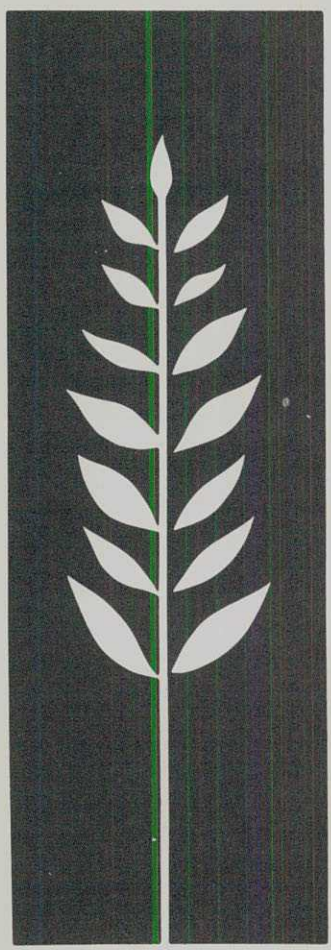
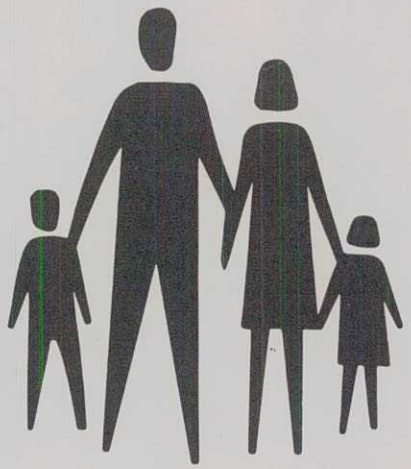
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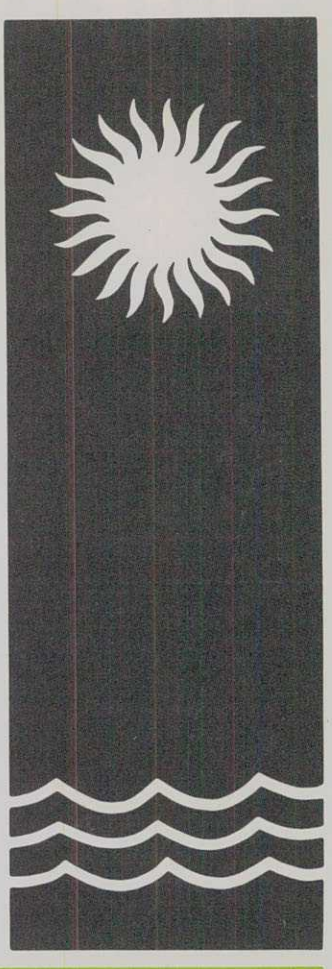
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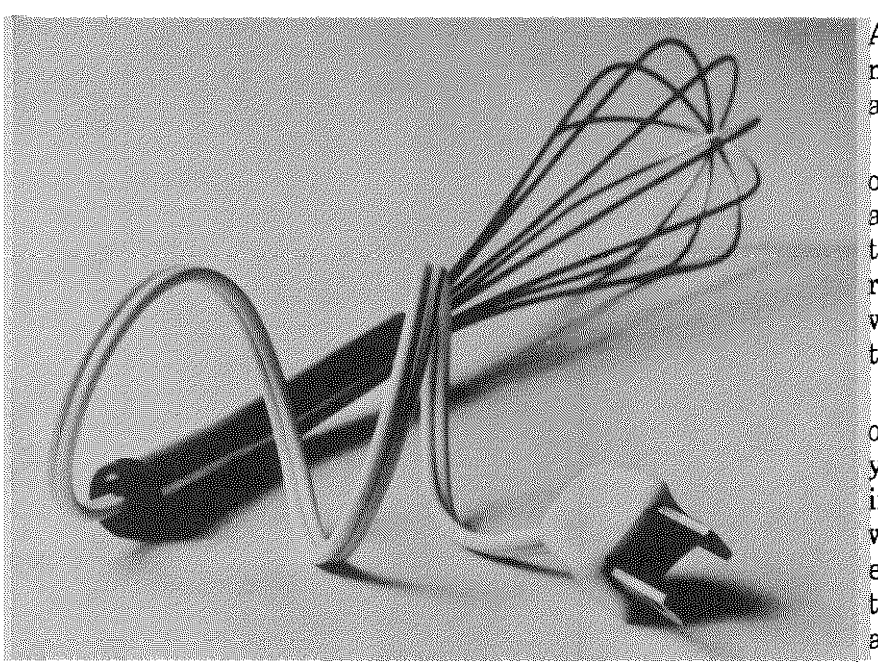
environmental design for the 1970's







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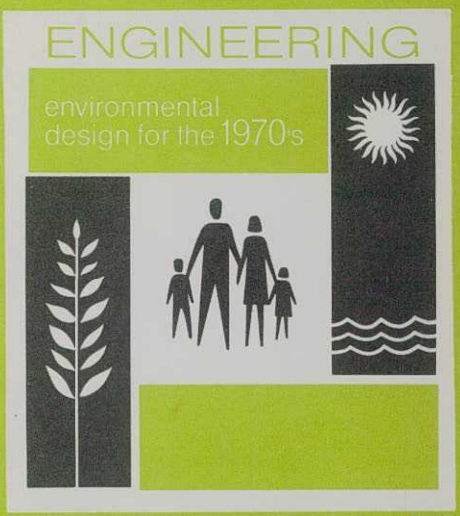
NATIONAL ENGINEERS WEEK, 1970

It gives me great pleasure to greet the National Society of Professional Engineers on the 20th annual observance of National Engineers Week.

More than ever before, our nation needs the talents and the energetic dedication of your members. Nowhere is this need more evident than in the area of the human environment which you have chosen as this year's theme. Only with the fullest use of our highest engineering skills can we hope to find -- and apply -- effective and economical solutions to our problems of air and water pollution, solid waste disposal, noise, and other areas of environmental deterioration.

I wish you every success in your continuing efforts to focus the attention of engineers on this salient national topic; and I commend your programs to involve more young people in rewarding, problem-solving careers in your fine profession.

Richard Nixon



COVER

"Engineering . . . Environmental Design for the 1970s" is the theme for this year's National Engineers Week. Read President Vogt's comments on Page 5.

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PRESIDENTIAL PRIVILEGE

LES President John F. Vogt, Jr.



"Engineering . . . Environmental Design for the 1970s"
Theme of National Engineers Week

An issue which has mushroomed in importance almost over night in the eyes of the American Public is the one on quality of the environment.

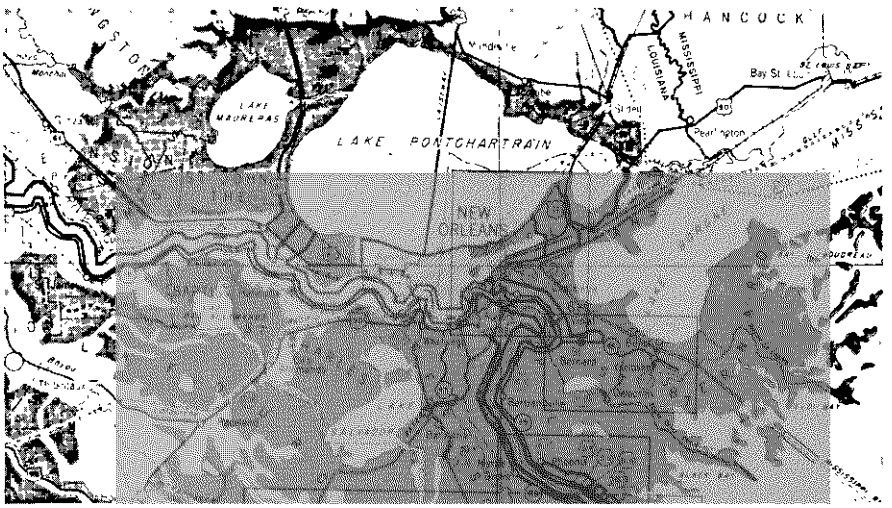
Students, politicians, scientists, conservation groups and others have joined in efforts to stifle and block technological development of all sorts, ofttimes without regard for the consequences—all in the name of a better environment. Many of these efforts, diffuse in their direction, lack organization and/or ability and, in many instances, have only delayed others in meeting the needs of our economy and the society it supports.

This aroused public opinion will place an immense challenge upon the engineering profession in the next decade. The broad scope of environmental problems, coupled with an expanding technology, will tax our ingenuity as engineering professionals as we go about our tasks of finding and applying effective, economical solutions to our problems of air and water pollution, waste disposal, noise and other areas of environmental deterioration.

Your LES committees are planning now for the 20th annual Engineers Week observance February 22-28. The theme, "Engineering . . . Environmental Design for the 1970s," provides a ready-made opportunity for the Louisiana Engineering Society to assert dynamic leadership on a subject which touches everyone.

I urge all members to take part actively in the observance. Since most environmental problems call for individual, local solutions, this activity can be looked on as an opportunity or a springboard for our society, through chapter activity, to take the initiative in directing solutions to these serious problems.

The Hurricane Protection System for the New Orleans Ar

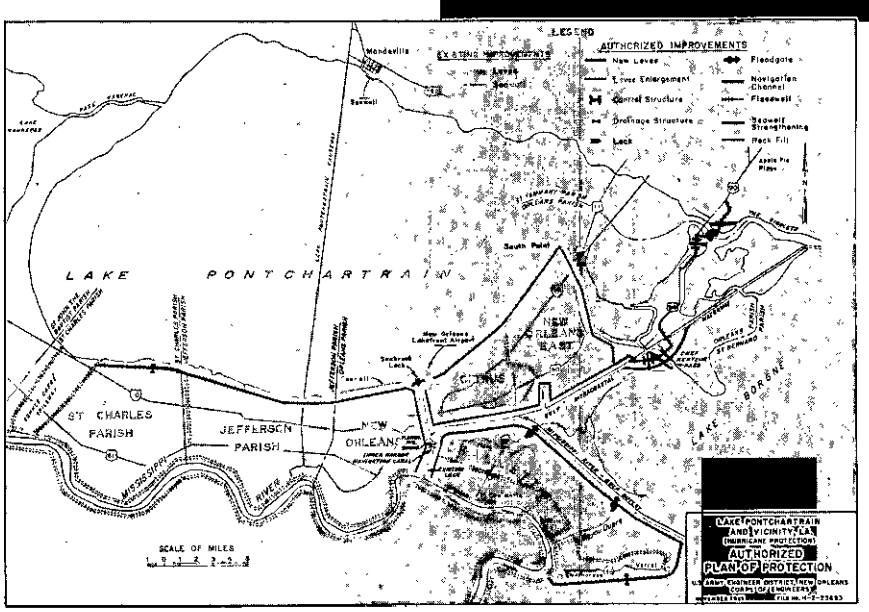


Flooding in the New Orleans area as a result of Hurricane Betsy is indicated by shading above.

Before looking at the hurricane protection system for the New Orleans area, let's review briefly the flooding and damage done by Hurricane Betsy, one of the most destructive hurricanes of this century. Hurricane Camille, which hit the Mississippi Coast in August of 1969, was a more intense hurricane but it was Hurricane Betsy which really put to test the proposed hurricane protection system for the New Orleans area.

Betsy began as a tropical depression just north of Trinidad and after developing into a hurricane and following an erratic course north of Puerto Rico and the Bahamas, the eye of Betsy passed over the Florida Keys and into the Gulf of Mexico. It was at this point that it became known as one of the fastest moving hurricanes, reaching a forward speed of 22 m.p.h. The eye passed over Grand Isle then to the west of New Orleans and on thru North Louisiana.

The map shows the amount of flooding in Southeast Louisiana as a result of Betsy. The shaded land area shows the extent of flooding which resulted from a tidal surge that preceded Betsy. Water in this area ranged anywhere from one foot to sixteen feet in depth and water depths up to nine and ten feet were recorded in some areas of New Orleans proper. The tidal surge that accompanied the hurricane inundated some 3,060,000 acres of coastal lands in southeastern Louisiana and flooded all or parts of 18 parishes.



Authorized plan of hurricane protection for the New Orleans area.

Some flooding in the New Orleans area resulted from the tidal surge which overtopped the Inner Harbor Navigation Canal west levee in the vicinity of its intersection with the Mississippi River-Gulf Outlet and levee breaks caused additional flooding southward along the canal. After the low lying areas adjacent to the canal were flooded, this water backed up into the area west of the canal thru drainage canals and subsurface drainage. Water also overtopped the seawall along Lake Pontchartrain; however, the secondary levee prevented inundation of areas behind the seawall.

Immediately after Betsy, the Orleans Levee Board began constructing an interim hurricane protection system based on designs prepared by the Corps of Engineers. The purpose of this system was to provide some flood protection until the final hurricane protection system could be completed. This interim protection system constructed by the levee boards, the Louisiana Department of Public Works as well as the levees and floodwalls constructed by the Corps of Engineers, prevented major flooding in the New Orleans area during Hurricane Camille. Stages for Camille in the Mississippi River-Gulf Outlet and Inner Harbor Navigation Canal were within 6" of those in Betsy but no flooding was experienced in the areas severely flooded in Betsy.

Hurricane Betsy produced the

HUGH L. BRACEY, P.E., Structural Engineer, U. S. Army Corps of Engineers, New Orleans, La.

greatest tidal surge ever recorded on the Mississippi River. The gauge at West Point a la Hache, 49 miles above the mouth of the river, showed an increase of 13.6 feet above low stage. At Baton Rouge the water rose approximately eight feet above the normal stage. The river surge overtopped the levees 50 miles upstream above the head of the passes, and would have topped all the levees up to Algiers had not the levees been previously raised to their present height.

Many barges were sunk and some ships and tugboats were grounded on top of the Mississippi River levees. In Baton Rouge, a chlorine barge loaded with 600 tons of deadly chlorine gas sank. The Corps was given the responsibility for raising the barge, which it did after much time and expense and with the cargo of chlorine gas still intact.

The total damage from all causes attributable to Hurricane Betsy amounted to an estimated $371,960,000.

Now that we've seen the effect of Hurricane Betsy on Southeast Louisiana and particularly the New Orleans area, let's look at the hurricane protection system as developed by the U. S. Army Corps of Engineers in cooperation with local interests.

