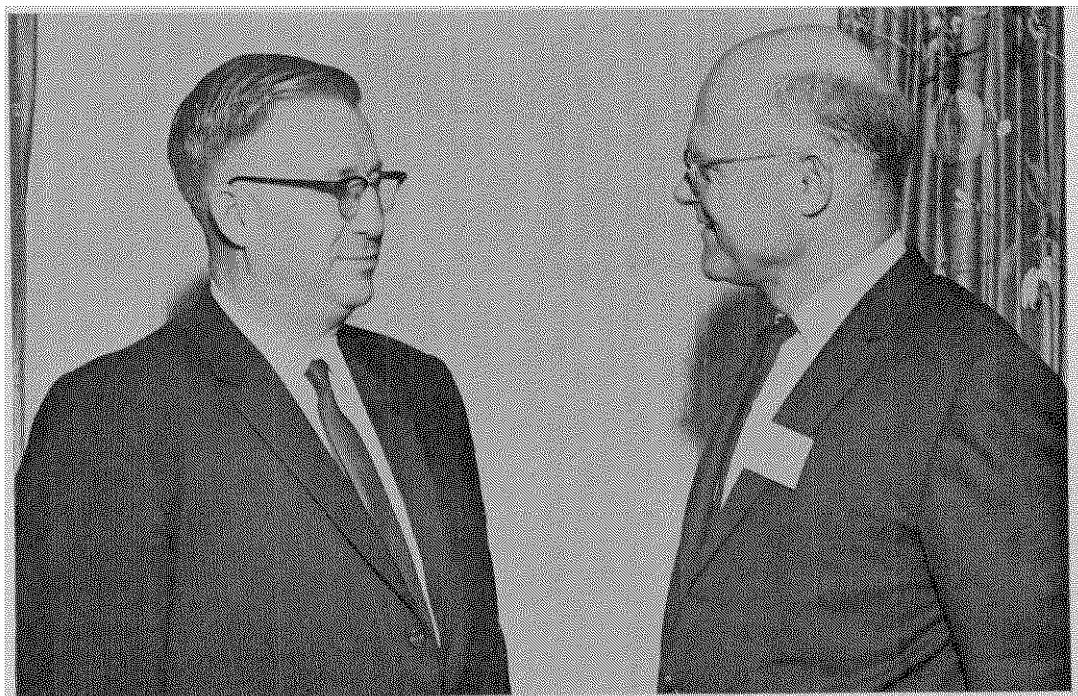
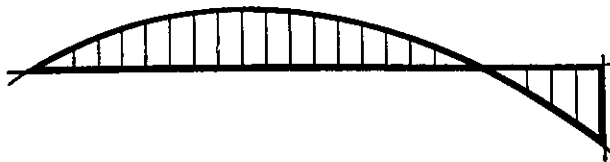


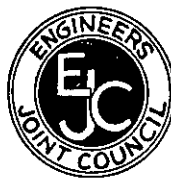
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LES GAVEL
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ENGINEER

Vol. 49 No. 1
February, 1963





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THE LOUISIANA ENGINEER

Vol. 49 February, 1963 No. 1

OUR COVER: James S. Janssen, outgoing President, extends congratulations to 1963 President Calvin T. Watts. Watts took office during the 66th Annual Meeting.

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Warren K. Bankston **Editor**
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Minutes Of The Board, LES

LOUISIANA ENGINEERING SOCIETY

Minutes of Meeting of the Board of Direction Held at the

Engineers' Club, New Orleans, Monday, November 12, 1962

The meeting was called to order by President Janssen with Messrs. Domingue, Knight, Macdonald, McNamara and Fernandez present. Mr. Allen Johnson, Public Relations Counsel, also was in attendance. Mr. McNamara moved that the minutes of the board's October meeting be accepted as corrected, seconded by Mr. Watts and carried.

President Janssen announced that the Louisiana Architects' Association had by resolution expressed its thanks to LES for assisting the architectural profession during the 1962 legislative session.

Correspondence concerning the establishment of contact with the NSPE Functional Section for Professional Engineers in Industry was discussed. Dr. Macdonald moved that LES liaison personnel be appointed to the NSPE committees on functional sections for Professional Engineers in Industry and in Government, and that these individuals report on the advisability of forming these committees in LES. Motion seconded by Mr. Domingue and carried.

Correspondence from two tour agencies suggesting that LES sponsor a European tour for its members was discussed. Mr. Knight moved that, since these facilities are available to members through other means and have no connection with engineering, the LES not sponsor a trip. Motion seconded by Mr. McNamara and carried.

The secretary read a report of the Legislative Committee. Mr. Watts moved that the report be accepted and that Mr. Henry L. Landry, Chairman, and his entire committee be thanked for their excellent work. Motion seconded by Mr. Knight and carried.

Mr. McNamara moved that LES present to Tulane University a picture of Dr. Derickson and a bronze plaque for the "Donald Derickson Reference Library." Motion seconded by Mr. Domingue and carried.

The president gave a progress report of the Datum Plane Committee prepared by Mr. Charles Montiero, Chairman.

Mr. Knight moved that the revisions to the constitution and by-laws of the Functional Section for Professional Engineers in Private Practice be approved, seconded by Mr. Domingue and carried.

President Janssen announced the appointment of Mr. Henry Landry as LES representative on the Council of Construction Components.

Mr. Watts moved that President Janssen be authorized to sign a contract with Littell-Murray-Barnhill to obtain national advertisers for the Louisiana Engineer. Motion seconded by Mr. Knight and carried.

Mr. Domingue moved that Mr. Harry D. Richardson be reinstated to the grade of Member, seconded by Mr. McNamara and carried. Mr. McNamara moved that the resignation of John E. Heard be accepted with regret, seconded by Mr. Domingue and carried. Mr. Knight moved that Messrs. Lewis B. Davis (New Orleans), Norman D. Wesley (Baton Rouge) and Frank E. Hogan (Oak Ridge) be dropped in accordance with their requests. Motion seconded by Mr. Watts and carried.

The secretary reported the receipt of a note of thanks for floral offering from the Williams family, whereupon Mr. Janssen appointed Messrs. Fred M. Fister, Chairman, Fred R. Adams and Ben H. Nolan to prepare a memorial in honor of our late member, Robert O. Williams.

There being no further business, the meeting adjourned.

JOHN P. FERNANDEZ,

Secretary-Treasurer

Minutes of Meeting of the Board of Direction Held at the Hotel Charleston, Lake Charles, on Friday, December 7, 1962

The meeting was called to order by President Janssen with Messrs. Bubenzer, Carville, Domingue, Irland, Knight, Lockett, Quinn, Stokes, Vincent, Watts and Fernandez in attendance. Other section officers and guests also were present as observers. Mr. Lockett moved that the minutes of the board's November meeting be accepted as read, seconded by Mr. Stokes and carried.

In his capacity as Chairman of the Honorary Membership Committee, President Janssen announced that Past President Waldemar S. Nelson had been elected to Honorary Membership in accordance with constitutional requirements. He also officially announced that Mr. Richard R. L. Ward of Lake Charles had been named recipient of the LES Civic Activities Medal—Andrew M. Lockett Award for 1963, by action of the Board of Direction at its November meeting.

The secretary presented the following report on membership and stated that, although the activities and services of the society were constantly increasing, the growth of membership in recent years was very disappointing:

Year	Gains	Losses	Net Change	Total Membership
1948	240	55	+185	1,023
1949	255	78	+177	1,200
1950	255	61	+194	1,394
Since affiliation with NSPE:				
1959	89	109	- 20	1,904
1960	148	116	+ 32	1,936
1961	188*	94	+ 94*	2,030
1962 (Est.)	110	125	- 15	2,015

Note (*): Figures for 1961 are misleading because they include a Student Chapter established at Tulane University with 69 members.

Mr. Watts reported on Development of Water Resources legislation, after which he moved that the LES Board of Direction agree in principle with the proposed Federal Water Resources Planning Act

of 1961 (S-2246 = HR8177), except for certain provisions that were not in the best interests of the states. He further moved that LES suggest to NSPE that all such far-reaching legislation that would affect the states be referred to the member state societies for comment and guidance. The motion was seconded by Mr. Domingue and carried.

Mr. Watts also reported on a meeting called to study feasibility of initiating a Council of Construction Components, at which Mr. Henry Landry was present as LES representative. Because the Council would be a heterogeneous group with great disparity of viewpoint, it was felt that any positive action would be difficult to obtain. Mr. Watts advised that the LES observers would give further careful study to the matter before recommending that LES join this Council.

President Janssen read the Nominating Committee's report in which the following were recommended to serve as officers and board members for 1963:

President (elected January 1963) Calvin T. Watts
For 1st Vice-President and
President-elect for 1964 John T. Knight, Jr.
For 2nd Vice-President Edward J. McNamara
For Secretary-Treasurer John P. Fernandez
For Director for 2 Years Charles W. Stokes
For Director for 2 Years John F. Vogt, Jr.
For Director for 1 Year Thomas C. David

Mr. Domingue moved that the report be received and presented to the membership at the society's December meeting in accordance with the constitution. Motion seconded by Mr. Lockett and carried.

As chairman of their respective committees, Messrs. Knight and Lockett presented reports on Ethics & Professional Conduct and on Annual Outing.

Letters of thanks from Mrs. T. Baker Smith and Mrs. C. Glennon Melville were read, in which they expressed appreciation for the memorial tributes to their late husbands that were published in THE LOUISIANA ENGINEER.

The secretary read a communication from Engineering Manpower Commission asking for stories about engineers of interesting or unusual accomplishments.

The secretary read a letter from the Postmaster rejecting the society's request for mailing privileges as a non-profit organization, and stated he would appeal for reconsideration of this decision.

The recent deaths of members John P. Eagan and Professor William Whipple were reported.

Mr. Knight moved that the resignations of the following members be accepted with regret, seconded by Mr. Lockett and carried:

Roderick E. Dillon, Jr. Homer, La. (Junior)
John T. Folk, Ruston (Member)
Edwin F. Hardy, Warrentown, Va. (Member-NSPE)
Wm. D. Holloway, Bellaire, Tex. (Member)
E. Joe James, Baton Rouge (Member)
Leo A. Nixon, Alexandria (Member)
Roy A. Perrin, Jr., Sheppard AFB, Tex. (Junior)

Upon motion by Mr. Watts, seconded by Mr. Domingue, the following were dropped from the rolls:

Herbert C. Albert, New Orleans (Junior)
Ara Arman, Lake Charles (Member-NSPE)
Wesley D. Glassell, Shreveport (Member-NSPE)
Stanley R. Morgan, Lafayette (Junior)

Mr. Stokes moved that the following Junior Members be transferred to Affiliate Member grade in accordance with the constitution, since they have reached the age limit for junior grade membership and have not applied for transfer to a higher grade:

Wm. A. Barnwell, Jr., Houston, Texas
Robert N. Bruce, Jr., New Orleans
John E. Dixon, New Orleans
Louis H. Fougereousse, Baton Rouge
J. Briant Fournet, Lafayette
E. Joseph French, Shreveport
Charles M. Higgins, Lake Charles
Larry R. Lucas, Franklin
Corley P. Senyard, Baton Rouge
Ronald J. St. Pierre, Norco
Norman D. Wesley, Baton Rouge

The motion was seconded by Mr. Bubenzer and carried.

President Janssen urged all those present to attend the society's Annual Meeting to be held in New Orleans on January 10-11-12, after which the meeting adjourned.

At the closing session of the Section Officers' Conference held in Lake Charles on Saturday, December 8, the following resolution was offered by Mr. Knight, seconded by Mr. Bubenzer and carried unanimously:

WHEREAS, the Lake Charles Section, through its President, Gus G. Quinn, has so generously volunteered to sponsor the Louisiana Engineering Society's 1962 Section Officers' Conference, and

WHEREAS, the Lake Charles Section has provided the facilities, arranged the program, and extended an invitation to all state and local officers of the society to attend, and WHEREAS the Section Officers' Conference, in the opinion of all who were present, has proven to be a real success, affording the officers an experience both pleasurable and informative, now therefore

BE IT RESOLVED, that the Louisiana Engineering Society express to the Lake Charles Section and to Mr. Quinn, sincere gratitude and appreciation for the gracious hospitality extended, and for the benefit to incoming administration gained through the exchange of ideas at the conference; and BE IT FURTHER RESOLVED that this resolution be incorporated in the minutes of the society, published in THE LOUISIANA ENGINEER, and a copy forwarded to the Lake Charles Section.

JOHN P. FERNANDEZ,

Secretary-Treasurer

LOUISIANA ENGINEERING SOCIETY
Minutes of Meeting of the Board of Direction Held at the
Jung Hotel, New Orleans, January 10, 1963

The meeting was called to order by President Janssen with Messrs. Affolter, Bogard, Capozzoli, Carville, Domingue, Ferguson, Knight, McNamara, Repscha, Thiipen, Vincent, Vogt, Watts and Fernandez present. Dean Bogard moved that the reading of minutes of the December Board meeting be dispensed with and that they be accepted as distributed to board members by mail; motion seconded by Mr. McNamara and carried.

President Janssen announced that all applicants for membership listed in the December ballot had been elected to their respective grades. A copy of the ballot is attached to these minutes.

The President announced the appointment of Messrs. Frank W. Macdonald, Chairman, Henry G. Armatis, Jos. T. Montgomery III and W. P. Musgrave as a committee to prepare a memorial resolution honoring our late member, Johnnie E. Rebold.

Mr. McNamara moved that the resignations of the following members be accepted with regret, seconded by Mr. Domingue and carried:

Lionel C. Allmand, Baton Rouge.....(Junior)
Ted J. Innes, Jr., Baton Rouge.....(Member)
Kenneth C. Landry, Baton Rouge.....(Affiliate)
Sheldon M. Law, Baton Rouge.....(Junior)
E. W. McNeil, Jr., Baton Rouge.....(Member)
Samuel C. Phelps, Houston, Texas.....(Member-NSPE)

Mr. McNamara moved that the following Junior members be transferred to full Member grade, seconded by Mr. Knight and carried:

Vernon W. Ashworth, Venice, La.
John M. Pfeffer, New Orleans
Eugene M. Sellers, Lafayette

President Janssen appointed a Finance Committee for 1963 composed of Messrs. Knight, Chairman, Watts and Fernandez and instructed them in accordance with the constitution, to submit a budget at the next meeting of the Board to be held on January 28.

Mr. Bogard moved that President-Elect Watts and Secretary Fernandez be authorized to sign checks for the society during 1963. Motion seconded by Mr. McNamara and carried.

Mr. Knight moved that Annual Meeting Chairman John F. Vogt, Jr., and his committee be commended for their excellent work in planning and carrying out arrangements for the annual meeting. Motion seconded by Mr. Domingue and carried.

Mr. Bogard reported that the Louisiana Industry-Engineering College Council was seeking the support of engineering societies throughout the state to promote its objectives in the field of higher education. President-Elect Watts stated he would appoint a committee to study this request.

Mr. Bogard moved that the Board of Direction give serious consideration to the formation of a committee on Engineering Education. Motion seconded by Mr. Domingue and carried.

The meeting then adjourned.

JOHN P. FERNANDEZ,
Secretary-Treasurer

REPORT ON THE WINTER MEETING
NATIONAL SOCIETY OF PROFESSIONAL ENGINEERS
Held at San Antonio, Texas, January 9-12, 1963

One of the important features of the meeting was the action taken on Community Planners. A "position" opposing legislation for the purpose of registration of community planners was approved, as it is believed that community planning, in the best interests of the public, must be a combined effort of the practitioners of several disciplines. The following is an excerpt from the policy that was adopted:

"NSPE adopts the position that many facets of a master plan embrace the practice of engineering, and therefore is opposed to the organization of information on any type of plans or drawings, except by a registered engineer, for the purpose of locating roads, streets, highways, interchanges, bridges or other facilities for the movement of traffic, or the specifications thereof; or the origination of information pertaining to elevations or topographic studies; or the origination of information involving movement of earth, demolition, construction, flood control, sewerage facilities, water treatment, public utilities or other such information which in the best interests of the public rely on engineering knowledge and experience."

An attempt was made to permit participation in functional sections of engineers who are not members of the State or National Society of Professional Engineers. After a lengthy discussion of the merits of this proposal the resolution was defeated.

The United States Employment Service in the last several years has been making a concerted effort to take over the College Placement services of universities. A Special Committee on University Placement Offices has been appointed to study this subject. Dean Lee H. Johnson of Tulane University is a member of this committee. The State Presidents' Conference will be held at Purdue on April 4-5, 1963.

The Education Committee of the Society completed a survey of Faculty Attitudes toward Professional Engineering and has prepared a very interesting publication on the results of its survey. It appears that many of our engineering faculty are delinquent in obtaining registration and in supporting programs of instruction for students. The following recommendation by the committee should be considered by the Louisiana Engineering Society:

"The Deans of Engineering Colleges and Department Heads of accredited curricula should be urged to support programs that will present professional ideals and responsibilities to the students."

Respectfully submitter,
FRANK W. MACDONALD
National Director

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NEW ORLEANS 13, LOUISIANA

President's Report--1962

By James S. Janssen

It is customary for the retiring President to prepare a report of the activities of the Society during his term of office. This, then, I propose to do.

Perhaps the most important efforts during 1962 were directed toward bringing the professional engineers in Louisiana together into a more closely knit unit. Several actions were taken that lead in that direction. Your president visited every local section in the state at least once.

On most of these visits I spoke to meetings of the local members on "Unity for Professional Engineers", a talk based on the "Functional Plan" as originally proposed by the American Institute of Electrical Engineers.

This plan proposes "to assign to existing organizations certain areas of activity for which they seem best qualified", thus briefly National Society of Professional Engineers, professional matters; Engineers Joint Council, technological affairs; and Engineers Council for Professional Development; educational considerations.

This Functional Plan which offers great hope for the unity that we all desire has been officially approved by A.I.E.E., A.S.M.E. and N.S.P.E., the three largest engineering organizations in the United States.

Board meetings were held in Baton Rouge, Alexandria and Lake Charles as well as in New Orleans.

A highly successful meeting was held in December in Lake Charles for the officers of the local sections. At this meeting incoming officers discussed among themselves and with the state officers the problems that they would meet during the coming year.

Those who attended were high in their praise of the meeting and it is believed that it has established a pattern that will be followed in future years. The one criticism offered was that more time should be provided for even more discussion.

This meeting is somewhat similar in format to the Section Planning Conference which L.E.S. holds in Alexandria each March for the state committees. It is similar in purpose to the meeting that the National Society of Professional Engineers hold at Purdue University each year for presidents-elect of state societies. Those of us who have attended these N.S.P.E. meetings were so well impressed that we decided to emulate them in Louisiana; hence, the Lake Charles meeting. We understand that other state societies are taking similar action.

N.S.P.E. also holds meetings periodically for state secretaries which our secretary attends. In addition to this, our national director regularly attends Board meetings of N.S.P.E. and we have members on various N.S.P.E. committees. From this you can see that our unification is strengthening, not only in the state through our local sections but also throughout the nation by means of N.S.P.E. Not only are we becoming more truly a state-wide organization but we are also contributing to the national influence of the engineering profession.

I might remind you that next year our Annual Meeting is to be held in Lafayette and that in 1965 the N.S.P.E. Winter Professional Meeting will be held in New Orleans.

Much of the work of L.E.S. is done through committees. This was certainly true in 1962.

The Legislative Committee and the special Registration Law Committee working together put in many, many hours and traveled many, many miles in warding off undesirable legislation and in securing favorable interpretations of laws pertinent to professional engineers in Louisiana.

The special committee appointed to organize a functional section for engineers in private practice has drawn up and has had approved its by-laws, it will shortly elect its officers and should begin to show tangible results early in 1963. From its operations, it will be determined if other functional sections for engineers in government, industry, etc. should be similarly organized.

The Committee on Ethics and Professional Conduct did an outstanding job, not only in reviewing specific cases but also in preparing several articles for the Louisiana Engineer.

The Public Relations Committee working in conjunction with the Public Relations Counselor improved the magazine both in quality and size, and have recently finalized a contract with a national firm to secure a much larger volume of national advertising. The Louisiana Engineer is now a financial asset as well as an engineering success.

The Vocational Guidance Committee has had prepared and distributed sets of slides to be used by the individual sections in presenting talks to school groups.

Finally, the special Datum Plane Committee is working in cooperation with the United States Coast & Geodetic Survey to have the bench marks in this area re-established.

I particularly want to thank John Fernandez, Aureline Fernandez and Mike Marchese who do the day in and day out chores of the Society year after year. They did service beyond the call of duty.

And most especially do I want to thank Mrs. Waldemar Nelson and the entire Woman's Auxiliary for their help during the year. On more and more occasions do we depend on them for assistance; during the Annual Meeting, Engineer Week, the Alexandria meeting and now the Lake Charles meeting.

I close with two suggestions for consideration in the future.

First, the time is growing closer when it will be necessary to create a New Orleans section.

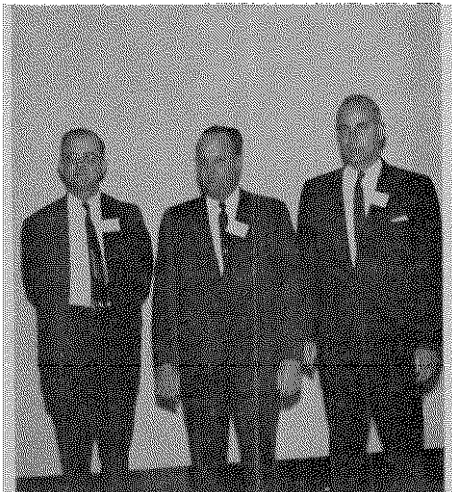
This will greatly simplify the work of the state officers, which is becoming each year more and more time consuming. There are numerous other organizational advantages which will become evident upon investigation. There are, of course, certain problems to be overcome in setting up a New Orleans section, principally a financial one. However, I believe the point has been reached where the advantages outweigh the disadvantages. I suggest that the possibility be studied.

The second suggestion is that a greater appeal be made to the younger engineers.

(Continued on Page 23)

HIGHLIGHTS OF THE 66th

Technical Sessions Featured...



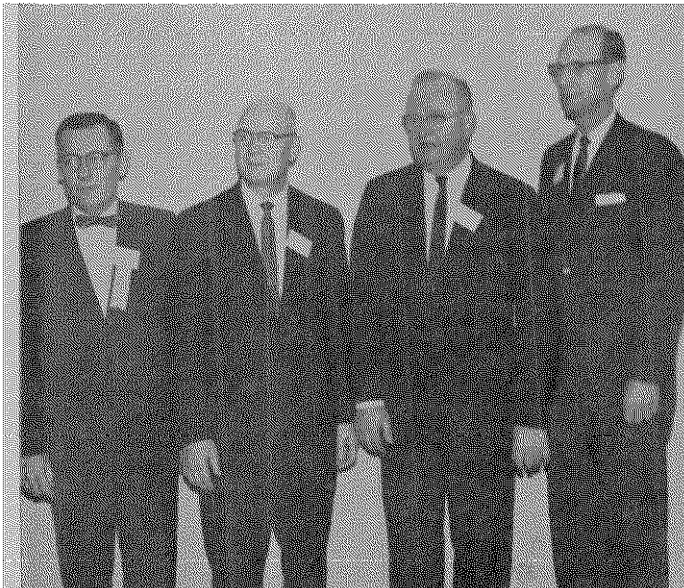
Charles H. Weatherly
Robert H. Macy
Frank Riess



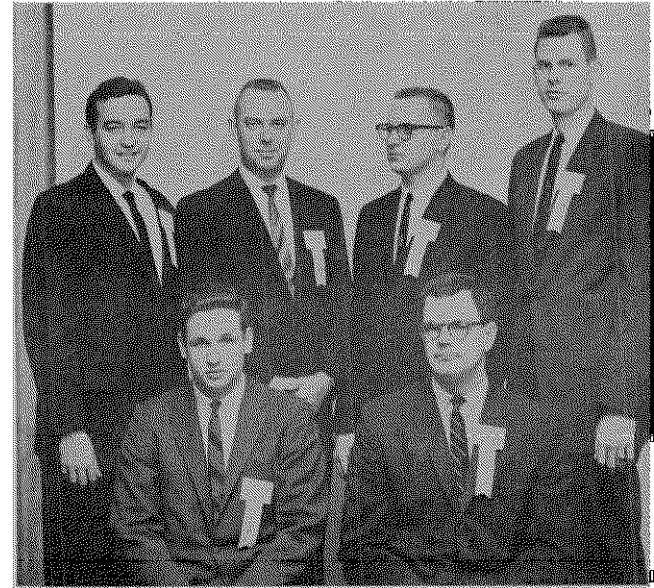
Cary B. Gamble
Robert H. Avery
L. L. Denson



H. H. Davies, Jr.
H. L. Payton
Manning Riser



Roy E. Johnson
Dean Fred H. Pumphrey
Dr. Jesse W. Mason
Dr. Lee H. Johnson



Students
With Chairman Pierre Stouse (seated, right)



"The Louisiana Engineering Society is planning to increase its efforts to sell industry leaders on the value of the National Society of Professional Engineers' program for registration and individual professional responsibility," James S. Janssen, president of LES, said at a recent meeting.

Commenting on the "Priority Goals for 1962-63" as cited by Harvey F. Pierce, President of the national society, Janssen said that the LES has been seeking to develop better working relations with other engineering organizations and groups for many years through joint meetings with technological engineering societies, committees, etc.

Janssen said that in recent years the LES has come to accept the concept of registration (as a professional engineer) as the hallmark of the profession, rather than a license to do business, and that the state society has been working closely with the state board of engineering examiners.

"George Spelvin, P.E.", a 22½-minute film on professionalism and engineering, is now available from the National Society of Professional Engineers for showings to engineering school students and recent graduates.

The film was made under the supervision of the National Society's Public Relations Committee as part of an over-all program to help develop professional concepts on the part of engineering students and graduates.

Prints of the film in 16mm color, may be borrowed from the National Society headquarters, 2029 K Street, Northwest, Washington 6, D. C.

Produced by Norwood Studios, Inc., Washington, D. C., the film is centered around a young engineer who is designing a fuel handling memory and control system for a nuclear power plant.



Dr. Eric A. Walker, electrical engineer and President of Pennsylvania State University, was re-elected President of Engineers Joint Council for 1963, according to an announcement by the Board of Directors of EJC. At the same time, Louis R. Howson, senior partner in the engineering consulting firm of Alvord, Burdick, and Howson, Chicago, was re-elected Vice President.

Two additional Vice Presidents were elected for the first time. They are Warren H. Chase, electrical engineer and Vice President of the Ohio Bell Telephone Com-

pany, and Rolland S. Stover, President of the R. S. Stover Company, Marshalltown, Iowa and Omaha, Nebraska.

At the same time, E. Lawrence Chandler and Leroy K. Wheelock were named Treasurer and Secretary respectively.

Engineering schools throughout the nation report another drop in freshman enrollment and in baccalaureate degrees granted, according to a survey just completed by the Engineering Manpower Commission of Engineers Joint Council.

The enrollment decline was a surprise to most manpower experts. After lagging for four years, it was assumed that the increased public emphasis on engineering would cause enrollments in this field to follow the national trend upward.

The engineering freshman decline spells serious manpower problems as demand for technological graduates rises steadily.

The space effort alone plans to absorb thousands of such highly trained men and women, in addition to growing defense requirements and the needs of a steadily expanding civilian economy.

Hytrol Conveyor to Arkansas

Hytrol Conveyor Company of Milwaukee, manufacturer of conveyors, announced that it will move its entire operation to Jonesboro, Ark.

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Financial Report 1962

FINANCIAL STATEMENT For the Year 1962

INCOME:

Advertising	\$ 10,381.26	
Annual Meeting	2,029.00	
Annual Outing	886.30	
Dividends & Interest.....	534.19	
Dues	24,343.25	
Miscellaneous	171.61	
State Board Contribution.....	4,000.00	\$ 42,345.61

EXPENDITURES:

Annual Meeting	\$ 2,852.27	
Annual Outing	883.89	
Awards, Scholarships, etc.....	507.65	
Dues & Rebates.....	10,728.05	
Engineers' Week	508.38	
Miscellaneous	447.20	
Monthly Meetings	561.13	
Public Relations & Publication	14,478.99	
Salaries	6,420.00	
Stationery & Printing	1,589.64	
State Conferences	499.82	
Taxes	200.64	39,677.66

Increase \$ 2,667.95

STATEMENT OF LIQUID ASSETS December 31, 1962

Cash in Bank.....	\$ 6,037.70	
U. S. Savings Bonds:		
Series J, March 1955.....	\$ 864.00	
Series J, April 1955.....	864.00	
		1,728.00
Homestead Stocks:		
Columbia	\$ 2,000.00	
Commonwealth	2,000.00	
Greater N. O.	2,824.63	
Security	1,500.00	
State	1,500.00	
Union	1,500.00	
		9,824.63
Lapel Emblems on hand, Value of		145.09
Total Liquid Assets:		
January 1, 1963.....	\$ 19,235.42	
January 1, 1962.....	16,567.47	
Net Increase	\$ 2,667.95	

1962 Membership Report

GAINS:

Elected:		
Members	39	
Affiliate Members	9	
Junior Members	17	
Student Members	49	114

LOSSES:

Deceased:		
Honorary Member	1	
Life Members	3	
Members	13	17
Resigned:		
Members	36	
Affiliate Members	6	
Junior Members	10	52

Dropped:

Members	29	
Affiliate Members	13	
Junior Members	16	58
		127

NET LOSS 13

TRANSFERS:

Member to Honorary Member.....	1	
Member to Life Member	5	
Affiliate to Member	2	
Junior to Member	7	
Junior to Affiliate	10	
Student to Junior	45	
Total	70	

SUMMARY:

Honorary Members	15	
Life Members	80	
Members	1,306	
Affiliate Members	220	
Junior Members	343	
Student Members	53	
Total	2,017	

Vocational Guidance Committee Conducts Panel Discussion

The Vocational Guidance Committee of LES recently conducted a panel discussion at a PTA meeting of the Benjamin Franklin Senior High School, according to Robert H. Boh, chairman of the panel. The program was presented at the request of the president of the association, Boh said.

"The program was extremely well received, and I am enthusiastic about the response, particularly in the questions period which followed the presentation," Boh said.

"All present expressed considerable interest in the Engineering Profession; this school is for particularly gifted students and we were especially anxious to present to them a program which would arouse their interest in the Engineering Profession as a career for their children," he stated.

Boh said that the president of the association requested the committee to present another program of a similar type to the group next year, and also suggested that a presentation to the students be considered.

Serving with Boh on the panel were John L. Martinez as Vice-Chairman and Ralph Leumas of the Chrysler Corporation as guest speaker.

A similar program had been presented to the students at Holy Cross High School in November, Boh said.

"One of the problems appears to be a general lack of information on the part of the students themselves," he said, and stated that programs of this type might erase some of these difficulties.

Boh also expressed the committee's indebtedness to DeWitt Morris, state chairman, "who assisted in arranging the program and also in securing the projection equipment."

Paper Mill Under Construction

Work is underway on a \$1.5 million lightweight paper mill in Picken, Miss. which will produce napkins, facial tissue, toilet tissue, wax paper, and toweling.

The plant, which is being constructed by Mississippi Industrial Land and Timber Corporation, is scheduled to go into operation by April, 1963.

THE PLACE OF ETHICS

By MARION D. GARRISON

The American Engineers practice their profession in a country with the most complex system of political and economic organization found anywhere in the world. The continued success of our system has pleased our friends, confused many distant observers and confounded our enemies. Our political system was designed to leave us with as much personal liberty as possible while providing the legal restrictions required in an organized society.

One of the important parts of our system of social organization is the large amount of voluntary restraint accepted by most citizens because they recognize the advantages of this system. These voluntary restraints are distinguished from legal demands are generally part of religious beliefs, trade association rules, professional organization or fraternal groupings. Our Engineering Society is concerned with the Professional Engineer's part in this, the American way of life.

During this past decade the increasing intrusions of government regulation in every phase of business has caused most of us concern for the future. These regulations by government edict have constantly encroached on the fields formerly considered belonging to the voluntary organizations.

In today's society the place accorded the professional groups has been rapidly increasing in importance and respect. To the extent that the professional men are making the new knowledge of the science research programs available for the benefit of mankind, this importance and respect is deserved. To better fulfill the responsibility of the professions, it becomes increasingly necessary that each group more carefully regulate the conduct of its members. These self imposed restraints are generally referred to as a "Code of Ethics," but by whatever name we know them they represent the considered opinion of a large body of people engaged in a common endeavor.

The most important purpose of a "Code of Ethics" is to insure the continued confidence of the public, and to merit that confidence by good service. Today we live in an age when great things are expected of the engineering profession, and the word "engineered" is applied to almost everything manufactured or built. Public officials know that every major public works require the services of a competent engineering design group. All major manufacturers employ many highly specialized engineers and in every walk of life we see the effect of this rising dependence on machines and devices perfected to a high degree by the application of sound engineering principle.

Among the practicing engineers the most difficult part of our Code of Ethics to abide by is in the expression of opinion. We all know and recognize the fact that seldom is any design answer an invariable result of a firm mathematical formula. Our major job is to fit science to human needs, knowing that people's needs or desires are an ever changing pattern. The end result is always a product that other engineers will differ with in some degree. It is on these interpretations of the human side of our work that business competition is fairly generated. These differences spur us to a high degree of accomplishment.

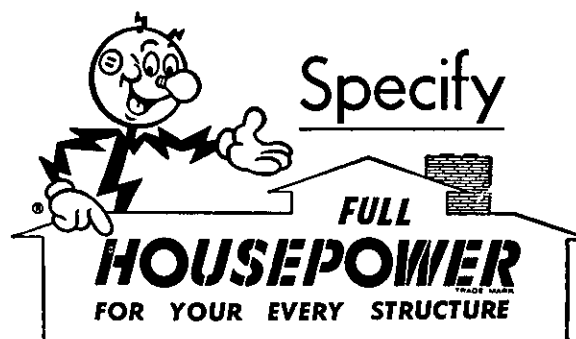
It becomes evident that where there is so much room

for difference of opinion, we must also restrict our free expressions of opinion on another Engineer's work when we have not been commissioned to do the work and been present in all the briefing sessions where the customer's requirements are made known. These requirements are often confidential and always a part of the final design. The members of our profession practice in many diverse fields ranging through private practice, government employment, industrial employment and sales work. All have one common purpose in working and we need to be always conscience of the advisability of not commenting freely on engineering matters when we are not the Engineer entrusted with the job. Each public official and plant manager has the responsibility of naming the professional engineer whose opinion they will trust. We must assume their judgement is sound and restrict our comments unless we are provided with all the facts and put in a position to render a competent opinion.

The opinions expressed by laymen will vary greatly on the merit or demerit of any project, but whenever these opinions can be reinforced by the off hand-opinion of a recognized Engineer we add to confusion and seldom create an atmosphere beneficial to any purpose.

Aluminum Plant in Louisiana

Southwest Aluminum Products will construct a new plant for the manufacture of aluminum extrusions in Monroe. Employment will be approximately 100 persons.



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ANNUAL LES MEETING

Speakers . . .



Ben T. Bogard
. . . Keynote Introduction



Gen. Richard G. Stilwell
. . . Keynote Speaker



Dr. F. Jay Taylor
. . . Technical Education

Awards . . .



Wayne Wallace
Gives W. S. Nelson
Honorary Membership



Alcee F. Maxfield
Gives Richard R. L. Ward
LES Civic Affairs Award



President Janssen gives Henry
Landry Certificate of Appreciation

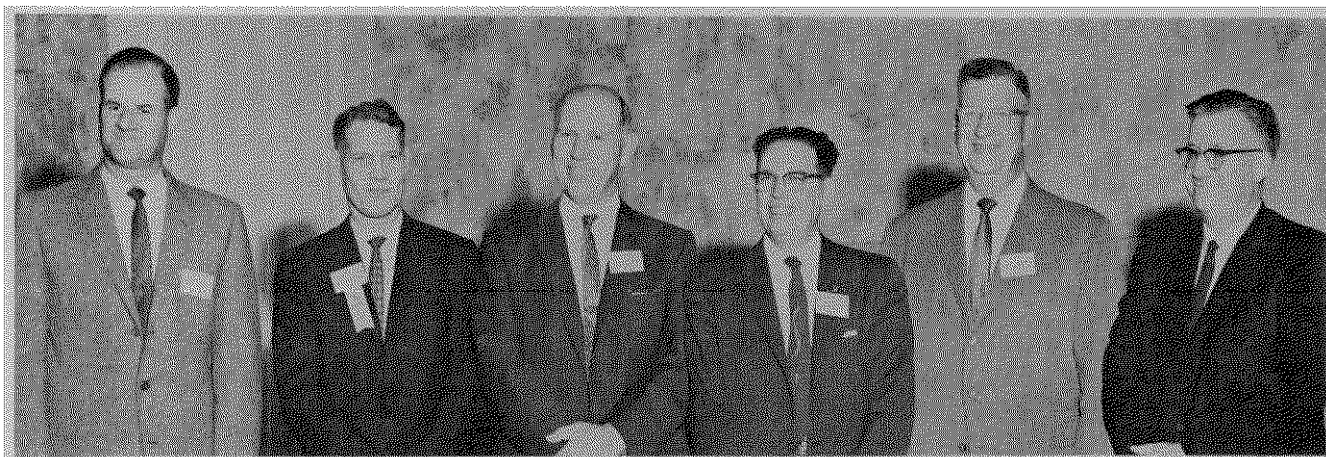
66th ANNUAL LES MEETING



Col. J. T. Knight, 1st Vice President
Ed McNamara, 2nd Vice President
J. P. Fernandez, Secretary Treasurer
Calvin T. Watts, President



John Vogt, General Chairman and
Janssen . . . a gift for the outgoing Prexy



Board of Directors of LES, 1963



Members of the Women's Auxiliary assisted with the meeting.

ANNUAL MEETING SCORES SUCCESS

Engineering developments in industry, education and the Space Program were topics of discussion at the 66th annual meeting of the Louisiana Engineering Society.

The keynote speaker was Brig. Gen. Richard G. Stilwell, Commandant of Cadets, U. S. Military Academy, West Point, N. Y. The general spoke on "Engineering Education of U. S. Military Cadets.

Dr. F. Jay Taylor, president of Louisiana Tech., spoke on trends and problems in technical education.

Dr. Taylor pointed out that engineering knowledge has grown to the point where continuing education is absolutely essential if today's graduate engineer is to continue to serve his company and nation. He said, "Our graduate programs are no longer a luxury, but a responsibility which none of us can evade."

Calvin T. Watts, Baton Rouge, incoming President, told the group that a principal beneficiary of the \$60 million Louisiana-Texas Toledo Bend dam will be Lake Charles, where the shrinking fresh water supply threatens industrial expansion.

Richard R. L. Ward, Lake Charles Engineer, was awarded the Louisiana Engineering Society Civic Activities Medal—Andrew M. Lockett Award. It was presented by Alcee F. Maxfield, representing the Lake Charles Lions Club.

Waldemar S. Nelson, New Orleans Engineer, received an honorary membership in the Society and Henry Landry was awarded a certificate of appreciation.

Leo Odom, a Baton Rouge consulting engineer, was elected Chairman of the Consulting Engineers Section of LES.

Odom, who is a member of the Board of Engineers and Land Surveyors, succeeds Joseph T. Montgomery III of New Orleans.

An A.S.M.E. Luncheon presided over by L. L. Denson, Chairman, New Orleans Section, American Society of Professional Engineers, was held at noon on Friday, January 11th, the second day of the three day meeting.

Technical session speakers included: Manning Riser, Manager, Pontchartrain Works, E. I. duPont de Nemours & Co., Inc.; Robert H. Macy, Pascagoula, Miss., Naval Architect and Marine Engineer; Robert H. Avery, Syracuse, N. Y., Director of Application Engineering, Cambridge Filter Corp.

General chairman was John F. Vogt, Jr. He was assisted by George M. Baccich, vice-chairman; F. J. Favaloro, W. S. Nelson, W. J. Verlander, S. G. Smith, F. A. McLellan, Ben Louviere, Claude Kelly, Jr. and Pierre Stouse.

The Woman's Auxiliary assisted with registration and held a general interest program and coffee party at the Engineer's Club.

The Annual Meeting ended with a cocktail hour followed by a banquet and dancing.

Watts Explains Toledo Project

A principal beneficiary of the \$60 million Louisiana-Texas Toledo Bend dam project will be Lake Charles, where the shrinking fresh water supply threatens industrial expansion, according to Calvin T. Watts, newly elected President of the Louisiana Engineering Society at The Society's 66th Annual Meeting in New Orleans.

"Lake Charles needs all the additional water it can get," he said. "It's already drained just about all its good water. If Lake Charles is going to expand, they're going to have to have more fresh water, and they're not going to get it from the Calcasieu River because the salt water from the Gulf is backing up all the time."

"Congress has already approved funds to block the salt water so it won't back up in the Calcasieu.

"But the real solution will come with the diversion of water to Lake Charles from the Sabine River under the Toledo project."

"Bonds financing the two-state project involving more than 100,000 acres of land in Northwest Louisiana for reservoir purposes will be paid by users of power generated by the dam.

"Bids already have been let on turbines and the dam should be in operation by 1967", concluded Watts.

Watts, a native of Ruston, received a Bachelor of Science Degree in Civil Engineering at Louisiana Polytechnic Institute and an M.S. Degree from Louisiana State University. A former professor at Louisiana Polytechnic Institute, Watts is presently Assistant Director of Public Works, State of Louisiana. In this capacity, he represents the Governor and the State of Louisiana on the Arkansas-White-Red Basins Inter-Agency Committee, the Red River Compact Commission, and serves as Chairman of the Executive Committee of the Lower Mississippi Valley Flood Control Association, and Secretary-Treasurer of the Association of Levee Boards of Louisiana.

Membership in professional engineering societies include L.E.S., the American Society of Civil Engineers, and National Society of Professional Engineers, and a Professional License is held to practice Civil Engineering in the State of Louisiana. Honorary societies in which membership is held are Tau Beta Pi Association, Omicron Delta Kappa, and Phi Kappa Phi. He is a member of the Methodist Church, and a Mason.

He has served on the Board of Direction of Louisiana Section, American Society of Civil Engineers, and was President of the Section in 1957.

On September 15, 1961 he was cited by the Secretary of the Army and Chief of Engineers for outstanding service to the United States Army Corps of Engineers, as Director and Assistant Director, Department of Public Works during the period 1952 to 1961, in the development and execution of river, harbor and flood control plans with the State of Louisiana and the Lower Mississippi Valley.

His wife is the former La Verne Hays of Ruston, Louisiana, and they have two children, Tommy age 21 and Marilyn age 17.

JANSSEN DISCUSSES UNITY FOR ENGINEERS

(By JAMES S. JANSSEN, Pres. of La. Engineering Soc.)

Before discussing the problem of how best to achieve unity for engineers, it might be well to consider how engineers became disunited. Let's do this by reviewing the history of engineering organizations. Perhaps it all began when the American Society of Civil Engineers (A.S.C.E.) was established in 1852. This then separated them from the military engineers and became the first recognized schism among engineers. In succession there followed the American Institute of Mining and Metallurgical Engineers (A.I.M.E.) in 1871, American Society of Mechanical Engineers (A.S.M.E.) in 1880, American Institute of Electrical Engineers (A.I.E.E.) in 1884, and the American Institute of Chemical Engineers (A.I.Ch.E.) in 1905. These five "Founder Societies" were rapidly followed by a myriad of others organized essentially for technological purposes. Some fell by the wayside but most are still more or less active, so that there are something like 100 in existence today. There is, of course, considerable overlap of coverage. Note that these technological societies, created for the exchange of engineering and scientific information, were the first to be founded. Then there came the recognition of the need to deal with problems other than technical and concerning all professional engineers, regardless of specialty.

The American Association of Engineers started in 1914 and was the first engineering society organized essentially to deal with professional rather than technological aspects. This was a national association with individual members and local chapters but no state organizations. Registration as a professional engineer was not a prerequisite for membership. Membership at one time reached 20,000 but has declined to about 5,000. The American Engineering Council, a federation of engineering societies, was created in 1920 and died in 1941. Other similar attempts died similarly.

The next three organizations described are important. In 1932 the Engineers Council for Professional Development (E.C.P.D.) was organized to establish minimum requirements for education institutions and to increase the caliber of engineering education. It was established by the five founder societies, plus the National Council of State Boards of Engineering Examiners (N.C.S.B.E.E.), the American Society for Engineering Education (A.S.E.E.) and Engineering Institute of Canada. The E.C.P.D. filled an important role in engineering activities and is very active today. Its four major areas of activity are (1) an accrediting program for engineering education, (2) preparation and maintenance of canons of ethics, (3) transition of young engineers from collegiate work to the practice of engineering, and (4) vocational guidance.

The National Society of Professional Engineers came into existence in 1934. It is devoted to the professional

interests of all engineers and endeavors to enhance these interests by dealing with the economic and legislative aspects of professional life. It is composed of individual members (59,000), who are also members of state societies (53 including District of Columbia, Puerto Rico and Canal Zone), and of 444 local chapters. It is similar in structure to the American Medical Association and to the American Bar Association. The Louisiana Engineering Society is, of course, one of the state societies. Engineers Joint Council (E.J.C.) was organized in the period from 1943 to 1952 and incorporated with a new constitution in 1958. Its revised objectives limit its activities to scientific, technical and educational fields. It was organized by the five founder societies as a **federation** of engineering societies, and has subsequently been joined by others until it now includes 10 national, 3 associate, and 8 local or regional organizations.

Note that up to this point there has been a continual trend toward disunity, the creation of more and more societies and organizations with duplication, overlapping and confusion the inevitable result. This has been a matter of increasing concern to many engineers. Various plans for unity have been advanced and considered. These include expansion of E. J. C., expansion of N.S.P.E., a merger of E.J.C. and N.S.P.E., the G.E. Plan, the Morton Plan, and many others.

Finally there was introduced what has come to be known as the "FUNCTIONAL PLAN." In 1956 the Board of the American Institute of Electrical Engineers (A.I.E.E., now in the process of merging with I.R.E. and becoming the Institute of Electrical and Electronic Engineers, I.E.E.E.) adopted a proposed plan for the coordination of the activities of the various engineering societies and councils. This plan proposed "to assign to existing organizations certain areas of activity for which they seem best qualified." Note the two important features here; the utilization of **existing** organizations and the division of activities by **functions**. Under this plan the Engineers Joint Council would coordinate the cooperative action of the various societies on technical matters and on certain related matters beyond the scope of any one society. This includes such topics as the engineering sciences, international relations including UNESCO and World Power Conference, recognition and coordination of specialties, technical surveys, and related subjects. Cooperative action by societies in the field of engineering education and allied matters such as guidance, accreditation, curricula, and student development would be assigned to the Engineers Council for Professional Development. Professional aspects of societies in economic and legislative fields of engineering life would be handled by the National Society of Professional Engineers. This would include registration, employment practices, salaries and fees, surveys pertaining to political, economic welfare and matters of this sort. A supplementary idea has been added to the original Functional Plan. This is the creation of a coordinating committee called "The Board for Engineering Cooperation" and consisting of the Presidents and Vice-Presidents of E.J.C., E.C.P.D.

James S. Janssen, 1962 President of LES, delivered the above address to several State Sections throughout the past year.

and N.S.P.E., holding regular quarterly meetings to resolve questions of policy, scope, etc. Briefly E.J.C. would handle technical matters, E.C.P.D. educational matters and N.S.P.E. professional matters.

This Functional Plan has been officially approved by the three largest organizations in the engineering profession. A.I.E.E. (68,000 members), A.S.M.E. (46,000) and N.S.P.E. (59,000) who have issued a "Unified Statement of Principle in the Interest of Improved Organization of the Engineering Profession" endorsing the Plan. Actually this plan has been more or less in effect for a number of years with each of these three organizations largely following the activities as outlined above. The Plan as drawn up provides for more careful delineation and continuing cooperation to avoid duplication and to insure coverage. There is a growing trend among engineers toward dual membership; that is, membership in a technological society and a professional one. N.S.P.E. recognizes and encourages this.

It should be noted here that universal acceptance of registration is practically a prerequisite for "unity for engineers." It is impossible to conceive that the medical or legal professions could present the united fronts that they do through the American Medical Association and the American Bar Association if they did not insist on registration or licensing. It is necessary to know who are engineers before we can hope to unite them into a solid organization.

A recent survey of N.S.P.E. members showed them to be overwhelmingly in favor of the Functional Plan (with a Coordinating Committee) over any other plan. It would be difficult and futile to try to attack many unsolved problems common to all engineers without first establishing unity to avoid wasted effort and duplication. For the first time in many, many years it is possible to feel optimistic about the attempts to clear up the disunity that presently exists. It is hoped and expected that other engineering organizations will give their approval and throw their support behind this Functional Plan.

Previous efforts toward unity have resulted in more and more organizations and more and more confusion. By using existing organizations and by assigning duties to them on a "functional" basis, Unity for Professional Engineers can finally be achieved.

Engineering Computer Speeds Up Project

The opening date for fishing on Toledo Bend Lake was moved a year closer this month by the use of electronic data processing equipment, according to Claude Kirkpatrick, director of the state department of public works.

"The mammoth job of computing the exact shoreline—some 1100 miles in all—promised to be a major time consumer in the reservoir location of Toledo Bend," Kirkpatrick pointed out. "With the electronic equipment, we expect to complete all surveying and computing work within the next nine months." Otherwise, it would have taken two years to complete this phase, he said.

He reported that the Baton Rouge engineering firm of Dawson, Gilbert and Pilcher has acquired an IBM

1620 computer, which will compute the mass of data in about one-tenth the time heretofore expected. "And, I might add, more accurately than would be humanly possible," he said.

Kirkpatrick explained that the survey must be accomplished before the department can determine how much land must be acquired from any one landowner.

According to James R. Gilbert of the engineering firm, most of the other six firms surveying the reservoir are shipping their data here for processing on a contract basis to expedite the project.

"Of course, the installation of such a computer would be impractical if used only for the Toledo Bend project," Gilbert said. "We have made it available to other firms for many different data processing uses," he said.

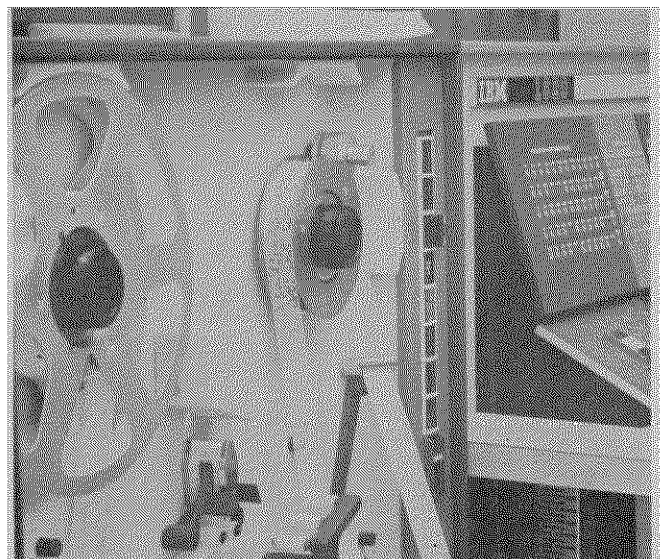
The model 1620 never loses "its sense of direction" in computing azimuths from field notes, according to Gilbert.

"In fact it tells us when mistakes appear on field computations," he pointed out. "If one point field is recorded incorrectly, the 'brain' types out in machine language, 'You've made a mistake!'"

Actually, the 1620 understands "man language," too. Number language is its favorite but, if the operator chooses to speak in his own tongue, the machine will translate. For instance, if the operator types "End" at the conclusion of a problem, the machine will change this to No. 48 and start computing the answer. "It will even correct grammar and spelling," Gilbert said.

At the same time the 1620 is computing mapping coordinates for the reservoir, it is working on a number of projects, for instance, that Dawson, Gilbert and Pilcher have undertaken for municipalities under the federal Public Works Acceleration Program. The machine is also adaptable to uses such as highway and bridge design. It will even lay out a subdivision into proper lot sizes.

But engineers, it seems, adjust to a new pace fast. Being able to accomplish 200 five-digit multiplications in a second, they now get answers in one day that formerly took a month to compute. But they grow anxious now when they can't get the answer before noon!



IBM 1620 COMPUTER

Planning- Field Notes

By Allen Johnson

THE SIXTH ANNUAL State Planning Conference of the Louisiana Engineering Society will be held in Alexandria March 22-23. All members are invited to attend the event which is aimed at giving state committees an opportunity for concentrated planning of society activities for the year. The Hotel Bentley is the site.

Speakers before the Annual Meeting are generally very much in the news, and that seems to go particularly for generals. A few years ago Maj. Gen. Don Yates addressed the Annual Meeting about space activities at Cape Canaveral; the day after his talk, President Eisenhower delivered his State of the Union message, portions of which sounded familiar to LES members. Sure enough, Gen. Yates had come to the meeting from a White House briefing of the President. The 1963 speaker, Brig. Gen. Richard G. Stilwell, Commandant of Cadets at West Point, eruditely described the engineering education of U. S. Military cadets with its objectives of producing leaders sound in mind and body for the ultimate mission of combat. Having spoken his piece as an educator, he is now on assignment in South Viet Nam, a Cold War hot spot.

John P. Fernandez scheduled a Feb. 10 trip to Washington for the annual NSPE Secretaries Conference.

Highway Director Ray W. Burgess announced recently that a series of three-day short courses designed to increase the efficiency of District Engineers Inspection Personnel will be offered in the state's nine highway districts.

"These courses are designed," said Burgess, "to enable experienced inspectors to add to their knowledge through discussions of modern inspection procedures."

Burgess added that three types of inspection courses will be offered, including work in bituminous construction, concrete construction and soil and base course construction. The courses will be conducted by instructors from Central Testing Laboratory in Baton Rouge as well as from the district laboratories.

Also Burgess said the program will bring in instructors from outside the Department if they can increase the training effectiveness.

Linward Ray Pylant Wins Armco-NSPE Scholarship

Linward Ray Pylant, 18, West Monroe, La., was chosen as the LES candidate for an Armco-NSPE scholarship.

Pylant, a senior at West Monroe high school, was second place winner in chemistry at the Regional Science Fair, third place winner of the high school chemistry contest of the South Arkansas Section, American Chemical Society, and attended the National Science Foundation-sponsored six-week course in engineering at the University of Arizona in the summer of 1962.

He is president of the school's Honor Society, past president and sergeant-at-arms of the French Club, past vice-president and president of his Sunday School class, Hi-Y Chaplain and junior assistant scoutmaster.

The son of George Linward Pylant and Dorothy Buras Pylant, he would like to attend either Louisiana State University or Louisiana Polytechnic Institute. He lists his hobbies as hunting, fishing, swimming, water-skiing, guitar-playing and coin and rock collecting.

1963 Engineers' Week Set For February 17-23

The theme of the 1963 National Engineers' Week, February 17-23, is "America's Engineers Build for the Future," according to Grover J. Trammell, State chairman.

The theme was based on the need "to call widespread public attention to the vital role played by science and technology in shaping the framework of our future technology and general ways of life," Trammell said.

Serving with Trammell on the committee are L. R. Daniel, Jr., vice-chairman; George B. Walther, Jr., Fred Brownlee, T. R. Henry, Jr., William J. Rountree, O. T. Ice, K. J. Thomas, Hoyt W. Brown and A. Max Kober. Board sponsor is President Calvin T. Watts.

'Full Advantage Not Taken of New Highways' . . . Burgess

Highway Director Ray W. Burgess said recently that many motorists are not taking full advantage of the advanced engineering design of the new Interstate interchanges.

This is noticeable especially on the expressways through various cities, Burgess said. He referred to the interchanges where traffic enters and leaves the expressway. "Many motorists do not enter or leave the expressway properly," Burgess said, "thereby causing traffic to pile up behind them."

Underwood Glass Announces Expansion

Underwood Glass Company, Harahan, manufacturer of glass bottles, has a \$140,000 expansion program underway.

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Memorials

JOHNNIE EDWIN REBOLD

It is with a feeling of great loss that the Louisiana Engineering Society records the passing of one of our fellow engineers, Johnnie Edwin Rebold, on December 19, 1962.

