearl Penner Rayner, and three children, Harry Arthur Rayner, Sarah Rayner Dasgupta, and Mitchell Albert Rayner.

Mr. Rayner was a native of New York City who made his home in Baton Rouge since 1952. He was a graduate of Tulane University in Civil Engineering in 1949 and was a registered Professional Engineer in the states of Louisiana and Mississippi, and a registered Architect in the state of Louisiana. He began a noted and successful practice of structural engineering with the opening of the office of Alfred G. Rayner, Consulting Engineer in Baton Rouge in 1957. That practice grew into the present firm of Rayner & McKenzie, Consulting Engineers, of which he was founding member and senior partner.

Among Mr. Rayner's more notable accomplishments of his field are the structural design of numerous area buildings including the Commerce Building, the new City National Bank Building, the main telephone building, and portions of the Centroplex in downtown Baton Rouge; and the structural design of the unique L.S.U. Student

Union, the Troy Middleton Library, and the new L.S.U. Field House on the Louisiana State University campus.

In addition to the structural design of many schools, churches, public and commercial buildings, Mr. Rayner was structural engineer for many sugar refineries throughout the world, including major refineries in the Sudan, Central America, South Florida, the Bahama Islands, South Texas, and the surrounding area of Louisiana.

Mr. Rayner has held membership in many engineering organizations, including the American Concrete Institute, the American Consulting Engineers Council, Prestressed Concrete Institute, the American Society of Civil Engineers, and the Louisiana Engineering Society. He was one of the first members and president of the infant Gulf Institute of Consulting Engineers, established in 1950, which has grown over the years into the Consulting Engineers Council of Louisiana, a member organization of the American Consulting Engineers Council, the leading organization of consulting engineers in private practice in the United States. He was the recipient of the A. E. Wilder, Jr. Award in 1983 for outstanding service to the Consulting Engineers Council of Louisiana.

Self Disenfranchisement

Many design professionals believe that their clients, having paid for services, are entitled to own the plans and specifications. We know of a structural engineer who contracted with an owner to design a restaurant on a one-time fee basis. The contract contained no disclaimer language relating to ownership of documents.

The engineer's design was for a restaurant to be constructed on South Carolina soil for a South Carolina client. The design was good, the restaurant was built and the client was happy.

The client was also a good businessman. The restaurant flourished, spawning other restaurants just like it all over the country — all based on those original plans for the one-time fee of \$2,800.

As the franchise proliferated, one of the restaurants in Texas experienced some floor slab and settlement problems. A good design in South Carolina is not necessarily a good design in Texas. Of course, project footings and soil surveys should have been coordinated for each separate place. All engineers know that, but all businessmen do not. The abrupt end to the story is that the structural engineer was drawn into a lengthy and expensive lawsuit, perhaps one of many — all for the lack of a few simple words in the contract.

If you surrender ownership of your plans and specifications, they may be reused without your knowledge. Such reuse creates uncontrollable and immeasurable exposure to claims of professional liability. The wise design professional will retain ownership of his plans and specifications, pointing out that his client is paying for professional services and that the plans and specifications are simply instruments of that service, not independent products subject to transfer or sale.

DPIC strongly recommends that you include in your contract an "Ownership of Documents" clause that clarifies this issue. Be sure that you consult with an attorney to compose language that might look something like this:

OWNERSHIP OF DOCUMENTS

Plans and specifications, as instruments of service, are and shall remain the property of the Design Professional, whether the project for which they are made is executed or not. The Owner shall be permitted to retain copies, including reproducible copies, of plans and specifications for information and reference in connection with the Owner's use and occupancy. The plans and specifications shall not be used by the Owner on other projects, for additions to this project, or for completion of this project by others except by agreement in writing and with appropriate compensation to the Architect/Engineer provided the Design Professional is not in default under this agreement.

Occasionally your client may insist that you transfer ownership of documents. When this happens you might, with the guidance of your attorney, incorporate a clause into your contract similar to the following:

OWNERSHIP OF DOCUMENTS

The Owner acknowledges that the Design Professional's plans and specifications are instruments of professional service. Nevertheless, the plans and specifications prepared under this agreement shall become the property of the Owner upon completion of the work. The Owner agrees to hold harmless and indemnify the Design Professional against all damages, claims, and losses, including defense costs, arising out of any use of the plans and specifications on any other project, for additions to this project, or for completion of this project, without the written authorization of the Design Professional, provided the Design Professional is not in default under this agreement.

Note: These issues apply also to subconsultants. If you work on a subconsulting basis, retain ownership of documents whenever possible. Use contract language that identifies your ownership and prohibits reuse of your plans and specifications without your written authorization.

There is one other safeguard that you can take to protect your ownership and use of plans. Apply a copyright stamp to each plan which states "Copyright © 1984 XYZ Design Professionals and Associates, All Rights Reserved." This alerts all third parties, such as contractors, suppliers and prospective purchasers that unauthorized use of the materials could subject them to an action for copyright infringement. Next, register the copyright. You need not file an application to register until an infringement to your copyright occurs. Writers of various articles, however, recommend that you should complete registration as soon as possible, since you may not file an infringement suit until you have registered the copyright. Also, certain statutory damages and attorney's fees cannot be awarded for any date prior to registration (unless registration is effective within three months of the first publication).

Finally, to register a copyright is not expensive — \$10.00. You can obtain copyright forms from Register of Copyrights, Library of Congress, Washington, D.C. 20559.

There are four copyright forms, two of which seem to apply to the work of design professionals. Form TX is used for literary works and all other works expressed in words or other verbal or numerical symbols. Form VA covers pictorial, graphic or sculptural works and includes technical drawings. If the documents you seek to protect are descriptive in words or numerical symbols, probably Form TX would be appropriate. Form VA applies to the drawings themselves.

It is important to recognize that Patent, Trademark and Copyright law is a special field of the law. Only someone admitted to practice before the United States Patent Office should give you legal advice regarding these matters. We offer this information as a guide, pointing you in the right direction—toward a good patent attorney.

Note: DPIC is the acronym for Design Professional Insurance Corp., a firm in Monterey, California, specializing in Professional Liability Insurance.

From DPIC Communiqué January 1984

CATCHING ON TO CATCHING ERRORS

**Especially for Louisiana
Architects, Engineers, and
their Employees.**

The Louisiana Institute of Building Sciences and LAAPRO, (the professional liability insurance program of the Louisiana Architects Association) are pleased to be joint sponsors of this special—staying out of trouble seminar.

Since a large percentage of the liability exposure suffered by design professionals comes as a result of errors and omissions of their employees, we hope that, as an incentive to attend, the principals of their firms will pay for their registration.

Our Speaker: Hollye C. Fisk is a practicing attorney and an AIA architect. A member of the firm of Howard M. Greenburg, Attorney-at-Law, Dallas, Texas, Mr. Fisk chairs the Professional Liability Committee of the Texas Society of Architects and is the author of "LIABILITY ALERTS", a TSA monthly newsletter supplement. He is a frequent lecturer on liability loss prevention at AIA seminars and specializes in construction litigation

SEMINAR SCHEDULE

9 a.m. - 12:30 p.m. Saturday, Feb. 18, 1984
Holiday Inn Fat City, (I-10 At Causeway), Metairie, LA

What Is Malpractice?

- "Malpractice" Defined
- Bases For Liability
- Profile of Claims

Sources Of Duty

- The Contract
- Standard Language
- Competence Standard
- Government Standards
- Industry Standards
- Statutes & Regulations

Contractual Liability

- The Contract Language
- Promises & Conditions
- Avoiding Warranties
- Interpretation Problems
- Contract v. Tort

Professional Negligence

- Standard of Care
- Use of Experts
- Statutory Violations
- Misrepresentation
- Degrees of Negligence
- Proximate Causation

Getting The Client

- Evaluating The Client
- Evaluating The Project
- Representations to Client
- Accepting The Commission
- Negotiating The Contract
- Scope of Services

Schematic Design

- Defining The Program
- Coordination of Disciplines
- Budgeting & Scheduling
- Schematic Cost Estimates
- Need for Accuracy
- Design Changes
- Escalation
- Schematic Approval

Design Development

- Preparing Drawings
- Outlining Specifications
- Code Verifications
- Updating Estimates
- Client Review

Construction

Documents Phase

- Legal Effect
- Bid Documents
- Owner Approvals
- Final Cost Estimates

Construction Observation

- The Project Rep.
- Approval of Shop Drawings
- Change Orders
- Inspection & Tests
- Stop Work Orders
- Payment Authorization

*MALPRACTICE

PREVENTION*

- Knowing the Rules
- Keeping Client Informed
- Client Approvals
- Documenting Decisions
- Internal Procedures

REGISTRATION FORM

"Catching On to Catching Errors"

February 18, 1984, Holiday Inn Fat City (I-10 at Causeway),
Metairie, LA

1st Architect or Engineer Principal in Firm	\$50.00	\$ _____
2nd Principal in Same Firm	\$35.00	\$ _____
Employee Attending Without Principal of Firm	\$25.00	\$ _____
Employee Attending With Principal of Firm	\$15.00	\$ _____
SUB TOTAL.....		\$ _____

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List name and status of each registrant. Mail this form with registratin fee to: **LIBS,**
521 America Street, Baton Rouge, LA 70802.



John E. Coon

1983 Louisiana Engineering Foundation Graduate Scholarship

John E. Coon, Louisiana State University, will receive the Louisiana Engineering Foundation's 1983 Graduate School Scholarship at the Baton Rouge Chapter Engineers' Week Banquet on February 23, 1984, at LSU. The \$500 Foundation scholarship is presented annually to a graduate student of engineering who expresses a sincere desire to enter the teaching profession at the university level. Vincent A. Forte, P.E., President of the Louisiana Engineering Foundation, will make the presentation.

John Coon was born in Fulton, New York, the son of Mr. and Mrs. John F. Coon. He is a graduate of G. Bodley High School, Fulton, New York, and Clarkson College of Technology, Potsdam, New York, with BS and MS degrees in chemical engineering. He is presently enrolled in the chemical engineering Ph.D. program at LSU, Baton Rouge. He maintained a 3.71 grade point in undergraduate study and a 3.4 in graduate school.

After graduation with his MS degree, he went to work at Exxon for four years before deciding in 1982 to obtain his Ph.D. and enter the teaching profession.

John Coon is single and states that his career plans are two-fold. "First to be an effective researcher, and second, to be an effective and conscientious teacher, meeting the various needs of my students."

The Louisiana Engineering Foundation is a tax-exempt organization founded in 1978 by the Louisiana Engineering Society. Its goals are to provide opportunities to practicing engineering professionals for development programs; to provide scholarships to serve the educational needs of young men and women pursuing a career in engineering; and to maintain a Center to serve all engineers. The Foundation is headquartered at 1213 Nicholson, Baton Rouge.

For Young Engineers Only

"HARD TIMES"

"I finally know what distinguishes man from other beasts: financial worries" (The Journal of Jules Renard).

Could it have been that Jules Renard was a young professional? Financial worries threaten to disturb the minds of young engineers everywhere. It tends to sometimes distract our thoughts and creativity away from our work and focus them rather on worries and schemes of improving our financial standing in life. We read books constantly seeking a secret formula to engineer our way to financial success. Could it be that we have even been "tempted in the throes of desperation" to insert our own name as grantee on one of those numerous funding applications?

It is disconcerting to think that young professionals must endure this "poor-man" syndrome. Oh mighty alma mater, forgive us when we say, "Maybe I should have been a doctor or a plumber." Who was it that told us of all the money that engineers make? Could it have been our engineering instructors at college?

College contributes largely to the financial worries faced by young engineers. For the married and unmarried student, college tuition and activities rapidly exhaust our funds and often leave us with debts. Then, there are those things which we put off buying in school, which can no longer be postponed after graduation. If you were to drive to work in the morning in the old college clunker, you may find your assigned parking space about ten blocks away in your competitor's parking lot.

Who would be caught dead in the same old car once you have graduated? The lifestyle of a young professional must be altered at the cost of much scarce money after graduation. As time progresses, the situation gradually snowballs as houses are bought, children are born and our overall social standing generally exceeds finances.

What are some of the ways to move away from those financial concerns? The first key is to balance out your lifestyle, commit yourself to growing gradually. Work within the system to advance yourself both professionally and financially, ever weighing the pros and cons. If anyone can plan financially, as an engineer - you can; budget both immediate and long-term needs. The most important thing is attitude, be positive in concentrating on what you have, rather than

what you do not have. Remember, a positive attitude is contagious not only at work but also at home, and best of all - it's free. Bon soir!

Promotions announced at Waldemar S. Nelson and Company, Inc.

The Board of Directors of Waldemar S. Nelson and Company, Inc., Engineers and Architects, announced the promotion of the following officers: Richard J. Cabirol, P.E., to Senior Vice President and Thomas G. Ehrlicher, P.E., to Vice President. The firm also announced the election of Charles J. Venezia, P.E., to Assistant Vice President.

Our congratulations to these members of the Louisiana Engineering Society.

Carriere Promoted

Blaise M. Carriere, P.E., has been named director of business development and an associate of the firm of Howard, Needles, Tammen & Bergendorf.

Carriere has been a member of LES since 1963. He received his BS and MS from Louisiana State University in civil engineering. Blaise is recipient of the 1973 F. Hugh Coughlin Young Engineer Award. He has served the engineering profession well working with his fellow engineers on both local and state committees.

Our congratulations Blaise!

POTPOURRI

Continued from page 13

well-attended event.

- The Croft Lectures feature internationally significant persons, usually engineers by training, who stand as shining examples of professional excellence.

- One seminar of the undergraduate seminar series is devoted to professional practice and ethics.

- Professional registration is strongly encouraged among both faculty and graduating seniors. Refresher courses are promoted for those who need them.

- Two courses are offered stressing the human factors in engineering.

The award consists of a plaque and stipend of \$1,000 made possible by a grant from the late Erhardt C. Koerber, P.E., a designer, inventor and industrialist who was active in both the engineering profession and the arts. It recognizes schools of engineering that provide noteworthy programs to instill professionalism in engineering students and that aid NSPE in communicating the need for professionalism. The presentation will take place at the Society's Winter Meeting in San Francisco January 20. The University of Missouri-Columbia was nominated by the Missouri Society of Professional Engineers.

BOARD MEMBERS

Continued from page 6

12. The LES will contribute \$100 to the Louisiana State Science Fair.
13. The Board granted approval for Louis Bacon, NSPE President, to attend the spring meeting as guest speaker at the awards banquet. All expenses will be absorbed by LES except travel which will be paid by NSPE.
14. Louisiana has always been in the forefront of the Employer Recognition Program and has strongly supported the concepts contained within the program. The current philosophy of candidate screening, considered acceptable by NSPE, has raised considerable comment within the State.

LES PEI feels strongly for an employer to be listed under the program, the company should have completed the checklist. We do not believe that this checklist should be optional but rather a necessary part of any new listing or renewal.

At the last statewide PEI meeting, PEI approved the policy that completion of a checklist is a necessary prerequisite for a Louisiana employer to be recognized within the

scope of the Employer Recognition Program. LES/PEI requested that a resolution be brought to the attention of the PEI Board of Governors and that they be asked to make this the NSPE-PEI Policy.

NSPE has advised LES/PEI that the thrust of the resolution does raise some procedural issues, particularly as the Employer Recognition Program is not limited to industrial employers, but is open to, and includes a fair number of, government, education, consulting, and construction employers.

While Louisiana can certainly establish any requirements it wishes for any or all Louisiana employers, and while NSPE PEI could recommend restrictions on industrial employers at the national level, it could not itself impose any checklist requirement without approval by the NSPE Board of Directors. Since it is likely that any recommendation from PEI would be referred to the NSPE Professional Employment Committee, it makes sense to ask the chairman to bring the suggestion to his committee which will meet before the January NSPE meeting.

PEI is requesting that the LES Board

endorses the resolution as it will give more credence. PEI feels very strongly that the checklist should be maintained as a requirement for the Employer Recognition Program.

The Board voted unanimously to support the resolution.

15. The Board gave authorization for the Executive Director and President-Elect to attend the NSPE Winter Meeting in San Francisco in January.
16. Gray Sexton, Wilson & Sexton, LES attorneys, reported that his firm has completed preparation of an Amicus Curiae brief on behalf of the LES in connection with *Vicon, Inc. vs City of New Orleans* through the New Orleans Aviation Board.
17. A newspaper article was brought before the Board regarding the possibility of designating the Lake Pontchartrain-Lake Maurepas Basin a special management area, and the appointment of an advisory council to help identify issues, set priorities, draft guidelines and devise a management mechanism. The list of organizations from which the advisory council will be named was very prestigious, but the list did not include a representative from the engineering sector. The Board voted to request that Frank Simoneaux, Secretary, Department of Natural Resources, consider an appointment from the engineering profession to serve on the council.
18. LES is having dialogue with the NSPE Educational Foundation on its recent decision to remove the ACT as an acceptable scholastic exam for the NSPE scholarship competition.
19. President Hixson read a letter from Dean Richard Matula to Mrs. Ruth Miller, LSU Board of Supervisors, advising that the Louisiana Council of Engineering Deans strongly opposes the development of any engineering or engineering-related programs at any university, college or institution not already offering accredited engineering programs in the State of Louisiana.

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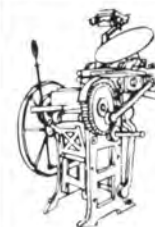
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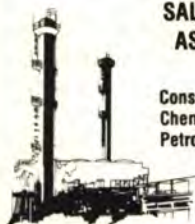
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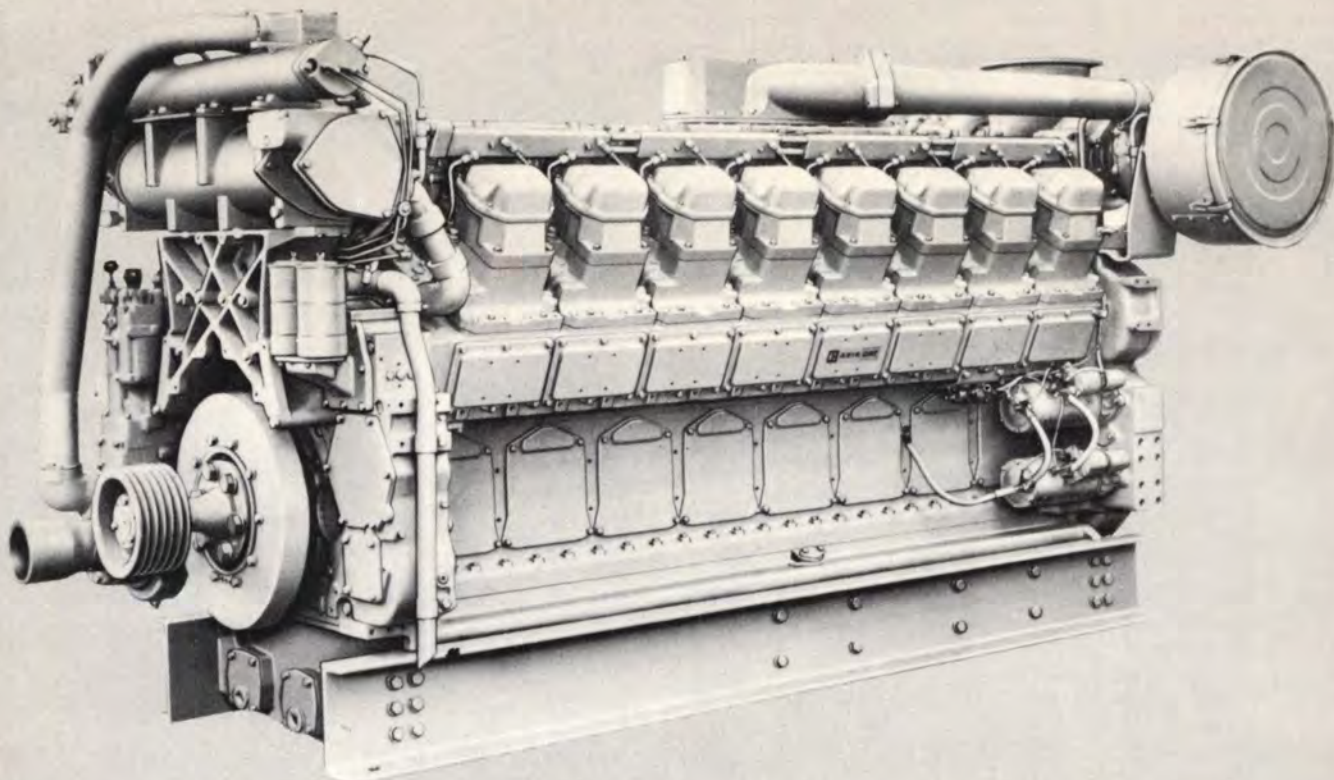


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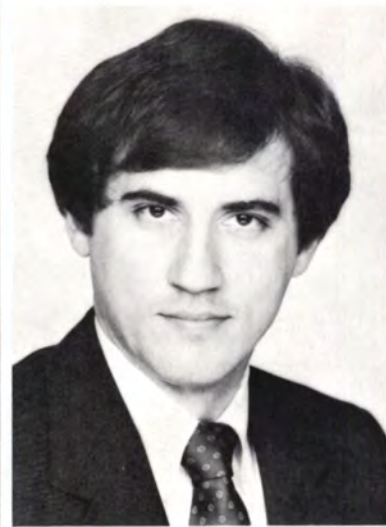
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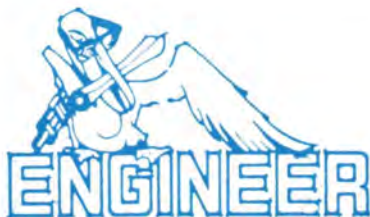
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ABOUT THE COVER

The Louisiana Engineering Society honored six outstanding engineers. See story on page 6.

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"OPPORTUNITIES: WORKING IN LOUISIANA" A JOB PROGRAM THAT'S REALLY WORKING!

Since last fall, a new job program for our state has been underway. Funded through a grant from the State of Louisiana and with major underwriting from Louisiana's investor-owned electric companies, "Opportunities: Working in Louisiana" is a series of ten one-half hour television programs on career education. It's now being shown on Public Broadcasting stations in the state and to virtually all high schools on Instructional TV. The programs will also be made available to business and civic organizations. The primary aim is to

help people find jobs, or find them better jobs, and a career counseling service is available through a toll-free number given at the end of each program.

One of the primary goals of your investor-owned electric companies has always been to improve our economy by bringing new industry to our state and creating job opportunities. "Opportunities: Working in Louisiana" is a step in that direction and an example of how government and industry can work together to better our way of life.



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A Time for Action



Thomas Dudley Hixson, P.E.
LES President

An imposed limitation on campaign contributions was a subject previously addressed in this column. The subject has been an item of discussion at every meeting of the L.E.S. Board of Direction this year.

The Louisiana Engineering Society and the Consulting Engineers Council/Louisiana both formally contacted the Louisiana State Board of Registration for Professional Engineers and Land Surveyors, requesting that the Board adopt a rule prohibiting the giving of a campaign contribution, by a registrant of the Board, which exceeds the legally established reporting limit. The Board of Registration elected not to pursue the adoption of such a rule.

The positive reasons for adoption are all around us. As has been previously pointed out, the N.S.P.E. Code of Ethics prohibits the giving of any gift or contribution in return for favors, or in an amount which can be reasonably construed by the general public to be given in return for special consideration.

It is a fact that campaign contributions which exceed the reporting limit are public information, and subject to the critical scrutiny of the public, and for their use, as they formulate their opinions of our profession. The premise that every individual has a right to spend his money as he sees fit is not valid when applied to a profession in which we must

depend on public trust and confidence, and when the amount given may be subject to public review. Upon entering the profession we have subscribed explicitly and/or implicitly to rules of conduct in the furtherance of public trust of our profession.

Large campaign contributions, publicly displayed, do not promote trust in, nor positive public image of, our profession.

It has been debated that the legislature, rather than the State Board of Registration, is the place to present a proposal to limit campaign contributions. I, for one, don't believe that there are enough resources in the entire world to successfully climb that mountain!

Our State Board of Registration is the entity charged with the regulation of the practice of engineering in Louisiana and with the protection of the public, and is the body most able and capable of acting on this important matter.

Irrespective of your feelings regarding this issue, your State Board can act according to the wishes of the profession only if you, as a registrant, voice your opinion. The time for action is now! Write to:

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Frederick J. Brown, P.E.

Dr. Frederick J. Brown, P.E., is an Associate Professor of Engineering, University of New Orleans, New Orleans, LA. He is a registered engineer in Louisiana, receiving his Bachelor, Master, and Doctorate Degrees in Mechanical Engineering from Tulane University. In addition to his mechanical engineering degree, he also received a Masters Degree in Electrical Engineering from Louisiana State University in 1967.

Dr. Brown has done much to publicize and promote the engineering profession and the Louisiana Engineering Society and National Society of Professional Engineers in particular. Upon joining the Louisiana Engineering Society in 1970 he requested and received their sponsorship of an EIT training course. He designed, promoted and taught the first course at UNO, and later, with an associate, established the first Mechanical Engineering review course for the principles and practice exam. The need for registration and participation and membership in the professional societies is emphasized throughout these courses. He continues to conduct these courses and at the request of local industries has conducted courses in Westwego, Thibodaux and

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JAMES M. TODD TECHNOLOGICAL ACCOMPLISHMENT MEDAL

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



John E. Chance, P.E.

John E. Chance, P.E. received his Bachelor of Science Degree in Civil Engineering in 1949 from the University of Texas, Austin, Texas. Prior to completing his B.S. requirements he served with the U. S. Army in the European campaign during World War II. Mr. Chance was employed by Sun Oil Company from 1949 until he started his own company in 1957. He is presently Chairman of the Board of John E. Chance & Associates Inc., Survey Boats, Inc. and President of Seven C's, Inc. He is a registered professional engineer and surveyor in Louisiana, Mississippi and Alabama.

His professional memberships include American Congress on Surveying and Mapping, Louisiana Engineering Society and Louisiana Society of Professional Surveyors. He is a member of the Board of Directors of the American Bank and Trust Company, member of the Board of Lafayette General Hospital, member of Fatima Catholic Church, having served on the Parish Council for three years, member of Lafayette Petroleum Club, member of Lafayette Chamber of Commerce, a former member of the Louisiana State Advisory Council for Vocational and Technical Education,

Continued on page 8

LEO M. ODOM AWARD FOR SERVICES TO THE PROFESSION

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



Arthur A. DeFraitres, Jr., P.E.

Arthur A. DeFraitres, Jr., P.E., is President of Gulf South Engineers, Inc., Houma, Louisiana. He received his Bachelor and Master Degrees in Civil Engineering from Tulane University. He is a registered professional engineer and land surveyor in Louisiana and Mississippi.

Mr. DeFraitres began his professional career in the U.S. Navy in 1953, serving three years on active duty aboard a hydrographic survey ship, followed by eight years in the reserves. From 1956 through 1958 he worked as a project and structural design engineer for Walter E. Blessey, Consulting Engineer, New Orleans, Louisiana. In 1958 he joined his father's firm of DeFraitres Associates in Houma, Louisiana and in 1959 was made a partner of the firm. In 1963 the firm was incorporated, and he served as the secretary-treasurer of the corporation and design engineer for the firm. In 1972, DeFraitres Associates, Inc. became a management and holding company, and Gulf South Engineers, Inc. became a wholly-owned engineering company. He has served as President of Gulf South Engineers, Inc. since 1972 and President of DeFraitres Associates, Inc. since 1981.

Continued on page 8

A. B. PATERSON MEDAL FOR AN ENGINEER IN MANAGEMENT

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 B. Paterson, an active member of the Society from 1923 until his death in 1952, was an engineer, administrator, executive, banker, civic leader and humanitarian.



George J. Groh, P.E.

George J. Groh, P.E., is President of R. J. Tricon Company, Inc., New Orleans. Mr. Groh received his Bachelor Degree in Mechanical Engineering from the Stevens Institute of Technology. He is a registered professional engineer in Louisiana. He began his professional career in 1947 as a Junior Engineer with R. J. Tricon Company, Inc., became Second Vice President in 1957, First Vice President in 1960, and advanced to the position of President in 1973. In addition to his management duties during the early years as an officer of Tricon Company, he still worked as a Sales Engineer and Design Engineer.

In addition to departmentalizing the company for better management, a computer was added in 1979. Use of the computer has significantly increased cash flow, decreased inventory and provides current sales data.

Recognizing a great potential in hose and conveyor belt sales, Mr. Groh formed a Rubber Division several years ago. This venture has grown very rapidly, exceeding sales projections each year. It has now become a very important cornerstone of company sales and profits.

Mr. Groh began a program several

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ANDREW M. LOCKETT MEDAL FOR CIVIC ACTIVITIES

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



Thomas Dudley Hixson, P.E.

Thomas Dudley Hixson, P.E., is Vice President of Meyer, Meyer, Lacroix & Hixson, Inc., Alexandria, Louisiana. Mr. Hixson received a Bachelor of Science Degree in Civil Engineering from the University of South Carolina in 1961 and completed graduate study in public administration from the University of Montana in 1964. He is a registered professional engineer in Louisiana and Mississippi and a registered land surveyor in Louisiana.

Mr. Hixson is a member and past president of the Alexandria Downtown Lions Club; Chairman of the City of Alexandria Board of Adjustments and Appeals; and a member of the Rapides Parish Police Jury Citizens' Advisory Committee. He has served as a Division Vice-Chairman of the United Way Campaign; served on the Board of Directors of the Louisiana Lions League for Crippled Children; and is past chairman of the Central Louisiana Chapter of Ducks Unlimited. He is currently serving as President of the Alexandria/Pineville Chamber of Commerce.

He is considered by his peers to be one of the most actively involved engineers in the civic affairs of the cities of Alexandria and Pineville. During his tenure as Presi-

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F. HUGH COUGHLIN YOUNG ENGINEER AWARD

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



James A. Ragland, P.E.

James A. Ragland, P.E., is Vice President and Principal of Huck, Ragland & Associates, Inc., Baton Rouge. He received his Bachelor and Master Degrees in Civil Engineering from Louisiana State University. In addition to his engineering degrees, he completed the U. S. Army Engineer Office Basic Course, Ft. Belvoir, Virginia in 1973, appearing on the Commandants List. He is a registered professional engineer in Louisiana.

Since 1981, Mr. Ragland has been a principal of the firm Huck, Ragland & Associates, Inc., Consulting Engineers. From 1977 to 1981, he was an Associate with the firm Robert L. Huck & Associates, Inc. During the years from 1975 to 1977, he was a structural engineer with the same firm. From 1972 to 1973, he was employed by the Louisiana Department of Highways as an engineer-in-training in the Bridge Design Section. During the 1971-72 academic year, Mr. Ragland held a teaching assistantship in the Civil Engineering Graduate School at Louisiana State University in Baton Rouge. During the concurrent years from 1971 to 1980, Mr. Ragland served in the U.S. Army Reserve, Engineer Branch. He resigned his commission (rank of Cap-

Continued on page 18

FREDRICK J. BROWN, P.E.

Continued from page 6

Hahnville.

Dr. Brown established the first student chapter of the Louisiana Engineering Society at UNO (UNOES) in 1978 and has continuously served as their faculty advisor. He was chosen by the students as the Outstanding Engineering Faculty Member in 1978. He has participated in many of their social functions, money raising projects, and in the selection of the Louisiana Engineering Society Outstanding Senior Award. Dr. Brown graciously allowed his home to be used as a "Haunted Castle," wherein enough money was raised to give scholarships to two Louisiana Engineering Society student members and a color television set to the State School for Retarded Children in Belle Chasse, La. The students subsequently "roasted" Dr. Brown at their graduation banquet, bestowing upon him the title "Engineer of the Year." Dr. Brown's home is used on a regular basis to host the UNOES *couchon de lait*.

Such activities do much to bring the students in contact with Louisiana Engineering Society members and practicing engineers. The UNO chapter has over 100 members and is the largest student chapter in the state, the largest student organization in the school of engineering, and one of the largest clubs on campus.

There are many other instances wherein the engineering profession and Louisiana Engineering Society were promoted such as: appearances on radio and T.V. shows; coordination of the first "Engineer's Day" at UNO; presentations on engineering to the League of Women Voters, the St. Bernard Parish Rotary Club, the Jefferson Parish Rotary Club, Tulane University graduate students; LSU Medical School, and the Association of College Unions International; participation in the UNO High School Relations Program; conducted Senior Seminars at UNO wherein professionalism and registration are stressed; established the first Minority Awareness Program in Engineering at UNO, 1977; coordination of student workers for the ASME Convention held in New Orleans, 1978; founder and first-president of the Edison League of New Orleans, 1979; presently assisting in obtaining the engineering student workers to staff technical exhibits at the New Orleans World's Fair for the Louisiana Nuclear Society, 1984.

Dr. Brown coordinated efforts of the New Orleans Chapter with the UNO Department of Mathematics for the Math-

counts Program. He arranged for radio and television coverage and solicited donations to help defray the costs.

Such activities have reached many students and practicing engineers and certainly has influenced, and in some cases was the direct cause of decisions to join the Louisiana Engineering Society. One need only to look at the New Orleans Chapter membership and note the many former UNO students who have joined and become active in the Society.

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

Dr. Brown is married to the former Brenda Labiche of Westwego, La. and has two children, Danette and Anja.

Dr. Brown 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. ●

JOHN E. CHANCE, P.E.

Continued from page 6

former member of the Board of Directors of the Acadiana Mental Health Treatment Center and former Director of the Petroleum Club of Lafayette.

John's first contribution to the advancement of his profession was his application of microwave distance measuring equipment to the process of offshore surveying in the early sixties. Although doubted by many, even some in his own company, John was determined that if these new electronic measuring devices could provide a better, more efficient service to the industry it was his duty to explore every possible use of these devices as applied to his profession. Although the status quo of optical surveying methods was adequate in most instances at the time, the microwave distance measuring devices soon became the mainstay of John's operations and evolved into the present day computerized totally integrated positioning systems used by the company.

In the late sixties, John realized the need for a distance measuring system with much greater range than was presently available. He provided a West Coast manufacturing firm with company resources and his ideas and the physical and mathematical calculations were made and a rough electrical schematic of a system that would do what John

wanted evolved. The system didn't get off the ground at that time but as the true need for such a system became apparent to others in the early seventies the system was revitalized. Cubic Western Data will be the first to confirm that John Chance was instrumental in the development of Cubic's Argo Radio Positioning System, now considered the standard by which long range positioning systems are measured by the industry.

In 1968, Congress approved civilian use of the Navy Navigation Satellite System, previously used exclusive by the Navy for positioning of its Polaris submarines. As commercial receivers became available, John knew that this tool would have great potential for positioning in remote areas. He sent one of his employees to graduate school to further his education in Geodesy, assisted the National Geodetic Survey in establishing satellite doppler stations on offshore oil platforms in two sessions in 1975 and 1976 and purchased two of the earliest commercial geodetic type receivers available in 1975. The company's satellite receiver inventory quickly grew to 13 and these receivers have been used to accurately determine positions in virgin areas such as all the well locations on the East Coast of the United States and in areas where accuracy was critical such as the Ixtoc blowout in the Bay of Campeche. The latest technological advancement by John E. Chance & Associates, Inc., in the field of satellite surveying, has been the practical application of a method by Magnavox, Inc. to transmit satellite orbital corrections from a receiver at a known location to a receiver at a remote location via single side band radio link. This allows for every accurate positioning of the remote receiver with reduced observation time by pseudo real time translocation through the radio link.

John's desire to provide comprehensive service to the industry has lead to the formation of one of the most comprehensive data bases covering pipelines, wells, structures, boundary lines and potential hazards in the Gulf of Mexico. This information is instantly retrievable through any of the company's 32 computer terminals.

As the search for hydrocarbons has ventured further offshore in typical water depths of 100 feet or more, John has applied everything he has learned about surface positioning to positioning beneath the sea. The company operates remotely controlled tethered vehicles which are completely integrated to the surface positioning systems through

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acoustics and computer interfaces. These vehicles determine positions of objects beneath the sea while recording video and stereoscopic film records of the objects of interest. These vehicles are presently used for determining positions and biological monitoring in deep water but will eventually be used to do work in very deep water or otherwise harsh conditions that could be hazardous to humans.

It is difficult to cite an attitude as a technological achievement but John's innovative, progressive attitude has led to his company continually getting the most out of available technology as well as the creation of new technology in several instances. This is a benefit to an industry that must concentrate its efforts on a spectrum broader than precise positioning alone.

John's favorite pastime is raising cattle and ranching in general. He and his wife, Joretta, reside in Lafayette, Louisiana and are the proud parents of six children, Kathy, David, Jimmy, Thomas, Laurie and John, Jr. ●

ARTHUR A. DEFRAITES, JR.

Continued from page 6

He holds membership in the Louisiana Engineering Society, the National Society of Professional Engineers, the NSPE/Professional Engineers in Private Practice, Consulting Engineers Council of Louisiana, Inc., American Society of Civil Engineers, American Concrete Institute, American Society for Testing and Materials, American Water Works Association, and the American Academy of Environmental Engineers.

One of his long term interests has been the procurement of Engineering Services within the State of Louisiana. He was Governor Edwards' appointee to the Engineers Selection Board created under the Governor's Executive order in 1975. He served as chairman of the original board, and personally wrote the "Rules of Operations" and the "Rules of Selection," which for the most part, are still in use today. He has followed with keen interest the development of procurement policy by the Louisiana Department of Transportation and Development since 1976 and has worked to keep the LES members informed on that development.

Mr. DeFraites is very active in community affairs having been a former Jaycee and Civil Defense Director of Terrebonne Parish. He is currently a member and officer in the Houma-Terrebonne Chamber of Commerce, the Chairman of the Chamber Magazine and Legislative Committees; a Charter Member and Past President of Terrebonne

Arts; a member of the Houma-Terrebonne Rotary Club, the Economic Development Committee for Terrebonne Parish, the LePetit Theatre de Terrebonne, and Terrebonne Historical Society; the Tulane Engineering Society, the Tulane Engineering School Advisory Board and the Terreanian Carnival Crew.

He was recently elected to and is presently serving his second term as a member of the Louisiana Democratic State Central Committee.

Mr. DeFraites is married to the former Mary Helen Starnes of Hammond and they have five children, Arthur, Christopher, Alan, Diane and Mary.

Arthur A. DeFraites' outstanding record and high standard of conduct and his active participation has been an inspiration to many of us in the Louisiana Engineering Society. His achievements exemplify the outstanding leadership recognized and honored through this award. ●

GEORGE J. GROH, P.E.

Continued from page 7

years ago to make Tricon a service as well as sales organization. As a result, Tricon has the capability to repair many of the many items sold. This includes a modern speed reducer repair shop and the latest conveyor belt vulcanizing equipment.

During all of this time, Mr. Groh has kept his engineering interests active. He is responsible for many unique conveying devices, especially in the sugar and paper industry.

In recent years, Mr. Groh has brought R. J. Tricon Co., Inc. into the construction business. Being licensed contractors, the company has undertaken many complete conveyor installations. The company is also registered as an engineering firm with the Louisiana State Board of Registration for Professional Engineers and Land Surveyors.

In summation, Mr. Groh has successfully led R. J. Tricon Co., Inc. through the difficult stages of small company growth and has made it a solid and growing part of the Louisiana business community. He has provided for the continued employment of a growing number of company personnel and the management to insure future operations. In addition, he is currently working on additional business opportunities to further company expansion, especially in the export field.

He holds membership in the American Society of Mechanical Engineers, the Louisiana Engineering Society, the National Society of Professional En-

gineers, Power Transmission Distributors, National Industrial Belting Association, National Association of Wholesale Distributors, the Chamber of Commerce, American Society of Sugar Cane Technologist, and the Paper Industry Management Association. He served on all the local committees of the ASME, including chairman, and, in addition, was assistant to the regional Vice President of ASME, chairman of various regional ASME committees, as well as national chairman of the nominating committee for ASME in 1965.

He has been on numerous LES committees, both local and statewide, including general chairman of the annual meeting, education committee state chairman, member of the educational review committee and others. A longtime member of The Engineers Club of New Orleans, Mr. Groh has served on many committees and is a past president.

Jack is married to the former Beverly Hebert of Jeanerette, La. and they have four children, George, Marcia, Eric and Kirk.

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

THOMAS DUDLEY HIXSON, P.E.

Continued from page 7

dent of the Alexandria Chapter of L.E.S., Mr. Hixson was instrumental in laying the groundwork for establishing the position of a full-time Parish Engineer for Rapides Parish.

While serving as President-Elect of the Alexandria/Pineville Chamber of Commerce, Dudley dedicated his efforts to provide Alexandria with continued commercial airline service after the cancellation of service by a major airline which provided east/west connections.

Mr. Hixson has also served as chairman of the Alexandria/Pineville Chamber of Commerce Military Affairs Committee and as Vice-President for Economic Development. While serving as chairman of the Military Affairs Committee, Dudley led a contingent of fourteen local citizens and elected officials to meet with the congressional delegation in Washington, D.C. to support the establishment of an Air National Guard Unit at Esler Regional Airport. This project is still active and when complete, will bring a significant positive economic benefit to central Louisiana.

Dudley has served on the vestry of St. Timothy's Episcopal Church and is an

Continued on page 18

LES Spring Meeting

The LES Monroe Chapter cordially invites you to attend the LES Annual Meeting and Training Conference to be held in Monroe at the Holiday Inn Holidome, June 20-23, 1984. Some of the activities include:

1. Tennis and golf tournaments on Wednesday, followed by a hosted cocktail hour.
2. A Mexican Buffet with complimentary refreshments and entertainment on Thursday night.
3. A Spouse's program to entertain and inform.

Come be with us for training, for discussions affecting the engineering profession, for fun, food and fellowship. Bring a guest. We guarantee you that you will be treated so many different ways that you will have to like some of them.

Bobby E. Price, P.E. President, Monroe Chapter

WEDNESDAY, JUNE 20, 1984

11:30 a.m. - 5:00 p.m.
12:00 Noon
2:00 p.m.
6:30 p.m. - 7:30 p.m.
7:30 p.m.

THURSDAY, JUNE 21, 1984

8:00 a.m. - 12:00 Noon
8:30 a.m. - 12:00 Noon
10:15 a.m. - 3:00 p.m.
12:15 p.m.
1:30 p.m. - 3:00 p.m.
3:30 p.m. - 4:00 p.m.
6:30 p.m. - 7:30 p.m.
7:30 p.m.