This plan remains as it was approved in 1963, two years before Betsy, but there have been some major improvements in the type of floodwall protection.

Beginning in St. Charles Parish along the lakefront, a new earth levee and drainage structure will be constructed. The existing levee along Jefferson and Orleans Parishes to the Inner Harbor Navigation Canal (IHNC) will be raised. A new lock will be constructed at the IHNC and a new levee will be constructed to South Point.

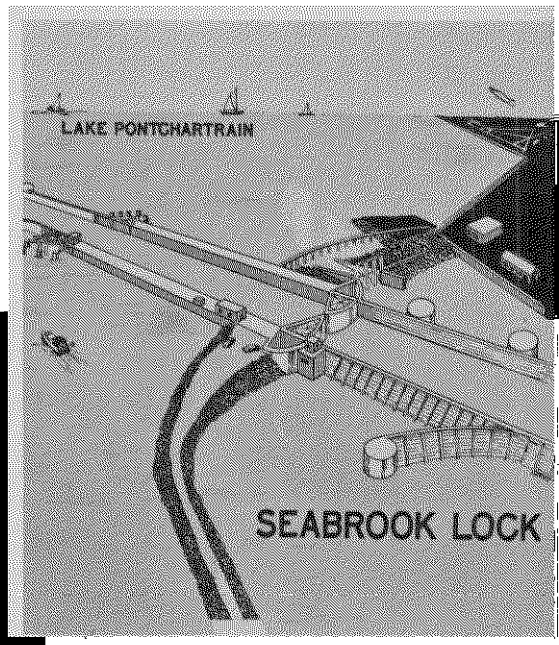
From South Point to the Gulf Intracoastal Waterway (GIWW), the existing levee will be raised. On both sides of the IHNC, levees and concrete floodwalls will be constructed from Seabrook Lock to the Industrial Canal Lock on the west side and on the east side to the GIWW. Along the north side of the GIWW, from the Inner Harbor Canal to Chef Menteur Pass, the protection system will consist of an earth levee and concrete floodwalls.

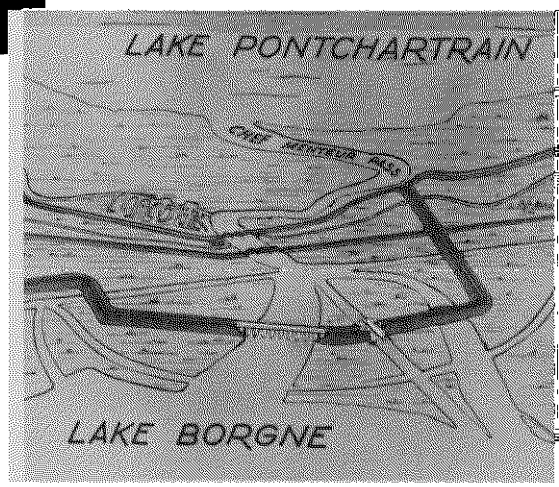
At Chef Menteur Pass and the Rigolets new control structures, a lock and navigation floodgate will be constructed. At Chef Menteur Pass, this will require relocation of a small part of the Gulf Intracoastal Waterway. Except for a concrete floodwall along the IHNC, the Chalmette area will be ringed with a new earth levee with control structures at all major drainage outlets.

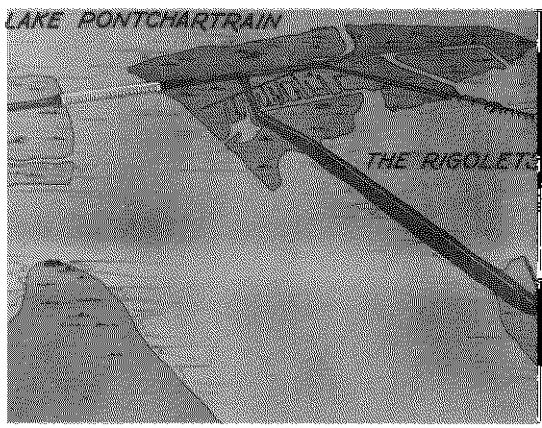
The design height of the floodwalls and levees is determined by computing the height of a wind tide at the structure using hypothetical wind fields which have been placed on a critical path with respect to the floodwalls. In our case the hypothetical design hurricane chosen for the New Orleans area is the standard Project Hurricane. A standard project hurricane is defined as, "A hypothetical hurricane that is intended to represent the most severe combination of hurricane parameters that is 'reasonably characteristic' of a specified geographical region, excluding extremely rare conditions."

These rare conditions would be such as high water on the Mississippi River causing the Bonne Carre Spillway to open and/or extremely heavy rains north of New Orleans which would cause the lake to rise two feet above normal, all of this occurring at the same time a hurricane is approaching the New Orleans area. The chances of this happening at the same time are possible but highly improbable.

Continued









One of the critical paths of a standard project hurricane which would cause the most severe damage to part of the New Orleans area is illustrated in this article. This is not to say that this is the only critical path this hurricane could follow but it is one of the paths that would cause the greatest damage to the area of New Orleans between the Jefferson-Orleans Parish line and the New Orleans Lakefront Airport. When considering the design of flood protection along the IHNC, Rigolets or other areas, then other critical paths of hurricanes must be considered.

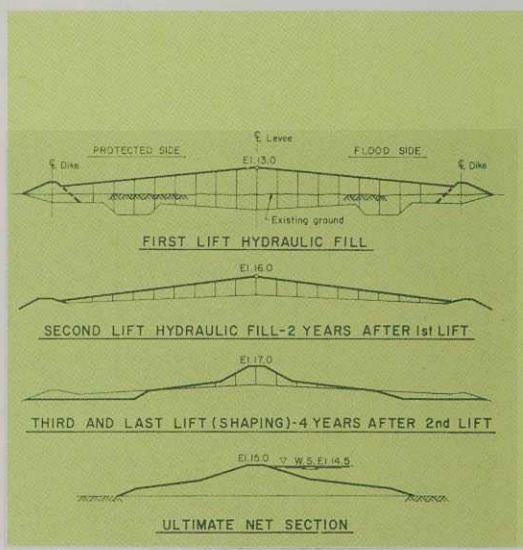
The floodwall protection for all the New Orleans area then requires the study of many critical paths of a standard project hurricane. The height of the presently designed floodwalls in the New Orleans area is adequate to take care of flooding from major hurricanes on critical paths.

One of the problems of providing hurricane protection for the New Orleans area is to keep the water from these tidal surges out of Lake Pontchartrain. As some hurricanes approach the New Orleans area, the hurricane winds blow from the south pushing the water into the lake and driving it against the north shore of the lake. When the eye of the hurricane moves above the New Orleans area the winds shift and blow from the north. The situation is now reversed and these waters are now driven against the south shore of the lake, overtopping the levees in the New Orleans area. Waters from these tidal surges will be kept out of the lake by locks and control structures. Lake Pontchartrain is like a giant saucer. When the winds of a hurricane blow from the south, the waters are driven against the north shore. This is like tilting a saucer in that direction. When the winds shift to the north, picture the saucer tilting towards the New Orleans area driving the water towards this area. By keeping these waters out of the lake, this will reduce the amount of flooding in the New Orleans area.

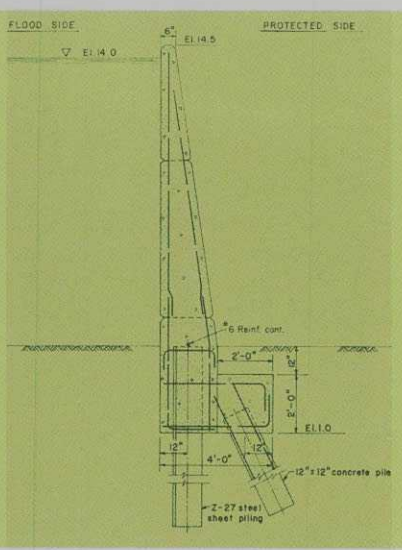
Plans for Seabrook Lock and the Chef Menteur Pass and Rigolets Complex have undergone many tests at the Corps of Engineers testing laboratory at Vicksburg, Mississippi. These tests have indicated that neither the salinity in Lake Pontchartrain nor the tidal changes will be seriously affected. This will be done by keeping the gates and control structures normally open, allowing the tides and currents into and out of the lake to flow unchanged. Hence, there will be no alterations of the salinity or ecology of Lake Pontchartrain.

The hurricane protection system for the New Orleans area in the vicinity of Inner Harbor Canal and Intracoastal Waterway will consist basically of three types of structures — an earth levee, a concrete I-type floodwall usually in a levee and a concrete inverted T-type floodwall.

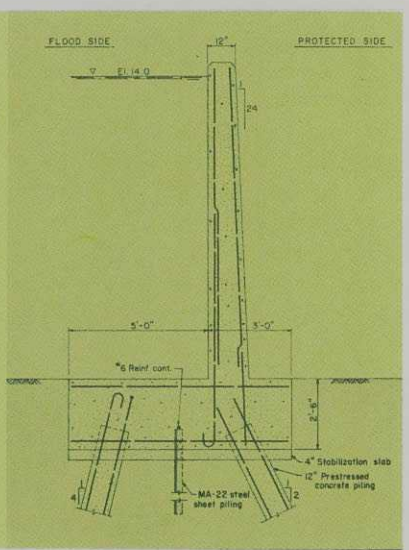
The most economical way to build an earth levee in this area



Typical levee construction.



Typical "I" wall with pile support.



Typical "T" wall.

is to construct it in lifts. Because of the poor soil conditions some levees settle as much as fifteen feet over a long period of time. Should single lift construction be used, this would require levees to be constructed to twice the levee height and require more than twice the amount of soil. Lift construction will also provide a more stable levee.

When the levee is ultimately completed, there is about as much soil below the ground as there is above the ground and the shape of the levee above ground is almost a mirror reflection of the shape of the levee soil below ground.

The concrete I-type floodwall shown is constructed by driving steel sheet piling, and capping the sheet pile with reinforced concrete. The maximum height of this type floodwall is eight feet above ground level, mainly because higher floodwalls will cause excessive deflections. Where it becomes necessary to construct I-walls higher than eight feet, batter piles are driven on the protected side of the floodwall. This type floodwall is restricted only to places where there is not enough room to construct an inverted T-type floodwall. It is also restricted because it is sometimes difficult to predict the differential settlement between the steel sheet pile and the batter pile.

The inverted T-type wall is used almost exclusively where the required height of floodwall is greater than eight feet. This type of construction consists mainly of a concrete stem on a heavy base slab supported on battered prestressed concrete piling. With the water near the top of the floodwall, the piling on the protected side will be in compression and the floodside piling will be in tension. Steel sheet piling below the T-type wall is strictly a "cut-off" piling. When the water reaches the top of the floodwall, the difference in pressures between the floodside and protected side could cause water to flow below the structure. This sheet pile is designed to "cut-off" this flow of water and thus prevent the structure from being undermined.

Another problem in floodwall construction is to provide a means where the floodwall will not interfere with the flow of road and railroad traffic and still provide adequate flood protection. The best way to provide for the steady flow of traffic would be to construct a ramp over the floodwall. This method is limited only to areas where space is not a factor. Ramps will be built over the floodwall in three different locations along the IHNC.

Another means of providing for the free flow of road and railroad traffic is to build a gate at each crossing. A typical sliding roller gate consists of a steel plate welded to two steel wide flange beams with stiffeners between the beams. The gate is suspended on trolleys, one of which is geared, and by means of a chain connected to the geared trolley the steel gate is moved across the gate opening. As the waters rise on the floodside of the gate, the gate is pressed against the concrete structure and the water sealed off behind the gate. The overhead beam can be removed to allow trucks with high loads to pass thru.

The design of this floodwall is a tedious and time-consuming task. Add to this the amount of coordination required between state and local agencies and individual firms to make this a workable flood protection plan. Typical of areas requiring coordination is the area between the IHNC lock and Florida Avenue. The upper (east) floodwall consists of steel sheet piling in an existing levee, capped with reinforced concrete to form an I-type floodwall and a modified cross section to suit the design. This is an open area with relatively few problems. The opposite is true of the lower (west) floodwall shown as a black line with gate openings shown as black dots. The gates will remain open to allow railroad and road traffic access to the area and will be closed as a hurricane approaches.

The floodwall must be constructed thru busy port facilities requiring the relocation of railroad tracks and the coordination of the movement of trains as construction progresses. Part of the floodwall had to be constructed thru a busy steel warehouse and will be constructed thru a continuously operating cement plant. This requires much cooperation and teamwork.

The Corps of Engineers has enjoyed this fine cooperation particularly with the Orleans Levee Board, Dock Board and Louisiana Department of Public Works, who in turn has coordinated the planning with other agencies, private firms and utility companies and has constructed portions of these levees and floodwalls.

This is the hurricane protection system for the New Orleans area as designed by the U. S. Army Corps of Engineers and constructed as a joint effort between the Federal Government and local interests. The Federal Government will pay for 70 per cent of the total cost and local interests will pay for the remaining 30 per cent.

This type of floodwall protection will protect the New Orleans area from the flooding which accompanied Hurricane Betsy and also from future project hurricanes following the critical path in the New Orleans area.

Although we all will feel relieved once the hurricane protection system is completed, it is the hope and prayers of the people of this area, that we never experience another disastrous hurricane.

Air Pollution – Federal and State

Air pollution has become a major problem in the United States with the great increase in the number of motor vehicles, generation of power and rapid industrial expansion throughout our country. Today it is estimated that more than 142 million tons a year of toxic matter are discharged into the air over the United States. This amounts to three-quarters of a ton per year for every American.

Air pollution may have a very serious effect on the population of a community. Strong epidemiological evidence is now available which indicates a direct relation between the incidence of disease and levels of air pollution. Respiratory diseases associated with air pollution include asthma, emphysema, chronic bronchitis, lung cancer, and the common cold. Some international incidents of air pollution follow.

In October, 1948, a fog and a low-level temperature inversion affected 42.7 percent of the 5,910 population of Donora, Pennsylvania, and 17 died.

In London in December, 1952, a smog that lasted for 5 days caused a high incidence of respiratory disease with 4,000 deaths recorded, mainly among the aged.

High incidence of asthma attacks in New Orleans appears to be related to air pollution. The specific cause has not yet been determined. In 1955, Charity Hospital reported an 800% increase in the daily visits of asthma patients. The attacks appear to have been associated with an increase in the particulate content of the air with winds from the south and southwest.