Born August 14, 1914, in Magnolia, Mississippi, Johnnie was educated at Millsaps College in Jackson, Mississippi, receiving a Bachelor of Science degree in 1934. From 1933 to 1941 he held the position of superintendent of construction for E. B. Ludwig Company of New Orleans. In this position he was engaged in the fabrication and construction of many buildings in the New Orleans area. In 1942 he joined the Dixie Machine-Welding and Manufacturing Company and was until recently that firm's manager. For the past year he served as General Manager of the Sun Erection Company which specializes in heavy industrial and commercial construction.

Johnnie was immediate past president of the Construction Industry Association, a Director of the Colonial Country Club, and a member of the board of deacons of the St. Charles Avenue Baptist Church. He was also a member of the board of directors of the Southern Baptist Hospital. He was a registered Professional Engineer in Louisiana.

John was an enthusiastic and very capable golfer. On several occasions he was the low scorer in the Societies annual golf tournament. He was known to his many friends for his ready wit and keen sense of enjoyment of good comradeship, and above all, Johnnie was a good, honest, and kindhearted man. He was a dear friend.

BE IT RESOLVED that the membership of the Louisiana Engineering Society express hereby its feeling of great loss to the profession of engineering through the passing of Johnnie Rebold; that this obituary be entered into the minutes of the Society, and that a copy be sent to Mrs. J. E. Rebold.

H. G. Armatis
W. P. Musgrave
J. T. Montgomery
F. W. Macdonald, Chairman

ROBERT O. WILLIAMS

The Louisiana Engineering Society lost by death a loyal friend and supporter with the decease of Robert O. Williams on Monday, October 29, 1962.

Mr. Williams was born on July 17, 1902 in Louisville, Kentucky and received his early education in the Louisville Public Schools, graduating in 1922 from the Louisville Male High School. He entered the University of Kentucky and received his training in the field of Civil Engineering.

Mr. Williams served in the Plant and Engineering Organizations of Southern Bell Telephone and Telegraph Company. He began his career with the Plant Department as a Fieldman in July, 1926 at Louisville, Kentucky and was promoted to Junior Engineer and transferred to Jackson, Mississippi in 1935. In 1946, he was made District Engineer at Shreveport, Louisiana, a position he held for ten years. Since 1956 he held various

Engineering Management positions in the New Orleans area and was District Engineer in the West Bank District at the time of his retirement on July 27, 1962. His telephone career covered a span of 36 years.

Mr. Williams served with distinction in the military forces of the United States during World War II. He was awarded the Bronze Star Medal for meritorious service during military operations against the enemy as Commanding Officer of the 32nd Signal Construction Battalion in France, Belgium, and Germany. His service included both the European Theatre and Pacific Theatre of Operations. At the conclusion of his wartime services in 1945, he held the rank of Colonel in the United States Army.

Mr. Williams was an active and interested participant in many areas of his community and professional life. He was a member of the Armed Forces Communications and Electronics Association and was elected president of the New Orleans Chapter for 1962-63. He was a member of the Military Order of the World Wars and served on the Attendance Committee. He was a life member of the Army Signal Association and a member of the Reserve Officers Association.

His professional interests included membership in the American Institute of Electrical Engineers, service on various committees of the Louisiana Engineering Society, registration as a Louisiana Professional Engineer, and membership in the Telephone Pioneers of America.

His community interest found expression as a member of the Highways and Streets Committee of the New Orleans Chamber of Commerce.

Mr. Williams was a member of the Carrollton Avenue Methodist Church and served it as a member of the Board of Stewards, as a member of its Commissions on Evangelism and Finance and in several offices in its Sunday School Organization.

Mr. Williams was a member of the Masonic Fraternity.

BE IT RESOLVED that the membership of the Louisiana Engineering Society express its deep feeling of loss to the profession of engineering through the passing of Robert O. Williams; that this obituary be read at a meeting of the Society, entered into the minutes, and that a copy be sent to Mrs. Robert O. Williams.

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The Responsibility Of The Engineer For Health And Safety In Industry

By Fred S. Venable, Industrial Hygienist

Humble Oil & Refining Co., Baton Rouge, La.

(An address before LES in New Orleans, La., November, 1962)

No one should be more aware of the remarkable growth of industry within Louisiana and the Gulf Coast Area during the past 20 years than a member of the engineering profession. Engineers can assume a major share of the credit for the construction of new plants, the modernization of existing plants and the development of entirely new industries which have comprised this tremendous accomplishment.

The engineer can also envision the growth potential of this area and he can foresee the new materials, processes and techniques that will inevitably accompany this expansion. New industry is eagerly sought by progressive communities because it means new jobs and payrolls. It is interesting to note, however, that while the role of the industrial worker in the plant of the future may not be sharply defined at this time, it is becoming increasingly evident that the number of operating and maintenance employees in the wage-earner category will be minimized and the technical and semi-technical groups will be larger than in the past.

Glowing reports on the advantages of automation in certain large industries such as auto making and steel production may tend to affect our thinking about the importance of the future industrial environment on health and safety. It is true that automation may solve many vexing problems in the large and complex factories. To the small industry, however, automation will be slower in arriving. In Louisiana, 94% of all industrial plants employ fewer than 250 persons, and 75% employ fewer than 25. Older industries, too, will find it difficult in many cases to finance modern equipment which can be adapted to assembly line methods. Many of these, as a result of obsolescence, are in dire need of upgrading their health and safety programs.

The manager of today's modern and highly automated factory must not let dreams of sky rocketing production and plunging unit costs leave him blind to the fact that his highly trained and skilled employees, although fewer in number, are valuable assets requiring increased protection from annoying or harmful factors in the work-

ing environment if these employees are to meet his expectations. Freedom from toxic or irritating chemicals, reductions of noise, improved lighting and proper temperature regulation are essential elements of the highly productive worker's surroundings.

The future tasks of industry in the field of health and safety are threefold:

1. To provide adequate protection to workers against new hazards from expanding operations, new chemicals and new tools utilizing higher forms of energy.
2. To improve working conditions consistent with the requirements of the more valuable employees in highly skilled jobs.
3. To upgrade the small or obsolete industrial plants that presently have substandard health and safety conditions.

The responsibility of designing, constructing, operating and maintaining the facilities that will provide safe and agreeable working conditions will fall upon the engineer. The full time engineer in industry or the consulting engineer performing work for the small plant both share this responsibility.

Many descriptions of an engineer's job may be found, but the function of the engineer which more closely ap-

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plies to the present subject is his ability to change man's environment. Notice that no specific environment of man has been mentioned nor has it been indicated if the change has been for better or worse. It is within the province of the engineer to change many of man's different environments, his workplace, his home and community, his recreational areas, etc., and to make these environments safer, more healthful and more pleasant through constructive planning, or to render them dangerous, unhealthy and unsightly through neglect.

Safety people have a slogan, "Safety is everyone's business." Good health, too, is everyone's business, and certainly it is the business of engineers of all kinds, in every capacity, to recognize health or safety problems in the planning or execution of their work. It is conceivable that occupational health, and safety problems can arise from the most commonplace engineering installations. A few examples would be the use of chlorine and fluorides in water treatment plants, noise in boiler houses, carbon monoxide in underground parking facilities, radioactive contaminants from hospital incinerators and hydrogen sulfide in dewaterage system manholes and treating plants.

(Continued from Page 10)

A greater effort should be made to interest them in the society and in professional affairs. We should put more of them on committees and otherwise use their talents. On them our future rests.

Gentlemen, I am grateful to you for my year as President of this Society. I have enjoyed it and I appreciated it. Thank you.

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What Every Louisiana P. E. Should Know

This is another in a series of articles prepared by the Editorial Staff of the LOUISIANA ENGINEER in which an attempt will be made to answer questions of interest to professional engineers in this area. Where, in certain instances, it becomes necessary to answer questions of a controversial nature, it must be re-emphasized that the opinions expressed are those of the Editorial Staff and do not necessarily reflect the feelings of the Louisiana Engineering Society nor the Louisiana State Board of Registration for Professional Engineers and Land Surveyors.

QUESTION—Does the Louisiana Professional Engineering Registration Act allow credit for engineering education without graduation?

ANSWER—Yes. The Louisiana Act specifically states that the satisfactory completion of each year of an approved curriculum in engineering in a school or college approved by the Board as of satisfactory standing, without graduation, shall be considered as equivalent to a year of experience. However, no applicant can receive credit for more than four years of experience because of undergraduate educational qualifications.

QUESTION—Is graduation in a college curriculum other than engineering allowed as credit toward registration as a Professional Engineer in Louisiana?

ANSWER—Yes. The Louisiana registration act states that graduation in a curriculum other than engineering from a college or university of recognized standing may be considered as equivalent to two years of experience.

QUESTION—May an applicant for Louisiana registration as a Professional Engineer have access to books, tables and other aids during his examination?

ANSWER—Yes. The Louisiana Act states that any books, tables, calculating machines or other aids to which a practicing engineer would have access may be used by the applicant in the examination.

QUESTION—May the Louisiana Registration Board refuse to register an applicant who meets all qualifications having to do with education and experience?

ANSWER—Yes. The Louisiana Act states that an applicant must be of good character and reputation.

American Cyanamid Expands Facilities

American Cyanamid Company has announced that it has begun engineering of a multi-million dollar methyl methacrylate monomer plant which the company plans to construct at its Fortier plant in Jefferson Parish in 1963.

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Section Officers Conference Held

The Annual Section Officers Conference was held Dec. 7th and 8th at the Charleston Hotel in Lake Charles.

A cocktail party and buffet was held for all LES members and their wives at the home of Mr. and Mrs. Quinn on the evening of Dec. 7th.

A meeting of state presidents and vice-presidents was held on the morning of December 8th with James S. Janssen, LES President, presiding. J. D. "Don" Strong, field representative, National Society of Professional Engineers, spoke on "Relationship of N.S.P.E. to L.E.S. and to Sections" Saturday morning, following which a film, "Building for Professional Growth," was shown.

Marion C. Bubbenzer, president of the Shreveport Section, addressed the conference on "Secrets of Successful

Chapter Operations."

"Public Relations Hints" was the subject of an address by Col. John T. "Jack" Knight, Jr., New Orleans.

A summary of conferences was held Saturday morning, presided over by Strong and Calvin T. Watts, Baton Rouge.

Mrs. Waldemar S. Nelson, New Orleans, president of the Woman's Auxiliary, discussed the Auxiliary's role at the Saturday luncheon.

All LES members and their wives convened in the Pioneer Club at 12:30 p.m. The conference adjourned Saturday after former Gov. Sam H. Jones spoke.

A coffee party for the ladies was held Saturday morning at the residence of Mr. and Mrs. Elmer E. Shutts.



Newly elected officers of the Baton Rouge Chapter of the Women's Auxiliary of LES are (left to right, standing): Mrs. Joseph L. Smilie, Corresponding Secretary; Mrs. L. J. Jenkins, Jr., Treasurer; Mrs. Joseph L. Nanney, Recording Secretary; (Seated) Mrs. Louis J. Capozzoli, Jr., Financial Secretary; Mrs. Calvin T. Watts, President; Mrs. C. W. Hair, Jr., Vice-President.

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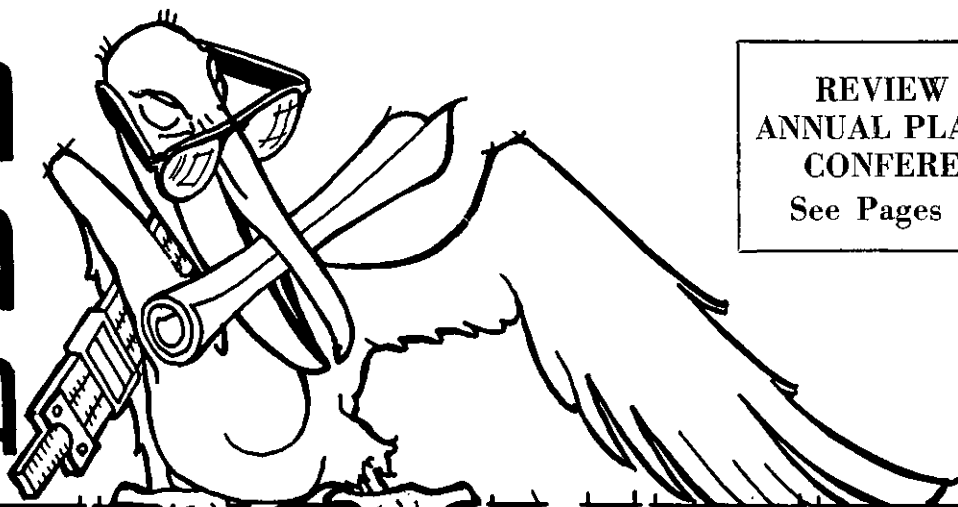
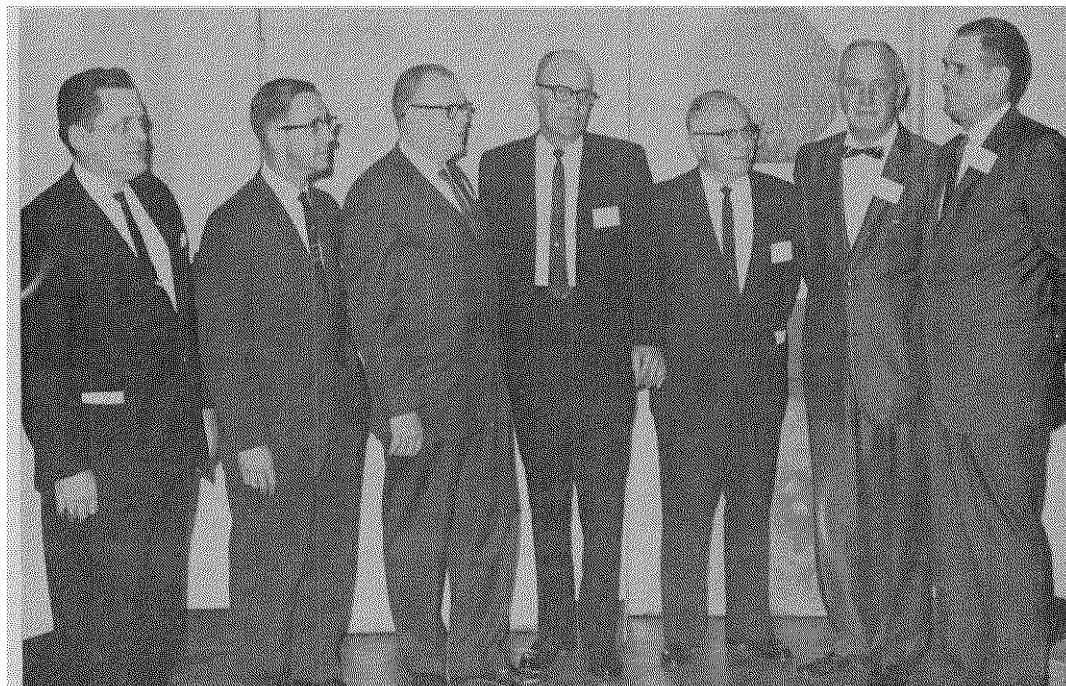
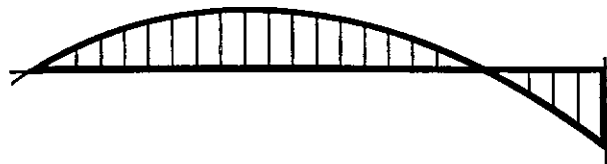
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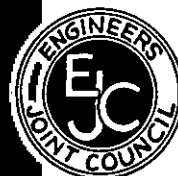
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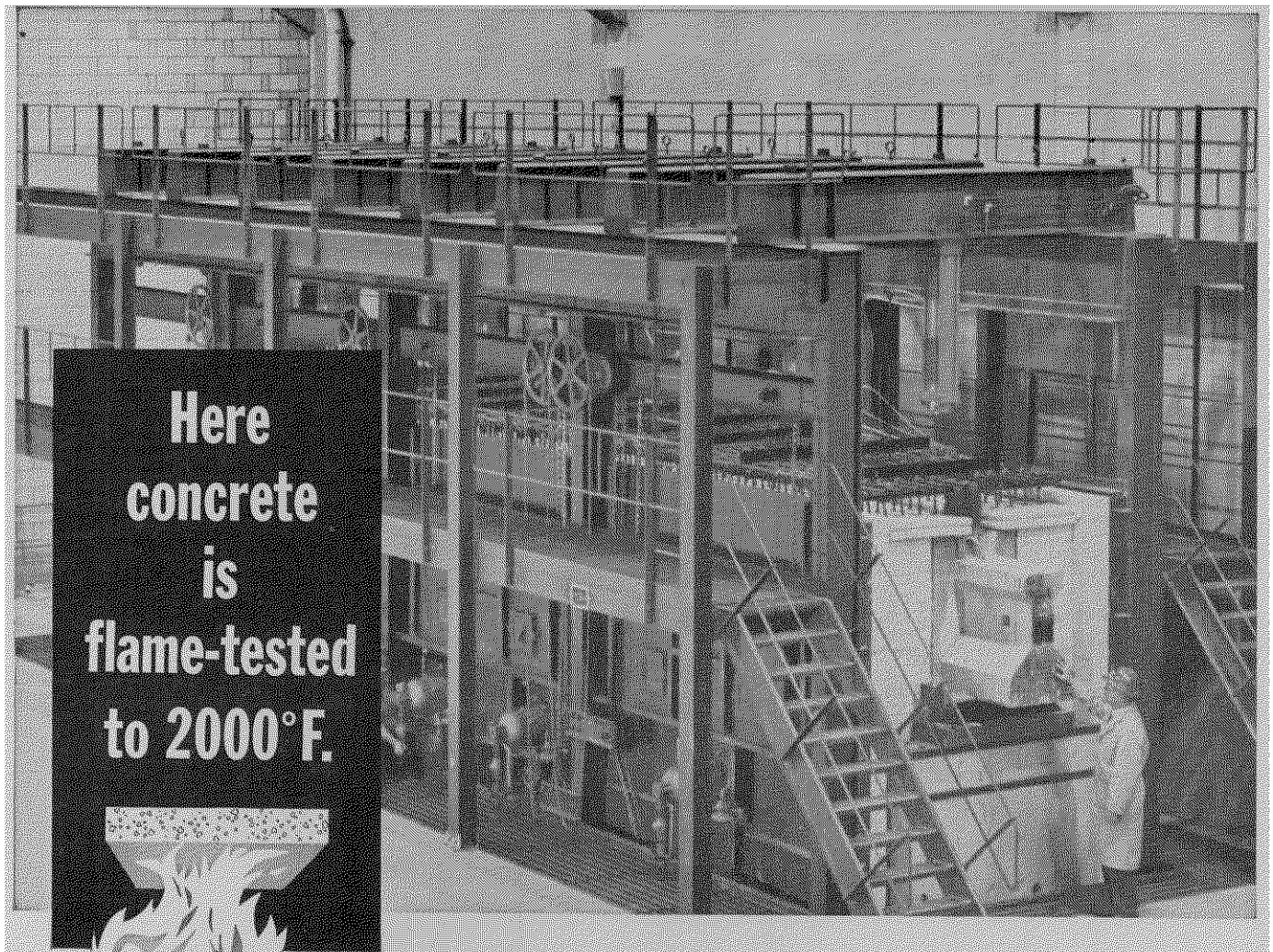


REVIEW OF
ANNUAL PLANNING
CONFERENCE
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ENGINEER

Vol. 49 No. 2
April, 1963





It's just one part of the cement industry's research facility

Of vital interest to many graduating engineers are the \$10,000,000 Research and Development Laboratories of the Portland Cement Association. Here in suburban Skokie, Illinois, near Chicago, is the world's largest assembly of engineers, scientists and equipment devoted exclusively to the study of portland cement and concrete.

In the Fire Research Center's huge furnace pictured above, full size beams and girders are subjected to licking flames from gas jets. Other furnaces subject whole floor sections to hours of intense heat.

In the nearby Structural Laboratory, the building itself serves as a giant testing machine for entire bridge sections. In still another laboratory, a machine capable of exerting a force of a million pounds bears down on a foot-thick concrete cylinder until it literally explodes.

Some of the research is fundamental—designed to increase basic knowledge of the nature of portland cement and concrete. Other projects are directed to development of new and improved uses of these materials. Still other projects are devoted to the processes of manufacture of portland cement—to help assure a uniform, high-quality product, whatever the source.

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THE LOUISIANA ENGINEER

Vol. 49

APRIL, 1963

No. 2

OUR COVER: LES State Section Presidents at Alexandria State Planning Conference look toward Keynote Speaker Claude Kirkpatrick, far right. They are (from left): George B. Walther, Jr., Lake Charles; Frank W. Irland, Shreveport; H. H. Mullins, Monroe; Louis J. Daigre, Alexandria; David J. Carville, Baton Rouge; Albert H. Repscha, Lafayette.

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Thomas C. David, 1022 Tenth St., Alexandria.

Robert P. Lockett, Jr., P. O. Box 561, New Orleans 7.

Charles W. Stokes, 1311 Eleventh St., Lake Charles.

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Minutes Of The Board, LES

LOUISIANA ENGINEERING SOCIETY

Minutes of Meeting of the Board of Direction Held at the
Conference Room, N. O. Public Service Bldg.,
January 28, 1963

The meeting was called to order by President Watts with Messrs. Carville, Daigre, Janssen, Knight, Lockett, Macdonald, Mullins, Repscha, Stokes, Vogt and Fernandez in attendance. Mr. Allen Johnson, Public Relations Counsel, also was present. Minutes of the meeting held on January 10 were accepted as read.

President Watts reported for Mr. Leo M. Odom, Chairman of the Functional Section for Professional Engineers in Private Practice, on contacts made with officials of Jefferson Parish and of NASA's Michoud Plant.

National Director Macdonald's report on the winter meeting of NSPE held in San Antonio was discussed and it was decided to refer the recommendation of the national society's Education Committee, together with its recent survey of faculty attitudes toward Professional Engineering, to the LES committee appointed to study the Louisiana Industry-Engineering College Council request (see minutes of board meeting of January 10, 1963). The aforementioned recommendation is as follows:

"The Deans of Engineering Colleges and Department Heads of accredited curricula should be urged to support programs that will present professional ideals and responsibilities to the student."

Mr. Vogt, Chairman of the 1963 Annual Meeting, presented a preliminary financial report of his committee. The 1964 Annual Meeting was then discussed and Mr. Repscha was advised that a two-day meeting as suggested by the Lafayette Section would be very desirable.

Mr. Knight, Finance Committee Chairman, presented the following budget for 1963, which was accepted upon motion by Mr. Lockett and seconded by Mr. Carville:

INCOME:	
Advertising	\$14,000.00
Dues	24,400.00
Miscellaneous	700.00
State Board Contribution.....	4,000.00
	\$43,100.00

EXPENDITURES:	
Annual Meeting	\$ 800.00
Annual Outing	200.00
Awards, Medals, etc.....	600.00
Dues and Rebates.....	10,800.00
Engineers' Week	750.00
Miscellaneous	900.00
Monthly Meetings	650.00
Public Relations & Publication.....	17,000.00
Salaries	6,600.00
State Conferences	500.00
Stationery & Printing.....	2,400.00
Travel Expenses	500.00
Unbudgeted	200.00
	\$41,900.00

Surplus\$ 1,200.00

A report submitted by J. T. Montgomery, 1962 Chairman of the Functional Section for Professional Engineers in Private Practice, was read. Dr. Macdonald moved that the 1964 chairman be instructed to proceed in accordance with the policies brought out at the Private Practice Conference sponsored by PEPP in Chicago. A Special Report on the conference has been published in the December 1962 issue of "Private Practice News."

President Watts read correspondence from the Georgia Society of Professional Engineers requesting support of their nomination of John J. McDonough, President of Georgia Power Company, as Professional Engineer of the Year. He also read an invitation from the Michigan Association of the Professions to attend its 4th Annual Congress at Lansing, Michigan, February 8-9.

The secretary read letters of thanks received from the following:

- (1) Lake Charles Section, in appreciation of financial assistance rendered by state headquarters in connection with the Section Officers' Conference.
- (2) Mrs. T. Baker Smith, for the memorial to her late husband in La. Engineer.
- (3) The Johnnie B. Rebold family, for floral tribute to that deceased member.

Correspondence between the firm of Allet, Fenner, Jolly & McClelland, Inc. and the Base Procurement Office, Barksdale AFB, was read. The Board commended this consulting firm for its promulgation of the profession's Code of Ethics.

Correspondence addressed by Mr. Frank Irland, President of the Shreveport Section, to the Commissioner of Public Safety, City of Shreveport, and to the State Board of Registration, was read.

The secretary reported that the society had been granted a permit to mail third class matter at reduced postage rates because of its non-profit status.

It was announced that the State Planning Conference would be held at Alexandria on March 22 and 23.

Obituaries of deceased members Robert O. Williams and Johnnie E. Rebold were read and the editor was instructed to publish these

in the February issue of The Louisiana Engineer. Mr. Knight moved that technical articles be published in The Louisiana Engineer at such times as the editor considers appropriate. Motion seconded by Mr. Stokes and carried.

Mr. Vogt moved that the Finance Chairman be authorized to renew the Public Relations Contract as discussed. Motion seconded by Mr. Stokes and carried.

Mr. Janssen moved that Mr. George C. Hengy of Shreveport be reinstated to the grade of Member and that the record show no break in the continuity of his membership since all of his back dues have been paid in full. Motion seconded by Mr. Repscha and carried. Mr. Lockett moved that the resignations of the following be accepted with regret, seconded by Mr. Stokes and carried:

Rudolfo J. Aguilar, Baton Rouge	(Jr.)
Richard H. Bretz, Baton Rouge	(Mbr.)
M. B. Carmichael, Baton Rouge	(Mbr.)
Willie L. Crook, Jr., New Orleans	(Aff.)
William S. Huey, New Orleans	(Mbr.)
Byron P. Lyons, Baton Rouge	(Mbr.)
Glenn R. Manning, New Orleans	(Jr.)
Shirley J. Miller, Bogalusa	(Jr.)
Arthur E. Reed, Bogalusa	(Mbr.)
James R. Riquelmy, Lake Charles	(Jr.)
W. H. Spaar, San Antonio, Tex.	(Mbr.)
Louis G. Spann, Baton Rouge	(Aff.)
R. B. Williamson, Shreveport (NSPE-Mbr.)	

Mr. Janssen moved that the following be dropped from the rolls in accordance with the constitution, seconded by Mr. Mullins and carried:

Ronald J. Robichaux, St. Martinville (Jr.)
H. A. Mike Flanakin, Address Unknown (Mbr.)

The secretary reported the recent deaths of members J. McLean LeDoux and Ralph E. Lind, both of New Orleans.

With the approval of the Board, President Watts appointed standing committee personnel to serve for 1963 (see list attached to these minutes).

The secretary called attention to a new policy adopted by NSPE with regard to pending legislation. Their Legislative Action Reports will carry a history, analysis and proposed NSPE policy on all proposed legislation affecting the profession. It will then be incumbent upon the state and local organizations to secure copies of the proposed bills and submit their comments or suggestions to national headquarters. If no comment is received it will be assumed that the state organization is in accord with anticipated NSPE action. This policy appears to be in conformity with the recommendation made by our LES board motion of December 7, 1962.

Board members were urged to attend the meeting of the society to be held on February 18 in celebration of National Engineers' Week.

There being no further business, the meeting adjourned.

JOHN P. FERNANDEZ,
Secretary-Treasurer

LOUISIANA ENGINEERING SOCIETY

Minutes of Meeting of the Board of Direction Held in the
Conference Room, N. O. Public Service Building, on
Monday, February 18, 1963

The meeting was called to order by President Watts with Messrs. Carville, Daigre, Janssen, Knight, Lockett, Vogt and Fernandez in attendance. Messrs. Leo M. Odom, Chairman of the Functional Section for PEPP, and Mr. Andrew M. Moore, Chairman of the 1963 State Planning Conference Committee, also were present. Mr. Knight moved that the minutes of the board meeting of January 28 be accepted as corrected, seconded by Mr. Carville and carried.

President Watts reported that he and other officers had given much consideration to a possible reorganization of the society's operations, and proposed the appointment of a Reorganization Study Committee to consist of the following members:

Roy T. Sassums, New Orleans (Chairman)
R. Mallard Seng, New Orleans
Edward A. McClellan, New Orleans
Walter H. Scales, New Orleans
Ben T. Bourd, Monroe
Marion C. Dubenzer, Shreveport
Daniel V. Oresnap, Alexandria
Leo M. Odom, Baton Rouge
Charles W. Stokes, Lake Charles
Emery Domingue, Lafayette

Mr. Carville moved that the Board approve President Watts' selection and that an Organization Study Committee be appointed. Motion seconded by Mr. Vogt and carried.

The secretary read a letter from Mr. John McGaughy, NSPE Chairman of PEPP, soliciting funds and inquiring whether the funds should be solicited by the state or the national organization. The secretary was instructed to advise Mr. McGaughy that the Functional Section for PEPP is still in the formative stage in Louisiana and our list of Consultant Engineers in Private Practice is in process of compilation but not yet completed; therefore it would be preferable for the National Functional Section to solicit individual Louisiana Consultant Engineers directly.

The secretary read a letter from national headquarters informing that the file of our LES candidate for the ARMCO-NSPE Scholarship, Mr. Linward Ray Pylant of Monroe, had been forwarded to ARMCO at Middletown, Ohio.

The secretary advised that a special tabulation of the replies received from Louisiana engineers in the 1962 NSPE Income and Salary Survey could be obtained at a cost of \$25.00. It was decided not to order this special tabulation.

The secretary read correspondence from NSPE on the pros and

cons of a joint meeting of NSPE and our state organization, and the Board instructed him to refer the correspondence to Mr. George M. Baccich, the 1965 Annual Meeting Chairman.

A letter from the State Board of Registration enclosing their contribution of \$6,000 for use in the Public Relations Program was read. The secretary was instructed to inform the Louisiana Land Surveyors' Association that the LOUISIANA ENGINEER is now being mailed to all registered Land Surveyors in Louisiana and that LES would be willing to publish articles and news of interest to land surveyors as space permits.

A letter from the President of the Parish of Jefferson was read in which he advised of a vacancy in the position of Director of the Department of Safety and requested assistance in filling the position with a qualified Registered Civil Engineer. The secretary was instructed to refer the matter to the Employment Committee Chairman.

With the concurrence of the Board, President Watts appointed Dean Lee H. Johnson Chairman of the 1964 Engineers' Week Committee, and Messrs. Kenneth V. Stewart, Jr., Chairman, and Allen T. Bonnet, Vice-Chairman, of the 1964 State Planning Conference Committee. President Watts also appointed the following board members to act as sponsors for standing committees as indicated:

Annual Meeting, Albert H. Repscha; Engineers' Week, Homer H. Mullins; Ethics and Professional Conduct, John T. Knight, Jr.; Employment and Technical Papers, James S. Janssen; Vocational Guidance and Public Relations, Frank W. Macdonald; Functional Sections, Calvin T. Watts; Honors and Awards, John P. Fernandez; Legislative, David J. Carville; Membership, John F. Vogt, Jr.; Annual Outing, Robert P. Lockett, Jr.

The secretary read the obituary of the late John P. Egan and Dr. Macdonald moved that it be published in the LOUISIANA ENGINEER and that copies be forwarded to the family of the deceased member. Motion seconded by Mr. Lockett and carried.

Mr. Carville moved that during 1963 the state sections be rebated 50% of the state dues collected by LES. Motion seconded by Mr. Lockett and carried.

Mr. Leo Odom reported that Messrs. Frank H. Walk and A. W. Thompson had been appointed as representatives of the Functional Section for PEPP to attend meetings with NASA representatives.

Mr. Knight moved that the Board of Direction adopt the following resolution and that a copy be sent to the Executive Director of the Department of Commerce and Industry:

"WHEREAS, the Board of Directors of the Department of Commerce and Industry, at executive session in Lafayette, Louisiana May 17, 1961, passed a resolution asking that all applicants for tax exemption and renewals thereof be reminded of and asked to adhere to RULE 4 of the Industrial Tax Exemption Law Article 10, Section 4, Paragraph 10 of the Louisiana Constitution, and

"WHEREAS, the word 'Engineers' was omitted from this resolution which outlined the Louisiana facilities to be utilized, if possible, by these applicants for tax exemption, and

"WHEREAS, the Louisiana Engineering Society believes that the services of Louisiana Engineers should be used wherever practical by those firms being granted tax exemption by the State of Louisiana, now therefore

"BE IT RESOLVED by the Board of Direction of the Louisiana Engineering Society that the Board of Directors of the Department of Commerce and Industry be asked to insert the word 'Engineers' between the words 'Louisiana' and 'Suppliers' on Line Five of Paragraph Three of its resolution dated May 17, 1961."

The motion was seconded by Mr. Daigre and carried.

Mr. Odom presented a copy of a Manual of Professional Practice for the Use of Engineers and Clients, and President Watts advised that he would study the manual and ask other board members to do so individually, and that it would be placed on the agenda at the next meeting of the board.

The meeting then adjourned so that board members could attend the regular meeting of the society which followed.

JOHN P. FERNANDEZ
Secretary-Treasurer

Betz Moves To New Office

Effective February 18th, 1963, Betz Engineering Sales Company moved into a new office at 7979 Earhart Boulevard, New Orleans.

The firm was founded in February, 1951 under the ownership of Allen W. Betz and has grown steadily in the past ten years at a rate above the national average, according to a firm representative.

Betz Engineering Sales Company now represents eight accounts dealing in industrial and marine equipment:

Electric Machinery Mfg. Co., motors, generators and controls; Moloney Electric Co., power and distribution transformers; W. S. Rockwell Co., butterfly and slide valves; Warren Pumps, Inc., centrifugal, reciprocating rotary and screw pumps

Elgin Softener Corp., water conditioning equipment; Spray Engineering Co., nozzles and spraying equipment; U. S. Electrical Motors, Inc., motors, gear reducers, varidrives; Whiton Machine Co., steam turbines.

Present personnel consists of four sales engineers, two secretaries and an office manager.

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PROFESSIONALISM AND LAND SURVEYING

By LEO M. ODOM

Mr. President, members of the Louisiana Land Surveyors Association and honored guests.

It is indeed a pleasure and privilege for me to address you and to bring to you the best wishes of the Louisiana State Board of Registration for Professional Engineers and Land Surveyors for success in your endeavors toward the betterment of the profession of Land Surveying. Your objectives of improvement of the economic status and of the professional and educational standards of the Land Surveyors of this State are very worthwhile and your program merits the endorsement and cooperation of Professional Engineers of all branches, but particularly of my branch which is Civil Engineering.

The State Board of Registration and its predecessor, of which I have been a member for 19 years, is charged with the examination, registration of Professional Engineers and Land Surveyors and the enforcement of the laws governing their practice. I am personally well acquainted with your problems since I have made land surveys, plotted the results of such surveys and filed them in courthouses, and have testified in courts concerning land boundaries as an expert witness. I have performed this work as an integral part of my more general practice of Civil Engineering which covers a period of thirty-six years. Based on this background, I have fairly definite opinions regarding the practice of Land Surveying and the methods by which the status of the Profession can be improved. I am glad to have the opportunity to pass these conclusions on to you with the hope that they may prove useful to you in working toward your objectives. My discussion will cover briefly the problems relating to Professionalism, Education, and Registration and will point out how, in my opinion, your organization can work effectively toward their solution.

The only valid basis for a profession is a code of ethics which its practitioners are willing to accept and live by. A great many ideals concerning professional practice have been advanced by various authorities. Unfortunately, most of them can only serve as guides since, in spite of our best efforts, all of us are prone to favor our own interests and there is no set of written rules that cannot be interpreted differently by any two individuals.

Discussions of professionalism as it applies to land surveying and to engineering in general are frequently seen in our magazines. I will quote freely from these so as to bring out the fact that my opinions are shared by many others in the profession.

Dean Dougherty, one of the grand old men of the movement for recognition of Engineering as a Profession has said, "A professional is one who uses specialized knowledge and skill in the solutions of problems that cannot be standardized. He is actuated by a service motive; he works in a relation of confidence, and observes an acceptable code of ethical conduct. These qualities are

acquired in the home, at school, and in the application of practice. Professionalism is a way of thinking and living, rather than an accumulation of knowledge and power."

Whether we like it or not, Land Surveying is inextricably enmeshed with and constitutes a component part of the profession of Engineering historically, in practice, and in the minds of the public. When I was a youngster the terms Civil Engineer and Land Surveyor were practically synonymous in my part of the country. The earliest registration laws; i.e., those passed before the first World War, of which Louisiana's old law is an example, provided for examination and registration of Civil Engineers and Land Surveyors, only, and it is quite probable that the public's need of dependable Land Surveyors was actually the original impetus for registration laws. With few exceptions the laws governing practice in the United States today provide for examination and registration of Land Surveyors and Professional Engineers by the same board. Bro. E. Austin Barry, one of the outstanding advocates of professionalism in the practice of surveying makes the following statement in an article which appeared in "Civil Engineering" for February, 1962: "The time has come when the surveying and mapping profession must slough off the shackles of a worn-out tradition of isolation from engineering and a solid resistance to change. A revolution must occur in our thinking if we are to make and keep land surveying a profession and prevent it from turning into a labor craft."

In spite of our claims to antiquity the practice of land surveying and engineering under the banner of professionalism is a unique feature of our modern Western Society. The origin and basis for the professional status of the engineer in this country are succinctly stated in the following quotation from an article by C. Ken Weidner in "Civil Engineering" for January, 1963:

"It (professional engineering) started around the time of George Washington—who was himself an engineer—and was governed by certain concepts:

1. That engineers form a socially conscious body of professional men, ranging from intelligent young beginners to capable and confident master practitioners who are held together by one basic ethical goal—to practice and constantly to improve the understanding, control, and use of the forces of nature for the benefit of humanity.

2. That the individuals who make up this body, in addition to being technically proficient, are cultured gentlemen with a high degree of social responsibility and ethical character, who willingly teach their juniors, cooperate with their equals, and learn from their seniors.

3. That this body is permeated and guided by the conviction that cooperation toward worthwhile goals, with full assumption of appropriate sociological responsibilities, is the essence of their practice."

It has been the assigned task of many committees appointed by scores of organizations to come up with a brief and comprehensive definition of the profession of engineering. Many elaborate definitions will be found. Of these, the ECPD Definition of Engineering revised and adopted last fall represents the latest thinking on the part of our educators and is undoubtedly the result of the most sustained effort. It is as follows:

"Engineering is the Profession in which a knowledge

Address Delivered by Leo M. Odom, Member of the Louisiana State Board of Registration for Professional Engineers and Land Surveyors, to the Louisiana Land Surveyors Association at Its Annual Meeting on February 2, 1963 in Baton Rouge, Louisiana.

of the mathematical and natural sciences gained by study, experience and practice is applied with judgment to develop ways to utilize, economically, the materials and forces of nature for the benefit of mankind."

Fitting Land Surveying into the above definition of Engineering would appear to be a rather awkward task. The definition of practice of Land Surveying given in Act #73 of the 1950 Louisiana legislature is as follows:

"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."

This definition is the clearest concerning a branch of engineering that is contained in the Act and leaves little doubt about what the practice of Land Surveying comprises. Since those of us who are most familiar with Land Surveying recognize that it is a branch of Engineering, we should insist that composers of definitions of engineering enlarge their scope so as to make the inclusion of Land Surveying more apparent.

The practice of and responsibility for Land Surveys is purely an individual matter under our law. It has been held in many courts that only individuals can practice a profession and not corporations or state departments. Mr. Walter S. Dix lists the basis for this ruling in the following quotation from his paper in the December, 1962 edition of "Surveying and Mapping."

"Professional status must be earned and reached
by individual qualification—
Qualification by individual knowledge
Qualification by individual conduct
Qualification by individual practice
Qualification by individual effort
Qualification by individual selflessness"

Let us hope that your organization will attempt to upgrade the profession of Land Surveying by seeking to improve each of these qualifications in its members. By adopting a code of professional ethics and insisting upon professional conduct by its members it can undoubtedly promote better land surveying and secure greater respect by the public for Land Surveyors. It can also collaborate with such organizations as the American Congress of Surveying and Mapping and the American Society of Civil Engineers in the progressive improvement of the techniques and professional status on the national level.

The problem of education for Land Surveyors is of vital importance at this time. Engineering college organizations such as ECPD seem to be determined to cut down the amount of surveying taught in engineering curricula to such an extent that not even Civil Engineering graduates will have the technical knowledge and ability to do survey work.

At the present time the improvement of the education of Land Surveyors is being stultified by the actions of three powerful groups. They are:

(1) The rather poorly informed (insofar as surveying is concerned) but nevertheless aggressive and, therefore, influential, anti-surveying, engineering educator;

(2) The leaders of the surveying and mapping profession, who, although dedicated and qualified, are not

sufficiently active in avenging the insults that are constantly being heaped upon their profession, both from within and without; and

(3) Mossback members of the surveying profession itself, who are convinced of nothing about professionalism and engineering education except that their own brand has been good enough for them and that, therefore, it should be good enough for future generations.

This situation makes it imperative that an organization such as yours take hold of the matter. With your organization as a spearhead interested educators and qualified practitioners can evolve a curriculum which will provide sufficient technical training and cultural background for the practice of land surveying. Educational requirements for registration as Professional Engineers are pretty well standardized throughout the country. They had been developed almost entirely by college professors with relatively little contribution from practitioners. In Great Britain, on the other hand, the organization of Institute of Civil Engineers predated by many years the offering of college degrees in engineering and in Britain the qualifications for practice have, therefore, been largely determined by the practicing engineers. It seems to me that in the previous nebulous state of the program for education of Land Surveyors your organization could fulfill a similar task.

The problems of a Land Surveyor are more deeply influenced by local conditions than are those of other branches of engineering. To quote again from Mr. Dix's article:

"The case of the Land Surveyor—the property-line surveyor—the professional responsible for title surveys, in particular, is a local matter. The necessary legislation to control standards and regulations is a local matter—municipal, county and State.

"It follows that the actual application of the practice, the philosophy—and the teaching—of land surveying is a local and regional matter. A few good, strategically-located, regional schools are sorely needed—but more sorely needed are the students interested in studying for the profession. The move in California to establish a California Institute of Surveying is an example of this precept."

It would be quite feasible for your organization to arrange with one of the colleges in the State to offer a curriculum which you, the practitioners, can work with its administrators in framing; one that would be more suitable for the preparation of a Land Surveyor in Louisiana than could be furnished by any of the standard curricula established for Professional Engineering. You will, of course, have to see to it when such a curriculum is established that enough students enroll in it to make it possible for the college to continue offering it. Only thus can we ensure that the profession of Land Surveying in Louisiana will grow and improve in technological accomplishment and in status in the years to come.

The legal requirement that its practitioners be registered by the state before they are allowed to practice is one of the greatest advancements that a profession can achieve. When our board examines and registers a Land Surveyor we not only certify to the public that he is capable of practicing his profession but we agree to defend him from competition from others who have not so qualified. However, although a registration law is a powerful

tool it does not accomplish everything that everybody expects of it. Most of our registrants do not seem to realize that the state legislature can only pass such a law for the protection of the public and not for the purpose of guaranteeing minimum wages or for equal distribution of income to practitioners. Ethical considerations cannot and should not be included in the law. They must be handled by organizations such as yours. Ignorance of the fact that our Board has no authority over ethical behavior causes our mail to be about twice as heavy as it would be otherwise. Also many of our registrants cannot understand why a Board such as ours cannot summarily punish a individual who transgresses our law. We can only bring him to court if our attorney thinks we have sufficient evidence to justify it, and then the judge's decision may not agree with our own. However, it is only under a dictatorship that an administrative agency such as ours would be accorded greater powers than we now have. Let's remain a democracy!

In closing let me quote again from Mr. Dix's article to which I have previously referred—"Professional recognition cannot be achieved by having someone else or some collective agency force it upon others." Neither education nor registration will raise the status of our profession. We must earn it by our conduct and our ability. Every land surveyor who does a sloppy job or who conducts himself in an uncultured manner reflects on all the rest of us. The primary aims of this organization should therefore be to increase proficiency and ethical practice in its own members and to improve the picture that we, as a profession, create in the minds of the public.

NOPSI's Newest Unit Increases Capability 45%

The completion of Public Service's newest electric generating unit means that the Company's capability for serving New Orleans consumers is increased by over 45%. The new unit is located at Michoud Generating station on Paris Road near Chef Menteur Highway and can produce 248,000 kilowatts of electricity — enough to light almost two and a half million 100-watt lamps at the same time. As recently as 1952, this unit alone could have supplied all of New Orleans' electric power needs.

The new unit, largest in the Public Service system,

increases the Company's summer net generating capability to 770,000 kilowatts. The station's other unit, of 118,000 kilowatts capability, began operation in 1957. Both generating units at Michoud Station are modern "outdoor" type installations with major components designed to withstand the weather. The only part of the station enclosed in a conventional building is the control room.

Strategically situated in the fast-developing eastern section of New Orleans, Michoud Station is a neighbor to the huge NASA Michoud Saturn Plant and is on the Mississippi River-Gulf Outlet, New Orleans' new alternate deep-water ship channel to the Gulf of Mexico. It is one of three steam-electric generating stations serving New Orleans, all of which are inter-connected by transmission lines.

This generating unit at Michoud Station is one of many new and expanded facilities added in recent years. Since World War II, Public Service has spent more than \$130,000,000 to build and expand power plants, substations, and power lines.

Daly Opens N. O. Office

The Leo A. Daly firm of architects, engineers and planners has opened an office in New Orleans for the purpose of directing its operations in the Gulf Coast states and Latin America.

The newly established professional facility at 4035 Touro Street in New Orleans will expand the Daly Company's participation in the rapidly mounting volume of technological, commercial and institutional building that is taking place in Louisiana, Texas, Mississippi, Alabama and Florida; the Caribbean area and Central and South America. The executive director of the New Orleans operation is Lawrence E. Miller who also is a vice president of the firm.

The Leo A. Daly Company conducts business in all 50 states and appears in Architectural Forum's latest listing as one of the largest organizations of its kind in the world. The value of projects undertaken in 1962 in all phases of the firm's work in architecture, engineering and planning was in excess of \$260,000,000.

Among the major projects designed by the Leo A. Daly Company is the world's largest computer center for the Boeing Company in Seattle.

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Creating A New Image For The La. Engineer

PUBLIC RELATIONS REPORT

By FRANK H. WALK

The Public Relations Committee met at 8:30 a. m., Saturday, March 23 with the following in attendance: Frank H. Walk, Chairman; Warren K. Bankston, Editor, *Louisiana Engineer*; Allen Johnson, Public Relations Counsel; Andrew M. Moore, Alexandria Section; Albert H. Repscha, President, Lafayette Section; H. H. Mullins, President, Monroe Section; Charles W. Stokes, Director, L.E.S., and Calvin T. Watts, President, L.E.S.

Following a brief preliminary discussion, the following tentative conclusions were reached by those present:

1. The internal public relations program of L.E.S. appears to be adequately served at present by the *Louisiana Engineer* publication and it is essential that this publication be continued with the same format and high standards which have characterized its handling in the recent past.
2. A new and revitalized external public relations program is indicated at all levels of L.E.S. activity. One of the primary objectives and responsibilities of the Louisiana Engineering Society is to serve as the medium through which its members and their common profession are established and held in high regard by the general public. Failing to do this, L.E.S. fails in one of its basic responsibilities to its members and causes them to lose interest in their membership. Conversely, if a good job is done in this regard by L.E.S., current members will be caused to hold their membership in high value and other engineers will be attracted to join L.E.S.

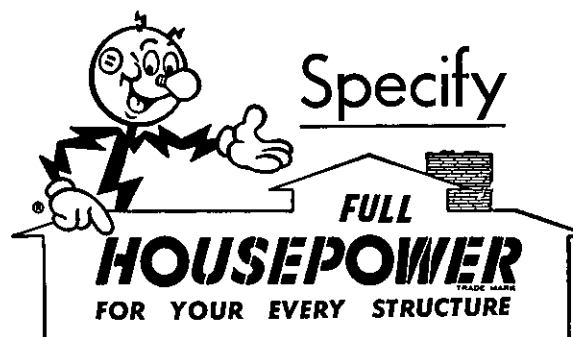
It was agreed that the primary public relations goal for 1963 should be to "Create a New Image for the Louisiana Engineer." In order to attain this goal, it was agreed that among other things the full cooperation of the Louisiana Press must be secured and maintained. Accordingly, the following initial steps in this regard should be taken:

1. Within the next few weeks and by all means prior to May 1, the president of each L.E.S. state section, in company with several other prominent engineers, should make a visit by appointment with the editor of each of the local newspapers. The basic purposes for this visit should be to thank the editor for his cooperation in the past, to acquaint or re-acquaint him with the position and importance of the engineering profession in the community, and to solicit his cooperation and support in the handling of all newsworthy matters pertaining to the engineering profession in the future.

The following additional noteworthy announcements and suggestions were made:

1. Chairman Walk announced that copies of the handbook entitled, "Public Relations for the Professional Engineering Society" would be distributed to the president of each state section within the next two weeks.

2. Director Stokes recommended that material on public relations be included as a prominent part of the L.E.S. Officers' Training Session to be held annually during the month of December in Lake Charles.
3. President Watts suggested that consideration be given to an annual ceremony during which a public recitation of the Engineers' Creed be given by a group of engineers. Such a group might include individuals receiving registration as professional engineers.
4. Allen Johnson suggested that an effort be made to have prominent engineers talk before annual meetings and state-wide conferences of other professional groups such as lawyers, doctors, etc. and also before civic clubs, chamber of commerce meetings, and the like.
5. Editor Bankston requested that state sections continue to send in photographs and information concerning local activities, including those of ladies auxiliaries and that any other newsworthy material, as well as suggestions for continuing improvement of the *Louisiana Engineer*, be forwarded to him.



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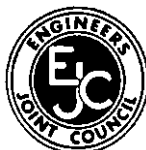
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From time to time the question arises as to the difference between engineers and scientists. The National Society of Professional Engineers has offered definitions that help to distinguish one from the other. Thus, "Engineers are primarily creators of technical things and services useful to man," while "Scientists are primarily discoverers and interpreters of information about nature." These definitions are admittedly overly simplified for brevity's sake. It is perhaps simpler to define "Science" and "Engineering" and then attempt to put the individual into the category which seems more completely to describe his field, recognizing that there is considerable overlap between these fields and the activities of their devotees. Engineers' Council for Professional Development has stated "The scientific function is the determination of what follows from a given combination of materials and forces" and that "The engineering function is the determination of what combination of materials, force, and human factors will produce, with a reasonable degree of approximation, a certain desired result. In other words, science is analysis; engineering is synthesis . . ." E.C.P.D. expands this into "Engineering is the profession in which a knowledge of the mathematical and natural sciences gained by study, experience and practice is applied with judgement to develop ways to utilize, economically, the materials and forces of nature for the benefit of mankind."

Still another definition is that the scientist studies "how and why" while the engineer "fashions." Put in other words "The scientist makes it known, the engineer makes it work."

If there still remains any doubt about what constitutes an engineer, it may be resolved finally and positively by *registration*. Registration as a "Professional Engineer" clearly establishes that the person under consideration is a recognized engineer qualified and licensed to practice his profession.



A new Engineers Joint Council publication describes existing and proposed facilities for servicing the information needs of practicing engineers.

Entitled, "INFORMATION SYSTEMS—Essential Tools in Engineering Application of Science for the Needs of Society," the 32-page publication reviews current and planned information activities of the Engineering Societies Library, the Engineering Index, the American Institute of Chemical Engineers, and the Engineers Joint Council.

A concluding presentation by Walter M. Carlson, Department of Defense Director of Technical Information and Chairman of EJC's Information Systems Committee

envisions how tomorrow's engineer is likely to utilize modern information systems in carrying out his professional activities in new and exciting ways.

The publication constitutes the papers presented at a jointly sponsored meeting of Engineers Joint Council and Section M (Engineering) of AAAS in conjunction with the AAAS Annual Meeting held December 27, 1962.

For prepaid orders the cost is \$1.75 per copy, otherwise there will be an extra handling charge of 25 cents.

The nation's engineering schools can use three times as many graduate fellowships as now available, according to a survey of Engineering college deans conducted by the Engineering Manpower Commission of EJC. This information follows close on the heels of recommended Federal assistance for graduate training in the areas of engineering, mathematics and the physical sciences recently suggested by the President's Science Advisory Committee. For the engineering field, at least, the EMC survey clearly points up a need for more graduate fellowships.

The 136 deans who responded represent 90% of all engineering colleges offering graduate courses. They reported 3,160 graduate fellowships now in existence, with only 33 going unused, largely because of special provisions or limitations. The deans reported that 6,420 additional fellowships would be used if available. One-third of this number would include stipend only for the student, and two-thirds with stipend for the student and the university. Several deans stressed the necessity for providing support in such form that it would also stimulate physical and faculty resources at the graduate level.

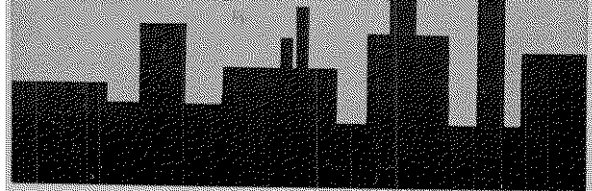
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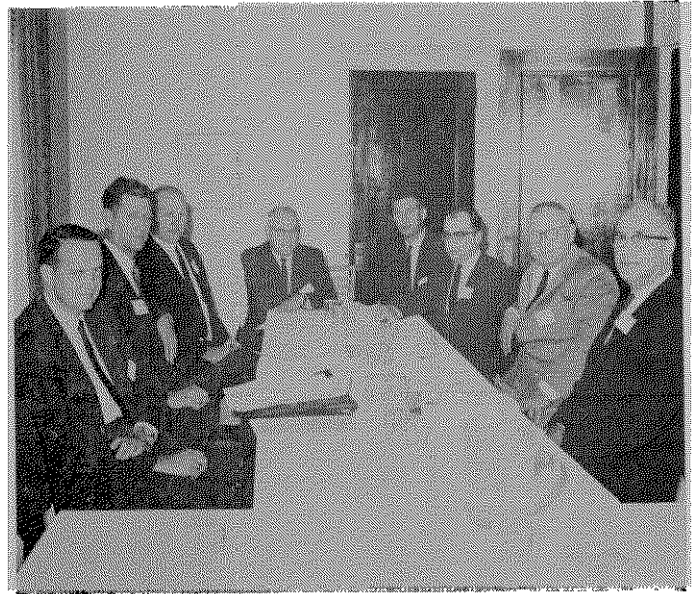
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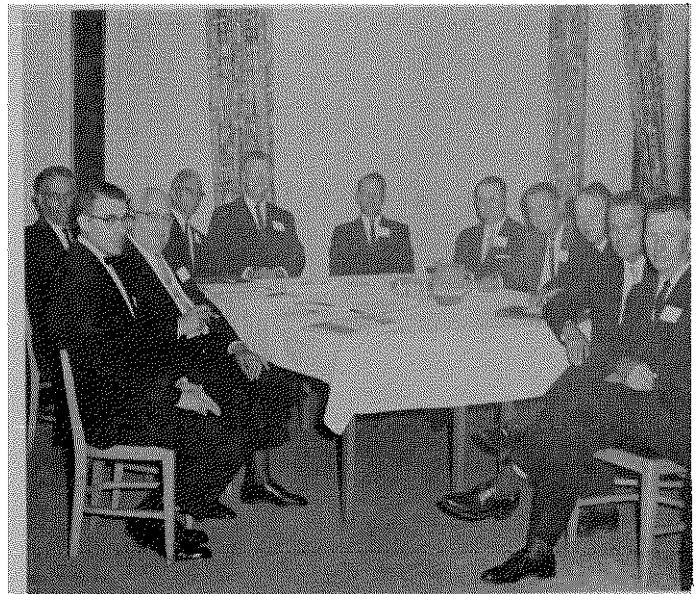
The Alexandria Section hosted the conference



The Legislative Committee convenes



The Engineers' Week Committee plans next year's event



The Ethics and Professional Conduct Committee discuss Ethics and the Engineer.