FRIDAY, JUNE 22, 1984

8:00 a.m. - 12:00 Noon
8:30 a.m. - 12:00 Noon
12:15 p.m.
1:30 p.m. - 3:00 p.m.
3:15 p.m. - 4:10 p.m.
4:15 p.m. - 5:00 p.m.
6:30 p.m. - 7:30 p.m.
7:30 p.m.

SATURDAY, JUNE 23, 1984

7:30 a.m.
9:00 a.m.

REGISTRATION

Golf Tournament, Chennault Park Golf Course
Tennis Tournament, Chennault Park
Cocktails (Hosted)
Dinner On Your Own

REGISTRATION

Committee Meetings
Council of Deans Meeting
Lunch On Your Own
Chapter Officers Training Conference
Chapter President's Conference
Cocktails (Hosted)
Dinner (Buffet) (Entertainment Planned After Dinner)

REGISTRATION

Committee Meetings
Lunch
Practice Division Meetings
Louisiana Engineering Foundation
LES/Political Action Committee
Cocktails (Hosted)
Installation Banquet

Combined Breakfast and General Membership Meeting
Board of Direction Meeting

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Holiday Inn Holidome - Monroe

Make plans to attend - use the hotel reservation and registration coupons below.

The hotel reservation coupon must be received by May 31, 1984 as the hotel will release the block of rooms set aside for the Louisiana Engineering Society this date.

REGISTRATION COUPON - LES SPRING MEETING Holiday Inn Holidome - Monroe - June 20-23, 1984

**CLIP OR
REPRODUCE &
MAIL TO:**

**LES
P.O. Box 2683
Baton Rouge,
Louisiana
70821**

Name _____ Spouse's Name _____

P.E. YES: _____ NO _____ Chapter: _____

	No. Tickets	Amount
Registration (Members)	_____	_____
Registration (Spouse)	_____	_____
Thursday Dinner	_____	_____
Friday Luncheon	_____	_____
Friday Dinner	_____	_____
Saturday Breakfast	_____	_____
Ladies Tour	_____	_____
Golf (Wednesday Afternoon)	_____	_____
Tennis (Wednesday Afternoon)	_____	_____

TOTAL _____

The Wednesday night cocktail party is hosted, but please advise if you plan to attend.

☐ Will attend ☐ Will Not attend

The State Office has been unable to determine the cost of registration and social events at this time. The amounts will be established to cover cost only.

THIS COUPON MUST BE RECEIVED BY MAY 31, 1984
Convention: Louisiana Engineering Society - June 20-23, 1984

HOLIDAY INN HOLIDOME

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71203
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Address _____

City, State _____ Zip _____ Tel. _____

Arrival Date _____ Departure Date _____

	1 Person	2 People
Single	\$41.00	\$47.00
Standard (2 beds)	\$45.00	\$51.00
Standard (Dome-2 beds)	\$50.00	\$56.00
King Leisure	\$47.00	\$53.00
King (Dome)	\$52.00	\$58.00

All reservations will be held until 6:00 p.m. unless guaranteed. Refund given if cancellation made 7 days prior to beginning date of convention.

Guaranteed ☐ Credit Card # _____

Expiration Date _____

History of the Industrial Development Along the Mississippi

Leo M. Odom, P.E.

The rapid industrial development along the banks of the Mississippi River below Baton Rouge during the past 42 years has been fantastic in the eyes of old timers who have lived in the area all their lives. The natural advantages the area had to offer lay dormant until relatively recent years because of the lack of confidence by capital in the adequacy of existing flood control and of navigation improvements. This problem has now been pretty well taken care of through the concerted efforts of the Corps of Engineers, U.S. Army, local Levee Boards and other state agencies, and the state's Congressional delegation who have been able to secure the necessary federal appropriations. The river is now lined with wharves for oceangoing vessels and facilities for barge tie-ups, and always has on its surface a large number of barges and ships hauling all kinds of products from and to ports all over the world.

Although the threat of inundation is no longer of great moment and the industries which had selected sites along the river can feel confident on that score, there are other problems remaining. In particular, problems caused by potential bank instability and erosion still require programs of professional inspection and advice. Caving or slumping banks can seriously affect industrial installations. These may not be readily apparent and may be quiescent for years on end, but any installation along the banks of the river must be continually monitored to mitigate damage to and loss of use of facilities.

An example of bank instability occurred following the high water of 1983 when a 700-foot-long section of the left (east) bank levee of the Mississippi River near Darrow (50 miles below Baton Rouge) slid into the river. The extent of the slide required a new levee and a river road set back considerably from the old locations. (see accompanying photo). A \$2,643,000 contract for construction of the new levee and road is scheduled for completion well prior to the next high water. The new setback levee is 5,432 feet long, and is 658 feet landward at its farthest point from the old levee.

For over 250 years the Valley of the Lower Mississippi River has attracted settlers along its banks, and the river has served as a transportation artery to serve the developing industrial and agricultural area of the Middle West. However, in its natural state, the Lower Valley was subject to frequent floods which inun-

dated the countryside and discouraged large expenditures for development of agriculture or industry. The cycle of high flood levels with accompanying hazardous, swift currents and of skimpy low-water flows which deposited bars and snags in the channel, made navigation hazardous and undependable.

However, because of the fertility of the soils along the banks of the river and its connecting streams, agricultural development began as soon as settlers were able to move in, and this development continued during the first quarter of this century despite the large floods that destroyed houses and crops with some loss of life. Railroads and highways were built in spite of the fact that these disastrous floods plagued the Valley every three or four years. In order to help themselves, local interests formed levee districts and raised money and built levees along the river banks and the banks of connecting streams in efforts to confine the floods. However, confinement increased the flood heights, and each additional levee enlargement would be overtopped and crevassed by a succeeding flood.

After the disastrous floods of 1912 and 1913, the state and its levee boards expended all the money they could raise by bond issues and taxes to bring the levees through the area to a grade and section that were designed with the objective of furnishing protection against any flood

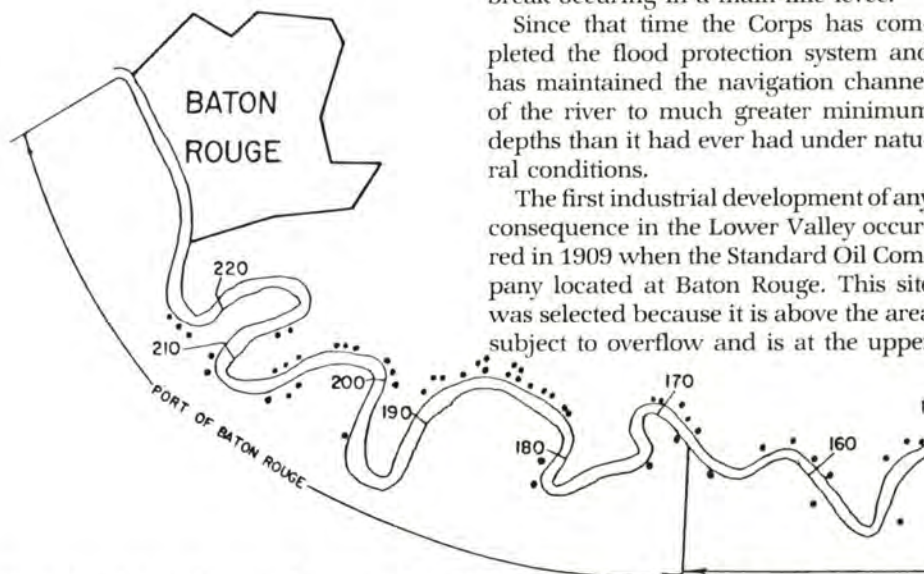
that was imaginable at that time. This program was completed by 1925, and was followed closely by the record flood of 1927 which turned out to be much greater than the design flood. Although no levees were crevassed between Baton Rouge and the lower side of New Orleans, the west bank was flooded by crevasses of levees on the Atchafalaya River; and but for the numerous crevasses that occurred in the Mississippi River levees above Baton Rouge, the levees below that point would have been overtopped and crevassed as well.

After the 1927 flood, the state and its levee boards had exhausted their resources, and the nation's leaders finally became convinced that provision of an adequate program for flood control in the Lower Valley was beyond the capability of local interests. Only then did the United States government take over the job of flood protection along the lower Mississippi River and its tributaries as well as the responsibility for construction and maintenance of needed improvements for navigation. As a result, the U.S. Congress passed the Flood Control Act of 1928, by which a master plan for flood protection and navigation on the river was authorized and turned over to the U.S. Army Corps of Engineers for execution.

Money was immediately made available and work of closing crevasses began at once. So successful were these efforts that by 1929 one of the largest floods of record (although less than the 1927 flood) was passed to the Gulf without any break occurring in a main-line levee.

Since that time the Corps has completed the flood protection system and has maintained the navigation channel of the river to much greater minimum depths than it had ever had under natural conditions.

The first industrial development of any consequence in the Lower Valley occurred in 1909 when the Standard Oil Company located at Baton Rouge. This site was selected because it is above the area subject to overflow and is at the upper



The industrial development that now exists within the Baton Rouge-New Orleans Industrial Corridor reflects the effect of improvements in flood control and navigation in that area that have resulted in choice by industries of sites along this section of the Mississippi River.

ver Between Baton Rouge and New Orleans

end of that portion of the river having natural depths sufficient to accommodate the oceangoing commerce of that day.

Despite the progress in the development of flood protection and the fact that no flooding occurred in the protected area below Baton Rouge after 1927, industrial development did not occur along its banks for many years. A primary reason for this delay undoubtedly lay in the fact that the Great Depression of the 30s put the chill on development, particularly in an area in which protection from inundation had not been in existence long enough to justify confidence.

A change in the attitude of capital towards investment in this area dates from the beginning of World War II. As the country geared up for the war effort, the necessity for rapid expansion of our military capacity caused national leaders to look to the Lower River for locations for new industrial facilities. With its channel capable of handling deep sea traffic, its long developable frontage on both sides, its plentiful supply of fresh water, and its connection by navigable channels to the industrial and raw materials-producing areas of the Midwest, together with the fact that the land along its banks was finally deemed to be secure from inundation by floods, the Lower River became the selected site for several large defense industries during the war period. Development has continued rapidly ever since the war to the point that the Mississippi River below Baton Rouge has now become one of the most important industrial areas in the world. The extent of the development is clearly shown on the accompanying map which lists the present industries and their site locations along the river between Baton Rouge and New Orleans.

Although the comparative freedom from constant threat of inundation eliminated the main disadvantage to develop-

ments along the Mississippi River below Baton Rouge, it must not be forgotten that there are other, although less conspicuous, hazards to docks and riverside developments to be contended with. While this section of the river is much more stable than it is farther upstream, it is still an alluvial stream flowing in a bed and within banks composed of erodible soils. No installation along its banks can be

regarded as completely free from natural hazards. All such installations must have a program of constant watchfulness to avoid disaster and face the probability of more or less expenditure for maintenance throughout its life. When these precautions have been taken, the safety of sites along the lower Mississippi have been found to be as great as that of any waterside location in the country.

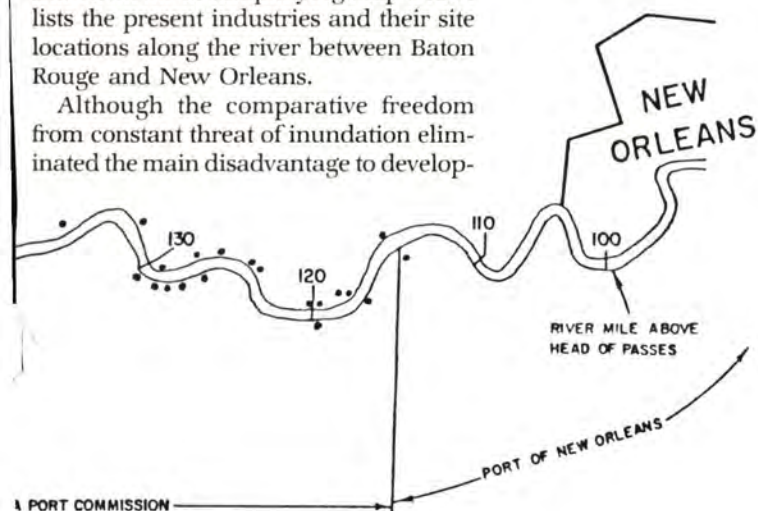


Levee slide showing a 700-foot section of the left (east) bank, Mississippi River levee which slid into the river on August 23, 1983 near Darrow, Louisiana after a recent high-water season.

EAST BANK INDUSTRIES: Airline Industrial Park (139), Air Products & Chemicals, Inc. (200), (190) (197), BASF Wyandotte Corporation (184), Bayou Steel (132), Borg-Warner (187), Borden Chemical Company (185), Boswell Oil (144), Bunge Corporation (120), Burnside Terminal Co. (170), Cargill, Inc. (139), Ciba-Geigy Incorporated (189) (200), Colonial Sugars Company (146), Convent Chemical Corporation (162), Cora Petroleum (150), Cos-Mar Company (187), Dupont Chemical (169), Exxon Chemical (169), Ethyl Corporation (203) (214), Freeport Chemical Company (160), GATX-Chevron Oil (162), GHR Energy (125), Godchaux-Henderson Sugar (139), Grief Brothers (200), Gulf States Utilities Company (202), Hunt

International (205) (213), IT Corporation (171), International-Maytex (118), Kaiser Aluminum & Chemical Corp. (145), Liquichemica (144), Liquid Carbonic (185), Louisiana Power & Light Co. (163), McKesson Chemical (183), Marathon Oil Company (155), Mitsui-Continental Grain (139), Mobil Oil Corp. (186), Monochem (185), Mo Portland Cement (168), Nalco Chemical Company (143), Olin (171), Peabody Coal Company (163), Peavey Company (150), Petro United, Inc. (204), Plantation Business Park (122), Riverbend Industrial Park (116), Rubicon Chemicals, Inc. (185), St. Charles Grain Elevator Co. (121), St. James Industrial Park (150), Shell Chemical Company (184), Shell Oil Company (186), Skelly Oil Company (162), Stauffer Chemical Company (189) (199), Sunoco Terminals, Inc. (198), Texaco, Incorporated (168), Thomas-Hayward Chemical (200), Trans-American Match Corp. (115), USAMEX Fertilizer (118), Union Oil of California (185), Uniroyal, Incorporated (185), U.S. Steel (205) (212), Zen-Noh Grain Corporation (164).

WEST BANK INDUSTRIES: Agrico Chemical Co., (167), Allemania Chemical Co. (205), American Cyanamid Co. (114), Beker Industries (129), C.F. Industries, (173), Copolymer Rubber & Chemical Corp. (223), Dow Chemical Company (210) (222), Farmers Export Company (117), First Nitrogen (173), Georgia-Pacific Corp. (205), Getty Oil Company (154), Gulf Chemical (167), Hercofina (205), Hooker Chemical Company (129) (223), Koch Industries (131), Louisiana Power & Light Co. (130), Melchem (173), Monsanto Company (120), Placid Oil & Refining Co. (179), Shell Oil Company (126) (142), Shell Pipe Line Corp. (159), Texas Eastern Transmission Corp. (180), Triad Chemical (173), Union Carbide Corporation (128) (197).





NÔTRE MÉTIER

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



State Board of Registration Selects a Staff Investigator

Benjamin S. Harrison, a former special agent with the United States Air Force, Office of Special Investigations, was selected in December, 1983 to fill the position of Staff Investigator for the Board. Harrison has fourteen years of investigative experience with the Air Force Office of Special Investigations. At his last Air Force assignment, Keesler Air Force Base, Biloxi, Mississippi, he served as the Superintendent of Investigations with supervisory responsibility for six agents conducting Air Force related investigations in South Mississippi and Southeast Louisiana. Harrison served in the United States Air Force for twenty-two years prior to accepting his current position.

Harrison was born in Newberry, South Carolina and reared in Meridian, Mississippi where he graduated from high school. He has completed college courses with the Community College of the Air Force and the Gulf Coast Community Junior College, Biloxi, Mississippi. He is active in serving his community in youth recreation programs.

Harrison's addition to the Board Staff substantially increases the Board's ability to investigate and resolve suspected violations of the statutes related to the practice of engineering and land surveying.

Disciplinary Action

A hearing was held on December 21, 1983 at the offices of the Louisiana Board of Registration for Professional Engineers and Land Surveyors in the matter of Mr. Joseph Doyle Kidd. Mr. Kidd is registered with the Board as a Professional Engineer in Civil Engineering, (#5283) and a Professional Land Surveyor (#2104). Only Mr. Kidd's land surveying practices and his Land Surveyor's license were at issue at the hearing.

Formal charges against Mr. Kidd were preferred by a non-registrant of the Board pursuant to Section 37:698 (A) (2) of the Louisiana Revised Statutes. This statute prohibits any fraud, deceit, gross negligence, misrepresentation, violation of contract, gross incompetence, or misconduct in the practice of engineering or land surveying.

Subdivision plats prepared by Mr. Kidd for the Lakewood and Spring Lake Subdivision, Parish of Union, were found to be in error. All lots in the Lakewood Subdivision were not properly monumented. The preparation of a map by Mr. Kidd of certain property of the complainant in the matter in Green Bay Subdivision, Parish of Union were also found to be in error. In addition, land surveying services performed by Mr. Kidd for five (5) other clients were also found to be incorrect requiring re-survey work at additional costs to those owners.

By a unanimous vote (one abstention) at its regular meeting on January 25, 1984, the Board of Registration for Professional Engineers and Land Surveyors revoked Mr. Kidd's land surveying license (#2104), finding him guilty of deceit, gross negligence, misrepresentation, and misconduct in the practice of land surveying.

The Very Last Opportunity for Some

The Long-Established Practice provisions of the law terminates this year. Louisiana Administration Code (LAC) 19-3:3.3.4 is quoted in its entirety because it will soon be the last opportunity for some individuals to be given consideration for registration as a Professional Engineer in the State of Louisiana. Two groups are affected:

1. Those are graduate engineers with over twenty years of experience who, for whatever reason, have not been registered as a Professional Engineer. For this group it means the difference of having to take only the principles and practice of engineering examination if one qualifies now under LAC 19-3:3.3.4. If one fails to apply on or before December 31, 1984 and applies later, both the fundamentals of engineering examination and the principles and practice of engineering examination will be required. For applications received after December 31, 1984, the Board will no longer have the option of waiving the fundamentals of engineering examination.

2. You will note that LAC 19-3:3.3.4 does not require that one necessarily have an engineering degree or for that matter any formal education. There will be no provisions in the law to consider these individuals after December 31, 1984. This will be the last opportunity for individuals without a degree to be given consideration for Professional Engineering registration in the State of Louisiana. The exception will be those individuals in this category who are Engineers-In-Training registrants of the Louisiana Board on December 31, 1984. Those Engineers-In-Training may be given consideration for Professional Engineering registration under the provisions of LAC 19-3:3.3.1 after December 31, 1984.

The following is LAC 19-3:3.3.4 Long Established Practice [ref. La.R.S. 37:693B (2) (d)]:

3.3.4 Long Established Practice (37:693 B (2) (d))

On or before December 31, 1984, the Board may register a person who can satisfy the following requirements:

3.3.4.1 The applicant must have had a minimum of twenty years of engineering practice (engineering practice in the Statute is

defined as professional service which requires the application of engineering principles and the interpretation of engineering data) not less than twelve years of which must have been in responsible charge of important engineering work. In order to be classed as being of a professional character, the practice must have been carried out in positions that are normally filled by persons with a degree from a school of engineering of recognized standing.

3.3.4.2 The applicant must have had pre-professional education and/or experience equivalent to that required for applicants on the basis of education, experience and examination before experience can be considered to be of a professional character.

3.3.4.3 The experience record must be completely validated by former employers or supervisors who are in a position to have intimate knowledge of the type and the degree of responsibility of work performed. It is not necessary that the applicant's total experience shall have been limited to one branch of engineering, but registration under this provision will be granted only in that branch in which the applicant seems to have obtained the greatest proficiency.

3.3.4.4 The Board will not accept credit for professional experience claimed by the applicant after the effective date of an engineering registration act in that state in which the experience is claimed if the experience was acquired in violation of any of the provisions of the said act.

3.3.4.5 If the applicant is domiciled in a state or territory other than Louisiana, the applicant must be registered to practice professional engineering in that state.

3.3.4.6 The applicant must pass the written examination in the principles and practice of engineering in the branch in which registration is sought.

3.3.4.7 Before approval will be granted to take the written examination, the applicant must appear before the Board or a committee of the Board for an interview and oral examination.

3.3.4.8 The applicant must be of good moral character and shall include in the application the names of five or more personal references who are Professional Engineers registered in Louisiana and who are not relatives or employers.

Time is running out for individuals who may qualify under LAC 19-3:3.3.4. **Please give this the widest distribution.**



Arthur R. Theis, P.E./P.L.S. is Chairman of the Board for 1984.

The Board Gives Another Recognition

In an unprecedented action, the Board also recognized Jack R. Reid, P.E., at its annual meeting on January 24, 1984.

The action was unprecedented in that this was the second recognition made by the Board at one of its regular meetings. Mr. John H. Stinson, III, P.E. was also given recognition at the January meeting (Page 9 of the *Louisiana Engineer*, February 1984).

Mr. Reid was recognized by the Board and was awarded the Certificate of Merit and Appreciation at his retirement ceremony on March 14, 1984. Paul L. Landry, Executive Secretary for the Board made the presentation.

The resolution accompanying the award reads in part - - - "Mr. Reid has always, fully cooperated with the Board by providing documentation regarding individuals being presented as "Engineers" and "Land Surveyors" when, in fact, they were not; and, - - - the assistance provided by Mr. Reid permitted the Board many opportunities to prevent the unlawful practice of engineering and land surveying, thereby protecting the public of the State of Louisiana - - -"

The Board furthermore noted that Mr. Reid was able to assist the Board in the administration and enforcement of the Act because of his comprehensive knowledge of the Registration Law and the Rules of the Board.

Jack - - - a job well done - - - the citizens of the State of Louisiana thank you.



1984 MEMBERS OF THE BOARD — Left to right, seated, Verdi Adam, Secretary; A. J. Brouillette, Edward J. McNamara; Francis C. Roy, Vice Chairman. Standing, H. L. Henry; Marion J. Chaney; Paul L. Landry, Executive Secretary; James L. Meyer; James W. Reeves; and Chris Demopulos.



Jack R. Reid, P.E., left, receives a Certificate of Merit for his contributions to the State Board from Paul L. Landry, P.E., Executive Secretary for the Board.

EXAMINATION SCHEDULE

	SPRING Apr. 20, 1985 Apr. 12, 1986	FALL Oct. 27, 1984 Oct. 26, 1985
Fundamentals of Engineering Examination (8 hrs.)	X	X
Fundamentals of Land Surveying Examination (8 hrs.)	X	X
Principles and Practices of Engineering (8 hrs.) Civil (Including Structural & Sanitary), Mechanical, Chemical, & Electrical	X	X
Agricultural, Industrial, Metallurgical, Mining & Petroleum		X
Principles and Practices of Land Surveying (4 hrs.)	X	X
Laws and Procedures of Land Surveying (4 hrs.)	X	

Apply at least six to eight months prior to an examination. Board approval must be given for anyone to be scheduled for an examination.

The applicant and the Board depends upon information provided by third parties in the processing of an application, therefore no assurance can be given that one will be scheduled for a specific examination.

BOARD MEETING NOTICE

The Louisiana State Board of Registration for Professional Engineers and Land Surveyors will hold its 1984 regular meetings at 1055 St. Charles Avenue - Suite 415, New Orleans, La. 70130 on the following dates:

1984

May 22	Sept. 25
July 24	Nov. 27



POTPOURRI

Leta Bueto
Executive Director
Louisiana Engineering Society

NSPE Names Top Ten Engineering Achievements For Past 50 Years

U.S. technological advances over the past 50 years were spotlighted by the National Society of Professional Engineers (NSPE), which announced its selection of the 10 outstanding engineering achievements of the past half century.

Recipients of the 10 "Engineering for Gold" awards were honored at a special ceremony at the Sheraton Palace in San Francisco. The awards were given to those engineering achievements that NSPE believes have had the most lasting impact on technology during the past half-century.

"Since NSPE is celebrating its 50th anniversary in 1984, we wanted to pay tribute to the greatest engineering accomplishments since 1934," said NSPE's president, Louis A. Bacon, P.E. "The hardest part, of course, was narrowing our list down to 10."

NSPE selected the 10 outstanding engineering achievements in a two-stage process.

First, its 80,000 members were asked to select 10 different award categories. They picked the following categories: synthetic fabrics, nuclear energy, electronic computers, solid state electronics, automation and control systems, jet aircraft, bio-medical engineering, lasers, communications and the space program.

Next, a special NSPE committee chose the outstanding engineering achievement in each category. A chronological list of the achievements and their award categories follows.

1) Nylon, for synthetic fabrics. The development of nylon fibers by the E.I. duPont de Nemours Co. in 1935 and its first commercial production in 1939 spawned an era of synthetic materials that are often cheaper, stronger and more durable than the natural products they replace.

2) The first controlled, self-sustaining nuclear chain reaction, for nuclear energy. A team of scientists and engineers, led by Enrico Fermi, overcame complex theoretical problems to initiate and control nuclear fission at

the University of Chicago on December 2, 1942. Their success in splitting and combining atoms to produce energy isotopes and radiation stands as one of history's benchmark achievements.

3) Electronic Numerical Integration and Computer (ENIAC), for electronic computers. In 1946, the staff of the University of Pennsylvania's Moore School of Engineering built the first electronic, large scale digital computer, ENIAC. ENIAC, which could handle the work of 20,000 people, brought about a revolution in the way information is processed.

4) The transistor, for solid state electronics. The transistor, developed in 1947 at Bell Labs by John Bardeen, Walter H. Brattain and William Shockley, revolutionized the electronic world. It stimulated the development of thousands of new industries and products, and created millions of new jobs. In 1959, an important refinement to the transistor was discovered at Texas Instruments and Fairchild Semiconductors, when the transistor's silicon crystal was made to serve as its own circuit board.

5) Inertial guidance system, for automation and control systems. Charles S. Draper in 1948 succeeded in combining gyroscopes, small computers and accelerometers to produce the true inertial guidance system. His laboratory at Massachusetts Institute of Technology later designed and built the inertial guidance system for the Apollo project's command and lunar excursion modules — a system that allowed astronauts to target their splashdowns from over a quarter of a million miles away.

6) Boeing 707, for jet aircraft. The 1954 introduction of America's first jet transport, the Boeing 707, led to a revolution in air transportation. Powered by four Pratt & Whitney turbojets, pod-mounted on wings swept back at a 35 degree angle, the 707 established a classic configuration for models of jetliners to come.

7) Pacemaker, for bio-medical engineering. The external pacemaker, developed by Medtronic, was first connected to a failing heart in 1958. A year later, two physicians, Drs. William Chardack and Andrew A. Cage, collaborated with electrical engineer Wilson Greatbatch to develop the first implantable pacemaker. Medtronic put this pacemaker into production at the end of 1960, extending and improving the quality of life for millions of persons previously doomed to the ravage of heart disease.

8) The discovery of the principle and application of lasers, for lasers. The laser — an acronym for light amplification by stimulate emission of radiation — was conceived and developed at Bell Labs in 1958. The properties and capabilities of lasers have had permanent impact on communication: optical surgery, satellites, welding, cutting and fusing materials and hundreds of other applications requiring speed and precision.

Continued on page 1

WM.F. Surgi... A New Louisiana Location for Fine Kohler Products.

WM.F. Surgi is proud to announce the opening of a new building. We are now located at 221 Laitram Lane in Harahan, LA. Our new facility is a modern up-to-date distributorship featuring high performance Kohler products. We have a new look. We have a new location. But we've kept the quality and service you've come to expect from WM.F. Surgi and Kohler products.

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The Spec Sheet

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

If Bidding is Your Only Option

There are those who are adamant in their opposition to competitive bidding for professional services. Others maintain it is the cutting edge of a new era of more efficient, more cost-effective practice management. We see it as fertile new ground for unnecessary claims of professional liability.

Headlong into the Unknown

One thing is certain. It is impossible to advocate the use of price as the basis for selecting an architect or an engineer without embracing a corollary assumption. It is this: professional practice ought to be something radically different from what it is today. How else could one possibly follow the advice of those who would counsel you on being a successful bidder?

You are cautioned, where there is no scope, always to underscope your work. Absent this enviable opportunity, you are advised to bid only what you see. You can worry about change orders later. Even then, you are told, do no more than the minimum design job, for quality is not an issue. Nor, presumably, is your critical need to maintain client relationships characterized by professionalism, effective communications, and a high degree of mutual trust.

A More Cautious Approach

Notwithstanding the obvious perils, competitive bidding has become something of a necessary evil for many firms. Few, however, have stepped forward to sacrifice the quality of their work at the altar of the bottom line. Is there a way to reconcile the conflict between the two inherent in an environment in which bidding is the controlling factor? Many argue there is not.

Other insist there must be. Perhaps, but it is not likely that either professional satisfaction or lasting financial stability will be found along a path paved with projects of inadequate scope and minimum design. Here is an alternative approach one observer has suggested for consideration by those who feel they have no choice but to compete on the basis of price.*

1. **"Bid only on projects where there is a clearly defined scope of work.** The idea that you can bid against an inadequate scope and somehow recover it all later is naive. You have a legal obligation to perform at the prevailing standard of care whether you get paid for your efforts or not. Most owners know this, and if they do not, their attorneys do. Your client could well be predatory enough, even foolish enough, to refuse to authorize work you know is required, but it is not going to absolve you of your professional responsibilities, nor of liability, in the event something should go wrong. Where there is no scope, or if you know it to be inadequate, you might be far better off to seek to define it for the owner on a time-and-materials basis. You will at least be paid for your work, and you may have an inside track on the project. If the owner refuses, there may not be a project worth bringing in.
2. **"Select your clients carefully.** You may be able to live with clients who prequalify architects and engineers and then take price into account as one of the factors governing their selection. But, where price is the determining factor, bidding is a serious mistake. There is nothing you can do that someone else cannot offer to do for less, and someone else probably will. Clients who use the price of professional services as the principal basis for selection generally deserve what they get from the someone else out there. They are not going to pay for what you know you must deliver, at least not the first time through.
3. **"Bid only on projects where your experience would favor your selection in the absence of price competition.** Your budget is likely to be as tight as you can make it. If you are not among the most qualified firms for the project, you cannot live within a budget tight enough to be competitive. Knowing this, why bid?
4. **"Evaluate your competition.** You can take a certain amount of comfort in the knowledge that those you are competing against operate with the same high standards you do. The rules of the game are relatively clear. Where, however, the competition includes firms you believe to be less than scrupulous in their dealings or less than professional in their performance, you might as well back off at the outset. You are going to get sandbagged anyway.
5. **"Plan to use the most competent and qualified people you have.** They are the most productive, and even if they command the highest salaries, you will be better off in the end. It makes no sense to add the risk of cost overruns, born of inexperience, to an already difficult and uncertain undertaking. You can count on your best people to deliver what they promise—betting on the inexperienced is a risky gamble, at best.
6. **"Define your work with great precision.** Involve the people who will work on the project in the preparation of a thorough and detailed project work plan. You will need it to estimate your costs, and you will need it to manage the project. Then, use your plan as a basis for defining your work in writing. You will have to be very specific about what it is you are going to do for your client and what it is you are not. The goal is not so much to position yourself for extras as it is to do everything you can to create realistic expectations and eliminate the possibility of later misunderstandings. Recognize, too, that bidding is an expensive undertaking. It entails costs once built into your projects that you now are likely to have to absorb in your overhead. Unless you are prepared to absorb these costs, you are not prepared to bid.
7. **"Make detailed cost estimates.** There is little room for uncertainty

and no room for error. If you have a clearly defined scope of work, if you prepare a detailed project work plan, and if you rely on the judgment of your most competent and experienced people, you just may be able to determine what

your costs will be with a fair degree of accuracy. If not, don't guess. It is someone else's project.

8. **"Finally, know when to walk away, and be prepared to do it.**
It is a difficult thing to keep in mind

when meeting the payroll is your most urgent concern, but the fact is, not everyone with a project dancing about in his or her head is a client. Be wary of the unsophisticated, the underfinanced, the avaricious. Some clients and some projects are destined to fail. You can smell them coming—usually long before you commit energies and resources that might better be applied elsewhere. Go elsewhere. You have too much at stake not to."

All this is sound loss prevention advice, whether you operate in a bidding environment or not. But if you must bid, it is one way you might draw the line between what you do as a professional and what some others out there may be willing to do for a price. Wherever you choose to draw that line, it may not be a bad idea to do it.

*David Lakamp, "Facing the Realities of Competitive Bidding," *Consulting Engineer*, Vol. 61, No. 5 (November, 1983), pp. 74-77. (Quoted with the permission of Consulting Engineer).

SEMINAR ANNOUNCEMENT:

**THE MANAGEMENT OF CHANGE ORDERS AND CLAIMS IN
EPA FUNDED PROJECTS**

A THREE-DAY SEMINAR

**APRIL 24, 25, 26 - NEW ORLEANS
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Designed for A/E Consultants, EPA Grantees, State Personnel, Corps of Engineers and Legal Counsel. Will focus on:

- Issues regarding meritoriousness.
- Claims for disputed changes.
- Extended delay discussion.
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- Dispute resolution provisions.
- Recent developments in EPA Regs regarding the management of change orders and claims.

To request a brochure or information, contact: George Grobar or Ila Barry, Project Management Associates, Inc., (313) 769-0530.

THOMAS DUDLEY HIXSON

Continued from page 9

active layreader in his parish. His other activities also include membership in the American Arbitration Association and the Air Force Association.

In addition to his civic activities, he maintains a very active professional profile in the Alexandria-Pineville area and throughout the state of Louisiana. He holds membership in the Louisiana Engineering Society, where he is currently serving as president; National Society of Professional Engineers; Fellow of the American Society of Civil Engineers, American Society for Testing and Materials; American Academy of Environmental Engineers; and the Consulting Engineers Council of Louisiana, Inc.

He is also currently serving as chairman of the NSPE-PEPP Government Response and Liaison Committee and is a member of the NSPE Legislative and Governmental Affairs Committee.

Dudley is married to the former Reba Jo Wells of Houston, Texas, and they have three children, Sharon, Michael and Renee. ●

JAMES A. RAGLAND, P.E.

continued from page 7

tain) in 1980.

Mr. Ragland served as project en-

gineer with technical supervision and final design review of a variety of structural restoration projects and condition surveys in which the finished work documents represented comprehensive rehabilitation and restoration plans, specifications and cost estimates and/or technical reports. Projects included: preparation of structural plans for the rehabilitation of 40,000 linear feet of pipebank in a multi-phase project; investigation of structural failure and preparation of plans for the renovation of a refinery furnace; investigation and evaluation of concrete deterioration of a fibers production plant; investigation and evaluation of concrete deterioration in a caustic chlorine plant; investigation of structural failure and preparation of plans for repair of a large chemical plant cooling tower constructed of wood; preparation of plans for the rehabilitation of several steel framed process buildings undergoing corrosion; investigation and preparation of plans for strengthening bulk loading gantries undergoing combined effects of fatigue and corrosion; and preparation of an overall improvement plan for a Mississippi River dock facility handling petroleum coke for ship and barge traffic.

Mr. Ragland has extensive experience in designing renovations of steel, wood and concrete structures undergoing the effects of chemical attack. He is a member of the National Association of Corrosion Engineers Technical Committee T-3K covering "Corrosion and Other Deterioration Phenomena Associated with Concrete." Mr. Ragland has recently presented a seminar on the "Repair and Rehabilitation of Concrete Structures," to the graduate students and faculty of Louisiana State University.

He holds membership in the Louisiana Engineering Society, National Society of Professional Engineers, American Society of Civil Engineers, Consulting Engineers Council of Louisiana, Inc., and Chi Epsilon Honorary Civil Engineering Fraternity.

Jim is married to the former Loretta Lasseigne of LaPlace, La. and they have one son, Robert, age 11.

The F. Hugh Coughlin Young Engineer Award is given to an engineer not over 35 years of age who had demonstrated to a high degree capabilities in engineering, thereby indicating potential for further advancement and leadership as a professional engineer. Mr. Ragland is a worthy recipient of the award. ●

LOUISIANA ENGINEER/APRIL 1984

POTPOURRI

Continued from page 16

9) Telstar satellite, for communications. The launching of the Telstar 1 by Bell Labs on July 10, 1962, heralded a new era of communications for data transmission, television and radio signals and telephone messages. The Telstar and its succeeding communications satellites have provided the links to move information around the world almost simultaneously.

10) Project Apollo, for the U.S. space program. Project Apollo was developed by the National Aeronautics and Space Administration in the early 1960s to put a man on the moon. On July 20, 1969, the entire world witnessed the successful moon landing of Project Apollo 11, the culmination of a decade of unprecedented advances in aerospace engineering.

Employment Service Now in Place for Members

A new employment referral service, called PEER (for Professional Engineering Employment Registry), is now available to NSPE members under an agreement authorized by the NSPE Board of Directors at its January meeting in San Francisco. The service is available free of charge to NSPE members. NSPE members wishing to receive further information on PEER should contact the NSPE Information Center. Employers seeking information on recruiting engineers through PEER should call JobNet (the company administering the new program) at (617) 275-3010.

Promotions Announced at Denson Engineering, Inc.

Denson Engineers, Inc. a New Orleans-based consulting engineering firm, has elected **Dr. Charles B. Ivy** a partner and has named **James R. Danner, Jr.** to the position of marketing manager.

Ivy, a former professor of civil engineering at Mississippi State University, as well as a practicing consulting and structural engineer, joined the Denson Organization in 1981 as head of civil and structural engineering and design activities.

Danner joined the Denson Organization recently after a number of years in business development and professional management at McDermott, Inc.

Water Well Contractors Must Be Licensed

Engineers in Louisiana can assist in protecting one of the state's most precious resources - groundwater.

To assure the people of Louisiana a long-term, safe and adequate supply of drinking water, the Department of Transportation and Development (DOTD), Office of Public Works (OPW) in April 1983, adopted rules and regulations for licensing of water well contractors.

Companies or individuals engaged in the drilling of water wells, test holes or the reworking of water wells must be licensed by OPW. According to State Law (R.S.38:3098.7) anyone drilling without a license is guilty of a misdemeanor with fines of up to \$1000 for each day a violation exists or continues.

State law also requires the reporting of the installation of all new water wells and the plugging and sealing of all abandoned water wells to the Office of Public Works, DOTD.

In the past, only wells with yield exceeding 50,000 gpd needed to be reported. This limitation no longer applies and all new water wells must be reported. This water-well information, along with the accompanying lithologic and geohydrologic data will offer all State agencies, industries, and private consultants a data base that is needed for

evaluating groundwater availability and providing solutions for water problems, including those associated with waste disposal.

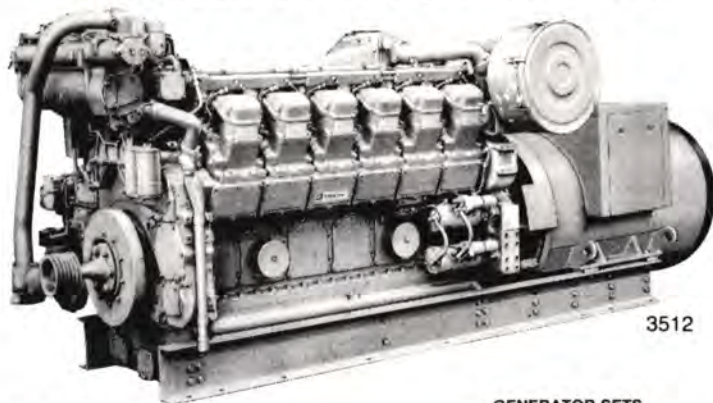
Engineers should be informed of these new requirements and modify their plans and specifications accordingly. The bid for water wells should include the water-well driller's license number. water well Drillers without a valid license issued by the Office of Public Works should not be allowed to drill a water well in the State of Louisiana.

Reporting forms, construction standards and plugging and sealing standards along with licensing information are available from the Department of Transportation and Development, Office of Public Works, P.O. Box 44155, Baton Rouge, LA 70804, or by calling 504/342-7541.

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up to 1400 kW. Caterpillar offers you six great families of diesel and natural gas engines to meet your needs.

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GENERATOR SETS Kilowatts with Fan ... 1800 rpm

	3508 60 Hz	3512 60 Hz	3516 60 Hz
Standby	700 kW	1000 kW	1400 kW
Prime Power	530 kW	800 kW	1050 kW

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IN MEMORIAM

Roy Thomas Sessums, P.E.

The nation and the State of Louisiana truly lost an outstanding engineer and public servant in the recent passing of Major General Roy T. Sessums, Air Force Reserve.

Born in the small town of Pioneer, Louisiana, and educated in the public schools of West Carroll Parish, he obtained his Bachelor of Engineering degree from Louisiana Tech University in 1935. Continuing his graduate studies at Louisiana State University and the University of Minnesota, he joined the faculty at La. Tech in 1937. Appointed Dean of the Engineering School in 1940 (at the age of 32) he brought national recognition to the school eight years later by its accreditation by the then Engineer's Council for Professional Development.

Roy left the post at La. Tech to take over the Directorship of the Louisiana

State Department of Public Works in 1952 and remained in that position until his acceptance of employment by Freeport Sulphur Company in 1955, where he later advanced to become Vice President of Public Affairs.

Commissioned in the U.S. Air Force during World War II, Roy received several citations—among them the Bronze Star and the Distinguished Service Medal. Continuing his reserve activities following World War II, Roy advanced to the rank of Major General in the U.S. Air Force Reserve.

He was appointed to the Louisiana State Board of Registration for Professional Engineers and Land Surveyors in 1962 and served for sixteen years. He also served as chairman of that board for one year. In addition, he served as President of the National Council of Engineering Examiners from 1971-72, and was awarded the Distinguished Service Certificate in 1972 and again in 1978.

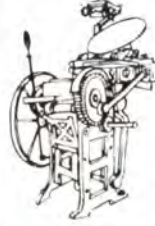
As president of the Louisiana Engineering Society and president of the Louisiana Section of the American Society of Civil Engineers, Roy was awarded the Charles M. Kerr Public Relations Award by the Louisiana Engineering Society for his many activities and contributions in that field.

His most recent recognitions by Presidents of the United States were appointments to the President's Water Pollution Control Advisory Board; the National Offshore Operators Advisory Board; and the Mississippi River Commission where he was serving his second nine-year term at the time of his death.

He is survived by his wife Pearl Brown Sessums and a daughter Bessie Sessums Weaver, and other relatives.