Federal Legislation

In July of 1955, the federal government passed its first legislation governing air pollution. It made state and local governments responsible for the problem. Two million dollars were appropriated for research and assistance to the state and local governments.

The Clean Air Act of 1963 provided the impetus for the present local and state air pollution abatement programs. The legislation was sorely needed to make possible strong Federal leadership as well as to provide state and local governments the means for developing control programs. Considerable progress has been made since this federal act has been passed with the state and local authorities and the federal government working together in a unified attack on the problem. The major provisions of 1963 legislation provided: grants to state and local governments for the establishment, development, and improvement of centralized programs. The legislation also provided for the formation of compacts between states to provide a means to attack the interstate pollution problems which were essentially out of the hands of any one state.

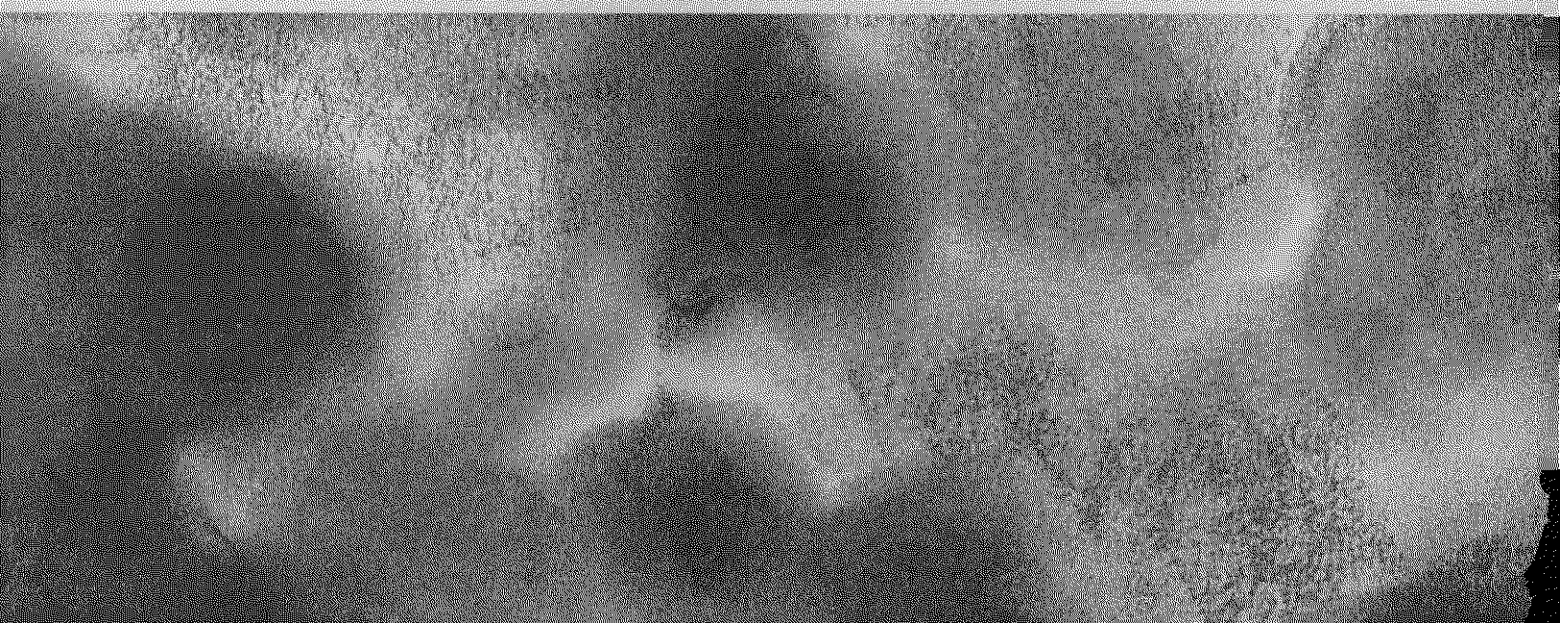
The act centers around the following basic premises:

a) That the prevention and control of air pollution at its source are primarily the responsibility of state and local governments.

b) That the role of the federal government is to provide leadership and assistance in the creation of effective air pollution control at the state and local levels of government.

Amendments have been made to the Clean Air Act for the purpose of controlling motor vehicle pollution and for the prevention of new air pollution problems.

The atmospheric environment in cities and suburbs varies throughout the United States. This is due to the variations in the number and types of industries, automobile population, power plants, refuse disposal, and heating facilities.



FRANK W. MACDONALD, Professor and Chairman, Department of Environmental Health, School of Public Health & Tropical Medicine, Tulane University, New Orleans, La.
JOHN E. TYRGG, Director, Bureau of Environmental Health, Louisiana State Department of Health, New Orleans, La.

Air pollution control is considered to be a regional problem and under the provisions of the Clean Air Act, 57 regions will be designated in the United States. Twenty-one regions have been thus far designated and it is expected that by the summer of 1970 the United States Department of Health, Education, and Welfare will have designated all of the 57 regions encompassing a total population of 97 million. New Orleans has been tentatively named as an air quality control region and studies are now being made to provide the necessary information for the delineation of an exact area before the designation can be made.

In summary, the federal legislation for the control of air pollution takes full cognizance of the nation's needs. The law provides a clear statement of the national policy that air pollution will be controlled in this country on the basis of scientific evidence of the insidious as well as the obvious effects of pollutants.

Louisiana's Program

Prior to 1964, Louisiana's organized air control program was extremely limited. It consisted of the operation of an air sampling station at New Orleans, and alternate year operation of stations at Baton Rouge, Lake Charles and Shreveport. Efforts were made to handle complaints of air pollution. The work was carried on by one employee of the Louisiana State Department of Health, on less than a full-time basis, with assistance from parish health unit sanitarians.

Air Control Commission

Growing state and national concern with the need for quality air control led to the creation of the Louisiana Air Control Commission by the 1964 Legislature. Act 259 established the Louisiana Air Control Commission as the exclusive agency for the protection of the purity of the air of the State of Louisiana.

Commission membership includes the State Health Officer as chairman, the Director of the State Board of Commerce and Industry, the Commissioner of Agriculture, or their authorized representatives, and four members appointed by the Governor from nominations of the Louisiana Engineering Society, the Louisiana State Medical Society, the Louisiana Manufacturers Association, and the Louisiana Municipal Association. The Commission is domiciled in the office of the Louisiana State Department of Health (in the State Office Building in New Orleans), and the Director of the State Health Department's Division of Engineering was designated Technical Secretary of the Commission. The working arm of the Commission is the Health Department's Division of Engineering, through its Air Control Section.

The Act authorized the commission to adopt rules and regulations deemed necessary to conduct a program to protect the quality of air of the state. Regulation I, which was largely administrative, was adopted in November, 1965.

Effective June 19, 1969, the Air Control Commission of Louisiana revised Regulation I to cover all administrative matters and adopted Regulation II which contains standards for dust and particulate matter, a smoke regulation, and prohibition of open burning.

Regulation I now requires that any person planning to initiate, commence, or reduce the emission of air contaminants, advise the Commission in writing of his intentions and receive approval of the Commission before beginning emissions. The application to the Commission must be prepared by a professional engineer registered to practice in Louisiana and shall include the following:

1. A brief statement describing the action which is proposed.
2. A statement giving the location of the industrial



plant or manufacturing establishment, or a map showing such location.

3. A statement giving the location of sources of emission of air contaminants, the size of outlets of such sources, the rate and temperature of the emission from such sources, and the composition and description of the air contaminants being emitted from said sources.
4. A statement giving a description of the air pollution abatement devices which will be utilized and if no facilities within the definition of this term are contemplated, the steps which will be taken to prevent emission of sufficient quantities of pollutants to result in undesirable levels.
5. An estimate of the extent to which the emission from the proposed facilities will alter or affect the quality of the air of Louisiana.
6. Such other pertinent data as may be necessary for a good understanding of the proposal which is being made.

Application forms have been developed and may be obtained from the technical secretary on request.

The present program of the Louisiana Air Control Commission is limited but viable. The principle activities now being carried on include:

Environmental Monitoring

A statewide air quality monitoring system to further establish a base line of air quality and to provide information on changes in air quality. Louisiana Air Monitoring Program (LAMP) fixed sampling stations are located in New Orleans, Baton Rouge, Monroe, Shreveport, Alexandria, Lafayette, and Lake Charles. Sampling is for dust, suspended particulates, and SO_2, and other polutants as deemed necessary.

Investigations and Enforcement

A planned program of investigation and enforcement is being carried on in the industrial areas of the state. The Baton Rouge area has been completed and the emphasis is now on the industrial corridor between Baton Rouge and New Orleans and the latter city and the Lake Charles-Westlake area.

Open Burning

An aggressive campaign to stop open burning continues. Open burning has been reduced approximately 50% in the last 18 months.

Emission Inventory

An emission inventory of all industries of the state conducted in 1966-67 is being continued to provide data on pollution by source.

New Industries

The Commission has reviewed 12 applications for new installations or additions since the revision of Regulation I in June, 1969 and has approved all of these requests.

Complaints

The Commission receives numerous complaints on air pollution. In each instance an investigation is made and appropriate action taken.

The specific objectives of the Louisiana Air Control Program for 1969-70 are as follows:

1. The adoption of regulations including standards for the control of sulphur oxide (SO_2) and other sulphur compounds if deemed desirable.
2. A revision of the present Regulation I to provide for the control of air pollution before it begins. (i.e. A permit or registration system.)
3. Completion of an investigative and enforcement program for the:
   a) Industrial corridor between Baton Rouge and New Orleans.
   b) Westlake-Lake Charles area.
   c) New Orleans metropolitan area.
4. Adoption of emission standards for:
   a) Dust.
   b) Suspended particulates.
   c) Sulphur compounds.
5. Revision of the present on-site incinerator policy to include specific standards with which such incinerators must comply. (Reference is made to standards being developed by the U. S. Public Health Service and the Incinerator Institute of America.)
6. Reduction of open burning to not greater than 50% of the amount being burned during the year ending June 30, 1968.
7. Continuation of efforts to control tampering with, or deterioration of, the efficiency of automobile exhaust anti-pollution devices.

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1970 L.E.S. ANNUAL CONVENTION PREVIEW

T. J. Hogue, Jr., Chairman of the 1970 Annual L.E.S. Convention, has announced the convention dates of April 29 & 30 and May 1, 1970. The convention will be held in historic old New Orleans at the Monteleone Hotel in the center of the French Quarter.

PRELIMINARY PROGRAM

WEDNESDAY, APRIL 29

7:00-8:30 p.m. EARLY BIRD COCKTAIL PARTY (A sponsored party in the Exhibit Area)

THURSDAY, APRIL 30

8:00 a.m.	Registration
9:15-10:15 a.m.	General Session
10:15-10:30 a.m.	Coffee Break
10:30-11:30 a.m.	General Session
11:30 a.m.	Beer and Po Boy Luncheon held in Exhibit Area
1:45-2:45 p.m.	General Session
2:45-3:00 p.m.	Coffee Break
3:00-4:00 p.m.	General Session
6:30-8:30 p.m.	Exhibitors' Cocktail Party in Exhibit Area

FRIDAY, MAY 1

8:00 a.m.	Registration
8:30-10:00 a.m.	Meetings of members in Private Practice, Industry, Government and Education Sections
10:00-12:00 Noon	Student Technical Papers
12:00-12:30 p.m.	Cocktails in Exhibit Area (A sponsored cocktail party)
12:45-2:30 p.m.	Honors and Awards Luncheon with Keynote Speaker
2:30-3:00 p.m.	General Society Business Meeting
3:00-4:00 p.m.	General Session
4:00 p.m.	Board of Directors Meeting

For the first time, the Mississippi Engineering Society will be the guests of L.E.S. and participate in convention activities.

The annual awards to outstanding engineers will be one of the highlights of the convention, as well as an outstanding series of exhibits of interest to engineers.

The following committees were appointed to make arrangements for the upcoming convention:

Exhibits	Program	Registration	Ladies Activities
Robert F. Eve	Larry Grundmann	Ronald Gressy	Mrs. John Giddens, Jr.
John O. Hebert, Jr.	Curtis Dyle	R. M. Singleton	Mrs. J. F. Williams
Chad P. Breaux	Dudley Hixson	John Leggett	Ashby Stevens
George Heller	E. E. Moncla	Willie McGough	Mrs. George Heller
Leo Bankston	Jim Odom	Glynn Gautreaux	Mrs. S. J. Richard
Ken Daspit	John Livingston	Bruce Baker	Edward M. Jolly
George Jamber		David Bergeron	Douglass Talbot
A. J. Szabo			
William A. Harrison			
Floyd Milford			

Please make every effort to attend your Annual L.E.S. Convention. Mark your calendar now so you won't have a conflicting date. See you in New Orleans this Spring!!!

National Director's Report on N.S.P.E. Winter Meeting

The Board of Directors' meeting of the National Society of Professional Engineers convened Wednesday evening, January 7 at the annual dinner. That afternoon I had attended the Practice Session of Professional Engineers in Industry.

At this PEI meeting, it was reported that the new booklet, "Positive Approach to Good Engineering Personnel Relations" had received excellent comments. I found that one of the most active programs of PEI is presently the series of workshops held in various states. Previously, these have been for engineering supervisory levels together with their upper engineering management levels. Henceforth, these workshops will be more for non-supervisory engineers as well as engineering supervisors meeting with managers. Workshops are to be held in New York, New Jersey and the North Central Region this spring. NSPE has prepared a kit delineating recommended subjects for these workshops and suggestions as to how they may best be set up. I feel that we should have an LES representative present at the national PEI meetings or workshops.

The recent Constitutional amendment to raise dues received 63% plurality favoring the increase but 66⅔% is the required vote; hence, the amendment to change the dues failed.

NSPE Executive Director Paul Robbins reported that the budget limitations required some curtailment of staff activities, and this would be increasingly felt in 1970. He was very complimentary of the staff; some of these people being experts with years of experience. Some of the items which required much staff time were the professional development activities, the registration laws change proposal, students' activities, young engineers' seminar, and the practice section assistance. Mr. Robbins pointed out that perhaps the part of the program to be hardest hit by the dollar limitation was professional practice activities such as Professional Relations, the Board of Ethics Review, etc. Mr. Robbins reiterated that liaison with other societies and groups by both NSPE officers and himself and the professional part of his staff was essential and would continue. Other items of his report dealt with the public relations films which were very well received, various public relations activities and the legislative and government liaison through offering testimony and in working up and providing information to various federal agencies and Congressional Committees.