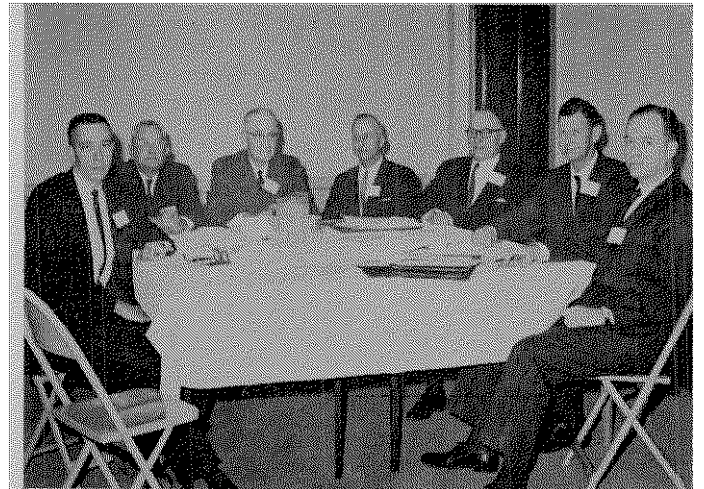
AL STATE PLANNING CONFERENCE



A. M. Moore introduces the keynote speaker.



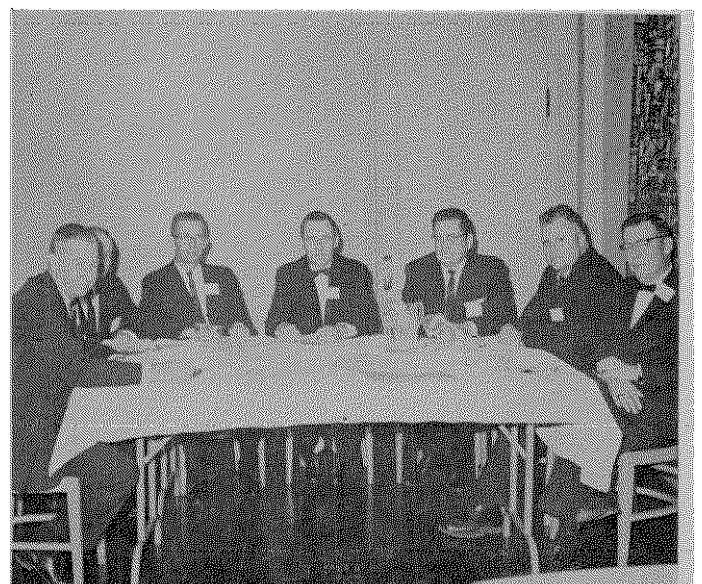
Claude Kirkpatrick delivers the keynote address.



The Functional Section, PEPP, makes plans for the year.



The Public Relations Committee discuss plans for the future

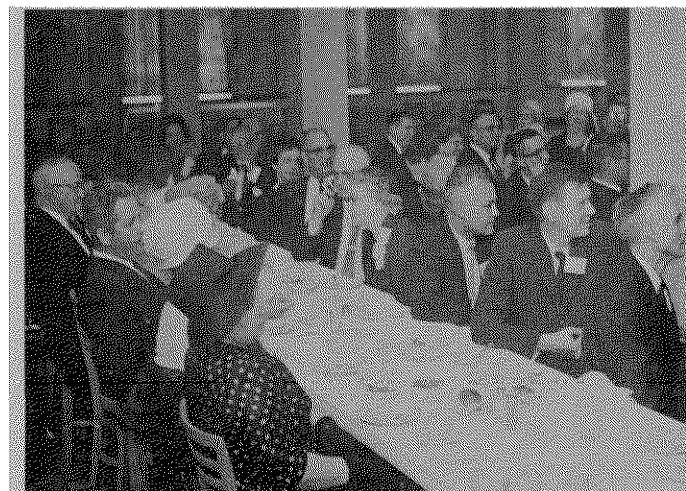


The Membership Committee compares ideas

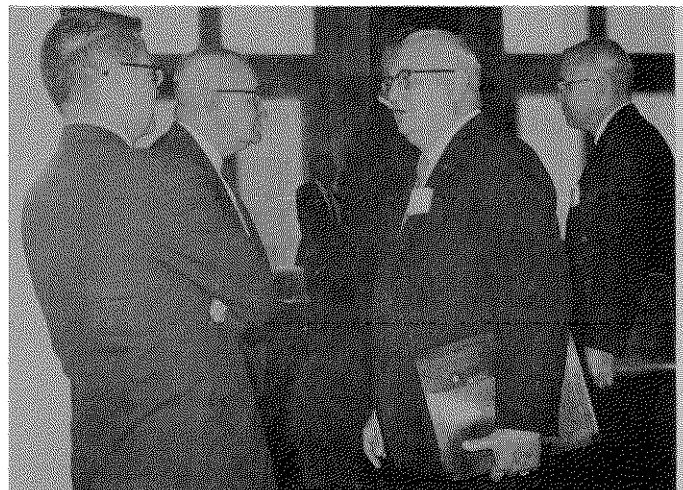
ANNUAL STATE PLANNING CONFERENCE



A. M. Moore, Claude Kirkpatrick, Mrs. Kenneth Preston, President, Alexandria Chapter of the Woman's Auxiliary of LES; Calvin T. Watts, LES President, and Louis Daigre pause to pose at the conference.



The banquet was a huge success, no matter which way you looked at it.



Many of the delegates found the lobby an ideal place to discuss business and make plans

Highlights Of The Seventh Annual State Planning Conference

The Seventh Annual State Planning Conference of the Louisiana Engineering Society was held March 22-23 at the Hotel Bentley in Alexandria.

Calvin T. Watts, Baton Rouge, society president, presided.

Professionalism, vocational guidance and the professional engineer's role in the community were among the topics discussed. Reports appear in this and subsequent issues of *The Louisiana Engineer*.

The two-day workshop session opened with registration and a meeting of the Board of Direction. A social hour followed with the Alexandria Section as hosts.

Workshops occupied the remainder of the meeting, with a luncheon conducted by Louis Daigre, president of the Alexandria Section of the Society. Claude Kirkpatrick, director of the State Department of Public Works, discussed Louisiana's natural resources.

Panels and committee chairmen included:

Engineers' Week—J. J. Thigpen, Ruston; Ethics and professional conduct—Marion C. Bubenzer, Shreveport; Functional section, Professional Engineers in Private Practice—Leo M. Odom, Baton Rouge; Honors and Awards—Ben T. Bogard, Ruston; Legislative—Henry L. Landry, Baton Rouge; Membership—Frank W. Irland, Shreveport; Vocational Guidance—Lawrence R. Daniel, Baton Rouge; Employment—William A. Baker, Jr., New Orleans; State Planning—A. M. Moore, Alexandria; Public Relations—Frank H. Walk, New Orleans.

Roy Sessums, New Orleans, led a special committee in discussions of a proposed LES reorganization program.

The Woman's Auxiliary, led by Mrs. W. S. Nelson, participated fully in the registration and administration of the meeting, and also enjoyed a program of social events.

Two NASA Contracts Awarded

Two contracts, totaling \$647,290, have been awarded to New Orleans firms for construction and modification of facilities at the NASA Marshall Space Flight Center's Michoud Operations.

Boh Brothers Construction Co. received a \$546,940-contract for construction of a Saturn barge dock and access road. The dock will be located 600 yards west of the Michoud Manufacturing Building on the Intracoastal Waterway.

Boosters for the Saturn I space vehicle will be shipped from Michoud to the Marshall Center in Huntsville, Ala., for static firing, returned to Michoud for final checkout and shipped to Cape Canaveral, Fla., for launch. The Saturn V boosters will be barged to the Mississippi Test Operations for static firing and returned to Michoud for shipment to the Cape.

The project, to be completed in seven months, consists of constructing 1,700 feet of asphalt roadway, a 75 by 200-foot concrete dock with concrete pilings and two mooring wharves with pilings.

"The dock and road addition was designed by J. Ray

McDermott and Co., Inc., of New Orleans, under a contract let by NASA last September.

"The second contract was awarded to Landis Construction Co., Inc., for the installation of new and repair of existing plumbing fixtures and facilities in the Saturn manufacturing area. Work under the \$100,350 pact is to be completed in 120 days.

Perez Awarded Contract For New Michoud Building

A \$425,000-contract for the design and construction supervision of an engineering and office building at the Marshall Space Flight Center's Michoud Operations has been awarded to August Perez and Associates of New Orleans by the National Aeronautics and Space Administration (NASA).

The two-story building is expected to be completed in the latter half of 1964.

Perez was selected by NASA for negotiation of the design contract in January.

The new Michoud building will be occupied by engineering and administrative personnel of the Boeing Co., Chrysler Corp., and Mason-Rust, prime contractors at the Saturn booster manufacturing installation.

Office employees who cannot be accommodated in the Operations' Administrative and Engineering Buildings will use the new structure. Some 1600 Boeing and Chrysler employees are now temporarily housed in leased office space in downtown New Orleans.

The building, to provide approximately 500,000 gross square feet of floor space, will be west of the Michoud plant, facing the Old Gentilly Highway, within the present 845-acre complex. An adjoining parking lot and cafeteria will also be built.

Over 500 Technicians Apply For Certification

More than 500 engineering technicians throughout the country have applied for certification from the newly established Institute for the Certification of Engineering Technicians. Dr. Merritt A. Williamson, dean of the College of Engineering at the Pennsylvania State University, and chairman of the Institute's Board of Trustees, has announced that nearly 200 individuals have received certification in one of three grades: junior engineering technician, engineering technician, and senior engineering technician, with minimum experience requirements of two, seven and seventeen years respectively.

The Institute, sponsored by the National Society of Professional Engineers, was organized in 1961 to provide recognition for those members of the technological manpower team who work for engineers and often supervise other technicians and craftsmen.

"Certification resulting from voluntary action," Dr. Williamson stated, "provides an indication to an employer that an individual not only has attained a certain level of technical qualification, but also that he has an interest and a desire to progress in his chosen work.

NATIONAL ENGINEERS' WEEK REPORT

By GROVER J. TRAMMELL

State Chairman

The celebration of National Engineers' Week for 1963 was very successful, thanks to the hard work put forth by the local chairmen and their colleagues, and to the kind cooperation of the various news media and business and industry throughout the state. A proclamation declaring National Engineers' Week was issued by Governor Jimmie H. Davis and by the mayors of many of the cities in the state. Stories on Engineering and Engineers' Week were carried by all leading newspapers in Louisiana, and several carried special supplements in the Sunday editions with feature stories on Engineering.

The New Orleans observance featured a joint luncheon with the Members Council of the Chamber of Commerce of Greater New Orleans. The speaker was Dr. Gordon Atwater, internationally known geologist who spoke on offshore drilling and what it means to the State of Louisiana. On Thursday night Mr. John Martinez of Tulane University moderated a panel discussion over television station WYES on educational requirements of future engineers. The local radio stations made many announcements and prominent engineers were featured as Secretary of the Day and Engineering Businessman of the Day.

The Baton Rouge Section held a joint meeting with the Louisiana Section of the American Society of Civil Engineers. The featured speaker was Mr. H. B. Myers, Chief Engineer, Louisiana Department of Public Works who discussed "The Atchafalaya Floodway." The week's celebration was climaxed by a TV program over station WAFB on "The Professional Engineer in Baton Rouge and Louisiana."

The Lake Charles section featured a 30-minute TV panel discussion slanted to inform the public on the scope of the Engineering profession. The program was presented over station KTLG and several prominent engineers participated in the discussion. A joint banquet was held with IEEE, SAME, AIChE, and ASME. The principal speaker was Mr. F. M. Fister, assistant Vice-President of Southern Bell Telephone and Telegraph Company. Mr. Fister's subject was the Engineers' Week theme "Engineers Build for the Future."

The annual banquet in Alexandria honored Mr. W. J. Rountree as Engineer of the year. Many city, parish, and state officials were also in attendance. The section also presented a TV program featuring the Section President and Vice-President.

The Shreveport Section was very successful in obtaining a joint effort with nine other technical societies in their area. Their celebration was highlighted by a full program on Saturday, February 23. During the afternoon a technical program was presented featuring talks by Mr. Loyd T. Williams, Chief Electrical Engineer, Southwestern Power Company; Mr. J. L. Horton, Manager of Product Development, The J. B. Beaird Company; and Mr. Edward C. Greco, Senior Research Associate, United Gas Corporation Research Laboratory. During the evening

a dinner meeting was held at which Mr. Sam Jones, former Governor of Louisiana spoke on "Louisiana and Its Future."

The highlight of the Monroe Section observance was a dinner meeting held at Louisiana Tech. Dr. F. Jay Taylor spoke to the group on "Some Trends and Problems in Technical Education." The Monroe Section was also very successful with a special honoring Engineering in the Monroe Morning World of Sunday, February 17.

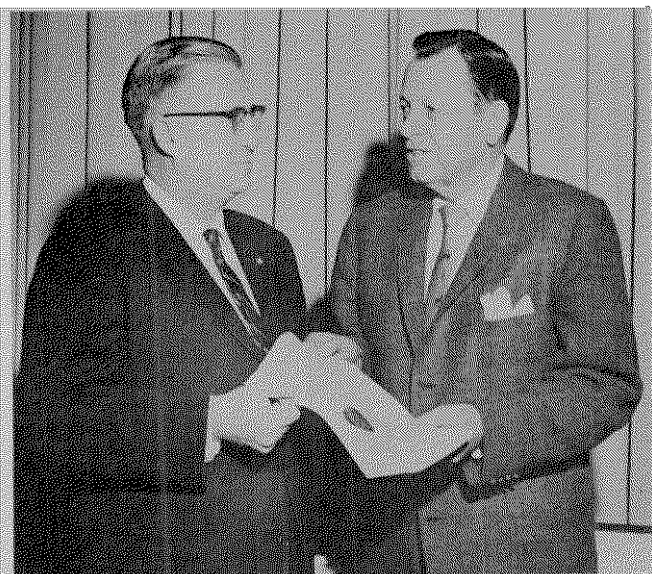
The above are only a few of the highlights of the many activities which contributed to making Engineers' Week of 1963 a great success in Louisiana. Your chairman would like to express heartfelt thanks to all of the many people throughout the state who contributed their time and effort so generously, and especially to the members of the committee:

Professor L. R. Daniel, Vice Chairman
Mr. George B. Walther
Mr. Fred Brownlee
Mr. W. J. Rountree
Mr. O. T. Ice
Mr. K. J. Thomas
Mr. W. C. Vencinte
Mr. Hoyt Brown, Jr.

Engineers' Week in Louisiana continues to grow and to make the public more conscious of the many contributions made to society by the Engineering Profession. The recognition of the profession and the status of the engineer will be ever increasing as "Engineers Build for the Future."



Mayor Victor H. Schiro of New Orleans signs a proclamation proclaiming National Engineers' Week while surrounded by (left to right) Fred Simmons, Vice-Chairman, Engineers' Week, J. T. Knight, First Vice-President, LES, Hoyt W. Brown, Jr., New Orleans, Chairman, and Marian Wellborn, Bridge Engineer, City of New Orleans.



Gov. Jimmy H. Davis presents LES President Calvin T. Watts with a proclamation proclaiming National Engineers' Week.



Highlight of National Engineers' Week in Lake Charles was a banquet sponsored jointly by LES, AICE, the Institute of Electrical and Electronic Engineers, ASME and the Society of American Military Engineers. Present at the banquet were (left to right): Gordon L. Wedemeyer, President of the Lake Charles Chapter of SAME; George B. Walther, Jr., President of the Lake Charles Section of LES; Charles W. Hack, Chairman of the Lake Charles Chapter of AICHE; Charles W. Stokes, representing ASME and Mohns Thornton, Lake Charles Chairman of National Engineers' Week.



Hoyt W. Brown, Jr., Engineers' Week Chairman, donates the National Engineers' Week trophy donated by Combustion Engineering, Inc., to a representative of T. A. Grissom, owner of Gushing Wind, winner of the Engineers Week Handicap at the New Orleans Fair Grounds.

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BRIG. GEN. STILWELL ADDRESSES L.E.S.

For several reasons, I count it a signal privilege and pleasure to participate with the distinguished membership of the Louisiana Engineering Society on the occasion of its 66th Annual Convocation. I hope you will accept the sincerity with which I say for us Northerners the city of New Orleans spells the charm of history, of blending of Old World and New, of things gastronomic, and of a level of Southern hospitality that no other American metropolis can match. And once here, one finds all that one had anticipated. Frankly, I have looked forward to return since February 1942 when as a Captain of Engineers enroute to my Division in Texas, I savored the warmth and color of this great city.

On the past Fourth of July, when the guns roared the roll call of states, 13 members of the Class of 1966 stood just a little taller when the 18th shot saluted the great state of Louisiana. These thirteen were the latest increment of young men this splendid state has been sending north to us for 145 years. The first, incidentally, was Joshua Baker of St. Mary's Parish, Class of 1819, who, following a career in the Army, was director of Louisiana's Board of Public Works and, later, member of the State Senate. Baker heads a long list of illustrious Louisianians, graduates of the United States Military Academy. As examples, Paul Hebert, No. One man in the Class of 1840, whose first duty was as an engineer developing the fortifications which guarded the western approaches to New Orleans. That job done, he was appointed Chief Engineer of the State. He put uniform on again to fight gallantly in the major battles of the Mexican War; and took it off to be elected, at age 35, Governor of Louisiana. Some years later, another West Point graduate acceded to the gubernatorial post: Francis Nicholls of Donaldsonville in the Parish of Ascension. Because of his marked contributions to the betterment of Louisiana, its citizenry elected him both the 20th and 24th Governor of Louisiana.

At the moment of Louisiana's secession in January 1861, a native son, the magnificent P.G.T. Beauregard was Superintendent of the Military Academy while William Tecumseh Sherman, also of West Point, but an Ohioan, sat as first President of what is now Louisiana State University. As a result of Louisiana's very painfully reached decision, both resigned, travelling south and north, respectively, to carve out fame and, I hope you will agree, glory as peerless battlefield commanders, one in gray and one in blue. It is interesting to note that two West Pointers of Louisiana origin headed these two great institutions at mid-20th Century. General Campbell B. Hodges, '03, born in Goran, and one of my predecessors as Commandant of Cadets was Louisiana State University's prexy from 1941-44, while General Blackshear "Babe" Bryan of Alexandria was Academy Superintendent from 1954-56. The relationship of Military Academy, your State University and this Society calls to mind Samuel Lockett of the West Point Class of 1859. Number Two man in order of aca-

Excerpts from a speech by Brigadier General Richard G. Stilwell, Commandant of Cadets, United States Military Academy, West Point, New York before the annual meeting of the Louisiana Engineering Society, January 10, 1963, Jung Hotel, New Orleans, Louisiana.

ademic merit and an officer in the Corps of Engineers. A native of Alabama, he fought with the Confederacy as Chief Engineer for such redoubtable commanders as Braxton Bragg, Albert Sidney Johnston, Beauregard and Pemberton—all West Pointers. In the aftermath of the War, he was elected Professor of Mechanics and Engineering of your State University, and filled these chairs until 1873, attaining a singular reputation as an educator and exercising a most salutary influence over the young men with whom he came in contact. It is noteworthy that during this same period he was commissioned to conduct a complete topographical and geological survey of Louisiana and produced elaborate maps of the entire area.

I would close out this random sampling by mention of two latter day greats. The first is General "Lightnin' Joe" Collins of Guadalcanal and Normandy fame, brilliant Chief of Staff of the United States Army a decade ago and still active in things international and national. The second is my long time mentor and friend, General Clyde D. Eddleman, of nearby Lake Charles, who retired last year after climaxing his career by command of Army Forces in Europe and, subsequently, by service as the Army's Vice Chief of Staff.

Thus the impact of Louisiana on the Military Academy, and the reciprocal thereof, extends unbroken from the earliest part of the 19th Century. And, appropriately enough, things and feats engineering have highlighted this intimate connection. I need not suggest to this audience the continuous and fruitful labors of the United States Army Corps of Engineers in river and harbor works and associated construction and conservation activities; but I do note with pleasure the presence here today of the President of the Mississippi River Commission, Major General Ellsworth Davis, and his top associates.

The role of the Army Engineers in internal improvements affecting the national economy is still significant, but it is only a fraction of what it was a hundred years ago and more. Prior to the Civil War, the Military Academy was the national school for civil engineering—the only institution of its kind until 1835 and the leading center of such instruction for the ensuing 30 years. At that period of our nation's history and with the consent and encouragement of the Congress, West Point filled an immense gap, making an equally immense contribution to the national development.

West Point's mission is a straight-forward but all-encompassing one: to prepare young men for careers as professional officers in the U.S. Army: men with the solid foundation for continuous growth, with the versatility and reactive ability to meet a myriad of problems in as many different environments, with the resourcefulness and drive to insure that the Army makes a maximum contribution, short of war, to the furtherance of U.S. foreign policy and security; and, above all, men with those deeply ingrained fundamental virtues which insure effectiveness in the ultimate challenge—leadership of men in battle. To this preparation our engineering education makes a distinct contribution—but it is far from the whole story.

While certain of the qualities and attributes demanded of the officer of the future remain immutable, others are

subject to change.

The widening frontiers of knowledge; the heavy impact of scientific and technological progress on the Army's requirements for equipment, methods and doctrine; the increasing contacts of Army personnel with all segments of national life and, concomitantly, their extensive service in all corners of the globe—all these impinge on the balance, breadth and depth of the educational base. From our constant studies of the future, certain imperatives have been deduced which serve as guidelines for our current curriculum and its subsequent detailed modifications.

The first is, that while we aim to be one of the very best educational institutions, we must never lose sight of our primary goal: the production of the prototype professional who has the capability to become at once a combat leader, a military executive, a recognized scholar and a technologist.

Second, all cadets must complete, or show evidence of having completed elsewhere, every course of standard core curriculum. It is standard because our products must, in the first instance, be generalists.

Third, specialization must come after graduation and in directions determined by Army requirements. But the level and quality of education provided must enable our product to enter any field of post graduate study. Our estimate is that 60% of each class will attend civilian graduate schools, predominantly at the master's degree level.

Fourth, the curriculum must include the wherewithal to challenge the intellectual capacities of each cadet, to capitalize on his special interests and talents in a particular field, and to enable him to proceed as fast and far as he can.

Overall Social Sciences and Humanities courses constitute almost 40% of the curriculum. Each cadet takes two years of one of five languages; and two years of English with the terminal semester concentrated on writing and speaking.

The base of the Natural Sciences and Engineering courses, of course, is a solid and extensive mathematics program, carefully tailored for the oncoming basic and applied science sequence. The prerequisites for admission include Algebra, Plane and Solid Geometry, and Analytic Trigonometry. The starting point is a course in Analytic Geometry and Calculus. The program includes the equivalent of a three-year standard analysis sequence, including analytic geometry, calculus, linear algebra, an augmented coverage of differential equations, and a course in probability and statistical inference.

Concurrently, the Freshman pursues two basic courses under the Department of Earth, Space and the Graphic Sciences (called, in cadet parlance, "All this and Heaven, too"). Fundamentals covers earth and space measurement (surveying), engineering graphics, descriptive and vector geometry, and graphical mathematics. Environment embraces physical geography, touching on the special earth sciences; descriptive astronomy, elemental astronautics and current space programs. This course, together with World Geography conducted by the same Department, provides a foundation for subsequent area studies in Social Sciences and for progression into weapons systems concepts and analyses.

In computer programmings, each Freshman cadet will have a chance for "hands-on" equipment in solving a problem. We have recently activated an Academic Computer Center built around the GE-225 digital computer, with an 8000 word memory, four tape transports and all associated accessories. The Center handles a class of 200 seated and contains closed circuit TV for projection of detailed computer operations, movie projector, and library facilities.

Knowing that the young officer will encounter the military family of computers early in his career, we believe it essential that each cadet understand basic computer theory and gain an appreciation of what a computer can do and, equally, what it cannot do. Beyond that, we recognize the importance of a well equipped, versatile computer center to our educational program overall.

Passing now to the third class or sophomore year, Physics and Chemistry, solid under-graduate courses, require no footnoting.

The second class or junior year is heavily weighted on the applied science side. Electricity, a sixteen credit hour course, encompasses a five-hour course in Circuitry, a two-hour course in Direct Current and Alternating Current machinery, a five-hour course in Electronics (to include solid state) and communications, and a four-hour course in Atomic and Nuclear Physics. To support laboratory work, the Department boasts of a subcritical reactor, analog computers, and a special purpose digital computer. Key electives are Nuclear Reactor Theory and Information Transmission.

Mechanics of Fluids breaks out into two natural components: Thermodynamics and the law of mechanics as they apply to liquids, vapors and gases, with reasonable emphasis on aerodynamics. The first semester of Engineering Mechanics, Mechanics of Solids, covers the principles of mechanics essential for an understanding of basic engineering, including the study of statics and strength of materials. The second semester of the Mechanics of Solids course deals with the principles of fundamentals to engineering dynamics including the study of Kinematics and Kinetics.

And so the cadet accumulates the underpinning for the study of engineering per se.

In the First Class or Senior Year, we present a four-term program containing adequate work in Engineering to insure that cadets understand the basic philosophy of Engineering and the application of mathematics and science previously studied. The choice of courses reflects the special mission of the Military Academy. The Ordnance Engineering Course, focusing on Military Weapons Systems, and stressing theory rather than hardware, is a self-evident prerequisite for entrance into the modern-day army. Civil or Structural Engineering is the best discipline for instructing future army officers in the philosophy of Engineering, by which we mean the logical reasoning process typically applied to the solution of engineering problems: definition of the problem through analysis of all pertinent factors; synthesis of results of analysis; exercise of creative facilities in design of solution; and acceptance of responsibility for successive decisions.

The Ordnance Engineering Course is necessarily broad, given the system approach. It opens with an examination

of the sources of energy, particularly explosives (including fusion/fission reactions), fuels and propellants. The major portion of the year is devoted to the Ballistics and Propulsion Subcourses. The finale of the course is a weapons system design study extending to a statement of military characteristics, program plan and development of preliminary engineering concept and design parameter.

The first semester of the Civil Engineering Course is the well known one of Structural Analysis. Thereafter, we proceed to a study of the principles and theory of design of steel and timber structures, with an introduction to reinforced concrete design. The climax of the course is a complete engineering analysis-design problem which requires application of all available math-science tools. During the current academic year, the problem is design of a static test stand for a solid fuel missile with characteristics approximating the Army's Pershing. The cadets first develop a set of functional considerations and, then, a structural concept. To give added realism, the next requirement is to determine optimum site of the test facility within a specified area of the lower Tennessee River Valley. They then develop design criteria and finally proceed to the detailed design of key tension and compression members, and those subject to combined direct stress and flexure.

The combination of these two courses, Ordnance and Civil Engineering, gives the cadet an appreciation of the total art of engineering which provides the Army its capabilities in mobility, maneuver, and firepower.

The Advance Ordnance and Civil Engineering Courses are called Honors Courses which refer primarily to our pedagogical methods, admittedly traversed by only a handful of cadets. These cadets cover the same ground as do the most advanced sections, but in a shorter space of time. This acceleration permits them to devote part of the final semester to a special project, either complete in itself or establishing the parameters for a more complex investigation in graduate school.

Beginning next year, a limited number of cadets, who have demonstrated competence in differential equations, fluid mechanics, and electricity will be permitted to substitute for Civil Engineering a two term course entitled *Introduction to Nuclear Engineering*, which will include much of the structural analysis sub-course, and will end with an analysis-design problem involving a military nuclear power plant. Cadets will be required to take as a concurrent elective, Nuclear Reactor Theory. We are not yet prepared to develop a comparable option in the electronics engineering field because, for self-evident reasons, that subject does not lend itself to the presentation of design philosophy as readily as civil and nuclear engineering.

As servants of the United States, of each individual state, and, indeed, of this community, we ask only that you give us your moral support, that you help us insure that, each and every year, the best possible cross-section of Louisiana's young men take their place as your representatives in the United States Corps of Cadets.

For your gracious attention, I thank you very much.

Gulf Semiconductors, Inc., Southeastern firm headquartered in Coral Gables, Fla., has been appointed a distributor for General Electric electronic capacitors.

Rhodes—Field Notes By Allen Johnson

The passing of Mr. William Rhodes, a past president of the Louisiana Engineering Society, bears more than usual mention in this column. Mr. Rhodes undertook the assignment of editor of *The Louisiana Engineer* four years ago when a concerted effort was being made to broaden the role of the journal in serving the engineering profession of Louisiana. He applied himself to this task for three years with diligence, patience and at the moment called for, with humor. To his efforts goes the credit for a major share of the success enjoyed by the journal. We were privileged to share in a personal association of more than 40 years, and will miss Mr. Rhodes.

LES members have been invited to participate in special tours of the Nuclear Ship Savannah when it visits New Orleans May 15. The tour lasts some 25 minutes, and is an opportunity long awaited by many engineers. Those wishing to specify a time for their tour have been asked to contact the General Operating Agent, States-Marine Isthmian Lines, 225 Baronne Bldg., New Orleans 12, La.

Another invitation to professional engineers concerned with any aspect of homebuilding has been extended by the Homebuilders Association of Greater New Orleans. May 12-19. May 14 has been set aside as "Architects and Engineers Night," and those wishing to attend should contact Mr. Robert F. Morrow, chairman, New Orleans Home Show, 1639 Gentilly Blvd., New Orleans 19, La. Special free tickets will be provided upon request.

Annual meeting of the National Engine Use Council will be held in New Orleans May 27-28, says Earl Bridges, executive vice-president, Reagan Equipment Co. and a national director. Speakers include A. G. Crews NEUC chairman and administrative engineer for Southern California Gas Co., Los Angeles; "Economic Forces Affecting the Engine Market"; Charles J. R. McClure, St. Louis; "Engines in the Total Energy Concept"; Frank W. Murphy, Tulsa, Okla.; "Role of Automation," and Haines Finnell, Los Angeles, "Engine-Driven Air Conditioning Field." Engine maintenance, specification fuel for LP-gas engines, dual-fuel applications and operation of unattended engines will be topics of discussion. Turbine engines will be subject of a panel discussion.

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What Every Louisiana P. E. Should Know

This is another in a series of articles prepared by the Editorial Staff of the LOUISIANA ENGINEER in which an attempt will be made to answer questions of interest to professional engineers in this area. Where, in certain instances, it becomes necessary to answer questions of a controversial nature, it must be re-emphasized that the opinions expressed are those of the Editorial Staff and do not necessarily reflect the feelings of the Louisiana Engineering Society nor the Louisiana State Board of Registration for Professional Engineers and Land Surveyors.

QUESTION—Is it possible to register as a Professional Engineer in Louisiana without graduation from an engineering college?

ANSWER—Yes, provided the applicant fulfills the following requirements:

1. He must present a specific record of eight years or more of experience in engineering work of a character satisfactory to the Board and indicate that he is competent to practice engineering.
2. He must successfully pass a written or (at the option of the Board) written and oral examination designed to show knowledge and skill approximating that attained through graduation in an approved four-year engineering curriculum.

QUESTION—May a contractor, executing work designed by a Professional Engineer, obtain credit for such work toward registration as a Professional Engineer in Louisiana?

ANSWER—Yes. The Louisiana Act states that such work may be considered toward qualification for registration.

QUESTION—Is it necessary that an applicant for registration as a Professional Engineer be practicing his profession at time of making application?

ANSWER—No. The Louisiana Act states that any person, having the necessary qualifications prescribed in the act to entitle him to registration, shall be eligible for registration although he may not be practicing his profession at the time of making application.

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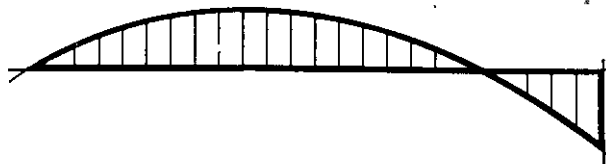
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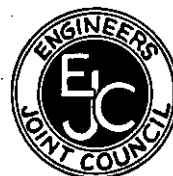


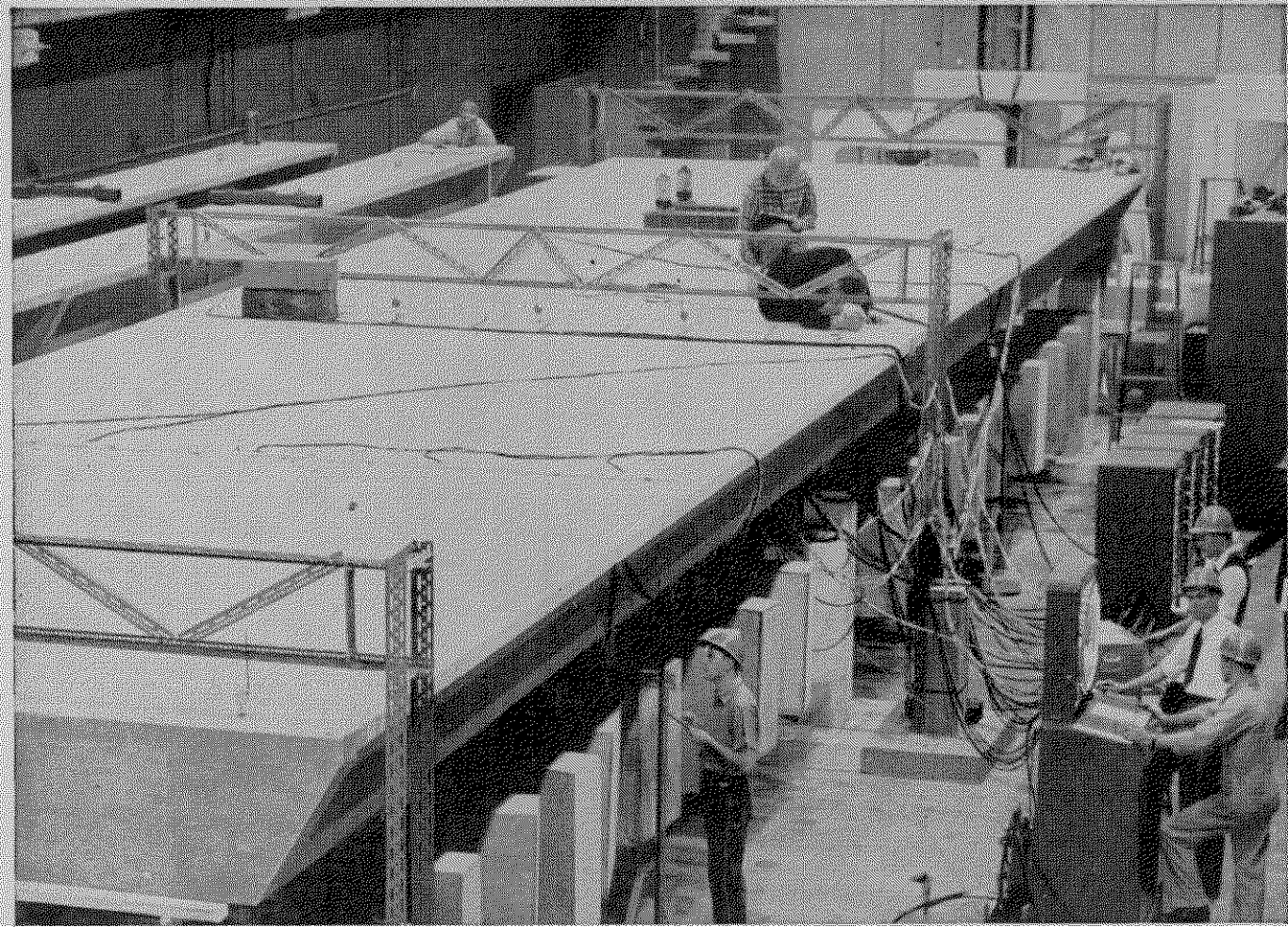
B. R. OUTING
ATTRACTS ENGINEERS
(See Page 14)

ENGINEER

Vol. 49 No. 3

June, 1963





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THE LOUISIANA ENGINEER

Vol. 49

JUNE, 1963

No. 3

OUR COVER: Enjoying a brief pause during the many activities at the Baton Rouge Annual Outing are (L. to R.) Doug Latimer, Nick Carter, LES President Calvin Watts, Dave Carville and Louis Duclos.

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Minutes Of The Board, LES

LOUISIANA ENGINEERING SOCIETY

Minutes of Meeting of the Board of Direction held at the Hotel Bentley, Alexandria, on Friday, March 22, 1963

The meeting was called to order by President Watts with Board Members Carville, Daigre, Irland, Janssen, Knight, Mullins, Rep-scha, Stokes and Fernandez present. Messrs. Leo Odom, Roy E. Johnson, DeWitt Morris and several other members also were in attendance, as was Mr. Allen Johnson, Public Relations Counsel. Minutes of the meeting held in February were accepted as cor-rected.

President Watts advised that he had appointed the following com-mittees to explore the feasibility of establishing two additional functional sections within the Louisiana Engineering Society:

Functional Section for Engineers in Industry
DeWitt L. Morris, Chairman
George Elmer May
Francis B. Sessums

Functional Section for Engineers in Government
Hu B. Myers, Chairman
Jerome C. Baehr
Louis Ducloux
E. F. Hughes.

The president also advised of the appointment of Dr. Elvin J. Dantin to study the Louisiana Industries-College Council request for support in promoting its objectives in the field of higher education. Additional appointments to this study group are under consideration.

President Watts reported the receipt of a letter from the U. S. Treasury Department asking LES to write to individual members urging them to buy US Savings Bonds. Mr. Janssen moved that the society comply with this request, seconded by Mr. Mullins and carried.

The secretary reported on the NSPE Executive Secretaries' Con-ference held in Washington on March 11-12.

The secretary read a report of the Ethics and Professional Con-duct Committee on the Ranna-Domopoulos & Ferguson case. Mr. Repscha moved that the report be accepted and the committee be commended for its excellent work, seconded by Mr. Mullins and carried.

The board then discussed the proposed Manual of Professional Practice for the Use of Engineers and Clients, and Mr. Janssen moved that it be accepted with minor corrections. The motion was seconded by Mr. Knight and carried.

Mr. Knight moved that Mr. Forrest E. Crawford, applicant for membership on the March ballot, be admitted to the grade of Af-filiate Member. Motion seconded by Mr. Stokes and carried.

Mr. Knight moved that the resignation of Albert H. Rordam (Affiliate Member-Metairie) be accepted with regret, seconded by Mr. Mullins and carried.

The secretary reported the recent deaths of members Charles M. Rogers and John H. O'Neill, Sr., after which the meeting ad-journed.

JOHN P. FERNANDEZ
Secretary-Treasurer

LES Members Attend NEUC Meet

Members of the Louisiana Engineering Society at-tended the National Engine Use Council held in New Orleans May 27-28.

The meeting's principle objective was to provide par-ticipants with information that will assist them in in-creasing the sale of engine-driven systems.

Part of the two-day program was given over to a five-man panel discussion on turbines. W. F. Wright, Jr., Director of Utilization, Southern Union Gas Co., moder-ated the panel.

Keynote speaker at the two-day council was Ambassa-dor de Lesseps S. Morrison, U. S. representative to the Council of the Organization of American States. The

Ambassador discussed generally the current trade rela-tions and business practices between the OAS countries and commented on how American businesses can conduct their operations to increase business with this segment of the foreign market.

U. S. Steel Moves Office

On May 1, the New Orleans District Sales Office of United States Steel's Tennessee Coal and Iron Division moved from 2457 Canal street, in the Caribe Building, to the John Hancock Building on Lee Circle at 1055 St. Charles Ave.

Two other U. S. Steel divisions, Oil Well Supply and National Tube, also moved to the new location in suites adjoining TCI's suite of offices. The three divisions will utilize the same reception room.

Thirty counties in the state of Mississippi and the en-tire state of Louisiana, consisting of 64 parishes make up the New Orleans Sales District.

Chief products made by TCI customers in this district include ships, barges, tugs, off-shore drilling rigs, pres-sure vessels, tanks, and equipment for the petro-chemical industry.

An important development in ball bearing technology announced by the New Departure Division of General Motors Corporation will result, according to engineering laboratory tests, in a remarkable improvement in the life of ball bearings the company produces.

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A. M. Lockett To Build New Facility In Jefferson



Participating in ground-breaking ceremonies for A. M. Lockett's new combined manufacturing and warehouse facility in Jefferson Parish are (L. to R.): J. W. Simon, Jr., Executive Vice-President, Chamber of Commerce of the New Orleans Area; Robert P. Lockett, Jr., President of the Company; Commander R. F. Duelfer, Assistant to the President of Jefferson Parish; Phillip A. Webb, Freight Traffic Manager of the Illinois Central Railroad.

NEW ORLEANS, LA.—A. M. Lockett & Co., Ltd., reported recently it will build a combined manufacturing and warehouse facility in Jefferson Parish, west of the New Orleans city limits.

According to Robert P. Lockett, Jr., President, who made the announcement at ground-breaking ceremonies, "The new facility will increase our capacity to manufacture fuel oil pumping and heating sets, packaged compressors and other fabricated items. The convenient location adjacent to the Illinois Central Railroad also will enable us to provide faster and more economical service to our customers," he stated.

Assisting Mr. Lockett at the ground-breaking ceremonies were J. W. Simon, Jr., Executive Vice-President, and Douglass W. McIlhenny of the Chamber of Commerce of the New Orleans area; Commander R. F. Duelfer, Assistant to the President of Jefferson Parish, and Phillip A. Webb, Freight Traffic Manager of the Illinois Central Railroad.

A. M. Lockett & Co., Ltd., primarily a sales and engineering organization, has been headquartered in New Orleans since its inception in 1899. The company maintains district or branch sales offices in 13 major cities in the South and Southwest to represent The Babcock & Wilcox Company's Atomic Energy, Boiler and Refractories divisions, the Diamond Power Specialty Corporation and Worthington Corporation. It also has warehouse facilities in Houston and Dallas, Tex.

New York—United Nuclear Corporation has received a contract based on competitive bidding to furnish Phillips Petroleum Company at Idaho Falls with over 600 nuclear fuel and control assemblies for the Engineering Test Reactor (ETR) and over 200 nuclear fuel and control assemblies for the Materials Test Reactor (MTD). The ETR and MTD are both located at the National Reactor Testing Station near Idaho Falls, Idaho, and operated for the Atomic Energy Commission by Phillips Petroleum Company.

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PHILOSOPHY OF UNITY

By Harvey F. Pierce, P.E.

For many years the leaders in the engineering profession have debated the subject of unity, or rather the lack of it, in the profession. So much has been said and so little accomplished, that it is indeed difficult to come into the middle of the show and recognize either the plot or the characters in this struggle.

To accept the *concept of unity*, it might be helpful to agree that *disunity* among engineers is the result of an evolution. This evolution is a process which started about 100 years ago, and in succeeding generations, has become deeply rooted.

In 1852 the American Society of Civil Engineers was founded and became the first National Engineering Society. Its founders fully expected it to weld all civilian engineers into one strong society; a single organization able to speak for the new engineering profession.

The exploding industrial revolution and the rapid expansion of the Nation, following the war between the States, developed an acute need for engineers skilled in mining, mechanical, electrical and chemical technology. But ASCE leadership failed to recognize the needs of these emerging groups, and as a direct result of this default, the other founder societies were organized. This splintering of the profession, along lines of technical specialty, has continued to this day; and now more than one hundred identifiable National, Technical Societies dot our landscape.

By and large, these societies perform a useful function for their membership in the areas of up-grading their technical competence. It has been estimated, however, that only about 30% of the engineers in this Country even belong to their own Technical Society.

These diverse organizations have no common approach to such problems as moral and ethical standards, career guidance, engineering education, student professional development, public service motives, legislation, fees and salaries, registration or legal status. Indeed it would seem futile for any one small segment of the profession to attempt to promulgate a positive program in any of these areas, when it is realized that the vast majority in the profession are unconcerned over them.

Because of the splintering of the profession, along technical lines, it is easy to understand why engineers developed strong loyalties around their technical society affiliations, and almost universally the engineer will identify himself with his technical group. Thus, he is a civil engineer, an electrical engineer, a mining engineer, etc. In many cases, prejudices have evolved, which in effect, make the electrical engineer suspicious of the mechanical engineer, who in turn was inclined to disparage anything that the civil engineer stands for, and so forth.

It is within this framework that most of the non-productive work toward unification of the profession has

taken place. Usually when unity, or the desirability of unity is mentioned, we think in terms of a single organization, providing for all of the requirements of the engineer, both professional and technical. Of course, therein lies a major hurdle, because each of the National Societies have their own paid staff of efficient and dedicated workers, plus their own pattern of officership, membership services and committee structure. While unity in this sense was a fact 100 years ago, it will take many years to return to this type of organization, if indeed it is a practical thing to do.

To me, the problem of unity is a philosophical one, and depends on the universal acceptance by all engineers, regardless of technical specialty or mode of employment, of a common set of objectives, both for himself and for the profession. If this philosophy were accepted, we would be engineers first, proud to be a part in a learned and honorable profession practicing in electrical, mechanical, aerospace or civil works second, and employed in industry, private practice, government or education, third. In this concept, the *unifying force* lies not in the organizational patterns of an engineering society, but rather by the universal acceptance on the part of every engineer of a common *creed of public service*, such as the Engineers' Creed, and above all a respect for and a pride in his fellow engineer and his profession.

With this philosophy, once accepted, the legitimate objectives of the engineering profession, could be clearly stated and appropriate means for implementing programs leading to the attainment of these objectives could be readily developed.

Such objectives might be:

1. To attract to the profession well qualified and motivated young people.
2. To provide the best possible engineering education for those choosing the profession, not only in the area of technical competence, but also in the area of professional integrity and social responsibility.
3. To provide employment opportunities which challenge the capacity of the individual to make his maximum contribution under conditions which encourage his professional development.
4. To encourage every practicing engineer to upgrade his technical competence by continuing study both formal and informal, and to seek registration as the "Hallmark" of the Profession.
5. To provide the forum for the effective exchange of knowledge in every area of technical discipline by coordinated meetings, technical papers and other means of communication.
6. To develop adequate and dignified recognition for professional achievement by engineers, for the encouragement of all engineers and for the information of the public.
7. To encourage the individual engineer to participate in appropriate civic activities and assume

*Excerpts from a talk given to the Joint Meeting of
Lafayette and Central Indiana Chapters, ISPE
Purdue University, April 4, 1963*

leadership in helping to solve social and political problems.

8. To properly and forcibly represent the position of the engineers in all areas affecting National Policy, objectives and direction, recognizing the inextricable effect of technology on all facets of our National life and the responsibility of the engineer to interpret these effects to Governmental bodies at all levels and to the general public.
9. To create and preserve for the engineering profession and its members, a deserved position of highest esteem, for exemplary public service.

These objectives are all attainable—if we will it.

In 1934, the National Society of Professional Engineers was formed to fulfill a definite need, which had been largely ignored by the Technical Societies. This pertained to the social, ethical, economic and professional development of the engineer. Through its programs and those of its 53 affiliated State Societies, and almost 450 Chapters, considerable progress has been made, but in many ways *we too are failing* to recognize the *dynamic* nature of our profession and to shift our own emphasis and programs to fit the ever changing pattern of the profession.

In some cases, we have not had the strength or the finances necessary to carry out worthwhile programs, but in most cases, we have failed to breathe life and meaning into our programs and to communicate this to our fellow engineers. For just as surely as we need strength of numbers and finances to carry out these programs, we need a constituency which is *zealous* in its professional pride and fully mindful of its opportunities to serve and responsibilities for the welfare of the profession and of our fellow man.

As I have stated often and sincerely believe, we in NSPE have long since past the point where we *can fulfill our destiny*, in the profession, by relating our programs to the *Professional Engineer* alone. Rather we must set our sights on those objectives which we have set for the *profession* and recognize that we need the confidence and help of all qualified engineers to attain these objectives for the profession.

In NSPE our philosophy has always been to *strive* for a profession with full legal status through *Registration* on the one hand, and to *serve* the social, ethical, economic and professional needs of the engineer on the other. But, I submit that perhaps our ability to *serve* has been hampered to a greater degree than we would care to admit by our apparent unyielding philosophy that an engineer, regardless of his education, character, experiences or ability, cannot enter *our profession* except through registration. Conversely we have been criticized and with some justifications, for accepting into our ranks individuals of little competence or moral characters, but who happen to be Registered.

During the past nine months, in my role as spokesman for NSPE, it has been my great privilege to have met with many of the leaders of other National Engineering Societies. Without exception they have impressed me not only with their leadership abilities and high moral character, but also in their genuine concern for the welfare of our profession. Many of these leaders are registered and some of them belong to NSPE and actively support our objectives.

Others, whose mode of employment does not require registration, are not registered and in many cases seriously doubt their ability to pass a registration exam.

If I were to synthesize the many varied views expressed by leaders of other engineering societies, I would express them thus:

1. *Registration alone does not* make an engineer as we would like to define him, resplendent in his high level of technical competence, morally and ethically true and with a sincere and unselfish social conscience.
2. Failure to accept registration *does not prevent* an individual from developing his technical and professional attributes.
3. That failure of NSPE to admit that *professionalism can be attained* in ways other than through registration *has made suspect*, many of our programs among those who are not privileged to understand their true motivation.

To me, the most direct approach *toward unity* of the engineering profession, is along the route of dual membership of every engineer in his technical and in his professional society.

There are two steps *we* can take to help bring this about.

1. We can stress the need of *every engineer* to belong to his technical society and take full advantages afforded thereby to maintain a high level of competence.
2. Create a place in our local chapters, State Societies and in NSPE for the qualified, though unregistered, engineer so that we can acquaint him with our programs and gain his support and participation.

While dual membership provides a mechanism by which we can spread this *philosophy of unity*—it really only provides a receptive climate.

It is then incumbent upon us all to *understand* and to *believe* in our programs; to the end that we can breathe life and meaning into them for others and fulfill our destiny of leadership in our struggle toward full professional status.

Leo A. Daly Co. Ranked Top Architectural Organization

A Louisiana firm has been named as one of the largest architectural organizations in the United States. In its annual listing of the nation's leading architectural firms, the April 1963 issue of "Architectural Forum" ranks the Leo A. Daly Company in its top category.

The company maintains offices in New Orleans at 4035 Touro Street. The Executive Director is Lawrence E. Miller.

The Leo A. Daly Company conducts business in all 50 states and has other offices in Omaha, St. Louis, Seattle and San Francisco. The firm has a staff of more than 300 architects, engineers and planners with professional degrees from 42 different universities in the United States and abroad.

NASA NEWS FLASHES

This is the first of a series of reports from the National Aeronautics and Space Administration's Saturn Moon Rocket Base at Michoud. THE LOUISIANA ENGINEER feels that the important Engineering, Scientific and Technological advancements being made at the Michoud complex will prove of special interest to the Louisiana Engineering Society.—Ed.

Three LSU Alumni To Teach New Course In Manned Spacecraft Technology

BATON ROUGE—Three distinguished Louisiana State University alumni who hold top posts in the National Aeronautics and Space Administration's Manned Spacecraft Center at Houston, Tex., have been appointed visiting professors to teach a new course in manned spacecraft technology beginning at LSU next fall.

Dr. Grover Murray, vice president of LSU and dean of academic affairs, identified the three as Walter C. Williams, deputy director for mission requirements and flight operations of the Manned Spacecraft Center; Maxime A. Faget, assistant director for engineering and development at the Center; and Paul E. Purser, special assistant to the director of the Center.

Establishment of the course has been made possible by a grant from the LSU Foundation to the President's Emergency Fund. The Foundation, a non-profit organization, seeks the support of such special projects throughout the University system.

The NASA executives will serve their alma mater as visiting professors of aerospace engineering, commuting weekly to the Baton Rouge campus to lecture for a special 15-week course designated as Aeronautical Engineering 195 and presented by the LSU department of mechanical and aerospace engineering.

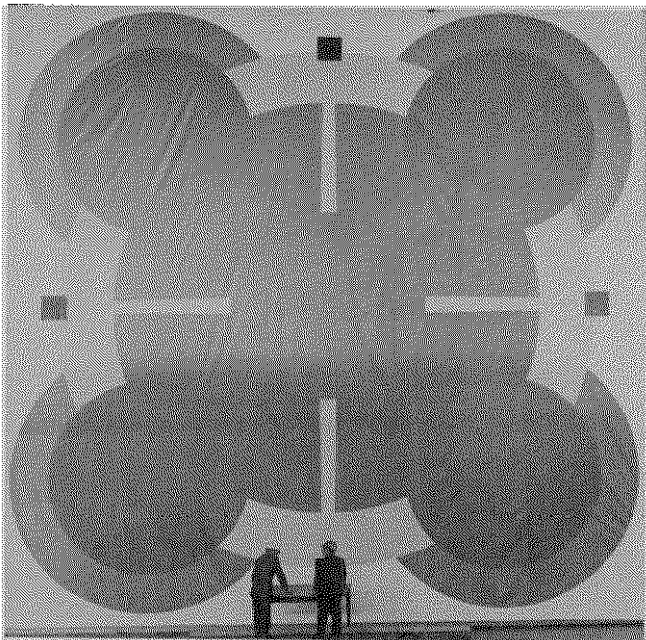
Those enrolled in the course will hold one three-hour meeting per week, earning three semester hours of credit for successful completion of the course.

Dr. L. R. Daniel, Jr., professor and head of the department of mechanical and aerospace engineering, said, "LSU is fortunate to have as visiting professors three of its most outstanding alumni who are also top engineers in the nation's space program. The forthcoming course will not only bring our students into direct contact with eminent space engineers but will be part of a continuing program to present the most modern technological advances in the field of aerospace engineering."

Williams, Faget and Purser were tapped for membership in the LSU chapter of Omicron Delta Kappa, national honor society for university men, at the Honors Day Convocation held as part of the 1962 LSU Spring Alumni Weekend. They were also initiated into the LSU chapter of Tau Beta Pi, honorary engineering fraternity, at that time.

Gurtler, Hebert Awarded \$239,411 Contract

A \$239,411-contract to install the second phase of a chemical waste disposal system at the NASA Michoud Operations has been awarded to Gurtler, Hebert and



Two engineers lend scale to a full-size drawing of the Saturn V first stage tail section in the NASA Michoud Operations' manufacturing building. The drawing, used as an engineering aid, depicts an end view of the 33-foot-diameter, 138-foot-long booster. The four dark outer circles and the one inner circle represent the booster's five 1.5 million-pound-thrust engines. Combined, the engines will generate the equivalent of about 150 million horsepower. Ten of the giant stages—called S-IC—will be built at Michoud by the Boeing Company Saturn Booster Branch. The S-IC will be the first of a three-stage vehicle designed to launch Apollo spacecraft on the nation's first manned lunar landing expedition.

Company, Inc., of New Orleans.

Work under the four-month contract will include installation of a holding pond, underground piping, pumping stations, an electrical power system and a collection system for chemical waste in the west side of the Operations' manufacturing building.

Chemicals will be used in treating and cleaning components for the Saturn I and Saturn V boosters to be assembled for NASA at Michoud.

The first phase of installing the chemical waste system, which consisted of constructing a collection system in the east area of the plant, was completed by Rittiner Industrial Piping Co., Inc., Metairie, La.

The third and final phase will be the drilling of a well several thousand feet deep for disposing of chemical waste.

Mason-Rust, support services contractor at Michoud, awarded the present contract.

Voice-Facsimile Network Installed At Michoud

HUNTSVILLE, Ala.—A voice-facsimile network for the rapid exchange of information between the NASA Marshall Space Flight Center and its Louisiana installations has been put into operation by the Center.

(Continued on Page 16)

1964 Engineer's Week Committee Report

The meeting of the 1964 Engineers' Week Committee of the Louisiana Engineering Society was held in Room 242 of the Hotel Bently in Alexandria, Louisiana, March 23, 1963. The meeting was called to order at 9:30 a.m. The following persons were present during part or all of the meeting.

John M. Fridge	Allen Johnson
Farrell W. Adams	Albert H. Repscha
Marshall B. Ewing	J. S. Janssen, Past President, L.E.S.
L. N. Hunsinger	Calvin Watts, President, L.E.S.
Mohns M. Thornton	Homer Mullins, Board Sponsor
J. J. Thigpen, Chairman	

Reports of the activities in the various sections for the 1963 National Engineers' Week were given. Certain of these activities were discussed at length. These activities, with pertinent comments, are listed below:

1. Banquets—A banquet or similar function with a prominent speaker seemed to be the focal point of the Engineers' Week celebration for each section. All were in favor of continuing this activity with emphasis on the selection of a good speaker with a subject of general interest. In some sections, wives were invited to this function, and this is generally recommended. The ladies auxiliary, where present, can be helpful in making this function a success. It was pointed out that if "registration cards" with the price omitted were used rather than "tickets," that this would help those people on expense accounts and eliminate possible taxation by IRS.