Roy will be sorely missed by his family, his friends and the profession in which he served so faithfully for almost fifty years.

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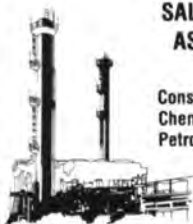
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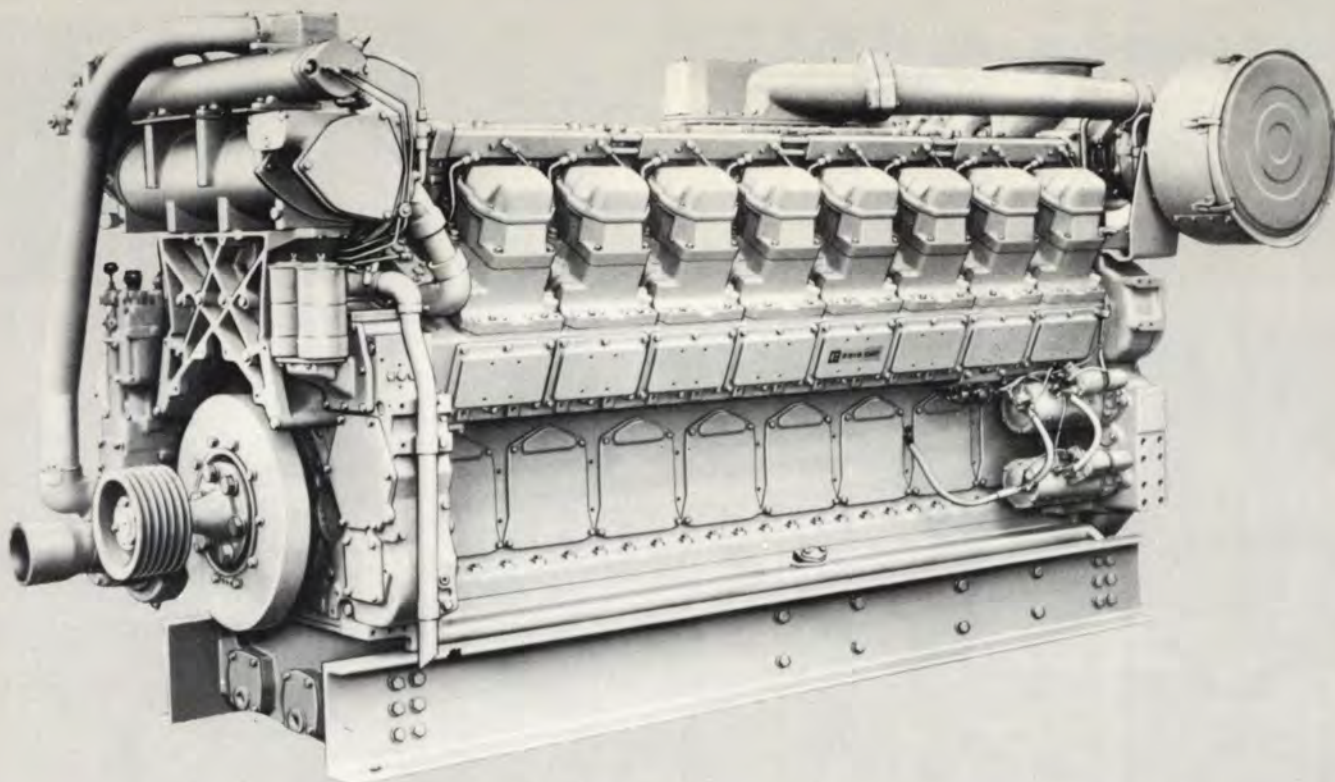


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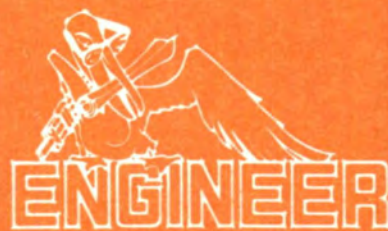
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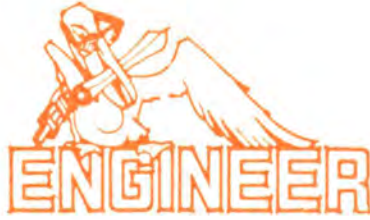
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ABOUT THE COVER

Our cover this month features scenes from the LES Spring Meeting held in Lafayette.

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Highlights of the Board of Direction Meetings

Highlight from December 16, 1983 LES Board of Direction Meeting.

The meeting was held at the state headquarters with twenty members and six guests present.

1. Waldemar Nelson reported to the Board that Publication Management Associates had informed the Publications Committee that they would be unable to publish 10,000 copies of the LES Directory as called for in the contract using the desired quality of paper. After discussion, the Board voted to request that PMA honor its contract to publish 10,000 copies.

2. The November financial statement was accepted subject to the usual audit.

3. The fourth membership report was distributed. With 43.2% of the contest time elapsed, the contest has signed up 73 new members. The Monroe Chapter is in 1st place with 48.0% of quota.

4. The Honors and Awards Committee submitted its report to the Board and it was accepted unanimously. (The awards ceremony is covered in this issue).

5. A written report along with legal and legislative recommendations by our attorneys was submitted by the Legislative Committee Chairman on inquiries made concerning proposed legislation by the committee. Copies of the report are available in the state office.

6. The Board of Direction adopted the Lake Charles Chapter bylaws as amended.

7. Marion Chaney, P.E., was appointed to the State Board of Registration for Professional Engineers and Land Surveyors to replace Fred Culpepper, P.E.

8. A letter was written requesting that Governor-Elect Edwards consider the appointment of a Governor's Engineering Advisory Council.

9. The Legislative Oversight Committee has disapproved the Rules of Employ-

ment of a Consultant by DOTD. The Highway Department will work on the rules and they will be reheard at a later date.

10. The State Board of Registration did not adopt the motion to limit campaign contributions. Due to the importance of this matter to the engineering community, the LES Board voted to request that the State Board of Registration reconsider their position.

Highlights from February 10, 1984 LES Board of Direction Meeting

The meeting was held at the state headquarters with eighteen members and eight guests present.

1. The December and January financial statements were accepted subject to the usual audit.

2. The Alexandria Chapter won the 1983 Retention Contest. The fifth membership report was distributed. With 58.6% of the contest time elapsed, the contest has signed up 96 new members. The Bayou Chapter is in 1st place with 58.8% of quota.

3. The Long Range State Planning Committee submitted recommendations to the Board. The committee recommended that the annual meeting be extended one additional day, having the installation of officers and the training conference at the same meeting thereby eliminating the Training Conference in September. The State Office was instructed to make the necessary arrangements.

4. Publication Managements Associates refused to print 10,000 copies of the LES Directory on the quality of paper desired. The Board voted that PMA publish 5,000 copies of the Directory and that PMA advise all advertisers in writing that the number of published copies had been reduced to 5,000.

5. The Legislative Committee was granted approval to proceed with drafting legislation to provide lien rights to engineers and land surveyors rendered under agreement with the owner or architects.

6. The National Director and the Executive Director submitted reports to the Board on the NSPE meeting in San Francisco.

7. A letter with all related correspondence was mailed to Governor-Elect Edwards concerning the appointment of an engineer to the Lake Pontchartrain/Lake Maurepas Basin Advisory Council. Governor-Elect Edwards informed President Hixon on January 16 that he will appoint a member of the engineering profession to the Board.

8. All related correspondence on the Governor's Engineering Advisory Council was sent to Governor-Elect Edwards, soliciting his consideration of the Council. The Governor-Elect responded, advising that he will consider the Engineering Advisory Council as proposed by the Society.

9. MATHCOUNTS competition is scheduled for February 18. Written reports should be submitted from each chapter participating in the competition.

10. An LES representative will attend the next meeting of the State Board of Registration and ask once again that they reconsider their decision not to limit campaign contributions.

11. The week of March 11, 1984 has been named by the President as National Surveyors Week.

12. LES retained the lobbyist firm of Agricultural Consultants for the 1984 Louisiana Legislative Session.

13. The State Board of Registration proposed a rule change to LAC 19-3:4.3.1. This rule change will make it possible for a registrant of the Board (Professional Engineer or Professional Land Surveyor) to incorporate a firm although he may not be a full-time active employee of that firm. The LES Board voted to advise the State Board of Registration that the Society is directly opposed to the proposed rule change.

14. A letter will be sent to the Congressional Delegation requesting that they take positive steps to have federal work in the state of Louisiana done by qualified professionals in this state.

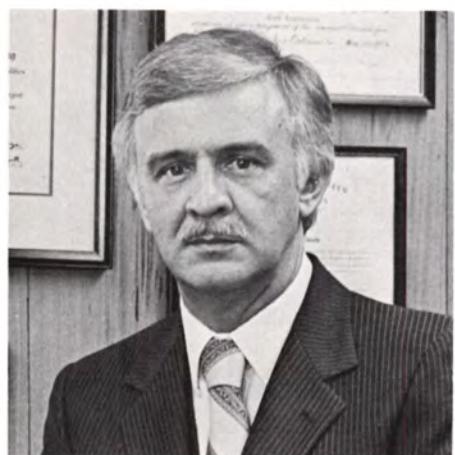
15. President Hixson appointed the 1984-85 LES Officer Nominating Committee, Lamon Moody, Chairman; John E. Ritter; and Jerrel Freeman.

**Join your
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**For more information,
write to:**

Louisiana Engineering Society
P. O. Box 2683
Baton Rouge, LA 70821

Thanks for a Productive Year



Thomas Dudley Hixson, P.E.
LES President

As we move toward the end of this administrative year, I take this opportunity to thank the membership of LES and the Board of Direction for the cooperation and responsiveness I have experienced during my term as your president.

I could fill up this page with individual accolades for those who have so diligently worked to make this a successful year.

If asked what I consider to be the most important accomplishment in LES this year, I would readily and sincerely tell you that it was the MATHCOUNTS program. MATHCOUNTS is probably what I would also consider to be the most significant occurrence in LES during my ten consecutive years as a member of the Board of Direction. I say that because MATHCOUNTS involved our membership at all levels of the Society. It took the profession to the people, and it involved the future of our nation—our children.

I cannot remember any issue or any undertaking that has touched more people or prompted more participation from our membership. The participation exemplified the deep, sincere professional concern and dedication that exists within this Society. It was personally rewarding to me to see it at work in LES.

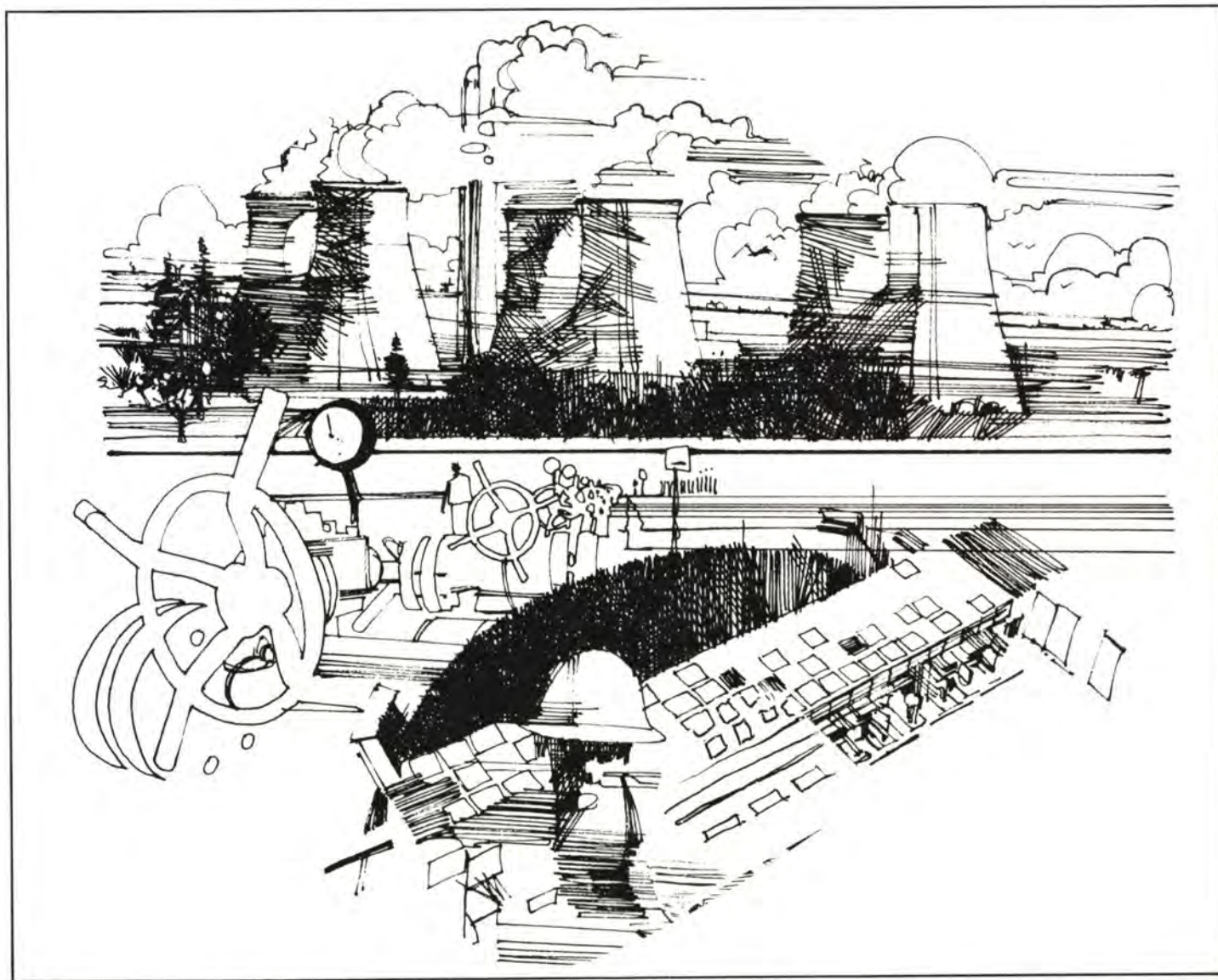
I would be truly remiss in this, my last message to you, if I did not thank Kerry LaBauve, P.E. for so faithfully and diligently executing his duties as State Chairman of MATHCOUNTS. He and his committees laid some important ground work for the future, in this our first year of participation in the MATHCOUNTS program. I am convinced that MATHCOUNTS will continue to grow and become a strong and unifying influence in our profession.

This year has also seen LES take a bold step to further solidify a positive public opinion of our profession. The active movement to limit campaign contributions to the legally established reporting limit continues with momentum and support. We should sustain our efforts to effect this action.

In closing, I again thank you for giving me the opportunity to serve as your president. You have truly honored me in permitting me to do so. It is with total confidence that I tell you that I know the Society will be under superb leadership with Henry Markel, P.E. as the incoming president of LES. My congratulations to him and to the new Board members of the Louisiana Engineering Society.

Nuclear Safety

By James S. Janssen, P.E.



It is inherent for all animals to be fearful of, and to approach with caution, any thing that is new and unknown. The human animal has the same trait. This is well illustrated in our approach to the acceptance of nuclear energy as a source of power. It is conceivable that when some prehistoric troglodyte brought a fiery branch from a lightning-struck tree into the communal cave to exhibit its value for lighting, heating and cooking, there were reactionaries who expelled him and his brilliant discovery. Who could tell what unknown evils of uncontrolled conflagration, atmospheric pollution, dreadful sickness or other mysterious calamities might result?

The introduction of gas (and later electricity) for lighting the home, the steam railroad locomotive, and the gasoline-powered automobile all met the same reaction. Fortunately, for the human race, these radical innovations were ultimately accepted even by the most skeptical.

Unfortunately, many of us immediately associate nuclear energy with the nuclear or atomic bomb just as our cave-man's associates probably connected his handful of fire with lightning and its dire consequences. In the production of electric energy from uranium, the only thing that is not conventional is the fuel itself. Instead of a furnace, there is a reactor

where nuclear fission occurs. Here atoms of uranium-235 are bombarded and split by neutrons and energy is released. The process may be compared to the combustion of any fossil fuel—coal, oil or gas—with some differences, all in our favor. The mass of fuel is much less, a pound of uranium having the energy equivalent of 1,300 tons of coal; there is no smoke, carbon dioxide, or other air pollutant released; the fuel cost is less and there is a known long-time supply.

It should be recognized that nuclear power is the safest type of power available. A nuclear power plant cannot suffer a nuclear explosion. The only potential hazard is a release of radioactivity.

and that danger is remote and is subject to control. Any leakage that might occur can be confined. The Three Mile Island incident is an excellent example of what could happen and of what results could be expected. While there was severe damage to the nuclear fuel core, the amount of radioactivity released was of such a low level that its health effects were statistically immeasurable. No one was killed, no one was injured, no one received more radiation than he would have received by occupying any granite building. As a matter of fact, no one has been killed or even injured in the years that the 73 nuclear reactors in the United States have been operating. It has been stated that the neighbors of a nuclear power plant are as apt to be exterminated by a falling meteor as they are of being killed by the power plant.

Contrast this with the many lives lost annually in coal mines, oil fields and offshore petroleum platforms (84 in a single incident). And add to those on-site deaths and injuries those resulting from coal miners' disease or black lung and from air and water pollution. Even hydroelectric power takes its toll, for example, when 2,000 people were killed in a dam failure in Italy several years ago. It is not claimed that nuclear power plants are accident free, it is merely pointed out that it is the safest known source of power for electric generating plants. The studies, investigations and added security measures that were an aftermath of the Three Mile Island incident have made a safe industry even safer. We are safer with electricity than without it and the use of nuclear energy is the safest way we know to generate it.

There has been concern expressed as to the long time ill effects of constant radiation to which neighbors of a nuclear power plant would be subjected. These fears are based on emotion rather than fact. Again, we fear what we do not understand. Even though we are exposed to radiation every minute of our lives, we can neither see it nor feel it, taste it nor smell it. It is a natural phenomenon that is all around us and is merely a form of energy that travels in waves or particles of energy called protons. It is emitted by just about everything in the universe including the sun and other celestial bodies, by radio and television sets, by radar and X-rays, by masonry and other building materials and by you and your associates.

Radiation is measured in units called rems. Simply stated, a rem is the radiation equivalent of a roentgen, the unit

used in X-ray procedures. But it is too large a unit for normal nuclear measurements so a smaller unit, the millirem, one thousandth of a rem was devised. A rough idea of the exposure to which you might be exposed may be obtained from the following examples: Chest X-rays about 50 millirems, TV viewing (1 hour per day) = 1 millirem per year; living in a masonry house = 50 millirems per year; flying in a jet plane = about 5 millirems per round trip coast-to-coast; cosmic radiation (which we all receive all the time) = 40 millirems per year. Other measures of radioactivity are: whiskey. . . 1200 picocuries per litre; salad oil. . . 4900 picocuries per litre; and nuclear plant discharge. . . 10 picocuries per litre (max.). But living at the boundary of a nuclear plant will add an insignificant 0.2 (two-tenths) of a millirem per year—considerably less than one percent of the total of all the above sources. You and every person, animal and plant have been exposed every minute of your lives to many, many more times the radiation than that to which a neighboring nuclear plant will subject you.

Not only will nuclear power plants not harm us, they will positively help us. The large-scale burning of fossil fuels, chiefly in power plants, has caused considerable concern because of the recent increase in acid rain. This hazardous phenomenon has been observed most conspicuously in the heavily populated northeastern United States and in eastern Canada where maximum electric power generation occurs. However, it has been detected as far south as Florida, west to California, and even out to the vicinity of Bermuda. There has been considerable communication between the United States and our neighbor to the north complaining about our polluting their atmosphere.

Primarily a by-product of coal, (with sulphur-bearing petroleum also playing a part), sulphur dioxide and some nitrogen oxides, when combined with moisture in the atmosphere, produce acids which later are precipitated in the form of sour or acidic rain. The acid content of these rainfalls has proved sufficient enough to adversely affect lakes and rivers in the areas concerned and to kill off the fish in those bodies of water.

The effect on trees and other plants is two-fold. The acid falling on the leaves has an adverse effect on the foliage while that which lands on the ground penetrates and attacks the roots. While research and tighter controls on stack emissions may ultimately afford relief from this growing problem, it should be borne in mind that nuclear plants do not

spew out acid. Of course, non-nuclear plants such as power-generating, industrial, and commercial coal-burning plants, may continue to create acid rain.

There is another adverse effect resulting from the creation of carbon dioxide by the combustion of fossil fuels. Commonly known as the "greenhouse effect," this is the long-range increase in the temperature of our planet. The majority opinion among involved scientists seems to be that the trend in world temperatures is well on its way up as a result of increased atmospheric carbon dioxide. It has been observed that the South Pole icecap has started to melt and is less extensive than it was 50 years ago. Numerous glaciers in the northern hemisphere have been receding in recent years. Of course, the rising temperature is not evenly distributed over the earth nor is it an even increase each year. But it seems to be pretty well established that the earth's climate is considerably warmer than it was 40 years ago and that the temperatures are rising at an increasing rate and will continue to do so. Some scientists have gone so far as to state that this increase in atmospheric heat will threaten human life within two generations. Assuming that these scientists are right and that the high latitude and high altitude snow and ice will continue to melt away, the level of the sea and all connected tidewater will inevitably rise. Without going into the question of time or possible extent of such increase of sea level, it is obvious that coastal Louisiana would soon be in serious trouble. Since the elevation of much of our land is very little above sea level and some is even below sea level, a very few feet of higher water would seriously threaten our levees and drainage systems.

Concern elsewhere in the United States as well as other parts of the world would be about the adverse effects of the increased atmospheric temperatures on agriculture, on personal comfort, and even on our health.

The United States has long been a world leader in industrial development and production. Unfortunately, this generalization does not apply to nuclear power plant construction at this time. Our loss of leadership in this field is partly due to emotional reaction and partly to regulatory restrictions and changes that have resulted in increased cost and extended completion time. There are 32 reactors in France producing 40 percent of that country's electric power. Twenty-three nations other than the United States have active reactors, the power production figures on some of these are listed below:

Sweden	36%
Finland	35.8%
Switzerland	28.1%
Belgium	25.4%

In the number of reactors now operating, Russia leads with 40 (23)*, then come France with 32 (27)* and Great Britain with 31 (10)*. Japan has 25 (10)*, West Germany 15 (9)*, and Canada 13 (10)*. There are 17 other countries, including some that we consider as under developed, which have firm programs for acquiring nuclear power in the near future. There are now a total of 214 (205) operable reactors outside of the United States with many more under construction or planned.

The demand for electric power in this country, as in all other countries, has been increasing and certainly will continue to do so. We must make decisions as to the basic source of the power that we will require. Certainly the cleanest and most readily usable source has been natural gas and we certainly have used it. But alas, the supply is not unlimited and the price has been increasing rapidly. True, we do keep adding to our known resources, but we have to look harder and drill deeper and go farther offshore or elsewhere to find and produce it. It is a luxury item that is no longer available at bargain prices. It must be conserved for more restricted uses such as domestic and commercial needs. Much the same can be said for oil. Here, again, we are not at the bottom of the barrel but we know there is a bottom of the barrel. We all recall the near panic and necessary emergency measures required a few years ago when our supply of Near East petroleum was threatened. It is comforting to know that our 73 nuclear power plants produce as much electricity per day as is available from 1,500,000 barrels of oil!

While there is at present an adequate supply of coal, it, too, is irreplaceable and inevitably must run out some distant day. Hydroelectric and geothermal sources are limited and have been developed to their practical limits. Unless there are to be dramatic new developments, solar, garbage combustion, and wind power will never prove practical on the large scale required for utility power plants. It is estimated that it would take at least 250 giant windmills (many times bigger than the ones you see pumping water) with a 20-mile per hour stiff breeze to equal the electric output of a single 1,000 megawatt nuclear power plant. And, when the wind stops, so does the windmill.

Of course, there are fuel conservation

methods that can and certainly should be adopted. These include greater efficiencies in combustion, more and better insulation, better control as to timing and other adjustments. But, even with all these things done, and done well, we still need vast amounts of fuel as our need for electricity increases along with our population and economy.

Fortunately, we now have an alternate supply in the form of nuclear energy, thus leaving oil available for motive power for our million of cars and trucks and our locomotives. Farsighted planning by utility management has made it possible for nuclear power to take over from oil, so that in 1980 the United States generated more of our electricity from nuclear sources (11%) than oil (10.8%). It is predicted that by 1990, nuclear capacity will be over 20 percent of all U.S. generating capacity radioactive elements. Either the entire residue, that is, the complete spent fuel assembly, can be treated as waste or the three percent that is active can be separated chemically and it alone is then considered and treated as waste. After such separation each power plant would have a volume of roughly a cubic yard of such waste each year. Probably the most practical way of disposing of this unwanted bit is to cast it within a solid chunk of glass, then encase this in a casket of stainless steel and bury the whole thing several thousand feet deep in a geological formation that has been undisturbed for millions of years. There it can sit quietly and safely for some more millions of years. Unfortunately, it will not do anybody any good there other than create a small amount of employment for miners and caretakers. And, since many people shudder at the thought of living within miles of radioactivity, neither they nor their political leaders want it in their territory. Other suggestions are to blast it into space or to bury it at sea. This latter procedure has been proposed as the last resting place for our nuclear submarines when they become outmoded. Actually, the waste problem is emotional and political rather than scientific or practical and must be faced by congress sooner or later.

Just as the supply of natural gas, oil and coal are exhaustible, so is the supply of uranium. It is estimated that the known reserves of uranium in the United States will provide a 40-year supply for the existing or proposed nuclear power plants in the country. Since the estimated life of these power plants is about 40 years, the equipment and its fuel should end up even. It is probable that new sources, domestic or foreign will be available by then but it is hoped that they

will not be needed. It is and will produce 25 percent of our electric energy. A longer range prediction calls for one-third of our capacity to be nuclear in origin by the year 2000.

It is interesting to compare fuel costs as well as availability. Recent figures of the unit fuel costs to produce a kilowatt hour of electricity are as follows:

Nuclear	2.25 cents
Coal	2.4 cents
Oil	6.0 cents

It is safe to assume that oil costs will increase as the cost to produce petroleum continues to go up and it is to be hoped that the cost of nuclear energy will hold or perhaps even decrease with improvement to this developing industry.

Admittedly, the disposal of nuclear wastes is a problem. But, like many problems, it is misunderstood. To begin with, only about 5% of the waste is from nuclear power plants with the remaining 95% coming from military operations; atomic weapons and nuclear submarines. In power plants, typically, a fuel assembly is placed in a reactor where it remains for about one year. It is then removed and one third of the charge is replaced with a fresh charge. When first placed in position for fission the charge contains about 3% uranium 235 but after usage this has been decreased by about two-thirds. The one-third that remains as uranium 235, plus the two-thirds, now called radioactive fission material, are the by products, that it is hoped and expected will be able to be put to practical use. The breeder using uranium 238 will produce electricity by fusion much as the present fission reactor does but it will also produce fuel, plutonium 239, simultaneously. The plutonium thus produced is a practical fission fuel. Here again United States scientists have the expertise to develop the breeder having, in fact, produced an experimental model as far back as 1952. This was shelved in favor of the simple fission type when there was no question as to the supply of uranium. There is a breeder project bogged down at Oak Ridge, Tennessee awaiting funding for further development. In the interim, several foreign countries, including Russia and Japan as well as France and Great Britain, are moving ahead with development of their breeder reactor programs.

We believe that the problems of safety control, and waste can be solved. It is to be hoped that the emotional and political problems will be solved in time for us to move along with the world in the development of nuclear power.

*Parentheses indicate number of reactors under construction as of the end of 1982.

LES Spring Meeting in Lafayette



John E. Chance, P.E., left, accepts the James M. Todd Technological Accomplishment Medal from the 1983 recipient, Roy W. Schubert, P.E.



Frederick J. Brown, P.E., left, accepts the Charles M. Kerr Public Relations Award from the 1980 recipient, Leo V. Bankston, P.E.



Thomas Dudley Hixson, P.E., left, accepts the Andrew M. Lockett Medal for Civic Activities from the 1983 recipient, Waldemar S. Nelson, P.E.



Kerry J. LaBauve, P.E., left, presents the F. Hugh Coughlin Young Engineer Award to James A. Ragland, P.E.



Thomas Dudley Hixson, P.E., left, presents an appreciation plaque to R. C. "Doc" Spears for his many years of service to the Society. Spears retired in October 1982.



Leo M. Odom, P.E., left, and James W. Reeves, P.E., right, presents the Leo M. Odom Award for Services to the Profession to Arthur A. DeFraites, Jr., P.E.



George J. Groh, P.E., left, accepts the A. B. Paterson Medal for an Engineer in Management from the 1983 recipient, Richard A. Matula, P.E.

The LES Spring Meeting was held March 22-23-24, 1984 at the lovely new Holiday Inn Central in Lafayette. There were sixty-five men and thirty ladies registered for the three-day event.

The Acadian Club was the site for the golf and tennis tournaments. Twelve golfers and six tennis players participated in recreation. Lloyd Hoover won low gross and Doc Spears and Bonnie Gautreau won 1st low net and 2nd low net respectively. Tom Carroll and Susan Hill won 1st and 2nd places respectively in the tennis tournament.

The early bird dinner and cocktails were held at Pat's Restaurant in Henderson with sixty six in attendance.

Engineering students from Louisiana Tech University, Louisiana State University, Tulane University, University of Southwestern Louisiana, Southern Uni-

versity and the University of New Orleans presented papers at a session Friday morning. The session was moderated by Walter Vodrazka, P.E., Engineering Education Committee chairman. Committee meetings were held immediately following the student paper presentations with practice divisions meetings in the afternoon. The LES Nominating Committee, the LES Political Action Committee, and the Louisiana Engineering Foundation also met in the afternoon.

Thomas Dudley Hixson, P.E., president, presided during the awards banquet on Friday evening with 143 engineers and guests present. John E. Ritter, P.E., chairman of the Honors and Awards Committee, assumed the chair for the LES award presentations. Six engineers were honored for their outstand-

ing service to the Society and the profession. R. C. "Doc" Spears was recognized for his many years of service to the Society. Doc retired as executive director in October 1982.

Nineteen ladies enjoyed the tour of historic Washington, La. and lunch at the Steamboat Restaurant.

The joint breakfast Saturday morning was attended by fifty nine ladies and men. The 1983 LES Membership Retention Award was presented to Kerry LaBauve, P.E., Alexandria Chapter president.

The Society thanks James Bowie, P.E., general chairman of the convention and Juanita Flores, chairperson of the ladies activities, and their committees, for helping make the meeting so successful and enjoyable.



Leta Bueto
Executive Director
Louisiana Engineering Society

MATHCOUNTS: A LES-Sponsored Program

The pressure mounted as eighteen school teams representing various areas of Louisiana competed in the MATHCOUNTS state competition on Saturday, April 7, at LSU at Alexandria. The teams of four students and their school coaches represented Alexandria, Baton Rouge, Lafayette, Lake Charles, New Orleans and Shreveport as they competed in fast pace action vying for top honors in the state.

The day-long event tested individual skills as well as group problem solving abilities. The school teams represented the top three groups from the various areas that won in regional competition in February. Because of their achievement, the students received the opportunity to travel to Alexandria to compete for the honor of being one of the four individuals who will represent Louisiana in national competitions in May.

MATHCOUNTS, a program designed to encourage 7th and 8th graders in mathematic studies, received an excellent response in its initial year. MATHCOUNTS is a math coaching and competition program designed to answer the problem of declining math skills among students at the pre-college level. Schools volunteer in their participation as their students study from handbooks under the direction of their mathematics teacher coach.

The voluntary program received a wary response from the various schools across the state. The favorable comments from the teams that did participate gave indication however that the second year of competition would see a greater participation from the schools within the state. The program, open to all private and parochial schools, began at the first of the school year with the selection of the students within each school who would best represent each school.

The math teachers of the junior high students, coached the various students as their busy time schedules permitted. One teacher from Baton Rouge commented however, "We did what we could. If you are going to give credit however, give it to the ones who deserve it. The students who motivated and challenged themselves were the ones who excelled in the competition."

After a second test was given in each school to determine the school teams, the students competed in regional tests in February to determine which top three schools would represent their region in the state competition. The test involved a comprehensive review of the

math skills of the individual with emphasis being given to a special topic in the afternoon, this year transformation geometry. Three competitions were held in the morning session with short breaks between.

The forty-five minute sessions began with a written round of forty questions for individual solutions. The students then adjourned to a group set-up to solve ten difficult questions allowing each student to test his knowledge and capacity to solve the problems as a member of a group. Said one coach, "They love that phase of competition. The stress is so great on them as an individual in the competition that they relish the opportunity to let their friends help them." The student then reconvened to solve ten written problems with longer solutions before breaking for lunch.

The afternoon session places and additional fifteen problems before the students pertaining to the special topic of the test. After that session of competition, the winning students are selected. A special topic oral competition is then conducted with judges quizzing the students in their ability to solve problems verbally in front of others. The winner of this phase bears no relation on the top individuals selection, but serves to provide an additional opportunity for a student to be rewarded for his knowledge and his ability to present that knowledge.

The rewards of the competition appears to be one of the most beneficial aspects of the competition. A teacher-coach from Baton Rouge noted, "The students are so excited about the competition. They are more excited about the rewards of winning which is not found in many scholastic competitions, especially in this age group. I had students with average math abilities approach me," she went on to say, "that begged me to allow them to take the school test with students of exceptional ability, just so that they would have a chance to compete in a program that had tangible awards and that appeared to be within the range of anyone that cared to challenge himself."

The tangible awards included expense paid trips, trophies and medallions, and the opportunity to fly to Washington D.C. to compete in the national competition on May 17-19 at the expense of the Louisiana Engineering Society. The Society is responsible for coordinating with the schools and conducting the competition. Their work in the program is on a voluntary basis and the cost of the competition is absorbed in their efforts to solicit contributions from companies and organizations. The anticipated national costs of con-

ducting the competitions, study materials, awards and other costs is being absorbed by national organizations and corporations and is expected to exceed one million dollars in the first year.

One engineer who helped to conduct the state competition commented, "I am not disappointed at all with my participation in this program. I think tangible results will be the outcome of this coaching and competition. Individuals have the opportunity to achieve and to be rewarded, the schools have the opportunity to read between the lines and measure their effectiveness in teaching and at some point the math skills of the students

The LES state organization is responsible for a number of directly related expenses on the MATHCOUNTS program, estimated to be in the \$2,500 range. Funds to help defray these expenses were solicited, but, to date, only \$1,765 has been received. Our special thanks to the following individuals and firms for their contributions:

Consulting Engineers Council of Louisiana, Inc.

Lamon L. Moody, P.E.

Domingue, Szabo & Associates

T. L. James & Co., Inc

Leo M. Odom, P.E.

Dresser Industries

Georgia-Pacific Corporation

Middle South Services Inc.

W. S. Nelson & Company

If you can assist financially in this worthwhile program, please mail your contributions payable to LES MATHCOUNTS, P. O. Box 2683, Baton Rouge, LA 70821.

across the nation are going to grow because someone cared enough to encourage development of a necessary skill in a technological society that has too long taken a back seat to other skills which prepare a student less for what is necessary to compete in a changing job market."

The MATHCOUNTS program comes at a time that the emphasis in schools are being reevaluated and new curriculums are being proposed would shift the criteria for graduation back to more basics of education, with special emphasis being given to mathematics. Said a college professor who participated in the competition, "You really cannot realize the slump the math abilities of students entering colleges today have fallen into. Over the past several years, whereas remedial mathematics was rarely if ever taught, over forty percent of our math professors work load is spent in remedial mathematics." Because of this need, the program was started based upon model programs in Chicago and Alabama which produced outstanding results over a period of time.

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The Spec Sheet



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

Louisiana Student Wins National Scholarship Competition

A University of Southwestern Louisiana student from Breaux Bridge took the top honors in the ACEC Scholar of the Year Competition. MARK L. SAVOY, who will be entering his senior year at USL in the Fall of this year, is pursuing a B.S. in Civil Engineering. He is currently president of both the USL-ASCE student chapter and the Civil Engineering Honor Society. He is a member of the USL marching band and is in the USL honors program. Savoy participated in the design and construction of a wheelchair ramp for Guillory Hall at USL. He earned advanced placement in Math, English, French and Chemistry, and maintains an over-all grade point average of 3.8. In his essay (which is part of the entry) he states:

"The consulting engineer today faces a world of change, challenge, and opportunity. Never before has so many technological problems been so prominent as in our system of values today. An engineer must be able to accept the challenge and opportunity, but not without a consciousness for the moral and ethical responsibilities that accompany new processes, designs, and systems.

A consulting engineer bridges the gap between the laboratory and the production line. In the early stages, he utilizes research and theory to conceptualize and design a particular project or process. Next he may employ communication skills and business acumen to present a plan and clarify various options. His leadership ability aids him in organizing and supervising in the production or construction phase. Expertise is needed in the inspection process to assure achievement or required criteria. The variety of the demands of his position requires that the consultant be a versatile individual."

Mark also took first place in the CEC/L Scholarship Contest. He will receive \$1,000 for his efforts at the state level and ACEC will award him \$5,000 for win-

ning the national competition. He will travel to San Francisco to attend the ACEC Annual Convention in May where he will be honored at a special luncheon.

In the state contest, second place went to STEPHEN C. LIPP, a senior at the University of New Orleans. Stephen is seeking an M.S. in Mechanical Engineering. This month, he will be awarded a B.S. in Mechanical Engineering and a B.S. in Mathematics. He is a member of Phi Kappa Phi Honor Society, the Mathematical Association of America, and is a member of the UNO band and wind ensemble. He has an overall grade point average of 4.0. He will receive the \$750 second prize.

Third place went to MORGAN M. WATSON, JR., Baker, La. Morgan will be entering his junior year in the Fall of this year at Southern University where he expects to graduate with a B.S. in Mechanical Engineering. He is a member of the ASME student section, Port City Association, Kappa Phi Kappa Educational Honors Fraternity, and the Southern University Honors Program. He participates in the Mount Pilgrim Baptist Church Young Adult Choir and has an overall grade point average of 3.5. Morgan is the son of one of our members. He will receive the \$500 third prize.

Consulting Engineers Council of Louisiana, Inc.

Consulting Engineers Council of Louisiana, Inc. (CEC/L) is a non-profit, voluntary, self-governing organization, formed in 1950 and incorporated under the laws of the State of Louisiana, to protect the public interest and advance the professional quality of consulting engineers in private practice. CEC/L is business oriented, devoting its energies toward the protection and improvement of the management portion of the practice. CEC/L provides liaison with other professionals, business leaders, legislators and government agency heads. Activities of the organization encompass and include client service, marketing engineering services, business management and pro-

fessional compensation. CEC/L addresses the needs of the membership on business matters, legal problems and political issues that affect their businesses and threaten the private enterprise system.

CEC/L has 162 member firms (70 of which are in the Baton Rouge area) represented by over 275 principals, managers, or owners and covering over 3,000 employees. There is a Consulting Engineers Council in every state and all councils form a confederation known as the American Consulting Engineers Council, headquartered in Washington, D.C.

Shreveport Engineering Consultants Cited For Modernizing City's Incinerator

For modifying the Shreveport, Louisiana municipal incinerator to comply with current clean air standards, a Shreveport consulting engineering firm was chosen for a major national award in the 1984 Engineering Excellence competition of the American Consulting Engineers Council.

The firm, Demopulos and Ferguson, Inc., received one of 11 Honor Awards from the Council at ceremonies held in Washington, D.C. on April 13, 1984, for "high professional execution of engineering design on the project."

Mayor John B. Hussey received a similar Honor Award presented to the City of Shreveport "for fostering excellence in engineering design on the project."

Mayor Hussey in acceptance of the award, commented

"The City of Shreveport is very pleased with the work of Demopulos and Ferguson, Inc. in the air pollution control modifications for our municipal incinerator. The plant has been an important part of our solid waste disposal system for many years. As a result of their creative application of innovative technology and cost effective process treatment the plant is now environmentally acceptable and we are confident it will continue to serve our

Continued on page 19



NÔTRE MÉTIER

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



Fee for Obtaining Work Prohibited In Louisiana

A title insurance company recently sent letters and questionnaires to Professional Land Surveyors in Louisiana and other states. The company solicited land surveyors to provide a summary of fixed-fee services, and to join a growing list of recommended surveyors. The company promised in return to refer land surveying assignments to the local firms, and land surveyors in consideration of 10% of the surveyors professional fee for performing the survey.

A letter was sent to the title insurance company advising that the Board did not believe that a Professional Land Surveyor can stipulate in advance to a set fee for survey work, without first seeing the property. The company was also advised that their solicitation would cause Louisiana Professional Land Surveyors to be in violation of rules of conduct regarding improper solicitation of professional employment.

All registrants are reminded that they are to avoid improper solicitation of professional employment. Louisiana Administrative Code 19-3:12.4.2 states:

"REGISTRANTS shall not pay or offer to pay, directly or indirectly, any commission, or gift, or other valuable consideration in order to secure work, except under the following circumstances:

- 12.4.2.1 Securing salaried positions through employment agencies.
- 12.4.2.2 As a bona fide employee, or a bona fide established commercial marketing agency retained by them."

The Board intends to take appropriate action against violators of this rule.

Reciprocity Registration

A question asked most often is, "Does Louisiana have reciprocity with the state of XYZ?" My most truthful answer would be, "I do not know." I avoid giving that answer because I do not believe the caller would be served. Before the telephone call is completed, the caller usually has concluded that he should contact the Registration Board in which reciprocity registration is sought.

"Reciprocity Registration" is a misleading term. "Reciprocity" to most of us means, "I have something here, and with it I can obtain the same thing over there." If I am a registered PE in Louisiana, can I obtain registration in Alabama? Paul Landry's answer is, "I do not know." To answer that question, I would

have to know all changes in the law and rules of the Board of both states for the time period under consideration, the PE registrant's academic credentials, his experience, etc. When you consider the fact that we have fifty-four (54) registration boards with the laws, and rules of each changing from time to time, you may agree with me, "I do not know."

The usual "test" a Board must make when considering reciprocity registration is, "did the applicant meet the minimum requirements of our state when he was first registered in the other state?" The state in which the applicant is seeking new registration is the one which must answer that question. Therefore, the applicant for reciprocity registration must address his questions to the Board in which new registration is sought.

Please call the Board office (504) 568-8450 for the address and telephone number of the Board of Registration, in which you may desire to apply for reciprocity registration.

Signing and Sealing of Plans

Another question which comes up with regularity is, "Should these plans be signed and sealed?"

Louisiana Administrative Code 19-3:10 specifies the "Rules Governing the Use of Seals."