In order to provide as much information in the shortest space, I shall omit most of the pros and cons discussed by the chairmen and from the floor and state the actions taken. The full reports of all committees and practice sections constitute a sizable book. The full official minutes of the Winter Meeting will soon be issued, and I refer you to these publications and the Winter Professional Meeting book for details.

It was decided that the separate publication of the salary survey will be continued, although a $5,000 savings could be realized by placing it in the PE magazine.

Mr. Billy Sumner, Chairman of PEPP, reported that PEPP had grown to a membership of over 3,000 and credited Mr. Waldemar Nelson, a National Director of the Louisiana Engineering Society, with much of this growth. The PEPP motion on the NSPE retirement plan was passed as amended to require the executive committee's recommendation as a prerequisite for implementation. The PEPP resolution 69-23, pertaining to the Urban Crisis, was not presented to the board but a Policy Statement dated January 6, 1970 was presented and was approved by the Board. This policy states that it will be the prerogative of the client to select the prime professional for an Urban Crisis project and the professional might be either an engineer or an architect. The professional so retained should perform only those services for which he is competent and should utilize the services of other qualified professionals as required.

Engineers in Education

The Professional Engineers in Education stated they were not ready to make a final report on the problem of consulting work by educators. This will be discussed at the July Board meeting. No PEE proposals were presented for action.

Engineers in Government

The Professional Engineers in Government presented a resolution that NSPE investigate with Federal agencies the feasibility of developing an executive order to provide legal status for registration for engineers in Federal services. This resolution was accepted by the Board of Directors. The problem of the Air Force using the term "engineer" for non-professionals was carried over for further study.

Engineers in Industry

The Professional Engineers in Industry Practice Section report was given by Mr. E. E. Slowter. The principal points were: the workshops held successfully in several parts of the country where engineers met with managers of engineering departments and groups; the affiliation with the Joint Engineering Management Conference; the continued promotion of state Industrial Professional Development

Awards; recommendation to be represented on the Design Products Safety Council and the recommendation that PEI needs more long-range planning.

The subject of apparent dissatisfaction of many employed engineers with existing patent practices was raised from the floor and a request was made that this problem be discussed at the July Board meeting.

The report of the Council on International Engineering reveals that private practice engineers outside the United States are receiving a poor image because of their advertising and competitive bidding practices. It was stated the private practice people engaging in these unethical practices are not NSPE members.

Mr. Morgan Allen, President of the National Council of Engineering Examiners, stated engineers and the boards are facing times of realignment and new courses of action will be required in the 70's.

Mr. Fred Morse, Chairman of Ethical Practices, brought out that the code of ethics applies only to individuals and cannot be applied to corporations. He reiterated that display advertising is not ethical but professional card advertising is OK. The Board of Ethical Review report was accepted by the Board.

Architect Relations

The National Architect-Engineer Liaison Commission representative, Mr. A. W. Banister, reported real progress on relations with AIA. The AIA has agreed to reconsider their position and has sent back to their committee their former stand on engineering work. The Commission is now working on who should be the "prime professional" to hold the contract with the client. Another problem being considered is price competition, where NSPE has taken its strong, well-known stand. There is some indication that the architects may be relaxing on competitive bidding.

Mr. M. E. Monsees reported that plans were well along on a national young engineers award. Probably the first such national award will be made at the next January meeting.

The Registration Committee reported that laws have been changed in Ohio, Missouri and Illinois so that at later effective dates, the B.S. degree will be required. This committee also reported that 23 responses to its questionnaire had been received from state societies. Generally, there were no unfavorable comments. In July, this committee will propose that NSPE adopt a favorable policy on engineering laws on reciprocity.

Membership Report

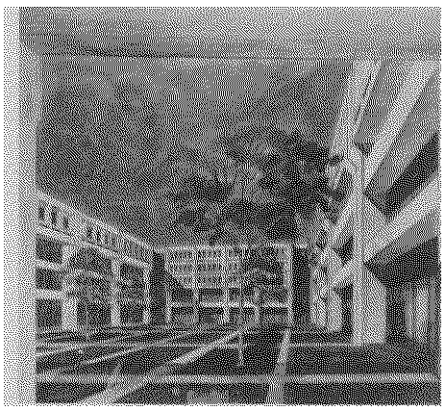
The Membership Committee Report summarized the findings of the survey conducted for NSPE by Opinion Research Corporation. Briefly, I can report that it found NSPE to be very well-known by registered engineers and recognized for its primary interest in non-technical concerns of engineers, including ethics, registration, legislative action, and building professionalism. Only about half the registered engineers surveyed see a need for a society with these concerns, though many felt that inadequate salaries and low professional status need more attention. The primary reason given for not joining NSPE was lack of conviction about NSPE's contributions.

In the course of considering Policy Operation Group reports, the Board approved the following: a new Reserve Fund Policy, Operating Procedure 15, together with a necessary implementation by change of Bylaw 6; elimination of the Education Committee, its former functions being carried now by PEE; a proposal to put to the membership changes in requirements of initiating constitutional amendments (⅔ of voting Board members instead of ½, or by not less than 3 state societies representing not less than 10% of eligible NSPE voters) and other requirements as stated in Attachment 2, Appendix F-V-5; establishment of a Young Engineer Identification Program to maintain a record on them as they move from college through several job locations (amended to be subject to budget limitations); elimination of per diem expense payments to all committee meetings other than Executive Committee (only travel will be paid); approval of the proposed 1970 budget (amended for no per diem expense for committee meetings); instruction to the Executive Committee to study staff load and activities and report back in July; a resolution to submit a new proposal for dues increase to the members for another vote. One of the most important considerations of the whole meeting was whether to reduce the number of National Directors. It was decided to maintain the status quo.

Under New Business, a resolution was passed to declare the week of May 17-23 as the week to demonstrate to the public NSPE's concern on pollution.

This National Director appreciates the opportunity to have represented the Louisiana Engineering Society at the NSPE Winter Professional Meeting. As this is the only practical way to join forces with other engineers on professional matters on a national scale, I think we should work in close cooperation with NSPE.

Center for Engineering and Business Administration



Louisiana State University is launching a $14,700,000 five-year program to provide business and industry with the know-how and brainpower needed in today's changing world — a program to be geared to the vast potential of science and technology for solving the problems of an emerging new and socially conscious nation.

LSU's Colleges of Engineering and Business Administration have teamed up to organize a Center for Engineering and Business Administration (CEBA), which has been established as a project of the LSU Foundation.

The center will house complete facilities for the College of Business Administration and the majority of those from the College of Engineering. CEBA is tentatively scheduled to occupy a 12-acre tract, including parking areas, on the southwest edge of the University's Baton Rouge campus. The complex is scheduled to be completed by 1973.

The center is to be constructed under a multiple-financing program calling for private gifts, $8 million in state funds and $2.7 million in federal matching funds. CEBA will house the two colleges in separate areas, yet at the same time permit mutual use of facilities to provide a practical interplay of resources which will be a key to the functioning of a unique instructional and research program.

Facilitating changing curricula concepts and interdisciplinary research, the center is envisioned by the University as a giant step in adapting educational resources in meeting the modern needs of business and industry.

"Business and industry are telling us that they no longer need just a businessman or just an engineer, but graduates who are highly trained in one field, while at the same time, made more knowledgeable of the other so that in the end you actually have a business-engineer. Industry needs this new breed of graduate," said Dr. Cecil Taylor, Chancellor of LSU's Baton Rouge campus.

"And too, under such a program, CEBA will help prepare Louisiana to meet the human resource demand. That demand will become critical when natural resources, now this state's economic mainstay, dwindle and the state will look more and more to the ingenuity of its engineers and scientists, the imagination and the skill of its businessmen to insure economic progress," Taylor said.

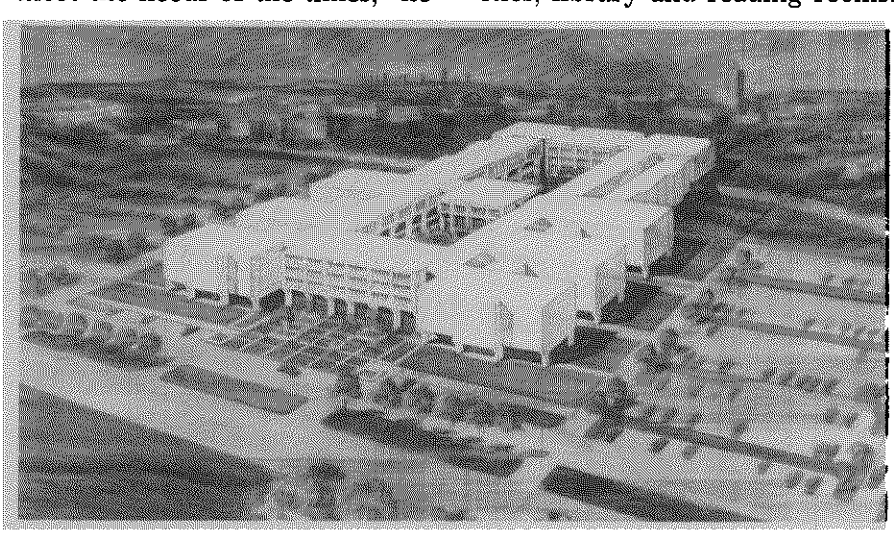
College of Engineering Dean Roger Richardson said that his college, for the most part, is operating an academic and research program in buildings and laboratories that were built in the 1930s. "From time to time, they have been renovated to meet the needs of the times," he said. "But after a few decades you reach a point where you can't do anything more."

"Engineering is cramped for space," he said. "The college cannot renovate without losing flexibility. Much equipment has to be installed on wheels so it can be rolled and other equipment used. Much of it is outdated. Hallways become storage areas. Graduate students are ganged together in rooms desk-to-desk and research space for them is a critical problem; it is almost non-existent."

The firm of Desmond-Miremont-Burks, Architects and Engineers, of Baton Rouge was retained to study facilities of the two colleges and come up with some preliminary building plans for the center.

The central core of the building will consist of three sections, one for classrooms and offices facing northeast to the center of the LSU campus. Laboratories will be located in six wings, projecting from the frontal side portions of the central core. "This arrangement gives faculty ready access to the instruction and research laboratories, from which classrooms are separated to minimize distraction from the hubbub of lavoratory activity," Richardson said.

Another central section is planned to house computer facilities, library and reading rooms.



Administrative offices for the two deans, directors of research, and placement service will be located in the central section facing Nicholson Drive.

All College of Business Administration facilities will be located in the new center. The Departments of Electrical and Chemical Engineering, already in relatively new facilities, will continue to operate their graduate programs and special laboratories in these buildings while their undergraduate program will function in the new building. Agricultural Engineering will remain in its present facilities. All others — civil, mechanical, aerospace, industrial and petroleum engineering, and the Engineering Science and the Engineering Graphics departments will be housed in the new center.

In the past LSU, like all other institutions of higher education, has produced graduates trained in accounting, economics, finance, marketing and other curricula in the College of Business Administration and chemical, civil, electrical, mechanical and other types of engineers through the College of Engineering. The majority of these were employed by industry and assigned to positions which required and utilized their education in their specific disciplines.

Over the years, however, it has been recognized that as most individuals progress in their careers, they have had to acquire new knowledge and to handle assignments which in whole or part are outside the traditional scope of their original field; simultaneously, their primary training is used more as background knowledge than for its specific techniques.

While there are many exceptions in which an individual has concentrated on his chosen field or has become a specialist in some specific phase or application of it, after a period of time which varies widely with the industry, the particular company, and the individual, the majority move into "management." Particularly at the upper and middle management levels, the individual's formal academic training is secondary to his knowledge of the company, his ability to analyze and evaluate the significance of their ideas or events as they apply to his company.

Experience has shown that education in engineering or in business administration provides a route to management and that the successful manager whose education was in one has generally acquired an understanding of the other.

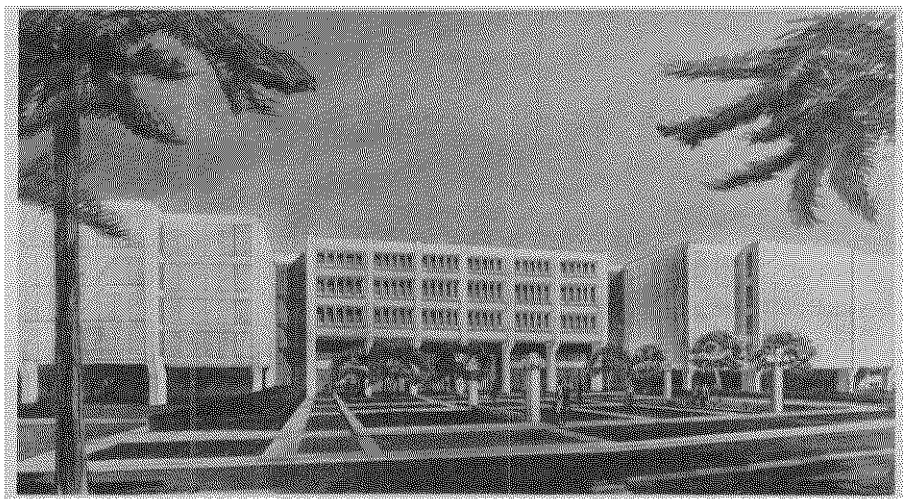
The CEBA concept is that both industry and the individual will benefit if the college education of the engineer and of the business administrator gives each a fundamental understanding of the other's field. This makes it possible for the two to work with one another effectively and to more readily acquire the advanced knowledge of each other's field.