2. Displays—It was felt that displays are one of the best methods to present to the public the activities and accomplishments of engineers. They should be well thought out and should be placed in prominent places such as terminals, banks, and store windows on the main streets.

3. Publicity—The radio and TV spot announcements prepared by NSPE were used by most sections. Some sections found the news media reluctant to give time and space to Engineers' Week activities. This varied from section to section and with the different news media. The New Orleans section obtained very good coverage on TV, radio, and in the newspaper. The prominence of the banquet speaker will influence publicity received for this activity. In New Orleans, comments of two Engineers' Week speakers were used in editorials in the "New Orleans States Item." It was pointed out that good results are normally obtained if an interview is arranged for the banquet speaker, or any other prominent person involved in Engineers' Week activities. Posters, banners, bumper stickers, and Engineers' Week Seals were used in varying degrees by the different sections. It was suggested that in cities which have busses and street cars, an Engineers' Week poster the size of the standard advertising card would be very effective if placed on the vehicles.

4. Newspaper Supplement—It was generally felt that the problems involved in publishing a satisfactory supplement outweighed the value of the supplement. The Monroe section is the only section which had a supplement during the 1963 Engineers' Week. This section is plan-

ning a similar activity for 1964. The ethics of soliciting advertisements for this purpose were raised.

5. Activities in High School—Many sections found that school authorities were not receptive to invitations to have high school students participate in Engineers' Week activities. This is understandable, because of the many requirements being placed on the time of the high school students. It was a general feeling of the committee that for Engineers' Week, activities involving high school students should be curtailed.

6. Proclamations—In some sections the use of proclamations were not deemed advisable as there were so many being issued and such an instrument often placed National Engineers' Week in competition with an activity such as "National Pickle Week."

7. Technical Sessions—This year the Shreveport section had several technical sessions in the afternoon prior to their banquet. These sessions proved very successful. It was pointed out, however, that the topics covered, although of a technical nature, were of general interest.

8. Recognition of Outstanding Service—It was felt that Engineers' Week is an excellent opportunity to recognize people who have made outstanding contributions to the community and to the profession. The banquet would be a most appropriate place for this recognition. "Certificates of Appreciation" for outstanding work done by members of the Louisiana Engineering Society can be obtained by application to and approval of the Board of Direction.

One question that faced the committee was the true purpose of Engineers' Week. What are we trying to accomplish by all our activities? After much discussion, it was decided to recommend that for 1964, the purpose of Engineers' Week be twofold; 1) To increase the public's appreciation of the engineer and the engineering profession. 2) To bring about the unity of engineers. If approval of this purpose is given by the Board of Direction, the activities will be planned to accomplish these two objectives.

The question of whom to include in the section planning and activities for Engineers' Week was discussed at some length. The Shreveport and Lake Charles section, and some other sections to a lesser extent, made the celebration of National Engineers' Week a joint effort of the engineering societies in their area. It was pointed out that where Engineers' Week is a joint effort, all societies should participate on an equal basis. This was felt to be a very good idea and should be carried out where possible. President Watts stated that he also thought this was a good idea, as there are many benefits to be derived. He stated, however, that it was a policy of the Board to appoint only members of L.E.S. to the position of chairman of L.E.S. committees.

In all of the discussion, it was clear that different circumstances exist in each of the sections. Because of this, no set program for the state as a whole was proposed. The planning and execution of activities of Engineers' Week rest primarily with the sections.

The need to begin planning for Engineers' Week as early as possible was very evident. It was felt that the

National Society of Professional Engineers should provide certain material, such as the theme of Engineers' Week and planning suggestions at as early a date as possible, certainly prior to October when the promotional kits are normally available. It was suggested that the chairman write a letter to President Watts, requesting that our views be made known to NSPE and request their assistance in this matter.

There being no further business, the meeting was adjourned at 11:45 p. m.

Respectfully submitted,
J. J. THIGPEN, Chairman



The National Society of Professional Engineers has urged Congress to adopt the Administration's proposal for expanding and establishing college-level technical institutes.

In testimony before a Senate education subcommittee, a spokesman for the 60,000-member engineering group pointed out that virtually every survey concerning engineering and scientific manpower in recent years has confirmed the need for maintaining a ratio of from two to five technicians per engineer, yet we are currently producing only half as many engineering technicians as engineers.

The spokesman, Paul H. Robbins, Executive Director of the National Society, testified that Congress should "adopt a specific, meaningful program to increase the number of college-level engineering and scientific technicians."

Mr. Robbins recommended amendments to the Administration's National Defense Education Act proposals which would make students in technical institutes eligible for loans under Title II of the Act, and which would extend grants to technical institutes for construction from three to five years.



New York, N. Y.—Large numbers of students who are well qualified are dropping out of our engineering schools according to a report just released by the Engineering Manpower Commission of Engineers Joint Council. High attrition rates cause student disillusionment which reacts against engineering and is one of the principal causes of declining freshman enrollments. Many students are asking themselves, "Why take engineering if the odds are stacked against you?"

The nation's engineering deans were asked to comment on the problem of attrition by a special subcommittee of the Commission chaired by Dr. Arthur B. Bronwell, Dean of Engineering, University of Connecticut.

cut. The report is a compilation of their reactions.

The complete report, **ENGINEERING STUDENT ATTRITION**, is available through the Engineering Manpower Commission, 345 E. 47th Street, New York 17, N. Y., at 50¢ per copy.

A report just released by the Engineering Manpower Commission shows an 8% increase in the overall median salary of engineers during the last two years.

The overall median salary as of mid-1962 was \$10,375 compared with \$9,600 for the survey conducted two years earlier.

During the past several months, exploratory committees of EJC and the National Academy of Sciences have been studying the problem posed by inadequate engineering representation in NAS—the formal advisory instrument to government on science and related matters. The discussions have resulted from conclusions of an earlier EJC study adopted by the EJC Board recommending the establishment of a National Academy of Engineering, if possible within the structure of NAS.

The nation's newly created honor for outstanding contributions to engineering and science has been awarded to Dr. Theodore von Karman. He is an expert in aerodynamics and fluid mechanics and a co-founder of Aerojet Engineering Corp., the first American firm specifically engaged in rocketry. His affiliations include an Honorary Membership in ASCE and membership in ASME.

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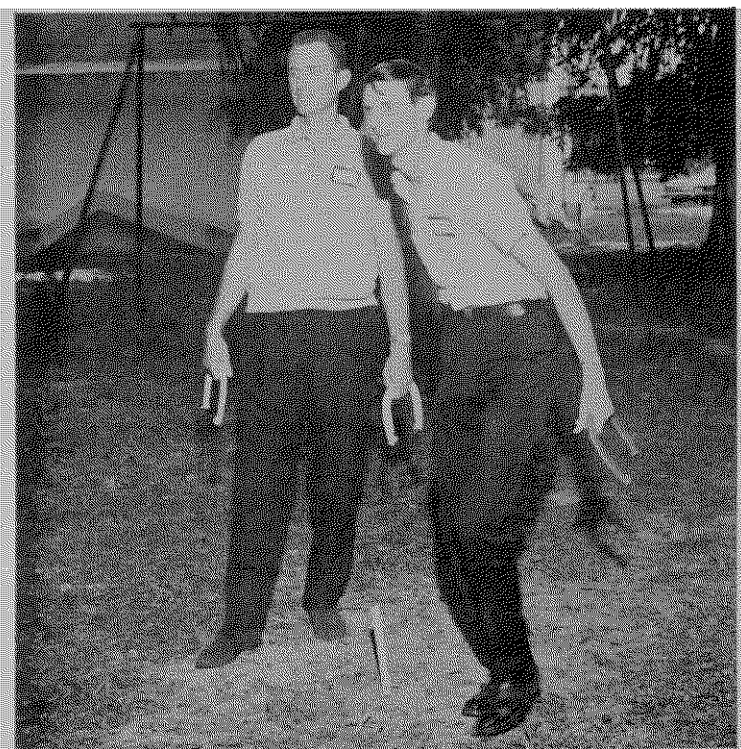
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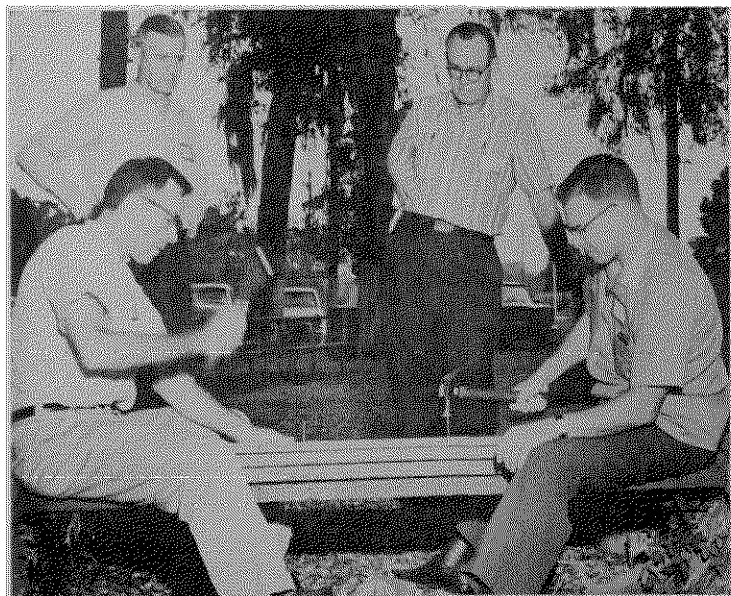
Baton Rouge Outing Attracts Engineers



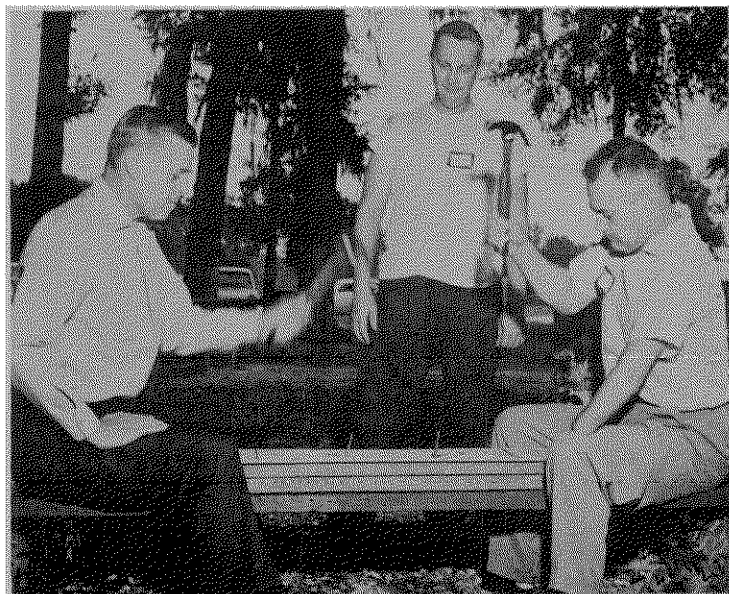
Red Taylor, left, watches as Joe Durrett winds up for a toss.



Red Taylor lines up a pitch.



Doug Latimer and John C. Copes (standing, L. to R.) cheer on W. R. Carter and Louis J. Capozzoli, Jr. (Seated, L. to R.) during the nail driving contest.



Wayne Randall, standing, concentrates on the nail driving efforts of (L. to R.) Doug Latimer and W. A. Wintz.

***B.R. Outing* — Field Notes** **By Allen Johnson**

Duck and wild rice again graced the menu of the Baton Rouge Section annual outing, and your columnist again had the satisfaction of losing to the winner of the horseshoe singles event, Louis Christian.

Prize winners in other various competitions were Wintz K. Thomas, horseshoe doubles; Jerry A. Affalter, archery; Leo Bankston, casting; Carl Thomas, washer pitching; Claude Taylor, marbles.

Beautiful weather and a fine turnout again made the outing a success. LES President Calvin Watts was on hand for the festivities, which were chairmanned by W. C. Randall.

* * *

President Watts addressed the Lake Charles Section on the occasion of the past presidents meeting held there June 10.

* * *

Approximately 200 safety and fire protection specialists from chemical and allied industries will meet in New Orleans September 24 to exchange information on the safe handling and use of chemical products.

It is anticipated that the chemical safety workshop, sponsored by the Manufacturing Chemists' Association, in cooperation with the Louisiana Chemical Association and the Chemical Industry Council of New Orleans will attract authorities in the field of chemical safety from civic and industrial organizations in the New Orleans area.

This workshop, one of a series conducted by the MCA all across the country, has as its basic objective providing an opportunity for industry safety officials to share their experiences with small chemical manufacturers, users and transporters of chemical products and with local fire officials.

In announcing the workshop, the MCA emphasized that attendance is welcome from anyone with an interest in the safe manufacturing, handling and use of chemicals; be they safety engineers, design engineers, plant managers, production supervisors, laboratory technicians, fire officials, medical officers or nurses.

There are 34 MCA member companies with manufacturing and laboratory facilities in Louisiana, the Association states, and many of the safety experts for this workshop will be drawn from these groups.

Previous workshops have been conducted by the MCA in Philadelphia, Houston, Chicago, Charleston, West Virginia, Niagara Falls, Canada, San Francisco and Los Angeles.

—o—

William Littlewood of Washington, D. C., vice president for equipment research with American Airlines, received the 1962 Monsanto Aviation Safety Award from the Aviation/Space Writers Association for having made the year's "most significant and lasting contribution to aircraft operating safety."

New Insulators Developed By G. E.

NEW YORK.—Development of electrical insulators made of synthetic materials which could save the nation's electric power companies millions of dollars within the next decade was announced recently by General Electric.

The development culminates nearly 10 years of extensive research and development by the company in an attempt to provide an improved insulation system for high voltage transmission lines. The new GEPOL* insulators which have already been proven on transmission lines of three electric utilities, are expected to be the forerunners of a complete line of insulators for tomorrow's extra high voltage transmission systems.

*Trademark of the General Electric Company.
—o—

Engineering Manpower Report Issued

New York, N. Y.—Basic facts about the present position of the nation's engineering manpower are presented in a report just released by the Engineering Manpower Commission of Engineers Joint Council. Howard G. Dixon, chairman of the Commission, described the publication as "designed to make available in a single document the most important items of information necessary for those with responsibilities relating to the profession."

The report projects engineering degrees through 1974 and concludes that they fall far short of requirements anticipated in a demand study published by the Commission last year. Recent estimates of engineering requirements made by the U. S. Department of Labor also are far in excess of projected supply.

—o—

13th International Manpower Congress Slated For New York Sept. 16-20

NEW YORK—U. S. corporations are underwriting expenses of the 13th International Management Congress which will be held in New York City September 16-20. Contributions totalling more than \$535,000 have been pledged to date.

Ray R. Eppert, President, Burroughs Corp. and Chairman of the Congress Sponsors' Fund, released the figures in a progress report to contributing companies. Eppert said, "The forthcoming Congress will be the largest and most important CIOS Congress ever held. Approximately 4,000 registrations are anticipated."

—o—

UNITED NUCLEAR APPOINTS C. D. HARRINGTON SENIOR VICE PRESIDENT

Washington, D. C.—United Nuclear Corporation has appointed Dr. Charles D. Harrington, Vice President, Chemicals Divisions, to the newly created position of Senior Vice President.

NASA News Flashes

(Continued from Page 11)

The new system, leased from Western Union, provides immediate service through an automatic switching exchange installation in New Orleans.

Presently serving ten MSFC locations, the automatic voice-coordinated facsimile system has been equipped to grow to a 50 station network as needed. The new system is used to exchange documents, drawings and administrative information by voice and facsimile, as well as digitalized data form which speeds up to 2,400 bits-per-second.

The network is the first of its kind and is being used to transmit engineering data and other information needed immediately by the widely separated stations. Master copies of transmitted documents are available to the receiver for reproduction for filing.

The transmitter and recorder unit can send or receive an 8½x11-inch sheet of information in less than three minutes. No specially trained personnel are needed to operate the equipment.

Engineering Office Building To Be Constructed at Michoud

HUNTSVILLE, Ala.—The NASA Marshall Space Flight Center awarded a \$387,000 contract to the Harders Construction Company, Panama City, Fla., recently for site work on an engineering-office building at the Michoud Operations in New Orleans.

The contract, first of a three phase construction program, calls for grading, drainage, filling and pile driving.

The two-story building is expected to be completed in the latter half of 1964.

The new Michoud building will be occupied by engineering and administrative personnel of the Chrysler Corporation, Mason-Rust and the Boeing Company, prime contractors at the Saturn booster manufacturing installation.

Office employees who cannot be accommodated in the Operators' Administration and Engineering Buildings will use the new structure. Some 1600 Chrysler and Boeing employees are now temporarily housed in leased office space in downtown New Orleans.

Being designed by August Perez and Associates, New Orleans, the new building will provide 500,000 gross square feet of floor space. It will be located west of the Michoud plant facing the old Gentilly highway within the present 845-acre complex.

Chrysler Awarded \$1,661,353 Contract

The National Aeronautics and Space Administration has awarded the Chrysler Corporation \$1,661,353 to establish a reliability program for the Saturn I boosters being assembled at the NASA Michoud Operations in New Orleans.

The modification, an addition to the \$215 million basic Chrysler Saturn I first stage contract awarded last July, was let by the NASA Marshall Space Flight Center.

Labor, facilities, equipment and services for the new program, designed to insure the dependability of future Saturn I flight boosters, will be furnished by Chrysler under Marshall Center supervision

A similar program in operation at Marshall has been credited with contributing to the success of all four Saturn I first stages launched to date.

Michoud Storage Building To Be Renovated

NEW ORLEANS, La.—A \$47,600 contract for the renovation of a storage building at the NASA Michoud Operations has been awarded to a New Orleans firm.

This contract increases to nearly \$14 million the amount awarded to date to New Orleans firms for construction of facilities at the Saturn booster-manufacturing plant.

A total of 175 contracts for construction work at Michoud have been let by NASA and its prime contractors. Of these, 158 have been awarded to firms in the New Orleans area.

The latest contract calls for a Boley and Hardouin Construction Co., Inc., to repair and renovate a single-floor concrete block building for use as a central maintenance shop and office area.

Mason-Rust, Michoud support services contractor, awarded the 60-day pact.

Haddad To Construct Dividing Wall

Haddad Construction Corp. of Slidell, La., has been awarded a \$52,000-contract to construct a dividing wall in the Manufacturing Building of the NASA Michoud Operations in New Orleans.

The 40-foot-high, 1100-foot-long partition will be constructed of structural steel and corrugated asbestos cement siding. It will serve a divider between the two Saturn booster manufacturing areas: the 1.5 million-pound-thrust Saturn I booster being built by the Chrysler Corporation Space Division and the 7.5 million-pound thrust Saturn V first stage under development by the Boeing Company Saturn Booster Branch.

Mason-Rust, support services contractor for NASA at Michoud, awarded the 80-day contract.

Ruston Firm To Dredge Barge Harbor, Access Channel At Test Center

A Ruston contracting firm was the apparent low bidder on a \$668,340 project to dredge a barge harbor and access channel for the National Aeronautics and Space Administration Mississippi Test Center being built in Hancock County.

The low bid was submitted by the T. J. Jones Co., Inc., of Ruston, the Corps of Engineers in Mobile announced.

Highway Blueprint Reading Course Offered By TECO Instruction, Inc.

DARIEN, CONN.—TECO Instruction, Inc., leading producer of self-instructional (programed) lessons for industry, government, and science, announces its new Standard Highway Blueprint Reading Lesson. The lesson emphasizes Four-Lane Divided Highway construction.

Price information (including special pre-publication prices), and descriptive literature on the lesson, and on the special programing technique (called *Mathetics*) used by TECO in preparing teaching and training materials, is available on request.

Tedious Bridge Erection Job Completed South Of Lake Charles

One of the most tedious bridge erection jobs on record was completed in April when crews from United States Steel's American Bridge Division set the 450-foot main span of the Calcasieu River and Ship Channel Bridge south of Lake Charles, La.

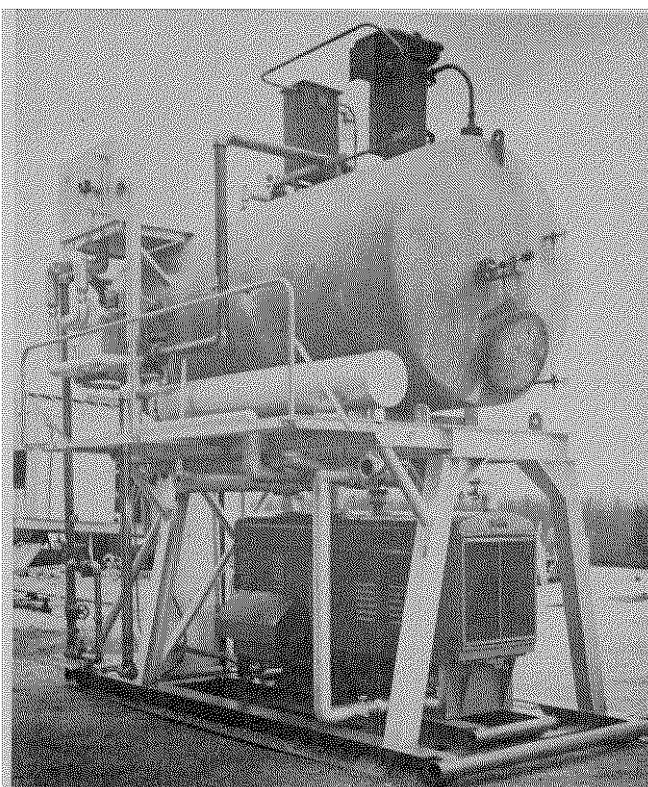
Believed to be the longest continuous welded plate girder bridge span in the United States, handling was made even more difficult by high winds and other adverse weather conditions.

The 8500-foot bridge will provide a four-lane link in the new Interstate Route 210. It forms a graceful arc which is aesthetic as well as functional.

The bridge's three-span central unit is centered over the main ship channel between two 135-foot piers. There is a 225-foot side span on each side.

The center section of this 450-foot main span measures 182 feet. It was set in place by a 193-foot guy derrick operating from a shearing derrick boat built especially for this job from a converted LST. A 125-ton capacity crawler crane on a barge was used to erect the filler spans.

American Bridge Division of U. S. Steel was general contractor for main channel steel work. American Bridge's District Construction Manager F. I. Liles supervised this phase of the bridge. J. D. Buvens was construction engineer, and John R. Penry was job superintendent for American Bridge.



A heater treater which does away with the open flame method of preparing paraffine laden crudes has been built by Reagan Equipment Co. for offshore installation on a Gulf Oil Corp. well. Utilizing exhaust heat and a chemical-electrical process, the unit is described as being safer for use on platforms where space is at a premium.

HAVE YOU SENT IN YOUR DATA FOR THE NEW MEMBERSHIP ROSTER?

If you haven't, please fill out the portion below and mail at once to:

JOHN P. FERNANDEZ,
Secretary-Treasurer
Louisiana Engineering Society
522 Crystal Street,
New Orleans 24, Louisiana

LOUISIANA ENGINEERING SOCIETY

REVISION OF MEMBERSHIP LIST

A new membership roster will be published in the near future. We will appreciate your prompt cooperation in supplying the information requested below.

Name.....

Mailing Address..... Zone.....

City..... State.....

Professional Title.....
(Civil Engineer, Mechanical Engineer, etc.)

Company.....

Registration.....
(List professional license number and issuing state, if any)

Memorials

JOHN P. EGAN

The Louisiana Engineering Society and the electric power industry of the New Orleans area lost a member and pioneer in power plant engineering when John P. Egan died December 2, 1962.

A native son, he was educated in local parochial primary and high schools. Early employment in the plumbing and the well drilling fields provided a practical background, for at the turn of the century, he was employed by Sanderson and Porter, the engineering and construction firm, while building the first installation of the electric generating station at the site of the original Market Street Station. In 1904 he joined the New Orleans Railway and Light Co., a forerunner of New Orleans Public Service Inc., as a pipe-fitter foreman, and in 1919 was elevated to Assistant Chief Engineer. In 1955 he was named Assistant to the Superintendent of Mechanical Operations, a position he held until his retirement in 1961. At the time of his retirement, Mr. Egan lacked one month of completing 57 years of continuous service with NOPSI.

John Egan was a member of the Louisiana Engineering Society for over 30 years and was active in the Electrical Association of New Orleans. In 1954 this association awarded him a certificate for fifty years of service to the electrical industry. He was also active in the affairs of his parish church, Holy Name of Jesus.

"Uncle John," as he was affectionately known, took obvious delight in recounting the early days of electricity here in New Orleans. He could detail the problems of power generation from the early reciprocating engines and the transition to turbogenerators, and often described the hardships when the then new industry was trying to maintain service under the most trying conditions.

He is remembered by his associates for his strong influence in the operation of the electric generating stations of NOPSI; he is also remembered by all as a gentleman and a friend. His ready wit and counsel was available to all.

BE IT RESOLVED that the society acknowledges a great sense of loss in the passing of this man who was such a significant part of early engineering progress in the state; that this memorial be read at a meeting of the Society, published in the minutes, and that a copy be sent to his sisters, the Misses Mary F., Ella M. and Sarah G. Egan.

**BEN H. BELL
SYDNEY ELLIS, JR.
ALLEN H. JENSEN,**

CHARLES M. ROGERS

On Friday, March 1, 1963, the Louisiana Engineering Society lost by death a member who had been active in civic and professional organizations in New Orleans for many years.

Charlie was born in Palmyra, Michigan, September 27, 1893. Prior to moving to New Orleans in 1918, he was connected with the construction industry. His initiative

and creative ability were shown early in his career as an engineer. He was co-inventor of the Rogers-Higgins oil burner which was used widely by the bakeries, laundries, and other large industrial plants in this area. Charlie joined New Orleans Public Service Inc. on March 1, 1928. He served as gas engineer, then industrial engineer, and was Industrial Development Director at the time of his retirement on March 1, 1958.

He was a founder and past president of the Astronomical Society of New Orleans, a member of International House, New Orleans Country Club, several professional groups and Carnival organizations. Charlie was a Shriner and 32nd degree Mason. He was an active member of the St. Charles Avenue Presbyterian Church.

Charlie was an ardent fisherman and golfer and led an active life right up to the time of his death. He loved his fellow man and was always willing to help him.

Tr Mrs. Charlie M. Rogers the officers and members of the Louisiana Engineering Society extend their deepest sympathy and request, by resolution to be entered in the minutes of this meeting, that a copy of this resolution be sent to Mrs. Rogers and it be published in the official organ of the Society.

**J. L. CAMPBELL
R. P. LOCKETT, JR.
C. L. NAIRNE**

JOHN HENRY O'NEILL

On March 16, 1963, the Louisiana Engineering Society, recorded with great sorrow the death of one of its Past Presidents and Honorary Members, Mr. John Henry O'Neill.

Born in Lowell, Massachusetts, Mr. O'Neill was a graduate in Sanitary Engineering of Massachusetts Institute of Technology in 1910. From 1910 to January, 1913, he was employed by the American Museum of Natural History in New York City, supervising a bacteriological laboratory, and the preparation of Public Health exhibits. In 1913 he established the Division of Sanitary Engineering of the Louisiana State Board of Health. As Director, he was instrumental in the construction of many water sewage treatment plants and mosquito control programs and developed one of the best sanitary engineering organizations in the country.

Mr. O'Neill was a Fellow in the American Society of Civil Engineers and Past President of the Louisiana Section of the Society. He was a member of the American Water Works Association and Chairman of the Southwest Section. In 1951, he received from this Association the George Warner Fuller Award for distinguished service in the field of sanitary engineering.

Mr. O'Neill represented the State Board of Health on the Louisiana Stream Control Commission from 1940 to 1955. He was the founder of the Louisiana Conference on Water Supply and Sewerage, an organization developed to train operators of water and sewerage treatment plants and to raise standards of water quality and sewage disposal in Louisiana. He was a member of the Louisiana Association of Public Health Workers and in 1951 received the first C. B. White Award for distinguished services in the field of public health in Louisiana.

Mr. O'Neill was a member and Past Chairman of the

Conference of State Sanitary Engineers. He served as Chairman of the Sanitary Engineering Division of the American Society of Civil Engineers. He was President of the National Malaria Society. At the time of his retirement in 1955 from the Louisiana State Board of Health he was the oldest sanitary engineer in terms of continuous length of service in the United States. He was a veteran of World War I, serving as a Captain in the Sanitary Corps of the U. S. Army. He was a member of the Round Table Club of New Orleans for many years.

Mr. O'Neill will be remembered by his many friends as a gentleman and a very distinguished engineer. He enjoyed the reputation of being one of the outstanding sanitary engineers in the United States and was one of the leaders in the field of public health in Louisiana.

Mr. O'Neill is survived by his widow, the former Albion Edwards whom he married in 1915; a daughter, Mrs. W. A. Summers; two sons, the Rev. Charles E. O'Neill, S. J., and John H. O'Neill, Jr.

Be it resolved that this memorial be entered into the minutes of the Society and published in THE LOUISIANA ENGINEER, and copies sent to the members of the family.

FRED N. BILLINGSLEY
ALVIN M. FROMHERZ
FRANK W. MACDONALD
ANDERSON B. RITTER
WALTER H. SCALES

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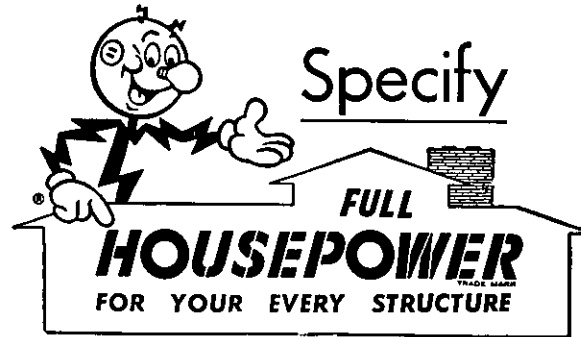
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Duration Curves For N. O. Area

The City of New Orleans, due to its location, has many peculiar drainage problems. Located in the lowlands of Louisiana, adjacent to the Mississippi River, the City is completely ringed by levees for protection against flooding by the river and surrounding lakes. A large portion of the City is below sea level with some sections by as much as six feet. This makes the City equivalent to a large "saucer" and all of the precipitation reaching this "saucer" must be pumped out.

Twelve pumping stations with a total capacity of 29,000 C.F.S. are required to remove the run-off from the average annual rainfall of 60 inches received by New Orleans. The drainage basin served by these pumping stations is approximately 49,000 acres in size. The pumps involved range in size from 25 C.F.S. to 1,000 C.F.S. The drainage system consists of 83 miles of open earthen canals, 11 miles of open canals with concrete bottoms and sides, 71 miles of covered concrete canals and 1,300 miles of subsurface sewer lines.

In designing drainage facilities it is essential that accurate and up to date run-off data be obtained in order to provide an economical installation and a system that will provide adequate removal of storm water. One of the more popular methods of run-off prediction in use today is the Rational formula. Realistic values of run-off coefficients and rainfall intensities will insure greater protection against flooding and an economic system.

Drainage systems are designed so that they can handle a specific design storm (intensity). This rainfall intensity is predicted by referring to rainfall intensity-duration curves. A set of said curves yields frequency data for any one specific duration. These curves are essentially records of past storm experience and are developed from statistical data (rainfall records) gathered over a number of years. The curves represent the probable average rainfall intensity that may be expected to last for a specific period of time. When used with the Rational formula the time period is the time of concentration of the drainage area. The intensity curves are predicted for certain design frequencies—two years, five years, 10 years or any other required value.

All of the many different procedures of storm-rainfall analysis start with a summary of experience. The experience summaries used in this study were developed from data taken from both New Orleans Sewerage and Water Board and United States Weather Bureau records. Each storm recorded was analyzed for total amounts of rainfall for various specified periods of time. A tabulation of this data was then developed from which, for any desired frequency, the average intensity of rainfall per time period used could be determined. Storms hav-

ing a total amount of rainfall less than one inch do not affect the intensity-duration-frequency values, therefore, such storms were not included in the summaries.

A total of three summaries was developed. The first summary was of all storms greater than one inch, as recorded by the New Orleans Sewerage and Water Board, for the 66-year period of 1895 thru 1960 (excluding 1944—records not available). The New Orleans Sewerage and Water Board maintains a total of seven gauges located throughout the City. The readings of the rain gauge that recorded the maximum amount for each storm were used, therefore, it can be assumed that the intensity-duration values determined from this information are very good estimates of the maximum intensities that will occur within the area covered by the rain gauges. In this case, the frequency attached to any one intensity-duration curve is an area frequency as opposed to a point frequency. Area frequency can be defined as the frequency with which a specified average rainfall intensity occurs within the drainage area. This does not mean that the specified intensity occurs across the entire area, nor does it mean that each time the specified intensity occurs it happens at the same point. Point frequency means the frequency with which a specified intensity occurs at any one point. As we will see later area intensities are greater than point intensities for any one frequency and duration.

The second summary was of all storms greater than one inch, as recorded by the New Orleans Sewerage and Water Board, for the 35-year period of 1895 thru 1929. This summary was developed in order to determine whether or not the intensity-duration curves change when a longer period of record is used.

The third summary was of all storms greater than one inch, as recorded by the United States Weather Bureau (one gauge), for the 53-year period of 1909 thru 1961. This summary was developed in order to compare area intensities and point intensities for specific frequencies and durations. The period of record for this summary is somewhat shorter than that of the Sewerage and Water Board summary but this difference should not effect the intensity-duration values to any great extent.

It was assumed that the five-year intensities were equaled or exceeded $65/5 = 13$ times in 65 years. Sixty-five years are used here because only 65 years of storm records are included in the summary since the 1944 records are not available. The generalized intensity-duration values were then interpolated from the summary by finding for each intensity the duration that was equaled or exceeded by 13 storms and for each duration the intensity that was equaled or exceeded by 13 storms. These points were then plotted and a smooth curve drawn through them representing the course of the five-year rainfall intensities.

Similar calculations were made for the two, five, 15 and 30-year intensities based on the 35-year summary. The results of these calculations were compared with the

Condensed from an article by Frank W. Macdonald, Professor of Civil Engineering and Sanitation, Tulane University and Adam Mehn, Jr., Second Lieutenant, U. S. Army (R) Fort Eustis, Va.

results from the 66-year summary (Table 1). In every case the 66-year curves exhibited the following general pattern. The intensities were higher for the first 120 minutes, lower between 120 and 240 minutes, essentially the same after 240 minutes.

TABLE I
RESULTS OF COMPARISON OF INTENSITY—
DURATION CURVES BASED ON SEWERAGE
AND WATER BOARD DATA¹

Duration min.	2-year intensities	5-year intensities	15-year intensities	30-year intensities
15	110.0 %	103.2 %	102.0 %	113.3 %
30	104.3	107.5	108.4	108.4
45	111.5	106.7	107.8	107.8
60	113.2	110.3	114.7	113.2
120	107.8	99.6	93.0	94.6
108	99.2	90.8	91.4	95.2
240	100.0	96.3	94.3	91.8
300	essentially the same			

The results of this comparison indicate that the rainfall pattern has changed during the last 30 years. The last 30 years had a larger number of short very intense storms and a fewer number of long (two to four hours) low intensity storms that the first 35 years of record.

This comparison also tells us that intensity-duration curves for any one area should be continually revised, i.e., about every five years, in order to keep up with changing rainfall patterns. The design engineer knows that the rainfall pattern will change with time but the big problem is, in what direction will these changes occur—increase or decrease? An example of this is a similar study that was made in 1959 for the City of Oakland, California.² This study showed that, in every case, the curves based on the longer period of record (52 years) were lower than the curves based on the short period of record (18 years).

A comparison of intensity-duration curves based on the 53-year United States Weather Bureau summary with the curves based on the 66-year Sewerage and Water Board summary is shown in Table II. In every case, the curves based on the Weather Bureau data yield lower intensities than the Sewerage and Water Board curves, i.e., the point intensities are lower than the area intensities.

TABLE II
RESULTS OF COMPARISON OF INTENSITY-DURA-
TION CURVES BASED ON UNITED STATES
WEATHER BUREAU AND SEWERAGE
AND WATER BOARD DATA

Duration min.	2-year intensities	5-year intensities	15-year intensities	30-year intensities
15	89.7 %	85.8 %	92.5 %	90.0 %
30	89.3	83.2	90.3	88.3
45	86.9	82.5	87.8	86.5
60	87.2	83.4	86.8	85.1
120	87.8	90.3	86.2	85.8
180	99.8	99.5	88.6	84.9

1. Percentages shown are the 66-year values compared to the 35-year values.

2. John A. Morin, "Report on Rainfall Intensity-Duration Curves for the City of Oakland to January 1, 1959," January, 1960.

The fact that the point intensities are lower than the area intensities is not a surprise when one realizes what is taking place. The area values are developed from the rainfall history of a large section which would automatically contain a greater number of large storms than the rainfall history of one particular point, therefore, the area intensities are higher than the point intensities. It will now be shown how this fact can be used in the design of storm sewer systems.

In order to illustrate the use of area and point intensities we will discuss the design of a typical storm drainage system for a large area. A typical large drainage system consists of both secondary lines that carry the run-off from the small areas and main lines that carry the run-off from large sections of the total area.

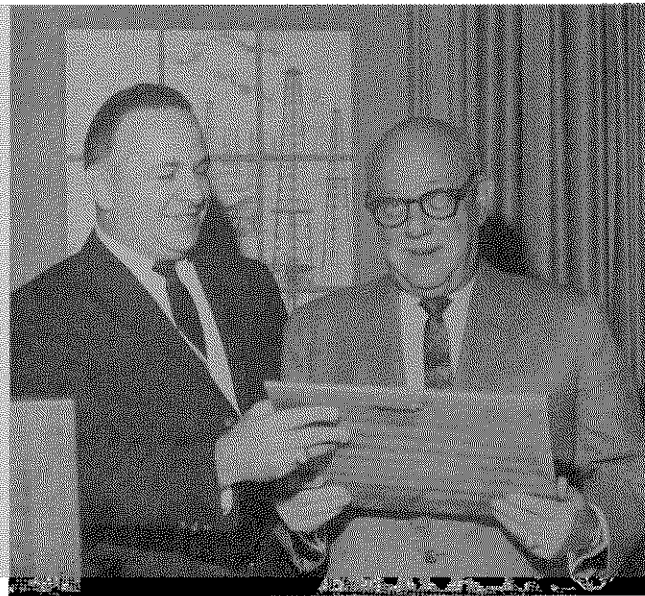
The design criteria states that all flooding should be kept out of the entire area except for that caused by rains in excess of the Y year intensities. Since the area intensity-duration curves are based on the maximum storms recorded in the area they should be used in the design of the secondary lines. The large areas will not receive these maximum intensities throughout, therefore, the main lines may be designed for intensities that are less than the area maximums. The intensity values to be used in the design of the main lines can be taken from a set of point frequency curves or from a set of curves based on averages of the readings of all gauges recording each storm. Curves based on the average readings were not developed in this paper since the records required for their development were not available for a sufficiently long period of record.

If the secondary lines were designed to carry the run-off determined by using the Y year point frequency curve, any one point in the resulting system may flood. If the entire system is considered, flooding would occur within the system with a frequency that is less than Y years. This is due to the fact that the point intensities are developed from the recorded amounts of precipitation occurring at one particular point. The center of every storm does not pass over the same point, therefore, one rain gauge does not measure the maximum intensity occurring within each storm, i.e., the edge of the storm may pass over the gauge.

It can be seen from this discussion that the engineer must use judgment when deciding which intensity-duration curve is to be used in a particular design problem. If the local rain gauge readings are available the engineer should use this data and develop a set of curves provided that the period of record is of sufficient length, i.e., about 30³ years or more. If rain gauge readings are not available the engineer can use the curves developed by the United States Weather Bureau for most areas of the country. It is well to remember that these curves are developed for the general conditions of large areas and special conditions may exist for the locality in which the design is being made. It should also be remembered that rainfall patterns are constantly changing and intensity-duration curves should be continually revised to insure that the best estimate of rainfall intensity is used in a particular design.

3. This figure comes from basic statistics in which the size of sample is considered "large" when the number of readings approaches 30 or more.

E. M. Freeman Honored By Shreveport Texas A & M Club



E. M. Freeman (r.) receives a Distinguished Service Award in recognition of his services to the Shreveport A&M Club.

The Shreveport Texas A & M Club at a recent meeting honored one of its past presidents. Mr. E. M. Freeman, an A & M graduate of 1922, received a Distinguished Service Award in recognition of his many contributions to the local A & M Club, the A & M College of Texas, and the community. Mr. Freeman, president of the consulting engineering firm of E. M. Freeman & Associates, has the distinction of being the first and only non-resident of Texas to serve as President of the Association of Former Students—a wonderful tribute to his leadership and long interest in the welfare of A & M College.

He is a communicant of the Trinity Episcopal Church of Marshall and St. Paul's Episcopal Church of Shreveport. He is a Scottish Rite Mason, a Knight Templar, and has served as Past Illustrious Potentate of the El Karubah Shrine.

He has been a member of LES for 25 years and was instrumental in organizing the Shreveport Section in 1949 and served as its first president. He also served as President of the State organization in 1958. He is a licensed Professional Civil Engineer in Louisiana, Arkansas, Texas, Oklahoma, and Mississippi.

Mr. E. E. McQuillen, executive director of the Texas A & M College Development Fund, and Mr. J. B. Hervey, executive secretary of the Association of Former Students, were special guests of the local club and informed members and their wives concerning present and future plans at the A & M College of Texas.

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June 4, 1963

By The Louisiana State Board of Registration For Professional Engineers and Land Surveyors

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WALKER ANNOUNCES FORMATION OF NATIONAL ACADEMY OF ENGINEERING

New York—A National Academy of Engineering will be formed affiliated with the National Academy of Sciences, said Dr. Eric A. Walker, President of Engineers Joint Council, in a statement released recently. Dr. Walker stated "The Academy will offer a singular opportunity to the engineering profession to participate actively and directly in communicating objective advice to government on engineering considerations related to national policy and, incidentally thereto, to identify and recognize individuals distinguished for their major engineering achievements."

The statement was made following a communication from Dr. Frederick Seitz, President of the National Academy of Sciences, advising Dr. Walker as Chairman of the EJC Exploratory Committee to Establish a National Academy of Engineering, that the NAS has approved in principle the establishment of the affiliate engineering organization. The action was taken at the annual meeting of the Academy concluded April 21 in Washington, D. C. This approach was recommended by a committee chaired by Dr. J. A. Stratton, President of Massachusetts Institute of Technology.

General Electric's High Voltage Switchgear Department, Philadelphia, has announced that it will introduce industry's first 250-kv interrupting head on the 500-kv high voltage air-blast circuit breaker awarded to the Company by the Tennessee Valley Authority.

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What Every Louisiana P. E. Should Know

This is another in a series of articles prepared by the Editorial Staff of the LOUISIANA ENGINEER in which an attempt will be made to answer questions of interest to professional engineers in this area. Where, in certain instances, it becomes necessary to answer questions of a controversial nature, it must be re-emphasized that the opinions expressed are those of the Editorial Staff and do not necessarily reflect the feelings of the Louisiana Engineering Society nor the Louisiana State Board of Registration for Professional Engineers and Land Surveyors.

QUESTION—What qualifications are required for registration as a Professional Engineer in Louisiana?

ANSWER—Excluding reciprocity, Louisiana's law specifies three ways that an engineer may presently become registered:

1. Graduation plus experience
2. Experience plus examination
3. Long established practice

During the first year after passing of the registration act (Act 73), public employees could be registered in civil engineering restricted to practice in public employ only. Also, during the first year, a grandfather clause was in effect covering each branch included in the act.

QUESTION—In general, what length of time is required for a professional engineering registration examination?

ANSWER—Louisiana and twenty-five other states give 16-hour written examinations. Seven states give 12-hour examinations; eight give eight-hour examinations and four give six-hour examinations.

QUESTION—What is the range of professional engineering registration fees?

ANSWER—Louisiana and 28 other states have a \$25 registration fee for professional engineers. The range, among the balance of the state is from \$10 minimum to \$45 maximum.

Thirty states have an annual renewal fee of \$5. While the Louisiana law states that the annual renewal fee shall not exceed \$10, the Louisiana state board has fixed the fee of \$5 for renewal in one branch and \$10 for renewal in two or more branches.

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WHAT IS AN ENGINEER?

The term "engineer" is certainly a much over-worked one in these days of modern science. We frequently hear the term used in conversations at school, in business circles, in the home, on the radio or television. But to get right down to brass tacks, what do we really mean when we refer to a man as an engineer? A Past President of the National Society of Professional Engineers, S. L. Stolte, once gave this definition: "An engineer is a person educated in the principles of mathematics and the physical sciences who applies this knowledge to direct and control the materials and forces of nature for the safe, economic use and convenience of man." Rather broad, isn't it? Let's try one of our own, to see if we can get a better picture of this fascinating profession. Suppose we say that an engineer is one who takes raw materials and transforms them into devices that are useful to mankind; he also harnesses the natural resources of the world to help man do his work. We seem to be getting no closer to a clear description of the engineer's work, do we? Television sets, automobiles, air conditioning units, electrical circuits, bridges, dams, and buildings are all the result of the efforts of some kind of engineer. No wonder we have difficulty when we try to give a concise definition of the duties of an engineer.

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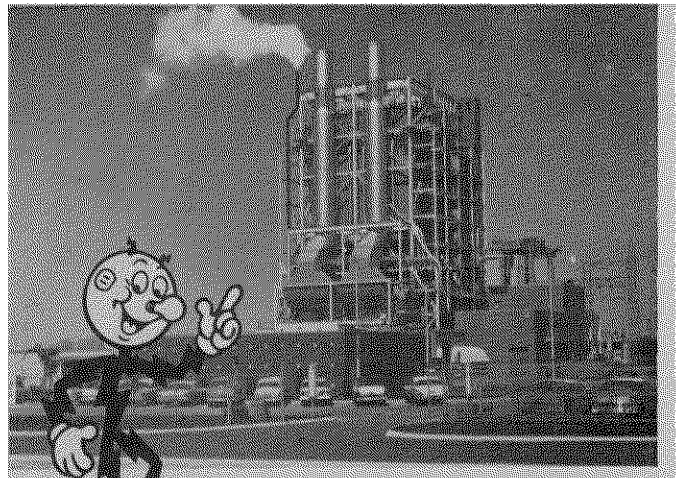
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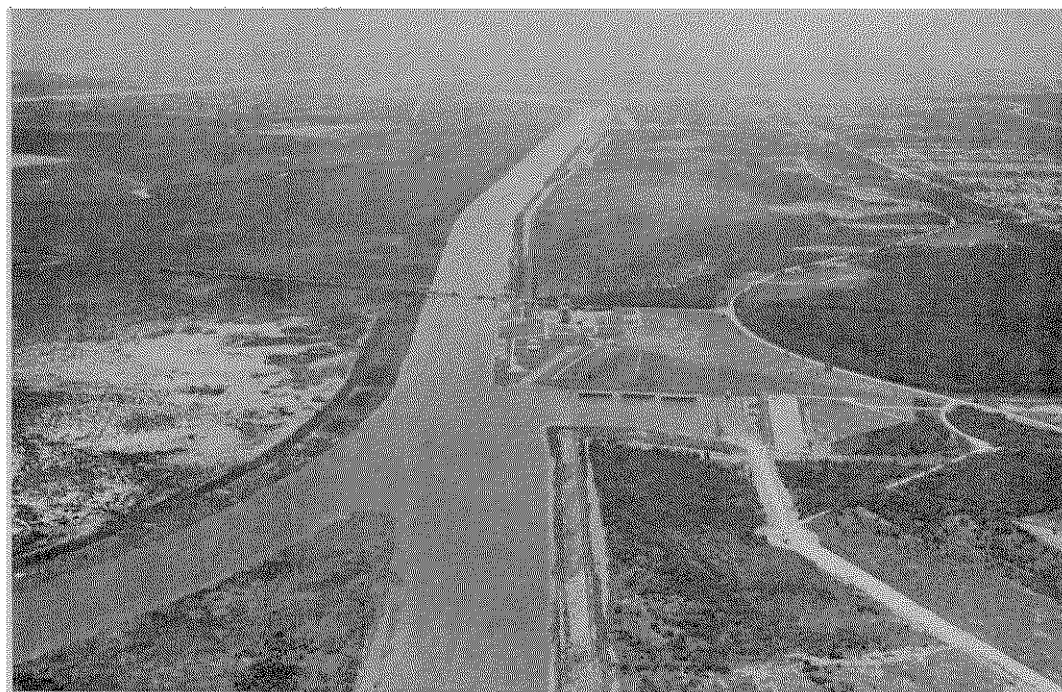
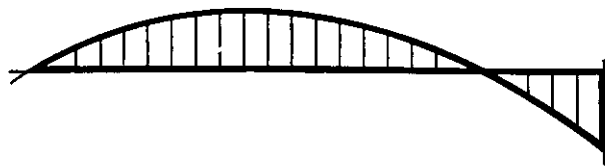
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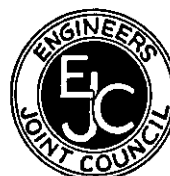
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MISS. RIVER-GULF
OUTLET IS OPENED
(See Page 9)

ENGINEER

Vol. 49 No. 4
August, 1963

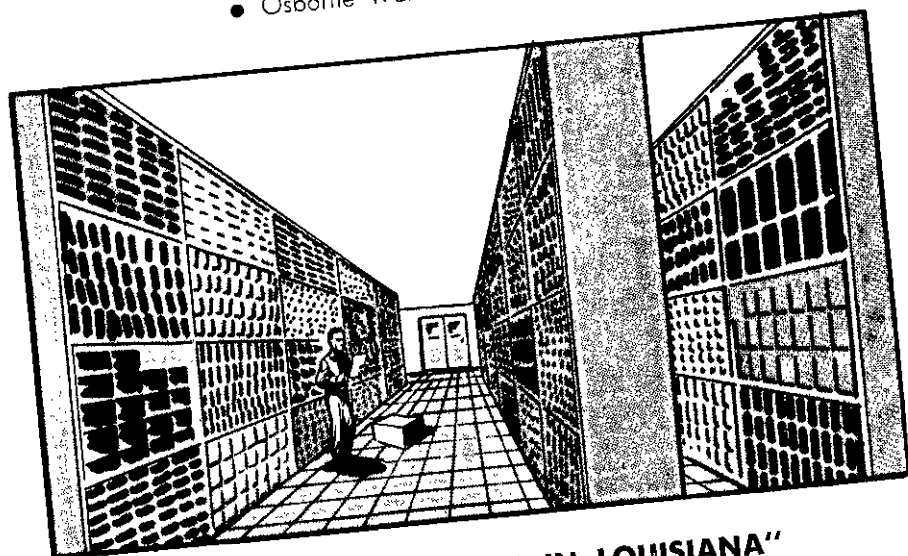


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THE LOUISIANA ENGINEER

Vol. 49

AUGUST, 1963

No. 4

OUR COVER: The fully-completed first seven miles of the Mississippi River-Gulf Outlet open to commerce July 25, 1963 is shown from its terminus at New Orleans (upper right) to the point where it departs from the Gulf Intracoastal Waterway (lower left). The new waterway, with its straight alignment, contrasts sharply with the meandering Mississippi River, shown in background. A \$13-million high-level, four-lane, vehicular bridge will be constructed at Paris Road (center).

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Minutes Of The Board, LES

LOUISIANA ENGINEERING SOCIETY

Minutes of Meeting of the Board of Direction
held at the Engineers' Club, New Orleans
May 13, 1963

The meeting was called to order by President Watts with Messrs. Carville, Knight, Macdonald, Repscha, Vogt and Fernandez in attendance. Messrs. W. S. Nelson, Registration Law Committee Chairman, and Allen Johnson, Public Relations Counsel, also were present by invitation. Minutes of meeting held on March 22 were accepted as distributed to board members by mail, with one correction noted in the title of the LES Louisiana Industry-Engineering Education Advisory Committee. President Watts announced appointments to this committee as follows:

ELVIN J. DANTIN, Chairman
VIRGIL ORR
ALBERT H. REPSCHA
TRUMAN E. POUNDS
DEWITT L. MORRIS
JERRY W. AFFOLTER, JR.

Mr. Repscha then presented an unofficial report of the initial meeting of the committee.

It was reported that estimates had been received on the cost of printing the Manual of Professional Practice for the Use of Engineers and Clients. Mr. Carville moved that the Secretary be authorized to pay for this printing with the understanding that the Society will be reimbursed as copies of the publication are sold. Motion seconded by Mr. Knight and carried.

President Watts reported that all State Planning Conference reports had been reproduced and bound in book form and that copies had been forwarded to board members, committee chairmen and vice-chairmen. President Watts stated he would request board sponsors to report on the recommendations made by their respective committees.

President Watts reported that the Datum Plane Committee headed by Captain Charles Montiero had outlined the requirements for a re-survey of bench marks in the New Orleans area and that the Coast & Geodetic Survey had determined that \$30,000 of local contribution monies would be required for their Service to do the work. President Watts stated that it appeared certain the survey would be made.

President Watts reported that the Reorganization Study Committee headed by Mr. Roy T. Sessums had had two successful meetings and was progressing satisfactorily. The Board agreed that President Watts should advise the Woman's Auxiliary to LES on the progress being made.

Discussion followed on the suggested changes in the Model Law as prepared by a committee of the National Council of State Boards of Engineering Examiners, and Dr. Macdonald was requested to prepare a letter for the President's signature incorporating the points brought out in the discussion.

President-elect Knight reported on the NSPE Incoming Presidents' Conference and stated that a concentrated drive should be made to get all eligible LES members to join NSPE. He also stated that from information gleaned at the conference he is convinced that Functional Sections can work and be an asset to LES.

Mr. Nelson reported that the American Institute of Aeronautics and Astronautics (formerly known as the American Rocket Society) had held its organizational meeting with 167 in attendance, also that a very large number of engineers had attended its Charter Meeting but very few of these were LES members. He stated that this group would present a potential field for a LES membership drive.

The Secretary reported that 82 applicants for membership listed in the March ballot had been elected to their respective grades. Distribution of these new members among the Sections was as follows:

	Members	Affiliates	Juniors	Total
New Orleans	10	6	1	17
Baton Rouge	5	—	2	7
Alexandria	1	2	—	3
Lake Charles	1	—	1	2

Monroe	1	—	—	1
Non-Resident	—	—	2	2
Total	18	8	6	32

The Secretary also reported that a tabulation made on April 8, 1963, showed 1,868 members in good standing and 122 delinquent. A breakdown of the members in good standing according to sections is as follows:

	Life & Honorary	NSPE	Members	Affiliates	Juniors	Students	Total
New Orleans	84	179	317	81	97	51	789
Baton Rouge	6	85	180	36	33	—	340
Lafayette	1	22	47	15	38	4	127
Shreveport	—	51	49	14	5	—	119
Monroe	—	36	47	11	9	—	103
Lake Charles	—	24	45	15	9	—	93
Alexandria	—	21	34	12	10	—	77
Non-Resident	13	25	109	12	61	—	220
Total	84	443	828	196	262	55	1868

The Secretary reported that the following committees had been appointed to prepare memorials for deceased members:

W. H. Scales, Chairman; N. E. Lant and Edw. A. McLellan for the late Wm. H. Rhodes.

A. M. Fromherz, Chairman; R. M. Seago and John Riess for the late Ole K. Olsen.

Walter Cooke, Chairman; F. W. Macdonald and Tom J. Stokes for the late Cary B. Gamble.

B. M. Dornblatt, Chairman of a committee of his own choice for the late J. McLean LeDoux.

The Secretary announced that the Annual Outing had been scheduled for September 18th at the Lakewood Country Club. Mr. Carville announced that the Baton Rouge Section's Outing would be held May 25 at the U.C.T. Camp.

The Secretary read letters of thanks for floral offerings and memorials from the families of the late Johnnie E. Rebold, Wm. H. Rhodes, John H. O'Neill and Ole K. Olsen.