The intent of this rule is that a registrant of the Board must accept the responsibility for the engineering or surveying presented. Therefore, if the work is engineering, a PE must sign and seal the work presented. If the work is surveying, a PLS must sign and seal the work presented.

Change to LAC 19-3:4.3.1. Adopted by the Board

LAC 19-3:4.3.1 now reads:

"In the case of firms providing or offering to provide professional services in the State of Louisiana, all such professional services shall be executed by or under the direct supervision of a registered professional duly registered in this state, and designated by the firm as a supervising professional. Such registered professional shall be either an active employee (1) whose primary occupation or employment is with the firm on a full-time basis or (2) whose secondary occupation or employment is with the firm, provided the firm is totally owned by one or more of the professionals whose registration is used to qualify the firm for certification. When the work consists of plans, designs, specifications, reports or maps, such registered

professional shall impress them with his seal as required by law. The appearance of a seal on a document of any type shall constitute a representation that such document was prepared by the registered professional or under his supervision."

The change to this rule was the addition of paragraph (2) [italic above for clarity].

This rule change was published in the Louisiana Register, Volume 10, Number 4, April 20, 1984, Page 343.

Board Offers NCEE Examinations "For Record Purposes Only"

The Louisiana Board registers Professional Engineers in specific disciplines and requires that one takes the examination in the discipline of registration. Registration is offered in Agricultural, Chemical, Civil, Electrical, Industrial, Mechanical, Metallurgical, Mining, and Petroleum Engineering only.

The National Council of Engineering Examiners (NCEE) has available examinations in other disciplines which are recognized and used by other states and the federal government. These other disciplines are Ceramic, Manufacturing, Nuclear, Aeronautical/Aerospace, and Fire Protection Engineering. To assist registered professional engineers of the Louisiana Board, the Board at its May 22, 1984 regular meeting authorized the Executive Secretary to administer these examinations to current Professional Engineering registrants. These examinations will be administered "For Record Purposes Only." The Board does not recognize or accept these disciplines for registration in Louisiana, and does not intend to in the near future. The reason for providing the service to current Professional Engineering registrants is that a few registrants must show proof of having taken, and passed these examinations to satisfy clients. For example, the federal government in one case requires a Mechanical Engineer registrant of the Louisiana Board to show proof that he has taken, and passed the NCEE Fire Protection Engineering examination.

These examinations are offered but once a year, in the fall (October 27, 1984). To be scheduled, please submit your letter request by August 1, with a check payable to the Louisiana State Board of Registration for Professional Engineers and Land Surveyors (LSBRPELS) for the amount of seventy-five dollars (\$75.00).

NOTICE OF CORRECTION

The Professional Engineer and Land Surveyor Registration numbers for JOSEPH DOYLE KIDD as reported in the Disciplinary Article, Page 14, Louisiana Engineer - April 1984 were incorrect. They should be P.E. (#5286) and P.L.S. (#2184).

BOARD MEETING NOTICE

The Louisiana State Board of Registration for Professional Engineers and Land Surveyors will hold its 1984 regular meetings at 1055 St. Charles Avenue - Suite 415, New Orleans, La. 70130 on the following dates:

1984

July 24

Sept. 25

Nov. 27

Locating "Lost" Members of Tau Beta Pi

Are you a member of Tau Beta Pi? Once initiated into Tau Beta Pi, you are a member for life. Today Tau Beta Pi has 277,000 members of which about 34,000 are deceased. The central office records contain current mailing addresses for 158,500 members or 65% of the living alumni. If you have recently moved or become "lost from the association," please send a current address to the central office address below. In 1985 Tau Beta Pi is approaching its 100th anniversary. Help us find all our members for this celebration!

The Tau Beta Pi Association

National Engineering Honor Society
P. O. Box 8840, University Station
Knoxville, Tennessee 37996

EXAMINATION SCHEDULE

	SPRING Apr. 20, 1985 Apr. 12, 1986	FALL Oct. 27, 1984 Oct. 26, 1985
Fundamentals of Engineering Examination (8 hrs.)	X	X
Fundamentals of Land Surveying Examination (8 hrs.)	X	X
Principles and Practices of Engineering (8 hrs.) Civil (Including Structural & Sanitary), Mechanical, Chemical, & Electrical	X	X
Agricultural, Industrial, Metallurgical, Mining & Petroleum		X
Principles and Practices of Land Surveying (4 hrs.)	X	X
Laws and Procedures of Land Surveying (4 hrs.)	X	

Apply at least six to eight months prior to an examination. Board approval must be given for anyone to be scheduled for an examination.

The applicant and the Board depends upon information provided by third parties in the processing of an application, therefore no assurance can be given that one will be scheduled for a specific examination.

Fall 1984 Engineering Management Courses at LSU

FACULTY

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

CERTIFICATE

Upon completion of four acceptable courses and a certificate application form, the participant will be awarded a Certificate in Engineering Management by the Division of Continuing Education. An Advanced Certificate will be awarded to students who take a total of six courses.

COST

The fee per participant is \$200 for each course and includes the cost of textbooks.

REGISTRATION

To insure that each student will have an opportunity to participate in discussion, enrollment in each section will be limited to 30 students.

Please complete the following form and return it to the address below if you are interested in the program. (Classes will begin during the week of Sept. 3, 1984.)

Name _____

Address _____ Phone _____

City & State _____ Zip _____

MAIL FORM TO:

Dr. L. Mann
Industrial Engineering Dept., CEBA Bldg.
Louisiana State University
Baton Rouge, Louisiana 70803-6409

Classes will be organized Wed., Aug. 22, 1984 in Room 503, LSU Medical Center, New Orleans - 7:30 PM and on Thurs., Aug. 23, 1984 in Room 3136 CEBA Bldg., LSU, Baton Rouge - 7:30 PM.

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.

AVAILABLE COURSES

Course A — Modern Management
Course B — Project Management with CPM/PERT
Course C — Engineering Economy
Course D — Financial Decision Making
Course E — Automation and Computer Aided Manufacturing
Course F — Basic Engineering Statistics
Course G — Human Relations
Course H — Cost Estimating
Course I — Microcomputers for Decision Making

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.)

COURSES OFFERED

☐ Management
☐ Project Management
☐ Engineering Economy
☐ Finance
☐ Automation
☐ Statistics
☐ Human Relations
☐ Cost Estimating
☐ Microcomputers

LOCATIONS

☐ Baton Rouge
☐ New Orleans
☐ Monroe
I cannot attend on the following nights:
M____T____W____Th____

Lawrence C. Grundmann, Jr., P.E. Promoted

Lawrence C. Grundmann, Jr., P.E., has been elected vice president of business development of Electec, Inc., a newly formed, diversified subsidiary of Middle South Utilities, Inc. (MSU).

Grundmann's principal duties with the new company will entail development of new business opportunities and marketing of certain capabilities, expertise and resources already existing within other companies of the Middle South Utilities System.

Grundmann has been employed by MSU System companies for more than two decades. He most recently served as vice president-engineering and coal operations of System Fuels, Inc. (SFI), a nonprofit fuel procurement and delivery subsidiary of the four MSU System operating companies — Arkansas Power & Light Company, Louisiana Power & Light Company, Mississippi Power & Light Company, and New Orleans Public Service, Inc. (NOPSI).

Grundmann was named vice president-engineering in September 1977 and assumed responsibility for its coal operations in December 1980. He joined SFI in February 1973 as a fuels engineer and was promoted that same year to engineering manager. He began his career in the MSU System in 1961 as an assistant engineer with NOPSI.

Grundmann received a bachelor of science degree in mechanical engineering from Tulane University in 1961, and has done post-graduate work in management, business, and economics. He is also a graduate of the Public Utility Management Course of the Southeastern Electric Exchange.

He is active in several professional organizations, including the Louisiana Engineering Society (a member since 1961), American Society of Mechanical Engineers, and National Society of Professional Engineers. He is also a member of the Edison Electric Institute fossil and synthetic fuels executive advisory committee.

Grundmann and his wife, Kathleen, reside in Metairie, Louisiana.

New Orleans Engineer Honored for Shaping International Energy Engineering Conference & Exhibition

Frank H. Walk, president of the New Orleans-based consulting engineering firm of Walk, Haydel & Asso-

ciates, Inc. has been honored for his work on the annual Energy Sources Technology Conference & Exhibition (ETCE). Walk had chaired the first annual ETCE held in Houston in 1977. He provided leadership needed in the formation of ETCE, shaping the concept and organization of this annual event which covers a wide range of technical topics on energy-sources and is sponsored by engineering societies within the U.S. and abroad.

Walk received the newly created Frank Evans Award for his "major contribution to the operation, growth, and success" of ETCE during an awards luncheon held Feb. 15 at the New Orleans Hilton Hotel during the 7th annual ETCE. The award was named after Frank L. Evans, Jr., former editor of the industry magazine *Hydrocarbon Processing*, who also made major contributions to the formation of ETCE.

Walk is a Fellow member of the American Society of Mechanical Engineers, is past president of the Consulting Engineers Council of Louisiana, member of the Louisiana Engineering Society, and has served in a number of leadership positions with the New Orleans Chamber of Commerce, and the Board of Economic Development Council of the New Orleans Area. He also is an active member of the L.S.U. Foundation and the New Orleans Metropolitan Area Council. Walk graduated with a B.S. in Mechanical Engineering from Louisiana State University in 1942.

FOR YOUNG ENGINEERS ONLY

So you design bridge bolts? Or could it be you have long since made the transition into the design of anaerobic digesters? Irregardless, the overstated fact of the matter is that the career world of young engineers has generally become very specialized.

Long since have the days of the later 1800s past when you were either a civil or a military engineer. Long since have the days of the 1960's past when you were a civil, mechanical or electrical engineer. We gaze with amazement at some of the very specialized areas of engineering which have become so commonplace in our age of new technology.

Even a young engineer looks back over his brief career and ponders to himself at the advances that have been made in his world since he began. With the advent of the computer, we can now design phases

of a project, whereas before, we had to assume. "Where to from here?" could be the question of this day of changes.

But, could it be on the horizon that we are seeing the engineering world go full cycle? More and more, the engineer is called upon to drop his specialty and assume a flexibility in his work. More and more, the engineer is called upon to limit the time and energy he spends upon the minute calculations and to rather turn his attention to more practical aspects of his work which include less tangible factors.

There are factors which never can quite fit into formulas; people, environment, aesthetics, impact, future. Factors which may affect the practical applications of science more than an exact yield stress being used in the calculation of one bridge bolt.

Who stands in the threshold of this new world of engineering? Who is there to see a height of technology and yet also a new awareness of the practicality of that application to benefit mankind? The young engineer, of course.

Engineers Elect Officers

The Engineers Club of New Orleans has announced the names of newly elected officers for 1984. They are Peter R. Quirk, President; Charles W. Nelson, 1st Vice President; J. Michael Pereira, 2nd Vice President; Oliver S. Delery, Secretary; Harold Olsen, Treasurer. Others elected to the Board of Directors were Howard McAfee, J. Michael O'Hare, Charles E. Drewitt and Peter Stafford. The Engineers Club, which was organized in 1951 to provide a forum for the local engineering community, has recently moved to new quarters in the 1001 Howard Bldg.

Professional engineering groups are encouraged to visit the club and to consider using it for their regular meetings.

IN MEMORIAM

William B. Gurney, P.E.

It is with sorrow that we report his passing on November 26, 1983, of William B. Gurney, P.E., a mechanical engineer, Life Member and a member of the Louisiana Engineering Society since 1943.

Mr. Gurney was a native of Marshfield, Massachusetts and a resident of Baton Rouge. He was retired as Supt. of Results, Gulf States Utilities in 1965. After graduation from M.I.T. in 1923, Mr.

Gurney worked for Stone & Webster Engineering Corporation and from 1930 until 1965 for Gulf States Utilities.

He was a registered professional engineer in Louisiana and recipient of the Louisiana Engineering Society's James M. Todd Technological Accomplishment Medal in 1959.

The Society extends its deepest sympathy to his wife and family.

IN MEMORIAM

Frank J. Germano, P.E.

Frank J. Germano, P.E., a member of LES since 1938 and a life member since 1968, expired on October 28, 1983. He attended Rensselaer Polytechnic Institute where he received a BS in C.E. in 1931, MS in C.E. in 1932, and Doctor of Civil Engineering in 1934. After spending two years at Hartford, Connecticut as Assistant Design Engineer for the Metropolitan District Commission, in 1936 he joined the Louisiana State University as an Instructor in Engineering Mechanics. In 1938, he was promoted to Assistant Professor, and in 1943 to Associate Professor. In 1948 he was elevated to the rank of Professor of Engineering Mechanics, and in 1949 he was selected as the Head of the Engineering Mechanics Department of Louisiana State University. He stayed in that capacity until 1953 at which time he assumed the position of Head of the Department of Civil Engineering. Dr. Germano remained Head of the Civil Engineering Department until his retirement in 1976 at which time he was awarded the title of Professor Emeritus of Civil Engineering.

During his teaching career, he was largely responsible for the development of the Department of Civil Engineering to its present strength. His outstanding qualities as an engineering educator were recognized by a Fulbright Grant in 1952 as a result of which he was invited to lecture at the Polytechnic de Milano as a Visiting Professor for one year. In 1966 Dr. Germano was invited to Nicaragua to lecture as a Visiting Professor at the National University of Nicaragua.

Dr. Germano has been involved in the design and investigation of various complicated structures around the U.S. He was a member of the American Society of Civil Engineers; Vice President of the Baton Rouge branch in 1962 and President of the Baton Rouge branch in 1963. He has been Director of the Louisiana Section. He was a biographee in Who's Who in America and in 1964 was awarded a second Fulbright Grant to lecture at the National Pontifical Catholic University in Lima, Peru.

NEW MEMBERS-Louisiana Engineering Society

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Industry

Glen M. Singer, P.E.
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NEW ORLEANS

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Industry

J. Cary Trochesset, P.E.
104 Bishops Dr.
Slidell, LA 70458
Industry

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Fairborn, OH 45324
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115 Coachman Dr.
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Continued from page 12

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The author is Dr. Richard Arthur, University of Wisconsin. Order a copy from Professional Publishing Group, Scott, Foreman & Company, 1900 East Lake Avenue, Glenview, Illinois 60025. List price: \$7.95.

NSPE 1983 Salary Survey

The 1983 questionnaire was mailed to 65,296 members of the Society. The total number of questionnaires returned was

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The median annual income salary, fees, cash bonuses and commissions) of survey participants was \$41,300, a 5.9% increase in the 12-month period since the preceeding survey.

***Median Income by Level of Education**

Less than a bachelors degree	\$40,000
BS Degree in Engineering	40,000
MS Degree in Engineering	42,500
Doctorate in Engineering	49,960

***Median Income by Branch of Engineering**

Agricultural	\$38,470
Chemical	46,800
Civil (Structural)	41,000
Electrical/Electronics	42,290
Mechanical	43,000

***Median Income by Regions**

New England/Mid Atlantic	\$43,600
Southeast	40,476
Midwest	39,600
Plains	38,000
Southwest (Louisiana included)	43,057
West	42,900

Other exhibits included in the survey: income by length of experience, level of professional responsibility, job function, size of organization, registration status, supervisory/managerial responsibility and fringe benefits.

Copies of the survey are available from NSPE, 2029 K Street N.W., Washington, D.C. 20006. Order NSPE Pub. No. 0004. Cost \$30 to members, \$55 to nonmembers.

SPEC SHEET

Continued from page 15

future needs."

Completed in 1971, Shreveport's 200-ton-a-day garbage incinerator has a combustion system and air pollution control characteristic of those developed in the late 1950s and early 1960s. Three years later, however, the incinerator could not comply with new, more stringent clean air regulations established by the Louisiana Air Control Commission. The city was also under orders to clean up the wastewater it discharged to its storm drainage system.

With an ultimatum from the state to clean up the incinerator's stack emissions or close it down, the city turned to Demopulos and Ferguson for a plan to bring the plant into compliance.

The project was initiated under the administration of Mayor L. Calhoun Allen, and directed by Don Hathaway, then Commissioner of Public Works and Jim Lynch, then Superintendent of Solid Waste. "The landfill could not accommodate the extra tonnage if the incinerator was shut down," says Don Hathaway. "We were determined to keep it in service if at all possible."

The modifications specified by the en-

gineers included installation of an innovative gas-cleaning system never before applied to a municipal solid waste incinerator. Its cleaning ability had been tested, however, on many industrial processes. A complete wastewater treatment and recirculation system, also unique to municipal incinerators, was installed. It completely eliminated wastewater pollutants.

With the modifications, the particulate emissions were reduced to well below the levels required by both the state and the Environmental Protection Agency. Major changes in the water treatment process resulted in savings of \$50,000 a year in water consumption.

By completely automating the incinerator's complex treatment systems, the city could manage the modified facility with no increase in staff. After more than a year of operation, the total cost per ton of garbage incinerated has increased less than 5%. This relatively low increase is attributed to the system's low maintenance cost and simplicity of operation.

The City of Shreveport's long battle with incinerator air pollution is over.

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A/E SYSTEMS REPORT, the newsletter on Automation and Reprographics in Professional Design Firms, has announced the release of its annual CADD Buyer's Guide, a comprehensive listing of all turnkey suppliers of computer design/drafting systems sold in the U.S. and Canada for A/E applications (architectural, engineering, interior and facilities management). The guide appears in the March, 1984 issue of the monthly publication.

"Because of the rapid advancement in A/E CADD," comments A/E SYSTEMS

REPORT publisher Michael R. Hough, "we've enlisted the services of Design & Systems Research, Inc., a leading management consulting firm specializing in computer graphics, computer-aided design applications and market research to prepare the guide. This new issue, which builds upon our previous guides, provides the most comprehensive and up-to-date listing available to A/E's. It will also be the most affordable," adds Hough, "costing only \$10 for non-subscribers. Subscribers will get it free as a part of their subscription."

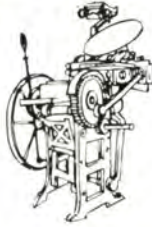
Says AESR Editor-in-Chief George Borkovich, "The guide will list vendors with addresses and phone numbers, hardware and software descriptions, applications available, pricing, date of first installation, and number of systems sold as well as those specifically in A/E offices. It will also show which companies will be exhibiting at A/E SYSTEMS '84, the world's largest computer conference/

trade show for A/E's, so prospective buyers can map out whose demonstrations they plan to see at the June 4-7 Baltimore show. More than 40 of the companies listed will participate in the show."

Design & Systems Research, Inc. is headed by Dan Raker, who also serves as Contributing Editor to A/E SYSTEMS REPORT. His Cambridge, MA office maintains a database of more than 2800 computer graphics suppliers, including vendors of hardware, software, systems services, supplies, and information providers. In its five years of existence, DSR has established a reputation as a disinterested party in carrying out market research on new and existing systems thus adding to its expertise in its work with architects and engineers.

The CADD Buyer's Guide costs \$10 from A/E SYSTEMS REPORT, P.O. Box 11316, Newington, CT 06111. The yearly AESR subscription rate is \$72.

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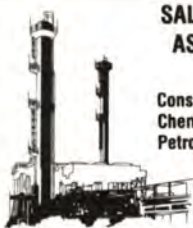
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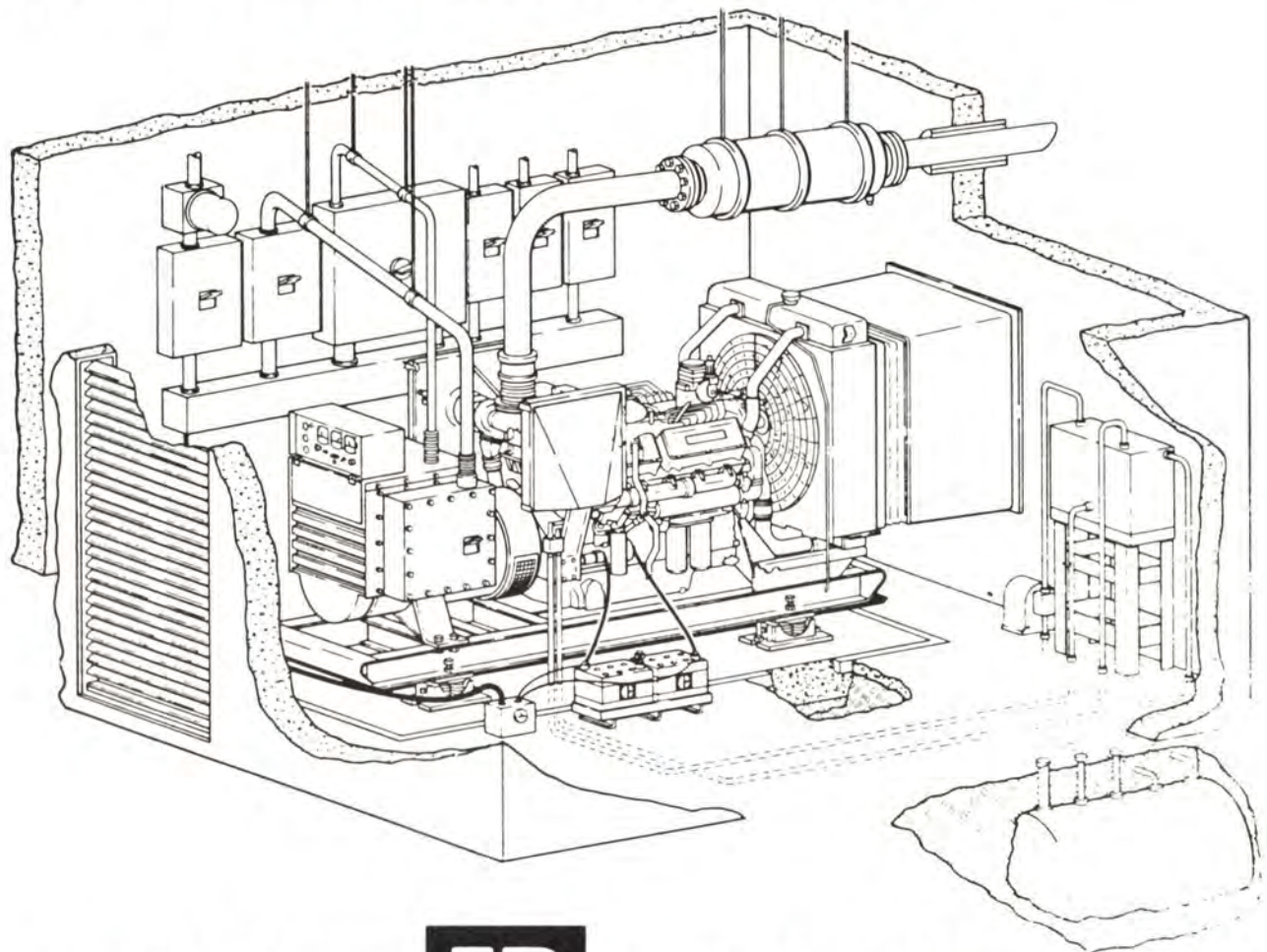
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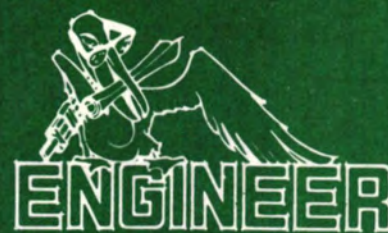
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ABOUT THE COVER

Our cover this month features LES President Henry E. Markel, Jr., P.E.

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Professional Liability Insurance: Can You Afford to Be Without It?

John E. Hunt, Jr., CPCU

Professional liability insurance is malpractice protection for engineers. It provides coverage for errors, omissions, and negligent acts that stem from designing, administering, or functioning in any way as an engineer. It also covers the engineer from acts, errors, or omissions of employees.

Just as a doctor carries malpractice insurance to protect him- or herself from mistakes, errors, omissions, slips, etc., and an attorney carries malpractice insurance to compensate for errors in registering titles or problems in drawing up legal papers, so, too, a professional engineer should protect him- or herself from the unknown and unexpected errors and omissions that occur from day to day in the best-run offices.

Is It Really Needed?

Many professional engineers feel that, since they have never needed liability insurance in the past, they don't need it now. The truth of the matter is that errors or omissions can be the fault of employees as well as firm owners. A secretary can make a typographical error; a drafter can misplace a line; an engineer can give a set of plans a cursory review and not catch a minor item that could ultimately result in significant costs or damages.

Professional liability insurance covers a multitude of problems. A building does not have to collapse for liability insurance to come into play. In truth, many claims do not have any bearing on collapsed buildings, falling bridges or similar problems, but actually result from cost overruns or requirements for work on a project above and beyond original specifications. New buildings frequently have elevator problems, water leakage, air-conditioning troubles, security alarm malfunctions, and many other difficulties. Professional malpractice insurance may apply in any of these situations.

In many cases, the professional liability carrier does not pay a claim, but instead provides protection for an engineer who is being sued, whether actually at fault or not. This protection is crucial, since an engineer does not have to be at fault in order to be sued for an alleged problem. In fact, many attorneys will sue everyone in sight, hoping to get someone with a "deep pocket," such as a wealthy

engineer, a big insurance company, etc., who can pay off a claim. In such cases, an insurance carrier will represent and defend a covered engineer until the case is decided.

As an insurance agent, I feel that every firm should be protected, regardless of size. However, many small firms cannot budget for the cost initially. In these cases, I recommend that a firm needs coverage when it takes on any sizeable job, any complicated job, or any job dealing with the government. Larger firms (with more than two employees) need professional liability insurance at all times, because mistakes do happen.

How Much Does It Cost?

Charges for professional liability insurance are generally considered to be high, although the cost is relative, considering the protection it affords. Policies are normally written in amounts from \$100,000 up to many millions of dollars, depending upon the size of the projects the covered engineer works on.

In thinking about the cost of insurance, an engineer has to take the long view of what the premium money buys: protection of assets. Obviously, it is important to buy the best possible coverage at the lowest possible cost. This is not necessarily the same as the cheapest price, and calculating the amount of protection one needs and deciding how much one can afford to pay for it are problems that require a considerable amount of knowledge in a subject that often seems arcane to outsiders.

Who Sells It?

A number of insurance companies offer their own coverage specifically, but most offer it through insurance agents. These agents represent different companies and investigate coverage and price offers from several underwriters, trying to find the best combination for the engineer-applicant.

While many agents write this type of coverage, it is always best to pick an agent who has some knowledge and expertise in the field and who understands the engineering profession. It is not necessary that a local agent handle coverage, but the agent should be able to provide service, should have access to many markets so that the client can get competitive quotes, and should under-

stand the engineer's business.

A Risky Business

Some engineers have heard the claim that if they don't have insurance they won't get sued. This isn't true. The fact that an engineer doesn't have insurance won't keep an attorney from trying to sue for his or her assets. If an engineer has any involvement in a situation in which an owner or attorney is seeking reimbursement for expenses, payment for death or injuries, or reimbursement for damages to property, he or she will probably be sued. If the engineer has insurance, then the carrier will defend and represent him or her until the case is decided. If the engineer doesn't have such insurance, then he or she must find an attorney well qualified and well versed in engineering. In many cases, the cost of the defense far exceeds the cost of payments or settlements.

How to Get Coverage

The engineer in search of liability insurance should contact a professional insurance agent who is informed about the engineering field and engineers' professional liability, making sure that he or she has access to all of the professional liability markets and will get more than one quote. The engineer should be sure that the agent understands the coverage needed and the characteristics of the firm. At this point the engineer completes an application, realizing that it is essential to be clear, concise, and complete to ensure getting the best quote and most complete coverage.

How Are Premiums Figured?

Premiums are figured primarily on gross billings expected for the coming year. Insurance companies also take into consideration the construction values the firm is dealing with and any specialties or hazards that might be unique to the firm, such as bridge building, tunnel and dam design, auditoriums or stadiums, offshore drilling platforms, etc.

Premiums can change from year to year, of course, as a firm's size, specialties, ownership, and risks change. Every few years an insurance agent needs to review a firm's coverage to be sure that

Continued on page 18

The Magic Matrix

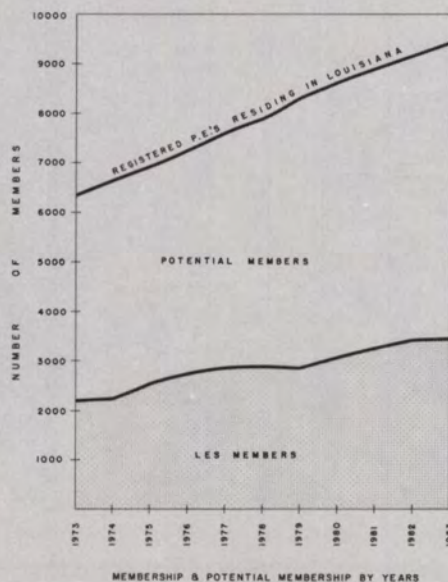


Henry E. Markel, P.E.
LES President

Draw a matrix with 16 squares and number the squares 1-4 in the top row, 5-8 in the second row, 9-12 in the third row and 13-16 in the last row. Draw a circle around any number in the matrix, then cross out the remaining numbers in the same horizontal line and vertical row as the number circled. Select any other number not crossed out and again draw lines through the other numbers in that number's line and row. Choose a third number in the same way and cross out its row and column. Finally, circle the single remaining number. Now add the four numbers circled and, voila! They add up to 34.

Now, what does this have to do with LES? Your attention is directed to the chart below.

Note that, for eight years, membership growth had been at a rate which ranged from 3% to 10% per year. But in the last two years, membership growth has actually declined, despite the vigorous pronouncements of previous administrations.



Yet, the most dramatic observation to be recognized from the chart is that two out of every three registered professional engineers, *living and working* in Louisiana, have failed to join their professional society. Can you imagine a doctor practicing medicine without joining the AMA or a lawyer not joining the Bar Association? Of course not.

But I'm puzzled as to what we must do to make LES attractive to all engineers in Louisiana? Are dues too high or too low? (LES dues are among the lowest of all 50 state engineering societies.) Should we offer seminars of various types? Do we hold meetings at the wrong time? Are our programs unimaginative?

I'm puzzled.

But you can help me solve the riddle. When you write to me for an explanation to the Magic Matrix, tell me what LES should be doing. Give me your solution. Help me to make LES the professional society all engineers will be proud to be a part of.

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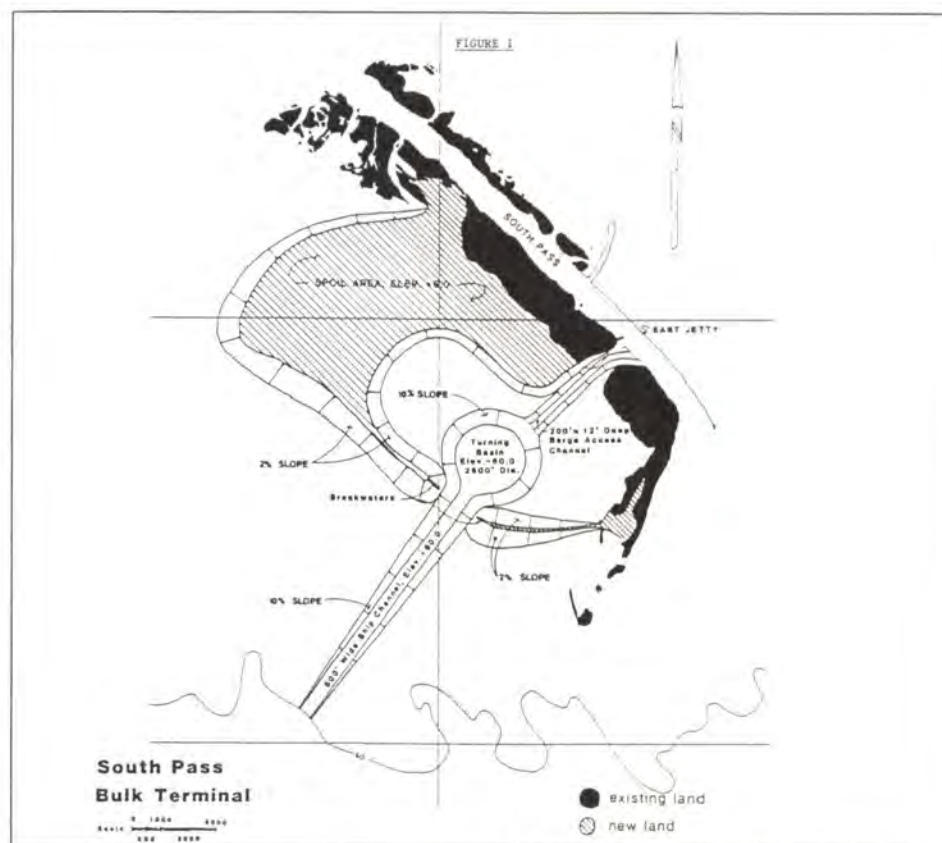
South Pass Bulk Terminal

Charles W. Nelson, P.E.
and
Mervin B. Morehiser, P.E.
Waldemar S. Nelson and Company,
Inc.
Engineers and Architects

Introduction

In July of 1983, the Governor's Task Force on Deep Draft Vessel Access to the Lower Mississippi River issued its final report entitled "Deep River Study - Lower Mississippi River." This study, completed by TAMS of New York, Booz Allen & Hamilton of Bethesda, Maryland and Pyburn & Odom of Baton Rouge, contained recommendations which have been accepted by both the Treen and Edwards administrations of appropriate positions for the State of Louisiana. The study's recommended program based on an evaluation of over 45 alternative projects is:

- Authorization should be sought for a long-range project to deepen the river channel to 55 feet;
- Implementation should begin, as soon as possible, of the first stage of the project, wherein a minimum 750-foot wide, two-way channel would be deepened to 45 feet from the Gulf via Southwest Pass to Mile 172 AHP.
- The private sector should be encouraged to put into operation, as soon as possible, topping-off facilities at the mouth of the river or in the Gulf in order to attract and establish pat-



terns of trade in deep draft vessels. The South Pass Bulk Terminal is a project which responds to the third of these recommendations. It was con-

ceived as a means of providing the Gulf Coast region with low cost, efficient access to the economies of the scale offered by using deep draft vessels for ocean

transport of dry bulk commodities. The proposed facility combines the advantages of a deep draft port with other advantages typical of a midstream operation. It is intended as a measure that will serve to maintain and attract trade to the Mississippi Valley until such time as the main channel of the Mississippi River itself can be dredged.

This paper draws from a presentation to the Mississippi Valley Coal Exporters Council Second Annual Conference held during May of 1984. It presents findings of a feasibility study prepared by Waldemar S. Nelson and Company for the Plaquemines Port, Harbor and Terminal District.

The Topping-off Alternative

To those who may not be familiar with "top-off" operations, this means a two-stage loading of an ocean-going bulk carrier. The first stage is the conventional loading of the vessel to the maximum draft available at a particular port. The second stage, the topping-off stage, consists of meeting the partially loaded vessel at a deep-water site outside the port and finishing the loading process with additional commodity brought to that location. For the specific case of coal leaving the Lower Mississippi, bound for the Far East, it is a significant fact that partially loaded colliers are routinely topped-off at Richards Bay, South Africa, some 8,000 nautical miles away.

A comparison of topping-off relative to port dredging shows several advantages and disadvantages. The advantages are:

1. The cost of most top-off projects is within the funding capabilities of local or private interests.
2. The environmental impacts are either small or non-existent, thus easing or sidestepping the permitting procedure.
3. They do not require a universal consensus of the various competing interests.
4. Though they cannot offer the full benefits of a deeper port, they do provide a large percentage of the benefit at a reduced cost.

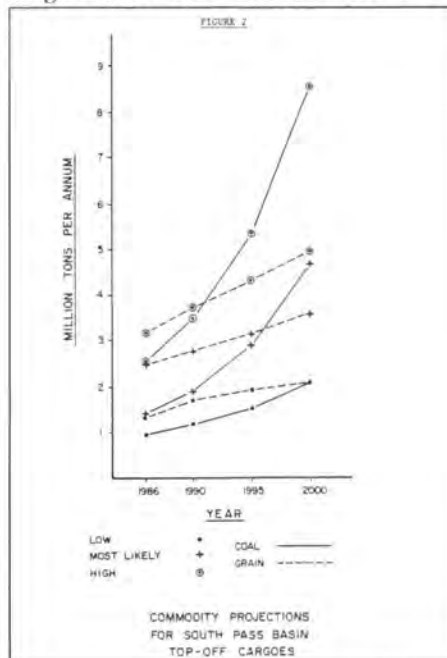
The disadvantages are:

1. Most projects handle one commodity or class of commodities.
2. They require the transport of the topping-off commodity to a location outside of the port, often requiring double handling.
3. Storage and sophisticated services available at land-based port facilities are usually either unavailable or significantly limited.

4. They are usually much more sensitive than conventional ports to adverse weather conditions.

The South Pass Bulk Terminal

The South Pass Bulk Terminal combines the qualities of a deep draft port and topping-off terminal. The concept is to provide a protected location where river barges and deep draft vessels can meet and floating midstream equipment can be used to transfer dry bulk commodities from the barges to the ships or vice versa, thus eliminating the need for double handling. The proposed location is a 2,500 foot diameter, sixty foot deep turning basin dredged into the shallow waters to the west of the mouth of South Pass (see Figure 1). This location is largely protected by various landforms of the Mississippi Delta. Further protection will be provided by the judicious use of dredge spoil removed from the basin. Access to this harbor for the deep draft vessels will be provided by a 500 foot wide by 2.25 mile long ship channel running southwest from the basin to the 60



foot contour of the Gulf. Access from the river for barges, tugs and other floating plant is by means of a 200 foot wide channel connecting the basin to the river at outlet 12.6W. This existing penetration through the west jetty will be improved to suit the purpose. A barge fleeting area will be located in South Pass a short distance upstream from the outlet channel. Midstream transfer equipment suitable for the volume and types of commodities handled will be provided by the terminal operator.

Terminal availability is extremely important, dictating that the basin be con-

figured and managed to allow transshipment activity during a very high percentage of the year. Environmental factors influencing operations will be the wave activity in the basin and the effect of fog on the topping-off process. The consensus from a number of sources holds that three foot high waves with lengths ranging from three-quarters to one and one-half times the length of the barges is a limiting wave condition.

During an average year, waves in excess of the critical wave would occur in the center of the turning basin approximately three percent of the time or roughly eleven days.

Fog is only a problem in the Delta Region during the colder months of the year. Fog at South Pass is expected for roughly five percent of the time during the months of December through April, or one percent of the time during an average year.

Coal Forecast

The coal exporters of the Mississippi Valley had their feast in 1981 and are now enduring what seems by comparison a famine. Barring future interruptions of shipments from foreign major coal exporting nations, local exporters will have to content themselves with moderate growth linked to increasing world demand for steam coal. The lingering world recession and the oversupply of oil and gas are the most prominent "dampers" on any tendency for dramatic increases in demand. Whatever the demand for coal eventually proves to be, it will be met by several new sources of supply in addition to the current ones. The U.S. is and will likely continue to be the high cost supplier. The determination to diversify sources of supply and to maintain links to the dependable U.S. market will be the driving force behind U.S. coal exports. Growth in the U.S. export market will depend primarily upon growth in the world demand for imports with the potential for short-term "bonanzas" such as 1981 when competing supplies were disrupted. Despite any savings that might result from deep draft vessel transportation, in the near term, the U.S. share of the world coal trade is not likely to increase significantly.

The real competition for the Lower Mississippi and the rest of the Gulf Coast ports is the U.S. East Coast ports. It is generally accepted that the Gulf ports are at a cost disadvantage relative to the East Coast ports for exports to the European market. It is clear that both coasts will have topping-off capability of one form

or another. Coastal Barge Corporation is appealing the decision by the Coastal Zone Industrial Control Board of Delaware which barred their top-off plans in Delaware Bay. Canadian Steamship Lines are likely to continue their operations with self-discharging vessels where permitted. By combining large vessel ocean transport savings with the cost advantage of cheap inland barge transportation, it should be possible for Lower Mississippi top-off operations to draw even with the East Coast and possibly gain a small cost advantage. Regarding the Pacific Rim trade, neither competitor will gain an advantage unless its topping-off facility is significantly more efficient. Since all of the topping-off schemes proposed for the East Coast require double handling of cargo, it is likely that the South Pass Bulk Terminal will be able to provide that advantage.

Importance of Grain

In the near term, the majority of the top-off cargo projected for the South Pass Bulk Terminal is grain rather than coal. The eleven grain elevators between Baton Rouge and Plaquemines Parish, along with several midstream operations, handled 62.9 million tons of grain and 12.4 million tons of feed-grade grain, by-products and derivatives during 1983 (50% of total U.S. exports for grain). Projections for 1985 Lower Mississippi export volumes are over 63.5 million tons for grain and around 7.5 million tons for coal. Clearly, until coal exports expand and are attracted to the Mississippi River, grain and its by-products will be the dominant bulk cargo available for top-off.

The part of the grain trade that would utilize the topping-off terminal initially would be that segment that has an existing deep draft port as a destination and that does not require sophisticated blending to meet the quality standards of the purchaser.

The following four groups of grain commodities meet the latter requirement:

1. Grain derivatives and by-products, traded to the compound feed industry in the European Economic Community (EEC). Of the 10.5 million tons of by-products and derivatives exported from the Lower Mississippi in 1982, approximately ninety percent went to the EEC, with 5.5 million tons of the total going to the deep draft port of Rotterdam.
2. "Identify preserved" grains which are weighed and graded, but not

blended. At present this is a small segment of the export market. There is some indication that it may grow, however, as a result of quality concerns on the part of EEC consumers.

3. Intra-company transfers of grain, in which all responsibilities for quality remain with the owner. In this case the Federal Grain Inspection Service (FGIS) waives the general requirement for the inspection of all export grain. This also is a small segment of the total market.
4. "Over-specification" grain which for one reason or another arrives at the Lower Mississippi significantly exceeding the minimum standards for the grade at which it is being sold. This cargo could be transferred from barge to ship with a significant degree of certainty that the grading requirements would be met without the need for blending. Midstream operators occasionally handle cargo of this type.

Figure 2 shows the projection for coal and grain top-off volumes for the South Pass Project over the 15 year period from 1986 to the year 2000.