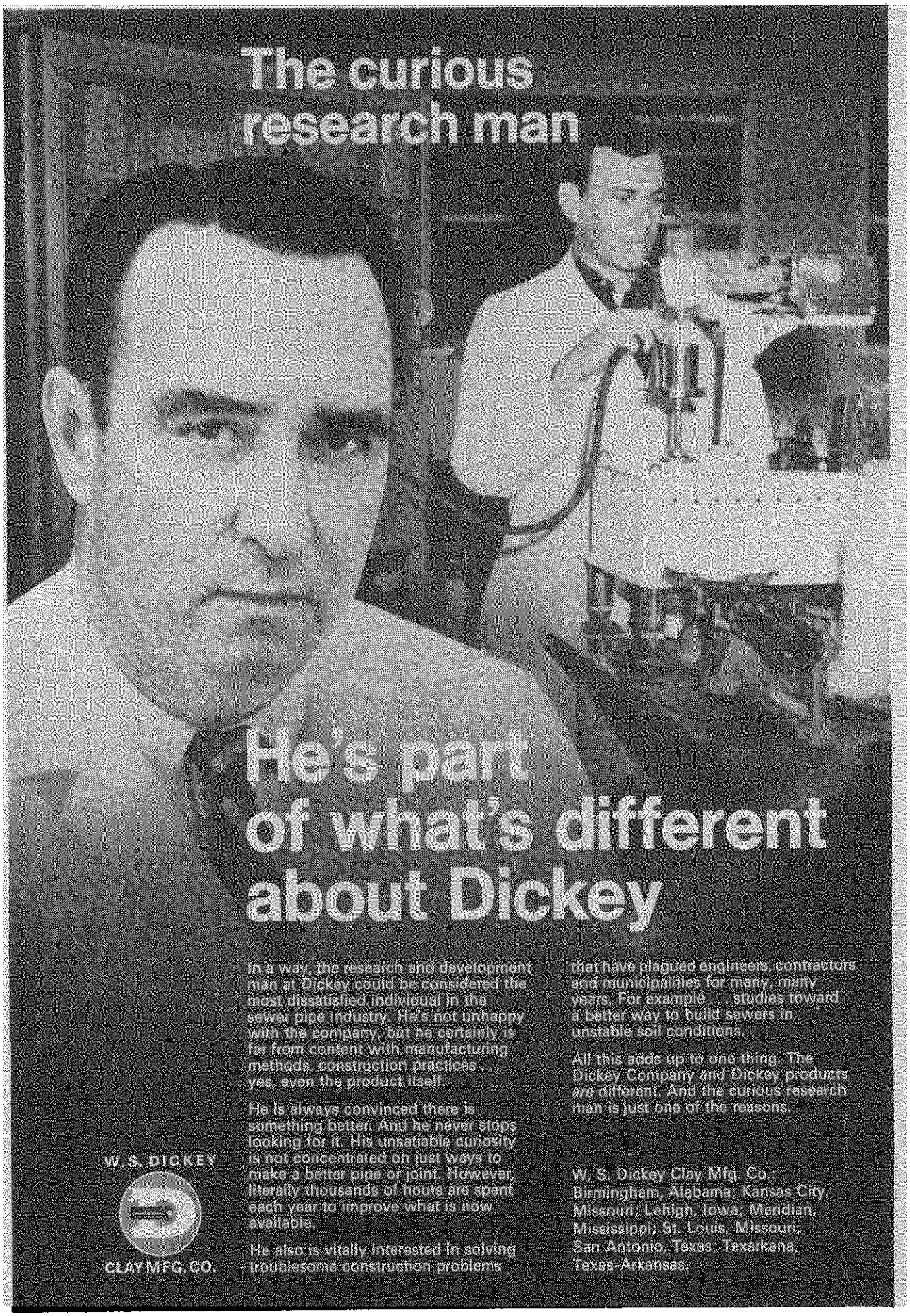
In simple terms, CEBA's basic objectives are:

1. To produce administrative science graduates who are better oriented to the nature and pace of advances in technology and the engineering sciences.

2. To produce engineers who are better oriented to the rapid developments occurring in the administrative sciences, particularly relating to the economic and managerial aspects of industrial operations.

To train personnel who can produce and operate effectively in an environment characterized by an increased interaction between the disciplines of engineering and business administration, CEBA will provide: (1) increased opportunities within the present framework of conventional curricula so that engineers can receive more adequate training in business practices and management students can acquire a scientific foundation, now missing, on which they can develop an understanding and appreciation of scientific and technological problems; (2) new curricula combining engineering and business administration at both the undergraduate and graduate levels and offering greater depth of training in specific hybrid areas; (3) a stronger and accelerated program of cooperative research in subjects of mutual interest; (4) an expanded program of continuing education and professional self-development for technical and management personnel and particularly for technical administrators both in the United States and in Latin America where Louisiana has close ties.




The curious research man
He's part of what's different about Dickey
In a way, the research and development man at Dickey could be considered the most dissatisfied individual in the sewer pipe industry. He's not unhappy with the company, but he certainly is far from content with manufacturing methods, construction practices . . . yes, even the product itself.
He is always convinced there is something better. And he never stops looking for it. His unsatiable curiosity is not concentrated on just ways to make a better pipe or joint. However, literally thousands of hours are spent each year to improve what is now available.
He also is vitally interested in solving troublesome construction problems that have plagued engineers, contractors and municipalities for many, many years. For example . . . studies toward a better way to build sewers in unstable soil conditions.
All this adds up to one thing. The Dickey Company and Dickey products *are* different. And the curious research man is just one of the reasons.
W.S. DICKEY
CLAY MFG. CO.
W. S. Dickey Clay Mfg. Co.: Birmingham, Alabama; Kansas City, Missouri; Lehigh, Iowa; Meridian, Mississippi; St. Louis, Missouri; San Antonio, Texas; Texarkana, Texas-Arkansas.

C. E. and L. S. Licenses

LAMON L. MOODY, P.E.

Following several years of hard work by Registered Professional Engineers and Registered Professional Land Surveyors throughout the State of Louisiana, a much needed improvement in the registration law is on the verge of being accomplished. The separation of the Civil Engineer License and the Land Surveyor License will upgrade and improve the land surveying profession. The necessity for separation of these licenses is dictated by:
(1) The national trend of de-emphasizing surveying courses in the Civil Engineering curriculum in colleges and universities; (2) the registration of Civil Engineers by reciprocity has become a severe problem due to the fact that some applicants have had few or no surveying courses in their curriculum, and under the present registration law a Civil Engineer is automatically licensed to practice land surveying in Louisiana and (3) the Louisiana State Board of Registration for Professional Engineers and Land Surveyors has the responsibility of registering Professional Land Surveyors as well as Professional Engineers; representation of Land Surveyors on the Board is currently manifested in the Civil Engineer members of the Board, however, with the separation of the Civil Engineer and Land Surveyor licenses, it is necessary to assure continuing representation of the Land Surveyors by stipulating that at least one member of the Board shall be a Registered Professional Engineer who is also a Registered Professional Land Surveyor, one of whose principal activities is in the field of land surveying.

During the past several months professional societies and organizations interested in surveying in Louisiana have actively studied and contributed to the proposed changes to the registration law. There has been a unanimity of concern over the problems at hand. The following professional societies and organizations are to be congratulated for their contribution: American Society of Civil Engineers, American Congress on Surveying and Mapping, Board of Registration, Consulting Engineers Council, Louisiana Engineering Society, Louisiana Land Surveyors Association and the Louisiana Society of Professional Engineers in Civil Service.

Realizing the urgent need of consolidating the efforts of all involved professional societies, the Board of Direction of the Louisiana Engineering Society, containing membership from all of the aforementioned societies, directed President Leo M. Odom on April 25, 1969 to invite delegates from interested societies and the Board of Registration to form a study committee. Thus, a Composite Study Committee was created and charged with the responsibility of studying: (1) the proposed changes to the registration law pertaining only to land surveying originated by the Louisiana Land Surveyors Association in December of 1968, and (2) the comments and directives from all interested professional societies and organizations concerning the matter.

After several meetings and many long hours of hard work, both in committee and out of committee, the final report, dated November 22, 1969, was issued.

Upon ultimate adoption into law by the Louisiana Legislature during their Regular Session in May of 1970, the following basic improvements would be affected to the registration law:

1. The present Board of Registration is composed of nine members. Proposed changes *will not* increase the Board membership, however, at least one member of the Board shall be a Registered Professional Engineer who is also a Registered Professional Land Surveyor, one of whose principal activities is in the field of land surveying.
2. There will be a separation of the Civil Engineer and the Land Surveyor License. After September 1, following the passage of these changes into state law, all Civil Engineers presently registered will be issued a Land Surveyor License without charge and without application. Thereafter, it will be necessary to pay the annual renewal fee for both the Civil Engineer and the Land Surveyor Licenses.
3. After September 1, following the passage of these changes into state law, all Civil Engineers presently licensed as a "Civil Engineer as a Public Employee" will be issued a Land Surveyor license without charge and without application. The license will be restricted to land surveying for the State of Louisiana on a salary basis only. Thereafter, it will be necessary to pay the annual renewal fee for both the Civil Engineer as a Public Employee and the Land Surveyor as a Public Employee licenses.
4. After September 1, following the passage of these changes into state law, all land surveying must be performed by a Registered Land Surveyor.
5. It shall be unlawful for any Recorder of Deeds of any parish to Record any survey map that does not have the personal signature and seal of a Registered Land Surveyor affixed thereto. (Note: this recommendation will be introduced as a separate act since it is not presently part of the registration law.)

L.E.S. Awards

LEO M. ODOM, P.E.
Chairman, Honors & Awards Committee



Recognition of fellow engineers has always been an important program of the Louisiana Engineering Society. It has been the Society's feeling that honors and awards should be given deserving members so that they will receive public recognition of their attainments, and also to inspire others to greater heights.

The Society has five basic awards. These are the Andrew M. Lockett Medal, Technological Accomplishment Medal, A. B. Paterson Medal, Charles M. Kerr Public Relations Award and the Louisiana Engineer Award of Merit.

Now, a brief word about each of the LES Awards:

The Andrew M. Lockett Medal is the Society's civic activities award and was first given in 1951. Measuring 2 x 2½ inches, the heavy medallion is given annually to an engineer for distinguished civic service in the public interest without compensation for those services.

The Technological Accomplishment Medal is given for distinguished services by an engineer for technological advancement or discoveries as contributions to the advancement of engineering. Like the Andrew M. Lockett Medal, it was first awarded in 1951.

The Louisiana Engineering Society has a special award for the engineer who distinguishes himself in management. This is the A. B. Paterson Medal which was first given in 1965. Primary criterion for selection is achievement in management rather than engineering or scientific attainment.

The character and scope of contributions to the Society's overall public relations program is also recognized to encourage other members to take a greater part in public relations on the chapter or state level. Named the Charles M. Kerr Public Relations Award, it was first presented in 1965.

It should not be thought that in order to receive recognition from the Louisiana Engineering Society an engineer must be practicing in the profession for a great length of time. Young engineers are acknowledged by the Louisiana Engineer Award of Merit.

Of course, besides these awards given on the state level, each chapter has its own awards given to its outstanding members.

All nominations for L.E.S. awards should be sent to the Executive Secretary at the State Office in Baton Rouge no later than March 15, 1970.

Nominations may be made by chapter or state officers, the Board of Direction, the Executive Committee or the equivalent body of any chapter, or by three or more members of the Society.

When nominations are submitted, they should be supported by:

(a) A full statement of the training, experience and notable contribution of the nominee.

(b) A statement of the basic reasons for submitting the nomination and for believing the nominee eligible for the honor.

(c) Such other information and reference as may be of assistance to the Board of Direction in considering and acting upon the case.

(d) It is essential that such nomination carry the current title and company connection of the candidate, and if he is retired, his present permanent address.

The selection for the award to be recommended to the Board of Direction must be a unanimous vote of the Society's Honors and Awards Committee.

Awards will be presented during the Society's Annual Convention in April.

Nothing Stays the Same

Reprinted from *Combustion* magazine.

Hudson Moore, Jr., president of Cheesman Realty Co., Denver, addressed the alumni and friends of the University of Colorado, College of Engineering, to acquaint them with what he held to be a tremendous opportunity to establish a scientific complex along the front range in Colorado. We do not intend to attempt assessing this opportunity but we did find Mr. Moore's supporting arguments so new and startling to us, at least, that we feel urged to pass them along. As they say today, "Would you believe?——

Unquote"

"For 200 years the industrial revolution has been the dominant economic force in the world. Now it is being challenged by another force — the knowledge revolution."

The industrial revolution which began when James Watt patented his steam engine in 1769 has been geared for one overriding objective — production. Its chief ingredients have been land, power, metals and capital equipment. By contrast, today's knowledge revolution seeks new business through technological advances, not volume production. Its chief catalysts are *ideas*, not *material resources*. Its leading institutions will be universities, not factories.

It is not generally realized how far the United States has come in the transition from a production-oriented system to a science-based, or idea-oriented economy. A few facts stand out:

Education now generates at least one-fifth of the United States growth rate. The "Knowledge Industry" accounts for nearly one-third of the entire economy, and is growing twice as fast. United States *business* is spending 17 billion dollars annually to educate its personnel, or one-third as much as is spent on the nation's entire public and private school systems. More than one-fourth of the nation is engaged in education (consisting of 51 million students and 2 million teachers.) Investment in education has increased the output of the economy and the income of those educated equal to a return on the investment of about ten per cent per annum, according to the Chase Manhattan Bank.

The concept of a "knowledge industry" is new. In a landmark study entitled "The Production and Distribution of Knowledge in the United States" Fritz Machlup of Princeton University is the first to try to analyze it in detail. He finds that the United States is spending in excess of 136 billion dollars annually, or 26 per cent of the gross national product, for the production and distribution of all kinds of knowledge.

An Editorial

Spending for this "intangible" commodity is growing 2.4 times as fast as spending for all physical goods and other services combined in the United States. Employment in the knowledge-producing occupations is growing twice as fast as that of the labor force in general.

For several years, economists have been puzzling over the fact that traditional concepts of capital—that is, plant, equipment, and inventory—fail to explain adequately the growth of the United States economy. Only recently have they turned to studies of human investment.

Beyond all doubt, ideas have become a major national resource as important as a country's land and its mineral wealth. Knowledge—the force of intellect—may in the future decide the rise and fall of companies, of professions, of social classes, of regions—and even of nations. Already it is creating an entirely new class of leaders.

The knowledge revolution is changing the economic geography of the nation. The dominant "growth" institutions of the future will not be the factories, but the nation's intellectual organizations—the research organizations, industrial laboratories, experimental stations and universities.

These institutions in turn attract industry. This is clearly shown by one of the nation's most research-oriented industries—defense. Three states, California, New York and Massachusetts, have been able to claim nearly 60 per cent of all military *research* contracts, because according to former deputy secretary of defense, Roswell Gilpatric, they are also "centers of learning."