Mr. Vogt moved that the resignations of the following be accepted with regret, seconded by Mr. Carville and carried:

Hubert J. Briley, Monroe (Junior Member)
David H. Brown, Baton Rouge (Affiliate Member)
Carl R. Hillman, Baton Rouge (Junior Member)
P. P. Lingamfelter, Baton Rouge (Junior Member)
Paul A. McKim, non-resident (Member)

Dr. Macdonald moved that Messrs. Henry C. Lalumandier, Baton Rouge (Member) and E. Reid Powell, New Orleans (Member) be

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dropped from the rolls in accordance with their requests. Motion seconded by Mr. Knight and carried.

Mr. Vogt moved that the activities of the Honors & Awards Committee be expanded to include solicitation for nominations for Honorary Membership and for Appreciation Certificates as well as for the two medal awards. Motion seconded by Mr. Repscha and carried.

Correspondence between Mr. Frank P. Lathrop, President of the Louisiana Land Surveyors Association, and Messrs. Odom and Macdonald was read. President Watts advised that he would write to Mr. Lathrop and invite him and the members of his organization to join LES.

The following resolution was presented and approved upon motion by Mr. Knight, seconded by Mr. Repscha:

WHEREAS, the City of New Orleans possesses a priceless asset in the French Quarter of the city; and WHEREAS this heritage has been held in trust for the benefit of future generations by the responsible citizens of the City:

NOW, THEREFORE, the Board of Direction of the Louisiana Engineering Society does not resolve to endorse, support and encourage the efforts of municipal officers and agencies and other parties interested in and dedicated to the preservation of the French Quarter and its buildings.

The Secretary read obituaries of deceased members John H. O'Neill and Charles M. Rogers.

Upon motion by Mr. Knight, seconded by Dr. Macdonald, the election of Messrs. John U. Allen and Wm. A. Rolston were declared void.

Dr. Macdonald moved that the following members be dropped from the rolls for non-payment of dues, seconded by Mr. Vogt and carried:

James O. Adams (M), Houston, Tex.; D. Chas. Antrobus, Jr. (J), Baton Rouge; Edw. P. Armstrong (A), Alexandria; Hugh R. Babylon (J), New Orleans; Ben Barnes (A), Minden; Robt. B. Barnett (J), Mobile, Ala.; Ronnie M. Bays (J), Pollock; Alexander B. Bell (A), Broussard; L. A. Bland, Jr. (A), Shreveport; Leonard J. Bordelon (J), Moreauville; Kenneth F. Boudreaux (J), Houma; Robert E. Boudreau (J), Plaquemine; Ronald B. Boulet (J), Rayne; Leslie Brasher (J), Lafayette; Ralph H. Brown (A), Shreveport; Wm. A. Burford, Jr. (NSPE), Monroe; Milford Burnitt (J), Lafayette; Richard D. Byrne (J), Edwards AFB, Cal.; Tommy Callagari (J), Cottonport; J. E. Clement, Jr. (A), Denham Springs; John B. Coffey, Jr. (J), New Orleans; T. F. Conley (A), New Orleans.

Jay L. Dalgetty (J), Baton Rouge; Thomas J. Dean (NSPE), Plaquemine; F. A. Deckbar, Jr. (A), Metairie; Dudley J. Deville (J), Cleveland, O.; Paul A. Digiovanni (M), Lake Charles; John E. Dixon, (A), New Orleans; Allen R. Domingue (J), Wichita, Kansas; Julius J. Dominguez (J), New Orleans; Kennedy J. Dugas (M), Erath; Clarence M. Dunlap (M), Winnsboro; Edmund E. Dupre, Jr. (A), Lafayette; Charles H. Filgo (A), Baton Rouge; R. C. Fleming, Jr. (A), Port Sulphur; Henry H. Forrester, Jr. (J), Clinton; L. H. Fougereousse (A), Baton Rouge; Don A. Garland (NSPE), Chas. D. Glass (A), Lake Charles; Francis W. Grant (M), Shreveport; Kirby Griffin (J), Lafayette; Nathan Guillory (J), Hessmer; Ira E. Hall (A), Alexandria; Wallace J. Hall (NSPE), New Orleans; John B. Hardy (J), Kaplan; Joseph H. Harvey (M), Houston, Tex.; Walter L. Hastings, (A), Lake Charles; Gayle P. Hebert (J), Lafayette; Frank H. Heroy, Sr. (M), Metairie; Davidson D. Hinkleley (M), New Orleans; Louie Leroy Hines (M), Baton Rouge; David H. Hovey (NSPE), Baton Rouge.

Randolph B. Lacroix, Jr. (J), Opelousas; John M. Lafuente (J), New Orleans; Walter A. Landry, Jr. (M), Metairie; John M. Lane (A), Baton Rouge; Henry J. Lartigue, Jr. (J), New Orleans; Daniel B. Lemoine (A), Baton Rouge; Marcel J. Leumas, Jr. (A), Duluth, Minn.; Robt. P. Linfield (M), New Orleans; Emile W. Lusted (M), Baton Rouge; Ralph H. McCollister (M), New Providence, N. J.; J. A. McEachern (M), Normandy, Mo.; T. J. McDaniel, Jr. (M), Zachary; Earl J. Magner, Jr. (J), New Orleans; Paul H. Majoue, Jr. (A), New Orleans; Warren E. Marcum (A), Slaughter; Richmond S. Merrill (A), Texarkana, Tex.; Henry M. Messinger (M), Bastrop; Edmund F. Metz (M), Baton Rouge; Jack Moffett (A), Pineville; Clyde R. Morris (J), Redondo Beach, Cal.

Carl E. Newman (M), Jacksonville, Fla.; Frank Nicoladis (J), New Orleans; Vernon D. Niven (J) Slidell; Hugh R. Pearson (J), Tallulah; Gerald E. Porche (J), Houma; Jos. J. Quartana (NSPE), New Orleans; Alfred F. Roach (M), London, England; Spencer B. Roane (M), Donaldsonville; Dallas C. Roberts (A), Alexandria; Viron E. Sendukas (NSPE), Alexandria; Emile S. Sherrard (M), Washington, D. C.; Ronald E. Shrader (M), Baton Rouge; James H. Simpson, Jr. (NSPE), Baton Rouge; Wm. J. Simpson (J), New Orleans; James H. Simpson, Jr. (NSPE), Baton Rouge; Wm. J. Simpson (J), New Orleans; James W. Souders (J), Lombard, Ill.; Kenneth G. Stevenson (J), Seattle, Wash.; Ronald J. St. Pierre (A), Norco; William G. Stewart, Jr. (M), Baton Rouge; Emile L. Stieffel (NSPE), Shreveport; Teddy Stockwell (J), Baton Rouge; Jack E. Stover (J), Mobile, Ala.

Otis L. Talbot (J), Alexandria; Darrell Temple (J), Lafayette; A. J. Theriot (J), Hammond; Octa J. Thibodeaux (J), Maplewood; James E. Tracy (A), Beaumont, Texas; Elmer V. Triche (J), New Orleans; Philip W. Wang (M), Port Allen; Jos. H. Westerfield (M), Lake Charles; Valdemar Westh (M), Baton Rouge; James R. Whitaker (A) West Monroe; Harry R. Williams (A), New Orleans; Madison J. Williams, Jr. (J), Newark, N. J.; Geo. F. Williamson (M), New Orleans; Charles S. Woodruff (M), Baton Rouge; J. L. York (A), Baton Rouge; Rex Scott Zerger (J), Pittsburgh, Pa.

Mr. Repscha announced that the 1964 Annual Meeting would be held on January 10 and 11 at the Municipal Auditorium in Lafayette and presented a tentative program which met with the board's approval.

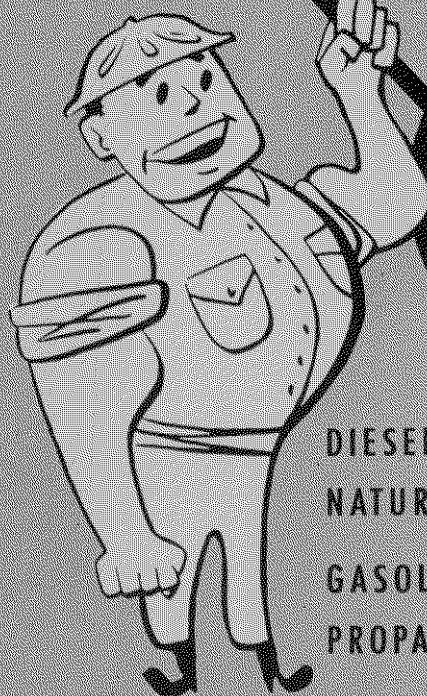
The meeting then adjourned.

JOHN P. FERNANDEZ,
Secretary-Treasurer.

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Miss. River — Gulf Outlet Is Opened

The New Orleans District of the U. S. Army Corps of Engineers completed the 36 feet in depth by 250 feet in width "interim channel" of the 76-mile Mississippi River-Gulf Outlet and officially opened the waterway to oceangoing traffic on July 25.

The full project channel, authorized by Congress in 1956, will be 36 feet in depth over a bottom width of 500 feet. Over 36 miles or almost half of the waterway has already been completed to the full project dimensions. These seven fully completed reaches of the waterway are located strategically to provide additional "passing lanes" for the larger vessels. Deep-draft vessels can, however, with care, pass one another in any section of the waterway.

The first five miles from the New Orleans terminus of the Mississippi River-Gulf Outlet were completed to the full project dimensions of 36 by 500 feet early in 1959. This was specifically accomplished principally to facilitate port and industrial development. The Board of Commissioners of the Port of New Orleans has constructed a bulk handling facility in this reach, and it is already undergoing its second expansion. The Bestwall Gypsum Company became the first major industry to settle on the Gulf Outlet with the construction of their plant in the vicinity of Paris Road.

Five of the fully completed reaches are at various locations between Bayou Bienvenue and Lake Athanasio. The sixth 36- by 500-foot reach extends from two miles above land's end through the completed 3-mile long stone dikes and across Breton Sound to the Chandeleur Islands, a distance of about 22 miles.

There are four dredging contracts presently under way for construction of the full project channel. Two of these are being done by Williams-McWilliams Industries, Inc., and one each by Jahneke Service, Inc., and Western Contracting Corporation. Five contracting dredges are currently excavating on the project channel. The Mississippi River-Gulf Outlet is being built in three phases. First, an access channel with dimensions of 18 feet by 140 feet was dug in order to allow equipment to be placed and to work in various locations along the route of the waterway. Under five access channel contracts, a total of 27.3 million cubic yards of material was removed. Twelve interim channel (36 by 250 feet) contracts were necessary to provide a useable channel for deep-draft vessels. The cost of these amounted to \$12.2 million and called for the removal of over 110 million cubic yards of material. The U. S. Army Corps of Engineers' Dredge LANGFITT dredged the outermost 3 miles of the interim channel.

Eight contracts for the completion of reaches of the waterway to the full project dimensions of 36 by 500 feet have already been completed. When entirely completed, approximately 288 million cubic yards of material will have been excavated in the construction of the waterway.

The U. S. Army Corps of Engineers has entered into



VAST AREAS of typical Louisiana marshland along the route of the Mississippi River-Gulf Outlet have been changed into high areas that will be ideally suited to industrialization. One such area where dredged material was placed between retaining dikes can be seen in this view along the right descending bank of the channel.

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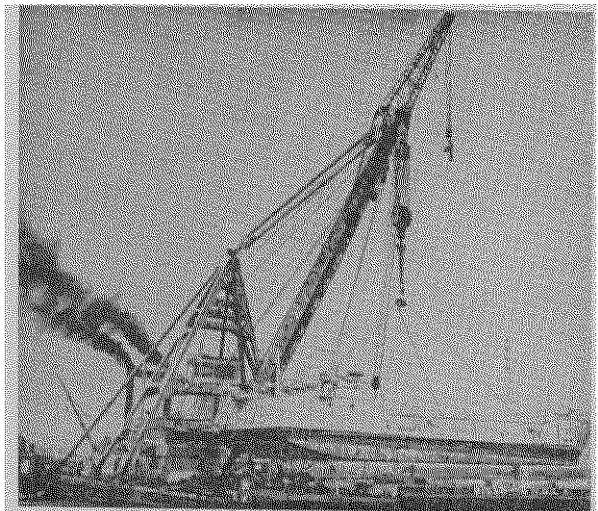
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GUARDING the new \$95 million Mississippi River-Gulf Outlet's entrance into Breton Sound are two 3 mile long stone dikes. More than 20 miles of the channel are visible in this photo. The light areas on the left of the channel are spoil disposal areas, now raised to an elevation of several feet above sea level.

an agreement with the state of Louisiana for the construction of a fixed, four-lane, high-level vehicular bridge crossing the Mississippi River-Gulf Outlet at Paris Road (Louisiana State Highway No. 47). Award of the first construction contract is scheduled for January, 1964. The bridge should be completed about June, 1966.

The total Federal expenditures through the fiscal year ending June 30, 1963, was \$35.2 million.

The over-all Mississippi River-Gulf Outlet Project is scheduled for completion in mid-1966.

The Project is being constructed under the supervision of Colonel Edward B. Jennings, District Engineer, U. S. Army Engineer District, New Orleans. It is under the general supervision of the Secretary of the Army, the Chief of Engineers, and the Division Engineer, U. S. Army Engineer Division, Lower Mississippi Valley.

Principal speaker for the ceremonies opening the channel was the senior U. S. Senator from Louisiana, Allen J. Ellender. Congressman F. Edward Hebert, in whose Congressional district the new waterway is located, acted as master of ceremonies for the occasion. Board of Port Commissioners President George C. Stohlman delivered the welcoming address to the many dignitaries present, and other addresses were made by Senator Russell B. Long and Congressman Hale Boggs of the Louisiana delegation; Major General Ellsworth I. Davis, Division Engineer, Mississippi River Commission and Lower Mississippi Valley Division, U. S. Army Corps of Engineers; and the New Orleans Mayor Victor H. Schiro.

Senator Ellender, dean of the Louisiana Congressional delegation which had won authorization and appropriation for the Outlet, cited its importance, and stated, "New Orleans is the maritime port for the Mississippi River and that stream drains 41 per cent of the area of the United States. It is also a world port. The last war demonstrated the importance of, and the vital need for, ready access to the Gulf of Mexico and for ample dock

Letters:

Doing Their Part

To the Editor:

The last issue of The Louisiana Engineer magazine contained a news story concerning the opening of our new office here in New Orleans. We certainly want to thank you for including this announcement in the magazine.

Things have been going very nicely for us here in Louisiana and we are very pleased with the way that we have been treated. As time moves along I believe that our people will become more acquainted in the various engineering organizations and we hope we can do our part whenever there is an opportunity.

L. E. MILLER, P. E.
Vice-President
Leo A. Daly Co.

and port facilities at New Orleans. The present atomic age emphasizes the need for dispersion and more than one avenue for the flow of traffic."

In referring to increased activity in the Port, Ellender pointed out that, between 1951 and 1960, cargoes, which had amounted to an average of some 13.2 million tons per year from 1936 through 1945, had increased to an average of 33,717,217 tons annually, and that, in 1960, the figure had risen to 47,227,687 tons. This, he added, provided the main reason for the authorization and construction of the seaway.

Mr. Stohlman, who traced the development of the channel from its inception in 1922 by the Board of Commissioners under the presidency of Rudolph Hecht, also pointed out that, while the channel is at full depth for its full length, it is still only about one-half its authorized width. He also urged that immediate steps be taken to construct an already-authorized lock and new channel between the seaway and the Mississippi to supplement the older Industrial Canal Lock, completed in 1923, and now inadequate for the rapidly-increasing transportation demands of the Port.

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Old River Closure Effectuated

The end of a river that attempted to rewrite history was recorded July 12, 1963 as the New Orleans District of the U. S. Army Corps of Engineers effected the closure of Old River.

Ironically enough, sand from its own bottom proved to be its nemesis.

Earlier, Col. Edward B. Jennings, District Engineer, U. S. Army Engineer District, New Orleans, gave Williams-McWilliams Industries, Inc., the civilian contractor awarded the \$1.1 million job, the order to close Old River at the earliest possible moment.

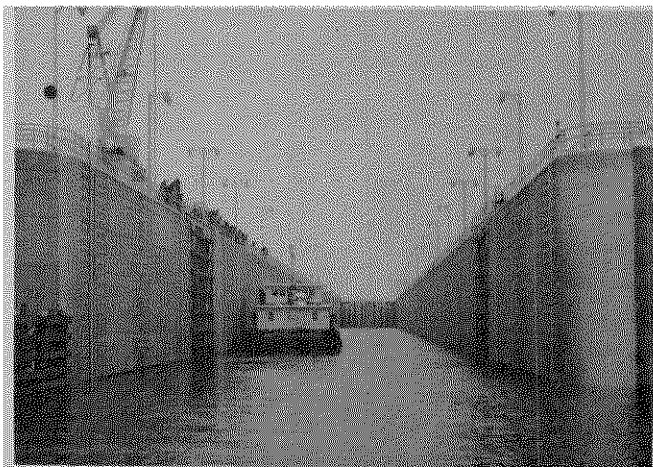
They responded immediately, putting two of their hydraulic cutterhead dredges to work on a 24-hour, seven-day-a-week schedule.

At 3:30 a.m. July 12 the last flow of Old River became a trickle—and then ceased altogether—as sand pumped from the discharge lines of the two dredges dramatically broke through the water's surface.

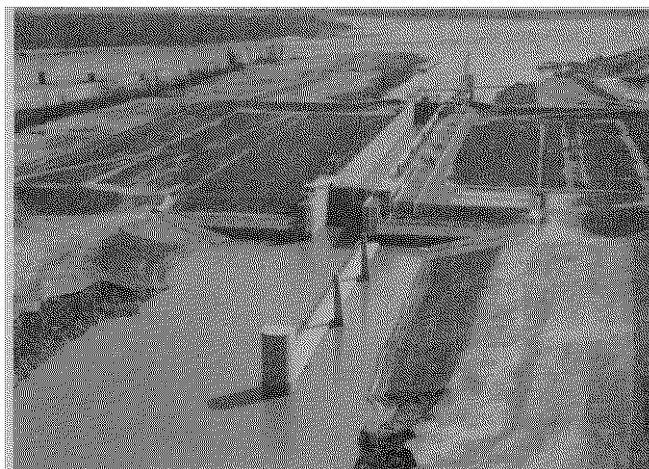
The death of Old River signaled that the end was in sight for the Corps of Engineers' \$68-million plan to forestall a disaster of incalculable proportions in terms of the safety and well-being of the almost two million residents of the area, not to mention the dire consequences to the multi-billion dollar industrial complex located on the Mississippi between Baton Rouge and New Orleans.

Old River was a scant 7-mile stream located some 72 river miles above Baton Rouge, which connected the Mississippi, Red and Atchafalaya Rivers.

The river was actually born in 1831 when Captain Henry Shreve cut off one of the many meandering loops of the Mississippi to shorten navigation. The upper portion of the loop soon silted up, but the lower reach went on to become a "sometimes tributary; some distributary" of the Mississippi. It worked this way. When the Mississippi was high and the Atchafalaya and Red low, flow went from the Mississippi westward through the Old and Atchafalaya Rivers to the Gulf of Mexico. On those occasions when the Red River was high and Mississippi low, the direction of flow was eastward into the Mississippi. Old River later became a major navigation artery for commercial towboats moving to and from oil-rich south central Louisiana up the Atchafalaya and Missis-



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sippi River to central and eastern United States cities.

However, Mother Nature played another of those tricks for which she is so famous. Easterly flow became less and less noticeable and finally ceased altogether. Not since February, 1945, has an easterly flow been observed.

With the removal of the massive Atchafalaya River driftwood jam undertaken in 1839, Old River embarked on a "self-improvement" program, enlarging itself and thereby capturing an increasingly greater proportion of the Mississippi's flow. It became so efficient, in fact, that close observation by the Army Engineers, coupled with an extensive engineering study, revealed that it would just be a matter of time before Old River would have "captured" the main flow of the Mississippi, diverting it down the Atchafalaya. This was not too unusual in itself, however, as the Mississippi has an extensive history of major course changes. And the Old-Atchafalaya combination offered the most ideal of conditions for such a change. It presented what the engineers call "a steeper gradient," or in layman's terms a route 170 miles shorter than the Mississippi's present one to sea level. The die was cast.

That this could not be allowed to occur was a matter of simple arithmetic.

Millions of dollars have been expended in "flood-proofing" the lower Mississippi with a network of levees and through the construction of massive floodways by the Army Corps of Engineers. Such a diversion would nullify most of this work and necessitate the construction of flood control works costing many additional millions. The lifeblood of the multitude of industries situated on the Mississippi below Old River is fresh water in bountiful supply—would be drastically altered through the intrusion of salt water from the Gulf.

In the interim, while a new flood control plans was being developed and constructed, vast areas in Louisiana would be subject to untold damage in the event of a major flood.

The Mississippi River Commission developed the solution. Old River would be dammed off.

But this gave rise to many other considerations.

Navigation would have to be continued—and it was. On March 15, 1963, the \$15-million Old River navigation lock was completed and opened to traffic.

The Lock was the largest contract ever awarded on the lower Mississippi by the Corps of Engineers. It was designed by Waldemar S. Nelson & Company, Inc. in joint venture with A. W. Thompson and Associates, Inc.

The entire structure is 1544' long. It has a lock chamber 75' wide and 1200' long. The floor is 11' below sea level, which insures adequate draft during periods of extreme low water. The lock walls are 78' high. The lock gates are of the horizontally framed miter type, hydraulically operated.

Filling and emptying the lock is accomplished through inlet ports in the sidewalls of the river approach bay, ports in the walls of the lock chamber and outlet ports in the side of a system of tunnels in the bottom of the canal approach bay.

These openings connect to culverts extending the length of the lock, located in the base of the sidewalls of the lock. A mobile gantry crane, operating on tracks, is provided for repair and emergency closure purposes.

Formal opening of the lock was followed by the permanent closing of Old River to navigation. The construction of a temporary dam across Old River was begun.

A permanent earthen dam will replace this temporary structure.

The flow from the Mississippi to the Atchafalaya River had to be continued so that the latter river would have enough water passing during periods of low flow to keep it scoured out to a degree necessary to assist in the passage of a "project flood"—and it was. A control structure was completed in 1959. It will permit the necessary diversion of flow from the Mississippi to the Atchafalaya at all stages, while providing for the control necessary to prevent capture.

And, lastly, Old River had to be closed—and it was!

The Army Engineers determined that the most economical means of constructing the dam was with locally available materials—in this case, sand from the bed of Old River itself. However, the current in Old River would wash this material away as fast as it could be placed. It was therefore necessary that the flow in Old River be reduced with a dam constructed of rock prior to construction of the main sand-fill closure. This rock dam, located $\frac{3}{4}$ of a mile downstream of the main dam site, was completed on May 16, 1963. At the time of its completion, water about 5 feet deep flowed over its crest. The plan called for construction to begin on the main closure when the water level fell below the temporary rock dam.

Col. Jennings gave the order to begin the main dam construction on June 27, 1963.

Sand will be pumped to an elevation of 45 feet above mean sea level. The base of the dam will be about 1,500 feet wide at the deepest point in the stream. Then hauling equipment will bring in clay fill to form the upper 28-foot portion of the dam, bringing it up to an elevation of 68 feet mean sea level. The actual height of the dam will range from about 20 feet near the river banks where it connects with the levees to about 99 feet at the deepest part of the stream. The crown will be 60 feet wide and will support a scenic highway.

NCSBEE Outlines Proposed Changes

The National Council of State Board of Engineering Examiners has notified Member Boards of changes proposed by the Constitution and By-Laws Committee.

The Registration Bulletin in its June, 1963 issue, said, "Notification is hereby given to all Member Boards of NCSBEE that the Constitution and By-Laws Committee will recommend the following changes at the meeting in Honolulu, 26-30 August 1963. Bold type indicates the changes in the wording.

"Article III, Section 4 of the Constitution

'An Affiliate Member Board shall be a legally constituted State Board, Department, or Instrumentality of the United States of America that (1) administers an act regulating the practice of Land Surveying, or (2) **administers an act regulating the practice of a single branch of engineering antedating any act regulating the general practice of professional engineering.** Representatives of Affiliate Member Boards may serve as members of appropriate committees.'

(The balance of this section would not be changed.)

"This proposal has been prepared in response to a suggestion from the floor that such a provision would avoid the possible encouragement of fragmentation of the profession by branch registration through separate committees.

"Article III, Section 9, Zones

"The Member Boards of the Council shall be divided into four zones, as follows: Western Zone, Southern Zone, Central Zone, and Northeast Zone. The specific allocation of the Member Boards from the various States, Districts, Territories, or other political subdivisions of the United States of America shall be as **provided in the By-Laws.**'

"Suggestions have been received for possible improvement in the Constitution and By-Laws which duplicate the purpose and intent of Articles in the Constitution and modification of the latter to combine the ideas separately presented now.

These are as follows:

"Article II of the Constitution

"Modify Article II of the Constitution to read

"The purpose of this Council shall be to promote the public welfare through the improvement of professional standards relating to the safeguarding of life, health and property by working toward:

- (a) Improvements in engineering registration laws, their administration, and effectiveness.
- (b) Uniformity of standards and practices in engineering registration.
- (c) General acceptance of inter-board recognition of registration of engineers, and by defining and maintaining nationally recognized qualifications for professional engineering registration.'

"Article III, Section 5 of the By-Laws. Add the wording in bold type to requirement A for Bureau verified professional record.

'A. **ENGINEERS QUALIFIED BY GRADUATION, EXPERIENCE AND EXAMINATION**—The applicant must have graduated from an ECPD accredited

ited curriculum, or have received a graduate degree based on at least one academic year of resident study in a department whose undergraduate curriculum is accredited; be not less than thirty years of age; . . .

"Article V of the By-Laws

"Delete Article V of the By-Laws as redundant in view of Article III of the Constitution.

"Article IV of the By-Laws

"Delete Article IV (Effectiveness) from the By-Laws. The subject matter of Articles V and VI properly belong in the Constitution.

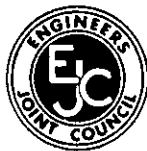
"Article VII would then be renumbered to be Article V of the By-Laws."



A union official's characterization of engineering as an "apprenticeable trade" has been challenged by the National Society of Professional Engineers as a statement which can "discourage young people from engineering careers to the detriment of the defense and security of the Nation."

Paul H. Robbins, executive director of the national professional society, challenged the likening of engineering to a trade by a union leader in a letter to Senator Olin D. Johnston, chairman of the Senate Post Office and Civil Service Committee. The statement had been made by Russell M. Stephens, president of the American Federation of Technical Engineers, AFL-CIO before the Johnston committee during hearings on Federal pay legislation. The union official opposed limiting coverage for future Government employees under a proposed separate classification schedule for engineers who have graduated from an accredited engineering curriculum or become licensed professional engineers under state registration laws.

The National Society has long advocated such a separate classification schedule for engineers and scientists in the Federal establishment, but endorsed the Administration's Federal Salary Reform Act before the Johnston committee as embodying many of the features of a separate schedule.



Engineers Joint Council has announced the availability of training courses in abstracting and coordinate indexing of scientific and engineering literature. The courses will be offered in various cities and will be conducted by Battelle Memorial Institute with EJC's exclusive endorsement under arrangements just completed between the two organizations.

Presentation of this course provides an opportunity for industrial, educational, governmental and library organizations to become proficient in the application of the EJC concepts to information systems.

Heightened Incentive

Boosting consumer purchasing power could be only a partial stimulant to continuing U. S. economic growth. The incentive for risking business capital must also be improved, a General Electric executive declared recently.

Francis K. McCune, vice-president for engineering, General Electric Co., Schenectady, N. Y., called upon the American Power Conference meeting in Chicago to help businessmen rebuild "the value of rewarding success—instead of penalizing it."

Speaking on the subject, "Daring to Excel," he said the economic problems of today "could respond amazingly to one basic treatment."

He described that treatment as "heightened incentive."



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Creating A New Image For The La. Engineer

Corps Of Engineers Has A Birthday

In order to meet present and future needs, the U. S. Army Corps of Engineers "emphatically emphasizes the importance of professionalism" in its military and civilian employees in Louisiana and elsewhere.

This emphasis is noteworthy following the 188th birthday of the U. S. Corps of Engineers and at a time when the Corps is busily engaged in a host of key projects throughout Louisiana.

The Louisiana Engineer asked Col. Edward B. Jennings, District Engineer, U. S. Army Engineer District, New Orleans, to explain how registration through the State Board of Registration for Professional Engineers & Land Surveyors and membership in the Louisiana Engineering Society contribute in the planning, design and

execution of such major engineering projects detailed elsewhere in this issue as the closure of the Old River and the opening of the new Mississippi River-Gulf Outlet.

Col. Jennings' reply reflected the spirit of the Corps of Engineers and that of the registered professional engineer in Louisiana who participates fully in activities of the professional engineering society: "Our standards of excellency dictate that our engineering talent possess the highest state of professionalism."

It reaffirms and broadens the "new image" of the professional engineer in Louisiana.

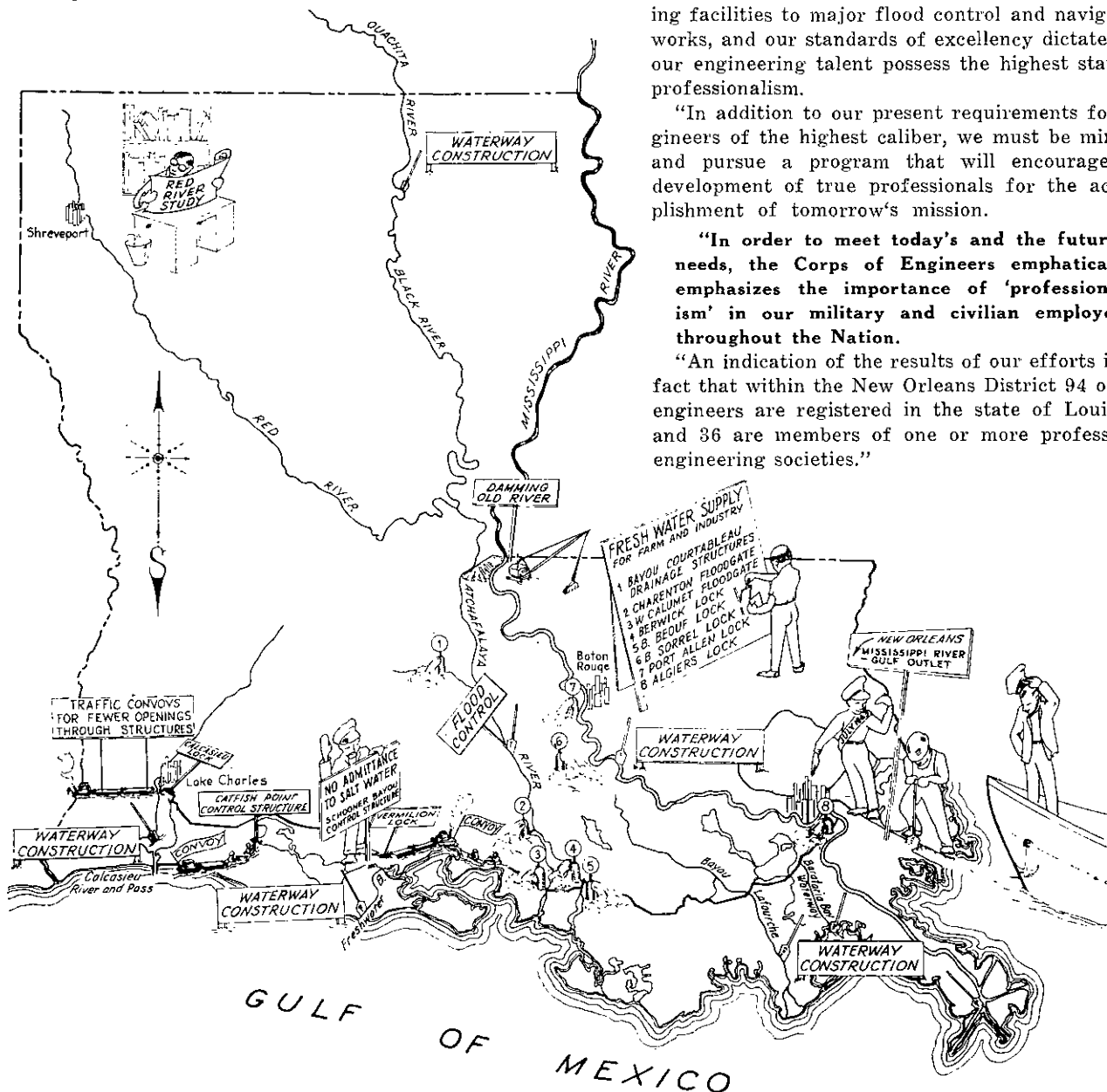
Col. Jennings told The Louisiana Engineer:

"The diversified activities of the U. S. Army Corps of Engineers, ranging from construction of missile launching facilities to major flood control and navigation works, and our standards of excellency dictate that our engineering talent possess the highest state of professionalism."

"In addition to our present requirements for engineers of the highest caliber, we must be mindful and pursue a program that will encourage the development of true professionals for the accomplishment of tomorrow's mission."

"In order to meet today's and the future's needs, the Corps of Engineers emphatically emphasizes the importance of 'professionalism' in our military and civilian employees throughout the Nation."

"An indication of the results of our efforts is the fact that within the New Orleans District 94 of our engineers are registered in the state of Louisiana and 36 are members of one or more professional engineering societies."



Consulting Engineers Section

Louisiana Engineering Society

There has been organized within the Louisiana Engineering Society a section known as the Consulting Engineers Section of the Louisiana Engineering Society to act as a forum for discussion and resolution of such problems as are peculiar to Professional Engineers engaged in private practice and to seek to take appropriate action to aid its members in matters affecting their economic well being and professional standing, recognizing at all times that its activities must be in the best interests of all Professional Engineers, clients and of the public.

If you are a member in good standing of the Louisiana Engineering Society engaged in the private practice of engineering, or employed by an engineer or engineers engaged in the private practice of engineering, and registered as a Professional Engineer in the State of Louisiana and would like to become a member of the Consulting Engineers Section of the Louisiana Engineering Society, fill out the application blank and send it in.

Secretary
Consulting Engineers Section
Louisiana Engineering Society
8200 Florida Boulevard
Baton Rouge, Louisiana

I am a member in good standing of the Louisiana Engineering Society registered as a Professional Engineer in the State of Louisiana.

☐ Engaged in the private practice of engineering

☐ Employed by an engineer or engineers in private practice and would like to become a member of the Consulting Engineers Section of the Louisiana Engineering Society.

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Herbert Hoover: The Engineering Profession

(Reprinted from the Consulting Engineer)

By Herbert Hoover

Herbert Clark Hoover, 31st President of the United States, this month celebrates his 89th birthday, still fighting vigorously for those essential individual freedoms



which he believes give meaning and strength to the American way of life. Consulting engineers everywhere take pride in numbering in their brotherhood this outspoken champion for the cause of private enterprise. For they know that Hoover, though he has received hundreds of honors and increasing volumes of praise as the years have passed, is probably no prouder of any of those

honors than he is of being an "engineer." Hoover's life has been a realization of the dream of every American boy, the embodiment of the American success story. Through his own efforts and talents he has achieved the fulfillment of what almost anyone could hope for—education for a profession that he enjoyed, a successful professional career, a happy family, repeated opportunities to serve his own countrymen and countless people all over the world, the love and respect of millions of his fellow citizens, and long years and wisdom which have made him our most eminent elder statesman.

Errors In Design Can Prove Costly

A structural engineering firm was engaged to make the structural design for a new building wing. The wing was long and narrow and was open on three sides, but tied into the existing structure on the fourth. Shortly after the new wing was occupied, cracks began to develop around the windows, at the stairway intersecting the existing portion of the building and along the floors and walls. A survey made by an independent engineer disclosed that sufficient leeway had not been allowed for the building to expand. It had been assumed that with one end free, only a minimum amount of expansion would occur in the direction of the existing building. This proved not to be the case. To remedy the defect, expansion joints had to be cut in the walls and a passageway leading to the wing had to be cut loose. Parapet wall joints had to be extended to the complete height of both walls in the wing. **The cost of making these corrections was assessed against the structural engineers because of their failure to make sufficient provision for expansion.**

MORAL—Design problems involving judgment can easily

It is a great profession. There is the fascination of watching a figment of the imagination emerge through the aid of science to a plan on paper. Then it moves to realization in stone or metal or energy. Then it brings jobs and home to men. Then it elevates the standards of living and adds to the comforts of life. That is the engineer's high privilege.

The great liability of the engineer compared to men of other professions is that his works are out in the open where all can see them. His acts, step by step, are in hard substance. He cannot bury his mistakes in the grave like the doctors. He cannot argue them into thin air or blame the judge like the lawyers. He cannot, like the architects, cover his failures with trees and vines. He cannot, like the politicians, screen his shortcomings by blaming his opponents and hope the people will forget. The engineer simply cannot deny he did it. If his works do not work, he is damned.

On the other hand, unlike the doctor, his is not a life among the weak. Unlike the soldier, destruction is not his purpose. Unlike the lawyer, quarrels are not his daily bread. To the engineer falls the job of clothing the bare bones of science with life, comfort, and hope. No doubt as the years go by people forget which engineer did it, even if they ever knew. Or some politician puts his name on it. Or they credit it to some promoter who used other people's money. But the engineer himself looks back at the unending stream of goodness which flows from his successes with satisfactions that few professions may know. And the verdict of his fellow professionals is all the accolade he wants.

give rise to errors. The work of all subordinates needs to be carefully reviewed by experienced principals to minimize judgment errors.

Professional Engineers in Private Practice

Approves Vieux Carre Preservation Moves

The Board of Direction of the Louisiana Engineering Society has approved a resolution endorsing efforts to preserve the French Quarter in New Orleans.

Text of the resolution, introduced by John T. Knight of New Orleans and seconded by Albert H. Repscha of Lafayette, follows:

"Whereas, the City of New Orleans possesses a priceless asset in the French Quarter of the city; and whereas, this heritage has been held in trust by past generations and should be held in trust for the benefit of future generations by the responsible citizens of the City;

"Now, therefore, the Board of Direction of the Louisiana Engineering Society does resolve to endorse, support and encourage the efforts of municipal officers and agencies and other parties interested in and dedicated to the preservation of the French Quarter and its buildings."

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Foreigner Study Fund

Members of EJC society technical division and educational committees are now being asked to explore with EJC the availability of funds for sponsoring lecture tours by outstanding foreign engineers.

Under an EJC program made possible by a grant from the National Science Foundation, engineering societies may invite engineers from foreign nations to lecture at universities, engineering colleges, society meetings, and industrial and national laboratories. Participation in seminars, faculty meetings, field trips and laboratory visits, also constitute an important part of the tour.

Expenses Paid

Tours may last from one to three months for which the visitor receives an honorarium in addition to travel and living expenses.

The societies are encouraged to bring to this nation engineers working in those areas of technology where their nation possesses capabilities comparable to, or more advanced than our own, or where their nation may approach technological problems differently from United States engineers and scientists.

With the exception of ASCE, the societies have not been sponsoring tours on a continuing basis even though the grant is an annual allocation.

Lost Opportunities

It is felt that the underutilization of grant resources means the loss of opportunities to disseminate to this nation's engineers the technological insights and know-how of other nations. Also lost have been opportunities to bring to bear on our engineering educational efforts foreign experiences in organizing and structuring engineering research and degree programs.

A fact sheet setting forth the financial ground rules and the mechanics of tour planning may be obtained from EJC.

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ATTENTION, REGISTERED ENGINEERS

TAKE JUST A MOMENT . . . ASK YOURSELF THESE QUESTIONS

1. There are some 2,000 members of the Louisiana Engineering Society . . . ARE YOU ONE OF THEM?
2. Don't you agree with the saying at the top of this page . . . that it's up to every engineer to actively support the engineering profession?
3. Don't you agree that you owe it to yourself . . . to your profession . . . and to your fellow engineers?

You Are A Member Of The Profession . . . And It's Up To You To Help Support The Profession.

You, as a member of the engineering profession, have the obligation to do all you can to help your profession. No one else will do it for us . . . If the engineers don't take an active interest, it just won't be done.

So far, some 2,000 members of this society have been **CARRYING THE BALL FOR YOU** . . . taking part in society activities . . . joining in the work necessary to promote engineering . . . supporting profession with their time, their efforts and their dues.

Let us respectfully remind you that every engineer . . . **WE REPEAT, EVERY ENGINEER**, if he cannot devote any time, should at least sup-

port the society with his dues so that others can do the work. (We realize that many of you are too busy to take an active part.)

Face it . . . some 2,000 men in Louisiana have been, and are, carrying the burden . . . and some 5,000 others are getting a free ride from their work, their time and their dues.

If it were not for the **LOUISIANA ENGINEERING SOCIETY** you would not have your professional status, for it was through this society's efforts that the State of Louisiana enacted

laws to recognize the engineering profession.

Were it not for this society, your earnings might be less . . . Why? . . . Because its work of building up the profession has resulted in **INCREASED STATURE, RECOGNITION AND RESPECT** for every engineer.

AND THIS IS NOT ALL . . . In addition to its many state-wire efforts, the Louisiana Engineering Society cooperates with the professional organizations of other states to protect and further your interests at the national level.

One Last Question . . .

Have You Been Getting A Free Ride From the Efforts of These Other Engineers Who are Doing the Work . . . Paying the Dues . . . Devoting Their Time and Talents?

WHY NOT DO SOMETHING ABOUT IT?

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John P. Fernandez
Secretary-Treasurer
Louisiana Engineering Society
622 Crystal Street
New Orleans 24, Louisiana

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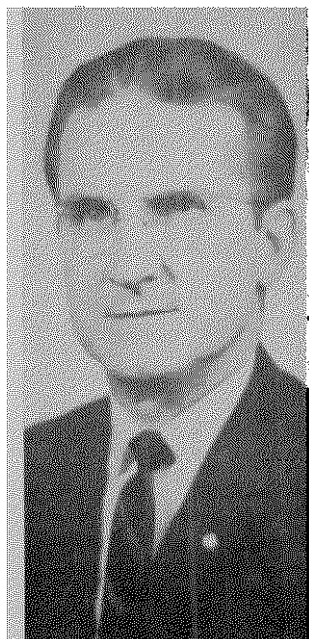
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LES Past President Named Dean At USL

LAFAYETTE—Dr. Wayne P. Wallace, who from 1957 to 1963, was professor and head of the Department of Civil Engineering at the University of Southwestern Louisiana, officially assumed the deanship of the USL College of Engineering July 1.



W. P. WALLACE
... new USL dean

He is a past president of the Louisiana Engineering Society.

"We will continue to increase and intensify our research efforts and will continue to constantly upgrade our courses and curricula to provide our students with the latest and best engineering preparation," said the USL dean of engineering.

"Our efforts will also be directed toward the acquisition of major laboratory equipment, through grants and gifts," said Dean Wallace.

Listed in American Men of Science and "Who's Who in Engineering," Dr. Wallace was awarded the Doctor

of Philosophy degree from Cornell University in 1942.

Post-doctoral studies were made at Harvard University, where he was a special auditor, and at Massachusetts Institute of Technology, where he was a fellow.

Last summer, the USL dean was enrolled in a special six weeks course on "Protective Structures" for the Department of Defense at Worcester Polytechnic Institute.

Dr. Wallace, a registered professional engineer in Louisiana, has for the past eleven years served as consultant civil engineer for numerous architectural firms throughout South Louisiana.

A member of several outstanding National and International Scientific and Professional Societies, he is presently serving as president of the Louisiana Section, American Society of Civil Engineers.

Born in Wichita, Kansas, Dr. Wallace attended the F. T. Howard and Beauregard Grammar Schools and the Warren Easton High School in New Orleans. He was awarded the Bachelor of Engineering and the Master of Engineering degrees from Tulane University.

Bode Electric Co., Metairie, La., received a \$54,986-contract to furnish and install a complete public address system in Michoud's manufacturing, engineering and administration buildings. The system will serve as a plant-wide warning and selective voice paging system.

Gurtler, Hebert and Co., New Orleans, was awarded a \$229,111-contract for the construction of a high pressure test facility. The 4,000-square-foot concrete block structure will be used in testing Saturn vehicle components.

Engineering Degrees At Graduate Level Gain

Engineering degrees at the graduate levels continue to increase at rates far surpassing that of most other fields of higher education, Francis Keppel, U. S. Commissioner of Education, announced recently.

During the past seven years, the rate of increase in the number of doctorates in Engineering has been three times greater than the rate of increase for all other fields combined. At the Master's level, the rate of growth has been about twice that of all other fields combined. The number of Doctor's and Master's degrees awarded in engineering has approximately doubled in the seven year period.

These findings are indicated by partial returns on the annual survey of Engineering enrollments and degrees conducted jointly by the U. S. Office of Education and the American Society for Engineering Education.

The number of Ph.D.'s awarded in Engineering during the calendar year ending June 30, 1962, was approximately 1,200, an increase of nearly 28 per cent over the preceding year. Enrollments for the Doctorate for the fall of 1952 have increased by about 24 per cent over last year, to approximately 9,750, more than three times the enrollment seven years earlier.

The number of Master's Degrees awarded in Engineering during the past year was approximately 8,900, an increase of nearly nine per cent over the preceding year. Furthermore, enrollment for the Master's Degree in Engineering increased by approximately the same per cent, to roughly 35,800, nearly double that of seven years ago.

At the Undergraduate level, Engineering continues to experience a decline. The number of Bachelor's Degrees awarded last year was approximately 34,600, which represents a decline of about 3.5 per cent from the preceding year. Total enrollment at the Undergraduate level has probably declined by less than one per cent, to approximately 230,000. The total enrollment dropped less than the degrees because freshman enrollments in Engineering had been declining less rapidly during the past two years than they had for several preceding years.

Enrollment in Engineering at the freshman level is apparently less this fall than last year. The exact amount of the decline is difficult to estimate as yet, but it will probably be comparable to the 2-3 per cent decline already estimated by the Engineering Manpower Commission. In interpreting these reported declines, it should be noted that reports on Engineering freshmen are received only from institutions which award Engineering degrees. An increasing number of eventual Engineering graduates begin their studies at junior or community colleges and are therefore never recorded as engineering freshmen.

STAMPS FOR SAFETY

A Georgia plant is paying off safety-minded employees in trading stamps, reports Factory, McGraw-Hill publication. A safety slogan is posted monthly, and during his rounds, the plant safety manager asks employees at random the slogan. If they answer correctly, they are 500 stamps richer.

Outings Field Notes By Allen Johnson

Bailey C. Vincent was to be emcee at a Lake Charles Section, LES shrimp boil this month at the Cities Service Pecan Grove. The section's formal program starts Sept. 9 with a paper on "Chemical Cleaning of Refinery and Chemical Plant Equipment" by L. W. Cunningham, Turco Products.

The LES Annual Outing will be held Wednesday, Sept. 18 at the Lakewood Country Club, according to Henry St. Paul, Jr., general chairman. Assisting with the details are Pierre J. Stouse, Jr., vice-chairman; Coleman Kuhn, Donald P. Boudreaux, Ronald P. Cressy, James R. Gore, C. Palmer Jones, Hugh A. Liles, and John R. Fielding, Jr. Jimmy Flower will be the master of ceremonies.

A one-day "Lime Seminar" is projected by the National Lime Association in conjunction with the LSU Experimental Station in Baton Rouge in January. Ara Arman, assistant professor, is in charge of arrangements. U.S. Gypsum, whose New Orleans sales manager is Hugo Phillips, is NLA state member.

An auxiliary ground-water source for the New Orleans area is being sought in a three-year study to provide for the area's expanding needs. The study is being conducted jointly by the water resources division of the U. S. Geological Survey and the Sewerage and Water Board at an estimated maximum cost of \$387,000, with the government and the S&WB sharing equally in the cost. . . . Rex R. Meyer, Baton Rouge, district geologist in Louisiana for the water resources division, gave a status report to the Louisiana Engineering Society at the Engineers Club in New Orleans July 8.

"We tend to think of water only when it's dry, or when there's no water in the tap. This study anticipates the need for an accessible, feasible water source for Orleans Parish."

Meyer said the tremendous flow of the Mississippi River past the city drains the Mid-Continent area, and brings with it sediment that must be processed out. Industrial waste and salt water intrusion are other factors that make this study important, Meyer said. A first step in the program is the drilling of three test wells in Lake Pontchartrain, and study of the Pearl, Tchefuncta and Tangipahoa rivers, he said. LES president Calvin T. Watts, assistant director of the state department of public works, told of ground-water studies being conducted particularly in Southwest Louisiana.

Encouraging women to enter aeronautical engineering is the aim of Zonta International, service organization of Business and Professional Women Executives, which has provided 46 scholarships worth \$2500 each in memory of the late Amelia Earhart, the air pioneer who died in 1937. Information is available from Mrs. L. L. Deslattes, 1409 NBC Bldg., New Orleans 12, La. . . . Dr. Clement A. Tatro, professor of mechanical engineering in the Tulane School of Engineering, is building an apparatus to continue his studies of what happens inside a piece of metal as it is subject to heavy loads. Ultrasonic analysis, the method used by Dr. Tatro, might have for a future application the investigation of air crashes to determine what load the metal had sustained.

PROFESSIONAL ENGINEERS GRANTED REGISTRATION BY THE LOUISIANA STATE BOARD OF REGISTRATION FOR PROFESSIONAL ENGINEERS AND LAND SURVEYORS

August 5, 1963—Andrew D. Aitken, Jr., New Orleans; Ozer A. Arnas, Baton Rouge; John R. Baker, Baton Rouge; Charles L. Borders, Tonawanda, N. Y.; Warrick J. Bourque, New Orleans; Lloyd O. Bowen, Jr.; Baton Rouge; Clifford C. Burton, Arcadia, Calif.; James V. Carlisle, Baton Rouge; George G. Clark, Tacoma, Wash.; Frank A. Denbrock, Jackson, Mich.; Robert D. Dewell, Oakland, Calif.; Wilbur T. Edwards, New Orleans; Vincent E. First, Tonawanda, N. Y.; Robert A. Fry, Houston, Tex.; Robert W. Fullerton, Metairie, La.; Jack D. Gallagher, Dallas, Tex.; John I. Hill, Houston, Tex.; Raymond R. Jageman, Houston, Tex.; Emmanuel T. Jensen, Wayzata, Minn.; Klausa C. Karde, New Orleans, La.; Raymond J. Keyes, White Plains, N. Y.; Frank A. Kunze, Slidell, La.; Arthur W. Luehrmann, Metairie, La.; Jerry M. Marr, Norman, Okla.; Stephen D. McNair, Jr., New Orleans, La.; James M. McQueen, Jr., Baton Rouge, La.; Joseph A. Miller, Jr., Birmingham, Ala.; Virgil O. Mitchell, Baton Rouge, La.; Andrew M. Moncrief, Houston, Tex.; William F. Nash, Jr., Pasadena, Calif.; Frank O. Paulson, Charleston, S. C.; James S. Piker, Slaughter, La.; Deiter E. Popoff, Metairie, La.; Robert L. Prichard, New Orleans, La.; Seab Reynolds, Jackson, Miss.; Edward G. Saal, Gueydan, La.; Jefferson L. Smith, Metairie, La.; Glenn R. Snyder, New Orleans, La.; Howard H. Spiegel, Jr., Cedar Grove, N. J.; Harry N. Tufts, Arlington, Va.; Philip G. Waters, Houston, Tex.; Elbridge M. Wiegmann, Shreveport, La.; Samuel D. Wilder, Hqs. USEUCOM, J-4 Division, APO 128, New York, N. Y.; Kenneth C. Zechiel, Florence, Ala.

\$765,000 Contracts Awarded At Michoud

Four contracts, totaling more than \$765,000, have been awarded for modification of facilities at the NASA Michoud Operations.

Supreme Construction Company, New Orleans, received a \$20,142-contract to construct an additional parking lot on the west side of the Michoud manufacturing building.

A \$29,256-contract was let to the George Construction Co., Harvey, La., for modification of a transportation building. Work will include the fabrication and erection of structural steel with asbestos siding, and the installation of steel rolling doors.

R. E. Neumann Electrical Contractors of New Orleans will install an additional electrical substation for the administrative and engineering buildings at Michoud under a \$12,459-contract.

Mechanical Contracting Engineers, New Orleans, has received a \$14,748-contract to install government-furnished auxiliary boiler equipment for the Michoud complex.

All contracts were awarded for the Michoud Operations by the support services contractor, Mason-Rust.

LSUNO Offers New Master's Degree

The Louisiana State University electrical engineering department will offer a master's degree program to New Orleans area residents this fall through the LSU General Extension Division.

Classes will be held on the LSUNO campus each Wednesday evening beginning Sept. 25, according to Dr. Leonard C. Adams, head of the LSU electrical engineering department. Registration may be made at the first class session.

The courses are established for resident credit and are identical to those presented on the main campus. A student may enroll either for a graduate degree or as an unclassified student in the graduate school.

A course in electromagnetic theory and techniques and courses in mathematics and mechanical engineering will be offered during the first semester. Credits may be applied to master's programs in either electrical or mechanical engineering.

Admission requirements are a baccalaureate degree in one of the engineering sciences, physics, or mathematics and acceptance by the Graduate School.

Inquiries about the program should be made to Adams at the Baton Rouge campus.



Check for \$1,000 was presented to Dean Lee H. Johnson, dean of the Tulane School of Engineering, by the Woman's Auxiliary of the Louisiana Engineering Society. With Dean Johnson are Mrs. Roy Cappel (right) president of the Auxiliary and Mrs. John L. Porter of the Fellowship Fund Committee. This brings the Fund total to \$8,578. Monies are used to sponsor scholarships in engineering at Tulane.

Tulane Adopts New Freshman Course

The Tulane School of Engineering this Fall will offer a new freshman course in engineering design and analysis, Dean Lee H. Johnson told The Louisiana Engineer.

The course was developed by Chester A. Peyronnin, Associate Professor of Mechanical Engineering.

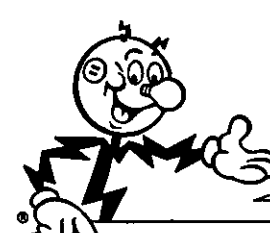
The dean said that the senior course in Aerospace Engineering will be offered again, and will be taught by a new member of the faculty, Dr. James C. O'Hara, who has had experience with the Space Technology Laboratory in connection with the Titan Project at Cape Canaveral, Fla.

Another Fall project will be the starting of installation of a microwave laboratory, to be used jointly by the Electrical Engineering and Physics departments, by Dr. Walter M. Nunn, new Tulane professor of Electrical Engineering.

Further, said the dean, "we expect to have in Mechanical Engineering a subsonic wind tunnel test section of an area of almost six square feet for research on heat and mass transfer. Velocities of up to 250 miles per hour will be obtained."

The School is continuing its work on plans for research on production, prevention and propagation of noise for test-firing rocket engines in conjunction with the NASA Marshall Space Flight Center in Huntsville, Alabama, Dean Johnson added.

NEW ORLEANS—Freeport Sulphur Company has acquired the assets of Southern Clays, Inc., it was announced by E. D. Wingfield, vice president in charge of Freeport's southern operations.



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Memorials

OLE K. OLSEN

Ole Kjeld Olsen, retired civil engineer and a Past President and Honorary Member of the Louisiana Engineering Society, died in New Orleans, Louisiana, on April 15, 1963 after an extended illness.

He was born in Copenhagen, Denmark, January 7, 1877 and received his degrees in Civil and Mechanical Engineering from the Polytechnical Academy, Copenhagen, in 1899.

Ole Olsen's engineering career began in 1899 with N. Christian Schouboe, Consulting Engineer, Copenhagen as a draftsman. He progressed to designer and had charge of the erection of dock work, grain elevator and other engineering work. After serving his term of military duty, he came to the United States in June 1901, and became a naturalized citizen.

He was employed as a Structural Draftsman by Hecla Iron Works, Brooklyn, N. Y., until the end of 1901. From January 1902, until January 1903, he worked for L. W. Brown, New Orleans, Louisiana, as assistant engineer, surveying a large tract of land in Texas for irrigation and designing a power and pumping plant for this project; also, at the same time he was assistant engineer for the Lone Star and Crescent Oil Company. During 1903 he was engineer in charge of the Industrial Pipe Line Company of New Orleans.