Project Costs and Revenues

Capital costs for the construction of the South Pass Bulk Terminal were estimated at \$30.8 million, while annual O&M costs were projected to be a little over \$1.5 million (1983 dollars). Act 571 of the 1984 legislative session established the Bulk Cargo Offshore Terminal Commission as an agency of the State of Louisiana. This new agency will provide the state with a suitable vehicle for cooperating with the Plaquemines Port, Harbor and Terminal District in the financing and construction of the South Pass Bulk Terminal. It is anticipated that the parish agency will construct the project with money obtained by a long-term lease for the facility provided by the new state agency. Ultimately the users of the project will pay for the project's construction and operation. Preferential use of the terminal may be available on a lease basis, but due to the public nature of the project a portion of its space and capacity would be reserved for common carrier status on a spot basis. For feasibility study purposes, a user fee of \$2.00

per ton of top-off cargo was used to compute project revenues and to establish the project's financial feasibility.

The economic analysis considered terminal costs, transportation savings, added cost and trade volumes under several market conditions in order to determine the project's viability. The "pessimistic" case assumed low trade volumes and depressed ocean freight rates; the "most likely" case assumed a recovery of trade volumes with continued depression in freight rates; while the "optimistic" case assumed the same recovery of trade but with ocean freight rates increased to a "fair rate of return."

A fourth case was analyzed in which Southwest Pass is dredged to 45 feet deep in 1990, which is possible if funding becomes available and environmental issues appropriately addressed. Under this scenario, the South Pass Terminal would be a smaller segment of the shipping industry, but would still be attractive. The sensitivity of the project in these four cases is shown below.

Summary

The South Pass Bulk Terminal would provide the ports of the Gulf Coast with an efficient means of fully loading deep draft vessels with a broad range of dry bulk commodities. Coal and grain by-products and derivatives would be the commodities immediately available for topping-off at the facility. Future developments may lead to topping-off with export heavy grain or lightering of imported ore. The capital investment required for this project is within the capability of non-federal public interest and many private companies. The technology and equipment required for the construction and operation of the terminal is proven and available. The net environmental impact of the project is positive. Marshland creation by spoiling of dredged material is an established and accepted practice in the lower Delta Region. The concept is both flexible and easily expandable. It could be readily modified to suit the future needs of the transportation community. Most importantly, it would provide access to the economies of scale of deep draft trade for the Gulf ports at a critical time in the development of new expanding trade patterns. This is especially true in the case of coal.

CASE	SAVINGS/COST	REVENUE/COST
Pessimistic	5.75	1.33
Most Likely	10.10	2.21
Optimistic	17.39	2.21
45' Channel at Southwest Pass	6.93	1.52

Report on the 1984 Annual Convention



Henry Markel, Jr., P.E., right, accepts the gavel from outgoing president, Dudley Hixson, P.E.

The annual LES convention and installation of officers was held at the Holiday Inn Holidome in Monroe on June 20-23. This convention began with a new four-day meeting format in hopes of increasing attendance and participation. There were 60 engineers and 30 spouses registered for the convention.

The convention got off to a good start with recreation at Chennault Park on Wednesday afternoon. There were eleven golfers and eight tennis players participating in recreation. The Monroe Chapter hosted a cocktail party on Wednesday evening for the early arrivals.

Committee meetings were held from 8:30 a.m. to 12:00 noon on both Thursday and Friday mornings, allowing committees longer meeting times. This format was very successful, as it allowed a greater number of attendees at the meetings.

Thursday afternoon was set aside for the Chapter Officers' Training Conference permitting cancellation of the annual September meeting. The session was well attended with special emphasis on the legislative program, scholarships, mathcounts and the State Board of Registration. Cocktails and dinner were held at the Holidome on Thursday evening with 92 people in attendance. After dinner, the Monroe Chapter hosted entertainment. A dance floor was set up and the group danced to its favorite tunes played by the Wildwood Express.

James G. Dalton, Assistant Executive Director for Programs, NSPE, was the guest speaker for the Friday luncheon. Jim gave a synopsis of on-going activities in the NSPE headquarters. Fifty-eight engineers attended the luncheon.

The practice division meetings were held on Friday afternoon. The Private



1984-85 LES Board of Direction.



The LES office staff presented outgoing president Dudley Hixson with the Engineers Creed done in counted cross stitch.

Practice division had an excellent program with a presentation from two representatives of the Naval Facilities Engineering Command in Charleston, SC. The presentation centered on the selection and contracting of engineering services by their agency.

The Associated General Contractors made a presentation to a joint meeting of PEPP, PEC, and PEI on several pertinent issues:

- a. newly developed standard specification by the Louisiana Department of Transportation and Development for sewer and water lines construction;
- b. adoption of standard pay items for sewer and water line construction;
- c. working conditions and relations between the contractor-engineer municipality; and
- d. preconstruction conferences.

The presentation was well received.

The Louisiana Engineering Foundation met on Friday afternoon. The Foundation elected new officers, approved a new set of bylaws, and adopted a financial budget for the 1984-85 fiscal year.

Waldemar S. Nelson, P.E., installed officers at a banquet on Friday night. Installed were:

Henry E. Markel, Jr., P.E., President; Vincent A. Forte, P.E., 1st Vice President;

Robert P. Blanche, P.E., 2nd Vice President; Bobby E. Price, P.E., Secretary-Treasurer; Kerry J. LaBauve, P.E., State Director; Marvin L. Firmin, P.E., State Director.

After the installation of officers, Newt Hielscher, Humorist, provided the entertainment hosted by the Monroe Chapter. The golf and tennis awards were presented.

Tennis winners were: Men, Howard McCain, P.E., 1st place, Robert P. Blanche, P.E., 2nd place.

Ladies, Jean Blanche, 1st place, Christine Lazenby, 2nd place, Myra Wintz, 3rd place, Donna Skipper, 4th place.

Golf winners were: Men, Glynn Gautreau, P.E., Low Gross, Lloyd Hoover, P.E., Low Net. Ladies, Bonnie Gautreau, Loss Gross, Beverly Groh, Low Net.

A combined breakfast and General Membership Meeting was held on Saturday morning. The Board of Direction meeting was held at the conclusion of the General Membership Meeting.

The ladies enjoyed a tour of the Bible Research Center and Elsong Home and Gardens on Thursday and a shopping spree to "O'Susanah" Shopping Center on Friday. Lunch was served at Austins in Monroe.

The LES Board of Direction and staff applauds the Monroe Chapter for an excellent meeting. The chapter hosted all three cocktail parties and the entertainment on both Thursday and Friday nights. The chapter accomplished this through contributions received from the following companies and individuals:

Associated General Contractors, Inc.
Bentz & Elmore, Inc.
D. & J. Construction Co.
Ford, Bacon & Davis, Inc.
Harrison & Lazenby, Inc.
IMC Exploration Co.
Louisiana Industries
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Daune F. Bruley, P.E.
J. E. Mitcham's Peaches, Ruston
Bobby E. Price, P.E.

Our sincere thanks to the contributors and to the members of the Monroe Chapter of the Louisiana Engineering Society and its Ladies Auxiliary for their many hours of hard work. A special "thank you" to Bobby and Patsy Price, Merlin and Shirley Pistorius, Jerry and Christine Lazenby, and Jedd Lewis.



POTPOURRI

Leta Bueto Executive Director Louisiana Engineering Society

Correction

Part of the story Nuclear Safety, James S. Janssen, P.E., in the June 1984 issue of Louisiana Engineer, was printed out of order. If you would like a complete copy of the correct text, please contact the LES office (504) 344-4318.

Engineers' Median Salary Tops \$43,000 According to Latest NSPE Survey

According to the just-released NSPE *Professional Engineers Income and Salary Survey*, the median income National Society of Professional Engineers (NSPE) members earned from primary employers reached \$43,017 in January 1984. This represents a gain of 4.2% in the 12-month period since the preceding survey, barely more than the 4.1% increase in the Consumer Price Index during the same period.

Top salaries were reported in NSPE Region 6, including Alaska, Guam, Hawaii, Montana, Idaho, Washington, Oregon, California, Nevada, Utah, and Arizona, where the median of \$45,511 narrowly edged out the Northeast's median of \$45,400. The Society's North Central Region, including North and South Dakota, Minnesota, Iowa, Missouri, Nebraska and Kansas, reported the lowest salaries.

New York City led among major metropolitan areas with a median of \$51,300, followed by Houston at \$50,608, Newark/Jersey City at \$50,000, and Los Angeles/Long Beach/San Diego at \$49,400. Cincinnati (\$37,107), Cleveland (\$41,696) and Kansas City (\$41,760) posted the lowest medians.

Despite a drop of almost \$1,500 from the previous year, petroleum and mining engineers again reported the highest median among engineering disciplines, at \$51,059. A distant second were nuclear engineers at \$47,640, followed by chemical engineers at \$47,000.

By industry, petroleum and coal products continued to lead with a median salary of \$50,675, followed by pipeline utilities at \$47,950, and chemical, pharmaceutical and allied products, and communications services (radio, tv, telephone and telegraph) at \$47,000. Lowest-paying employers continue to be the three levels of Government, federal, state, and local, at medians of \$40,869, \$37,000, and \$37,681, respectively.

By degree level, the median for engineers with a B.S. in engineering was \$41,756. Those with an M.S. in engineering reported \$45,000, and those with a doctorate, \$52,000.

By length of experience, medians ranged from \$26,000 at the under-one-year level to \$52,000 for those with 30 or more years of experience.

Highest-paying job function continued to

be the executive/administrative category, with a reported median of \$51,000, followed by sales/marketing at \$43,484, and teaching at \$40,000. Design engineers, mostly a younger age group, reported lowest incomes at \$37,500.

The survey is based on a questionnaire mailed to 62,371 non-student, actively employed NSPE members in January 1984. The results are based on 16,000 returns. Income is defined in the survey as the individual's annual base salary from the primary employer as of January 1, 1984, plus fees, bonuses, and commissions during the preceding 12-month period, but excluding overtime pay and income from secondary or part-time employment. Included in the full survey report are additional data including cross tabulations of the basic variables, such as income by years of experience and industry or service of employer.

The National Society of Professional Engineers represents more than 80,000 engineers in all technical branches of the profession. The Society is headquartered in Washington, D.C. The full report, *NSPE Professional Engineers Income and Salary Survey - 1984*, is available for \$30 for NSPE members and \$55 to non-members.

Nation's Largest Engineering Scholarship Program Offers 153 Awards

This year the National Society of Professional Engineers (NSPE) has awarded 153 engineering scholarships and grants with a total value of nearly \$1 million to students around the country. Recipients were selected from among 1,703 applicants and were judged from national standard test scores, essays, transcripts and extra-curricular activities. Scholarships range from \$1,000 for one year to four-year full tuition scholarships in excess of \$20,000. The program, expanded this year to include students already enrolled in college, in addition to high school seniors, is administered by the NSPE Educational Foundation and is the largest of its type in the United States.

Since the program began in 1958, approximately 1,125 students will have been awarded Foundation scholarships and grants. The assistance program is made possible by generous contributions from businesses, schools, the Society's Auxiliaries and individual donors.

This year NSPE's Professional Engineers in Industry practice division established a special \$1,000 grant in commemoration of NSPE's 50th Anniversary, to be awarded to a

senior engineering student in recognition of the need for industry involvement in and support for engineering education. Also for NSPE's Golden Year, the Professional Engineers in Government practice division established a \$1,000 Fellowship for Engineers in Management in response to a concern that practicing engineers were being overlooked for promotion to management positions owing to the lack of formal credentials.

This financial assistance is just part of the Society's effort to help deserving engineering students. Applicants who do not receive an award at the national level may still be eligible for one of the numerous scholarships or grants available through state societies, their chapters and auxiliaries.

David A. Roberson, P.E., President of the NSPE Educational Foundation, remarked, "The program will continue to grow as one of the best ways to encourage and support a strong engineering future."

Paul H. Robbins, P.E., Receives NSPE Award

Paul H. Robbins, P.E., former Executive Director of the National Society of Professional Engineers (NSPE), has been selected to receive the NSPE Award, the Society's highest honor to an individual. He was nominated by the Maryland Society of Professional Engineers and endorsed by the D.C. Society.

"It is especially fitting that during this year of the Society's 50th anniversary we recognize someone who has done so much, and for such a long time, for the profession, his community and NSPE," said Otto A. Tennant, P.E., Chairman of the Society's Honor Awards Committee, when asked to comment on the unusual choice. "Paul Robbins guided the Society to a position of eminence, recognized not only by other engineering groups but by the U.S. Congress and Government agencies as well."

The NSPE Award requires that the recipient be "an engineer who has made outstanding contributions to his or her profession, public welfare and/or mankind." As head of a Society encompassing all engineering disciplines, Robbins was in a position to promote the non-technical aspects of the whole profession. During his 32-year leadership he pushed for:

- Engineering registration to protect the public from unqualified practitioners;
- Legislation dealing with such engineering interests as employment practices and technology policy; and
- Unity among the varying factions of the profession.

Author of the Engineers' Creed, Robbins has urged engineers to be true professionals, by placing "service before profit, the honor and standing of the profession before personal advantage, and the public welfare above all other considerations." Under his guidance, NSPE achieved branches in every State of the

Union by 1960 and grew from a fledgling 12,000-member group into an organization of some 76,000 engineers at the time of his semi-retirement in 1978.

Born in Syracuse, New York, Robbins earned a B.S. degree from Syracuse University and went on for a Master's from M.I.T. He has been awarded two honorary Doctorates of Engineering, one from Rose Polytechnic Institute in 1964 and the other from Norwich University in 1979. His first engineering experience was with the Pittsburgh Bridge and Iron Works for a year; in 1937 he joined the engineering faculty at The Cooper Union for the Advancement of Science and Art in New York, where he remained until his selection for the position of Executive Director at NSPE in 1946. During that period, Robbins also taught some summers at the University of Maine and New York University and served as a consultant to New York Mayor Fiorello La Guardia on the needs of the city in the event of a wartime attack.

Tulane Engineers to Meet

The Annual Meeting of the Society of Tulane Engineers is scheduled for Saturday, September 22, 1984 in Stibbs Rooms A and B at the University Center on Tulane's campus.

Activities begin at 11:30 A. M. with a cash bar, followed by a luncheon, business meeting, and a guest speaker. Cost for the event will be approximately \$8.00 and is payable at the door, but make your reservations in advance by contacting Shelly Richardson at 1-504-865-5764 (N. O. phone number). See you there!

National Society of Professional Engineers Donates Special Gift for Washington Monument

Washington, D.C. March 22, 1984—The National Society of Professional Engineers (NSPE) has announced it will donate two new walkways for the Washington Monument grounds. NSPE President Louis A. Bacon, P.E., said the walkways will be a special gift to the American people. The project begins this week with filling and grading of the grounds. Construction of the walks becomes the first step in a multi-year National Park Service plan to define the grounds with formal landscaping, facilitate improved visitor comfort and safety and relieve vehicle congestion. Not since the turn of the century has the terrain surrounding the Monument been altered.

Park Service National Capital Region Director Manus J. Fish said, "We are deeply grateful to the Society on behalf of 1.2 million visitors annually to the Monument who will begin to experience the results of years of planning the redesign of the Monument grounds along formal lines established early in the Federal City's history."

"Cooperation between the public and private sectors brought us to the point of construction where only plans existed before," Fish explained.

This year is the 100th anniversary of the completion of the Washington Monument and the 50th anniversary of NSPE. In observance of these anniversaries, a groundbreaking ceremony for the walks was held on July 11 with the Society, National Park Service and U.S. Army Corps of Engineers, which was instrumental in the building of the Monument.

The new paths each will be 1,150 feet long and 15 feet, 6 inches wide and have an exposed aggregate surface for good traction. The open-space character of the ground will be maintained for informal recreational use, special events and walking and jogging.

Bayou Chapter Wins 1983-84 Membership Contest

The Bayou chapter won the 1983-84 membership contest with 111.8% of quota and 152.9% of contest. In addition to points for new LES members, chapters are credited one point for each new NSPE member. The Bayou chapter had a quota of 17 and added 19 members, seven of whom joined NSPE.

The Alexandria chapter won second place and the Baton Rouge chapter won third place.

A portable rostrum will be presented to the Bayou chapter at the next meeting of the LES Board of Direction.

House Rejects Bill That Would Have Crippled Brooks Law, Altered Set-Asides

By Arthur Schwartz
NSPE Assistant General Counsel

In a dramatic and somewhat closer-than-expected voice vote, the House of Representatives rejected an amendment to the Department of Defense Authorization Act of 1985 that would have required that price be a factor in the selection of architectural and engineering (A/E) firms by the defense agency, and that would have removed the current \$85,000 threshold that DoD uses to determine

which design contracts should be set aside for small business. Had the two-part amendment been successful, the professional selection process for A/E services, commonly known as the Brooks law, would have been gravely damaged, and DoD would not have been precluded from setting aside all of its A/E procurements for small firms. A "small" engineering firm under present criteria issued by the Small Business Administration is one with an average annual gross billing of less than \$7.5 million. Tyis number is being restudied by SBA, but there is presently no indication of what change, if any, will be made.

The controversial amendment was offered by Rep. Berkley Bedell (D-Iowa) and received vocal support on the House floor by Reps. Parren Mitchell (D-Md.) and Buddy Roemer (D-La.). The debate centered on two long-standing issues highly sensitive to both the A/E community and the federal government in recent years.

The provision of the Bedell amendment that would have removed the current \$85,000 (or any) cap on small business set-asides has been anathema to the A/E community because it would return DoD to its previous practice of setting aside 100% of its A/E contracts to small firms under the so-called "rule of two," that is, each A/E contract must be set aside for small firms unless the contracting officer cannot find two small firms which are qualified for the project. NSPE and other groups have long been on record as opposing this practice because, under it, truly small firms were at an unfair disadvantage by being forced to compete with moderately sized firms, while at the same time large firms were being arbitrarily excluded.

The debate over the Brooks law procedures came as somewhat of a surprise to some observers, including many members of the House. In response to statements on the floor made by Bedell, Mitchell, and Roemer that price should be a preliminary factor in the selection of A/E firms by the federal government, House Government Operations Committee Chairman Jack Brooks (D-Tex.), author of the Brooks law, noted that while he is a "strong supporter of competition in government contracting, there are a few extraordinary circumstances in which competitive factors other than price—such as the capacity and proven ability to perform—should prevail. The procurement of architectural and engineering services," said Brooks, "is one of these."

Also voicing opposition to the Bedell amendment were Reps. John Dingell (D-Mich.), Don Fuqua (D-Fla.), Frank Horton (R-N.Y.), Bill Nichols (D-Ala.), and Albert Gore (D-Tenn.). Dingell stated bluntly, "If you want good engineering, get good engineering. If you want to deal on price . . . you may get cheap engineering but you may get a fantastically costly, dangerous, ineffective, and inefficient product." Added Horton, "I do not know about you, but I sure would not want to have my office on an upper floor of a building designed by a low bidder. I would not want to drive over a bridge built by the cheapest engineer."

Reprint from July 1984 *Engineering Times*

NSPE Committee Appointments

Herbert G. Koogle, P.E.-L.S., NSPE President, has released his 1984-85 Committee and Representative Appointments.

The following Louisiana Representatives have been appointed to national committees:

Name	Committee
James L. Meyer, P.E.	Registration and Qualification for Practice Committee
Dudley Hixson, P.E.	Practice Division Representative (PEPP)
Leta Buetto	Achievement Awards Committee (SSAC Representative)
Waldemar S. Nelson, P.E.	Honor Awards Committee
Roger Seals, P.E.	Professional Development Awards Committee
Dale Hunn, P.E.	Membership Committee
Billy Rentrop, P.E.	Professional Industry in Industry
	Executive Board (Southwestern Region Vice Chairman)
Mrs. James C. Webb	Auxiliaries Board (Southwestern Vice President)



The Spec Sheet

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

Indemnification, Part I: Identifying Unacceptable Risks

The language can be convoluted and arcane. Attorneys seem to write things that way. But the intent is clear: It is to shift risk. When you agree to indemnify others, you agree to stand in their place in the event of a loss. The stakes can be high, and the terms and conditions of that agreement can be of vital importance to you.

There is no reason to assume those terms and conditions will be fair. Indemnification provisions are drafted by attorneys who, at least going in, are not particularly concerned with what is fair. They are concerned with advancing the interests of their own clients to the fullest extent of their ability.

Skydiving without a Parachute

Consider this typical example (stripped of legal clarifications which, for most of us, tend more to confuse than to clarify):

The Architect (Engineer) agrees to hold harmless, indemnify, and defend the Owner against all claims, damages, and losses arising out of the performance of services under this Agreement, except only those claims, damages, and losses caused by the sole negligence of the Owner.

This is not a provision you can reasonably accept. It expands your potential liability well beyond your responsibilities under the law, it establishes a requirement (defense of the owner) you are unlikely to be able to meet, and it places you in an untenable position of responsibility for negligence on the part of your client. Most importantly, it imposes risks no professional liability insurance carrier in the United States will insure.

To understand why, it is important to keep this in mind: Your professional liability insurance is intended to protect you against the consequences of your negligence. It is not intended to protect others against the consequences of theirs. Nor, with very few exceptions, will it protect you against liability you voluntarily assume under contract, liability which would not be yours in the absence

of such a contract.

Preserving the Protections of the Law

Under the common law, it generally takes more than an error in professional judgment to establish liability for a loss. The law requires the proving of negligence, and under most circumstances, only after the experts have convinced the court of your failure to provide usual and customary professional care is a finding of negligence likely to be made. It is against this eventuality that your professional liability insurance indemnifies you.

The law affords an enormous degree of protection, for professional negligence is extremely difficult to prove. But you can cast this protection aside (and the protection of your professional liability insurance along with it) with the stroke of a pen. All you need do is sign a contract which makes you responsible, not just for losses arising out of your negligence, but for losses arising out of anything that may somehow be attributable to the services you perform.

This, in fact, is the principal effect of the indemnification provision set forth above. You can safely agree to accept responsibility for the consequences of your *negligent* acts, errors, or omissions (or the *negligent* performance of your services). Only at great risk can you agree to accept responsibility for losses arising out of *any* act, error, or omission. The distinction: liability for losses that would not otherwise legally be yours.

Your Client's Defense

What does it really mean when you agree to "defend," as well as indemnify? It means that, long before any legal liability on your part is established, you may have an obligation to retain an attorney and mount a defense on your client's behalf. Under most circumstances, this is an obligation your insurance carrier is likely to refuse to accommodate. Your insurer may, however, depending on the provisions of your policy, agree to reimburse your client for the costs of defense.

At best, the problem will go away once the specific circumstances surrounding a particular loss are known. It may not be

Small Design Firm Marketing Manual

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in your client's interest to force you to make good on your obligation to defend. At worst, your refusal or inability to retain an attorney on your client's behalf could fuel the fires of a dispute with your client that would not otherwise exist. You could find yourselves adversaries in a situation in which resolution of the real conflict at hand might best be served through cooperation.

Indemnify your client against the costs of defense if you must, but avoid agreeing to mount that defense. It is likely to be contrary to everyone's interests in the long run.

The Owner's Negligence

Never mind the fact that it may be permissible under the law in some states. Is it reasonable for you to accept 100% of the liability for losses for which you may only be partially responsible? Not really. Yet, that is precisely the effect of the language, "... except only those claims, damages, and losses caused by the sole negligence of the Owner." You cannot insure against the risk that your client may somehow contribute to a loss but your client can. Why not simply leave the risk where it belongs?

In the final analysis, how far can you reasonably go on agreeing to indemnify your client? Not very far beyond the protection of your insurance. Here is an insurable restatement of the example above:

The Architect (Engineer) agrees to hold harmless and indemnify the Owner against all claims, damages, losses, and costs, including cost of defense, arising out of the negligent performance of services under this Agreement.

Curiously, this brings you full-circle, for it amounts to little more than what is already required of you under the law. But, with the exception of responsibility for willful misconduct and some manageable legal refinements, it is the most you can reasonably concede. It may seem as if a great deal of wasted effort is required to produce a result that would have been achieved had the issue never been raised in the first place. Negotiations are sometimes like that. Once raised, however, it is an issue you can ill-afford to ignore.

Indemnification provisions involve complex legal considerations, and their ultimate acceptability may depend upon the specific coverage afforded by the insurance you carry. Seek the advice and assistance of your attorney and your insurance broker. Both can be of great help to you in your efforts to negotiate fair,

equitable, and insurable agreements.
(From: *The Professional Liability Prospective*, July, 1984).

Dear Executive:

The American Consulting Engineers Council notes that the median size of its member firms is about seven people. The American Institute of Architects reports that 80% of its member firms have nine people or fewer.

As you know, these firms are often unable to adequately market their services. To assist them, we have prepared the SMALL DESIGN FIRM MARKETING MANUAL. This concise 90-page manual is intended as a primer on the basic tools and techniques of effective marketing for

the smaller firm. Its goal is to inspire effective marketing and to allow the professional to avoid false starts and half efforts.

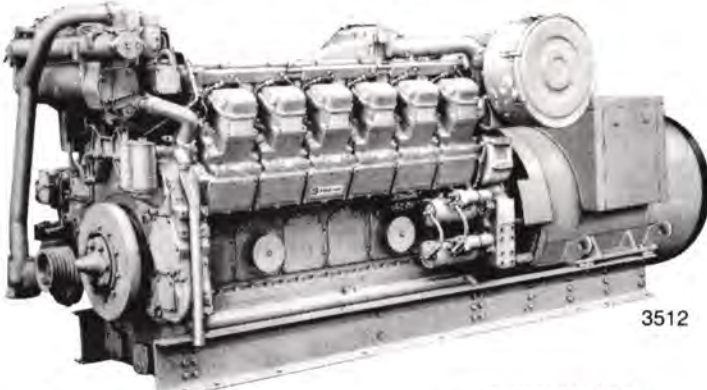
Our goal is to disseminate the information in the MANUAL and, of course, to sell this publication. Several professional societies have directly sold the MANUAL to their members. These include: Architects Society of Ohio, New Jersey Society of Architects, Cleveland Chapter, AIA, the National AIA Bookstore and the Chicago Chapter, AIA.

The MANUAL is priced at \$20.00 per copy plus shipping. We provide copies of the MANUAL to professional groups for \$15.00 per copy plus shipping. This will

Continued on page 18

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NÔTRE MÉTIER

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



THE BOARD OF REGISTRATION AND THE PROFESSIONAL SOCIETIES

The bottom line, top line, and middle line is — **the purpose of the Board is to protect the public. The purpose of the Professional Society is to protect you.**

The Board of Registration for Professional Engineers and Land Surveyors administers and enforces the law. The law begins with the General Provisions (La.R.S. 37:681) which states — "in order to safeguard life, health, and property, and to promote the public welfare, any person in either public or private capacity, or foreign or domestic corporation, practicing or offering to practice professional engineering or professional land surveying, shall be required to submit evidence that he is qualified to so practice and shall be registered as hereinafter provided; and it shall be unlawful for any person to practice or to offer to practice in this state, engineering or land surveying, as defined in this Chapter, or to use in connection with his name or otherwise assume, use, or advertise any title or description tending to convey the impression that he is a professional engineer or a professional land surveyor, unless such person has been duly registered under the provisions of this Chapter."

In the administration of the law the functions of the Board are:

1. **Initial registration of registrants.** These are Engineers-In-Training, Professional Engineers, Land Surveyors-In-Training, Professional Land Surveyors, Engineering Firms, and Land Surveying Firms.
2. **Renew the certificates** of Engineers-In-Training and Land Surveyors-In-Training and renew the **registrations** of Professional Engineers, Professional Land Surveyors, Engineering firms and Land Surveying firms.
3. **Determine** which curricula are to be recognized under the provisions of the Act. The Board accepts the Accreditation Board for Engineering and Technology Accreditations and conducts its own inspection and visits within the state.
4. **Active** in the National Counsel of Engineering Examiners (NCEE). This is the organization all engineering Boards throughout the United States and its territories who belong to for the purpose of:
 - (a) Providing the standard examinations and grading.

- (b) Exchange of enforcement information.
- (c) Providing a "Model Law" for all states to strive for so as to facilitate reciprocity registration.
- (d) Evaluate foreign education.
5. **Enforcement** of the law and rules of the Board.

All of these functions and others not enumerated herein are for the purpose of the protection of the **public** and not necessarily in the "best interest" of the **individual** registrant of the Board, the professional.

The professional societies such as the Louisiana Engineering Society (LES) and the Louisiana Society of Professional Surveyors (LSPS) stated objectives may include the "protection of the public;" however, that is not the professional societies' primary purpose.

Article I - **Objects** of the Constitutions and Bylaws of the Louisiana Engineering Society states:

"The objects of this Society are the professional improvement of its members, the encouragement of social intercourse among Engineers and men of practical sci-

ence, and the advancement of Engineering; and for the promotion of these objects, stated meetings of the Society shall be held."

Article II of the Articles of Incorporations of the Louisiana Society of Professional Surveyors states:

"This Corporation is organized for the following purposes and to carry out the same: Enhancing the status of the Land Surveying Profession by:

1. Maintaining high technical and cultural standards for entrance to the Association.
2. Cooperating with educational institutions in the maintenance of high standards of education in Land Surveying.
3. Requiring a high standard of ethical practice by members of the Society.
4. Aiding in the adoption of high standard of attainment for the granting of the legal right to practice Professional Land Surveying.
5. Fostering among students of Land Surveying the study of philosophy and history, tradition and achievement, duties and social functions of the Land Surveying Profession.
6. Encouraging the personal and professional development of young Land Surveyors.
7. Supporting activities looking to the increased employment of Land Surveyors and seeking new opportunities for service in Land Surveying . . ."

Would you not agree that the stated objec-

Continued on page 19

EXAMINATION SCHEDULE

	SPRING Apr. 20, 1985 Apr. 12, 1986	FALL Oct. 27, 1984 Oct. 26, 1985
Fundamentals of Engineering Examination (8 hrs.)	X	X
Fundamentals of Land Surveying Examination (8 hrs.)	X	X
Principles and Practices of Engineering (8 hrs.) Civil (Including Structural & Sanitary), Mechanical, Chemical, & Electrical	X	X
Agricultural, Industrial, Metallurgical, Mining & Petroleum		X
Principles and Practices of Land Surveying (4 hrs.)	X	X
Laws and Procedures of Land Surveying (4 hrs.)	X	

Apply at least six to eight months prior to an examination. Board approval *must* be given for anyone to be scheduled for an examination.

The applicant and the Board depends upon information provided by third parties in the processing of an application, therefore no assurance can be given that one will be scheduled for a specific examination.

Two Named to Engineers Selection Board

William H. Miller, P.E., Lake Charles, and Houston K. Huckabay, P.E., Ruston, have been elected to the Engineers Selection Board. Miller will serve from July 1, 1984 to June 30, 1985. Huckabay will serve from January 1, 1985 to December 31, 1985.

Miller received a B.S. degree in civil engineering from Louisiana State Uni-



William H. Miller, P.E.

versity in 1950. He is a member of the Louisiana Engineering Society, National Society of Professional Engineers, American Society of Civil Engineers and Deep Foundations Institute.

Miller served as LES chapter secretary, vice president, and president of the Lake Charles Chapter. He served as LES state chairman of the Professional Engineers in Construction.

Miller is vice-president of F. Miller & Sons, Inc., with responsibilities including estimating, subcontractor and vendor relations, and administrative duties. Bill is married to the former Linda Corley and they have seven children and one grandchild.

Huckabay received a B.S. degree in chemical engineering from Louisiana Polytechnic Institute in 1954. After graduation, Huckabay was called to active duty in the United States Air Force where he served as an aircraft maintenance officer, air weather officer and aerial reconnaissance weather officer in Texas, Minnesota and Guam. Upon release from active duty he entered graduate school at Louisiana State University, receiving the M.S.Ch.E. in 1959 and the Ph.D. in 1960.

Houston became a registered professional engineer and joined LES in 1965. He served as state chairman of the Profes-



Houston K. Huckabay, P.E.

sional Engineers in Education 1983-84 and is serving as chairman for the 1984-85 administrative year.

Houston is a Professor of Chemical Engineering at Louisiana Tech University. He has held research grants with the Louisiana Department of Highways and Louisiana Department of Energy. He has

served as a consultant to private industry, legal firms and the Louisiana Department of Revenue. He serves as energy advisor to Mayor Elton Pody of Ruston.

Houston is married to the former Georgia Anne Fillingham and they have five children.

The "Roster of Engineering Societies" will be published in the October 1984 issue of the *Louisiana Engineer*.

If you would like your engineering-related organization officers published in the magazine, mail the information to LES at P. O. Box 2683, Baton Rouge, LA 70821 along with addresses and telephone numbers, prior to September 15, 1984.

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LIABILITY INSURANCE

Continued from page 4

changes have been taken into account and coverage remains optimal.

Effects of the Economy

When times are tough in the money market, people are more prone to file suit and seek money for damages or injuries on claims that they might have settled out of court in easier times. If an engineer waits until he or she has a claim to buy insurance, the cost will surely be higher. While most insurance companies will stay with a firm through claims from year to year, many companies will not accept a previously uninsured firm that applies for coverage after having been subject to a number of prior claims. The insurance company would be wary of the management decisions of such a firm.

Insurance for Inspectors

The new Vogt legislation (SB 556) will be requiring municipalities to change their procedures regarding inspections by city building and zoning inspectors. Insurance coverage is beginning to develop for building and zoning inspectors, and we have heard of premiums as low as \$75 a year. Most professional liability policies have exclusions dealing with in-

specting work that an engineer has not designed or performed, and this area should be addressed in professional liability coverage.

Fine Print

Why is the wording so hard to read in professional liability insurance policies? Almost every word in insurance policies has been court tested at least once. The phrases, coverage descriptions, and exclusions have all been analyzed by one court or another so that the meaning has been clarified by court case precedence.

While it appears that it would take a Philadelphia lawyer to read and interpret an insurance policy, good common sense helps, as does taking the time to read through the policy, paying particular attention to the description of coverage relating to the phrase, "will pay on behalf of the insured all sums legally obligated to pay for . . ." Exclusions also require particular attention, since they indicate what coverage does not include.

The most important element of selecting professional liability insurance is knowledge: knowing what coverage is needed, where to acquire it at the best price, and how to keep it current. The American Consulting Engineers Council or a reputable insurance agent can pro-

vide further information to help engineers choose appropriate, affordable coverage.

John E. Hunt, Jr., CPCU, is president, John E. Hunt & Associates, Inc., Insurance Agents and Risk Managers, Tallahassee. The Hunt agency is the sole Florida agent for insurance programs of the American Consulting Engineers Council. Reprinted with permission from Journal, Florida Engineering Society.

THE SPEC SHEET

Continued from page 15

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NOTRE METIER

Continued from page 16

tives of both of these professional societies are self-serving? Members of these societies should be proud that they **are** self-serving. If these two grass root organizations do not serve **you** as a professional, who else will? Do not expect the Board to serve the profession. That is **not** the charter of the Board; the Board exist to serve the *public*. I do not mean to imply that the Board will not work with and cooperate with the societies.

The Board works very closely with the societies in the areas of enforcement and legislation. From the Board's point of view, this cooperation is essential in the protection of the **public**. The law which is the Board's responsibility to enforce must be a law which is enforceable. If it is not enforceable, legislation has to be changed. The societies through their lobbying efforts can change the law. Cooperation is necessary to enact a change of the law.

The societies' "Code of Ethics" is parallel to the Board's "Professional Code of Conduct." The society by enforcing its "Code of Ethics" enhances the Board's enforcement function. If the profession takes care of its own problems, it will **not** become a "legal" problem for the Board.

A number of registrants of the Board and members of the societies are confused by their membership. This is especially true for members of LES and registrants of the Board. A few months ago a Professional Engineer came

to the Board office to discuss his problem. He was convinced that he was not an **Inactive** registrant of the Board because he produced seven (7) years of cancelled checks proving payment. His cancelled checks were made to the Louisiana Engineering Society (LES) and not to the Board. He had been sealing drawings for the past seven (7) years illegally.

The *Louisiana Engineer* magazine contributes to the confusion of membership in the societies and registration of the Board. Leta Bueto, executive director, of LES, and "Doc" Spears before her have discussed this confusion in articles they have published in the *Louisiana Engineer*. Please bear with me as I attempt to state the facts:

1. The *Louisiana Engineer* magazine is the official publication of the Louisiana Engineering Society.
2. The *Louisiana Engineer* magazine is **also** the **journal** of the Louisiana State Board of Registration for Professional Engineers and Professional Land Surveyors.
3. All active registrants of the Louisiana State Board of Registration for Professional Engineers and Land Surveyors receive a copy of the magazine. This includes all active Engineers-In-Training, Professional Engineers, Land Surveyors-In-Training, and Professional Land Surveyors. The term active in this context means registrants of the Board who have paid their annual fee.

4. Members of the Louisiana Engineering Society who are **not** registrants of the Board or who are registrants of the Board but inactive will **also** receive a copy of the magazine.

5. Members of Louisiana Society of Professional Surveyors who are **not** registrants of the Board or who are registrants of the Board but inactive and who are not members of LES will **not** receive a copy of the magazine.

The Board administers and enforces a law. The Societies serve you, the professional, hopefully in a selfish way. This is Notre Metier (our profession) — don't count on anyone else to **do it** for you. Many of you reading this are **not** members of **your** professional society. Why aren't you? You like it the way it is? Are you asking the question, — "what's in it for me?" Your future is at stake; that's what's in it for you!

(The opinion expressed, especially toward the end, is strictly mine).

BOARD MEETING NOTICE

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

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Sept. 25	Nov. 27	Jan. 22 & 23 Mar. 19 Jun. 4	July 23 Sept. 24 Nov. 26

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Major General William E. Read Joins the Staff of Walk, Haydel & Associates, Inc.

Major General William E. Read, who is retiring after 34 years of commissioned service with the U.S. Army Corps of Engineers, is joining the engineering and construction management firm of Walk, Haydel & Associates, Inc. of New Orleans, Louisiana as Executive Assistant to the President.

ENR - Top 500 Design Firms

The Engineering News Record, a national publication of the McGraw-Hill Company, has recently published the nation's Top 500 Design Firms. Seven Louisiana design firms were included. They are:

Rank Firm

- # 52 Walk, Haydel & Associates, Inc., New Orleans, La
- #118 Petro-Marine Engineering, Inc.,

- Gretna, LA
- #172 Waldemar S. Nelson & Co., Inc., New Orleans, LA
- #293 Perez Associates, New Orleans, LA
- #323 Burk & Associates, Inc., New Orleans, LA
- #417 N-Y Associates, Inc., Metairie, LA
- #498 Demopulos & Ferguson, Inc., Shreveport, LA

LES Seniors Meet at New Orleans Engineers Club

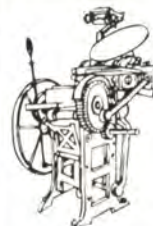
A group of retired, semi-retired, about to be retired, and still active, middle-aged members of the New Orleans Chapter meet regularly for lunch at the Engineers Club in the Plaza Towers at 1001 Howard Avenue in New Orleans. The coalition calls itself the Senior Members and usually meets at noon on the fourth Tuesday of each month. However, this date is subject to change if circumstances

so indicate. In fact, the organization is purposely very loosely organized with no rules, no speeches or other programs, no officers, no dues—just drinks, lunch, good fellowship and conversation. Occasionally, we will have a serious discussion about such things as how in these days of advanced technology can you still expect to turn out competent professional engineers in four-year curricula.

Stalwart regular attendees of these meetings include Jeff Arthur, Carl Bankston, Akbar Brinsmade, Wally de Gruy, Gus Durning, Charles Dusenberry, John P. Fernandez, Bob James, Jim Janssen, Ray Johnson, Gus Lehman, Ed McLellan, Henri Molaison, Landry Murphy, Waldemar Nelson, Bob Stoops, Mario Zervigon, and Johnny Vogt. Other members of LES are welcome to meet with us as regulars or as occasional visitors. Call Jim Janssen at 504/523-5281 or 482-5392, or Mrs. E. D. Markel, club manager, at 581-7981 for additional information or to verify dates.