Production contracts now tend to seek out the havens of intellect, rather than raw material and labor supply areas as in the past. The three states I mentioned are now receiving nearly 40 per cent of all military prime contracts for *production*.

The science-based industries sprouting up around university campuses form the nuclei for a new kind of city—the "ideopolis" or "city of the intellect," as Clark Kerr calls them, or if you please, asked Mr. Moore, "the scientific complex, as we are beginning to call this remarkable new trend in Colorado."

The adage of yesteryear "If you build a better mousetrap"—now yields to "If you have an idea of *how* to build a better mousetrap, market it; let someone else build it."

Technical Writing at Tulane University

BRECK HENDERSON
Student, Tulane University
School of Engineering

EDITOR'S NOTE: Breck Henderson is a student in the Tulane University School of Engineering. Writing an article such as this one is part of his training conducted in cooperation with the local engineering profession.

Many students on college campuses throughout the country have been reacting against the rigid requirements of most university curricula in recent times and calling for more academic freedom. Almost in answer to their demands, but yielding to no pressure except that of progress, Tulane University's School of Engineering has instituted a program allowing engineering students a great amount of freedom to pursue original and unusual interests. The program is termed the Engineering Curriculum major. It outlines a broad core of basic science and engineering courses, but leaves the student free to elect more courses than he can elect under the curricula of Tulane's four traditional departments. This enables students with special interests to follow their interests, often into very imaginative areas. As I write this article, I am a senior in the Engineering Curriculum, and have been preparing for a career as a technical writer.

Several students have entered the program with intentions of attending medical school. The program offers them a Bachelor of Engineering degree while allowing them to complete courses prerequisite for medical school. Other students are planning to attend business school.

There are other students devoting their electives to highly specialized areas of engineering such as Nuclear Engineering, Environmental Engineering, Computer Technology, Oceanography, and Aerospace Engineering. Perhaps the most unusual specialty however is that of Technical Writing. Unlike many engineers, I am very much interested in the art of written communication, and I have used the freedom of Tulane's flexible new program to cultivate this interest. I enjoy courses of a technical nature, but I discovered early in my college career that I also had a great taste for English. Thus I am able to combine the two interests into a practical and useful profession.

My schedule each semester is no small source of wonder to my fellow students. Frequently I must leave a class in Romantic Poetry or some similar subject and proceed to one in Engineering Mechanics, but this diversity I feel is a rare advantage. I am well grounded in Science, Mathematics, and Engineering, but I have also been thoroughly exposed to the Humanities. Through these diverse studies, I hope to be able to talk to engineers on their technical level, and then convey the information to the general public. The fact that I have taken courses in each of the four traditional fields of engineering I think will enable me to appreciate each engineer's point of view.

The core of the Engineering Curriculum consists of 76 semester hours of basic Engineering courses, ranging in scope to the junior level in Mechanical and Chemical Engineering and to the sophomore level in Electrical Engineering. The program also prescribes 24 semester hours of Humanities and Social Studies, 15 hours of Science or Engineering Science, plus 21 hours of electives. The Humanities and Science requirements may be elected to a large degree, and often students are able to find courses beneficial and relevant to their specialty. Thus as many as 45 hours may be elected by the student to fulfill his interests outside Engineering.

As a prospective Technical Writer, my interest lies in the realm of communication, writing of a creative nature, and journalism. Many of my electives have been in English, but I have also been able to take advantage of many other types of courses. Most notable and valuable was a special course entitled Communication Workshop taught by Dr. Hodding Carter, Tulane's Writer in Residence and a nationally known journalist, author, and newspaper editor. Other courses that I have had great benefit and enjoyment from include Literature, Psychology, and Philosophy. I have also worked with the campus newspaper. This year I am receiving credit for my newspaper work as well as other writing projects that I plan to undertake. I am attempting to function as a liaison between the Engineering School and the rest of the student body by keeping newsworthy information in the school paper. This special project work for credit is another feature of the Engineering Curriculum. Most students in this program are allowed in their senior year to engage in an individual project in the field of their special interest for credit.

The concept of a Technical Writer functioning as an intercommunicator between engineers and the public is one which I hope to be able to carry with me. The idea of a Technical Writer as a person who is confined to writing instructional booklets and reports I feel is a misconception which could prove costly. As the technical world becomes more highly specialized and more complex, the different areas tend to lose sight of one another and the public becomes hopelessly befuddled. My job, as I envision it, will be to try to keep engineers informed of progress through technically accurate and readable articles, and to keep the public informed through simple but conceptually accurate communications.

JEWELRY DESIGN CONTEST

Win your free dues for LES next year!

Any grade member can submit an entry.

Submit a sketch of what you think would be a distinctive lapel emblem. Your sketch should be large enough for clarity; however, keep in mind that when it is reduced to small lapel size it will lose considerable detail.

The sketch must be received in the state LES office, Box 2683, Baton Rouge, Louisiana 70821, not later than April 10, 1970.

The Board of Direction will decide if any of the sketches submitted warrant the award of the free dues.

Your Society has at present an emblem that is about 5/8" in diameter with blue background and gold lettering. This size is considered to be too large and the design non-distincive to be in style for today's wear. You may not remember having ever seen one of these emblems. Therefore, it is thought that someone may come up with a clever or distinctive emblem that would be worn by more of our members.

GET TO WORK ON YOUR ENTRY NOW!

MEMBERSHIP CONTEST STANDINGS

RULES OF THE CONTEST

1. A Chapter must reach its 10% quota to qualify as the Contest winner.

2. The Chapter with the greatest percentage increase, based on application and reinstatement requests received by the state LES office through the week prior to the June annual meeting will be the winner. Transfers into a Chapter or grade changes will not be counted as part of the quota. Students upon graduating will be counted for a Chapter only if the Chapter gets them to fill out an Application form with up-dated information and, also, if they reside in the Chapter's Area.

Standing	Chapter	Applications	Quota	Percent
1	Bayou	6	4	150.000
2	Lake Charles	11	13	84.651
3	New Orleans	50	79	63.291
4	Shreveport	10	21	47.619
5	Monroe	7	15	46.667
6	Alexandria	6	13	46.154
7	Baton Rouge	17	56	30.357
8	Lafayette	2	16	12.500
January 16, 1970 Totals		109	217	50.230

LES POLICY STATEMENT REGARDING WORK BY ENGINEERING FACULTY

Since an engineering faculty member is a part of the engineering profession, and since his teaching duties, as in any other profession, are performed effectively only when his training and education are adequately supported by experience; the Louisiana Engineering Society encourages the participation of engineering faculty members in some applied outside engineering work.

The engineering teacher has a responsibility to his profession and to his school to see that his outside work conforms to established canons of practice. The following conditions form the basis for this Louisiana Engineering Society policy:

1. The quantity of outside work should be such as not to interfere with proper teaching.
2. The school administration should be kept appraised of all work done during the school year.
3. The salaries for personnel employed on engineering work by an engineering faculty member should be in accordance with those doing similar work in the area of employment.
4. The fees for this work should be in accordance with the schedule of fees recommended in the Manual of Practice as published by the Louisiana Engineering Society and the Consulting Engineers Council of Louisiana.

ENGINEERS IN NEWS

Roy T. Sessums, president of the Louisiana Engineering Society in 1959, was recently reappointed by Governor John J. McKeithen as a member of the Louisiana State Board of Registration for Professional Engineers and Land Surveyors.

NEW ENGINEERS

PROFESSIONAL ENGINEERS GRANTED REGISTRATION
January 13, 1970

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

Avers, Wilbur J.—Mechanical
Shreveport, La.

Blum, Joseph F.—Electrical
Houston, Texas

Brady, Jack H.—Mechanical
Houston, Texas

Brasted, Lee K.—Civil
Metairie, La.

Bratton, Jimmie L.—Civil
Grand Prairie, Texas

Breaux, Roy L., Jr.—Mechanical
Groves, Texas

Brown, Alfred W.—Civil
Beaumont, Texas

Bryan, Ross H.—Civil
Nashville, Tenn.

Chaffin, Philip R.—Civil
Natchez, Mississippi

Ciske, Vernon A.—Civil
Cary, Illinois

Cooper, Miller M.—Civil
Dunwoody, Georgia

Culbertson, John C.—Petroleum
New Orleans, La.

Dowdell, Edward M.—Mechanical
Hodge, La.

Dunn, Roland J., Jr.—Mechanical
Covington, La.

Dykes, Vancle E.—Petroleum
Gretna, La.

Fischer, Alvin—Civil
Teaneck, New Jersey

George, Thomas D.—Mechanical
Shreveport, La.

Givens, Thomas T., Jr.—Mechanical
Pampa, Texas

Gleekman, Lewis W.—Metallurgical
Southfield, Michigan

Hale, Stephen D.—Civil
Baton Rouge, La.

Harper, William J.—Civil
Houston, Texas

Hedges, Frederick W.—Civil
Honolulu, Hawaii

Holm, John R.—Civil
Roswell, Georgia

Hoskyn, John P.—Agricultural
Little Rock, Arkansas

Kippels, Horace O.—Mechanical
Baton Rouge, La.

Kuo, Yung-huang—Civil
Baton Rouge, La.

Lazenby, Jerry G.—Civil
Oklahoma City, Oklahoma

LeDoux, John R.—Mechanical
Reserve, La.

Long, Richard E.—Electrical
Kenner, La.

Lowry, Moseley M.—Elect. & Mech.
Phoenix, Arizona

Lupey, George A.—Electrical
Luling, La.

Mahfoud, Bernard F.—Civil
Baton Rouge, La.

Montestruc, Alfred N.—Mechanical
Baton Rouge, La.

Murphy, Thomas D.—Civil
Houston, Texas

Nolan, Edmund J., Jr.—Civil
New Orleans, La.

Oliver, William C.—Electrical
Beaumont, Texas

O'Neal, Huey P.—Mechanical
Dayton, Ohio

Peevey, Robert M.—Petroleum
Lafayette, La.

Petersen, Maurice L.—Mechanical
Marrero, La.

Poon, Power Pong-Chuen—Civil
Baton Rouge, La.

Rewerts, Thomas H.—Electrical
Baton Rouge, La.

Rohde, Carl—Civil
Lake Oswego, Oregon

Sidebottom, Edwin W.—Mechanical
Houston, Texas

Smith, Jerry M.—Civil
New Orleans, La.

Spigolon, Silvio J.—Civil
Germantown, Tenn.

Spinks, Jack M.—Agricultural
Houston, Texas

Summars, Joe N.—Petroleum
Lafayette, La.

Thrash, Edward F.—Mechanical
Vicksburg, Mississippi

Trautner, Robert J.—Chemical
Metairie, La.

Utzinger, Robert W.—Civil
Portland, Oregon

Warrington, Ralph M., III—Civil
New Orleans, La.

Williamson, Duane Adrian—Civil
Birmingham, Alabama

VOTE "NO" IN MARCH

A proposal to expand the membership of the National Society of Professional Engineers to include non-registered engineers will be presented to Society members in March, 1970.

The Board of Direction of the LES has taken official action in opposition to this proposal and wishes to encourage all members of NSPE and especially those of the LES, to vote against admitting non-registered engineers to membership as Senior Associate Members of NSPE.

NEW MEMBERS

ALEXANDRIA

James M. Hawkins, Jr., P.E.
P. O. Box 176
Ferriday, Louisiana 71334

BATON ROUGE

Clyde R. Burgins, P.E.
Rt. 1, Box 151
Gonzales, La. 70737

Carlos L. Hermida
Box 19878, L.S.U.

Isaac R. Porche, P.E.
P. O. Box 10057

Albert Richardson, Jr., P.E.
12489 Lockhaven Ave.

Walter R. Williamson
P. O. Box 368
Baker, La. 70714

BAYOU

Ernest J. Grow, Jr., L.S.
P. O. Box 231
Houma, La. 70360

Robert G. Reed, P.E.
P. O. Box 812
Houma, La. 70360

Raymond H. Thompson
610 Gen. McArthur Dr.
Morgan City, La. 70380

John W. Woodard, P.E.
Dularge Route, Box 206
Houma, La. 70360

LAKE CHARLES

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P. O. Box LL

Edwin A. Bell, P.E.
P. O. Box 1562

Grandison K. Bienvenu, P.E.
314 N. Pine Street
DeRidder, La. 70634

Roy L. Brown, P.E.
150 Heather

Ronald D. Fittz
700 East McNeese St.

John L. Grubb
1216 Post Oak Rd.
Sulphur, La. 70663

Richard Hodges III
1807 19th Street

Olin Ray Merchant
416 Cody Street
Sulphur, La. 70663

Austin V. Sierra, Jr., P.E.
28 Horseshoe Lane
Maplewood, La. 70663

Joseph Robert Thibodeaux
720 West Sallier

MONROE

Robert Curtis Freeman, Jr.
P. O. Box 471

Leo W. Gagnon, P. E.
Apt. 211, Vetville
Ruston, La. 71270

Jerry L. Hudson, P.E.
15 Lakeview Dr.

NEW ORLEANS

James D. Cospolich
14 Theresa Ave.
Kenner, La. 70062

Marlin O. Gonzales
N.O.P.S.I.—527 Magnolia

John P. Lozes, Jr., P.E.
P. O. Box 60340

Jimmy V. MacNaughton, P.E.
624 Morningside Dr.
Gretna, La. 70053

Bennie C. Martin, P.E.
2209 Suwannee Dr.
Marrero, La. 70072

George A. Miller, P.E.
1327 Greenlawn St.
Slidell, La. 70458

Peter R. Quirk, P.E.
1012 Beverly Garden Dr.
Metairie, La. 70002

Charles W. Ruckstuhl, Jr., P.E.
5813 Boutall St.
Metairie, La. 70003

Frank N. Stone, P.E.
212 Lilac St.
Metairie, La. 70005

Robert W. Vaughan
N.O.P.S.I.—527 Magnolia

SHREVEPORT

James G. Brown
P. O. Box 4443

Richard B. Carruth
P. O. Box 1407

Ronnie D. Hall
P. O. Box 1407

NON-RESIDENT

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4676 Hamilton St., Apt. 8
San Diego, Calif. 92116

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Jerry M. Bourgeois
Frederick D. Broussard
Howard Chaney
George L. Ellison
Raoul Gonzales
Robert G. Graves
Terry M. Green
Sham L. Gupta
Robert M. Heinrichs
Bill R. Hise
Charles W. Hogg, Jr.
Quillie E. Kinard, Jr.
Norval P. Knapp
H. R. Norekauer
John D. Ortalane
Russell E. Painton
Charles F. Peterson
David I. Rogers
Virgil M. Shaw
Oran J. Suire
William D. Walters
Robert G. Webb
John R. Whipple
George R. White
Jimmy R. White
Edward Woods
J. King Woolf, Jr.
Seaborn B. Young, Jr.