From 1904 to 1907, he practiced in New Orleans as a consulting engineer designing and supervising construction of docks, power houses, warehouses and general engineering. From 1907, Mr. Olsen specialized in the design of reinforced concrete and structural steel construction and combined this with the sale of reinforcing and structural steel and high class building specialties for architectural and engineering construction. In 1933, he took his office personnel into his business as partners operating as Ole K. Olsen, Inc., and later Ole K. Olsen Company.

Mr. Olsen and his companies participated in either designing or furnishing materials or specialties for practically every large structure that was erected in New Orleans from 1904 into the 1950's. Numerous times, he, or his companies, served as both designers and furnishers of reinforcing and structural steel and specialties and his integrity remained unquestioned.

Mr. Olsen was elected to Associate Membership in the American Society of Civil Engineers in 1914; served as president of the Louisiana Section in 1922; and, was made a Life Member in 1948. He became a member of the Louisiana Engineering Society in 1907; served as its President in 1919; and, was made a Life Member in 1937 and an Honorary Member in 1956. He was also an assigned member of the New Orleans Chapter, American Institute of Architects.

Although he had no children of his own, he worked many years, and became a leader, in the Boys' Scout Movement. He was also a member of the Chamber of Commerce of the New Orleans Area. Mr. Olsen was never found wanting when help was needed in civic affairs

whether it be for the City of New Orleans, State of Louisiana or the Government of his adopted country, the United States of America.

Ole was a man of average stature with a big warm love for human beings. He trusted people and seldom was his trust betrayed; his smile was ready and his laughter always lifted the spirits of those around him; his assistance to those who sought his help was unbounding; and, his hobby was being entertained by his friends and entertaining them by the hundreds, maybe thousands, in the Rathskeller at his home on Millaudon Street.

Ole Olsen was married to the late Clara Anna Lawrie of Newcastle, England. He is survived by two sisters, Mrs. Karen Hansen of Copenhagen, and Mrs. C. V. Rafn of West Palm Beach, Florida.

RESOLVED, That the Louisiana Engineering Society mourns the loss of its valued Member and former President, Life Member and Honorary Member; that this memoir be inscribed in the records of the Society and that a copy be sent to his sisters.

By

ALVIN M. FROMHERZ

R. MALLARD SEAGO

JOHN RIESS

CARY BRECKENRIDGE GAMBLE

It is with heavy hearts that the Louisiana Engineering Society records the death on April 30, 1963, of one of its gifted and notable members

Mr. Cary Breckenridge Gamble

Mr. Gamble was born on January 5, 1902 in Wilson, North Carolina, and attended Episcopal High School in Alexandria, Virginia. In 1923, he received a BS Degree in Electrical Engineering from Alabama Polytechnic Institute, Auburn, Alabama. After graduation, he spent a year at General Electric Company, as a student engineer, then two years teaching physics at Washington & Lee University. He then joined the Frigidaire Organization in 1926 and served in both the sales and the engineering departments until 1935, at which time he moved to New Orleans to enter the field of air conditioning contracting.

In 1936, he became associated with the firm of Leo S. Weil & Walter B. Moses, specializing in air conditioning, handling a wide range of type and size of engineered installations. This association continued until it was interrupted in 1941 by World War II, at which time he went with the Associated Mechanical Contractors of Dallas, Texas, doing work on Ordnance Plants in Texas. In 1943, he returned to New Orleans and began his career as a professional engineer serving as a consultant to contractors for marine air conditioning and refrigeration in connection with contracts for the Army, Navy, War Shipping Administration and Maritime Commission, and continued this through 1945.

On January 1, 1946, he, in partnership with his brother Richard W. Gamble, formed the Consulting Engineering firm of Cary B. Gamble & Associates, which was to become well known and respected for excellence in mechanical and electrical engineering and its never ceas-

ing efforts to raise the standards of air conditioning and the engineering of same.

The firm was incorporated November 1, 1962. No attempt will be made to enumerate the numerous projects on which they have been engaged. Suffice it to say that these included Office Buildings, Hospitals, Medical Facilities and Institutions, Hotels and Apartments, Industrial Applications, Federal Projects, Stores and Restaurants, Ships, Miscellaneous Commercial, Churches, Schools, and, even Penitentiaries. These projects are scattered all over the Nation from coast to coast and in South America. Truly, it could be said that he was an ambassador of good will for our Society and our City. He exemplified the "Engineer" to all who knew him. His activities in professional and technical societies, as well as trade and business associations, were as varied as the projects his firm engineered. The following is the list:

Louisiana Engineering Society.

American Society of Mechanical Engineers.

American Institute of Electrical Engineers.

American Institute of Consulting Engineers.

Gulf Institute of Consulting Engineers—the first President of this Society.

American Society of Heating and Ventilating Engineers—Member of Board of Directors and a Past President of the Delta Chapter.

American Society of Refrigerating Engineers—Member of Board of Directors and a past Chairman of the New Orleans Section.

American Society of Heating, Refrigerating and Air Conditioning Engineers, Inc.—formed by the merger of the two foregoing societies in which he served, actively, on several standing committees.

National Association of Practical Refrigerating Engineers.

International House—a founder member.

Metairie Country Club.

Propeller Club of New Orleans.

Chamber of Commerce.

Construction Industry Association of New Orleans, Inc.—past Vice-President.

Eta Kappa Nu Honorary Society.

His passing has left a vacancy difficult to be filled in the engineering community life of New Orleans, into which he entered in 1935 as a fully mature engineer, thoroughly experienced in manufacturing, teaching, service-sales and practical operation in all the allied industries in the air conditioning field. The many activities enumerated in which he was so very active and contributed so significantly shall on the one hand feel his loss while on the other remain immeasurably enriched by his guidance.

In addition, he was a devoted husband to Eva Wambsgans Gamble, a devoted and exemplary son of Reverend Cary Gamble, and always thoughtful of his sister and brothers. He was always ready to help those in need whenever he could.

He is survived by his widow, the former Eva Wambsgans, whom he married February 10, 1940; his father, the Reverend Cary Gamble; his sister, Miss Elizabeth

Gamble, both of Selma, Alabama; and three brothers—Richard W. of New Orleans, George P. of St. Louis, and Dr. E. Lee Gamble of Cambridge, Mass.

Our hearts, as we said in the beginning, are heavy as we close this memorial to the passing of this man who meant so much to professional engineering in our City and Society.

Be it resolved, therefore, that this Memorial be entered into the minutes of the Society and published in The Louisiana Engineer, and copies sent to the members of his family.

WALTER COOKE, Chairman

FRANK W. MACDONALD

GEORGE ELMER MAY

THOMAS A. STOKES

LES to Participate

In Workshop Sept. 24

WASHINGTON, D. C. — The Louisiana Engineering Society is cooperating with a group of technical societies, civic organizations, trade associations and state agencies for the presentation of the Seventh Annual Chemical Safety Workshop to be held in New Orleans Sept. 24..

Officials and members of the these organizations are being encouraged to participate in the workshop which is sponsored by the Manufacturing Chemists' Association, the Louisiana Chemical Association and the Chemical Industry Council of New Orleans.

The organizations which are cooperating in this safety workshop are: Louisiana State Chamber of Commerce, Louisiana State Board of Health, Louisiana Department of Commerce and Industry, New Orleans Chamber of Commerce, Louisiana Manufacturers' Association, Mississippi Department of Commerce and Industry, Mid-Continent Oil and Gas Association, and the New Orleans chapters of the American Chemical Society, American Institute of Chemical Engineers, American Society of Mechanical Engineers and the American Society of Safety Engineers.

It is anticipated that approximately 200 safety and fire protection specialists from chemical and allied industries will take part in the informal discussions centering around the safe handling and use of chemical products.

These workshops, which are conducted throughout the country by the MCA, provide industry safety officials with an opportunity to make available the latest information on safety practices to small chemical manufacturers, users and transporters of chemical products and to local fire officials and physicians.

The workshop will be conducted by the Safety and Fire Protection Committee of the MCA which is under the chairmanship of G. G. Fleming of Celanese Corporation of America.

Previous workshops have been conducted by the MCA in Philadelphia, Houston, Chicago, Charleston, West Virginia, Niagara Falls, Canada, San Francisco and Los Angeles.

General Audit - - Year Ended Dec. 31, 1962

PHONES:
BUS. 524-2338
RES. VERNON 5-0285

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AMERICAN INSTITUTE OF CERTIFIED PUBLIC
ACCOUNTANTS
SOCIETY OF LOUISIANA
CERTIFIED PUBLIC ACCOUNTANTS

June 28, 1963.

Board of Direction
Louisiana Engineering Society
New Orleans, Louisiana

Dear Sirs:

I have audited the accounts of the Louisiana Engineering Society for the year ended December 31, 1962 and submit the following:

Statement of Assets, December 31, 1962 (Exhibit A)
Statement of Cash Receipts and Disbursements for the Calendar Year 1962 (Exhibit B)

The cash on deposit at December 31, 1962 in the regular checking account and in the various homesteads were verified by certifications obtained from the depositories.

My examination was made in accordance with generally accepted auditing standards and included such tests of the accounting records and such other auditing procedures as I considered necessary in the circumstances.

In my opinion, the accompanying Statement of Assets and Statement of Cash Receipts and Disbursements, fairly present, respectively, your financial condition at December 31, 1962, and the cash transactions for the year then ended.

Yours very truly, -----

Carlos J. Grimader
Certified Public Accountant

LOUISIANA ENGINEERING SOCIETY STATEMENT OF ASSETS DECEMBER 31, 1962

CASH:	
Checking account—Whitney National Bank of New Orleans.....	\$ 7,508.76
UNITED STATES SAVINGS BONDS, SERIES J:	
(Maturity Value—\$2,000.00) redemption value	\$ 1,728.00
INVESTMENTS—HOMESTEADS:	
(AT COST)	
Columbia Homestead Association.....	\$ 2,000.00
Commonwealth Homestead Association.....	2,000.00
Greater New Orleans Homestead Association.....	2,824.63
Security Building and Loan Association.....	1,500.00
State Savings and Loan Association.....	1,500.00
Union Savings and Loan Association.....	1,500.00
Total Investments—Homesteads.....	\$11,324.63
LAPEL EMBLEMS ON HAND.....	\$ 145.09
TOTAL ASSETS	\$20,706.48

NOTE: Of the cash in bank stated above, \$6,037.70 is available for ordinary operations and \$1,471.06 is being reserved for the Registration Law Fund.

Miscellaneous—sales of certificates, publications, etc.	39.25
Registration Law Fund.....	80.00

Total Receipts \$42,294.17

DISBURSEMENTS

Dues rebated:	
N. S. P. E.....	\$ 5,532.25
Sections	4,984.80
Advertising Commissions paid.....	1,890.50
Annual meeting	2,852.27
Annual outing	883.89
Auditor's fee	175.00
Awards, scholarships and vocational guidance	507.65
Dues, Chamber of Commerce, etc.....	187.00
Engineering week	508.38
Miscellaneous expenses, certificates, floral, offerings, etc.	413.67
Monthly meetings	381.13
Printing, stationery, and office supplies.....	1,753.62
Public relations	4,186.04
Publication—The Louisiana Engineer.....	8,238.47
Rent—headquarters	180.00
Salaries:	
Secretary-Treasurer and assistant.....	5,100.00
Stenographer	1,320.00
Shreveport Fair	150.00
Social Security tax.....	200.64
Travel expense	66.70
State planning conference.....	165.65
Registration Law fund.....	62.84

Total Disbursements \$39,740.50

LOUISIANA ENGINEERING SOCIETY STATEMENT OF CASH RECEIPTS AND DISBURSEMENTS FOR THE CALENDAR YEAR 1962

RECEIPTS	
Dues:	
N. S. P. E.....	\$ 5,489.00
All other	18,854.25
Advertising	10,381.26
Annual Meeting	2,029.00
Annual Outing	886.30
State Board Contribution.....	4,000.00
Interest—homestead shares	361.25
Sale of emblems	41.50
Monthly meeting expense pro rata.....	32.36
Engineer's Week contribution.....	100.00

EXCESS OF RECEIPTS OVER DISBURSEMENTS	\$ 2,553.67
CASH BALANCE JANUARY 1, 1962—	
WHITNEY NATIONAL BANK.....	4,955.09
CASH BALANCE DECEMBER 31, 1962—	
WHITNEY NATIONAL BANK.....	\$ 7,508.76

NOTE: Not reflected in receipts above are an increment in U. S. Savings Bonds of \$94.00 and optional shares account of the Greater New Orleans Homestead Assn. of \$78.94; not reflected in the disbursements is the cost of emblems sold in the amount of \$41.50.

LES Awards Nominations Due By Sept. 15

The Louisiana Engineering Society recognizes outstanding service or accomplishments by engineers in various ways. One of these is by the awarding of the "Civic Activities Medal" or "Andrew M. Lockett Award" presented for distinguished civic service rendered by the recipient engineer in the interest of the public, without compensation for such service. The character and scope of the service, rather than its scientific or professional nature are the predominant criteria for this award. This award was established to honor the memory of Mr. Andrew M. Lockett, who, in his lifetime, was not only a top-flight engineer and very active in engineering society affairs but who also found time and energy to engage in many civic enterprises. Recipients of this medal in the past have been:

1951 Lester F. Alexander	1957 Frank Hugh Coughlin
1952 Harold C. Leonard	1958 Neville Levy
1953 A. P. Paterson	1960 Franklyn G. Hornsby
1954 Arthur J. Naquin	1961 Clayton L. Nairne
1956 Homer Fritchie	1963 Richard R. L. Ward

Note that in some years no award was made as no suitable candidate was nominated.

The other medal is the "Technological Accomplishment Medal," given for attainments or discoveries contributing to the advancement of engineering. For outstanding work in various fields of engineering this medal has been awarded to the following men:

1951 A. Baldwin Wood	1957 Irven E. Hanson
1952 Edwin L. Dennis	1958 Jesse Coates
1953 C. Glenn Cappel	1959 William B. Gurney
1954 Alexis Voorhies, Jr.	1960 Robert J. Kuhn
1956 Wiley D. Poole	

Again, awards were not made in some years.

It is not necessary for nominees for either of these medals to be members of the Louisiana Engineering Society although it is logical to expect to find candidates for such top professional honors among the type of engineers who show evidence of professional attitudes by belonging to LES. Nominations must be made to the officers of the local sections by Sept. 15 1963, who will consider them and if approved, forward them to Ben Bogard, Chairman of the Honors and Awards Committee by Oct. 15, 1963. The following data must accompany nominations for these awards:

1. Full statement of the training, experience and notable contribution of the nominee.
2. Statement of the basic reasons for submitting the nomination and for believing the nominee eligible for the honor.
3. Other information and supporting data that may assist the committee to consider and act upon the case.
4. The present company connection and title of the candidate and his present permanent address.
5. In drafting the citation, care should be taken to assure that the specific reason for bestowing the honor is clearly stated.

The highest honor that the Society can bestow upon any member is that of **Honorary Membership**. There are at present only 12 such members, these and the year of their election are:

1949 James M. Robert
1951 James M. Todd
1952 Edward S. Bres
1954 Leo J. Lassalle
1955 Norman E. Lant
1956 Fred N. Billingsley
1957 Charles M. Kerr
1957 George P. Meade
1958 Herman L. Lehmann
1959 John Riess
1961 George Griffin Hughes
1963 Waldemar S. Nelson

There are no limits to the number of Honorary Members, either as to totals or number per year. However, the awarding of this type of membership averages less than one per year. Article VII of the Constitution prescribes the procedure for nomination and election of candidates for Honorary Membership as follows:

"Endorsement by at least ten members in good standing, affirmative action by at least 80% of the Honorary Membership Committee which consists of all living Past Presidents, and finally confirmation by the affirmative votes of 75% of the members of the whole Board of Direction. Recommendation by the candidate's local section is not required but such recommendation would certainly favorably influence the Honorary Membership Committee and the Board."

The "Certificate of Appreciation" has been awarded by the Society on a state-wide basis each year since it was instituted at the 1953 Annual Meeting.

1953 Lionel J. Cucullu	for his work in Vocational Guidance
1954 Jeffrey H. Collins, Sr.	for Publication
1955 Calvin T. Watts	Legislative
1956 Clayton L. Nairne	Reorganization Committee
1957 John T. Knight, Jr.	Vocational Guidance
1958 Otha E. Barron	State Planning Conference
1959 William J. Drawe, Jr.	Engineers Week
1960 John P. Fernandez	Work for the Society beyond the call of duty
1961 Tom E. Alexander	B. R. Engineers' Council
1962 John T. Knight, Jr.	Ethics and Professional Conduct
1963 Henry L. Landry	Legislative

In addition to these Certificates given by the Society for work for the Society as a whole, each State Section is entitled to award a similar certificate each year for work especially for the particular Section. Some Sections have taken advantage of this opportunity while others have neglected it. The State Secretary issues these at the request of the Section President and they are then presented to the honoree at an appropriate ceremony, perhaps during Engineers Week.

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Towards Unity

Outlines Objectives For The Profession

Excerpts of Minutes
Board of Directors, E. J. C.
May 22, 1963

Group consciousness of "Unity" require certain basic objectives universally accepted and supported by the majority of the members of the Profession.

This is so fundamental a concept that the Board of Engineering Cooperation has formulated a set of "Objectives for the Profession," which it is hoped will serve as a basis of comment and discussion among all engineers who wish for progress toward true professional status. Ultimately, it could be hoped that all recognized engineering organizations would agree on and adopt a common set of objectives.

For discussion purposes, the Objective for the Profession are stated as follows:

1. To project the true image of Engineering, resplendent in its contributions in the past and with all of its challenges for even greater service to mankind in the future, and thereby to attract to the Profession, well qualified and properly motivated young people.

2. To provide the best possible Engineering education for those choosing the Profession, whereby technical content and the humanities are appropriately balanced to the end that graduates will develop professional integrity and social responsibility.

3. To provide employment opportunities for the engineer which will challenge the capacity of the individual to make his maximum contribution under conditions which encourage his professional development.

4. To advocate and motivate every practicing engineer to upgrade his technical competence by continuing study, both formal and informal, and to seek legal status through registration at the earliest possible point in his career.

5. To support and encourage the development of highly qualified engineering technicians, recognizing their importance as a key member of the engineering team, and the legitimate concern of the engineer for adequate technician support within the proper environment.

6. To provide the forum for the effective exchange and extension of knowledge in every technical discipline by coordinated meetings, technical papers and other means of communication.

7. To develop adequate and dignified recognition for Professional achievement by Engineers, for the encouragement of Engineers, and for the information of the public.

8. To encourage the individual engineer to participate in appropriate civic activities and assume greater leader-

ship in helping to solve the broad general problems facing society.

9. To evolve the mechanism which will properly and forcibly represent the position of the profession in all matters affecting National policy, objectives and direction, recognizing the inextricable effect of technology on nearly all facets of our National life and the responsibility of the engineer to interpret these effects to governmental bodies at all levels and to the general public.

10. To develop for the entire profession, a single set of Canons of Ethics, applicable to all Engineers, and provide within the Profession a mechanism for assuring compliance.

11. To create and preserve for the Engineering Profession and for its members a deserved position of high esteem for exemplary public service.

These objectives are being distributed to EJC, ECPD, and NSPE for discussion and comment.

Comments should be forwarded by EJC constituent societies to EJC and NSPE State Societies to NSPE for correlation, results of which will be made known to all participating organizations.

Daily Reminder: Engineer's Creed

As a Professional Engineer, I dedicate my professional knowledge and skill to the advancement and betterment of human welfare.

I pledge:

To give the utmost of performance;

To participate in none but honest enterprise;

To live and work according to the laws of man and the highest standards of professional conduct;

To place service before profit, the honor and standing of the profession before personal advantage, and the public welfare above all other considerations.

In humility and with need for Divine Guidance, I make this pledge.

Adopted by

National Society of Professional Engineers
June, 1954

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NEW ORLEANS *Public Service* INC.

Housing Authority Gets Order To Pay \$587,114

The Housing Authority of New Orleans has been ordered to pay \$587,113.85 to the Pittman Construction Co., general contractor of the Desire Street Housing Project.

Pittman Construction Co. had brought suit against the authority to recover amounts alleged due for materials and work performed. The first trial was on Oct. 14, 1958.

The authority had filed a reconventional demand alleging that Pittman walked off the job without completing the work.

Damages amounting to \$1,477,824.42 had been incurred because of this, the authority claimed.

The decision against the authority was announced Aug. 1 by Judge Alexander E. Rainold.

The suit revolved around the fact that land on which the project is built subsided from 15 to 30 inches during construction work, Judge Rainold said.

Pittman, low bidder for the project at \$4,369,864, was awarded the contract on March 6, 1953.

The company claimed that serious damage to much of the work, including the utilities, was caused by the subsiding and that under protest the company was forced to perform extensive extra work by the authority.

Testimony during the trial, Judge Rainold ruled, brought out the fact that the authority knew the site would subside considerably, but did not expect it to subside as quickly as it did.

"The Desire Street project was the 14th project of its kind to be planned and constructed by HANO," the judge said, "and apparently HANO based its plans and specifications on past experience with other projects, thereby not taking cognizance of the vastly different soil conditions present on the Desire St. site."

The court ruled that Pittman should be compensated for the extra material and labor necessitated by the soil subsidence.

Although the court noted that Pittman completed some 98 per cent of the work on the project before leaving the job, it held Pittman liable for certain third-party and counter demands surrounding the case.

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NASA Briefs

An appropriations bill authorizing the expenditure of \$8,688,000 for additional production facilities at the Michoud plant and \$92,696,000 at the Mississippi Test Facility has won approval of the House of Representatives in Washington.

The appropriations were included in the \$5.2 billion space exploration bill. Amendments trimmed nearly \$39 million from the original measure.

The Michoud funds are to be used for additions and extensions to utilities systems, including lighting power distribution, steam, air-conditioning, industrial waste disposal, gas and water systems.

The bill also provided \$2,633,000 for construction of a prefabricated steel frame building for the Saturn booster rocket assembly plant.

Another \$375,000 was earmarked for rehabilitating the present 5,500-foot-long Michoud airstrip and the installation of a lighted heliport.

Static Test Stands

The bill provides for expenditure of \$32.4 million for two static test stands, construction of a test control center, a stage storage building and auxiliary systems and equipment at the Mississippi Test Center in Hancock and Pearl River Counties.

Another \$4.5 million was designated for construction of a bridge for the East Pearl River crossing of U. S. Interstate Hwy. 10. The sum represents the difference in cost between the low-level fixed bridge originally planned by the Bureau of Public Roads and a specially designed bridge required to provide waterway access to the test facility.

Air Reduction Sales Company will build an \$8 million plant adjacent to the Michoud rocket booster facility for production of gaseous and liquid oxygen, nitrogen and argon, according to company president R. E. Lenhard. No starting date for construction was given.

The facility will be built on a 50-acre site fronting on the Intracoastal Waterway near Michoud Canal. It will have a capacity of 1,000 tons per day.

Missile and rocket industries depend heavily on liquid oxygen as a fuel oxydizer to propel liquid fuel vehicles, and it is also used to simulate outer space conditions in testing rocket and missile components.

Airco said its facility will feature a unique distribution system of barges for transporting liquefied gases through the Intracoastal Waterway, as well as up the Mississippi River.

The barges will be specially insulated to sustain the extreme cold of these fluids.

Special wharves, docking facilities and a complex piping system will be installed to accommodate the barges.

The National Aeronautics and Space Administration has awarded a second one-year contract to the firm of Mason-Rust for continued provision of support services at the Saturn booster manufacturing Michoud Operations in New Orleans.

The \$11,708,225-contract, signed by NASA's Marshall Space Flight Center, Huntsville, Ala., became effective July 1. It will continue in force through June 30, 1964.

Mason-Rust currently employs about 660 personnel.

A \$211,637-contract has been awarded for the installation of the third phase of a chemical waste disposal system at Michoud. The four-month contract was let to Dow Industrial Service, Cleveland, Ohio.

Work will include the design and construction of a deep well injection system. The well, to be approximately 4,800 feet deep, will permit the safe disposal of industrial waste from the Saturn booster manufacturing installation.

The contract was awarded for NASA by Mason-Rust, support services contractor at Michoud.

Six contracts totaling \$483,433 have been awarded to five firms in the New Orleans area for construction of new and modification of existing facilities at Michoud.

A \$124,962-contract for the construction of offices on the south mezzanine of the manufacturing building was awarded to Boley and Hardouin Construction Co., Metairie.

Boley and Hardouin will also build additional office facilities in the north end of the Saturn booster manufacturing plant under a separate, \$42,300-contract.

Mechanical Contracting Engineers, Inc., New Orleans, will install emergency fire pump equipment in the Operations' boiler house under a \$5,124-contract.

A \$26,950-contract was awarded to Otis W. Sharp & Son, Inc., New Orleans, for construction of a salvage yard facility.

The contracts were awarded by Mason-Rust.

The National Aeronautics and Space Administration said construction of the Mississippi test facility has started.

A 250-acre boat harbor has been cleared and a pilot channel cut for more than a mile into the harbor and lock area from the East Pearl River.

The Mississippi test facility said "already \$15,816,105 worth of construction (is) going forward."

Clearing has begun on a 850-acre Saturn V complex where four test positions will be built to static fire the Saturn V S-1C booster and the S-11 second stage.

LES Annual Outing Scheduled Sept. 18

The Annual Outing of the Louisiana Engineering Society will be held at the Lakewood Country Club Wednesday, Sept. 18, according to Henry H. St. Paul, Jr., chairman.

The golf tournament, beginning at 8:30 a.m. has an entry fee of \$5.50.

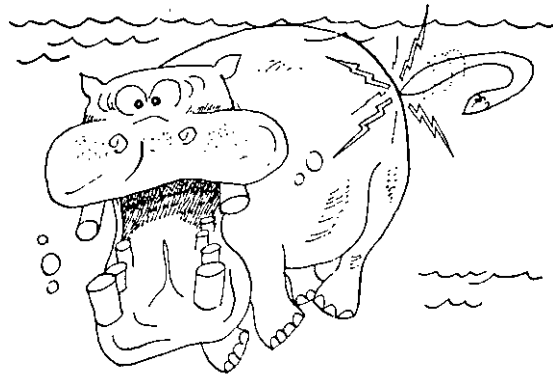
Horseshoe singles and doubles, with entry fee of 75 cents for single or double and \$1.25 for both events will start at 2 p.m.

Admission to the buffet dinner, starting at 6 p.m. is \$5.00.

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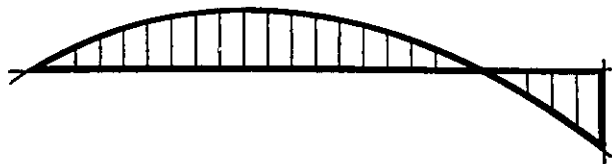
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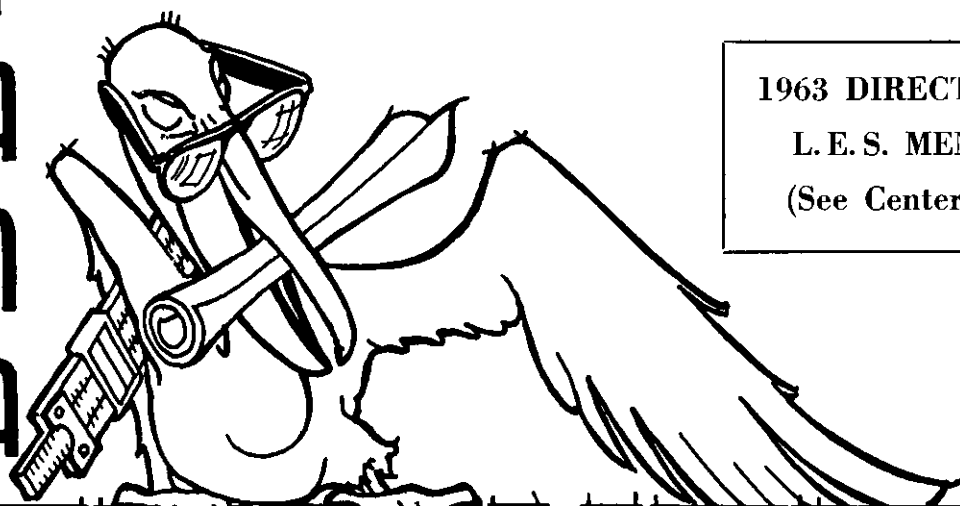
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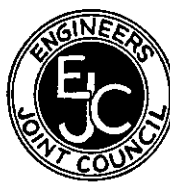
New Orleans Area Datum Plane Committee Makes Report. (Pp. 9-10)



1963 DIRECTORY OF
L. E. S. MEMBERS
(See Center Pages)

ENGINEER

Vol. 49 No. 5
October, 1963

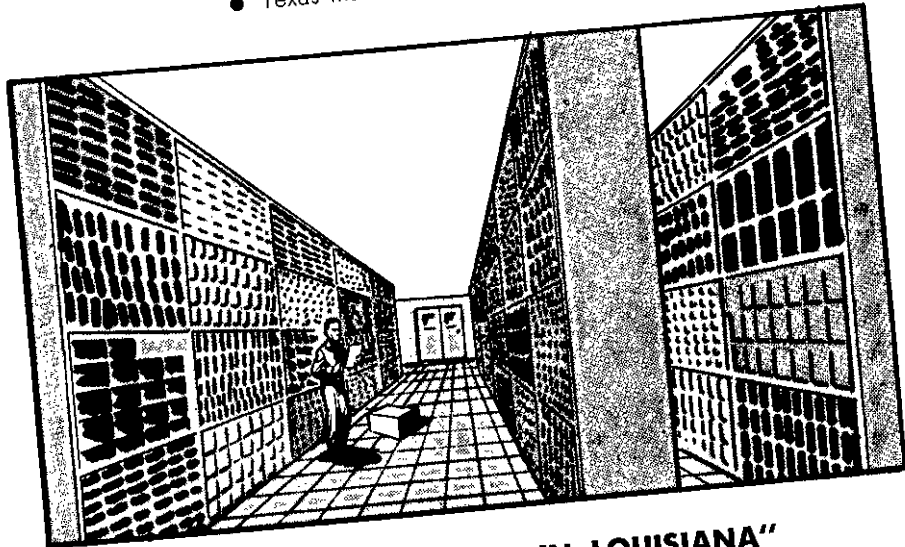


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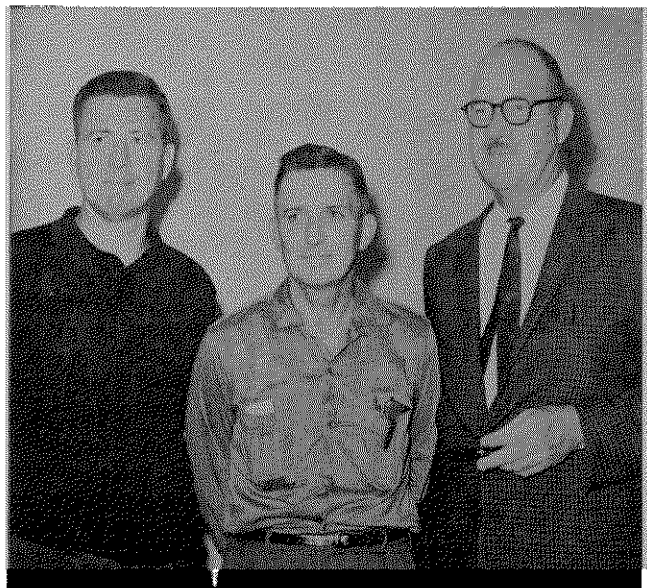
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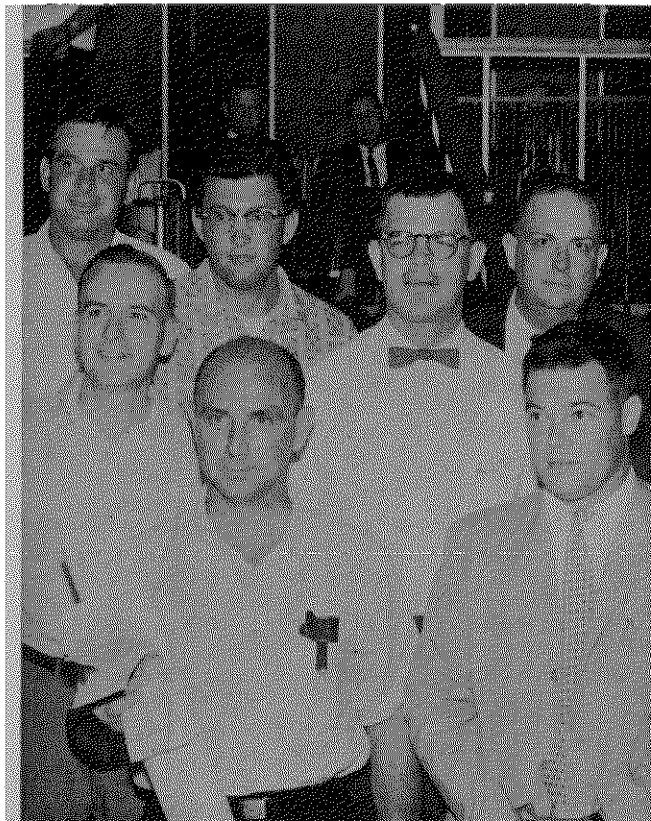
L.E.S. STAGES 33rd ANNUAL OUTING



WINNER of the horseshoe singles at the 33rd Annual Outing of L.E.S. at Lakewood Country Club in New Orleans was Ray Maddux (left). Doubles event was taken by Al Adoue and Syd Ellis (right). Rain failed to dampen spirited competition. Singles runnerup was F. M. Taylor. Doubles runnersup were Maddox and Adoue.



FAST BREAK FOR FOOD followed eventful day that included the golf tournament, horseshoes and other less strenuous activities. President's trophy was won by Frank W. Macdonald, repeating his 1962 triumph. Many golfers, despite an intermittent rain through the day, toured the links at Lakewood.



GUIDING the Annual Outing to a successful conclusion was Henry H. St. Paul, Jr. (front, right), general chairman. He was ably assisted by C. Palmer Jones (front, left); Don Boudreaux and Pierre (Pete) Stouse (center, from left); and (rear, from left), James Gore, John Fielding, Coleman Kuhn.



GUEST SPEAKER James S. Flower, district manager of the Henry Vogt Machine Co. was welcomed by Col. J. T. Knight, Jr. (left), L.E.S. first vice-president, and Robert P. Lockett, Jr. (right), Board of Direction sponsor of the Annual Outing Committee. Flower creditably handled the emcee chores and prizes awards.

THE LOUISIANA ENGINEER

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The LOUISIANA ENGINEER is the official publication of the Louisiana Engineering Society and of the Louisiana State Board of Registration for Professional Engineers and Land Surveyors and is published in February, April, June, August, October and December. Subscription \$2.00 per annum; single copy 50 cents.

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Signed,

W. K. Bankston,
Editor

OUR COVER: New Datum Plane Committee includes (from left, front), Comdr. Harry D. Reed, Jr., U. S. Coast & Geodetic Survey; Capt. Charles R. Monteiro, U.S.C.G. ret., Industrial Electric, Inc., chairman; A. W. J. Bisso, Sewerage & Water Board of New Orleans; (from left, rear), J. Bres Eustis, Eustis Engineering Co.; Guy J. Seghers, Jr., G. J. Seghers & Associates, and John S. Gentilich, U. S. Corps of Engineers.

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Minutes Of The Board, LES

LOUISIANA ENGINEERING SOCIETY

Minutes of Meeting of the Board of Direction
held at the Engineer's Club, New Orleans
Monday, July 8, 1963

The meeting was called to order by President Watts with Messrs. Carville, Irland, Janssen, Lockett, Macdonald, Stokes, Vogt and Fernandez present. Messrs. Allen Johnson, Public Relations Counsel, and M. J. Marchese, Assistant Secretary-Treasurer, also were in attendance.

Minutes of the meeting of May 13 were read and accepted after deletion of the names of several dropped members who have since paid their dues. Noting the large number of members who were dropped, discussion took place on the desirability of improving the society's public relations program. It was decided that the Executive Committee would meet with the Publications Committee to develop guidelines for the improvement of the public relations program.

The secretary then read minutes of a meeting of the State Board of Registration held on June 4.

President Watts read a report from Captain Charles Monteiro, Chairman of the Datum Plane Committee, stating that local contributions had been obtained to insure a resurvey of bench marks in the New Orleans area by the Coast & Geodetic Survey. The contributors are as follows:

City of New Orleans Dept. of Streets.....	\$3,750.00
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Board of Commissioners, Port of N. O.....	3,750.00
Orleans Levee Board.....	3,750.00
U. S. Corps of Engineers.....	7,500.00
Louisiana Dept. of Public Works.....	7,500.00

Total\$30,000.00

President Watts read a letter from Hoyt W. Brown, Jr. concerning recently publicized allegations of unethical practices by engineers in this area. The secretary was instructed to refer the matter to the Ethics & Professional Conduct Committee for a recommendation.

It was announced that, due to a conflict in dates with NSPE's Winter Meeting and with the second Louisiana gubernatorial primary, the dates for the society's 1964 annual meeting in Lafayette had been changed to January 17-18, 1964. The secretary was instructed to invite Mr. George M. Baccich, Chairman of the 1965 meeting, to attend the next meeting of the Board, scheduled for Monday, August 19, one week following its regular monthly meeting date.

The secretary reported that all applicants listed in the June ballot had been elected to their respective grades. Mr. Vogt moved that Mr. Teddy C. Hell be transferred from Affiliate to Member grade and that Mr. J. E. Kidd be transferred from Member to Affiliate. Motion seconded by Mr. Lockett and carried. With these transfers noted, distribution of the newly elected members is as follows:

	Member	Member Affiliate	Junior	Trans. Student to Junior	Total
New Orleans	7	1	5	19	32
Baton Rouge	3	—	—	—	5
Lake Charles	—	—	1	—	1
Shreveport	6	—	—	—	6
Monroe	8	1	1	—	10
Lafayette	—	—	3	—	3
Alexandria	—	1	1	—	2
Non-Resident	1	—	—	—	1
Total	25	3	13	19	60

A copy of the ballot is attached to these minutes.

The secretary presented a report of the Technical Papers Com-

mittee submitted by Mr. Warrington B. Speer, Chairman, and was instructed to advise Mr. Speer of the board's comments on the proposed schedule of programs for the society's monthly meetings. National director Frank W. Macdonald reported on the Regional Meeting of NSPE attended by him in Cleveland, Ohio, on June 25-29.

The secretary presented a semi-annual financial report covering the first half of 1963 and the Auditor's Report for the year 1962. Mr. Stokes moved that the General Audit report be published in the LOUISIANA ENGINEER, seconded by Mr. Carville and carried.

Letters of thanks from Mrs. Cary B. Gamble, Louisiana Polytechnic Institute Scholarship Committee, and Charles W. Taylor, scholarship recipient, were read. Also read were letters from Mayor Victor H. Schiro and the Vieux Carre Commission acknowledging receipt of the society's resolution of May 13, 1963.

The secretary read memorials honoring our late members Cary B. Gamble and Ole K. Olsen, after which he was instructed to have them published in the LOUISIANA ENGINEER and to forward copies to the families of the deceased members.

Upon motion by Mr. Lockett, seconded by Mr. Vogt, the election of David A. Mitchell was considered void since he has not indicated his acceptance of membership by payment of dues.

Upon motion by Mr. Macdonald, seconded by Mr. Lockett, the following resignations were accepted with regret:

John A. DeMonte (Member-NSPE), Kansas City, Mo.

Harold M. Fraser (Member-NSPE), New Orleans

Leland V. Page (Member-NSPE), Baton Rouge

The secretary reported the recent deaths of Carroll L. Wood and James W. Spence and stated that committees to prepare their obituaries were under consideration.

The meeting then adjourned so that the society's regular meeting could be opened on time.

JOHN P. FERNANDEZ,
Secretary-Treasurer

LOUISIANA ENGINEERING SOCIETY

Minutes of Meeting of the Board of Direction
held at the Engineer's Club, New Orleans
Monday, August 19, 1963

The meeting was called to order by President Watts with Messrs. Carville, Jassen, Knight, Macdonald, Mullins, Stokes, Vogt and Fernandez in attendance. Messrs. Allen Johnson, Public Relations Counsel, and G. M. Baccich, Jr., 1965 Annual Meeting Chairman, also were present by invitation.

Minutes of the Board's July meeting were corrected to show the election of one Affiliate Member from Alexandria and one Non-Resident Member on the June ballot, with the total number of new members elected remaining unchanged. Also, the date set for the August meeting was noted as August 19 instead of 18. Upon motion by Mr. Janssen, seconded by Mr. Carville, the minutes were approved as corrected.

President Watts reported on a meeting of the Executive Committee with the Public Relations Committee held on August 12. He also reported on progress of the Ethics & Professional Conduct

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Committee, in the matter of Mr. Hoyt Brown's inquiry. The president also announced that the Datum Plane Committee had been asked to expand on the scope of the survey of Bench Marks to be made in the New Orleans area.

Discussion followed on plans for the 1965 Annual Meeting and Mr. Baccich was requested to obtain additional information and to report to the Board at a later date.

Mr. Knight moved that the resignations of the following members who have left Louisiana be accepted with regret, seconded by Mr. Vogt and carried:

David A. Hopkins (New Orleans), Member, NSPE
J. Howell Peebles, Jr. (New Orleans) Member
Otis B. Rowland (Bastrop) Member, NSPE

Upon motion by Dr. Macdonald, seconded by Mr. Vogt, the secretary was instructed to submit the names of Mr. Roy T. Sessums as LES's nominee for NSPE Vice-President for the Southwestern Region.

Discussion took place on the subject of a vacancy on the City Planning Commission and Mr. Knight moved that the secretary be instructed to write to Mayor Schiro offering the services of the society in this connection. Motion seconded by Mr. Mullins and carried.

It was decided to publish a new Membership Roster in The Louisiana Engineer, to be printed in two parts: (1) a roster of the entire membership in alphabetical order and (2) separate listings of members by sections.

The Manual of Professional Practice for the Use of Engineers & Clients, prepared by the Functional Section for Engineers in Private Practice, was presented and the Board commended this committee for its splendid and painstaking work.

The secretary read a memorial honoring our late member, Carroll L. Wood, after which Dr. Macdonald moved that the resolution be spread upon the minutes, published in The Louisiana Engineer, and that copies be forwarded to the family of the deceased. Motion seconded by Mr. Carville and carried.

Progress reports of the various standing committees were presented and were followed by discussion of the recommendations made at the State Planning Conference.

Mr. Knight moved that all Certificates of Appreciation that may be awarded in the future be presented at the local section meetings during National Engineers' Week. Motion seconded by Dr. Macdonald and carried.

Mr. Janssen moved that the Board of Direction approve in principle the Industrial Management Award recommended by the Honors & Awards Committee and that this committee be requested to prepare a program for the implementation of the award. Motion seconded by Mr. Stokes and carried.

With reference to a suggestion made to reimburse local sections \$2.00 for each new member obtained to offset expenses of section membership drive, Dr. Macdonald moved that this be referred to the committee appointed to study possible reorganization of the society's operations. Motion seconded by Mr. Janssen and carried.

Reports on the Public Relations and Vocational Guidance programs were deferred until a later date, after which the meeting adjourned.

JOHN P. FERNANDEZ,
Secretary-Treasurer

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N.O. Datum Plane Study To Start In November

A \$60,000 re-levelling survey of the New Orleans area will be undertaken by the U. S. Coast & Geodetic Survey, Capt. Charles R. Monteiro, chariman, Datum Plane Committee, Louisiana Engineering Society, said.

Capt. Monteiro told The Louisiana Engineer that the work is tentatively due to start in November.

The purpose of the survey is to check approximately 410 miles of level line in New Orleans and vicinity and issue a revised list of bench mark elevations. The latest list issued by USC&GS in 1957 showed a difference of up to seven-tenths of a foot from the list previously published in 1952. This difference is due to plasticity and subsidence of the soil in the area involved. It is hoped to tie the New Orleans level net to several permanent structures, the foundations of which have prevented subsidies, and which will be used as reference points for future checking of other bench marks in the area.

It is also planned to establish additional bench marks as requested and paid for by the Sewerage & Water Board of New Orleans, the New Orleans Department of Streets and Jefferson Parish. Cost of the new bench marks is in addition to the cost of the basic re-survey.

Sponsors of the program are the Louisiana Engineering Society, the Louisiana Section of the American Society of Civil Engineers and the American Congress on Surveying and mapping.

Funds for the survey have been provided as follows:

U. S. Coast & Geodetic Survey—\$30,000.

Louisiana State Department of Public Works—\$7,500.

U. S. Corps of Engineers—\$7,500.

Sewerage & Water Board—\$5,000 (including cost of new bench marks).

New Orleans Department of Streets—\$5,000 (including cost of new bench marks).

Board of Commissioners, Port of New Orleans—\$3,750.

Orleans Levee Board—\$3,750.

Jefferson Parish—\$1,500 to \$2,000 (for new marks).

This program got its start when the Sewerage & Water Board reported in April, 1962, that the latest re-

vised list of bench mark elevations in the New Orleans area, published Oct. 10, 1957 by the U. S. Coast & Geodetic Survey, was approximately three tenths to seven tenths of a foot lower than those contained in their previous publication of March 19, 1952.

This information was conveyed to James S. Janssen,

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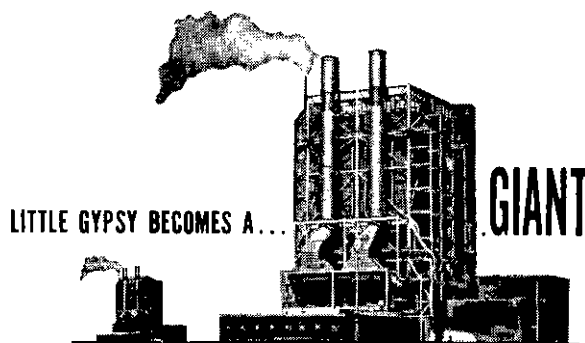
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1962 president of the Louisiana Engineering Society by E. F. Hughes, S&WB general superintendent, who reported: "The Board has recently employed the firm of Waldemar S. Nelson & Company and Burk & Associates, Inc., as engineering consultants, to prepare a report on drainage for the area bounded by the Industrial Canal, Lake Pontchartrain, Paris Road and the L&N Railroad.

"Since it is very important," reported Hughes, "that all agencies involved with the design and construction of improvements within this area work from the same datum plane, we would appreciate it if you would join with the ASCE in sponsoring a meeting of the representatives of various agencies that would be interested in discussing and possibly adopting this new datum plane for all future work contemplated for this area."

Capt. Monteiro accepted chairmanship of the task group designated to coordinate the project, together with J. Bres Eustis and John S. Gentilich, representing the Louisiana Engineering Society, and Guy J. Seghers, Jr., representing the American Society of Civil Engineers.

The memberships of the Louisiana Engineering Society, the ASCE and the American Congress on Surveying and Mapping and local engineering firms and governmental agencies were circularized with a view to determining if they concurred in this need and whether they would make use of the data when republished. Ninety-two replies were received, and the comments therein indicated a need desire for a new survey and additional bench marks in newly developed areas.

A joint request for such a survey was addressed to Rear Adm. H. Arnold Karo, director of the U. S. Coast & Geodetic Survey, by Janssen for L.E.S., Roy G. Cappel, president, Louisiana Section, ASCE, and J. L. Pontcuberta, chairman, Louisiana Section, American Congress on Surveying and Mapping.

In April 1963, Capt. Monteiro reported to 1963 L.E.S. president Calvin T. Watts of a meeting of local engineering representatives with James B. Small, chief of the Leveling Branch of the Coast & Geodetic Survey.

Capt. Monteiro reported:

"Mr. Small advised that a check of the lines from Biloxi, Miss. to New Orleans, New Orleans to Baton Rouge and from New Orleans north to the state line can be undertaken with U. S. Coast & Geodetic Survey funds, but that work within the New Orleans area must be accomplished on a cooperative basis with the local agencies participating in the cost.

"Work would be done in the winter months. Preliminary results should be available about six weeks after starting and completion date about six months after starting.

"Additional marks, requiring running of new lines, would be at the cost to the community of approximately \$75 per miles, plus cost of bench mark materials."

Participating in the meeting were Robert Atkinson, Waldemar S. Nelson & Co.; A. W. J. Bisso, S&WB; Max Bland, U. S. Corps of Engineers; Larry Bodet, Orleans Levee Board; H. R. Davis, Vector Corp.; Eustis; John Giddens, Board of Commissioners, Port of New Orleans; H. K. Hanson, U. S. Coast & Geodetic Survey; H. W. Herbst, B. M. Dornblatt & Associates; E. E. Holton, Jefferson Parish Sanitation Dept.; Coleman Kuhn,

F. C. Gandolfo, Surveyor; H. H. Harrison, Louisiana Department of Public Works; A. F. Locascio, New Orleans Department of Streets; Hu B. Myers, Baton Rouge, Department of Public Works; Monteiro; Comdr. Harry Reed, Jr., U. S. Coast & Geodetic Survey; Seghers; C. J. Tircuit, Baton Rouge, State Department of Highways, and A. J. Willoz, Orleans Levee Board

In July of this year Capt. Monteiro reported to LES President Watts that financial participation had been obtained, as outlined above, and that the necessary work of the Datum Plane Committee had been completed.

Meetings of the committee were held in the Sewerage & Water Board conference room, through the courtesy of Mr. Hughes. Stenographic assistance was provided by the Sewerage & Water Board and by Industrial Electric Inc. Comdr. Reed of the local Coast and Geodetic Survey Office, and Mr. Bisso of the Sewerage and Water Board attended all committee meetings and were helpful in an advisory capacity, Capt. Monteiro said.

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Tulane To Offer Ph.D. In Civil Engineering

A doctorate in Civil Engineering will be offered at Tulane University starting in 1964 under plans offered by Prof. Walter E. Blessey, chairman of the Civil Engineering Department.

"Several students have indicated they will work toward a doctorate, and are taking steps to that end," said Prof. Blessey. "In many cases, the students are encouraged to take professional courses by local oil industry, contractors, consulting firms, engineer-contractors, U.S. Corps of Engineers, and the 8th Naval District public works office."

The demand for Ph.D.'s in engineering has increased beyond reasonable hope of satisfaction in the foreseeable future, he said.

The National Aeronautics and Space Administration has publicly stated that they will reach a requirement of 1200 Ph.D.'s per year during the next decade. Many of these will be required in the field of Civil Engineering. The field of education requires annually a large number of graduates holding the doctorate, and here too, the demand greatly exceeds the supply. This is especially true in the field of Civil Engineering.

Explosion of Knowledge

In the fields of structural and foundation engineering, a tremendous explosion of knowledge has resulted in the need for a highly sophisticated and broadly trained civil engineer skilled in the application of scientific principles tempered with economic and sociological knowledge heretofore undreamed of.

Drilling for oil in the waters of the Gulf of Mexico demands civil engineers not only skilled in structural and foundation engineering but also cognizant of the latest scientific developments in oceanography and the applications of computers.

New structures taking advantage of the ability of concrete to be moulded into unusual but effective shapes are appearing in this country and challenging the resourcefulness of the structural engineer.

Tremendous emphasis is being placed on the development of new materials and methods of design aimed at exploiting the basic structural materials in use today and addition the materials of tomorrow—plastics and glass.

Civil engineers are constantly being asked to design structures capable of resisting atomic blasts and nuclear radiation. The advanced training in a Ph.D. program promises to prepare the leaders of tomorrow capable of facing the challenges of the space age.

Environmental Problems

In the field of sanitary engineering, increasing population and concentration of people in urban areas have accentuated environmental problems in many ways.

A great need exists for a doctoral level program to educate sanitary engineers for our health departments,

industry and consulting engineering firms, and for expanded research programs in the field of environmental health.

The faculty and graduate students of the Civil Engineering department are at present engaged in stream pollution survey in the Cauca Valley, Colombia, South America, and on experimental studies of the disposal of domestic and industrial wastes. Research is also in progress on drainage and waste disposal problems in the New Orleans area.

In the field of transportation engineering, the evolution of this nation's economy from a basically agricultural one to the present highly industrialized economy has been accompanied by an enormous growth in our transportation systems as evidenced by the development of the interstate highway system, the commercial jet airliner, the nationwide pipeline complex, the St. Lawrence Seaway, the New Orleans tidewater channel, and other dramatic improvements.

This growth has produced many problems with comparatively few competent people to solve them. One example of this problem is the federal government's recent action requiring the various states to spend 1½ % of their federal aid for highways on research and planning with the result that few states have the necessary research personnel to use these funds as fast as they become available.

Need For Research Personnel

If our transportation systems are to continue to expand and new media are to be developed, it will require a great increase in the number of trained research personnel in this field. The normal training ground for this type of person is the graduate school.

In the field of engineering economics, a growing interest in the need for accelerated growth of undeveloped and underdeveloped areas, regions and countries has emphasized the role of the Civil Engineer as a planner.

Utilization of the natural resources of an area is generally accomplished with large expenditures of funds on Civil Engineering projects such as locks, dams, highways, tunnels, bridges, and offshore marine structures. An understanding of the primary and secondary effects of these projects is essential in order to determine the economic feasibility of a particular project. There exists an urgent need for course offerings in this field. Such courses are best presented at the graduate level and will serve to broaden the doctoral program.

Interest Shown

Not infrequently, prospective graduate students who might become doctoral candidates are discouraged from so doing because of the lack of a doctoral program in a given geographic area.

The fact that at the present time there are 40 grad-

uate students in the Civil Engineering course as compared to 14 graduating seniors in the undergraduate curriculum attests to the interest exhibited in the graduate program.

In recent years, more and more interest has been shown among the Civil Engineering graduate students at Tulane to go beyond the Master's degree level.

The various inquiries and interest shown, combined with the great stimulus to Civil Engineering provided by the Michoud NASA complex indicates that it would be reasonable to expect at least six and perhaps as many as ten students annually enrolled in a doctorate program in Civil Engineering. This number should increase with time. It is of interest that the two prime contractors involved in the creation of the NASA complex have indicated their interest in an advanced graduate program in Civil Engineering at Tulane, and one of them has offered financial incentives to their civil engineers to pursue their graduate works, especially at the doctoral level.

Briefly this statement may be summarized: There is an evident need in this geographic area for a graduate program in Civil Engineering at the doctorate level. Since Tulane is capable of supplying this need, it is the University's responsibility to do so.

It is the present plan to effect the doctoral program in Civil Engineering in 1964, offering majors in structural and sanitary engineering with minors in hydraulic engineering, transportation engineering, soil mechanics and foundations, and engineering economics. With time, majors would be offered in the above minor fields.

Present Program

University records indicate that the graduate program in Civil Engineering was established in 1896, shortly after the construction of the Civil Engineering Building in 1894. The first graduate degree in Civil Engineering, the degree of Civil Engineer (C. E.), was awarded in 1897 to Mr. Arsene Perrilliat, a man who later was in charge of the planning and construction of the Mississippi River levees from Vicksburg south to Baton Rouge. In 1948, the degree of Civil Engineer (C. E.) was discontinued. In its place the degree of Master of Science (in Civil Engineering) was offered. In the years between 1896 and 1962, Tulane University has awarded 70 graduate degrees at the Master's level in the field of Civil Engineering. These 70 graduate degrees in Civil Engineering represent 40% of the total graduate degrees awarded by the University in all fields of engineering during this period.

Of interest is the rapidly accelerated growth of graduate study in Civil Engineering. Of the 70 graduate degrees awarded over the aforementioned 66-year period, half have been awarded in the last five years. Even the last five years have exhibited greatly accelerated growth. The annual number of graduate degrees awarded in 1961 and 1962 nearly doubled the annual number of degrees awarded in each of the years 1958, 1959 and 1960..

At the present time 40 graduate students are engaged in the Civil Engineering program. Ten of them are in their second year and are expected to satisfy the require-

ments for the Master of Science degree before September, 1964. Of the 38 departments at Tulane offering the Master of Science degree, Civil Engineering ranks among the top three in enrollment of graduate students. Approximately 11% of the total number of candidates for the degree of Master of Science are in the Civil Engineering Department.