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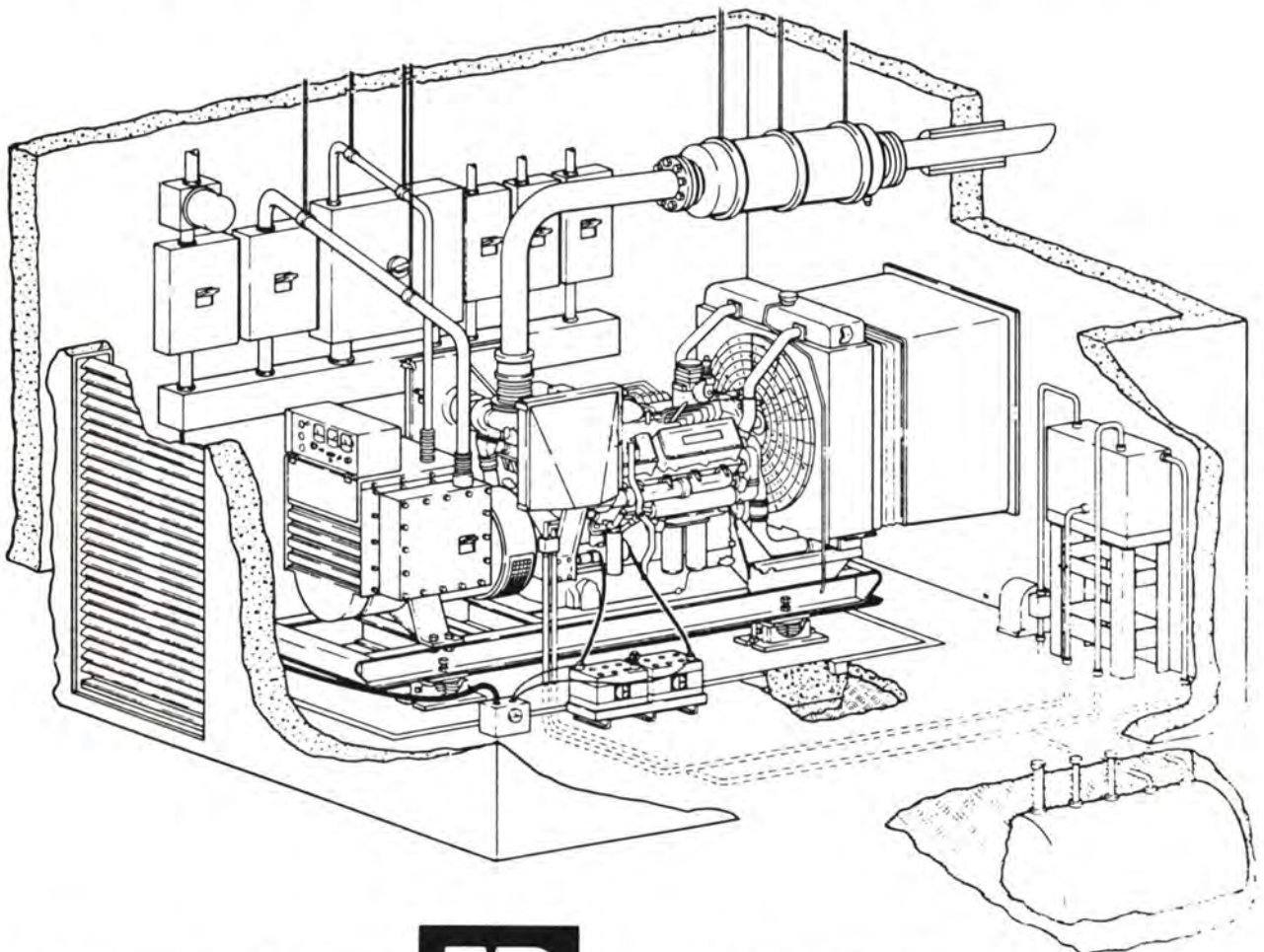
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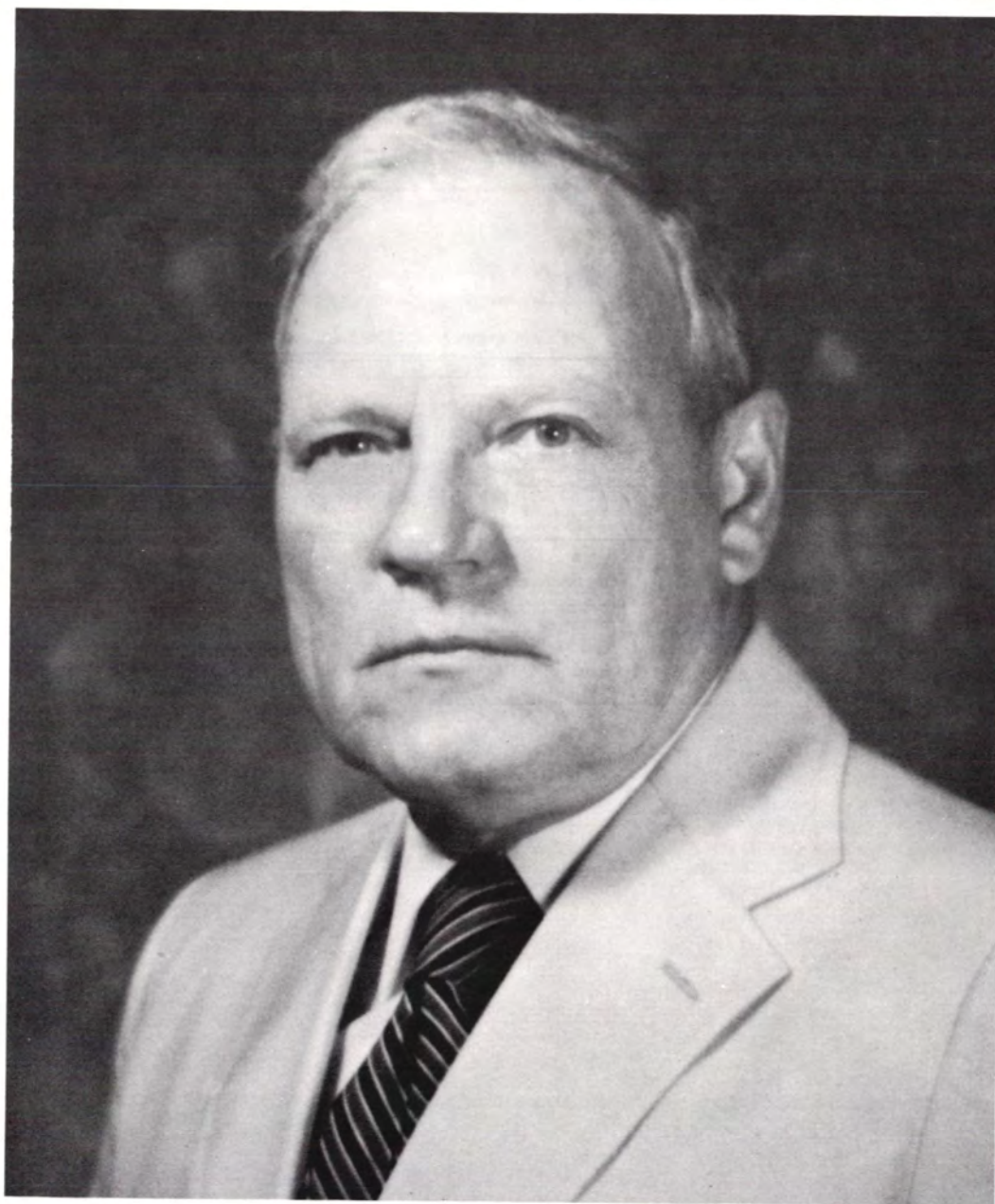
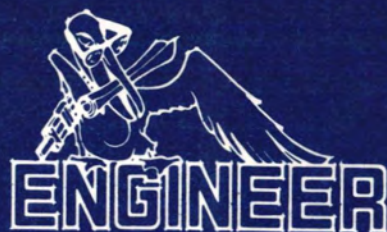
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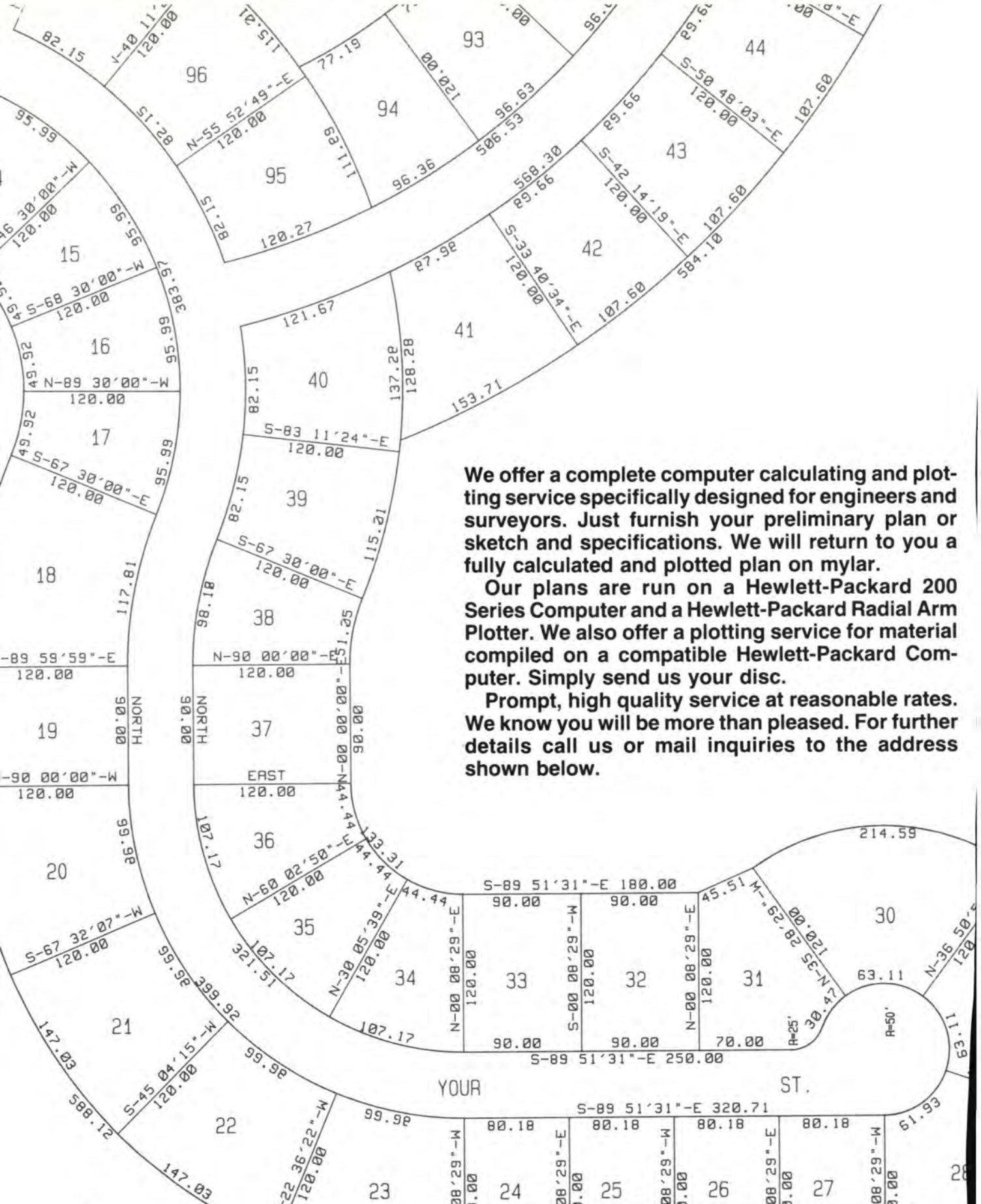


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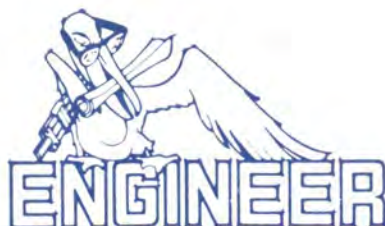
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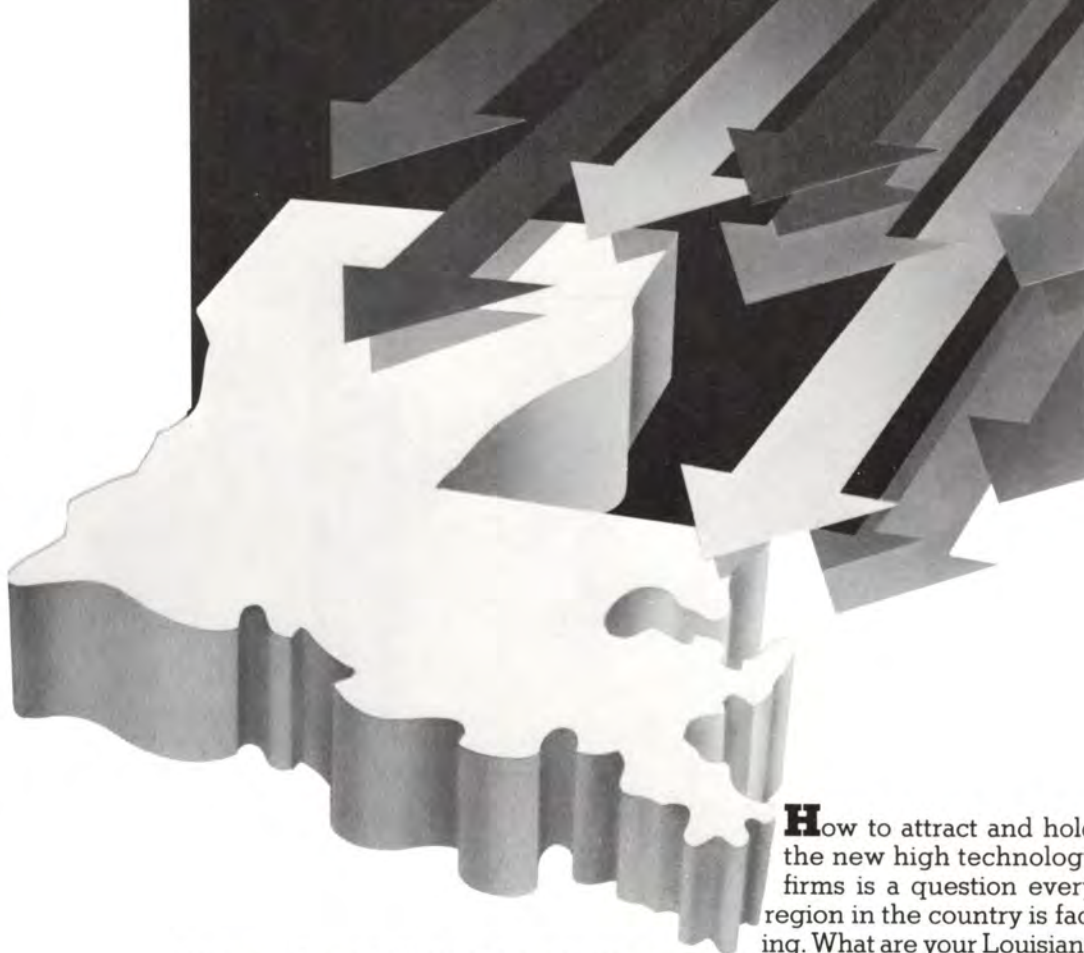
Our cover this month features 1984-85 CEC/L President Don W. Chesson, P.E.

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Membership Growth Necessary



Henry E. Markel, P.E.
LES President

Perhaps the toughest job associated with being President of the Louisiana Engineering Society is to author this column. Vanity convinces one that each piece of writing will be a literary marvel, but realism quickly points out how droll any one piece can be. There is the desire to be factual, but not unduly boring. The work should be easy to read, but must have substance. The beginning must capture the reader's attention, the middle retain your interest and the closing paragraphs motivate you into action. And always there is the deadline—only two short months separate the typewritten copy from the printer's ink.

With the above as a preface, I hope you will read below. I want to give you a report on a few of the activities from our last two Board of Direction meetings.

First, and most importantly, your Board adopted an "interim" budget totalling \$169,426 — a substantial sum of money! Our income comes from these sources:

Dues	61%
Advertising in <i>Louisiana Engineer</i>	11%
State Board of Registration*	15%
Contributions	6%
Miscellaneous (Interest, Awards, Other)	7%

*For use of *Louisiana Engineer* page space

Our major expense items are:

Salaries for staff (including payroll taxes)	30%
Chapter Rebates	8%
<i>Louisiana Engineer</i>	26%
Rent and Utilities	6%
Legislative program	5%
Postage and supplies	10%
Miscellaneous	15%

I hope you appreciate that this is a "bare bones" budget. Further, this budget only provides for basic operation of the Louisiana Engineering Society. There is no surplus for providing pro-

grams that would benefit the members. Such programs will be available if membership growth takes place, because the incremental cost to service new members is small. This is the reason why every engineer should be a member of LES.

Our Membership Committee has started its campaign to enroll 418 new members while retaining all present members. This is a formidable task, but Chairman Peter Quirk and his committee believe the goal is reachable. And it is — with your help!! You must know an engineer who doesn't belong to L.E.S. — get him or her to join!

Our MATHCOUNTS program is off to a good start under the capable leadership of Kerry Lebauve. Kerry ran the MATHCOUNTS contest last year and knows all of the problems associated with it. But we expect this year to have fewer problems and better students. Hopefully, our team will be among the winners in Washington, D. C.

A program such as MATHCOUNTS requires financial support to be a success. Last year the Chapters arranged financing from local contributors. This year, we have had initial contacts with a sponsor to underwrite the cost of the entire Chapter and State competitions. We are confident that we will secure this support which will relieve the Chapters from soliciting funds. At the proper time, we will advise you of our successes in this program. Meanwhile, if you want to participate in the MATHCOUNTS program, you may also send contributions to the state office or, more importantly, volunteer to assist your Chapter MATHCOUNTS Chairman.

Your Officers, Directors and Chapter Chairmen are all working to make the Society a vital force for the Engineering community. Let us know what we can do for you. If we do well, let us know about it. If we deserve criticism, offer us your solution. We are proud to serve you and want to deserve your support.

The 1984 World's Fair Monorail System

By Michael A. Plummer

A popular attraction at the Louisiana World Exposition is the sleek, blue and white monorail which hums smoothly overhead of the fair's visitors. This system has carried approximately 3.6 million passengers in the first four months of the fair's operation. The story of the monorail began in 1982 when Universal Mobility of Salt Lake City, Utah, signed a contract with the Louisiana World Exposition to provide a viable people-mover service around the fair site, which is located in the warehouse district of the City of New Orleans. Designed to give visitors a general overview of the locations of the different exhibits and pavilions, as well as a means of transportation around the fair site, this air conditioned, elevated, and lightweight system is the first of its kind to be installed and operated in Louisiana.

The monorail system used at LWE is comprised of six 10-car trains, 1.4 miles of elevated track winding through the fair site, an electrical power distribution system, three elevated stations with walk-up ramps to accommodate passengers, a self-propelled maintenance car, and two rollerbeds for maintenance uses. The second floor of the Federal Fiber Mills building, which also houses several fair exhibits and restaurants, has a maintenance barn joined to the main track by a pair of guideway spurs. Construction of this system began in July of 1983, and was completed in December of the same year.

Each of the six trains has a lead car, eight intermediate cars, and a tail car. Maximum width of a train is 78 inches, and total train length is 151 feet, 9 inches. An intermediate car provides seating for 12 adults or 16 persons (mixed adults and children) with four benches set in pairs facing one another. The lead car is divided by a drive cabinet and clear plexiglass between a driver's compartment and seating for eight adults. In line with LWE's objective of making the fair more accessible to the handicapped, the monorail's tail cars have been designed with special wide doors with entry to a floor space that will accommodate two wheelchair passengers. There are also fold-down seats in this area to allow a companion to accompany a single wheelchair passenger. Each car has two doors on each side that slide open in opposite directions, front-to-back, powered by electromechanical devices.

Each door panel is equipped with a sensitive edge switch feature which reopens a door in the case of an obstruction. The car bodies are fabricated from molded fiber-reinforced plastic, inner and outer skins bonded together around aluminum frames. There are hinged hatch doors between the cars to connecting platforms which provide access to wheels, motors, and air-conditioning systems.

The train is controlled from the lead car by a driver, who can regulate the speed of the train when in a manual mode. Operation speed is 10 feet per second, which allows a 15-minute moving view of the fair site. Sixteen digital readouts are located on the upper left-hand side of the control panel which show everything from the voltage being drawn off the track (normal range, 440-480 volts), to the amount of power being used by each of the eight DC motors. Toward the right of these is a row of lights that indicates, by lighting up, when a door in one of the cars is open, and closing is completed with an automatic reset button. All the doors must be closed and locked before the brakes will release and allow the train to move. Forward and reverse movement are controlled by means of a rheostat in the form of a joystick in the center of the control panel, which, when pushed forward, increases the speed of the train. To the upper right are two rows of auxiliary controls, AC and DC power, on/off switches which

control interior and exterior lighting, air conditioning, doors, radio and p.a. systems. A main power switch is in the extreme upper right-hand corner. Behind the driver's seat in a main drive cabinet is an on/off switch which allows the train to be switched into forward, reverse, or automatic modes, and two buttons for converter on/off.

Besides familiarization with the various switches and buttons and their sequences, the driver must monitor the meters, regulate the speed, watch the track ahead, and narrate a tour of the fair site for the passengers. The majority of the drivers operating the monorail at the Louisiana World Exposition are students from area colleges who were trained by Unimobil '84 personnel before the Expo opened last May.

The trains have an automatic mode which will stop and start the train, running it at a maximum set speed with clear track ahead of it. If a train approaches too closely to a preceding train, the automatic control will slow the train down eventually to a stop. There is an autopilot on each train which detects this signal, and, as it increases, the train will decelerate, maintaining a safe distance. Once the train ahead begins to move, only then will the stopped train begin to move. This is accomplished by employing a sensing system placed strategically along the guideway, which allows the autopilot to "read" the signals. Each of the three stations also gives off



signals simulating those of the trains. Upon entering a station a train will slow to a stop at the appropriate point, lock its brakes, and open its doors for a prescribed length of time, close the doors, release its brakes, and leave the station.

The running surface of the trains is a structural steel guideway, or single rail which is lighter and more durable than the usual concrete spans used in previous systems. The guideway is elevated approximately 30 feet on the average, with its highest point 42 feet above the ground, affording a good view of the fair site from both sides of the train. The columns used to hold the guideway are affixed to 36-inch pipe pilings. The columns are basically H-beams and tapered steel-flanged fabricated sections. There are caps on the tops of these columns to which the guideway is attached, which allow the track to slide within bounds to accommodate thermal expansion and contraction. The guideway or track itself is made of steel in broad-based T-sections which are welded in 65 to 85 feet spans. The T-section provides attachment for the electrical conducting rails on its horizontal section. The sides of these horizontal sections are flanged downward to cover and protect these conducting rails. The collector shoes of the trains reach around this flange for contact on the power rails.

On the inside of the track is a signal rail and ground under the horizontal flange of the T-section which carries 0-18 volts for use in the automatic mode. On the outside beneath the flange on the horizontal section is the basic power rail system, which is a three-phase Delta system with C-phase grounded. This ground is connected to the steel track at every section of the route, to ground rods at many points, and to secondary windings of each transformer at others. The monorail guideway system is divided into four power zones fed by four General Electric Versa Trip breakers set for all possible line and ground faults as well as overloads. In the case of a loss of power in a zone, an adjacent zone may be used through the use of cables attached at a switch to feed power into the dead zone.

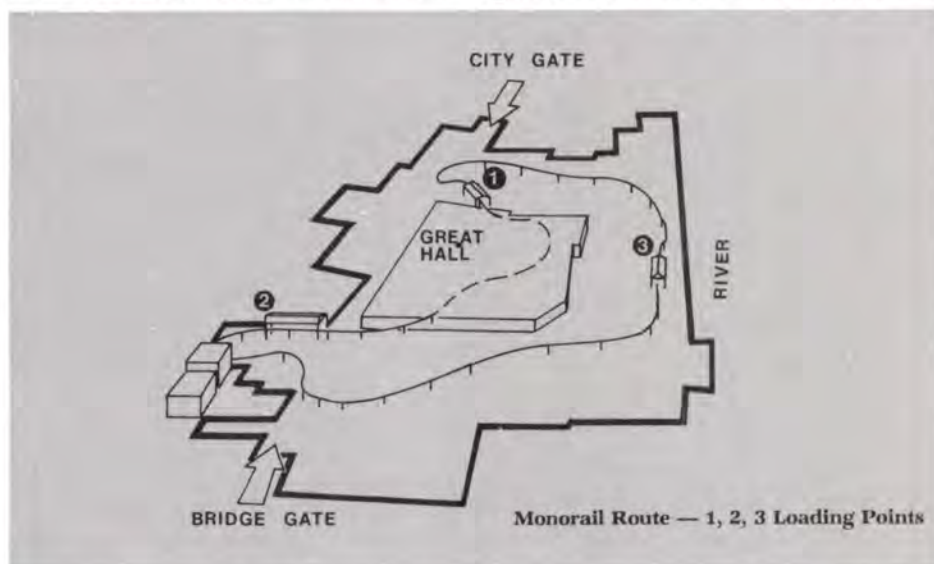
The primary transformers for the electrical system which provides power to the guideway and trains are provided by the New Orleans Public Service Inc. The basic power system is designed to carry 500 amperes of current, and the main isolating switches and power feed switches are rated for the full capacity of the main power feed bars.

There are three stations on the fair site for passenger loading and disembarking at locations selected to provide easy ac-

cess to the many attractions of the Expo. These stations are basically steel-reinforced concrete decks with girder supports and each has two sections of ramp inclined to bring passengers to the main platform. On the main platform of each station is a turnstile booth which has switches controlling a set of turnstiles which limits access to the train. A control booth is centered on the platform near the guideway, where the stationmaster may control the trains, while at the same time platform attendants provide crowd control by showing passengers the correct "dots," or individual waiting stations, which are painted at proper places on the deck itself, 16 to a car. The station-

spect and maintain the guideway and power rail. There is a usual buildup of residue between the isolators of the zones that requires routine cleaning. Both sides of the vehicle have movable work platforms that may be lowered to provide easy access beneath the guideway.

Two rollerbeds consisting of elevated rails are kept on standby in the maintenance barn, at the termination of the spur sections. These provide access to the entire train underside for servicing. Each car of the train has four maintenance wheels designed to capture and roll on these rails. On entering the maintenance barn from the guideway spurs, the train passes over a short transition piece that



master controls the trains when in the manual mode by the use of a light system, which signals the drivers to "close doors" and to "go." In the automatic mode the stationmaster may control the train through the use of stop/go buttons on a control panel. He has the option of stopping the train or permitting it to continue and bypass the station. When in automatic, by pressing the "stop" button, the train will remain in the station regardless of the train's circuitry being in the "go" attitude, until the "go" button is depressed. In each control booth there are also buttons that allow the stationmaster to shut the power off to entire zones, in case of emergency situations.

A self-propelled car is used by the maintenance crew. It is designed to transport the required repair personnel and up to 2,000 lbs. of material and equipment, with the use of a diesel-powered engine with automatic transmission. There is a 5,000-watt generator to provide power for tools and lighting requirements. The self-propelled car is designed to serve two purposes, one being a "tug" vehicle, to transport a disabled train. The other function is to in-

enables cars to smoothly transfer their support from tires to the maintenance wheels. Guides are also provided to smoothly funnel collector shoes in and out of the power rail. Variable speed hydraulic winches are used to pull the trains off and on each rollerbed length. A pit power plug is located near the front of the train at the end of each rollerbed, which may be plugged into the train to energize it for complete testing of all on-board equipment.

Since 1969 Universal Mobility has engineered and installed nine automated monorail systems that together utilize a total of 355 cars assembled into 42 trains. The monorail system at the Louisiana World Exposition is just one link in a long line of successes. In over three hundred million passenger miles of service Unimobil has not experienced a single serious injury. Unimobil's experience with people moving is from the ground up, from turnkey construction to support and operations and maintenance.

MICHAEL PLUMMER is a writer who is currently living in New Orleans. He has attended the University of Mississippi and the University of Southern Mississippi and was employed this summer by UNIMOBIL '84.

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Don W. Chesson, P.E. - A Profile

Don W. Chesson has assumed the office of 1984-1985 President of the Consulting Engineers Council of Louisiana, Inc. He has served on the board for several years in various offices including Vice-President and President-Elect. He is the head of Don Chesson & Associates, Inc., Baton Rouge, Louisiana, a well-known and highly respected consulting firm offering mechanical and electrical engineering services and specializing in electrical, air conditioning, heating, plumbing, and other mechanical designs on commercial, institutional and industrial projects. Chesson established his own firm in the latter part of 1969 as a spin-off from the old firm of Chesson, Forrest & Holland, Baton Rouge,

Louisiana.

Chesson was graduated in 1943 from Louisiana State University with a Bachelor of Science degree in Mechanical and Electrical Engineering. He is also registered in Louisiana and licensed to practice in both fields of engineering. He and his wife, Mary Ann, have four children. He holds membership in several other professional societies including the Construction Specifications Institute, Louisiana Engineering Society, ASHRAE, NFPA, and the Baton Rouge Electrical League. An avid airplane and boat enthusiast, Chesson has a pilot's license and captains his own two in-board, 30-foot boat. He also enjoys playing golf with friends.

Asked about Chesson's ability to lead CEC/L as president, Warren Wilder, the Council's Executive Director, commented, "Don is a player, not a spectator. He uses his presidential privilege very effectively in making the necessary committee assignments and in conducting the board meetings in an expeditious manner; however, he has also attended most, if not all, committee meetings and has actively participated in those meetings. He has also personally represented CEC/L at meetings with the other organizations. Don is a worker. This is amply reflected in his own business as well as in his service as president of the Council. He, in turn, expects the same from his employees and his board members."

Biographical Sketches of the Board Members

LINDSEY J. "RED" AUCOIN, P.E., is President of Aucoin & Associates, Inc., Eunice, Louisiana, a consulting engineering firm offering services in highway design, streets, natural gas transmission and general land surveying. A registered civil engineer, Aucoin received his Bachelor of Science degree in Civil Engineering from Louisiana Tech University in 1949. He is a member of the Louisiana Engineering Society, the Louisiana Society of Professional Surveyors, and the Parish Engineers Association. He and his wife, Mary Jo, have five children. Aucoin serves as President-Elect of CEC/L and will assume the presidential responsibilities next year.

LARRY A. MCKEE, P.E., is owner and Chief Executive Officer of Professional Engineering Consultants, Baton Rouge, La. He has been elected to serve CEC/L as Vice President. He was graduated from Louisiana State University in 1958 with a Bachelor of Science degree in Civil Engineering and holds professional licenses in Mississippi, Texas, Alabama, Missouri and Minnesota. McKee holds membership in a number of other professional organizations including WPFC, American Society of Civil Engineers, National Society of Professional Engineers, Louisiana Engineering Society (1983-1984 Baton Rouge Chapter President),

and the American Water Works Association. He has served on the Board of Directors of the Baton Rouge Chamber of Commerce and is a member of the Rotary Club of Baton Rouge. He and his wife, B. J., have two children.

ARTHUR E. MEYER, JR., P.E., partner in Meyer, Meyer, LaCroix & Hixson, Inc., Alexandria, La., has been elected to serve on the Board as Treasurer. He received his Bachelor of Science degree in Civil Engineering from Louisiana Polytechnic Institute in 1956. He served as a Civil Engineering officer in the United States Air Force in the latter 1950s. He is a member of Louisiana Engineering Society where he has served as President of the Alexandria Chapter and as State Chairman for Engineers in Private Practice. Meyer is also a member of the National Society of Professional Engineers and the American Society of Civil Engineers. He is a certified fallout shelter analyst and is certified to perform value analyses of engineering projects. He serves as chairman of the Aviation Committee, Alexandria-Pineville Chamber of Commerce.

CHARLES S. HEDGES, P.E., is Vice President and founder of Geotechnical Associates Corporation, Slidell, La. He was graduated from Georgia Tech with a Bachelor of Science degree in Civil En-

gineering in 1961 and specializes in geotechnical engineering. His wife, Patricia, is president of the corporation. Hedges has been elected to serve CEC/L as Secretary. He has served in the past as President of the CEC/L New Orleans Chapter and as Member-at-Large. He is a member of the American Society of Civil Engineers, American Society for Testing and Materials, Louisiana Engineering Society, and Sigma Xi.

GERALD A. DUBROC, P.E., is president of Sellers, Dubroc & Associates, Inc., Lafayette, La., a consulting engineering firm specializing in civil engineering, planning and land surveying. He is serving a second term as President of the Lafayette Chapter. Dubroc received his Bachelor of Science degree in Civil Engineering from the University of Southwest Louisiana, Lafayette, La., in 1960. He holds membership in the Louisiana Engineering Society, National Society of Professional Engineers, American Society of Civil Engineers, and the American Public Works Association as well as the Louisiana Society of Professional Surveyors. He serves on the Greater Lafayette Chamber of Commerce, the Lafayette Regional Planning Commission, and is a member of the Lafayette Lions Club. He and his wife, Diane, have six children.

VERNON F. MEYER, P.E., is serving his last year on the CEC/L Board as National Director. He is President of the three corporations in The Meyer Group. Meyer was graduated from Iowa State University with a Bachelor of Science degree in Civil Engineering in 1959. He is a registered professional engineer in both Louisiana and Mississippi and holds membership in the Louisiana Engineering Society, the National Society of Professional Engineers, the American Society of Civil Engineers, and the Louisiana Society of Professional Surveyors. He and his wife, the former Carolyn Armes, have three children, Tijie, Tim and Chris. Meyer has served on the CEC/L Board for several years in various offices including Secretary, Treasurer, Vice President, President-Elect, and last year as President.

MORGAN M. WATSON, P.E., was born in St. Joseph, Louisiana, in 1943, and attended public schools in Tensas Parish, graduating from Tensas Rosenwald High School as Valedictorian in 1961. He then attended Southern University on an academic scholarship, graduating in 1966 with a B.S. in Mechanical Engineering. While in college, he partici-

pated in various activities including a full year as co-op student at Marshall Space Flight Center, Huntsville, Alabama, honor student, and was selected for *Who's Who Among Students in American Colleges and Universities*.

After passing his EIT in 1966, he became a P.E. in 1971, and organized MEL, Inc. in 1972 after realizing that absolutely no opportunities existed for blacks and other minorities as engineers in private practice. Presently, MEL, Inc. is among the four largest minority-owned consulting engineering firms in the country, and among the largest in the state of Louisiana.

Watson is married to the former Helen Johnson of Newellton, La., and is the father of three children. He is serving CEC/L as Member-at-Large.

LEE J. CASTAGNOS, JR., P.E., is head of Castagnos-Goodwin & Associates, Houma, Louisiana. A registered mechanical engineer in Louisiana and Mississippi, Castagnos was graduated from the University of Southwestern Louisiana, Lafayette, La., in 1960. He also attended the U.S. Navy Officer Candidate School, Newport, Rhode Island, and the Civil Engineer Corps Officers School in Port

Hueneme, California.

Upon graduation, he accepted employment with the Missile Control Division of the Bureau of Naval Weapons as an Engineer in Training. He was later promoted to Project Engineer before entering the U.S. Navy. In 1962, Castagnos worked as Assistant Public Works Officer/Shops Engineer, Department of Public Works, U.S. Naval Auxiliary Air Station, New Iberia, La. In 1965, he became the Director of Physical Facilities, University of Southwestern Louisiana, Lafayette, La. Castagnos holds membership in several other professional societies including the Louisiana Engineering Society, National Society of Professional Engineers, and the American Society of Heating, Refrigeration, and Air Conditioning Engineers. He serves on the CEC/L Board as Member-at-Large.

J. G. "JERRY" HARRISS, JR., P.E. is a partner in the consulting engineering firm of Harriss-Jambor & Associates, Shreveport, La., specializing in mechanical and electrical engineering, HVAC design, piping waste disposal, power distribution, lighting and communications.

Harriss is a registered electrical engineer in Louisiana and is registered as well in Arkansas, Texas, Mississippi, and Tennessee. He attended Louisiana Tech University, Ruston, La., and The Rice Institute, Houston, Texas, majoring in electrical engineering. He was graduated from Louisiana Tech University in 1947 with a Bachelor of Science in Electrical Engineering.

Harriss has served on the CEC/L Board of Governors in the capacity of Shreveport Chapter president. He is also a member of the Louisiana Engineering Society, National Society of Professional Engineers, the Illuminating Engineering Society, and the Association of Energy Engineers. He is chairman of the Board of Appeals for the city of Shreveport and former member and chairman of the Electrical Board for the City of Shreveport. He and his wife, the former Helen E. Carmichael, have two children, Jeffrey and June. Harriss serves CEC/L this year as Member-at-Large.

RAYMOND J. DUNN, SR., P.E., is Secretary-Treasurer of Pan American Engineers, Inc., a multi-discipline consulting engineering firm specializing in waterworks, sewerage, telephone systems, highways, bridges, and military

Continued on page 19

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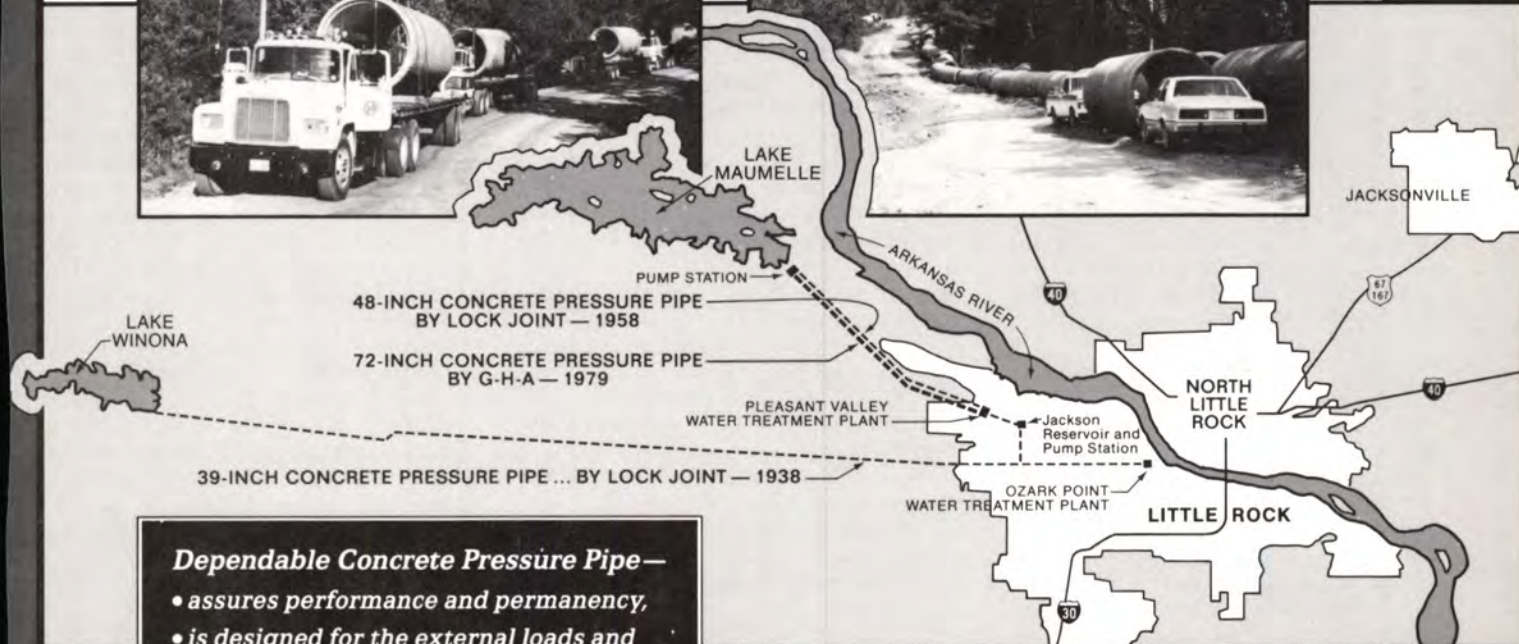
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Leta Bueto
Executive Director
Louisiana Engineering Society

**Herbert G. Koogle, P.E.-L.S., Installed
as President of National Society of
Professional Engineers**

Herbert G. Koogle, P.E.-L.S., President and Chief Engineer of Koogle & Pouls Engineering, Inc., Albuquerque, New Mexico, was recently installed as President of the National Society of Professional Engineers (NSPE) during the Society's 50th Anniversary Annual Meeting in Washington, D.C.

Koogle plans to emphasize the outward directions NSPE could take to interface in the realm of public affairs during his year of presidency. "Of course, I'll try to advance all areas in which the Society helps the engineering profession," he stresses, "but representing engineers' interests in the public arena will receive special attention."

Koogle was NSPE Vice President, Southwestern Region (1979-82) and Vice President, Chairman of the Professional Engineers in Private Practice division in 1977-78, which presented him their Distinguished Service Award. A Past President of both the New Mexico Society of Professional Engineers and of its Albuquerque Chapter, he was named Engineer of the Year by both groups and the state has also conferred on him four Distinguished Service Awards. Koogle has represented New Mexico as a National Director and been active on several committees, including chairing the NSPE Legislative and Government Affairs and Education Committees as well as the Communications Coordination Board.

Among Koogle's professional recognitions are appointments to two five-year terms as a member of the New Mexico Board of Registration for Professional Engineers and Land Surveyors and having twice served as that board's Chairman. The National Council of Engineering Examiners awarded him their Distinguished Service Medal. His memberships include those in the American Society of Civil Engineers, American Consulting Engineers Council, American Congress on Surveying and Mapping, American Society of Photogrammetry, American Public Works Association and Society of American Military Engineers.

Koogle has participated in civic organizations as President of the Board of Directors in the New Mexico Symphony Orchestra and as a member of the Rotary Club, United Way and Albuquerque Chamber of Commerce and Junior Achievement. A registered Professional Engineer in the State of New Mexico, he holds a B.S. degree in Civil Engineering from Stanford University. Herb Koogle and his wife Judy reside in Albuquerque and have two children.

Assuming the office of President-Elect is Paul E. Pritzker, P.E., of Weston, Massachusetts. President and Senior Engineer of George Slack & Pritzker Associates, Pritzker has been Northeastern Vice President and President of the Massachusetts Society of Professional Engineers. He will take office in July 1985.

The National Society of Professional Engineers, headquartered in Washington, D.C., represents more than 80,000 professional engineers, land surveyors and engineer students in all technical branches of the profession. The Society works to achieve high standards of professionalism among practicing engineers.

**Engineering Scholarships Available
for High School Seniors
and College Students**

High school seniors and enrolled college students looking for engineering scholarships can apply to the National Society of Professional Engineers' (NSPE) Educational Foundation for its 1985 educational scholarship program. Applications will be accepted until November 15, 1984.

NSPE's scholarship program is the largest of its kind in the U.S. In 1985, it will award approximately \$1 million worth of scholarships and grants, ranging from \$1,000 for one year to more than \$20,000 for full tuition, four-year scholarships.

Applicants are judged from national standard test scores, essays, transcripts and extracurricular activities.

NSPE has awarded scholarships to 1,145 students since the Society began the program in 1958. The Educational Foundation raises funds through contributions from schools, businesses, the NSPE Auxiliaries and individual donors.

In addition, NSPE offers separate scholarships in each of its six geographic regions, memorial and minority grants and one for a student in construction engineering.

**Fellowship for Engineers in
Management Available**

The Professional Engineers in Government (PEG) practice division of the National Society of Professional Engineers (NSPE) announces the availability of a \$1,000 Fellowship to be awarded to an engineer pursuing advanced studies in management. The grant will be administered by NSPE's Educational Foundation, which oversees a million-dollar-a-year engineering scholarship and grant program, the largest of its kind in the U.S.

PEG is funding the Fellowship in response

to a concern that practicing engineers were being overlooked for promotion to management positions owing to the lack of formal credentials. Any Engineer-in-Training (EIT) or registered Professional Engineer (PE) from any discipline employed in any area of engineering practice (Government, Education, Private Practice, Industry or Construction) may apply.

Other qualifications for application include a minimum overall Grade Point Average of 3.0; a desire to earn an MBA in Management, Masters in Engineering Management or Masters in Public Administration; and acceptance by a university accredited by the American Assembly of Collegiate Scholars of Business or the Accreditation Board for Engineering and Technology.

For further information and application forms, contact the NSPE Educational Foundation Professional Engineers in Government Management Study Fellowship, 2029 K Street, N.W., Washington, D.C. 20006. All applications must be received no later than February 1, 1985.

**State Society Administrators
Council Meeting**

July 9-11, 1984

The State Society Administrators Council of the National Society of Professional Engineers convened its meeting on Monday, July 9, 1984. The meeting was opened with a general session allowing for the NSPE staff and officers to address the group. Lou Bacon, outgoing NSPE President, reiterated to the group the importance of participation among state administrators, NSPE staff, and NSPE officers. He expressed his appreciation to those states in which he attended as guest at their annual meetings, etc.

Herbert Koogle, incoming NSPE President, spoke on the importance of membership recruitment, expressing his beliefs that recruitment on a one-to-one basis doesn't work. The membership committee needs an aggressive chairman and program at the chapter levels. Believing the future of the Society lies in the engineering students, a very aggressive "student activity program" is being planned by the chairman from Michigan.