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William C. Bethea
Troy W. Thompson, Jr.

LAFAYETTE

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George A. David
Jadwin DeBlanc
Larry G. Fowler
Noy O. Lewis
Alfred F. Mauldin
Joseph E. Robichaux
William B. Welborn, Jr.

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James D. Burgin
Carlton Cormier
Paul H. Dronet
Leroy Little
Cordie H. Watler
Jesse C. Watson

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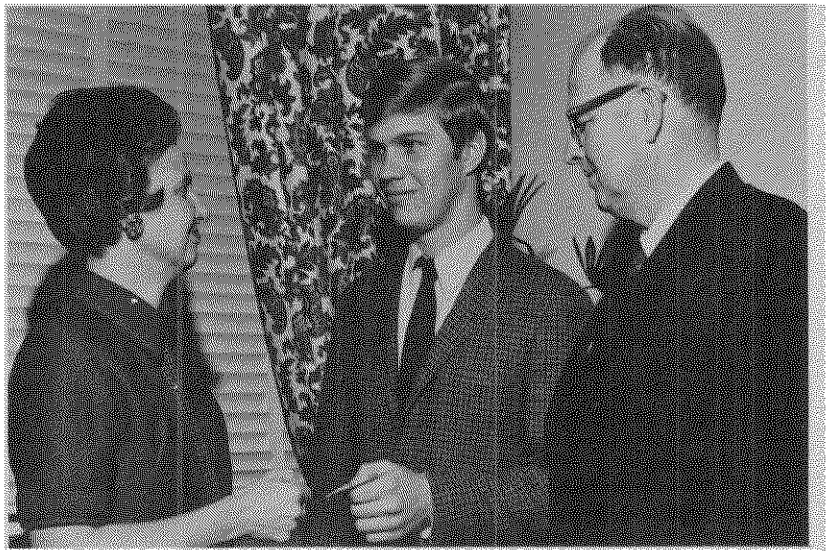
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Edward C. Farmer
William A. Kelly
Albert E. Patterson
Eric J. Smith

NEW ORLEANS

Albert M. Alexander, Sr.
Brian T. Barcelo
Morgan C. Bennett
James B. Biggers
Walter C. Bonie
Robert E. Brown
Herman L. Dulberg
Paul R. Geiger, Sr.
Vincent J. Greco
John A. Hebert
Thomas H. Johnson
Philip Kneiper, Jr.
Victor Law
Charles C. Mann
William B. Martin
Harold A. Miller
Edward E. Moore
Joseph A. Reine, Jr.
John C. Rogers
Vernon O. Slayter
Pirtle E. Walker
John G. Wallis
David A. Warriner

SHREVEPORT

Keith A. Hetrick
David B. Kimball



Mrs. Grover J. Trammell, chairman of the Scholarship Committee of the Monroe Chapter Women's Auxiliary, is shown presenting a $100 scholarship to William C. Campbell. Dean Ben T. Bogard of Louisiana Tech's School of Engineering looks on.

Campbell, who expects to receive his B.S. degree in August, was cited for his excellent scholastic average and participation in campus organizations.



The Women's Auxiliary to the Baton Rouge chapter, Louisiana Engineering Society, honored an outstanding LSU engineering student at its annual scholarship award dinner recently in the Sherwood Forest Country Club.

Mr. Nathaniel Bordelon, sophomore chemical engineering student from Cottonport, received this year's award.

Hostesses were Mrs. M. Conway Lusk, Mrs. Raymond Pillow and Mrs. Jesse Coates. At the register was Mrs. W. A. Wintz, Jr.

Seated at the head table were Dr. James Cordiner, scholarship advisor, and Mrs. Cordiner; Mrs. Henry G. Pylant, auxiliary president, and Mr. Pylant; Mrs. Lusk, scholarship award chairman, and Mr. Lusk; the honoree and his wife; Mrs. Al Spain, monologist who furnished entertainment, and Mr. Spain.

Mr. Pylant gave the invocation, Mrs. Pylant introduced the speaker and Mrs. Lusk presented the scholarship.

The photo at left shows Mrs. Pillow, seated, Mr. Bordelon, and Mrs. Pylant.

IN MEMORIAM

FRED C. BROWNLEE

Fred C. Brownlee was born in Calhoun, La. on September 29, 1911 and graduated from Ouachita Parish High School in 1930.

Mr. Brownlee was employed by M. Kaplan and Son as Vice President and Assistant Manager until his death on December 8, 1969.

He was a member of the Louisiana Engineering Society, and in 1964 was President of the Monroe Chapter. Mr. Brownlee was active in church, civic and fraternal organizations.

E. M. FREEMAN

E. M. "Jiggs" Freeman, a past President of the Louisiana Engineering Society, died in Shreveport on January 30.

A native of Marshall, Tex., he had been a Shreveport resident for about 47 years. He was a consulting engineer with E. M. Freeman and Associates.

In 1966, Mr. Freeman, described as the "Father of Engineering" in the Shreveport area, was presented the first annual award of the Engineering and Scientific Council of Shreveport. He was distinguished as a Fellow of the American Society of Engineers and was a member of the Louisiana Institute of Civil Engineering and the Louisiana Section of the American Society of Civil Engineers.

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Minutes – LES BOARD

December 12, 1969, Capitol House Hotel, Baton Rouge, La.

President Vogt called the meeting to order with the following board members present: Charles P. Barnard, P.E.; Hoyt W. Brown, Jr., P.E.; Fred Culpepper, P.E.; Kenneth E. Deal, P.E.; H. L. Henry, P.E.; Frank M. Heroy, Jr., P.E.; T. J. Hogue, Jr., P.E.; James L. Meyer, P.E.; Willie E. McGough, P.E.; Lamon L. Moody, Jr., P.E.; Leo M. Odom, P.E.; Sylvan J. Richard, P.E.; Richard See, P.E.; Charles W. Stokes, P.E.; A. J. Szabo, P.E. and Jack Thigpen, P.E. Also present were: Farrell W. Adams, P.E.; Larry C. Grundmann, P.E.; Carl Heck, Jr., P.E.; George L. Heller, P.E.; and Gerald A. Simmons, Executive Secretary.

Minutes of the Board of Direction meeting of October 23, 1969 were corrected and approved. The motion for approval was made by Mr. Odom, seconded by Mr. Barnard and passed.

Motion by Mr. Szabo, seconded by Mr. Moody, "that the policy statement approved at the last board meeting which reads as follows be published in the LOUISIANA ENGINEER:

"Since an engineering faculty member is a part of the engineering profession, and since his teaching duties, as in any other profession, are performed effectively only when his training and education are adequately supported by experience; the Louisiana Engineering Society encourages the participation of engineering faculty members in some applied outside engineering work.

"The engineering teacher has a responsibility to his profession and to his school to see that his outside work conforms to established canons of practice. The following conditions form the basis for this Louisiana Engineering Society policy:

1. The quantity of outside work should be such as not to interfere with proper teaching.
2. The school administration should be kept appraised of all work done during the school year.
3. The salaries for personnel employed on engineering work by an engineering faculty member should be in accordance with those doing similar work in the area of employment.
4. The fees for this work should be in accordance with the schedule of fees recommended in the Manual of Private Practice as published by the Louisiana Engineering Society and the Consulting Engineers Council of Louisiana."

Motion Carried.

Financial Statement—The financial report was given by Mr. Thigpen for the months of October and November. Total receipts through November, year to date, were $24,884.49 and expenses for the same period were $25,643.50. Mr. Thigpen noted that the statements for 1970 dues had been sent in November and were beginning to come into the office. He encouraged all chapters to make a final effort to contact delinquent members and have them transmit their dues. Motion by Mr. Barnard, seconded by Mr. Heroy, "that the financial report be accepted as presented." Motion carried.

SECTION REPORTS

Professional Engineers in Education—Mr. Henry, chairman of the P.E.E. Section reported that the results of the poll conducted by the P.E.E. Section had been referred to the Liaison with the State Board of Registration Committee. The poll requested the views of members on the proposal to register engineers simply as professional engineers rather than by branch.

Professional Engineers in Government—Mr. Heroy, chairman of the P.E.G. Section discussed the coming session of the N.S.P.E.-P.E.G. Board of Governors. He stated a representative of the Louisiana Section would attend. Mr. Heroy requested $100.00 to help defray the P.E.G. representative's expenses with the understanding the money would be returned from the P.E.G. Fund.

Motion by Mr. Heroy, seconded by Mr. Szabo, "that L.E.S. provide a $100.000 advance to the P.E.G. Section for the purpose of sending a representative to the N.S.P.E.-P.E.G. Board of Governors meeting, and that the money be refunded by the P.E.G. Section." Motion carried.

Mr. Szabo noted that L.E.S. in the future should budget funds to take care of necessary expenses of the committees and practice sections.

Professional Engineers in Industry—Mr. Richard, chairman of the P.E.I. Section, gave no formal report but did encourage all chapters to continue their efforts to find candidates for the N.S.P.E. Professional Development Award.

Professional Engineers in Private Practice—Mr. Moody, chairman of the PEPP Section, reported that bids have been received on the printing of the Manual of Private Practice. The low bid was $1,100 for 5,000 copies submitted by Franklin Press of Baton Rouge. Mr. Moody stated that C.E.C. would share the printing cost with L.E.S. on a ⅓-⅔ basis and share in the distribution of the Manual. Mr. Moody



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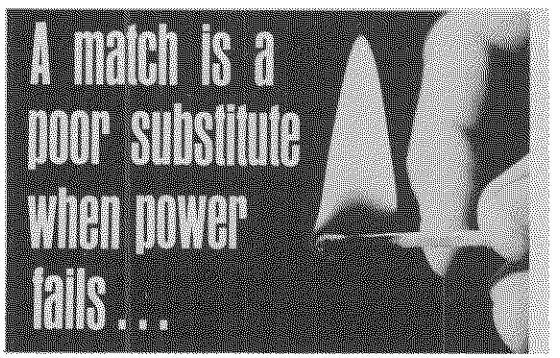
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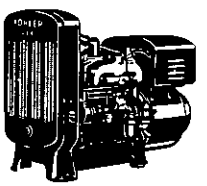
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stated that the PEPP Section was presently discussing different means of financing the printing and distribution of the Manual.

Motion by Mr. Moody, seconded by Mr. Szabo, "that the L.E.S. proceed with the printing of the Manual and that L.E.S. share the $1,100 cost for 5,000 copies on a ⅓-⅔ basis with C.E.I.C."

Mr. Odom noted that the last printing of the manual was distributed on request and did not get the distribution desired. He felt engineers should have the manual and be encouraged to use it.

Mr. Stokes stated the manuals were not distributed and used last time so he was against printing this time because of the cost involved.

Mr. Meyer urged L.E.S. to provide the Manual of Private Practice to engineers in all branches so that it might be used to review contracts. Mr. Szabo suggested the Manual be distributed to all governmental agencies through the L.M.A.

Question was called for on the motion—Motion Carried.

At the next meeting of the Board of Directors, Mr. Moody is to submit a recommendation on the distribution and financing of the Manual.

Mr. Moody reported that the PEPP Section was studying the Plans Review Board system now employed in Illinois. He also reported that Mr. Arthur E. Meyers, Jr., has replaced Mr. William S. Hughes, deceased, as Chairman of the Alexandria PEPP Section.

Membership Report—Mr. Grundmann, chairman of the membership committee, reported the following contest standings as of December 13, 1969:

Position	Chapter	Applications	Quota	% Quota
1	Bayou	6	4	150.000
2	Lake Charles	10	13	76.923
3	Monroe	6	15	40.000
4	Alexandria	5	13	38.462
5	Shreveport	8	21	38.095
6	New Orleans	30	79	37.975
7	Baton Rouge	14	56	25.000
8	Lafayette	2	16	12.500
		81	217	37.327

Mr. Grundmann asked each chapter president to meet with his membership committee and provide all the assistance necessary to assure that each chapter reaches membership over their quota.

Admissions Committee—Mr. Adams reported that the chapter admissions committees are doing a fair job of processing members, but some chapters are holding membership applications entirely too long before submitting them to the state admissions committee. He urged all chapters to speed up the processing of membership applications and use the new forms where necessary.

Young Engineers Week—Mr. Heller, chairman of Young Engineers Week, reported the Monroe chapter has organized its program of Young Engineers Week. He urged all chapters to plan a program for this week. He noted that none of the chapters had responded to his request for their plan to involve the Young Engineers in L.E.S. activities.

L.E.S. Convention Committee—Mr. Hogue announced the Monteleone Hotel as headquarters for the L.E.S. Spring Convention. He stated that the contracts were being prepared for the selling of booths to exhibitors and urged all chapters to assist in contacting potential exhibitors. Mr. Hogue noted that he had not received all the chapter appointments to the convention committees. He asked all chapter presidents to make these appointments as soon as possible.

Vocational Guidance Committee—Mr. Henry reported for Dr. Holstead in his absence. Material on both the El Paso Vocational Guidance program and the JETS program was sent to each of the chapters with the request that consideration be given to initiating one or both of these programs. No reports have been received on action taken.

Legislative Committee—Chairman Moody reported he has begun meeting with interested organizations in an effort to gain support for the L.E.S. Legislative program. The committee is working to gain support from interested organizations to oppose legislation providing for unionization of public employees.

Education Committee—Mr. Brown, chairman of the Education Committee, reported that the engineering management course is being well received by engineers statewide. The committee is estimating that 9 classes will be meeting next semester. Registration will again be conducted by L.S.U.

Mr. Brown reported the Ad Hoc Engineering Education Committee had met and after much discussion agreed that a "charge" would be drafted for presentation to the committee. The charge adopted by the committee reads as follows:

"Study engineering education in the publicly supported institutions of Louisiana and recommend guide lines for a plan of short term and long range development of overall engineering education to best afford the opportunity for engineering training and to meet the needs for the State of Louisiana with regard to numbers and locations of colleges and fields of study, while best utilizing the funds available to adequately support all such programs."