The Department of Civil Engineering presently offers advanced study and professional education in the general fields of transportation engineering, hydraulic engineering, sanitary engineering, soil mechanics and foundations, structural engineering, and engineering economics. In addition, a program was recently initiated for the graduate-level education of Civil Engineering Corps officers for the U. S. Navy.

Aim of Graduate Program

The increasing complexity of many phases of engineering, and recent scientific and industrial developments have created a strong demand for civil and sanitary engineers with education beyond that included in undergraduate programs of study. Fields of work for which graduate study is desirable and for which it prepares the engineer are as follows:

- 1) Advanced analysis, design, consulting, and administration in various specialized fields.
- 2) Teaching of both fundamental and engineering courses and advanced work in civil engineering or related fields.
- 3) Research and development in industrial laboratories or at educational and scientific institutions and government organizations.

Formal graduate course work and participation in creative research enables the civil engineer with advanced graduate education to go beyond the limitations of present practices and to contribute to the progress of his profession.

The aim of the graduate program in Civil Engineering at Tulane is to assist in supplying the present demand for civil engineers holding advanced degrees and to provide future graduates at the Master's and Doctor's levels for the expanding world of science, technology, and engineering.

The concepts guiding the graduate Civil Engineering program were well described by Dean C. K. Weidner:

"1. That engineers form a socio-politically conscious body of professional men, ranging from expert master to willing young neophyte, held together by one basic ethical goal—to practice and constantly improve the art of understanding, controlling, and using the forces of nature for the benefit of humanity.

2. That the individuals who make up this body are cultured gentlemen of social responsibility and ethical behavior, who teach their juniors, cooperate with their equals, and learn from their seniors, without regard to rank or age.

3. That this body is pervaded throughout by the conviction that cooperation toward a common worthwhile goal, with full assumption of appropriate socio-economic responsibilities, is the essence of professional practice."

LOUISIANA ENGINEERING SOCIETY

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General Electric Company
- W. C. BARNWELL (M) M., E.
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Crown Zellerbach Corp.
- WILLIAM A. BARNWELL, JR. (A)
822 Arvana, Houston 34, Texas
Dow Chemical Corp.
- HAROLD THOMAS BARR (NSPE) A.
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La. State University
- JAMES Q. BARRICH (A)
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Gulf States Utilities Company
- CYRIL A. BARRIOS (J)
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- O. E. BARRON (M) E.
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Self-Employed
- O. E. BARRON JR. (M)
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Self-Employed
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New Orleans Public Service Inc.
- Z. W. BARTLETT (M) Mi.
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Freeport Sulphur Company
- JOHN C. BARTLEY (M) C.
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Bartley & Binnings
- FRANK J. BASILE, JR. (NSPE) M.
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Southern Shipbuilding Corp.
- LEWIE LON BASS, JR. (J) M/I
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Louisiana Power & Light Company
- RAYMOND P. BASSICH (LM)
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N. O. Blue Print & Supply Company
- AYLMER PRICE BATCHELOR (NSPE) M.
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Delta Tank Mfg. Company
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Barnard & Burk Inc.
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Columbia Southern Chemical Corp.
- WALTER BROWN (M) M.
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North American Aviation Inc.
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M. Kaplan & Son, Inc.
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Texas Bitulithic Co. & Delta Paving Co.
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By Frank W. Macdonald¹
and Adam Mehn, Jr.²

The City of New Orleans, due to its location, has many peculiar drainage problems. Located in the lowlands of Louisiana, adjacent to the Mississippi River, the City is completely ringed by levees for protection against flooding by the river and surrounding lakes. A large portion of the City is below sea level with some sections by as much as six (6) feet. This makes the City equivalent to a large "saucer" and all of the precipitation reaching this "saucer" must be pumped out.

Twelve (12) pumping stations with a total capacity of 29,000 C.F.S. are required to remove the run-off from the average annual rainfall of sixty (60) inches received by New Orleans. The drainage basin served by these pumping stations is approximately 49,000 acres in size. The pumps involved range in size from 25 C.F.S. to 1,000 C.F.S. The drainage system consists of 83 miles of open earthen canals, 11 miles of open canals with concrete bottoms and sides, 71 miles of covered concrete canals and 1,300 miles of subsurface sewer lines.

In designing drainage facilities it is essential that accurate and up to date run-off data be obtained in order to provide an economical installation and a system that will provide adequate removal of storm water. One of the more popular methods of run-off prediction in use today is the Rational formula. Realistic values of run-off coefficients and rainfall intensities will insure greater protection against flooding and an economic system.

Drainage systems are designed so that they can handle a specific design storm (intensity). This rainfall intensity is predicted by referring to rainfall intensity-duration curves. A set of said curves yields frequency data for any one specific duration. These curves are essentially records of past storm experience and are developed from statistical data (rainfall records) gathered over a number of years. The curves represent the probable average rainfall intensity that may be expected to last for a specific period of time. When used with the Rational formula the time period is the time of concentration of the drainage area. These intensity curves are predicted for certain design frequencies — 2 years, 5 years, 10 years or any other required value.

All of the many different procedures of storm-rainfall analysis start with a summary of experience. The experience summaries used in this study were developed from data taken from both New Orleans Sewerage and Water Board and United States Weather Bureau records. Each storm recorded was analyzed for total amounts of rainfall for various specified periods of time. A tabulation of this data was then developed from which, for any desired frequency, the average intensity of rainfall per time period used could be determined. Storms having a total amount of rainfall less than one inch do not affect the

intensity-duration-frequency values, therefore, such storms were not included in the summaries.

A total of three summaries were developed. The first summary was of all storms greater than one inch, as recorded by the New Orleans Sewerage and Water Board, for the sixty-six (66) year period of 1895 through 1960 (excluding 1944—records not available). The New Orleans Sewerage and Water Board maintains a total of seven (7) gauges located throughout the City. The readings of the rain gauge that recorded the maximum amount for each storm were used, therefore, it can be assumed that the intensity-duration values determined from this information are very good estimates of the maximum intensities that will occur within the area covered by the rain gauges. In this case, the frequency attached to any one intensity—duration curve is an area frequency as opposed to a point frequency. Area frequency can be defined as the frequency with which a specified average rainfall intensity occurs within the drainage area. This does not mean that the specified intensity occurs across the entire area, nor does it mean that each time the specified intensity occurs it happens at the same point. Point frequency means the frequency with which a specified intensity occurs at any one point. As we will see later area intensities are greater than point intensities for any one frequency and duration.

The second summary was of all storms greater than one inch, as recorded by the New Orleans Sewerage and Water Board, for the thirty-five (35) year period of 1895 through 1929. This summary was developed in order to determine whether or not the intensity-duration curves change when a longer period of record is used.

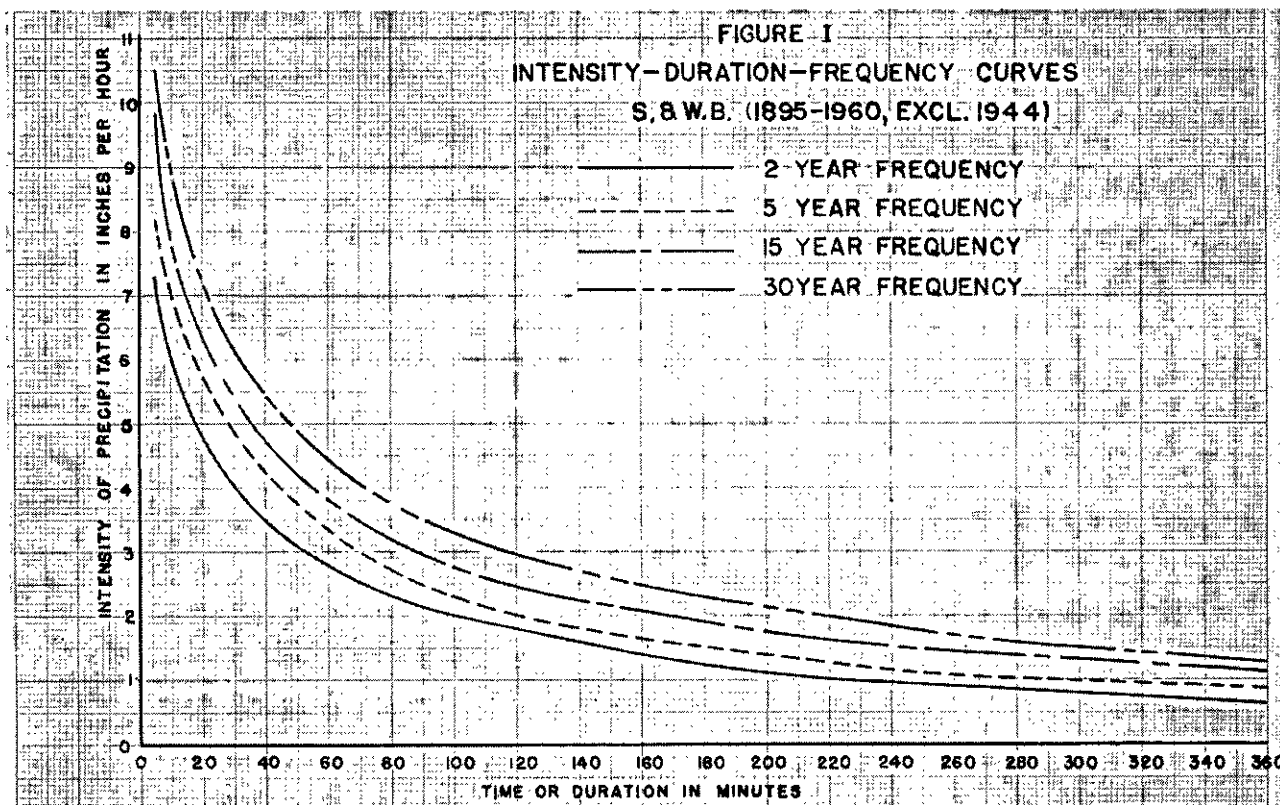
The third summary was of all storms greater than one inch, as recorded by the United States Weather Bureau (one gauge), for the fifty-three (53) year period of 1909 through 1961. This summary was developed in order to compare the area intensities and point intensities for specific frequencies and durations. The period of record for this summary is somewhat shorter than that of the Sewerage and Water Board summary but this difference should not affect the intensity-duration values to any greater extent.

An outline of the calculations for the 5 year intensities based on the sixty-six (66) year Sewerage and Water Board records follows. It was assumed that the 5 year intensities were equaled or exceeded $65/5 = 13$ times in 65 years. Sixty-five (65) years are used here because only sixty-five (65) years of storm records are included in the summary since the 1944 records are not available. Then generalized intensity-duration values were then interpolated from the summary by finding for each intensity the duration that was equaled or exceeded by 13 storms and for each duration the intensity that was equaled or exceeded by 13 storms. These points were then plotted and a smooth curve drawn through them representing the course of the 5 year rainfall intensities.

A plot of the 5 year figures as well as similar information for 2, 15 and 30 year frequencies can be seen in Figure 1. All curves in Figure 1 were developed from

¹Professor of Civil Engineering and Sanitation, Tulane University.

²Second Lieutenant, Army of the United States (R), Fort Eustis, Virginia.



the Sewerage and Water Board sixty-six (66) year summary. The frequencies attached to these curves are area frequencies.

Similar calculations were made for the 2, 5, 15 and 30 year intensities based on the thirty-five (35) year summary. The results of these calculations were compared with the results from the sixty-six (66) year summary (Table I). In every case the sixty-six (66) year curves exhibited the following general pattern. The intensities were higher for the first one hundred and twenty (120) minutes, lower between one hundred and twenty (120) and two hundred and forty (240) minutes, essentially the same after two hundred and forty (240) minutes.

TABLE I
RESULTS OF COMPARISON OF INTENSITY-DURATION CURVES BASED ON SEWERAGE AND WATER BOARD DATA*

Duration min.	2-year intensities	5-year intensities	15-year intensities	30-year intensities
15	110.0%	103.2%	102.0%	113.3%
30	104.3	107.5	108.4	108.4
45	111.5	106.7	107.8	107.8
60	113.2	110.3	114.7	113.2
120	107.8	99.6	93.0	94.6
180	99.2	90.8	91.4	95.2
240	100.0	96.3	94.3	91.8
300	essentially the same			

*Percentages shown are the sixty-six (66) year values compared to the thirty-five (35) year values.

The results of this comparison indicate that the rainfall pattern has changed during the last thirty (30) years. The last thirty (30) years had a larger number of short very intense storms and a fewer number of long (2 to 4 hours) low intensity storms than the first thirty-five

(35) years of record.

This comparison also tells us that intensity-duration curves for any one area should be continually revised, i.e., about every five years, in order to keep up with changing rainfall patterns. The design engineer knows that the rainfall pattern will change with time but the big problem is, in what direction will these changes occur — increase or decrease? An example of this is a similar study that was made in 1959 for the City of Oakland, California.³ This study showed that, in every case, the curves based on the longer period of record (52 years) were lower than the curves based on the short period of record (18 years).

A comparison of intensity-duration curves based on the fifty-three (53) year United States Weather Bureau summary are shown in Figure 2. The frequencies attached to these curves are point frequencies. A comparison of these curves with the curves based on the sixty-six (66) year Sewerage and Water Board summary is shown in Table II. In every case, the curves based on the Weather Bureau data yield lower intensities than the Sewerage and Water Board curves, i.e., the point intensities are lower than the area intensities.

The fact that the point intensities are lower than the area intensities is not a surprise when one realizes what is taking place. The area values are developed from the rainfall history of a large section which would automatically contain a greater number of large storms than the rainfall history of one particular point, therefore, the area intensities are higher than the point intensities. It will now be shown how this fact can be used in the

³John A. Morin, "Report on Rainfall Intensity-Duration Curves for the City of Oakland to January 1, 1959," January, 1960.

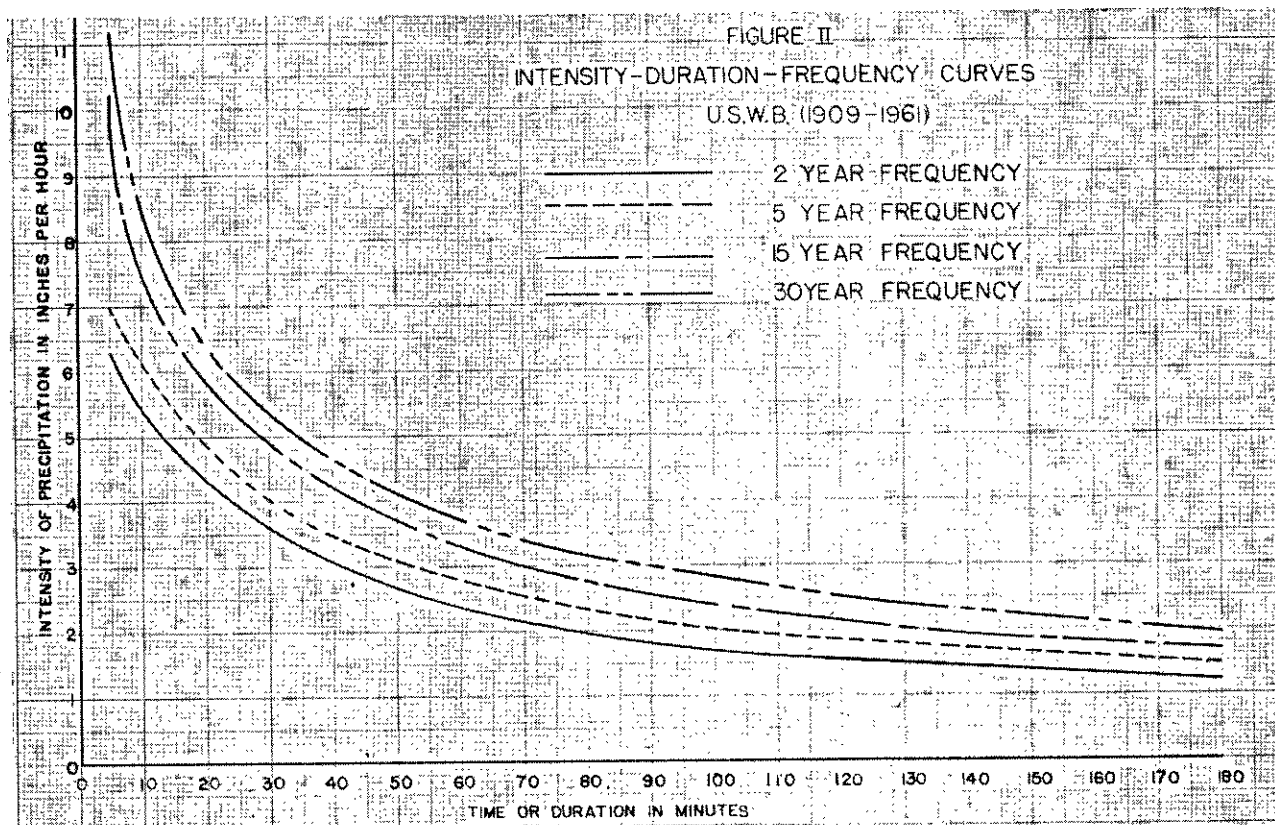


TABLE II
RESULTS OF COMPARISON OF INTENSITY-DURATION CURVES ON UNITED STATES WEATHER BUREAU AND SEWERAGE AND WATER BOARD DATA*

Duration min.	2-year intensities	5-year intensities	15-year intensities	30-year intensities
15	89.7%	85.8%	92.5%	90.0%
30	89.3	83.2	90.3	88.3
45	86.9	82.5	87.8	86.5
60	87.2	83.4	86.8	85.1
120	37.8	90.3	86.2	85.8
180	99.8	99.5	88.6	84.9

*Percentages shown are the Weather Bureau values compared to the sixty-six (66) year Sewerage and Water Board values.

design of storm sewer systems.

In order to illustrate the use of area and point intensities we will discuss the design of a typical storm drainage system for a large area. A typical large drainage system consists of both secondary lines that carry the run-off from the small areas and main lines that carry the run-off from large sections of the total area.

The design criteria states that all flooding should be kept out of the entire area except for that caused by rains in excess of the Y year intensities. Since the area intensity-duration curves are based on the maximum storms recorded in the area they should be used in the design of the secondary lines. The large areas will not receive these maximum intensities throughout, therefore, the main lines may be designed for intensities that are less than the area maximums. The intensity values to be used in the design of the main lines can be taken from a set of point frequency curves or from a set of curves based on averages of the readings of all gauges record-

ing each storm. Curves based on the average readings were not developed in this paper since the records required for their development were not available for a sufficiently long period of record.

If the secondary lines were designed to carry the run-off determined by using the Y year point frequency curve, any one point in the resulting system may flood. If the entire system is considered, flooding would occur within the system with a frequency that is less than Y years. This is due to the fact that the point intensities are developed from the recorded amounts of precipitation occurring at one particular point. The center of every storm does not pass over the same point, therefore, one rain gauge does not measure the maximum intensity occurring within each storm, i.e., the edge of the storm may pass over the gauge.

It can be seen from this discussion that the engineer must use judgment when deciding which intensity-duration curve is to be used in a particular design problem. If local rain gauge readings are available the engineer should use this data and develop a set of curves provided that the period of record is of sufficient length i.e., about thirty (30)⁴ years or more. If rain gauge readings are not available the engineer can use the curves developed by the United States Weather Bureau for most areas of the country. It is well to remember that these curves are developed for the general conditions of large areas and special conditions may exist for the locality in which the design is being made. It should also be remembered that rainfall patterns are constantly changing and intensity-duration curves should be continually revised to insure that the best estimate of rainfall intensity is used in a particular design.

⁴This figure comes from basic statistics in which the size of sample is considered "large" when the number of readings approaches thirty (30) or more.

HOUSE APPROVES SCHOOLS BILL

The House has overwhelmingly approved a \$1.2 billion authorization bill to help colleges and universities build classrooms, libraries and laboratories including junior colleges and technical institutes. The vote was 287 to 113.

The college aid bill authorizes the spending over the next three years of \$690 million in grants for undergraduate facilities, 22 per cent of which is reserved for junior colleges and technical institutes. *Specific dollar aid for college-level technical institutes was incorporated in the measure (H.R. 6143) primarily as the result of the bipartisan efforts of Representatives Goodell (N.Y.) Brademas (Ind.) Quie (Minn.) and Sickles (Md.), members of Representative Edith Green's subcommittee which reported the bill to the floor.*

During floor debate on the measure, Representative Brademas cited NSPE Executive Director Paul Robbins testimony urging congressional enactment of assistance for two-year technical institutes.

Also included in the measure, now before the Senate Labor and Public Welfare Committee, are \$145 million in grants for graduate schools (endorsed by NSPE) and \$360 million in loans for both graduate and undergraduate facilities. The Federal grants must be matched by two-thirds money from the colleges, universities and technical institutes, while loans may be made for up to three-fourths of the project costs.

NSPE ASKS REJECTION OF CIT PROGRAM

In a letter to the Senate Appropriations Committee, NSPE has asked Congress to reject appropriation requests of the Commerce Department to continue the Civilian Industrial Technology Program launched last year.

Commerce received \$625,000 to start the program for the fiscal year which ended June 30. It had sought a total of \$7.4 million for the current year, which the House reduced to \$1 million for a program limited to the textile industry.

"While we are in agreement that there is much to be gained from a well-organized program of engineering research, we suggest that the initiation of such an impor-

tant and far-reaching program through direct appropriations, and without the benefit of carefully-considered enabling legislation, is not warranted," the NSPE letter declared.

The letter to Senator John L. McClellan, Chairman of the Senate Appropriations Subcommittee for the Departments of State, Justice and Commerce, noted NSPE had conducted a careful and comprehensive study of the CIT program. *The study resulted in the adoption of an NSPE policy statement urging enactment to provide a Federal engineering research program in cooperation with private industry, educational institutions and the engineering profession.*

SENATE INCREASES MILITARY PAY

The Senate has unanimously passed a pay bill for the military services, restoring most of the cuts in base pay previously made by the House in the Administration's proposals. Under the Senate bill, to be resolved in conference with the House, officers would receive monthly dollar increases of from \$20 for second lieutenants with under two years service to \$120 for majors with over 14 years service.

Rejected by the Senate Committee were NSPE proposals which would have extended the current incentive pay for doctors and dentists to engineers.

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Tied-down cantilever design and A36 Steel reduce girder weight 15%

Tied-down cantilever design with USS A36 Steel reduced plate girder weight 15% on the Watkins Overton School Auditorium, Memphis, Tenn., permitting an overall savings in structural steel, and in foundations. Upright members (tension columns) anchor each girder at the ends. Compression columns, like fulcrums, set 8 ft. inside these members, resist live and dead loads plus tension column reactions. This lessens girder deflection and approximates a fixed-end restraint condition in the girders at the compression columns—using relatively simple column and beam connections.

Says structural engineer S. S. Kenworthy, "This technique, plus the higher strength-to-weight ratio of A36 enabled us to span well over 90 feet with far less steel than we normally would have used in A7 Steel. The lighter structurals gave us a chance to save overall on foundations, too, in an area where the ground has relatively low bearing soil pressure. Because A36 is weldable, we didn't have to bother with the lower strength weldable A373 Steel. In the end we saved money with A36. I'd say it won't be long before A36 replaces A7 as the most commonly used structural steel."

On May 20, the Tennessee Coal and Iron Division of U. S. Steel delivered 150 tons of A36 web plates, flange plates, and wide flange shapes to the fabricator, Pidgeon-Thomas Iron Company, Memphis. In 45 days all structural members were fabricated and at the job site; 15 days later erection was completed.

Send for our free booklet, "New Steels • New Shapes • New Concepts." Write to: Tennessee Coal and Iron, P. O. Box 599, Fairfield, Ala. USS is a registered trademark. Auditorium addition: Watkins Overton High School, Memphis, Tenn. Architect: A. L. Aydelott & Associates, Memphis. Structural engineers: S. S. Kenworthy & Associates, Memphis. Structural fabricator and erector: Pidgeon-Thomas Iron Company, Memphis.



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New officers of the Woman's Auxiliary to the Louisiana Engineering Society are (Front Row, Left to Right), Mrs. Thomas A. Fromherz, Vice-President; Mrs. Roy G. Cappel, President; Mrs. Otha E. Barron, Jr., President-Elect; (Back Row, Left to Right), Mrs. John A. Haase, III, Treasurer; Mrs. Forney Fuller, Corresponding Secretary; Mrs. C. Glenn Cappel, Honorary Vice-President; Mrs. Daniel H. Vliet, Financial Secretary; Mrs. John W. Bell, Recording Secretary.

Prizes Field Notes By Allen Johnson

An abundance of prizes marked the 33rd Annual Outing of the Louisiana Engineering Society at the Lake-wood Country Club Sept. 17. Winners and prize donors were: F. W. Macdonald, President's Flight golf trophy, a silver tray donated by Calvin Watts, LES President; H. G. Armatis, Boh Bros. Construction Co.; F. W. Macdonald, McLellan Equipment Co.; Joe Riorda, Metal Building Products Co.; J. D. Wilcox, Dixie Machine Welding Metal Works, Inc.; E. D. Cambon, W. S. Dickey Clay Mfg. Co.; Roy Cappel, Equitable Equipment Co., Inc.; Joe C. Skinner, American Creosote Works, Inc.; Jack Holloway, T. Edward Ernst; H. St. Paul, Allis Chalmers Mfg. Co.; S. Walsh, Alumna-Glass Building Products; N. Markel, Ayers Materials Co.; O. LeBlanc, Standard Supply & Hardware Co., Inc.; Jack Bartlett, Leo A. Daly Co.; Harry Tormy, Leo A. Daly Co.; R. A. Finlayson, Lionel Favret; Roy Fleming, Flintkote Co.; Pat Patterson, E. G. Boh Forest Products; H. Sewell, Leo A. Daly Co.; Bill Brewer, New Orleans Public Service Inc.; Harold Morris, Fromherz Engineers; Claude J. Kelly, General Electric Co.; Sidney Lewis, Walter J. Barnes Electric Co.; F. Koger, Boland Machine & Mfg. Co., and S. Lewis, Pittsburgh Testing Laboratories, all golf winners and donors.

Ray Maddux, Shilstone Testing Laboratories; F. M. Taylor, Haag & Trammel; F. Dudden, United Gas Pipeline Co.; W. Bankston, Verlander Equipment Co.; Pete Mullinix, Service Supply & Engineering Co.; Sid Ellis, Waldemar S. Nelson & Co.; Ray Maddux, R. P. Farnsworth Co.; Al Adoue, Fidelity Deposit Co. of Maryland;

Jim Gore, R. E. Gosa; S. G. Smith, Armco Metal Products; W. D. Weidner, Freeport Sulphur Co.; Kurt Novak, Louisiana Gas Service; Hoyt Brown, Jahncke Service, Inc.; C. M. Foreman, Jahncke Service, Inc., all horse-shoe events finalists and donors.

General participation prize winners and donors were: J. R. Rollo, Jahncke Service, Inc.; J. Roy, Louisiana Gas Service; Wayne Williams, Belden Concrete Products; R. J. Bannon, Belden Concrete Products; Joe Riorda, Belden Concrete Products; B. L. Ruckstuhl, Creole Engineering Co.; A. A. Mura, Creole Engineering Co.; Ray Fleming, Creole Engineering Co.; John H. Bailey, New Orleans Cement Products; A. H. Douglas, Jr., Reagan Equipment Co.; W. P. Cleveland, Arthur C. Hayes & Associates; M. Mickleberry, Baton Rouge Blue Print & Supply Co., Inc.; M. J. Marchese, Eustis Engineering Co.; Don Guiza, Orleans Materials & Equipment Co., Inc.; P. B. Williamson, R. J. Tricon; Tom Fromherz, Interstate Electric Supply Co.; Ed Pavia, Delta Testing & Inspection; C. J. Van Horn, Delta Testing & Inspection; Allen Collins, Standard Supply & Hardware Co.; W. G. Smith, Welding & Mfg. Co.; Sam Muery, Welding & Mfg. Co.; W. S. Nelson, Betz Engineering Sales Co.; Charles Bragg, Charles Bruning Co.; H. M. Shambarger, Jay Jalenak Engineering Co.; B. A. Axelrad, A. F. Livaudais Co.; Clem Haulman, Markel Lumber Co.; A. J. Lehman, Moloney Electric Co.; Bill Cunningham, Gabler Insulation; John Mercier, Boland Machine Mfg. Co.; Roy Johnson, A. M. Lockett & Co., Ltd.; W. W. Woodland, Allan J. Harris Co.; M. Deloney, Gore Engineering Co.; Arno Ziesenis, J. Ray McDermott; R. H. Earl, J. Ray McDermott; R. M. McDougal, Gulf Engineering Co.; G. L. Johnson, Gulf Engineering Co.; H. J. Lane, Jr., Williams-McWilliams Industries; J. P. Fernandez, N. O. Blue Print and Eugene Dietzgen.

Gulf Outlet Dredging Is Awarded

The largest Mississippi River-Gulf Outlet dredging contract, both in terms of total yardage to be excavated and dollar value, has been awarded to Bauer Dredging Company, Inc., Port Lavaca, Texas, according to an announcement by Col. Edward B. Jennings, district engineer, U. S. Army Engineer District, New Orleans. The contract totaled \$2,134,153.10 and called for the removal of about 24,752,000 cubic yards of material from the route of New Orleans, new short-cut to the Gulf.

The excavations will take place over two reaches of the channel, one beginning at Bayou La Loutre and extending southward about five miles, and the other beginning at the end of the stone dikes and extending 14 miles into Breton Sound.

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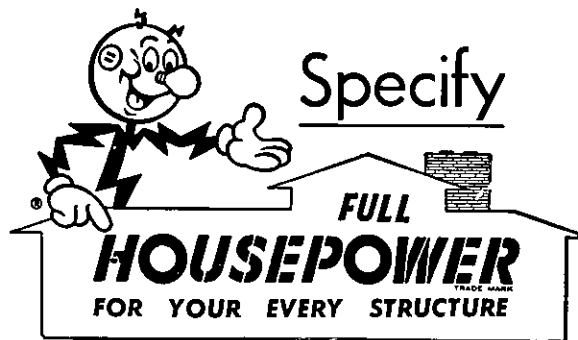
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Memorials

WILLIAM HERBERT RHODES

On April 7, 1963, in the death of William Herbert Rhodes, the community lost a good citizen, the engineering profession an outstanding engineer, and all who knew him a well-loved friend.

Born December 29, 1886 in Springfield, Massachusetts, the son of William H. and Isabell Adams Rhodes, he attended the public schools of his native city, and then graduated in 1910 from the Worcester (Mass.) Polytechnic Institute with the degree of Bachelor of Science in Civil Engineering. Upon graduation he began his engineering career with the U. S. Bureau of Public Roads, where he soon became a traveling missionary for the then new "Good Roads" movement, which carried him throughout the South where he was to later become one of the outstanding authorities on the design, construction and maintenance of roads and airfield runways.

From September 1916 to June 1919, he served as Captain of Company C, 25th U. S. Engineers, which included 17 months of duty with the First Army in France.

After his discharge, he rejoined the U. S. Bureau of Public Roads as Senior Highway Engineer in charge of design, construction and supervision of Federal Road Construction in Louisiana.

In April 1920, Mr. Rhodes married Miss Mabel Benton Wilmarth of Washington, D. C., who survives him, as does their daughter, Mrs. Ernest Leigh McLellan of Meridian, Mississippi.

In 1922 he became State Maintenance Engineer for the newly formed Louisiana State Highway Department, in which capacity he set up and organized the State's first Highway Maintenance Department. In 1924, the newly created Oklahoma State Highway Commission employed Rhodes as its chief of the Maintenance Department, which he organized and directed as he had done in Louisiana.

In 1928 Mr. Rhodes returned to Louisiana as the Southern Division Manager of the Asphalt Department of The Shell Oil Company (his territory consisting of Louisiana, Mississippi, Alabama and Tennessee), which position he held until his retirement from the company in 1950. During this period he became an outstanding authority, not only on highway design and construction, but also in the design and construction of airport runways, in what was then a new and rapidly growing field of engineering.

In 1950 Mr. Rhodes became the Southern District Manager (for Louisiana and Mississippi) of the Asphalt Institute, a national organization. His extensive knowledge and experience in road and airport runways design, construction and maintenance enabled him to broaden his field as an engineering advisor to cities, counties and parishes, as well as to the Army and the Navy, on both new construction and the re-building and strengthening of existing installations. Mr. Rhodes retired from the consultive work in 1956.

In his society and organization life, Mr. Rhodes was as active as in his professional life. He became a member of the Louisiana Engineering Society in 1921, and in the following years he served with distinction on many

committees and in many offices, becoming President in 1940; he was honored by the Society as a Life and Honorary Member. He was instrumental in the development of Sections of the Society, and active in the obtaining of the present Louisiana Engineers' Registration Law. For several years after retirement he was the editor of the L. E. S. publication "The Louisiana Engineer."

Likewise, he was equally active in the American Society of Civil Engineers (of which he was a Fellow and Life Member); becoming a member in 1922 and holding numerous offices including that of President of the Louisiana Section. As in the Louisiana Engineering Society, he worked for the establishment of Branches of the Section, and for the Engineers' Registration Law.

Mr. Rhodes was a Past President of the Louisiana Post of the Society of American Military Engineers, and a member of the American Legion. He was a valued participant in the affairs of the Round Table Club of New Orleans and of the Trinity Episcopal Church.

NORMAN E. LANT

EDWARD A. McLELLAN

WALTER H. SCALES, Chairman

CARROLL L. WOOD, JR.

WHEREAS, the Louisiana Engineering Society, through the death of Carroll L. Wood Jr., has lost one of its outstanding members, and

WHEREAS, he unstintingly devoted his time and efforts to his profession and the Society, and

WHEREAS, his sound judgment and wise counsel contributed largely to the stature and success of the Society, and

WHEREAS, he gave generously in help and assistance to those in the profession who had not yet made their mark, and

WHEREAS, his decisions regarding the work of others was always prompted by fairness and equity, and

WHEREAS, all of us who were connected with him will always bear his indelible mark,

NOW THEREFORE, we, the members of the Louisiana Engineering Society, extend our sincere condolences to the members of the family of the late Carroll L. Wood Jr., and express the privilege and the pride of having worked with him and the deep loss we have sustained in his death.

UNANIMOUSLY RESOLVED at New Orleans, Louisiana, this 19th day of August, 1963.

CLAIBORNE PERRILLIAT

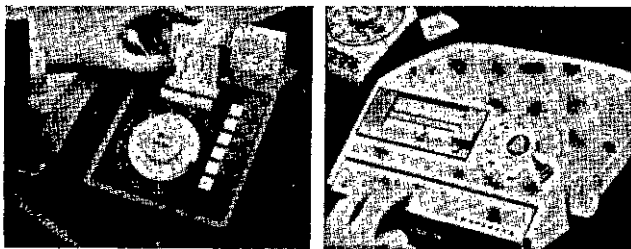
JOHN S. GENTILICH

WARWICK WILL EMPLOY 2,000 AT \$8 MILLION ARKANSAS PLANT

Forest City, Ark.—Warwick Mfg. Co. will locate a major plant here to manufacture television sets, L. O. Haggerty, president of the firm, announced. The company expects to have the plant in operation by April, 1964 and to employ approximately 1,000 persons by the end of the year. Haggerty said the company eventually would have an investment of about \$8 million in the plant, which will be in full operation about three years after it opens. It will eventually employ about 2,000 persons and be one of the state's largest industries.

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Mr. L. P. Whorton, President
Society of Petroleum Engineers
American Institute of Mining, Metallurgical
and Petroleum Engineers
Jung Hotel
New Orleans, Louisiana

Dear Mr. Whorton:

On behalf of the Louisiana State Board of Registration for Professional Engineers and Land Surveyors I extend our congratulations on the 50th anniversary of your Society.

It is to our technical societies that we must look to focus the attention of our practicing engineers on the advancements in their profession and to the importance of engineering registration. We are pleased to report that in Louisiana a large percentage of our engineers are registered in the petroleum branch, and engineering registration is strongly advocated by the majority of our petro-chemical industries. The support your Society has given to registration has done much towards establishing a unity in the profession and in providing a better understanding of engineers and engineering by the general public.

With best wishes for a very successful convention, I am

Very truly yours,

Ben T. Bogard
Ben T. Bogard
Chairman

This message on professionalism and engineering registration from Dean Ben. T. Bogard, chairman of the Louisiana State Board of Registration for Professional Engineers & Land Surveyors, was read before the 1963 national meeting of the Society of Petroleum Engineers of AIME Oct. 6-8 in New Orleans by L. P. Whorton, president. Some 4,000 attended meeting.

code revision since the pioneer days of reinforced concrete." said Ashby T. Gibbons, Jr., Louisiana District structural engineer for the Portland Cement Assn.

Seminars are scheduled as follows:

New Orleans, November 12-13, Tulane University.
Shreveport, December 11-12, The Captain Shreve Hotel, sponsored by Louisiana Polytechnic Institute.
Baton Rouge, January 21-22, Louisiana State University, also

Structural engineers from the Portland Cement Association will conduct the program. Emphasis will be on designing concrete structures under the provisions of the 1963 ACI Code. Registration will be handled by the colleges.

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Lafayette To Host Annual Meeting

J. E. Jarmon, general chairman, has announced that the L.E.S. annual meeting will be held January 17-18, 1964 in Lafayette. He urged all members to plan now to attend the event. He listed the following tentative program scheduled at the Lafayette Municipal Auditorium:

January 17, Friday

- 9:00 a.m. Registration
- 10:30 a.m. Technical Session—Engineering Students
- 12:00 noon Board of Direction Meeting & Luncheon
- 1:30 p.m. General Meeting of L.E.S.

Keynote Address: Mr. Robert Angers, Editor & Publisher of the Franklin Banner Tribune
Title: "Industrial Development in Louisiana"

Business Meeting and Presentation of Awards

6:00 p.m.-7:00 p.m. Social Hour (No Charge)

January 18, Saturday

- 9:30 a.m. Technical Session—Speakers for Technical Sessions, Waldemar S. Nelson, New Orleans consulting engineer, "LISA"
- 10:30 a.m. Technical Session—Dr. James Olivier, Dean, Graduate School, U. S. L., "Computers in Engineering"
- 2:00 p.m. Technical Session—James Stamy, NASA Deputy Director, Michoud Operations, "NASA—Space Program"
- 3:15 p.m. Technical Session—Newman Hall, U. S. Commission on Engineering Education—"Trends in Engineering Education"

Time for the speakers not set.

7:00 p.m. Banquet—Mr. Chester Laucks, Executive Assistant to the President of Continental Oil Company, Lum of "Lum and Abner" show

9:30 p.m. Dancing

ANNUAL MEETING COMMITTEE

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Mr. Jarmon also provided the following colorful history of Lafayette as background information to L.E.S. members and their ladies:

(Situated on the Vermilion River, Lafayette is in the Parish of Lafayette. The City of Lafayette is named after the Marquis de Lafayette, famous French volunteer in the American Revolution. It is in a region once inhabited by the Attakapas Indians, a cannibal tribe. The city is built on the site of an old Indian trading post.

Probably the first families to locate in what is now Lafayette were Andrew Markin, and the brothers Jean and Marin Mouton, who arrived here around 1770. The country around Lafayette was settled by the Acadians. The village was called Vermilionville after Bayou Vermilion.

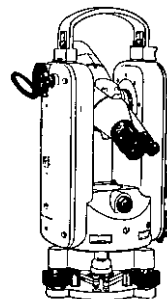
The first written record of the settlement is the report of a missionary, Pere Michael Barriere, who wrote in 1804 about his visit to the large plantation of Jean Mouton.

Vermilionville was laid out as the seat of Lafayette Parish in 1824 by Jean Mouton who gave the land for the courthouse and the Catholic Church. The town was incorporated in 1836. In 1840 a branch bank of the Union Bank of Louisiana was opened. In 1842 the Vermilionville Academy was established. In 1872 it was sold and the proceeds used to build three public schools. In 1846

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the first weekly newspaper, *L'Impartial* was established and printed in both French and English.

An interesting affair in the history of this town was the breakup of an organized band of cattle thieves in 1859. Cattle rustling became so frequent that it almost ruined the ranchers. A force of 4,000 vigilantes was organized under the leadership of Mayor Orilian St. Julien and Alfred Mouton, a West Point graduate. The rustlers formed an "anti-vigilantes" organization. In September, 1859 after several minor engagements, they took refuge on a farm on Bayou Queve de Tortue (Turtle Trail). The vigilantes arrived with a cannon upon which the rustlers broke and ran. Two hundred were captured, the leaders were hanged and the others flogged and run out of the community.

The New Orleans-Opelousas and Great Western Railroad in 1873 was built through Vermilion to Houston. In 1884 the name of the town was changed to Lafayette.

French is still spoken around Lafayette, both the patois and the correct language.

At Lafayette is the University of Southwestern Louisiana, with one of the most beautiful campuses in the South. It is the largest state co-educational college, with an enrollment of 4,600 students.

Lafayette, the Floral City, is unique in that it has three beautiful floral ceremonies in succession each year. Truly a beautiful sight during the early spring of the year.

The spectacles begin with the Camellia Pageant and Mid-Winter Fair Exposition in the USL Coliseum each January. Then the nationally famous Azalea Trail in February and March with miles of floral splendor can be

seen by the visitor to Lafayette. Every home has azaleas. And finally the Louisiana Iris Society Show at the Coliseum in April, attended by Iris lovers from throughout the nation.

Section Officers Due To Meet In Lake Charles

Professionalism, membership, operation of a state section and public relations will be topics of discussion at the Second Annual L.E.S. Section Officers Conference at Lake Charles December 13 and 14.

Sessions will start with registration in the Charleston Hotel on Friday from 3 to 6 p. m., according to George B. Walther, Jr., Lake Charles Section President and conference chairman.

A Board of Direction meeting will be held from 4 to 6 p. m. The opening day's events will close with cocktails and a buffet for L.E.S. members and their wives at the Lake Charles Country Club.

On Saturday, a ladies' coffee party will be staged from 10:15 to 11:30 a. m. Registration will continue from 8 to 10 a. m.

L.E.S. President Calvin T. Watts will preside at a Section Presidents and Vice-Presidents meeting, at 8:30 to 9 a. m. Concurrently, L.E.S. Secretary-Treasurer John P. Fernandez will conduct a Secretaries and Treasurers meeting.

"The Three Levels of the Society: National, State and Local" will be the topic of a discussion by Don Strong, Washington, D. C., field representative for the National Society of Professional Engineers.

Frank Irland, Shreveport section president, will discuss "How to get New Members" from 9:30 to 10 a. m.

Following a 15-minute coffee break at 10 a. m., David J. Carville, Baton Rouge Section President will discuss "Operation of a State Section" till 11:15 a. m.

"Public Relations" will be the subject of a talk by Frank H. Walk, New Orleans, chairman of the L.E.S. Public Relations Committee, from 11:15 to 11:45 a. m.

President elect John T. Knight, Jr., will present a summary of the conference at 11:45 to noon.

George B. Walther, Jr., will preside at a luncheon from 12:30 to 2:30 p. m. The luncheon speaker will be provided by the Lake Charles Section.

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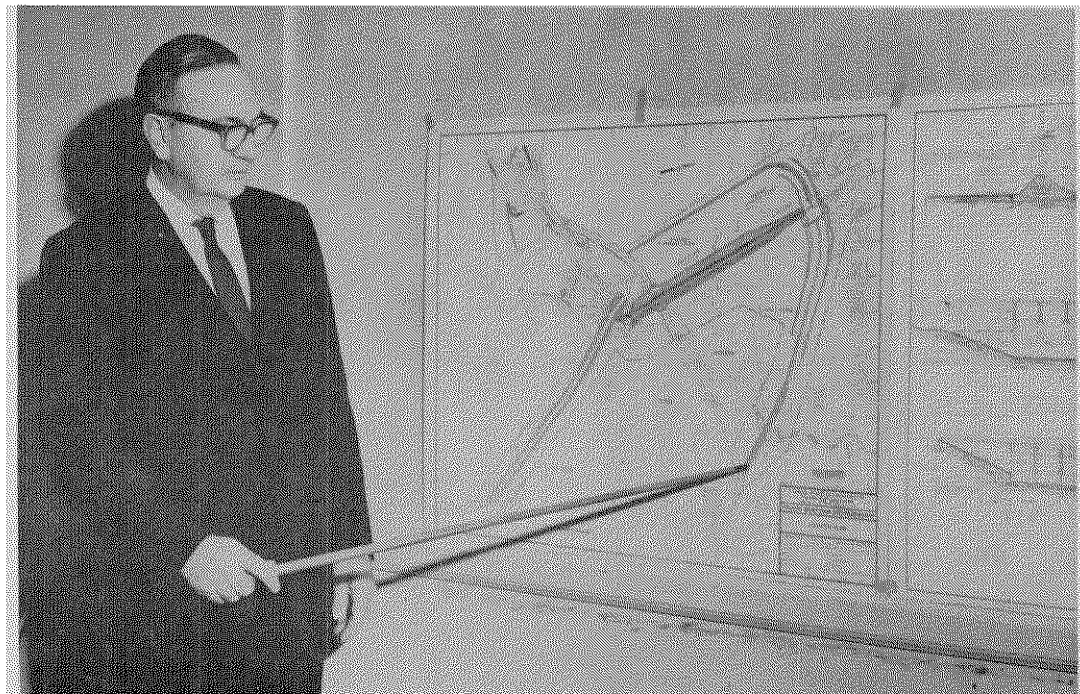
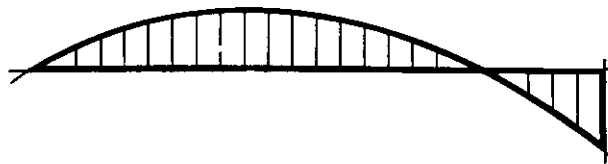


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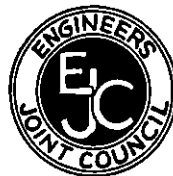
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(See Pages 18 & 19)

ENGINEER

Vol. 49 No. 6
December, 1963

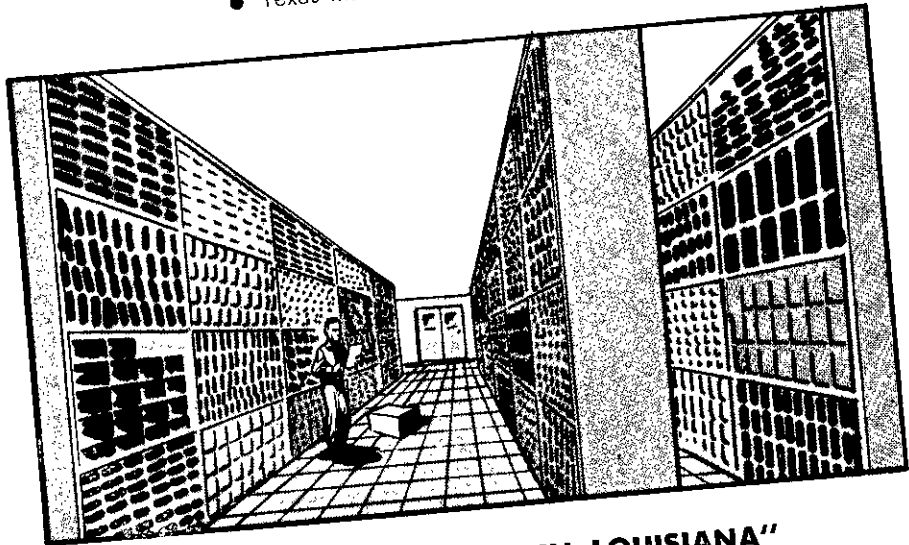


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EJC NOTES

Walker Lee Cisler, President and Director of the Detroit Edison Company, has been elected President of Engineers Joint Council. Elected Vice-Presidents were Dr. Ernst Weber, President of the Polytechnic Institute of Brooklyn; Richard H. Tatlow, III, President and Director of Abbott, Merkt & Co.; and William R. Marshall, Jr., Associate Dean of the College of Engineering at the University of Wisconsin.

As an executive of the Detroit Edison Company, Cisler has been actively engaged in atomic energy development since shortly after World War II. In 1955, he was appointed by Harold E. Stassen to a special task group studying disarmament. In the same year he was made an advisor to the United States delegation to the International Conference on the Peaceful Uses of Atomic Energy held in Geneva.

He holds three honorary degrees of Doctor of Engineering, four Doctor of Law degrees, and two Doctor of Science degrees. He is a Fellow of the Institute of Electrical and Electronics Engineers, The American Institute of Management, and the American Society of Mechanical Engineers, for whom he served as President in 1960. He has also been President of the Society of American Military Engineers. Among his many awards is the Hoover Medal, given to him in 1962.

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THE LOUISIANA ENGINEER

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December, 1963

No. 6

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The average number of copies of each issue of this publication sold or distributed through the mails or otherwise to paid subscribers during the 12 months preceding the date shown was 7,533.

Signed,

Oct. 31,
1963

W. K. Bankston,
Editor

OUR COVER: Rex D. Morgan, project engineer for the Toledo Bend Dam and Reservoir, a major hydroelectric development on the Sabine River, forming part of the boundary between Louisiana and Texas, points out engineering features in address before Louisiana Engineering Society Nov. 11, 1963.

Warren K. BankstonEditor
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Robert P. Lockett, Jr., P. O. Box 561, New Orleans 7.

Charles W. Stokes, 1311 Eleventh St., Lake Charles.

John F. Vogt, Jr., 317 Baronne St., New Orleans 9.

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Minutes Of The Board, LES

LOUISIANA ENGINEERING SOCIETY

Minutes of Meeting of the Board of Direction
Held at the Engineers' Club, New Orleans on
Thursday, October 3, 1963

The meeting was called to order by President-Elect Knight with Messrs. Janssen, Lockett, Macdonald, Repscha, Vogt, Walther and Fernandez present. Messrs. S. Logan McConnell, LES Representative on the Delta Parishes Building Code Committee, and Frank Walk, Public Relations and Publication Committee Chairman, also were present by invitation. Reading of minutes of the August 19th meeting was dispensed with upon motion by Dr. Macdonald, seconded by Mr. Repscha.

The order of business was dispensed with to discuss a report presented by Mr. McConnell. After the discussion, Dr. Macdonald moved that Messrs. McConnell, Zervigon and Knight be appointed to prepare a resolution reflecting the views of the LES Board of Direction with regard to the Building Code Committee. Motion seconded by Mr. Walther and carried.

Mr. Knight reported on a Membership Drive Meeting held by the Baton Rouge Section that was very well attended. A highlight of the meeting was a tour of the nuclear laboratory at Louisiana State University conducted by Professor Harry Richardson.

The secretary reported that all applicants whose names appeared on the September ballot were elected to their respective grades. A copy of the ballot is attached to these minutes, and a breakdown of new members by sections is as follows:

Section	Members	Affiliates	Juniors	Total
New Orleans	3	---	1	4
Baton Rouge	3	---	---	3
Lake Charles	4	1	1	6
Shreveport	---	---	---	---
Monroe	---	---	---	---
Lafayette	1	---	1	2
Alexandria	---	1	---	1
Total	11	2	3	16

Mr. Frank Walk presented his report on the Public Relations Program to the board, and Dr. Macdonald moved that the recommendation to appoint an expanded Public Relations Committee be implemented as soon as possible and that the remainder of the report be accepted. Motion seconded by Mr. Vogt and carried, whereupon the Board commended Mr. Walk for his excellent work.

Dr. Macdonald presented a report of Mr. Lawrence R. Daniel, Jr., Chairman of Vocational Guidance. After the discussion Dr. Macdonald was requested to convey the Board's recommendations to Professor Daniel.

Mr. Walther reported on plans made by the Lake Charles Section for the Section Officers' Conference to be held in Lake Charles December 14-14, which is to follow the same guidelines as the conference held last year.

Mr. Repscha reported on plans for the 1964 Annual Meeting to be held in Lafayette. Dr. Macdonald moved that the proposed program submitted by the Annual Meeting Committee be approved, with the recommendation that a strenuous effort be made to reduce the estimated deficit. Motion seconded by Mr. Lockett and carried.

Mr. Lockett reported that, in spite of the deplorable weather, the Annual Outing and Golf Tournament held on September 19 had been a great success.

The secretary read a letter addressed to President Watts by the Louisiana State Board of Registration for Professional Engineers and Land Surveyors, advising that the term of Dean Ben T. Bogard as a member of the Board would expire on November 16, 1963. It was announced that President Watts had appointed Messrs. Knight, Janssen and Roy T. Sessums to prepare a list of qualified engineers to be submitted to the Governor to fill the vacancy. It was decided that, as soon as the list is prepared, the secretary would poll the board members by mail so that the names may be submitted to the Governor as early as possible.

Upon motion by Mr. Lockett, seconded by Mr. Repscha, the following were reinstated to Affiliate membership grade:

Edwin P. Armstrong, Alexandria
Ralph H. Brown, Shreveport
Dallas C. Roberts, Alexandria

Upon motion by Mr. Walther, seconded by Mr. Vogt, the following resignations were accepted with regret:

John A. Glover, New Orleans (Member)
Grover C. Bayles, New Orleans (Member)

Upon motion by Mr. Walther, seconded by Mr. Repscha, Mr. W. I. Haring, Texas, (Member) was dropped from the membership roll in accordance with his request.

The secretary reported the death of George B. Lambert, Jr. (Member), a longtime member of LES and a resident of Mississippi, which occurred February 23, 1963, but was only recently brought to his attention.

On the recommendation of the members of the Board of Direction, the Chair appointed Messrs. James S. Janssen, Chairman, Edward A. McLellan and Wayne P. Wallace to constitute the Nominating Committee for 1964 officers.

The meeting then adjourned.

JOHN P. FERNANDEZ
Secretary-Treasurer

LOUISIANA ENGINEERING SOCIETY

Minutes of Meeting of the Board of Direction
Held at the Engineers' Club, New Orleans,
Monday, November 11, 1963

The meeting was called to order by President Watts with Messrs. Carville, Janssen, Knight, Lockett, Macdonald, Repscha, Vogt and Fernandez present. In addition to the members of the Board, the following also were present by invitation: Mr. Leo Odom, Chairman, Functional Section for Professional Engineers in Private Practice; Mr. Frank H. Walk, Chairman, Public Relations Committee; Mr. Allen Johnson, Public Relations Counsel; Messrs. Frank P. Lathrop and James I. Carter, President and Vice-President of the Louisiana Land Surveyors Association.

Reading of minutes of the preceding meeting was dispensed with and approved as mailed to board members.

The order of business was altered so that Messrs. Lathrop and Carter could speak in behalf of the Louisiana Land Surveyors' Association. The Board advised these gentlemen that the LES is in sympathy with the objectives of their organization and recommended a closer working relationship with it. Mr. Walk stated that his committee would consider publishing material submitted by the organization in The Louisiana Engineer.

President Watts announced the appointment of a new Public Relations Committee to serve for the remainder of 1963 and on through 1964. Appointments were made on the advice of the Executive Committee, with the concurrence of President-Elect Knight.

Frank H. Walk, Chairman (Private Practice)
J. J. Thigpen, Vice-Chairman (Education)
Hardy M. James (Private Industry)
A. W. Durning (Private Utilities)
Harry D. Richardson (Education)

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Gus G. Quinn.....(Private Practice)
 James L. Rike.....(Private Industry)
 Warren K. Bankston.....(Editor, The Louisiana Engineer)
 Allen Johnson.....(Public Relations Counsel)

President Watts further stated that this committee would be augmented by a representative of Government.

The president reported that the special committee appointed to recommend nominees for the vacancy on the State Board of Registration had submitted the following names:

Ben T. Bogard, Ruston
 Marion C. Bubenzer, Shreveport
 Waldemar S. Nelson, New Orleans
 Charles W. Stokes, Lake Charles
 Max P. Watson, Shreveport

The secretary reported that, in accordance with the Board's instructions at the October meeting, a ballot had been mailed to all board members. Fourteen ballots out of fifteen were returned, twelve favored the selections and two contained mild objections. In accordance with Act 73 of 1950, State of Louisiana, the above list of nominees was submitted to the Governor.

Discussion followed on an article published in the Louisiana Engineer entitled "Errors in Design Can Prove Costly." Letters objecting to this article, received from Messrs. Warren Moses and Tom C. David, the latter as President of the Gulf Institute of Consulting Engineers, were read. Mr. Lockett moved that the LES Board of Direction adopt a policy providing that articles of this nature not be published unless they have been fully documented; that Mr. David be advised of the action and informed that the editorial staff is open to receive further suggestions from his organization. Motion seconded by Mr. Carville and carried.