Weinert addressed the group, announcing some staff changes at the NSPE headquarters. Jack McKee will retire on August 31 and Frank Musica, formerly of ASCE, will be the new PEPP Director. Nick Wright will be overall practice division coordinator. Margie Bayers will be in charge of student programs and PEE.

Pam Wunderlick, Scholarship Coordinator, announced that the high school and in-college level screening will be combined this year on a trial basis. The Selection Committee will meet in Phoenix on March 7-8, 1985. Selection again will be based on SAT scores, but the NSPE Educational Foundation is looking into the problems surrounding the ACT

Continued on page 18

LES Awards Scholarship to Louisiana State University Student



Richard A. Matula, P.E., left, Dean of Engineering, Louisiana State University, and Henry E. Markel, Jr., P.E., President of the Louisiana Engineering Society, presented a \$500 check to Donna Sue McMahon. Donna Sue was winner of the LES \$1,000 scholarship. She will receive the balance of the scholarship at the start of the second semester.

MATHCOUNTS is More Than the Sum of its Parts

MATHCOUNTS, the program President Reagan called "an effort which has the potential to awaken our young people to the importance of mathematics to our country's future," completed its first full year in May, when 200 young "mathletes" (including four team members and one alternate from Louisiana) from all over the U.S. came to Washington, D.C. to compete in the national MATHCOUNTS finals.

Sponsored nationally by NSPE, the CNA Insurance Companies, the National Council of Teachers of Mathematics, the National Aeronautics and Space Administration, and the National Science Foundation, the MATHCOUNTS program reached hundreds of thousands of seventh and eighth-grade students at schools throughout the country during its first year. Enthusiasm for the program in the 47 participating states and the District of Columbia is so great that the contest's sponsors anticipate the number of participants will double, or even triple, during the program's second year.

MATHCOUNTS is without a doubt the most ambitious program ever undertaken by NSPE. Thousands of NSPE



1. Mrs. Hul Hsiung Kuo (Isaac and Henry's mother) 2. Ms. Mona Bonar (Coach — Lafayette) 3. Mark McCollister (Baton Rouge) 4. Bryan Taylor (Lafayette) 5. Isaac Kuo (Baton Rouge) 6. Larry A. McKee 7. Rep. Henson Moore 8. Henry Kuo 9. Joey Jones (Lafayette, alternate member of team) 10. Greg Anderson (Lafayette) 11. Mrs. Don McCollister (Mark McCollister's mother) 12. Ms. Claudia Allums (Team Coach - Baton Rouge).

members at the chapter, state, and national levels have worked tirelessly to help organize and run the program and assure its success.

Beginning last fall, seventh and eighth

graders in some 4,000 participating schools — about 400,000 students in all — had the opportunity to receive coaching on advanced math topics. Each

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NÔTRE MÉTIER

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



What is Land Surveying in Louisiana?

With Mr. Leo Odom's permission, the following correspondence is presented so that we can review the question, "What is Land Surveying in Louisiana?"

July 25, 1984

Mr. Paul L. Landry, P.E.
Executive Secretary
Louisiana State Board of Registration for Professional Engineers and Land Surveyors
1055 St. Charles Avenue
Suite 415
New Orleans, Louisiana 70130

Dear Mr. Landry:

In the June issue of the *Louisiana Engineer* you state that the rules governing the use of seals by Professional Engineers and Land Surveyors are contained in La. Administrative Code 19-3:10 and that if the work is engineering a PE must sign and seal it and if the work is **surveying** a PLS must sign and seal the work. I assume that your reference to a Code must be to a provision that was adopted by the Board of Registration and published in the La. Register, after which it has acquired legal status. I don't have ready access to this Code, but I hope that your statement does not follow exactly the wording contained in the said Code since it would appear that any drawings showing the results of surveying must be sealed by a Professional Land Surveyor even though they were the work of a Professional Engineer.

I would like to point out that Act 568 of 1980 covering the registration of Professional Engineers and Land Surveyors does not provide for governing the general practice of surveying since Professional Engineers in the field of civil engineering do a great deal of surveying in other fields than land surveying and that at the time the Act was written it was never intended to require the services of a Professional Land Surveyor to make topography, route surveys, aerial surveys, etc.

I hope you can straighten this out since the advice contained in your article in the *Louisiana Engineer* is bound to puzzle registrants in both categories and can result in squabbles.

Very truly yours,
Leo M. Odom, P.E.

August 1, 1984

Dear Mr. Odom:

I refer you to your letter of July 25, 1984 regarding the article published in the June,

1984 issue of the *Louisiana Engineer* concerning the signing and sealing of plans.

I appreciate your letter and I have to agree that my oversimplification in the article may be puzzling to some registrants of the Board. I will follow through with an article in the October issue of the *Louisiana Engineer* clarifying the point you have made.

Thanks again for your comments.

Very truly yours,
Paul L. Landry, P.E.
Executive Secretary

December 30, 1974

Gentlemen:

This report is written in accordance with your request that the Committee on Land Surveying state for the record and explain the derivation of the definition of the practice of Land Surveying under which it has worked since the passage of the 1970 Amendment to Act 73 of 1950. Briefly, the Committee has interpreted the term "Land Surveying" to be synonymous with "Boundary Surveying" wherever it appears in the amended Act.

The definition of the term Land Surveying became of particular importance after the passage of the 1970 amendment since by virtue of that amendment the Legislature definitely recognized Land Surveying as a separate profession from Professional Engineering. It was no longer to be regarded as a sort of sub-professional activity in a field in which Professional Civil Engineers were the prime professionals. The term Land Surveying has actually been considered to cover only one relatively small area in the general practice of Civil Engineering.

Since the techniques used in some of the various types of engineering surveying are also used in Land Surveying, there are a great many engineers who are still of the opinion that all engineering surveying is Land Surveying and vice versa. This opinion can no longer be accepted since the 1970 Amendment to Act 73 of 1950 recognized Land Surveying as an independent profession. The difficulty remains largely because the Land Surveyor uses the same instruments in the work of measurement of lines and areas and drawing of plats that are used by technicians employed by Professional Engineers in their work. It is therefore necessary to define Land Surveying in terms which specifically indicate what it is that a Land Surveyor does with the data that he collects which sets him apart from other professionals, and that he is not solely a collector and compiler of data, per se.

The Land Surveyor's claim to professionalism lies basically in the fact that independent judgment and responsibility are required in his practice. The following quotations from an article by Frank Silver, LLS, which appeared in the November-December 1973 issue of the *"Empire State Surveyor"* published by the New York State Association of Professional Land Surveyors reinforce our position:

"It is probably not the mensuration or measurement part of the task that makes the legal branch of land surveying a learned profession. More likely it is the record and legal part of the task, the weighing the evidence, reconciling the conflicting claims of parties, the relocation of lost corners, the creating of a plat and description that will stand up in court, that makes boundary surveying a learned profession. Five years is hardly long enough to gain a good working knowledge of the record, as it is kept in most countries in the original colonies. This 5 years would be required of an intelligent, degreed, engineering professional, of high ethical standards, receiving close expert guidance and supervision. If any of these favorable elements are weakened, a much longer time will be required, or the neophyte may not live long enough to gain a good understanding of the structure of the record and the demands it places on him in difficult cases.

"The law and the record play little part in construction or topographic surveying. Division of labor with field crews, calculators, draftsmen, etc. works rather well with this type of surveying. It can work rather well with laying out new lines. Bright youngsters with some native talent and some high school math can be taught most of these jobs fairly quickly. They can become rather proficient in a few months or years."

Our interpretation also agrees with the definition given in the "Encyclopedia Britannica - 15th Edition," which is as follows:

"Land Surveying - Surveys to establish boundaries constitute a large highly specialized branch of surveying known as land surveying. Not only must a land surveyor be thoroughly versed in surveying techniques but he must understand real property law, be familiar with property lines within the area in which he works and be able to make decisions that he can justify in court when appearing as an expert witness."

There has been some question as to whether our definition of Land Surveying

BOARD MEETING NOTICE

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

1984		1985	
	Jan. 22 & 23		July 23
Nov. 27	Mar. 19		Sept. 24
	Jun. 4		Nov. 26

conforms to the definition contained in Act 73 of 1950 which is as follows:

"Land Surveying. The 'Practice of Land Surveying' within the meaning and intent of this Act includes measuring of areas, land surfaces, streams, bodies of water and swamps for their correct determination and description, for the establishment, re-establishment, ascertainment or description of land boundaries, corners, divisions, distances and directions, the plotting and monumenting of lands and subdivisions thereof, and mapping and topographical work."

We believe that it does. The only clause in question is the last one "and mapping and topographical work" which, if taken out of context, might be interpreted to mean that no one but a Registered Land Surveyor could legally perform the myriad tasks that are now done by sub-professionals and technicians with little or no college training. Our interpretation is that this clause actually refers back to the preceding clause and infers that the "mapping and topographical work" covered is that done in connection with Boundary Surveying. Any other interpretation would bring all Civil Engineering work to a halt until the hundreds of party chiefs now engaged on route surveys, construction surveys, etc. could become registered, which would be never under our present law.

Respectfully submitted,
Sidney L. Poleynard
Leo M. Odom

CONCLUSION

All Surveying work in Louisiana is not considered to be Land Surveying as defined under the provisions of La.R.S. 37:682 (9). Land Surveying as defined by this statute is "the establishment, re-establishment, ascertainment, or description of land boundaries, corners, divisions, distances, and direction, the plotting and monumenting of land and subdivisions thereof . . ." This work shall be performed only by "Land Surveyors" or "Professional Land Surveyors" (by law they mean the same), a registrant of the Board (La.R.S. 37:682 (6)). The Professional Land Surveyor doing such work is also charged with the responsibility of identifying his work (Louisiana Administrative Code 19-3:10).

Construction surveys, route surveys, typographic surveys, marine surveys, etc. are not surveys which must by law be necessarily performed by Professional Land Surveyors, registrants of the Board.

I want to thank Mr. Odom for his persistence. Some of us continue to want to "reinvent the wheel," and it is only through the voice of experience that we are precluded from doing so.

Louisianians Receive NCEE Recognition

The 1984 NCEE Distinguished Service Award with **special commendation** was presented to Waldemar S. Nelson, P.E. This award was presented to Mr. Nelson at the Sixty-third Annual Meeting of the National Council of Engineering Examiners, on August 14, 1984 in San Francisco, California.

The commendation read as follows:

Special Commendation

Waldemar S. Nelson, P.E., was appointed to the Louisiana State Board of Registration for Professional Engineers and Land Surveyors in 1968. In 1975, he received NCEE's Distinguished Service Certificate in recognition of his outstanding service to the Louisiana Board, the Southern Zone, and the Council. He was elected to serve as the Council's first Treasurer in 1975. Subsequently, he was re-elected to serve two additional one-year terms. While serving as Treasurer, he established policies and procedures for maintaining financial controls, preparing annual budgets and quarterly financial statements, and accounting practices to ensure that the Council's financial reports are presented in accordance with commonly accepted accounting practices. Throughout his three-year tenure as Treasurer, he continually refined and improved the accounting and financial reporting systems. In addition to his service as Treasurer, he served on the Council's Advisory on Council Activities, Records Verification, and Finance Committees and on numerous Southern Zone and Louisiana Board Committees.

The National Council of Engineering Examiners recognized eight professionals for their achievements by presenting them the Distinguished Service Award. Fred C. Culpepper, Jr., P.E./PLS, was a recipient of one of these Distinguished Service Awards.

The citation read as follows:

Fred C. Culpepper, Jr., P.E., L.S., was appointed to the Louisiana Board of Registration for Professional Engineers and Land Surveyors in 1974. He served as secretary, vice chairman, and chairman of the State

Board in addition to serving on numerous state and zone committees. He served as Assistant Vice President of the Southern Zone from 1979 to 1981 when he was elected to a two-year term as Vice President. He served on the Council's Public Information and Advisory on Council Activities Committees and was chairman of the Continuing Professional Competence Ad Hoc Committee. He is currently serving as chairman of the Office Automation Ad Hoc Committee which is developing plans to fully automate the headquarters office, including facilities for microfiche records, equipment for telecommunications between State Board offices, and coordination of the schedule of implementation with all committees that will be affected by the change-over.

LAST CALL

The **Long Established Practice** provisions of the registration law terminates **this year**. Please refer to the April, 1984 issue of the *Louisiana Engineer* for a detailed explanation of the law and rules of the Board regarding the registration of Long Established Practice applicants. Simply stated, all professional engineering applicants applying after December 31, 1984 will:

- 1. Be required to take and pass **both** the Fundamentals of Engineering Examination, and the Principles and Practice of Engineering Examination.
- 2. Be required to have a bachelor of science degree as a minimum requirement for application.
- 3. Be required to meet the progressive engineering experience acceptable to the Board.

EXAMINATION SCHEDULE

	FALL Oct. 25, 1986 Oct. 26, 1985	SPRING Apr. 20, 1985 Apr. 12, 1986
Fundamentals of Engineering Examination (8 hrs.)	X	X
Fundamentals of Land Surveying Examination (8 hrs.)	X	X
Principles and Practices of Engineering (8 hrs.) Civil (Including Structural & Sanitary), Mechanical, Chemical & Electrical	X	X
Agricultural, Industrial, Metallurgical, Mining & Petroleum		X
Principles and Practices of Land Surveying (4 hrs.)	X	X
Laws and Procedures of Land Surveying (4 hrs.)	X	

Apply at least six to eight months prior to an examination. Board approval must be given for anyone to be scheduled for an examination.

The applicant and the Board depend upon information provided by third parties in the processing of an application; therefore, no assurance can be given that one will be scheduled for a specific examination.

Recognition of fellow engineers has always been an important program of the Louisiana Engineering Society. It is the Society's feeling that honors and awards should be given deserving members so that public recognition of their attainments will inspire others.

The Society has six basic awards:

- The Andrew M. Lockett Medal for Civic Activities
- The A. B. Paterson Medal for an Engineer in Management
- The Charles M. Kerr Public Relations Award
- The James M. Todd Technological Accomplishment Medal
- The F. Hugh Coughlin Young Engineer Award
- The Leo M. Odom Award for Services to the Profession

Nominations for recipients of the six basic awards may be made by:

- Any elected officer of the State Society or one of the Chapters.
- The Board of Direction of the Society.
- The Executive Committee or equivalent body of the Chapter.
- Three or more members of the Society.
- The individual Chapter Honors and Awards Committee.

Nominations may be submitted to a member of the Honors and Awards Committee, or to the Honors and Awards Committee in care of the State Office, no later than December 1, 1984. Nominations for the awards must be submitted on the appropriate form. These forms were delivered or mailed to each Chapter on September 14. The nomination forms should be supported by:

1. A full statement of the formal academic training, experience, progress, and notable technical or engineering contributions made by the nominee.
2. A statement of the basic reasons for submitting the nomination, and for believing that the nominee is eligible for the honor.
3. Such other information and references as may be of assistance to the Board of Direction in considering and acting upon the case.
4. It is essential that such documentation carry the present title and company connection of the nominee, and set forth clearly and concisely why he should be named for the award recommended.
5. A photograph of the nominee.

It is time for the Chapters to screen and select worthy candidates. Nominations for the awards must be in the hands of the Executive Director by December 1, 1984.

Awards will be presented during the Society's spring meeting on February 8, 1985 in Houma.



Dale T. Hunn, P.E., Honored

Dale T. Hunn, project engineer with Waldemar S. Nelson and Company was given an award as the Outstanding Young Civil Engineer of the New Orleans Branch of the American Society of Civil Engineers. The ceremony was conducted at a dinner meeting on August 10, 1984, with the presentation being made by Kong Wong, chairman of the Selection Committee and incoming president of the New Orleans Branch.

Mr. Hunn attended Tulane University and received a B.S. degree in civil engineering in 1972 and a M.E. degree in civil engineering in 1977. He is past president of the New Orleans Chapter of LES and he's currently serving on the LES Board of Direction as a State Director. Mr. Hunn was awarded the Young Engineer Award of Merit from the Society in 1981. The award recognizes an engineer who has demonstrated to a high degree capabilities in his chosen field of engineering, thereby indicating potential for further advancement and leadership as a professional engineer.

Our congratulations to Dale!

Major General Ames S. Albro Joins the Staff of Walk, Haydel & Associates, Inc.

Major General Ames S. Albro who has recently retired as Director of Engineering and Construction, U.S. Army Corps of Engineers, has joined the engineering and construction management firm of Walk, Haydel & Associates, Inc. of New Orleans, Louisiana as a construction management executive.

In making the announcement, Frank H. Walk, Chairman of the Board of Walk, Haydel, said, "We are most fortunate to have General Albro become associated with our organization. He brings to us his many years of valuable experience in engineering and construction management on both national and international levels."

General Albro is a graduate of the U.S. Military Academy, West Point, and holds a Master's Degree from Oxford University, Oxford, England (Rhodes Scholar). He is also a graduate of the U.S. Army Command and General Staff College, the U.S. Army War College and the Harvard Advanced Management Program.

Gen. Albro has served with the U.S. Army Corps of Engineers all over the world in construction management and related assignments for the past 30 years.

Walk, Haydel & Associates, Inc. has just completed 25 years of service. They were recently ranked as number 52 in Engineering News Record's TOP 500 Design Firms and as number 20 in the ENR TOP 50 Construction Managers.

IN MEMORIAM

Lionel E. Flotte, Sr.

Lionel E. Flotte, Sr., a Member of the Louisiana Engineering Society since 1939, and a Life Member since 1967, expired on August 27 in New Orleans. A lifelong resident of New Orleans, Mr. Flotte was a registered consulting engineer. During World War I, he served with the merchant marine. He was a co-founder of Lionel E. Flotte & Associates, the company he retired from in 1979. During his retirement, he wrote several books on physics, developing his theory of the helixial motion of satellites. Mr. Flotte is survived by his wife, Mary Schmalz Flotte; two sons, Lionel E. Flot-

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te, Jr., and Dudley L. Flotte; a daughter, May Lee Lombard; nine grandchildren; and 10 great-grandchildren.

IN MEMORIAM

Lee Vance McLean

Lee Vance McLean, P.E., expired April 6, 1984. He received a B.S. in E. E. in 1934 and M.S. in E. E. in 1936 from LSU and did some advanced study at the Univ. of Illinois and MIT. He was registered in Louisiana and Texas. After spending two years with Schlumberger Well Surveying Corporation he joined the LSU E. E. faculty in 1941 as an instructor. Then, after four years, he left the U.S. Navy as a Lt. Cdr. and returned to the LSU faculty in 1946. He retired from LSU in 1976 to be Professor Emeritus of Electrical Engineering.

During his teaching career he initiated the interest in computers at LSU by starting a series of annual computer conferences, the first in the South, in the early 1950's—in those days analog computers were the vogue. He was responsible for bringing the first digital computer to LSU and the E.E. Dept. and was acting Dept. Head for a period. He was personally responsible for convincing the LSU Administration to invest in a separate building for the Electrical Engineering Department and played a major role in its design, equipping, and completion.

He served as a consultant for the Gulf South Research Institute, the U.S. Coast and Geodetic Survey, the U.S. Navy Electronics Lab., and the U.S. Naval Reserve Training Publications Project. He authored a two volume text for the Navy on

SONAR Equipment. He spent summers with the Argonne National Lab., the U. S. N.E.L., and the U. S. C. & G.S. His last publication, co-authored with E. Tims and J. Van Lopik, was "A Plan for a Vessel Traffic System for the Lower Mississippi River," in the Bulletin of the Permanent International Association of Navigation Congresses (1984). At his passing he was President of NOCON Corporation specializing in acoustics and Noise Control Engineering projects.

POTPOURRI

Continued from page 12

scores vs. SAT scores. The state scholarship committees will also distribute the ROTC Scholarship Applications. Any expenses directly related to the distribution and handling will be reimbursed by NSPE.

A lengthy discussion ensued on the problems of membership retention and recruitment. Many of the SSAC group were disappointed that again this year the NSPE decreased their budget for this most important committee. Many feel that NSPE is expecting the state societies to carry more and more of the burden of retention and recruitment. A committee was appointed to speak with the budget committee on this matter.

Paul France announced that all the membership records have now been converted to the Hewlett Packard 3000 series computer. NSPE is running parallel operations in July and August for membership records activities. As of September 1, NSPE expects to be operating completely on the Hewlett Packard.

The NSPE headquarters building should be ready for occupancy in late December. The address is 1420 King Street, Alexandria, Virginia.

Several hours Monday afternoon were set aside for a general discussion on successful programs and problems. Many worthwhile suggestions came out of the meeting concerning membership recruitment and retention some of which the state office has already initiated.

The Tuesday morning meeting was held at the American Society of Association Executives headquarters. I elected not to attend this session and instead sat in on the NSPE practice division meetings.

The Louisiana Engineering Society has 2 engineers and spouses attending the NSPE Annual Meeting.

MATHCOUNTS

Continued from page 13

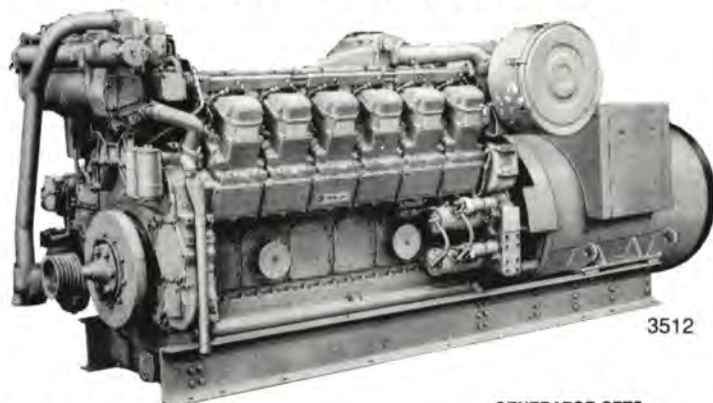
of the schools then selected a team of its most promising "mathletes" to represent them at the chapter-level MATHCOUNTS competitions held in late February. More than 300 of these contests were held, with financial support from the sponsoring NSPE chapters and from local donors.

The winning teams then progressed to state-level contests organized by NSPE state societies in early April. The four top-scoring individuals from each state were invited for an all-expenses-paid trip to Washington, where they matched wits

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in the national finals May 19. All participants' expenses were paid by CNA.

Michael Edwards of Houston, Texas, came out on top in the individual team competition and Virginia's "mathletes" stole the show for overall team performance, winning a decisive first-place victory over the other 47 participating MATHCOUNTS teams. Louisiana placed 36th in the competition.

THE SPEC SHEET

Continued from page 10

facilities designs. Pan American is located in Alexandria, Louisiana, with branch offices in Baton Rouge.

A registered electrical engineer, Dunn was graduated from Tulane University in 1950 with a Bachelor of Science in Electrical Engineering. He holds membership in the Louisiana Engineering Society, the American Society of Heating, Refrigerating and Air Conditioning Engineers, and the Illuminating Engineers Society. Dunn is married to the former Doris Oswald and they have nine children. He is serving this year as the president of the Alexandria Chapter.

PHILIP J. LINDSAY, SR., P.E., was born and raised in Idaho Springs, Colorado, and is a Korean War veteran, serving in the U.S. Marine Corps. He was

graduated from Louisiana Tech University in 1969 with a Bachelor of Science in Civil Engineering.

Presently, Lindsay is associated with Kindle-Stone Associates as a principal with KSA/Griswold Engineering, a firm specializing in general and pre-engineered steel buildings for public and private clients, and structural design for water and sewer treatment plants.

Registered as a civil engineer in Louisiana and as a professional engineer and land surveyor in Texas, Lindsay holds membership in several professional organizations including the Society of American Military Engineers, the Louisiana Engineering Society, National Fire Protection Association, and ASCE of which he is past president of both the Shreveport Branch and Louisiana Section and is currently the Secretary-Treasurer of the District 14 Council.

He is married to the former Mary Glenn Davis, a teacher of advanced academically gifted children in the Bossier Parish School System. They have three sons. He serves on the Board of CEC/L as Shreveport Chapter President.

JERRY G. LAZENBY, P.E., is Secretary-Treasurer of Harrison & Lazenby, Inc., West Monroe, La., a consulting en-

gineering firm offering civil engineering and land surveying services. He is serving on the CEC/L Board as President of the Monroe-West Monroe Chapter. He was graduated from Louisiana Tech with a Bachelor of Science degree in Civil Engineering in 1965. He is a registered professional engineer and professional land surveyor in Louisiana. Lazenby holds membership in the Louisiana Engineering Society, National Society of Professional Engineers, American Society of Civil Engineers, Institute of Transportation Engineers, and the Water Pollution Control Federation. He is a member and Past President of the West Monroe Chamber of Commerce and is Vice President of the Monroe-West Monroe (Ouachita Parish) Public Trust Finance Authority. He and his wife, the former Christine Wilson, have two sons, Jeff and David, and one daughter, Heather.

E. R. "RANDY" COX, JR., P.E., has been elected to serve on the CEC/L Board as President of the Baton Rouge Chapter. A registered chemical engineer in Louisiana and Mississippi, Cox was graduated from Louisiana State University and Mississippi State University with a Bachelor of Science degree in 1962

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and a Master of Science degree in 1970, respectively. He is a member of LES, NSPE, American Institute of Chemical Engineers, Air Pollution Control Association, American Public Health Association, American Association of Energy Engineers, Water Pollution Control Federation and the American Academy of Environmental Engineers. He is president of Cox, Walker and Associates, Inc., Baton Rouge, La., a firm offering design of municipal, industrial and environmental control projects.

He and his wife, the former Carolyn Lard, have two children.

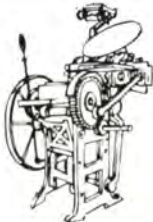
RICHARD A. VANWOOTTEN, P.E., is Senior Vice President of Walk, Haydel & Associates, Inc., a multi-discipline consulting engineering firm specializing in industrial plant designs, and the design of deep water terminals, fertilizer facilities, docks, paper and pulp mills, and petroleum and gas producing facilities. With its main office in New Orleans, Louisiana, Walk, Haydel & Associates, Inc. has branch offices in Baton Rouge,

Louisiana, and Mobile, Alabama.

A registered Louisiana civil engineer, Van Wootten was graduated in 1957 from Rensselaer Polytechnic Institute, Troy, New York, with a bachelor's degree in Civil Engineering. He holds membership in the Louisiana Engineering Society, National Society of Professional Engineers, and the American Society of Civil Engineers. Van Wootten is married to the former Linda McIlvain and they have a son, Peter, and a daughter, Wendy. He is serving on the CEC/L Board as New Orleans Chapter President.

R. KENNETH "KEN" DERICK, P.E., is the newest member of the CEC/L Board of Governors. He is the first president of the newly established Lake Charles Chapter. Derick is a registered civil engineer and is Director of Lake Charles operations of Soil Testing Engineers, Inc., a Baton Rouge based geotechnical consulting engineering firm specializing in soil mechanics and foundation engineering for commercial, industrial, transportation, and environmental pro-

jects, domestic and foreign. He was graduated from Georgia Tech with a Bachelor of Science degree in 1975 and a Master of Science degree in 1977. He is also Senior Engineer and serves on the Board of Directors of Soil Testing Engineers, Inc. Derick is a member of the Louisiana Engineering Society and the American Society of Civil Engineers. He is married to the former Anne Lyons and they have two children, a boy and a girl.

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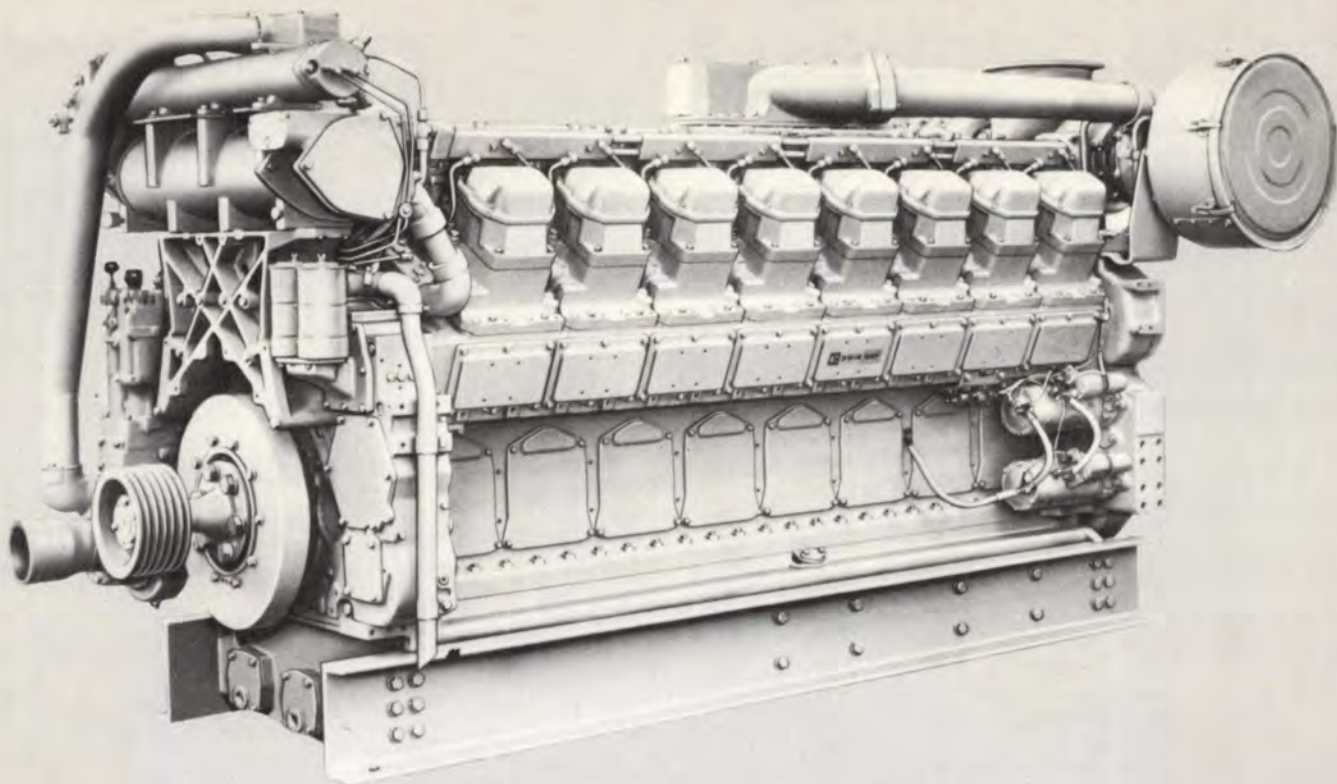
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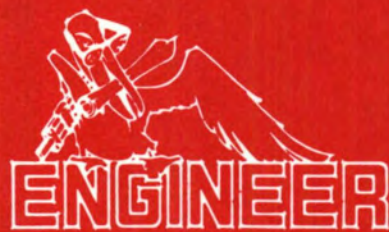
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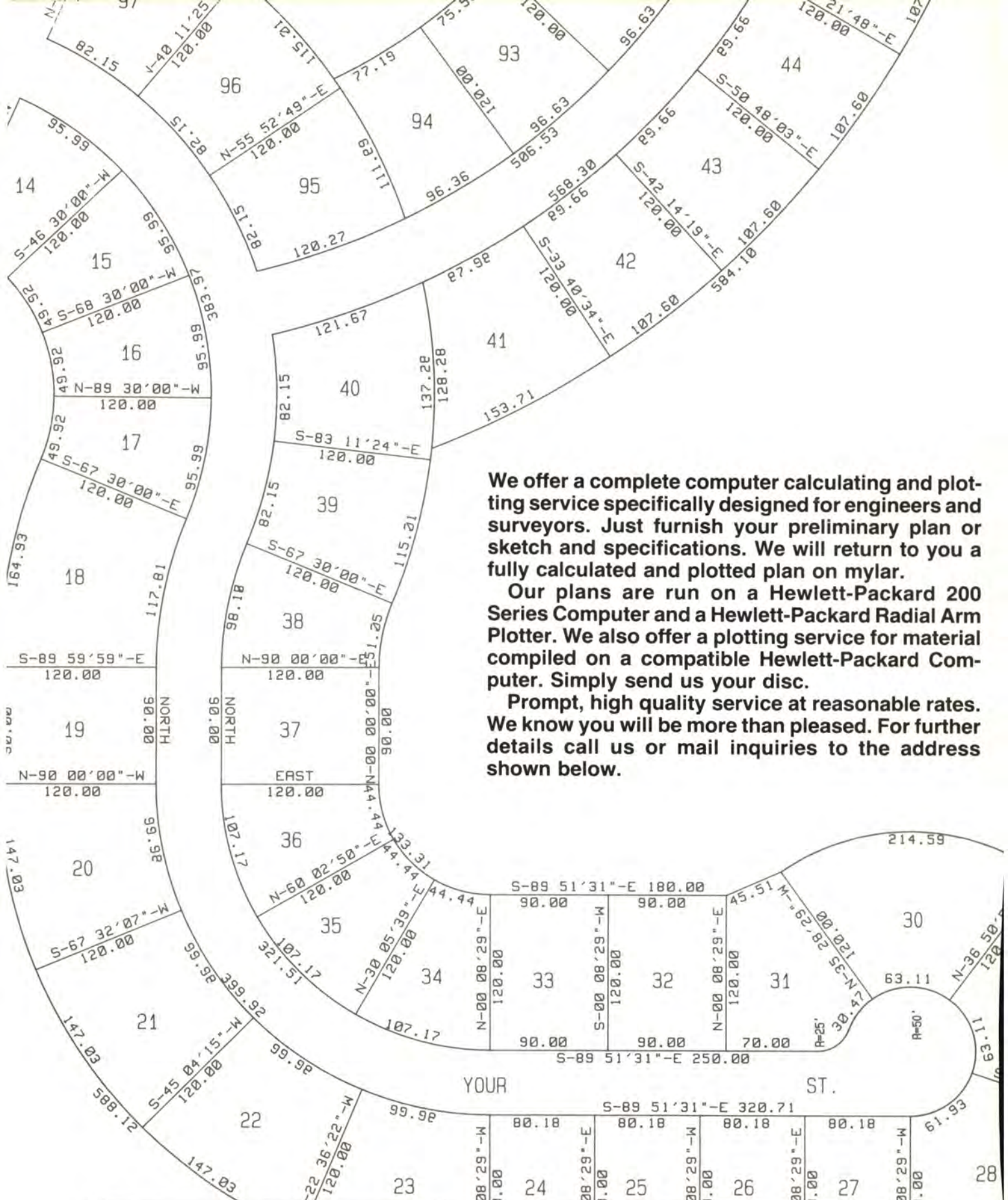
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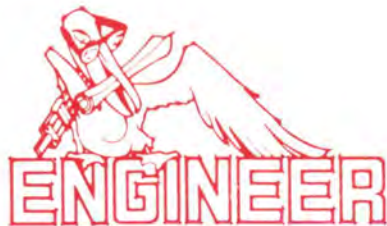
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LOUISIANA ENGINEER



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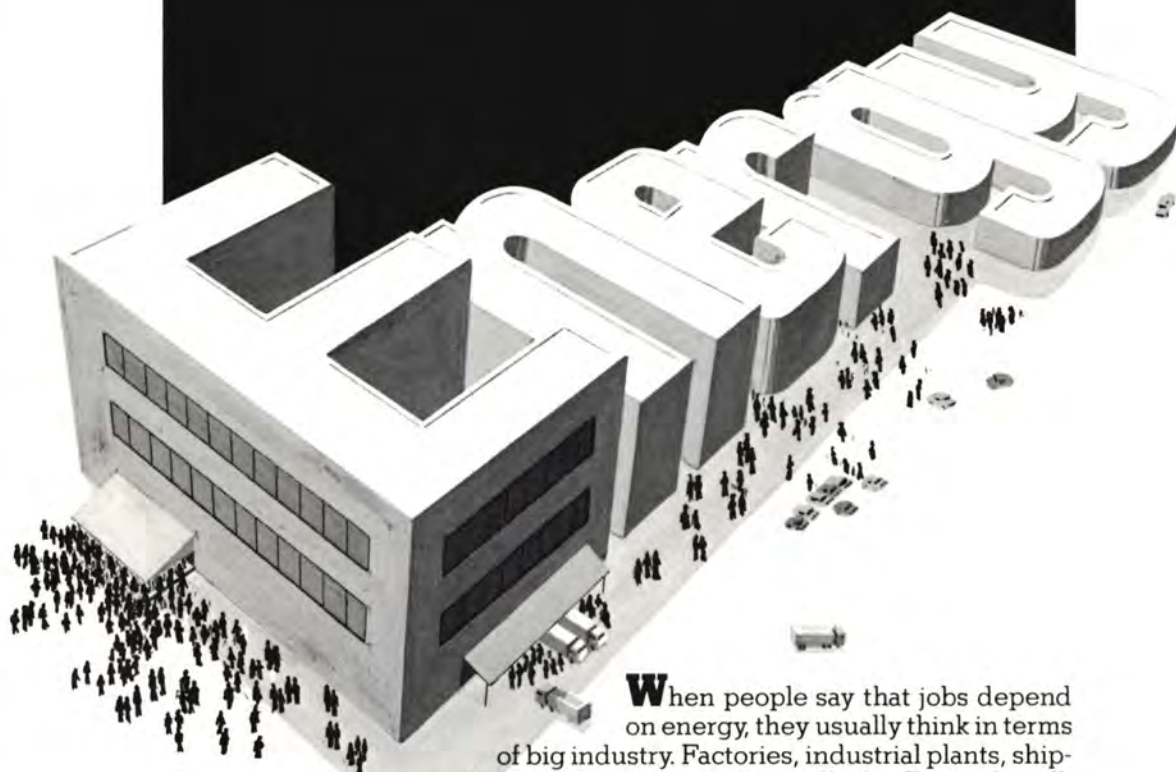
Holiday greetings to you and your family.

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Job Generator

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Engineers Serve Their Community And Their Profession



Henry E. Markel, P.E.
LES President

I was privileged recently to attend the Annual Meeting of "The Chamber-New Orleans and the River Region," the Chamber of Commerce of the Metropolitan New Orleans Area. It was a well attended meeting with every segment of the community present. There were attorneys, marketing executives, governmental officials and employees, real estate developers and persons with a variety of careers.

And, of course, **Engineers** were there and I was proud! Proud, because, the outgoing President of The Chamber is J. J. Krebs, P.E., a New Orleans Consulting Engineer and Land Surveyor. But my pride reached greater heights when the incoming President was introduced—Bob Boh, P.E., President of Boh Bros. Construction Company. I also shook hands with Frank Walk, P.E., President of Walk-Haydel and Associates, a former President of The Chamber

Why were these gentlemen selected for such a prestigious position?

What could Engineers offer to the community that someone from another discipline could not match? My laundry list of attributes that make engineers unique would include:

- The ability to choose the best alternative from among several worthy choices.
- An understanding and the application of economic analysis.
- The organized approach to solving tough problems.
- The desire to "sell" a concept.

These traits are surely valuable in such an important position.

But perhaps the most important trait of an Engineer is that he is dedicated to

creating for **the public good**. They are builders, constructors, creators. Engineers bring together diverse elements, which alone have no intrinsic value, but when combined are utilitarian, desirable and worth-while. Engineers do not destroy except as may be necessary to construct even greater monuments for the public good!

Messrs. Walk, Krebs, and Boh offer these attributes to their community — as do other LES members throughout Louisiana—because they, like all LES members are professionals. Their hope, their aspirations may not all be achieved, but they give freely of their **time** so that their fellow man will be better off because of their efforts.

Jim Porter, P.E., President of the Baton Rouge Chapter expressed it well in his October message to his membership:

"... I am often confronted by those who complain that they do not have enough time to do something. I suggest two premises about time. First, it is the expendable commodity of our life which is precious, unavoidably spent and irretrievable. Second, there always appears to be enough time to do those things which are truly important to us. Therefore, it is never the lack of time, but that of priority, for not accomplishing our goals. Have you recently evaluated your priorities? Does service to your profession have a prominent place in your priorities? I believe that the placement of this priority separates the professional from a common laborer."

Engineers who serve their community also serve their profession. For this reason alone, they make us proud to be Engineers.

LES Awards Meeting, February 6-7-8-9, 1985, Houma, La.

The 1985 convention is sponsored by the Bayou Chapter - MAKE PLANS TO ATTEND - USE HOTEL RESERVATION AND REGISTRATION COUPONS ATTACHED - (Reservations should be made by January 25, 1985).

PROGRAM

Wednesday, February 6, 1985

11:00 a.m. - 5:00 p.m.

11:30 a.m.

2:00 p.m.

7:00 p.m.

Registration

Golf Tournament, Ellendale CC

(Tee Off Time Promptly at 11:30, please)

Tennis Tournament, Imperial Racquet Club

Cocktails (Cash Bar)

Dinner Own Your Own

Thursday, February 7, 1985

8:00 a.m. - 2:00 p.m.

Registration

Committee Meetings

8:30 a.m. - 10:00 a.m.

8:45 a.m. - 9:45 a.m.

9:00 a.m. - 10:00 a.m.

10:00 a.m. - 10:30 a.m.

10:15 a.m. - 3:00 p.m.

10:30 a.m. - 12:00 Noon

11:15 a.m. - 12:00 Noon

12:15 p.m. - 1:30 p.m.

2:00 p.m. - 4:00 p.m.

4:00 p.m. - 5:00 p.m.

6:30 p.m.

Engineering Education

Inter-Society Relations

Public Relations

Coffee Break

Council of Deans Meeting

Membership Meeting

Liaison Board of Registration

Lunch - On Your Own

(The hotel serves as an excellent luncheon buffet)

Presentation of Student Papers

Nominating Committee

Early Bird Cocktails and Dinner

(Seafood Blowout - Sheriff's Camp)

Friday, February 8, 1985

8:00 a.m. - 12:00 Noon

Registration

Committee Meetings

8:00 a.m. - 9:00 a.m.

8:30 a.m. - 10:00 a.m.

9:00 a.m. - 10:00 a.m.

10:00 a.m. - 10:30 a.m.

10:30 a.m. - 11:30 a.m.

10:30 a.m. - 12:00 Noon

11:00 a.m. - 12:00 Noon

12:15 p.m. - 1:30 p.m.

2:00 p.m. - 4:00 p.m.

6:00 p.m. - 7:00 p.m.

7:00 p.m.

Long Range Planning Committee

Legislative

Constitution and Bylaws

Coffee Break

Ethics and Professional Conduct

Young Engineers

Scholarship

Lunch On Your Own

Practice Division Meetings

Cocktails (Cash Bar)

LES Awards Banquet

Saturday, February 9, 1985

8:00 a.m.