The secretary read a report of Mr. Ben T. Bogard, Chairman of the Honors & Awards Committee, presenting the following nominations for medal awards:

For the LES Civic Activities Medal—Andrew M. Lockett Award:
 Mr. Williford J. "Red" Evans of Baton Rouge

For the LES Technological Accomplishment Metal:
 Professor Joseph H. Barnwell of Ruston

Mr. Knight moved that the committee's recommendations be accepted, seconded by Mr. Carville and carried.

With the concurrence of the Board, President Watts appointed a committee consisting of Messrs. Robert E. Gosa, Chairman, Roy G. Cappel and Owen V. LeBlanc, to prepare a memorial resolution honoring our late Life Member, Herriek J. Lane.

The secretary reported the passing of Soule Butler of Alexandria. The secretary advised that a special meeting of the Board would be necessary on December 9 to receive the report of the Nominating Committee.

Those present were urged to attend the Section Officers' Conference to be held in Lake Charles, December 13-14, after which the meeting adjourned.

JOHN P. FERNANDEZ,
 Secretary-Treasurer



LARGE TURNOUT for Christmas Tea of the L.E.S. Woman's Auxiliary in New Orleans included (from left), Mmes. Frank A. Birdsong, Richard H. Earl, Joseph R. Pezold, Roy G. Cappel and Mario G. Zervigon.

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N. O. Bond Issue Follow-Through

Plan to Spend \$14.7 Million For Streets

New Orleans Streets Department engineers are pushing detailed plans for the largest street improvement programs in the city's history; made possible when the city's property owners recently approved a \$14,700,000 bond issue.

The bond issue, limited almost exclusively to streets improvements and construction, is the largest amount ever authorized for this purpose at one time.

Funds derived from the sale of the bonds will:

1. Provide new traffic arteries to assist in the development of Greater New Orleans industrial and port facilities and for the extension of residential areas.
2. Reserve necessary rights of way for future expressways and major street widening and extension.
3. Extend a comprehensive program of street improvements which will provide paving and drainage for existing unimproved streets through a Paving Lien program in which the property owner and the city share the cost of improvements, to give access to new industrial and public works complexes, and eliminate gaps or bottlenecks in the city's existing street system by providing new bridges, replacement of outmoded bridges and roadways and widening of existing roads.

The bond issue also includes funds for new heavy duty equipment to be used in street maintenance, for street illumination, and for a water main to serve the down-river section of the city's Algiers area.

City officials say the most important project to be undertaken will be the development of the Almonaster Avenue extension which will serve the new Tidewater Channel and the National Aeronautics and Space Agency's industrial complex at Michoud. This extension will stretch from the present terminus of Almonaster Avenue at Florida Avenue to an easterly crossing of the Inner Harbor Navigation Canal and thence through a presently undeveloped section to a connection with Paris Road in the vicinity of the NASA complex.

This new artery is expected to hasten development of industrial and harbor facilities along the Tidewater Channel which opened to ocean-going ships this fall.

The four-lane roadway will cost approximately \$4,000,000, with property owners contributing \$500,000 toward the cost.

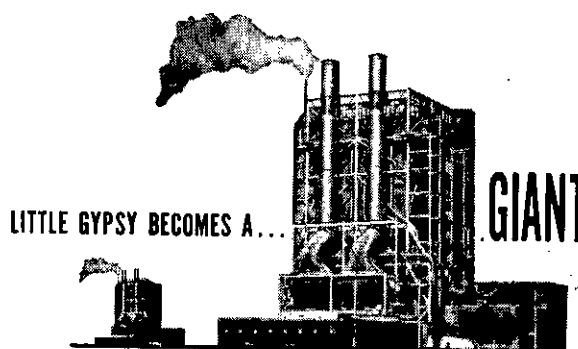
The most interesting engineering problem in the six-mile project will take place in the four-mile stretch from the Inner Harbor Navigation Canal to Paris Road. This stretch will traverse an area of undrained lowlands, most of which are under water a great deal of the time, and which eventually will provide 2400 acres for industrial development.

Development of the area at present does not justify the installation of a drainage system of canals and pumping stations and present plans for the roadway reflect this situation.

Present plans call for the roadways to be placed on a highway type embankment, with the finished roadway grade set at elevation 24.50 ft. (Cairo Datum), or approximately 4 to 5 feet above the present ground levels, in order to resist flooding. The completed roadway section will have 2-24' roadways, 8' shoulders, with swale ditches adjoining property frontages with the median area containing a canal section of 36' width to provide for necessary drainage.

City Engineers realize that construction of a roadway through this virgin territory will require great care to insure that a well-compacted and uniform subgrade is provided in order to minimize effects of land subsidence resulting from drainage and usage of this area. A heavy-duty type roadway of flexible base pavement will be installed. This will consist of a 1" asphalt wearing surface, 4" of bituminous base course (two layers of 2" thickness) and 8" compacted clam and dead reef shell (1:1 mix) base course.

The second section of the overall program involves early acquisition of properties which will be needed to carry through the city's Major Street Plan. A total of



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\$4,612,100 of bond funds has been set aside for such right-of-way acquisition.

This money will be used to buy rights-of-way for 8.1 miles of major streets and expressways and will result in great savings because the property will be acquired before land speculation and uncontrolled development have a chance to sky-rocket costs.

In addition to the Almonaster Extension, the two other projects for which rights-of-way acquisitions are planned are the Poydras Street widening and the Riverfront Expressway. The sum of \$3,663,000 has been set aside for these two projects.

The widening of Poydras Street from its present narrow path of 75 feet to a six-lane major street with a 134-foot width is essential for the continued development of the Central Business District and for the accommodation of increased auto traffic. The six-lane section will stretch from South Broad Avenue to the Mississippi River at the foot of the planned International Trade Mart-Convention Facility complex. This improvement has been allocated \$1,663,000 for rights-of-way purchases.

The Riverfront Expressway, long a dream of city planners, has been declared feasible and necessary by engineers who have studied the project. They propose a route which will travel the east bank of the river from Jackson Avenue to Elysian Fields Avenue and thence along the Elysian Fields neutral ground to a connection with Interstate Highway I-10 at North Tonti street.

However, in order for this project to qualify as an integral part of the urban road system, the City of New Orleans must furnish all rights of way before the State and Federal governments can include it in the system.

The allocation of \$2 million will insure this right-of-way acquisition.

As planned by the Riverfront Expressway engineers, the expressway will have a complete interchange with the Mississippi River Bridge via unique elevated two-level ramp connections.

A section will go underneath the Convention Facility between Poydras and Canal Streets. Construction of this section must be performed concurrently with the construction of the Convention Facility building.

In the stretch from Canal Street to Elysian Fields Avenue, exceptional measures must be taken because of the constricted condition resulting from the location of numerous railroad tracks which serve the docks.

Portions of the Dumaine Street flood wall will have to be moved landward in order to accommodate needed rail track locations and expressway piers. The six-lane roadway along this stretch will be elevated and three rail lines will run between the piers underneath the highway. Study engineers maintain this is the only feasible method of locating the expressway through this area.

The next segment of the program is the improvement of major and minor streets, for which funds totaling \$3,250,000 have been allocated.

Under present legislation, the city may assess property owners up to \$10 per front foot for street paving. No charge can be made for drainage installations. It is expected that this assessment will bring \$2,250,000 from property owners, thus providing a total of \$5,500,000 for these improvement projects.

A total of \$1,400,000 of the bond funds has been set aside for paving of residential streets under the city's Paving Lien program. Under this program, 60 per cent of the owners, on a front foot basis, fronting a street may petition the City Council for paving and drainage for their street. Upon acceptance by the Council, the Department of Streets is authorized to prepare plans and specifications. It is expected that the money set aside, along with a matching \$1,400,000 from property owners, will cover the cost of some 12 miles of streets.

It is planned that no bids will be asked until several such paving lien projects are developed so contractors may bid on a large number of jobs at one time.

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Watts Outlines Objectives to Section Officers

An expanded public relations program and increased membership are twin objectives for the coming year, Calvin T. Watts of Baton Rouge, president of the Louisiana Engineering Society, told the Second Annual Section Officers Conference Saturday at the Charleston hotel.

He noted that the 66th Annual Meeting of the Society will be held for the first time in Lafayette, January 17-18.

Watts, who is assistant director of the state department of public works, also said the National Society of Professional Engineers (NSPE) will hold its winter meeting of 1965 in New Orleans.

Col. John T. Knight of New Orleans, president-elect, called for the "enthusiastic performance" of the 1964 officers in "putting across the professional engineer to John Q. Public."

John P. Fernandez of New Orleans, secretary-treasurer, conducted a briefing of the duties of the local

secretary-treasurer.

J. D. Strong, Washington, NSPE field representative, outlined various services available to the professional member.

Strong noted that NSPE has an annual budget exceeding \$800,000 to help solve the professional engineer's legislative, registration and other problems. He referred to continuing efforts of NSPE executive director Paul Robbins to restore \$25 million in engineering and science fellowships and scholarships for the National Science Foundation.

He discussed a national trend toward more chapters of NSPE within a metropolitan area, making it easier for engineers to attend meetings near their homes. He said that Mississippi has doubled its membership with the setting up of 13 chapters, with no loss of membership to the parent chapter.

He particularly urged L.E.S. members to join NSPE, and noted that the NSPE Board of Directors will hold their annual winter meeting in New Orleans in 1965, in recognition of the growing stature of professional engineering in Louisiana."

Frank W. Irland of Shreveport outlined a comprehensive membership program aimed at developing the society's potential of 6,500 registered engineers in Louisiana. The society has a present strength of 2,015.

David J. Carville of Baton Rouge, urged broad professional programs to interest engineers who might be specializing in entirely different technical fields. He praised the work of the women's auxiliary in "getting the engineer to the meeting" and for their very fine scholarship program for engineering students.

Frank H. Walk of New Orleans said the board of directors of the society has approved an expanded program, "recognizing that foremost and always the Louisiana Engineering Society must give its membership a topnotch public relations program designed to make known to the general public, and to constantly keep before them, the true purpose, importance and accomplishment of the engineering profession in the state of Louisiana."

Allen Johnson of New Orleans, public relations counsel, said that "the best public relations stems from the professional engineer himself in his daily business and social life in the community."

Guest speaker at the closing luncheon in the Pioneer Club was Carl J. Eckhardt, Austin, Tex., professor of mechanical engineering at the University of Texas and a past national vice-president of the American Society of Mechanical Engineers.

Eckhardt was introduced by C. W. Stokes, Lake Charles, Board of Direction member and a former student of Dr. Eckhardt of the University of Texas.

Eckhardt declared that although knowledge rolls back darkness, it does not dispel it, and that the true illuminant is wisdom.

"Many know how to hate. Few know what it is they love. How terrifying this hatred can become," he said, adding that if love were in the hearts of every man there would be no wars, no hunger, no false ideologies.

What Every Louisiana Engineer Should Know

This is another in a series of articles prepared by the Editorial Staff of the LOUISIANA ENGINEER in which an attempt will be made to answer questions of interest to professional engineers in this area. Where, in certain instances, it becomes necessary to answer questions of a controversial nature, it must be re-emphasized that the opinions expressed are those of the Editorial Staff and do not necessarily reflect the feelings of the Louisiana Engineering Society nor the Louisiana State Board of Registration for Professional Engineers and Land Surveyors.

QUESTION—Is it necessary that an applicant for registration as a Professional Engineer be practicing his profession at time of making application?

ANSWER—No. The Louisiana Act states that any person, having the necessary qualifications prescribed in the act to entitle him to registration, shall be eligible for registration although he may not be practicing his profession at the time of making application.

QUESTION—Are copies of the roster of Louisiana registered Professional Engineers available to the public?

ANSWER—Yes. Copies are furnished to the public upon request of the Executive Secretary, F. W. MacDonald, Civil Engineering Building, Tulane University, New Orleans 18, Louisiana. Copies are also placed on file with the Secretary of State and the libraries of all engineering colleges and universities in the State.

QUESTION—Can a certificate of registration be reissued to any person whose certificate has been revoked?

ANSWER—Yes. The Board may reissue a certificate of registration to any person whose certificate has been revoked provided four or more members of the Board vote in favor of the reissuance.

QUESTION—How can a certificate of registration be replaced if the original is lost or destroyed?

ANSWER—A new certificate of registration to replace any certificate revoked, lost, destroyed or mutilated will be issued, subject to the rules of the Board, for a charge of five dollars.

Objectives: Expanded Public Relations, Members



PUBLIC RELATIONS Chairman Frank H. Walk and membership chairman Frank W. Irland commanded special attention at meeting with emphasis being given their activities by President Calvin Watts.

HEAD TABLE at luncheon included (from left), Mrs. C. W. Stokes and Mr. Stokes; Prof. Carl J. Eckhardt, University of Texas, luncheon speaker; Mr. Watts; Mr. and Mrs. George B. Walther, Jr.; President-elect Col. and Mrs. John T. Knight; Mr. and Mrs. Ernest Livingston. Mr. Strong is not shown.

Social highlights of the meeting were a cocktail party and buffet at the Lake Charles Country Club. A coffee party was held for the engineers' wives at the Chateau Charles.

The conference was widely publicized in the Lake Charles American Press and Beaumont Enterprise, whose reporter Miss Kathleen Malloy was a luncheon guest, and statewide as well.

Conference participants included James Janssen, John F. Vogt, Jr., and Robert Lockett, New Orleans board members; C. W. Stokes, Lake Charles, second vice-president; Jerry Affolter and Dr. Louis Capozzoli, both of Baton Rouge; William J. Rountree and Marshall B. Ewing of Alexandria; Albert B. Repscha, Eugene M. Sellers, L. M. Hunsinger, Jr., and Sylvan Richard, all of Lafayette; Fred C. Brownlee, Monroe; Ernest Livingston, James F. Williams, T. W. Kirby, Rich Griswold, Gus G. Quinn and Marion D. Garrison, all of Lake Charles. George B. Walther, Jr., was general chairman of the event.

Repscha issued a special invitation on behalf of Lafayette to all L.E.S. members and non-member engi-

neers, particularly those in the petroleum engineering field, to attend the 66th Annual Meeting in Lafayette.

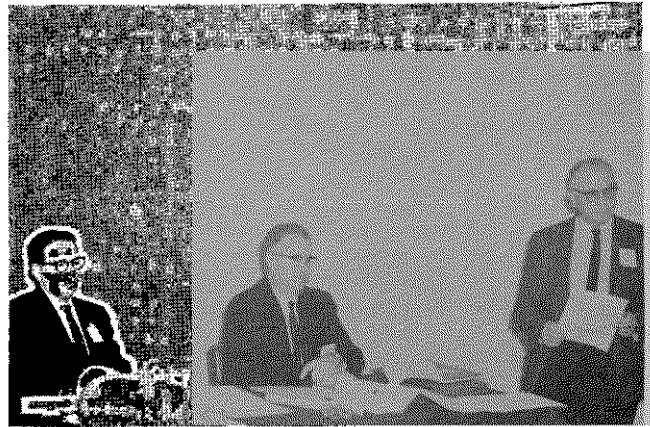
The convention, to be held in Municipal Auditorium, promises an outstanding program, said Repscha. Ample comfortable accommodations are available now at the Evangeline Hotel, the Town House, Travel Lodge and Plantation Motels close by the auditorium. He said that plantation tours and the traditional French cuisine of the area were added incentives for the engineer and his wife to participate in the meeting.

Exhibit space has been provided, according to John H. Huffman, United Gas Pipeline Co., Lafayette, exhibits chairman. Available at \$50 per space, exhibits have been taken by a number of Louisiana firms. Among the first to sign up for space were: W. S. Dickey Clay Mfg. Co., Texarkana, Tex.-Ark.; Rock Island Fiber Glass; Superior Reproduction Supply; Big River Industries, Inc., Baton Rouge; Lake Charles Dredging and Towing Co.; Oil Center Research, Chemical Service, Inc., and B. & G. Asphalt Co., Lafayette.

Contact Huffman before Jan. 14 to arrange your company's exhibit.



J. D. (DON) STRONG, Washington, NSPE field representative, registers at 2nd Annual Section Officers Conference in Charleston Hotel, Lake Charles, Dec. 13-14, 1963. Strong outlined NSPE services to Louisiana engineers.



DAVID J. CARVILLE, Baton Rouge section president (at right) answers question on "Operation of A State Section." Seated are (from left), John P. Fernandez, secretary-treasurer, and Calvin T. Watts, LES president.



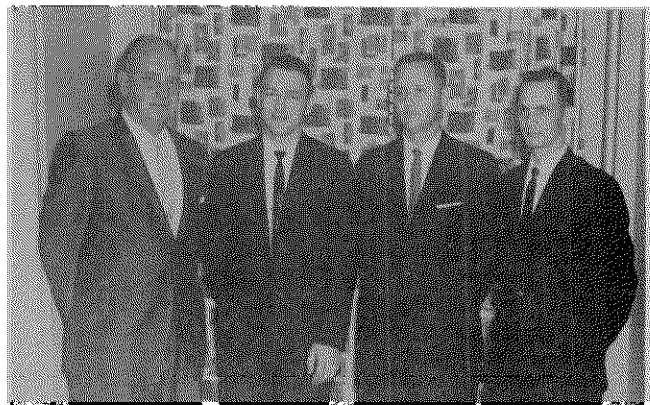
OTHER FAMILIAR faces at luncheon included (nearest camera) Mr. Carville, Mrs. and Mr. Jerry Affolter; (opposite) Mrs. Carville, Robert P. Lockett, Mrs. and Mr. John F. Vogt, Jr.; (second table, facing camera), Mrs. and Dr. Louis J. Capozzoli; (third table), William J. Rountree.



ATTENDING COFFEE PARTY were (from left), Mesdames John F. Vogt, Jr., New Orleans; Mrs. David Carville, Baton Rouge; Mrs. James Janssen, New Orleans; Mrs. John T. Knight, New Orleans; Mrs. Louis J. Capozzoli, Baton Rouge; Mrs. Fred Brownlee, Monroe; Mrs. J. W. Affolter, Baton Rouge; Mrs. John P. Fernandez, New Orleans.



CONGRATULATING newly-elected Lake Charles Section officers (from left), Thomas W. Kirby, secretary-treasurer, Cities Service Oil Co.; James F. Williams, Jr., McNeese State College, First vice-president, and Ernest Livingston, Ernest Livingston & Associates, president, are George B. Walther, Jr., outgoing section president, and C. W. Stokes, Lake Charles Board of Direction member.



HARD AT WORK on plans for Lafayette's first Annual Meeting, Jan. 17-18, 1964, are (from left), Albert H. Repscha, section president; Eugene M. Sellers, first vice-president; Lawrence N. Hunsinger, second vice-president, and Sylvan J. Richard, secretary-treasurer. They participated in Lake Charles conference.



MEMBERS OF THE entertainment committee and some of the members and guests at New Orleans tea are shown in this photo. Event held Dec. 10 was one of many sponsored statewide during the holiday season by the Woman's Auxiliary. (See story, page 21).

Gives Details of Toledo Bend Dam

By REX D. MORGAN

Project Engineer

State Department of Public Works

Before L.E.S., November 11, 1963

Perhaps most of you are somewhat familiar with the Toledo Bend Project. However, to begin at the beginning I will say that it is a major hydroelectric development on the Sabine River. As you know, the Sabine River forms a portion of the boundary between the states of Louisiana and Texas. The dam site will be at river mile 156.5 at approximately the latitude of Leesville, Louisiana and 18 miles west of same.

Parts of the dam site are in Sabine and Vernon Parishes, Louisiana and in Newton County, Texas. The project is a joint undertaking of the two states, being carried out under the general provisions of the Sabine River Compact.

The project comprises a hydroelectric dam and reservoir. The dam will consist of a rolled earth embankment about 75 feet high in the flood plain and with a maximum height of approximately 110 feet above the river bottom. On the south end of the dam which will be anchored in a point of the Texas hills at the small community of Toledo will be constructed the power plant while at the north end in Louisiana hills will be built the spillway structure.

The main reservoir extends up the river for about 60 miles to Logansport, Louisiana. Some flooding of low lands and channel bottoms will extend upstream from Logansport into Texas for an additional 15 to 20 miles. The Reservoir capacity is estimated at 4,477,000 acre feet at elevation 172.0 MSL which is the top of the power-drawn storage. The capacity at elevation 162.2, the top of power head storage is 2,922,800 acre ft. which means that when the pool elevation is at 172.0 MSL there is available 1,854,200 acre ft. for the production of power.

The project is estimated to cost approximately \$60,000,000 and financing is being arranged for this amount. One half of the cost of project will be obtained from a bond issue for which the revenues from the sale of power will be pledged. The responsibility for the second \$30,000,000 will be divided equally between the two states. Louisiana's \$15,000,000 was provided by an amendment to the State Constitution, approved by the voters in 1960. The amendment dedicates to the Department of Public Works the residue from the ad valorem tax dedicated to Confederates' Veteran Fund for the development of Louisiana's water resources. The first \$15,000,000 is to be used for the Toledo Bend Project. The Sabine River Authority of Texas will borrow a like sum from the Texas Water Development Board for their half.

I suspect that this group would like to know who is doing the engineering for the various parts of this project. "THE TOLEDO BEND PROJECT, JOINT OPERATION" is the name adopted by the organization which was set up by the two Sabine River Authorities to carry out the Project. The Joint Operation, as I will refer to

it hereafter, divided the engineering responsibilities in this manner: Texas Engineers will have the responsibility for the design and construction of the dam and spillway with the power plant and appurtenant structure included. Forrest and Cotton Engineers of Dallas, Texas have been engaged by the Joint Operation to do this job. Louisiana, through the Department of Public Works, has the responsibility for just about everything else. Included are all surveys for land acquisition, foundation investigations, all relocations, the reservoir clearing and any other miscellaneous engineering problems that are not directly connected with the design and construction of the dam and spillway proper. To handle this the Department has created an additional district with the speaker in charge. Most of our engineering is being done by consulting engineers under the general direction of the District Engineer. As I discuss further some of the specific engineering features of the project, I will identify the engineering firms involved.

Possibly the most interesting and spectacular feature of the project is the dam and spillway with the power plant and other attendant facilities. While the design is being handled by Texas, Louisiana did have the responsibility for subsurface investigation of the foundation. Eustis Engineering Company of New Orleans was engaged by the Department to make these investigations.

In the tentative plans for the dam included in the feasibility report of 1958-59 prepared by Forrest and Cotton it was proposed to build the dam on the approximate alignment and location as finally adopted. However, this early plan provided for the power plant and spillway to be located adjoining each other at the south or Texas end of the dam. The principal reason for adopting this arrangement was the increase in available head for generating power which could be obtained by routing the trailrace channel across the long bend in the river. Through 1.6 miles of trailrace channel the discharge from the turbines enters the river 4.5 miles downstream from damsite, thus shortening the distance the water travels about 2.9 miles. This results in an appreciable increase in head.

Soils information at the time of publishing the feasibility report indicated that the foundation would be satisfactory with this arrangement. However, it was recognized that a more favorable arrangement might be worked out when a more complete soils investigation would be carried out. Accordingly, early in the final phase of the overall foundation and soil investigation carried out by Eustis Engineering Company, borings were made in selected locations in the north or Louisiana abutment. These borings indicated the foundation materials to be superior to that found in the Texas abutment. The strata were also at a more desirable depth for founding the spillway structure and the overburden materials were relatively impervious and suitable for embankment materials. For these reasons the spillway was shifted to the Louisiana end. The power plant was retained at approximately its original location due to its obvious hydraulic advantage.

An evaluation of the report of Eustis Engineering Company on their investigation indicated that areas in the power plant and spillway at the elevation to which excavation would be performed would be under artesian pressure and that the foundation under the embankment would be subject to excess seepage forces. This indicated the need for pressure relief wells under these structures. Also apparent was the need for design information by the prospective contractors for use in working out dewatering systems for the period of construction.

The information available from the soils investigations carried out by Eustis was not sufficient for the design of the relief wells. Needed were the coefficients of permeability and transmissibility of the water bearing sands. In order to obtain this information a contract was negotiated with Layne Louisiana Company for the construction of two test wells with piezometers radiating out from them and for conducting pumping tests and compiling the results.

As a result of these tests 15 relief wells have been included in the power plant area, 37 were placed in the embankment area and 26 were estimated for the spillway area. The spillway design is subject to revision since a test well was not constructed in that area.

The embankment cross section is designed to have an impervious core with a 10 foot thick impervious layer at the bottom in the upstream portion of the embankment. Then from the upstream toe of the fill and extending 1800 feet upstream to the edge of the approach channel to the spillway will be a 5 foot thick impervious blanket covering the entire area including outcropping of pervious formations in the excavation for the approach channels.

Downstream from the impervious core will be constructed a 10 foot thick layer of pervious materials on the bottom of the section and adjacent to the impervious core up to elevation 150. On a berm on the downstream side at elevation 138.0 will be constructed a road which is expected to be incorporated into the highway system, providing a crossing over the project.

Slope protection on the lake side will be either stone rip-rap or as an alternate, compacted soil cement may be used. On the downstream slope will be 4" of top soil which will be sprigged and seeded. The crown will be protected by a 6" gravel, soil asphalt, or soil cement base.

The several types of materials called for in the section indicate the problems confronting the inspection forces on the job. Very close control will be required. A word frequently used in describing the soils to be encountered in the major excavations is "heterogeneous." The problem created by this characteristic is obvious.

The spillway will consist of an approach channel, approach training walls, approach channel slab, a concrete gravity ogee weir with eleven tainter gates and 10 piers, an inclined chute which will terminate in a stilling basin composed of a reinforced concrete anchored slab floor with two rows of baffles and an end sill. Concrete retaining walls will be at each side of the chute and stilling basin and a discharge channel 8200 ft. in length will convey the spillway releases to the Sabine River Channel. Forming abutments at each end of the weir sections will

be non-overflow monoliths, 154 feet in length, which will be enveloped by the earthen embankment. The right, or riverside, non-overflow monolith will contain the control room and access shaft for the inspection and drainage gallery. A bridge will span the spillway immediately upstream of the weir to provide a road crossing and access for operation and maintenance of the reservoir and structures. A low-flow release sluice 8.33' x 12' in dimension will be located in a special pier near the center of the spillway.

The gross width of the weir section will be 530 feet and the net width of overflow crest will be 440 feet—eleven 40 foot bays. The crest of the weir will be at elevation 145, the upstream base at elev. 116.0 feet and the downstream base at elevation 118.0 feet. The weir crest will be a concrete gravity type ogee structure with a small amount of reinforcing steel in the thinner sections of the base. There is approximately 90,000 cu. yds. of concrete in this structure which has an overall length of 820 ft.

The power plant substructure and intake is a monolithic concrete structure with the superstructure being of concrete and steel. The plant has two 42,500 KVA generators driven by 58,500 horsepower Kaplan type turbines. The power intake is controlled by six vertical lift broom type gates. A single 100,000 KVA transformer is mounted outdoors on the draft tube deck. A power house indoor crane of 200-ton capacity serves the units. There are approximately 100,000 cu. yds. of concrete in the power plant structure.

The two turbines will be 58,500 horsepower vertical shaft (Kaplan) hydraulic turbines with single runners of the propeller type with automatically adjustable blades. They will be manufactured by the English Electric Corporation and will be manufactured in England. For your information English Electric's bid was \$382,000 (or 23%) below the second bidder, an American firm. This figure represents a substantial saving and is an important factor in the overall cost of the project.

The generators which will be manufactured by Allis Chalmers Manufacturing Company of Milwaukee, Wisconsin, will be rated 42,500 KVA, 95 PF continuous capacity, 3 phase, 60 cycles and 13,800 volts. Allis Chalmers will also furnish the 100,000 KVA transformer and the generator switch gear. The Harnischfeger Corporation of Milwaukee, Wisconsin will furnish the 200 ton power house crane.

It became the Department of Public Works' responsibility to establish the project boundary. In determining the limits of land to be acquired for the reservoir the following factors were considered:

1. The normal top of the power draw-down storage elevation 172.0 would be determined and marked in the field in order that individual owners affected could see where the edge of the lake will be. This was effected by levelling and marking trees with yellow paint.

2. A traverse would be run at, or above, the 175 foot contour which would become the taking line for the reservoir.

3. Necessary field ties would be made to establish land lines and property lines to permit proper description of the lands to be acquired.

4. Control points in the Lambert Coordinate System would be established for control of the traverse.

The control surveys were carried out in two contracts by Brown and Butler Engineers of Baton Rouge. They engaged Gandolfo, Walker and Kuhn of New Orleans to do a part of the horizontal control work.

The horizontal control survey was begun in the vicinity of Logansport, Louisiana and projected southward through a network of triangles to its southern terminus in Leesville. The triangle network was established by measuring the sides of each triangle with the Tellurometer. First order U. S. Coast and Geodetic Survey control monuments were used for position and directional control at each end of the system and also provided one intermediate check.

The coordinate and directional system used in the computations were based on the Louisiana Plane Grid System, Lambert Projection, North Zone. Four USC & GS first order stations in the Logansport area were used to establish starting positions and directions. An intermediate tie to triangulation Station "Brittain" in Shelby County, Texas showed an error of closure of 1 in 20,000. Closure at the Leesville triangulation station was also on the order of 1 in 20,000.

From the basic network by a system of trilateration, triangulation and in some instances, traverse, monuments were established in the vicinity of the 175 foot contour which were the horizontal control points to be used in later surveys.

A second contract was negotiated with Brown and Butler to establish control above Logansport into Texas. This was carried out in much the same manner as described before with about the equivalent results.

In addition to the horizontal control points Brown and Butler established vertical control markers at roughly 5 mile intervals around the perimeter of the project.

Third order accuracy was specified and levels were run in accordance with U.S.C. & G.S. specifications. Main level loops were run along the roads with temporary bench marks set about every mile. First and second order coast and geodetic bench marks were used as reference. Ziess self levelling instruments were used with K & E Lo-Var precise rods graduated in yards and hundredths. A temporary bench mark was set at every point in the main loop where it was desired to run a spur off to one of the concrete monuments to be used as a control marker in the project. After the main loop was closed and adjusted, levels were then run to the monuments. Closures were well within the criterion for third order accuracy and we believe that the water level will be somewhere in the neighborhood of our established contour.

The Engineering Committee of the Sabine River Authority of Louisiana in consultation with the Department of Public Works selected eight engineering firms from various parts of the state to make the shoreline survey. These firms were:

1. Dawson, Gilbert and Pilcher, Inc., of Baton Rouge
2. D. W. Jessen of Lake Charles
3. Louis J. Daigre of Alexandria
4. Downs, Gray and Williamson of Bossier City
5. S. E. Huey of Monroe
6. W. S. Nash of Monroe

7. F. Shutts' Sons of Lake Charles

8. Robert L. Cleveland of Crowley

When we commenced negotiations with these firms for the determination of a price to be paid for the several items of work a wide variance in ideas as to the probable cost of the work was found. The management of the project did not wish to do the work on a "per diem" basis. It was their determined policy that some sort of units or work be set up and that payment be made on a unit price basis.

Accordingly, the Department drew up some specifications for the survey work we felt should be done. From these specifications we set up four units of work which we felt would constitute a reasonable measurement of their work.

According to the specifications each contractor would start from one of the control markers established by Brown and Butler. He would, by levelling, establish the 172 ft. contour and the 175 ft. contour. He was required to paint yellow circles on a sufficient number of intermittent trees, posts and other vegetation along the 172 ft. contour so that its location could be easily distinguished on the ground. Landward of and as near to the 175 ft. contour as practicable was laid out a series of tangents which were made as long as possible and still remain within a space not more than 75 ft. landward of the 175 ft. contour and not less than 50 ft. from the 172 ft. contour. Due to the rugged terrain, tangents were very short, in most cases averaging just over 100 ft.

The location of the line created by the series of tangents was determined by transit-tape traverse. In Texas the situation was a little more difficult. Their land system is based on the original land grants which are called leagues, surveys or Labors, depending on the size of the tract and the period in the State's history when the grant was made. Most of their descriptions contain the vara as the unit of length, some use the chain as a unit and a few are described in feet. Here more detailed field surveys of the lands were required for the ties to our taking line.

1. A "per mile" price was worked out as payment for the contour line. This included all the levelling necessary to establish and mark the 172 ft. and the 175 ft. contours, the transit-tape traverse of the taking line at or above the 175 ft. contour, the necessary ties from the traverse line to the 172 ft. contour, and the preparation of maps and all the computations connected with the survey.

2. A "per mile" price was worked out for an item called Auxiliary Traverse. This was to be used when the 172 ft. line departed more than about 125 ft. from the 175 ft. line. However, in most instances this line was not run since in certain areas there was such a large amount of this that it became uneconomical to continue. This item was eliminated from most of the survey. It was necessary, however, to work out a price adjustment for contractors who had large amounts of this type of work to compensate them for having to run separate lines of levels for the two contours.

3. A price "per mile" was set up for making ties to the land lines for all the tracts, sections, and surveys that were severed by the taking line.

4. In the upper portion of the reservoir it was decided to take some additional flowage easements above the 175 ft. contour or taking line. A price "per mile" was worked out for establishing, marking and tying in this line.

As stated before we found a wide variation in ideas as to the expected cost of this work. The engineers felt that there were many variables and uncertainties and they came up with proposals that would have been out of line with the values involved. In order to try to establish a fair price which would permit the contracting firms to realize a reasonable profit and yet fall within the budget as set up for the project, we decided to conduct experimental surveys of a section of the shoreline. We selected an estimated 18 mile stretch and contracted with S. E. Huey to do the work on a "per diem" basis. We used the performance experienced on this segment as a basis for estimating production and for revising our specifications to bring the costs more in line. With this information we arrived at a price for each of the items discussed.

To give you an idea of the amount of surveying that was required on the project, I report the following figures on the quantities of each of the items outlined previously:

Contour Survey	1258 miles
Property lines	650 miles
Flowage easement	150 miles
Auxiliary traverse	212 miles

In addition to the maps of the shoreline tracts prepared by our contractors, we are preparing property maps of the entire reservoir and preparing descriptions of each tract to be acquired. This work is being done in the Department of Public Works office at Baton Rouge and it quite a sizeable task. We estimate that there are something like 3000 tracts to be mapped and described. Our most difficult mapping job is that portion which is on the Texas side of the reservoir. As mentioned before their system of land records is based on the descriptions of the original land grants or patents. These descriptions are somewhat difficult to correlate with the terrain that exists. All are metes and bounds descriptions with distances expressed in a unit called the "vara." As a result of some of our efforts to trace and prove some of these lines, I suspect that the term "vara" arose from the fact that the unit had a variable magnitude. This characteristic is also apparent as we try to prepare property maps based on these descriptions. To make the putting together of the jig-saw puzzle more difficult, many of the tracts within the original leagues or grant are described as beginning at some arbitrary point without reference to a corner which we know anything about. For instance, a certain tract might be described as beginning at J. Smith's southwest corner and our file of abstracts of present day descriptions contains no reference to a J. Smith tract. This could have been a tract belonging to Mr. Smith a hundred years ago and may have changed hands several times with the possibility of being subdivided in the process. You can see

that our search for Mr. Smith's southwest corner might require quite a bit of digging into the records. When finally unearthed, it might be couched in the same sort of terms, etc. It has been necessary to engage the assistance of abstractors in working out some of these problems. As a result of these difficulties, progress is slow in mapping the Texas lands. We have completed only about three segments in Texas. In Louisiana we have made a great deal more progress, having completed 12 segments.

The Department of Public Works has also the responsibility for all of the relocations in connection with the project. There are two major pipeline crossings in which some adjustments will be necessary. Tennessee Gas Transmission Company owns a crossing consisting of two 30" lines and a 24" line on a single right of way. United Gas Company's 30" Refugio to Sterlington line also crosses the reservoir. We have engaged Barnard and Burk to assist us in preparing a recommendation to the Authorities on the most practical adjustment to protect the interest of the public and to equitably compensate these utilities for their inconvenience. Our consultants are presently engaged in the study of the problem.

In addition to the relocation or adjustment of the pipelines, there are several state highways and farm to market roads that will be affected by the project as well as local county and parish roads. We have engaged Dawson, Gilbert and Pilcher of Baton Rouge to make a study of the roads that will be inundated and to present us with a recommended program of relocation. These preliminary studies are under way and will be reported on in the near future. A typical problem is the determination of the most feasible method of maintaining access to lands whose access might be cut off by the inundation of a certain road. They will determine the comparative costs between raising the inundated segment of road and re-routing it. We will also have to consider whether it is less costly to pay the owner "severance" damages rather than build the new road. These are some of the factors involved in the road relocation studies and we have not as yet reached conclusions nor made decisions on any of them, pending receipt of our consultant's initial report.

Gentlemen, I thank you for your kind attention and patience. I could, I suppose, go on and on about this project. I believe it will be a significant factor in the development and progress of this state. It will, of course, mean much to the surrounding area in West Louisiana and East Texas, but I feel that its value will be realized statewide.

McQUAY COMPLETES SECOND EXPANSION

Grenada, Miss.—McQuay, Inc., manufacturer of heating, ventilating, air conditioning, refrigeration products, and ice makers, has completed its second major expansion since locating here in 1955.

INGALLS BEGINS SERIES OF SIX M & M CARGO LINERS

Pascagoula, Miss.—Shipway construction is proceeding here on the series of six cargo liners being built by Ingalls Shipbuilding Corp. for Moore-McCormack Lines.

Lafayette to Host Annual Meeting

L.E.S. members are urged to make a special point of attending the 1964 Annual Meeting in Lafayette, Jan. 17-18. It is the first time Lafayette has been the site for the meeting, and members of the host section have been going all-out to make preparations. Those who are not L.E.S. members are also urged to attend.

Theme of the meeting, said general chairman J. E. Jarman, will be:

The Engineer—"A vital factor in the development of our State."

For exhibit space, contact J. H. Huffman, United Gas Pipe Line Co., Lafayette.

GENERAL INFORMATION

All sessions will be held in the Banquet Hall located at the rear of the Lafayette Municipal Auditorium. The Auditorium is located on South College Road in the vicinity of the Lafayette Oil Center. Adequate parking space is available.

Registration of members and guests in Foyer at entrance to Banquet Hall from 9:00 A.M. Friday through 2:00 P.M. Saturday.

THERE IS NO REGISTRATION FEE

Tickets for the Ladies Luncheon, the Friday night Cocktail Hour and the Saturday night Banquet and Dance will be available at the Registration Desk.

No charge to registrants for the Ladies Luncheon or the Cocktail Hour.

Deadline for purchase of Banquet Tickets 2:00 P.M. Saturday.

Transportation, for ladies wearing registration badges, will be available at the Town House Motel for the Ladies Luncheon and the Ladies Coffee Party.

ENTERTAINMENT IN THE BANQUET HALL

Cocktail Hour—6:00 P.M., Friday, January 17, 1964 (Courtesy—Lake Charles Dredging & Towing Co.).

Banquet—7:00 P.M., Saturday, January 18, 1964

Dance—9:30 P.M., Saturday, January 18, 1964, Louis Major Orchestra.

FRIDAY MORNING

8:30 A.M.—Consulting Engineers Section meeting, Leo M. Odom, chairman.

9:00 A.M.—Registration.

10:15 A.M.—Technical Session, Presented by Engineer Students. Presiding: James H. Gabler, Tulane University.

12:00 Noon—Board of Direction Meeting & Luncheon.

FRIDAY AFTERNOON

1:30 P.M.—General Meeting of Louisiana Engineering Society. Presiding: Calvin T. Watts, President. Invocation: Rev. Perry Sanders, First Baptist Church, Lafayette, La. Introduction: Officers of State Sections. Key-note Address: Robert J. Angers, Jr., Editor and Publisher, Banner-Tribune, Franklin, La. Subject: "Louisiana Needs an Engineer". Annual Report: John P. Fernandez, Secretary-Treasurer. Annual Report: Calvin T. Watts, President.

AWARD PRESENTATIONS

1. Certificate of Merit to Student Conference Speakers.

2. Life Membership in Society: Lawrence C. Brune, William J. Drawe, Jr., John S. Gentilich, Edward H. Gessner, J. Mason Guillory, William T. Hess, Edmund F. Hughes, James S. Janssen, Louis I. Korn, Stanley M. Lecourt, Frank W. Macdonald, John K. Mayer, David Moodie, Herbert S. Swan, Richard E. Wagner.

3. L.E.C. Civic Activities Medal, Andrew M. Lockett Award. To: W. J. "Red" Evans, Baton Rouge, La.

4. L.E.S. Technological Accomplishment Medal. To: Joseph H. Barnwell, Ruston, La.

Teller's Report: James S. Janssen, Chairman of Nominating Committee.

Installation of Newly Elected Officers. Presentation of Token of Appreciation to Retiring President. Announcements. Adjournment.

SATURDAY MORNING

Technical Session

8:00 A.M.—Public Relations Committee, Frank H. Walk, chairman. (All are invited to attend.)

9:30 A.M.—Presiding: Emery Domingue, Consulting Engineer, Domingue, Szabo & Associates.

Speaker: Waldemar S. Nelson, President, Waldemar S. Nelson & Co., Inc.

Subject: Louisiana Intracoastal Seaway Association.

10:45 A.M.—Presiding: F. L. Larue, Jr., Ass't Prof. of Chemical Engineering, University of Southwestern Louisiana.

Speaker: Dr. B. H. Amstead, Ass't. Dean of Engineering, University of Texas, Austin, Texas.

Subject: Present Trends in Engineering Education.

12:00 Noon—ASME luncheon, Forney Fuller, presiding.

SATURDAY AFTERNOON

Technical Session

2:00 P.M.—Presiding: R. A. LeBlanc, Sr., President, St. Mary Iron Works.

Speaker: James L. Stamy, Deputy Manager NASA Michoud Operations.

Subject: The Space Program.

3:15 P.M.—Presiding: Frank Love, Transmission Engineer, Southern Bell Tel. & Tel. Co.

Speaker: Dr. James R. Oliver, Dean of Graduate School and Director of Computer Center, University of Southwestern Louisiana.

Subject: Use of Computers in Engineering.

Adjournment.

7:00 P.M.—Banquet. Presiding: Col. John T. Knight, President Elect. Invocation: Rt. Rev. Msgr. Alexander O. Sigur, Our Lady of Wisdom Chapel, University of Southwestern Louisiana.

Banquet Speaker: Chester Lauck, Executive Assistant, Continental Oil Company (Lum of "Lum & Abner").

9:30 P.M.—Dancing. Louis Major Orchestra.

LADIES ACTIVITIES

Friday, January 17, 1964

9:00-11:00 A.M.—Registration - Banquet Hall, Municipal Auditorium.

11:45 A.M.—Luncheon, Oakbourne Country Club.

Speaker: Dr. T. J. Arceneaux, Dean, College of Agriculture, University of Southwestern Louisiana.

Luncheon courtesy of: Central Louisiana Electric Company, Inc., Gulf States Utilities Company, Southwest Louisiana Electric Membership Corp., United Gas Corporation.

Following the Luncheon—Tours of Lafayette.

6:00 P.M.—Cocktail Hour.

Saturday, January 18, 1964

10:00 A.M.—Coffee Party. La Maison Acadienne Francaise. Campus—University of Southwestern Louisiana.

11:00 A.M.—Business Meeting, Women's Auxiliary to the L.E.S., College of Engineering Auditorium, Madison Hall, University of Southwestern Louisiana.

7:00 P.M.—Banquet and Dance.

ASEE Appoints Dr. Henry A. Kallsen

URBANA, Illinois—The American Society for Engineering Education has announced the appointment of Dr. Henry A. Kallsen to the post of Assistant Executive Secretary for the Society. Dr. Kallsen, who will begin his duties for ASEE on February 1, 1964, is currently a Professor of Civil Engineering at the Louisiana Polytechnic Institute in Ruston, Louisiana. He is a member of the Louisiana Engineering Society.

In his new capacity, Dr. Kallsen will be located at the ASEE headquarters in Urbana, Illinois. Professor W. Leighton Collins, Executive Secretary of ASEE, commented that, "The appointment of Dr. Kallsen as the Assistant Executive Secretary is the first of several steps ASEE is taking to increase its full-time professional staff in order to meet the increasing demand for services the rapidly changing developments in engineering education are placing on the Society." Dr. Kallsen will be responsible for matters pertaining to membership, the relationships with geographic subdivisions, and the administration of special studies in ASEE headquarters, as well as participating in the daily administrative functions of the Society.

Kurt F. Wendt, President of ASEE and Dean of the College of Engineering at the University of Wisconsin, stated that Dr. Kallsen is "extremely conscientious, open-minded, full of enthusiasm and vigor, and very much of a realist." Dean Wendt also said that he will be "very happy to work with him."

Dean Ben T. Bogard of the School of Engineering, Louisiana Polytechnic Institute, chairman of the State Board of Registration for Professional Engineers, and Land Surveyors, and a past president of the Louisiana Engineering Society, stated that "Dr. Kallsen possesses considerable talent for administrative work and is an excellent teacher . . . He is brilliant, enthusiastic, and an effective teacher and administrator with an exceptional amount of creativeness. He has an open mind that generates many new ideas and much activity."

The new Assistant Executive Secretary received his B.S. in Civil Engineering at Iowa State and his M.S. and Ph.D., both in Civil Engineering, at the University of Wisconsin, where he taught for ten years. While at the University of Wisconsin he served as secretary-treasurer of the Wisconsin Society of Professional Engineers and of the Wisconsin Society of Land Surveyors.

Dr. Kallsen has been a member of ASEE since 1950, and now also holds membership in the ASCE. He is a registered professional engineer in Wisconsin and Louisiana and a member of Sigma Xi, Tau Beta Pi, Chi Epsilon, and Phi Kappa Phi.

Dr. Kallsen is a Lieutenant Commander in the U.S. Naval Reserve, is married, and has four children, aged 4 to 11.

Set Engineers Week Theme

"Creative Engineering—Design for Tomorrow" will be the theme of Engineers Week Feb. 16-22, 1964, according to an announcement by J. J. Thigpen, chairman of Engineers Week in Louisiana.

National Engineers Week is an annual observance sponsored by L.E.S. and N.S.P.E. to "bring to the attention of the American people the role of the engineer in society, and his vital function in furthering safety, technical progress and public welfare," said Thigpen. The week of George Washington's birthday is traditionally chosen since the first President of the United States was himself a notable civil and military engineer.

Riess 'Dean' of Past Presidents

Society in 1920, was acknowledged as "dean" of the society's Past Presidents at a meeting in New Orleans Dec. 9, 1963.

President-elect John T. Knight saluted the past presidents for their service and dedication to the society. Those present included Frederick H. Fox, 1928; Frederick N. Billingsley, 1932; A. Lee Dunlap, 1934; R. A. Steinmayer, 1945;

L. J. Cucullu, 1950; F. W. Macdonald, 1954; R. Mallard Seago, 1955; Waldemar S. Nelson, 1957; Edward A. McLellan, 1960, and James S. Janssen, 1962. Other past presidents are James M. Robert, 1924; James M. Todd, 1930; Edward S. Bres, 1935; David W. Godat, 1939; Charles M. Kerr, 1944; Leo J. Lassalle, 1946; C. L. Nairne, 1947; W. Stone Leake, 1948; H. L. Lehmann, 1949; Michael C. Abraham, 1953; W. P. Wallace, 1956; Ernest M. Freeman, 1958; Roy T. Sessums, 1959; Ben T. Bogard, 1961.

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Lime

Field Notes By Allen Johnson

L.E.S. members are invited to attend a Lime Seminar, sponsored by the LSU Civil Engineering Department at Pleasant Hall on the campus January 23, according to Ara Arman, assistant professor of soil mechanics in the department and himself an L.E.S. member.

Co-sponsor of the meeting is the National Lime Association. Serving as hosts are East Baton Rouge Parish and the City of Baton Rouge.

Preceding the seminar will be a cocktail party at the Supper Club on the New Hammond Highway at 6:30 p. m. Jan. 22. The affair will be sponsored by the National Lime Association.

The program Jan. 23 at Pleasant Hall opens at 8 a.m. with registration.

Dr. Frank Germano, head of the Civil Engineering Department at LSU, will open the meeting and preside at the morning session.

Robert Boynton, Washington, D. C., executive Secretary of the National Lime Association, will discuss "The Development of Lime Stabilization."

Dr. James Eads, Urbana, Ill., professor of Geology at the University of Illinois, will talk on "Design and Testing of Soil Lime Mixes."

A movie entitled "Lime Stabilization of Clay Soils," prepared by the National Lime Association, will be shown.

Following luncheon in the Student Union Building, Mr. Willis H. Taylor, Baton Rouge, bituminous construction engineer for the State Department of Highways, will speak on "The Story of Lime Stabilization in Louisiana."

Mr. Eads will read a second paper, on Lime Stabilization by Electro-Osmosis."

Mr. Samuel Hanna, Houston, senior laboratory engineer for the Texas Highway Department, will talk on "Lime Stabilization in the Gulf Coast Area."

For information on reservation, L.E.S. members are invited to contact Mr. Boudreaux at Pleasant Hall; for technical information, contact Assistant Prof. Arman.

Baton Rouge Ladies Hear NASA Speaker

By SALLY BIRDSONG

Publicity Chairman

LES Woman's Auxiliary

The Alexandria Chapter celebrated their Founder's Day on September 19 with coffee at the home of their President, Mrs. Louis J. Daigre. Mrs. Roy G. Cappel and Mrs. Thomas A. Fromherz motored to Alexandria to attend this function. Mrs. Cappel is president of the New Orleans organization.

This year the Baton Rouge chapter is featuring the major engineering projects in Louisiana. One of the largest is the Michoud plant near New Orleans. Mr. Paul M. Lagarde, construction management engineer of the George C. Marshall Space Flight Center of NASA, explained the operations of the large plant and the vital role that engineers play in building and operating the plant. A film on a flight to the moon was shown at this October 15 meeting.

On the afternoon of November 12 some 350 guests called at the home of Mrs. Jack Burke to attend the Founder's Day tea given by the Baton Rouge Chapter. Those going from New Orleans for this occasion were Mrs. Roy G. Cappel, Mrs. Thomas A. Fromherz and Mrs. Frank A. Birdsong.

News from the New Orleans organization tells that they have had a busy season, also. Since the start of the year two executive board meetings followed by beautiful luncheons were held at the home of the President, Mrs. Roy G. Cappel.

Following the first executive board meeting on October 22 the first Fall meeting took place. In keeping with the custom of the past and to the enjoyment of nearly 300 ladies Gus Mayer Co., Ltd. presented a style show after the annual luncheon. This function was held at the Royal Orleans Hotel and a Thanksgiving motif was used throughout the room and congratulations go to the committees on a job well done.

ATTENTION, REGISTERED ENGINEERS:

Following the publication of the membership roster in the October issue, a number of persons wrote to ask why their names did not appear.

We would like to explain that the roster contained the names of Louisiana Engineering Society members only. While all engineers registered in the state receive our magazine as a matter of professional information, membership in L.E.S. must be applied for.

Why not join now and make sure your name will appear in the next roster? Your membership will help to support the Society's efforts to promote and uphold the best interests of the engineering profession.

Just send your name and address to the Secretary and an application form will be forwarded to you.

John P. Fernandez
Secretary-Treasurer
Louisiana Engineering Society

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Yes, I would like to become a member of the Louisiana Engineering Society. Please send me an application form.

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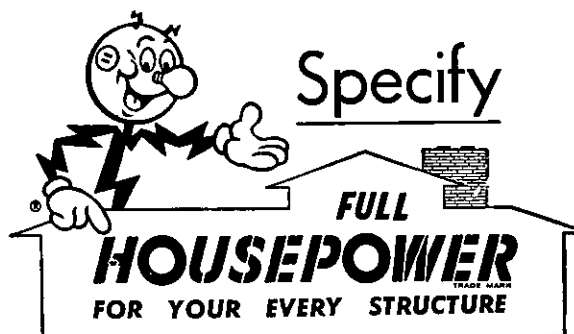
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Ethics And Professional Conduct

By R. M. HETHERWICK, JR.

Member L.E.S. Ethics and Professional
Conduct Committee

To quote from the Canons of Ethics for Engineers, "Honesty, Justice and Courtesy" form a moral philosophy which, associated with mutual interest among men, constitutes the foundation of ethics. The engineer should recognize such a standard, not in a passive observance, but as a set of dynamic principles guiding his conduct and way of life. As the keystone of professional conduct is integrity, the engineer will discharge his duties with fidelity to the public, his employers, and clients, and with FAIRNESS AND IMPARTIALITY to all. In his dealings with fellow engineers he should be FAIR AND TOLERANT.

Recognizing that there may be two or more successful solutions to an engineering problem, doesn't the design engineer owe the engineer in sales a full explanation, with facts and figures to prove why his equipment is being rejected? On the other hand, the engineer in sales is not in a position to make an evaluation until he has all of the facts concerning the entire project. If, after being fair and tolerant, a disagreement still exists, each should remember Canon 24, and exercise due restraint in criticizing another engineer's work in public. The proper forums for technical discussions and criticisms are the Engineering Societies and the Engineering Press.

The Ethics Committee is charged by the Board of Direction with the responsibility of investigating complaints, reporting its findings to the Board, and elevating the engineer's professional image in the eyes and thoughts of the public. These responsibilities are very important, and the Committee feels that all engineers share them. We can function properly only with the cooperation, suggestions and assistance of all engineers. On occasion, complaints have been made by elected public officials, which present the engineer and the entire profession in a most unfavorable light. The Committee is anxious that these matters be brought to the attention of the Board of Direction in order that an exhaustive study can be made and the true facts set forth. The Committee feels that an engineer who has been maligned through ignorance or deceit deserves the full support of all engineers. While a public retraction of the charges may be the ideal, practical considerations may determine a more subtle approach is best. The elected official who is shown the error of his ways is not likely to repeat the mistake. Elected officials who are given the opportunity to know the attitudes and high moral character of the engineers of the State of Louisiana are not likely to make false charges in the first place.

In one area, we need self-discipline. Rule Six, of the Rules of Professional Conduct, states, "Telephone listings shall be limited to name, address and the telephone number under each branch listing in which he qualifies." A typical telephone directory might show as many as nine listings in addition to the eight branches recognized by Louisiana Law.

Founder Of Science Of Soil Mechanics Dies

Dr. Karl Terzaghi, 80, professor emeritus of civil engineering at Harvard and founder of the science of soil mechanics, died Oct. 23 at his home, 3 Robinson Circle, Winchester, Mass.

Dr. Terzaghi was regarded by many of his colleagues as one of the greatest civil engineers of this century.

After World I while teaching in a small Turkish college, he performed his classical tests on the consolidation of clay. In 1925 he published the results in a book which has become a classic work of engineering literature.

He began teaching the first formal course on soil mechanics at Massachusetts Institute of Technology where he accepted a lectureship in 1925.

In 1936 the International Society of Soil Mechanics and Foundation Engineering was founded at Harvard and Professor Terzaghi was elected life president.

He leaves his wife, Dr. Ruth (Doggett) Terzaghi, a research fellow in engineering geology at Harvard; two daughters, Margaret and Vera and a son, Eric.

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NOVEMBER 12, 1963

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NSPE Legislative Reports

Bills introduced in the House and Senate by the champions of the Self-Employed Retirement Act of 1962 would amend the act in two respects. Also known as Public Law 87-792 and H.R. 10, the Act was passed last year following a decade of ground work led by Senator Smathers of Florida and Representative Keogh of New York. The legislation gives self-employed professionals and businessmen additional income tax reductions for setting up a retirement plan for the owners, principals, partners and employees.

As introduced, the proposed amendments would eliminate the \$2,500 maximum annual contribution to such a plan except for the self-employed who do not have employees. The new bills would also allow the full amount of the contribution as a tax deductible item, removing the present fifty per cent limitation. (S. 2229 and H.R. 8771)

The only possibility of action on the amendments this year would be for Senator Smathers to offer the proposals during the Senate Finance Committee's consideration of the House-passed tax reform and reduction bill. Senator Smathers, as second ranking majority member of the committee, could offer the amendments during Senate hearings on the tax bill, during executive session when the committee is marking up the bill or during consideration on the floor. Otherwise, consideration of the proposals would be delayed at least until next year.

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