Combined Breakfast and General

Membership Meeting

9:30 a.m.

LES Board of Direction Meeting

**THE LADIES PROGRAM HAS NOT BEEN FINALIZED.
INFORMATION WILL BE AVAILABLE AT THE REGISTRATION DESK.**

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Registration (Spouse)	\$ 5.00	_____	_____
Early Bird Dinner, Thursday	\$ 9.00	_____	_____
Awards Banquet, Friday	\$16.25	_____	_____
Breakfast, Saturday	\$ 5.75	_____	_____
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Tennis	\$15.00	_____	_____
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City, State _____ Zip _____

Estimated time
of Arrival _____ Phone (a/c) _____

Reservations held until 6 P.M. If later arrival, we require major credit card number or 1 night's deposit.
To assure obtaining accommodations and rates guaranteed to your group, your reservation must be
made on this card. Credit Card # _____

The Use of a Computer Model to Plan Drainage Improvements for Orleans Parish, Louisiana

By Dave Milner and Joe Sullivan

From its founding in 1718, New Orleans has been beset by drainage problems. The problems result from the unusual low-lying topography of the city and an inherent soil instability. Within one year of the city's founding, the Mississippi River overflowed its banks and flooded the fledgling settlement. Almost immediately thereafter, levees were raised along the river as well as around the perimeter of the town. The levees kept out the river's overflow but made the disposal of water from within even more difficult.

During most of its early history, the city's drainage system consisted of open canals which drained away from the river and emptied into the bayous that flowed into Lake Pontchartrain and Lake Borgne. Between 1835 and 1871, steam-driven drainage machines were installed with capacities sufficient to safely remove the run off from 0.12 inches of rainfall in one hour. The frequent occurrence of heavy rains over the city caused the lower areas to remain flooded for days at a time.

By 1893 it was apparent that an adequate drainage system was necessary for the city's welfare, and City Engineer L. W. Brown was authorized to make the first topographic survey of New Orleans. The survey revealed that the highest land is located on the natural levee along the banks of the Mississippi River. The topography slopes down away from the river for 6,000 to 9,000 feet with a drop of about 14 feet in elevation. The ground is practically flat from the foot of the slope northward to Lake Pontchartrain, with the exceptions of the five-foot-high Metairie and Gentilly ridges, that run roughly parallel to the lakeshore.

Based on the results of the topographic survey, a master plan was drawn to lift storm water runoff out of the saucer-like city. The master plan called for an extensive network of main and tributary canals, pumping stations, and outfall canals to Lake Pontchartrain and Lake Borgne. The lakes were selected for discharge because the vertical lifts were significantly less than to the Mississippi River, where flood stage is reached as often as three times a year.

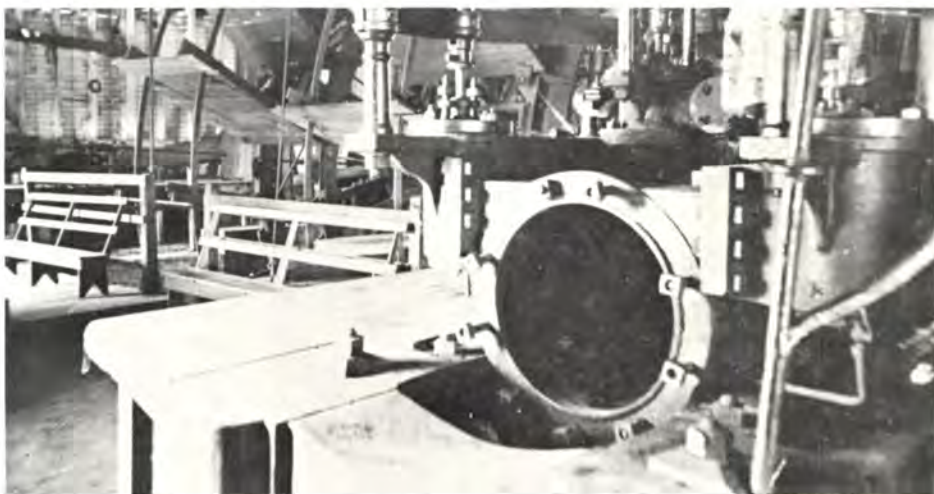
The Sewerage and Water Board of New Orleans carried the plan to completion. While the board has expanded those facilities over the years as the city grew, the drainage system is essentially

the same one that was devised at the turn of the century. The present drainage system consists of approximately 87 miles of open canals ranging from 6 to 125 feet wide, 85 miles of covered canals ranging from 5 to 28 feet wide, and 70 miles of large pipelines. Separate drainage systems are maintained for Algiers on the West Bank of the Mississippi River and for that portion of the city east of the Industrial Canal and north of the Mississippi River-Gulf Outlet.

In addition, there are nineteen pumping stations capable of removing water at the rate of approximately 38,600-cubic-feet-per-second, or 25.0 billion gallons of water per day. The main pumping units within the stations are 12-foot and 14-foot diameter screw-type pumps, cap-

able of lifting stormwater at a rate of 550 and 1050 cubic feet per second, respectively. Each pump is operated by electric motors of up to 2500 horsepower. The electrical energy is primarily supplied by the board's own power plant with a capacity of 61,000 kilowatts. The power is distributed over the board's own transmission system, most of which is underground for greater reliability.

Major changes have taken place since the original Master Plan was implemented. The three major phenomena that impact upon the drainage system are land subsidence, more intensive use of developed areas, and new land development in previously undeveloped areas. These and other phenomena have com-



Above, the old Dublin Pumping Station on the Oleander Canal, indicating the paddle wheels and Corliss engine that were used in the late 1800's. Below is a photo of the turn of the century improvements to replace the paddle wheel pump with the new Wood Screw pump design, taken at the dedication of Pumping Station No. 1, South Broad and Melpomene in 1915. Left to right are Alfred Theard, Alfred Raymond, George Earle, A. Baldwin Wood, S. G. Frank Haas, J. E. Morrill, Wade Barnett.



to increase the severity and frequency of flooding in New Orleans. If the city is to continue to flourish and grow, solutions must be found to the existing and anticipated flooding problems.

Early in 1983, DMJM was commissioned to prepare a Master Plan of drainage improvements for the entire parish served by the drainage system. The preparation of the Master Plan consists of four primary phases.

The first is the collection and analysis of the available data describing the entire drainage system and its operation. The second is the development of a computer model capable of simulating the operation of the drainage system. The third is the determination of the deficiencies in the existing drainage system and the development of alternative improvements to correct those deficiencies. The fourth is the development of a systematic program for the implementation of the recommended drainage improvements. The tasks involved in the first two phases establish the strong foundation for the identification and selection of alternative system improvements.

The area served by the present drainage system consists of approximately 55,000 acres of the city of New Orleans and 2,550 acres in adjoining Jefferson Parish. The average annual rainfall is approximately 58 inches and the maximum recorded rainfall totaled 16.9 inches in approximately 12 hours. The average rainfall amounts to more than 115 billion gallons of water weighing nearly 484 million tons.

Hydrologic modeling is an important tool for estimating and organizing quantitative information for drainage planning, design, and operation. The application of a digital computer model to meet given planning or design goals requires an inventory and evaluation of available models, adopting or adapting the model judged most suitable in terms of reliability and cost, and calibrating the selected model to estimate the hydrologic information of interest.

In order to successfully simulate the complex network of canals, conduits, and pumping stations, the model must be capable of predicting the following for any given storm event: peak flows throughout the drainage system, times of occurrence of the peak flows, elevations of the peak flows, maximum pumping rates required to safely pass the peak flows, total time required to pump the storm water runoff, and the above ground flood slopes. After a detailed scrutiny of 75 digital computer models, the Storm Water Management Model of the U. S. Environmental Protection Agency was judged as the most suitable.

The model has been employed in numerous investigations throughout the U.S. and Canada. These applications include storm sewer design, infiltration/in-flow analysis, analysis and evaluation of existing systems, facilities planning, and master planning. Meetings held with the authors as well as with other users of the model at the University of Florida confirmed that the model was indeed capable of simulating the wide variety of hydraulic structures and configurations present within New Orleans' unique drainage system.

The comprehensive version of the model uses a digital computer to simulate either actual or hypothetical storm events on the basis of rainfall inputs, catchment characterization, and conveyance system configuration to predict results in the form of quantity hydrographs. The model accepts rainfall hyetographs over the subcatchments and makes a step accounting of infiltration losses in previous areas, surface detention, and overland flow, leading to a calculation of a runoff hydrograph into an inlet for each subcatchment. The central core of the model then receives hydrograph input at specific inlet locations for each subcatchment and performs a dynamic routing of stormwater flows through the conveyance system to the points of outfall. The model will simulate: branched or looped networks; backwater due to tidal or non-tidal tailwater conditions; free-surface flow; pressure flow or surcharge; flow reversals; flow transfers by weirs, orifices, and pumping facilities; and, storage at on-or off-line facilities.

To ensure that the model's predictions are sufficiently accurate and that the estimates of the input parameter values are consistent with the catchment characteristics, a series of sensitivity, calibration, and verification trials were conducted using measured storm hyetographs and actual pumping records. The most important group of hydrologic input data are the measured storm hyetographs. The board maintains a network of sixteen recording raingages throughout the city, with more than ninety years of records, from which the storm hyetographs were directly recovered.

By performing a sensitivity analysis prior group of hydrologic input data are the measured storm hyetographs. The board maintains a network of sixteen recording raingages throughout the city, with more than ninety years of records, from which the storm hyetographs were directly recovered not considered further. And adjustments to specific parameters to produce a desired variation in the model's predictions were then estimated.

Calibration trials were then performed by simulating selection storm events, adjusting the input parameters, and repeating the simulations until satisfactory replications were obtained of the storm hydrographs calculated from the actual pumping records. The calibration trials were performed over the entire drainage system utilizing the actual records of the operation of fourteen pumping stations. The results of the calibration trials were then verified by comparing the predictions of the calibrated model against storm hydrographs not used for the calibration trials.

In order to further confirm that the models of each sub-area have been adequately calibrated and verified and that the models are sufficiently accurate to simulate major storm events, a total continuity balance was summarized over all of the sub-areas within the older portion of the city. For three of the storm events used in the calibration and verification trials, the model predicted the total volume of runoff pumped out of the city within 10% of the total volume calculated from the pumping records. Based on the results of the calibration and verification trials and the total continuity balance, it was concluded that the model was satisfactorily calibrated and is, therefore, sufficiently accurate to simulate major storm events.

The developed model is now used to determine the deficiencies in the existing drainage system under selected storm frequencies. Alternative improvements are developed to correct the deficiencies, with particular attention shown to areas of frequent flooding. And finally, based on estimates of their cost, benefit, and effectiveness, a master plan will be prepared for the systematic implementation of the selected improvements.

Upon completion of the master plan, the model will be installed on the computer system of Tulane University. There, the model may be used by the faculty as both a teaching and research tool. In addition, the model, while at Tulane, will be directly available to the board and its staff. Potential applications include canal design and analysis, evaluation of proposed system improvements, evaluation of major land use changes, and facilities planning. The model may be easily updated and may be expanded to simulate water quality.

The utility of the model was demonstrated as a tool in predicting urban storm water runoff and in simulation a complex drainage system. The development of the master plan will demonstrate the utility of the model in evaluating the adequacy of the existing drainage system and in planning system improvements.

Petitions for Constitutional Amendments

Petitions have been submitted to the Louisiana Engineering Society. The written petitions were signed by at least sixty (60) or more voting members in good standing, with at least fifteen (15) from at least 50% of the different chapters of the Society. This is your letter of notification of the amendments. The master will be acted on at the LES General Membership Meeting scheduled for Saturday, February 9, 1985, Ramada Inn, Houma, LA.

Petition I. We, the voting members of the Louisiana Engineering Society, do hereby petition for an amendment to the Constitution of the Society to add to Article I the following statement:

"The Society is a member state society of the National Society of Professional Engineers (NSPE), a national organization of like aims and purposes."

Petition II. We, the voting members of the Louisiana Engineering Society, do hereby petition for an amendment to the Constitution of the Society to add, following the Preamble, Terminology:

TERMINOLOGY

"The following terminology, including plural and possessive forms, capitalized or not capitalized, when used in the Constitution and/or Bylaws will have the meanings as designated following.

1. The terms "Professional Engineer," "Engineer," "Engineer-In-Training," "Land Surveyor," and "Land Surveyor-In-Training," shall designate a person duly registered as a Professional Engineer or a Land Surveyor, or duly certified as an Engineer-In-Training or a Land Surveyor-In-Training, in any State, Territory, or Political Subdivision of the United States of America that administers an Act regulating the practice of professional engineering and/or land surveying.

2. The terms "professional engineering" and "engineering," or "land surveying" shall refer to the practice of engineering or land surveying by, or under the direct supervision of, a Professional Engineer or Land Surveyor, respectively.

3. The terms "engineering" or "land surveying" may refer to, as indicated in context, candidates for, or education, schools, students, or curricular pertinent to the achievement of, registration as a Professional Engineer or Land Surveyor, or may refer to further education of Professional Engineers or Land Surveyors.

4. Masculine pronouns or titles imply equally the female counterparts."

Petition III. We, the voting members of the Louisiana Engineering Society, do hereby petition for an amendment to the Constitution of the Society to change Article II, Section 4(c) to read:

"A graduate of an engineering curriculum or land surveying curriculum actively pursuing an engineering or land surveying career, or engaged in postgraduate engineering study."

Petition IV. We, the voting members of the Louisiana Engineering Society, do hereby petition for an amendment to the Constitution of the Society to change Article II, Section 6 to read:

"An Affiliate Member shall be a person who, by scientific acquirements or practical experience has attained a position in his special pursuit, qualifying him to cooperate with Engineers in the advancement of Professional Engineering knowledge and practice, but who is not eligible to hold membership in another grade."

Petition V. We, the voting members of the Louisiana Engineering Society, do hereby petition for an amendment to the Constitution of the Society to change Article VII, Section 1 (3rd paragraph) to read:

"Any other applicant for membership, or transfer to another grade, shall furnish the names of at least three members of the Society to whom he is known personally, except in the case of a new State resident, who is not known personally by three members. In the latter case, the applicant shall furnish the names of at least three Professional Engineers in other states who know him personally. Each of these references . . ."

The changes:

Petition I - Commentary - The National Society of Professional Engineers indicates considerable differences exist between the LES Constitution and Bylaws compared to the NSPE model for state societies. NSPE suggests we adopt a completely new Constitution and Bylaws in conformance with the NSPE model. The LES Board of Direction *does not* recommend a rewrite of the Constitution to comply with this request, but does recommend that the statement in Petition I be added to Article I.

Petitions II, III, IV, and V - Commentary - These changes would bring the Constitution's terminology in accord with the Louisiana Registration Law, and/or would eliminate ambiguity in said terminology.

Roster of Engineering And Surveying Societies

The Inter-Society Relations Committee of the Louisiana Engineering Society is responsible for compiling a roster of chief executive officers for other engineering societies in the state on an annual basis for publication in the *Louisiana Engineer*. The purpose of this effort is to improve communications among the entire engineering community in Louisiana and identify contacts for such inter-society activities as Engineers' Week programs, technical seminars, and coordination of legislative efforts. If your engineering organization is not listed and you wish to be included in next year's roster, please make that request through the LES headquarters at P. O. Box 2683, Baton Rouge, LA 70821.

K. A. Perret, P.E., Chairman, Inter-Society Relations Committee

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NÔTRE MÉTIER

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



Thank You All

The Board Staff appreciates the patience you have displayed in this last year's transition from **all** registrants being billed for the annual renewal fee at the end of the year to **quarterly billing**. **Quarterly billing** is the billing of one quarter of the registrants each quarter of the year. You will note that your renewal

Continued on page 14

Gov. Edwards Appoints New Board Member

On September 13, 1984, the Governor appointed Rodger D. Phelps, P.L.S. for a six-year term. Mr. Phelps is the second Professional Land Surveyor Board Member appointed to the Board. Mr. A.J. Brouillette was the first.



Rodger D. Phelps

Rodger D. Phelps obtained a bachelor of science degree in civil engineering from McNeese State University, Lake Charles, Louisiana in 1971. He holds registration as a professional land surveyor in the states of Louisiana and Arkansas.

His professionalism and leadership have been recognized by his peers. He served two years on the Board of Directors of the Louisiana Society of Professional Surveyors and in 1979 was the President of the then 375-member organization. Mr. Phelps is an active member of the American Congress on Surveying and Mapping and currently serves as Louisiana's delegate to the national American Congress on Surveying and Mapping and also serves on the Government Affairs Committee. Mr. Phelps is also an active member in the International Right-of-Way Association, and the Managers Association of Professional Photogrammetry Scientists.

Today, as President of Vernon F. Meyer and Associates, Inc., he directs all surveying activities of that firm.

He is married to the former Gwen Alexander and they have two children, Stuart, 11 and Candace, 8. They attend First Baptist Church of Westlake, Louisiana.

The Very Last Notice

The following notice was recently published in leading newspapers throughout the state in a last and final effort to notify engineers who may qualify under the Louisiana Revised Statutes 37:693 B (2) (d) **Long Established Practice**.

Please circulate this notice where you work, in your technical society, and among your friends.

PUBLIC NOTICE TO ENGINEERS (Reference La.R.S. 37:693 B (2) (d))

The Board has the authority to waive one of the two (2) required 8-hour examinations for Professional Engineering registration to Engineering applicants with bachelor of science degrees, with over twenty (20) years of experience by December 31, 1984, if an application is postmarked on or before that date. The Board **will not** have the authority to waive one of the two (2) 8-hour examinations if the application is postmarked **subsequent to December 31, 1984**.

The Board may also accept applications for Professional Engineering registrations from individuals without a bachelor of science degree who have acquired over twenty (20) years of engineering experience acceptable to the Board, if these requests are postmarked **prior to December 31, 1984**. The Board **will not** have the authority to consider such requests postmarked **subsequent to December 31, 1984**. Applicants in this category are also required to take and pass at least one of the two (2) 8-hour examinations.

Applications must be submitted on forms provided by the Board. These forms may be obtained by either writing or calling the Board office.

Paul L. Landry, P.E., Executive Secretary
Board of Registration for Professional
Engineers and Land Surveyors

1055 St. Charles Avenue, Suite 415
New Orleans, Louisiana 70130
Telephone (504) 568-8450

EXAMINATION SCHEDULE

	SPRING Apr. 20, 1985 Apr. 12, 1986	FALL Oct. 26, 1985 Oct. 25, 1986
Fundamentals of Engineering Examination (8 hrs.)	X	X
Fundamentals of Land Surveying Examination (8 hrs.)	X	X
Principles and Practices of Engineering (8 hrs.)		
Civil (Including Structural & Sanitary), Mechanical, Chemical, & Electrical	X	X
Agricultural, Industrial, Metallurgical, Mining & Petroleum		X
Principles and Practices of Land Surveying (4 hrs.)	X	X
Laws and Procedures of Land Surveying (4 hrs.)	X	

Apply at least six to eight months prior to an examination. Board approval *must* be given for anyone to be scheduled for an examination.

The applicant and the Board depend upon information provided by third parties in the processing of an application, therefore no assurance can be given that one will be scheduled for a specific examination.

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card has an expiration date of either March 31, June 30, Sept. 30, or Dec. 31. The Board mails a renewal notice to the registrant's last mailing address on file with the Board. This is the same address used to mail this magazine, the **Louisiana Engineer**. If you're a registrant of the Board and you're receiving the **Louisiana Engineer**, we have your correct address. If you're a registrant of the Board, your registration number and discipline is listed above your name on the mailing label. The **Louisiana Engineer** magazine which is the official journal of the Board is mailed to you in February, April, June, August, October, and December each year. If you fail to get the magazine and you've paid your annual renewal fee to the Board, something is wrong. Call or write the Board to clarify your status. Computer errors are **not** possible **but** human errors are.

Again **thanks** for your help and understanding. A Merry Christmas to you all and a Happy 1985.

BOARD MEETING NOTICE

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

1985

Jan. 22 & 23	July 23
Mar. 19	Sept. 24
Jun. 4	Nov. 26

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The Spec Sheet

Consulting Engineers Section

Warren J. Wilder

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Keep Good Business Records or You Could Be Fined

The Louisiana Department of Revenue and Taxation has initiated a new program aimed at cracking down on businesses that fail to maintain adequate business records. The new policy of the department will be to recommend that civil or criminal charges be filed against any taxpayers who fail to maintain adequate records with which the department can perform an audit for state taxes.

According to Louisiana law, R.S. 47:309, business owners must "keep and preserve suitable records of the sales, purchases, or leases taxable" under the law, and other records of "accounts as may be necessary to determine the amount of tax due." Louisiana law permits auditing tax returns for the current calendar year and the three preceding calendar years by the Department of Revenue and Taxation. The inability to produce adequate records for this period of time could result in both civil and criminal charges being brought against the taxpayer, and, if convicted, in a fine or imprisonment for each count.

Secretary of Revenue and Taxation Shirley McNamara reports that the department has noticed an increase in the number of Louisiana taxpayers who are failing to keep adequate supporting documents reflecting how their sales tax liability was calculated. Some taxpayers believe that not maintaining adequate records for an audit is an effective tax evasion method. However, this will only increase their tax problems. When adequate records are not found, the department will recommend civil or criminal charges be brought against the taxpayer, and make an assessment of what tax is owed by the taxpayer. When a tax assessment is made, it is usually on the high side to best protect the interest of the state.

To aid those taxpayers who are unaware of the records they are required to keep, the department is undertaking a public awareness program. The kinds of records which should be kept by a business will, of course, vary according to the type and size of the business, type of tax reporting required by law, and the

business's degree of internal control; however, required records should always include original entry documents such as invoices, bills of lading, cash register tapes and summary records such as worksheets, journals and ledgers. In cases where a business's records are inadequate for department auditors to verify that taxes have been properly paid, the department has the legal right to estimate the amount due.

Any taxpayer who willfully fails to collect taxes or who collects, but fails to remit taxes to the department, could be charged with the commission of a felony, and could be subject to a fine of not more than \$10,000 or imprisoned for not more than five years, or both. This penalty also includes the collection of employees' withholding taxes.

As this program is being kicked off, the Department of Revenue and Taxation is encouraging taxpayers to review and, if necessary, improve their record preparation and retention procedures to avoid being fined when their returns are audited. Any taxpayer who has a question on what constitutes suitable and adequate records for their particular type of business is urged to contact an office of Revenue and Taxation. Offices are located in Alexandria, Baton Rouge, Lafayette, Lake Charles, Monroe, New Orleans, Shreveport, and Thibodaux. The personnel at these offices will be happy to assist you in determining what record-keeping procedures are necessary for your particular type of business.

ACEC First to Adopt Resolution on Structural Building Integrity

In a far-reaching resolution aimed at eliminating the potential for structural building failures, the American Consulting Engineers Council became the first U.S. design professional organization to call for major changes in the engineers' role in designing and constructing buildings.

Meeting at the fall membership conference in Little Rock, the Council's Board of Directors passed a five-part resolution it deemed "imperative" to maintain and improve "the excellent safety record in design of buildings."

The recommendations, proposed by the November, 1983 Engineering Foundation conference on structural building failures, call for:

- Improvement of overall structural integrity of buildings by use of design concepts and details which provide ductility (building flexibility to withstand such forces as wind and earthquakes), continuity (all building components acting in concert and not separate from each other) and redundancy (supportive component "overdesign" for safety).

- Delegation to design professionals of leadership roles on building projects in order to establish the structural safety of a completed building.

- Requirement that an independent professional provide a comprehensive peer review of the structural design and details.

- Assignment in writing of various design and construction responsibilities necessary to assure the structural safety of the completed building.

- Development by the insurance industry of a blanket, all purpose risk policy to simultaneously insure under a single umbrella the owner and all members of the project team. The policy should cover design, construction and occupancy of the building.

The Council, according to President Clifford E. Evanson, "has an enormous task to implement the board's resolution. We need to change perceptions that quality design services can be obtained by lowest competitive bid. We need to educate the courts that engineers should be allowed to administer construction without accepting liability for acts or conditions beyond those stipulated in their contracts. Owners should be discouraged from 'cutting corners' in order to speed completion of their projects," he said. Evanson emphasized that the safety record of the U.S. design and construction industry "has indeed been excellent."

ACEC, Evanson said, wants to work with other construction industry organizations to implement the board's resolution.

ACEC, headquartered in Washington D.C., is a national association of 4,200 independent private practice engineering firms which annually design more than 50,000 projects with a value of more

than \$25 billion. The Council promotes the professional and economic welfare of consulting engineers and their clients.

Requiring Certificates of Insurance from Subconsultants

Not everything in professional practice is as neat and tidy as it might be. There are always improvements to be made, practices to be strengthened, loose ends to be tied. But there is one end that seems to be loose more often than not. It has to do with the need for close attention to the insurance protection maintained by your consultants.

This is one of those issues that tends to work its way to the bottom of lists already too long. "Let's do something about the latch before the horses get out of the barn," is a less than compelling call to action when there are more immediate problems to be solved. On the other hand, the alternative to a few simple precautions now can be costly surprises later on. None of us needs any costly surprises.

It is not unreasonable to require your consultants to maintain adequate insurance protection. In fact, there are some sound business reasons for you to make certain you do. Nor is it unreasonable for you to insist upon appropriate coverages and limits of liability. You have a direct

interest in the consequences of the added risk your consultants bring to the design team.

Assume, for a moment, that one of your consultants turns out to be responsible for a serious loss. Absent a financial capacity to respond on your consultant's part, you may find your deductible and your insurance protection on the line, instead. In the search for a "deep pocket" out of which the plaintiff might be made whole, the argument before the court is likely to focus on your responsibility for coordinating the work. If the loss is serious enough, it would not be surprising for a jury to find this argument persuasive.

This is not the end of the potential fallout, however. The applications for insurance used by most professional liability insurers ask whether you obtain Certificates of Insurance from your consultants as a matter of routine. The reason? No insurer wants to find itself in a position of potential liability for the negligence of consultants who ought to be separately insured, but are not.

One carrier even goes so far as to grant a premium credit to applicants who respond positively to the certificates question. But, because the credit is issued in reliance on your affirmative representation, it can be a double-edged sword. Should that reliance later turn out to have been misplaced, unsettling questions

may be raised about the extent to which the company may be liable for a loss attributable to a consultant from whom you had neither requested nor received a Certificate of Insurance.

What about the other carriers? They are going to be less than enthusiastic about finding themselves liable for a loss that would not otherwise be theirs. What they are likely to consider to be a costly degree of inattention to management on your part may well be reflected in the judgments they make about the advisability and cost of insuring your firm in the future.

It is not difficult to establish insurance requirements for subconsultants, but it is necessary to have something of a feel for what might be reasonable and what not. In addressing this issue, it is important to keep in mind that the decisions your consultants make about the adequacy of their insurance protection are based on internal considerations, just as yours are. Those decisions represent a business judgment on their part as to how best to protect the assets they have at risk within the constraints of affordable cost.

You might also keep in mind that professional liability insurance is not the only concern. You need assurance of current workers' compensation, general liability, and automobile liability insurance, as well. You may even want to require evidence of valuable papers

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coverage to protect against the risk that your consultants may not otherwise have the financial wherewithal to reconstruct work in progress that may somehow be destroyed.

The place to establish insurance requirements for your consultants is in the written agreements you prepare to reflect your mutual understandings. Subject to the advice of your attorney and to any contractual commitments you might have to your clients, your requirements might be stated as simply as this:

Prior to initiating work under this Agreement, Consultant shall deliver to Architect (Engineer) Certificates of Insurance evidencing the following insurance coverages: Professional Liability; Workers' Compensation and Employers' Liability; Comprehensive General Liability, including Blanket Contractual Liability, Broad Form Property Damage Liability, and Completed Operations; and Automobile Liability, including Non-Owned and Hired Automobile Liability. All such Certificates shall be kept current for the duration of this Agreement and shall provide for an unqualified 30-day notice to the Architect (Engineer) in the event of cancellation, termination, or nonrenewal of Consultant's insurance policies.

These are minimum requirements. They rely on the judgment of your consultants—as to the adequacy of the limits of liability they carry and the economic feasibility of continuing to purchase professional liability insurance for years after your agreement with them expires. But they could easily be modified to incorporate limits at whatever levels you believe to be necessary. This is something you will want to consider carefully, however, for your decisions about the insurance protection you expect your consultants to maintain are directly related to your decisions about the size of the firms you choose to work with.

None of this will be worth the paper it is written on unless you administer compliance. It is neither difficult nor time consuming to do so. Certificates of Insurance are relatively simple documents, and your consultants can cause them to be issued with as little as a telephone call or a transmittal memorandum to their insurance brokers.

You can set this process in motion with a straightforward, standard letter reminding your consultants of the requirement for certificates and requesting that they be issued promptly. You can use the same letter to follow through in the event that their reissuance upon renewal or

LOUISIANA ENGINEER/DECEMBER 1984

replacement of one or more of the policies is somehow overlooked.

As a final precaution, you might also consider sending us copies of your file of certificates so we can review them for adequacy. They tend to vary in the degree

**The Officers, Directors and Staffs
of the
Louisiana Engineering Society,
Consulting Engineers Council
of Louisiana,
State Board of Registration
for Professional Engineers &
Land Surveyors
Wish you a happy and safe
Holiday Season**

of protection they afford, and we would be pleased to suggest steps you might take to strengthen those are less comprehensive than they might be.

From: "The Professional Liability Prospective" Vol. 3, No. 9.

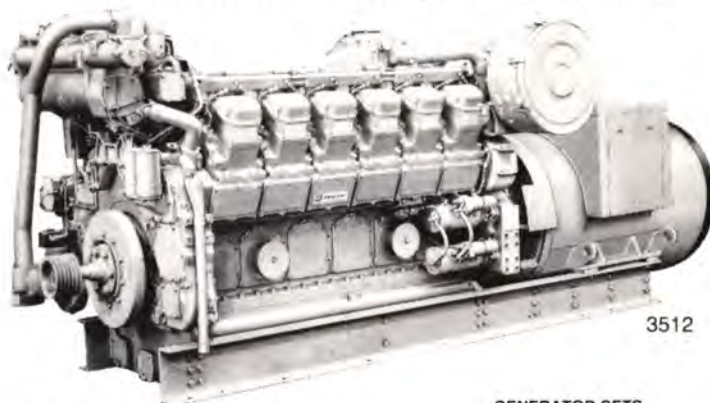
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Lou Ana Foods, Inc. of Opelousas Wins National Energy Award



Left to right, Pat Collins, Undersecretary of Energy; Larry F. Lafleur, P.E.; Donald P. Hodel, Secretary of Energy at the presentation in Washington.

At a special presentation ceremony on October 1, 1984, at the Department of Energy in Washington, D.C., Secretary of Energy, Don Hodel, and Under Secretary of Energy, Pat Collins, presented National Awards for Energy Conservation to four winners from Louisiana.

Receiving the awards were: the Lou Ana Foods Energy Conservation submit-

ted by Lou Ana Foods, Inc., of Opelousas; the USHOP project submitted by One Universal Spirit - Ashrama of Greensbury; the Cade Energy Home project submitted by the Louisiana Department of Natural Resources of Baton Rouge; and the Passive Solar Research House project submitted by the School of Architecture, College of Design, Louisiana State University at Baton Rouge.

The project at Lou Ana Foods, Inc., which won the national award, was a continuous deodorization system installed to replace a batch type system. The continuous deodorizer delivered impressive savings by increasing the production rate and by significantly reducing the energy required to process a pound of vegetable oil. Since the old deodorizer process was a batch type and utilized no heat recovery, the new continuous process was projected to increase production capacity by forty per cent while reducing process energy consumption by twenty per cent. Both projections were exceeded. Sales from increased capacity, along with production improvements and energy savings, allowed a payback in less than three years on the \$1.25 million project.

Lou Ana Foods, Inc. produces premium quality vegetable oils from cottonseed, corn, coconut, peanut, soybean, and palm kernel. The oils are brought into the plant as crude oil in railroad tank cars. The oil is then refined, bleached, and deodorized before being shipped out as finished product.

Oil is deodorized in order to remove the odor and flavor-causing compounds. High temperature and near perfect vacuums are required. Both oil-to-oil and oil-to-water heat recovery loops are provided. These heat recovery systems recover over seventy per cent of the heat previously rejected to once through cooling water in the old batch process.

In addition to the heat exchange systems specified by Lou Ana, the new process uses a more efficient oil heating system, increased insulation levels and a more efficient vacuum system. Recent improvements to the vacuum system have further reduced the energy required to produce the vacuum needed for operation.

This new deodorizer equipment permits Lou Ana Foods, Inc., to maintain its competitive position in the vegetable oil industry while continuing to produce premium quality, table-ready, products.

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Copes Named an ASME Fellow

John C. Copes, III, P.E., was recently named an ASME Fellow. John is principal of John C. Copes Consulting Engineers, Baton Rouge. He is a specialist in machine design relating to split mechanical seals and has several patents for split seals and mechanical seal inserts.

Copes has been a member of LES since 1956 and received the 1977 LES James M. Technological Accomplishment Medal for his outstanding achievements with "split seals." John is also a member of the Louisiana Engineering Foundation.



James S. Janssen, P.E.



J. Bres Eustis, P.E.

Tulane Recognizes Two LES Members

James S. Janssen, P.E., of the Class of 1931 has been selected as the Outstanding Engineering Alumnus for 1984 and was honored during the 1984 Tulane Homecoming activities.

Since retiring from New Orleans Public Service Incorporated as manager of the Gas Engineering Division in 1973, Mr. Janssen has been associated with Waldemar S. Nelson and Company, Incorporated, a New Orleans-based general consulting engineering and architectural firm, as a fuels consultant.

Among other honors and awards, Mr. Janssen received the 1972 LES Andrew M. Lockett Medal for Civic Activities and the 1979 LES Charles M. Kerr Award for

Public Relations.

Mr. Janssen is married to the former Dorothy Grundmann. They have three children and ten grandchildren.

J. Bres Eustis, P.E., of New Orleans is the honored recipient of the Distinguished Alumnus Award for 1984. Mr. Eustis graduated from Tulane in 1934 with a Bachelor of Engineering degree. In 1939 he enrolled at Harvard University, and in 1941 he completed work for the Master of Science degree in Civil Engineering with a major in Soil Mechanics, a field in which he has had a long and distinguished career.

Among other honors and awards, Mr.

Eustis received the Order of St. Louis from Archbishop Phillip M. Hannan of New Orleans, in 1975, and the James M. Todd Technical Accomplishment Medal from the Louisiana Engineering Society in 1981. He has been actively involved in Tulane's development, as member of the Board of Advisors of the Engineering School and the Board of Trustees of the Tulane Engineering Foundation. He is past President of the Society of Tulane Engineers and a charter member of the Green Wave Club Board of Directors. He was awarded the 50 Year Reunion Graduation Certificate from Tulane, and award that was given also to his father, his mother, and his oldest brother.

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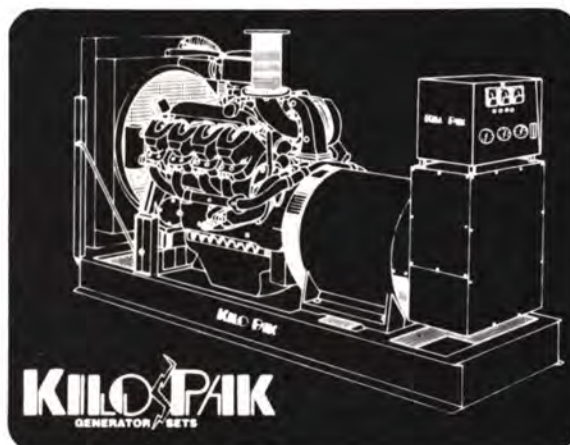
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Louisiana Solar Design Association Organized

Dr. Jason C. Shih, Professor, School of Architecture, Louisiana State University, recently announced the formation of a non-profit membership organization dedicated to increasing awareness and utilization of solar energy applications in hot/humid climates, the Louisiana Solar Design Association (LSDA). The association is endorsed by the Louisiana Engineering Society.

The purpose of the association is to further solar and related applications in architecture, engineering, landscape architecture, agriculture, and related arts and sciences with concern for the ecological, social, and economical fabric of the region.

A technical advisory committee comprised of leading experts from various solar disciplines assures the LSDA's services to its members to be of the highest technical quality.

A Solar Development Committee comprised of individual and corporate members will provide LSDA members the

most practical and current information in solar applications and energy conservation.

There has already been prepared for the Louisiana Department of Natural Resource Research and Development Division a public document on Louisiana Solar Design Notes. This document is available at a cost of \$8.50 per copy from the Louisiana State University Book Store, Baton Rouge, LA.

Programs being planned are solar information programs including a solar design information clearing house, consumer information, product information, information journals, and news. In addition there will be an education program to be made up of conferences and meetings, solar tours and demonstrations, special seminars, and public policy/legislative services case study and discussion.

Membership categories and annual dues will be \$40 for professional membership; \$30 for full member; \$80 for corporate member and \$10 for student membership.

For further information contact the

Louisiana Solar Design Association, P.O. Box 21540, Baton Rouge, LA 70893, telephone (504) 388-6885.

Engineering Management Courses Offered

The Louisiana State University College of Business Administration and Engineering is again offering Engineering Management courses in the fall.

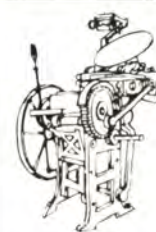
Courses will be available in Modern Management, Project Management with CPM/PERT, Engineering Economy, Financial Decision Making, Automation and Computer Aided Manufacturing, Basic Engineering Statistics, Human Relations, Cost Estimating and Microcomputers for Decision Making.

Depending on demand, courses may be offered in Baton Rouge, New Orleans, or Monroe.

Complete information can be obtained by contacting Dr. L. Mann, Industrial Engineering Dept., CEBA Bldg., LSU, Baton Rouge, LA 70803-6409.

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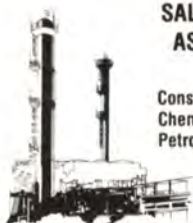
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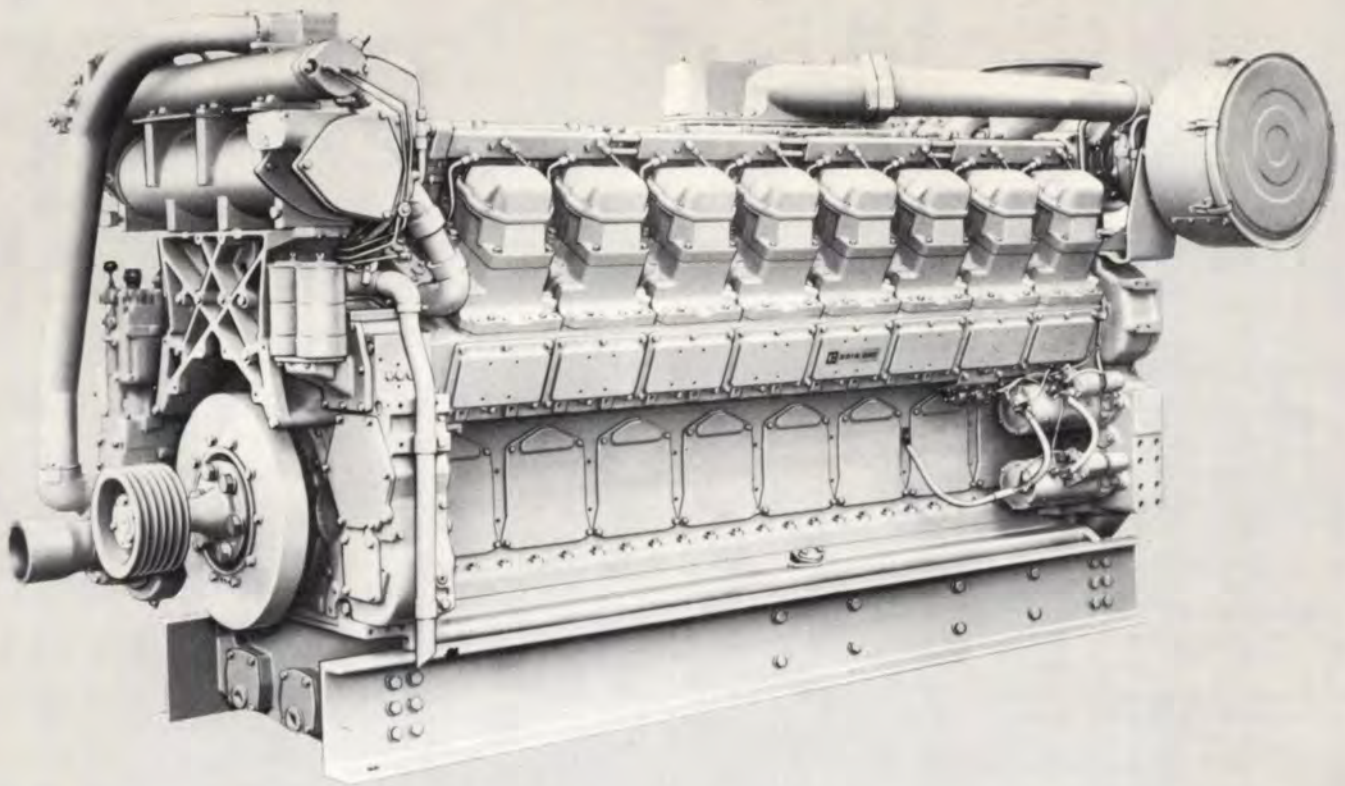


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Compare The Cat 3516

Fuel Economy & Long Service Life

Are Engineered In

- Superior connecting rod assembly. Four-bolt design reduces bolt torque required to achieve proper clamping load.
- To reduce friction and enhance the seating-in process, 3500 series pistons have a baked-in graphite coating.
- Three-ring piston design further reduces friction and wear, boosts engine efficiency & maintains good oil control. Two oil jets per piston.
- Aluminum die-cast spacer under each head eliminates counter bore for liner... makes a stronger block.
- Rear-mounted dry turbocharger and dry exhaust manifold are standard. Watercooled turbocharger, watercooled exhaust manifold and watercooled elbow available as attachments on industrial & generator set arrangements (standard on marine applications).
- Individual heads for each cylinder allow for easy removal. Eight bolt pattern allows required gasket sealing pressure to be obtained with less bolt torque.
- One-piece cylinder block. Single alloy-iron casting, stress-relieved to avoid warping.
- One-piece crankshaft. High-strength steel forged, heat treated for added rigidity.

BOYCE  **MACHINERY**
CORP.