Motion by Mr. Hogue, seconded by Mr. Culpepper, "that the charge as adopted by the study committee be accepted." Motion passed.

Study Committee to review changes in State Registration Law as it pertains to Land Surveyors—Mr. Moody reported that copies of the study committee's report has been mailed to all board members for their review.

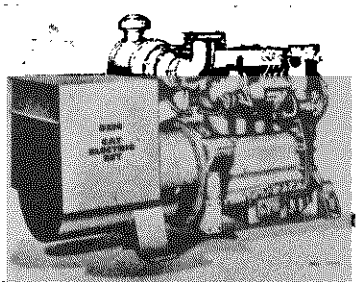
Mr. Vogt stated the report will be referred to the Liaison with State Board of Registration Committee, with instructions to report back to the Board of Directors at the next board meeting.

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Resolution—Individual Sewage Disposal Facilities—Mr. Moody read the following resolution held over from the October 23, 1969 Board meeting and asked for adoption of the resolution.

Motion by Mr. Moody, seconded by Mr. Deal, "that the following resolution be adopted":

WHEREAS, the Louisiana State Board of Health adopted a resolution on Individual Sewage Disposal Facilities at their regular meeting on July 28th, 1967 making it incumbent upon all State Officials make every effort to prevent the use of individual sewage disposal facilities, and the Board has approved code revisions which remove or modify all references to septic tanks and individual secondary treatment facilities, and,

WHEREAS, the State Board of Health has adopted administrative procedure on the basis that septic tanks and individual secondary treatment facilities are non-functional in the State of Louisiana in residential or commercial applications, and,

WHEREAS, this policy makes no provision that septic tanks and individual secondary treatment facilities are functional when properly maintained by the Owner, and,

WHEREAS, the rigid administration of this policy works a hardship and places undue financial burden on the citizens of the State of Louisiana, and

WHEREAS, the Board of Direction of the Louisiana Engineering Society, representing two thousand three hundred (2,300) members, unanimously oppose the rigid administration of this policy that prohibits the utilization of septic tanks and individual secondary treatment facilities when designed by a Civil Engineer, licensed by the State of Louisiana, and thereby charged with the responsibility to do so, and, who supervises the construction of these systems, now,

THEREFORE BE IT RESOLVED, that the Board of Direction of the Louisiana Engineering Society prays that the Louisiana State Board of Health will instruct all state health officials to approve plans, specifications and construction of septic tanks and individual secondary treatment facilities when performed by and under the supervision of a Civil Engineer who is licensed by the State of Louisiana.

Question was called for and the motion failed to pass.

N.S.P.E. Winter Meeting—Mr. Stokes discussed the coming N.S.P.E. Winter meeting and asked for board action to give him direction on the question of a reduction in the number of N.S.P.E. Board members.

Motion by Mr. Stokes, seconded by Mr. Szabo, "that each state society have one board member for a membership from 1-500 and further, a minimum of 2 board members for a membership over 501." Motion passed.

Association of Professionals with L.E.S.—Mr. Heroy briefly discussed the possibility of forming a group composed of Professionals (doctors, lawyers, CPA's, etc.) to meet and work with L.E.S. on common problems.

Mr. Vogt referred the matter to the Inter-Society Relations Committee, with instructions to study the possibility of forming such a group and report back to the Board of Directors.

Correspondence—Mr. Vogt read a letter from Governor McKeithen announcing the appointment of Mr. Roy T. Sessums to the State Board of Registration. Mr. Sessums was one of five nominees submitted by L.E.S. for appointment to the Board of Registration.

Mr. Vogt read a letter from Mr. Leroy Culbertson requesting that the L.E.S. endorse a proposal allowing engineers who are not registered to become members of N.S.P.E.

Motion by Mr. Odom, seconded by Mr. Henry, "that L.E.S. opposed the proposal to allow engineers who are not registered a membership in N.S.P.E." Motion passed.

Motion by Mr. Brown, seconded by Mr. Szabo, "that a letter be written to Mr. Culbertson stating the society's opposition to the proposal and further stating that the society will encourage its members to vote against the proposal when submitted to the membership. The Society's opposition will be stated in the next issue of the LOUISIANA ENGINEER." Motion passed.

Mr. Vogt read a letter from Dr. Frank J. Germano, head of the Dept. of Civil Engineering at L.S.U., requesting the society's support in establishing a Ph.D. program for civil engineers at L.S.U.

Motion by Mr. Hogue, seconded by Mr. Barnard "that Dr. Germano's request be referred to the Education Committee for study and recommendations to the Board of Directors." Motion carried.

Mr. Vogt stated that New Mexico was working to have the N.S.P.E. Annual meeting held in their state October 22-24, 1970.

Mr. Simmons handed out a report of those members who had resigned or died since the last meeting.

The next meeting of the Board of Directors will be held Friday, January 23, 1970 in New Orleans at 3:00 p.m. at the Hilton Inn.

LOUISIANA ENGINEERING SOCIETY

Minutes of Board of Direction Meeting

Fontainebleau Motor Hotel, October 23, 1969, New Orleans, La.

President Vogt called the meeting to order with the following board members present: C. P. Barnard, P.E.; Hoyt Brown, P.E.; H. L. Henry, P.E.; Frank M. Heroy, P.E.; T. J. Hogue, Jr., P.E.; James L. Meyer, P.E.; Lamon L. Moody, P.E.; W. E. McGough, P.E.; Leo M. Odom, P.E.; S. J. Richard, P.E.; Guy Seghers, P.E.; Charles W. Stokes, P.E.; A. J. Szabo, P.E.; and Jack Thigpen, P.E. Also present were: Farrell Adams, P.E.; Richard M. Primeaux, P.E.; R. W. Richardson, P.E., and Gerald A. Simmons, Executive Secretary.

Minutes of the Board of Direction meeting of September 20, 1969 were corrected and approved. The motion for approval was made by Mr. Hogue, seconded by Mr. Brown and passed.

Financial Report—The financial report for the month of September was given by Mr. Thigpen. Total receipts through September, year to date, were $4,919.67 and expenses of $16,663.94. A question was raised regarding the method of reporting salaries and payroll taxes. Mr. Thigpen stated that in the next financial report these items will be reported by the same method they are budgeted. Mr. Odom moved the report be accepted. The motion was seconded by Mr. Hogue and passed.

SECTION REPORTS

Professional Engineers in Education—Mr. Henry, chairman of the P.E.E. section, reported that the bylaws of the section had been revised in accordance with the recommendations of the constitution and bylaws committee. Motion by Mr. Thigpen, seconded by Mr. Brown "that the bylaws of the P.E.E. Section be accepted as presented." Motion carried.

Chairman Henry discussed the need for better communications between P.E.E. and P.E.I. so that the two sections may better coordinate the problems involving the education of engineers.

The P.E.E. Section is now in the process of polling Engineers in Education to determine their opinions on the proposal to register engineers simply as professional engineers rather than by branch. Mr. Henry will report the results of the poll to the committee on Liaison with State Board of Registration.

Professional Engineers in Government — Chairman Heroy reported the P.E.G. Section at its last meeting requested the necessary action to collect $2.00 per P.E.G. member to help defray program costs of the Section.

Mr. Odom discussed the procedure used by the P.E.P.P. Section in collecting money for its programs.

Mr. Hogue moved, seconded by Mr. Szabo, "that the P.E.G. Section be authorized to solicit $2.00 annual dues per P.E.G. member for financing programs, that the funds be deposited in the account of the L.E.S. with expenditures to be authorized by the L.E.S. Board of Directors, and further, that the details of billing be left to Mr. Thigpen and Mr. Heroy." Motion carried.

Mr. Heroy stated the P.E.G. Section is opposed to the draft of the La. Land Surveyors Association bill recommending changes to the Louisiana Registration Law for Professional Engineers and Land Surveyors.

Mr. Vogt introduced two visitors to the Board of Directors, Mr. Leroy Culbertson and Mr. Bruce Bates, both attending the NSPE S. W. Regional meeting.

Professional Engineers in Industry—Mr. Richard reported the section is still working to get eligible candidates for the NSPE Professional Development Award. Any chapter interested in submitting an entry may do so.

The P.E.I. Section is continuing to work with the P.E.E. Section to study educational needs of engineers preparing for employment in industry.

Professional Engineers in Private Practice — Chairman Lamon Moody, stated he had no formal report for the section at this time, but was prepared to discuss the items on the board agenda dealing with engineers in private practice.

Policy Statement—After proper notification to the Board of Directors, according to the Constitution, a motion was made by Mr. Moody, seconded by Mr. Szabo, "that the following statement be included along with other L.E.S. policy statements:

Since an engineering faculty member is a part of the engineering profession, and since his teaching duties, as in any other profession, are performed effectively only when his training and education are adequately supported by experience; the Louisiana Engineering Society encourages the participation of engineering faculty members in some applied outside engineering work.

The engineering teacher has a responsibility to his profession and to his school to see that his outside work conforms to established canons of practice. The following conditions form the basis for this Louisiana Engineering Society policy:

1. The quantity of outside work should be such as not to interfere with proper teaching.
2. The school administration should be kept apprised of all work done during the school year.
3. The salaries for personnel employed on engineering work by an engineering faculty member should be in accordance with those doing similar work in the area of employment.
4. The fees for this work should be in accordance with the schedule of fees recommended in the Manual of Practice as published by the Louisiana Engineering Society and the Consulting Engineers Council of Louisiana.

Motion passed.

RESOLUTIONS

Individual Sewage Disposal Facilities—Motion by Mr. Moody, seconded by Mr. Szabo, "that the following resolution be adopted:

WHEREAS, the Louisiana State Board of Health adopted a resolution on Individual Sewage Disposal Facilities at their regular meeting on July 28th, 1967 making it incumbent upon all State Officials to make every effort to prevent the use of individual sewage disposal facilities, and the Board has approved code revisions which remove or modify all references to septic tanks and individual secondary treatment facilities, and,

WHEREAS, the State Board of Health has adopted administrative procedure on the basis that septic tanks and individual secondary treatment facilities are non-functional in the State of Louisiana in residential or commercial applications, and,

WHEREAS, this policy makes no provision that septic tanks and individual secondary treatment facilities are functional when properly maintained by the Owner, and,

WHEREAS, the rigid administration of this policy works a hardship and places undue financial burden on the citizens of the State of Louisiana, and,

WHEREAS, the Board of Direction of the Louisiana Engineering Society, representing two thousand three hundred (2,300) members, unanimously opposes the rigid administration of this policy that prohibits the utilization of septic tanks and individual secondary treatment facilities when designed by a Civil Engineer, licensed by the State of Louisiana, and thereby charged with the responsibility to do so, and, who supervises the construction of these systems, now,

THEREFORE BE IT RESOLVED, that the Board of Direction of the Louisiana Engineering Society prays that the Louisiana State Board of Health will instruct all state health officials to approve plans, specifications and construction of septic tanks and individual secondary treatment facilities when performed by and under the supervision of a Civil Engineer who is licensed by the State of Louisiana.

No action was taken on the motion and it was agreed the resolution would be considered at the next Board meeting.

Airport Assistance Act for Continuing Capital Improvements for Airports—Motion by Mr. Moody, seconded by Mr. Szabo, "that the following resolution be adopted":

WHEREAS, air travel is a vital mode of public transportation intra-state, inter-state and inter-nationally, and,

WHEREAS, most airport facilities are antiquated and therefore unable to accommodate the size and speed of aircraft presently serving the public, and air traffic controls and safety devices and baggage facilities require modernization in most airports, and,

WHEREAS, the Board of Direction of the Louisiana Engineering Society, representing two thousand three hundred (2,300) members unanimously agrees that their is a dire need for financial assistance for modernizing airport facilities in the State of Louisiana, now,

THEREFORE BE IT RESOLVED, that the Board of Direction of the Louisiana Engineering Society hereby proposes that the Congress of the United States adopt an Airport Assistance Act for Continuing Capital Improvements for Airports and that the Louisiana Congressional Delegation be asked to initiate such Act.

Motion passed.

Federal Tax Treatment of State and Municipal Bonds—Motion by Mr. Moody, seconded by Mr. Szabo, "that the following resolution be adopted":

WHEREAS, present Federal Law provides that interest on obligations of state and local governments generally is exempt from federal income tax, and have been exempt since the inception of the Federal Income Tax in 1913, and,

WHEREAS, state and local governments depend upon this tax free status on interest from bonds to secure purchasers of these securities, and,

WHEREAS, proceeds from these securities are utilized by state and local governments to engineer and construct capital improvement projects for the betterment of their citizenry, and,

WHEREAS, U. S. House of Representatives Bill No. 13270 would remove the tax exempt status of these State and Municipal Bonds, and ultimately extinguish this source of finance from the state and local governments of Louisiana, and,

WHEREAS, the Board of Direction of the Louisiana Engineering Society, representing two thousand three hundred (2,300) members unanimously agrees that enactment of such legislation would be detrimental to the state and local governments of Louisiana, now,

THEREFORE BE IT RESOLVED, that the Board of Direction of the Louisiana Engineering Society hereby goes on record as opposing H. R. 13270 and that the Louisiana Congressional Delegation be informed of such opposition.

Motion passed.

Nominees submitted for appointment to State Board of Registration—Mr. Vogt read a report from Mr. Janssen, Chairman of the Liaison Committee, suggesting the following names of engineers be submitted to the Governor as nominees for appointment to the State Board of Registration for Professoinal Engineers and Land Surveyors to fill the vacancy created by the expired term of Mr. Roy Sessums:

Mr. Roy T. Sessums — Mr. John F. Vogt, Jr.
Mr. Richard M See — Mr. Charles Stokes
Mr. Farrell W. Adams

Motion by Mr. Hogue, seconded by Mr. Heroy, "that the above mentioned engineers be submitted as nominees." Motion carried.

Report of L.E.S. Spring Convention Committee—Mr. Hogue, chairman of the L.E.S. Spring Convention Committee reported a number of hotels had been contacted relative to the possibility of housing the L.E.S. Spring Convention. He stated the Monteleone wanted the convention and the facilities seemed adequate.

Motion by Mr. Hogue, seconded by Mr. Barnard, "that the L.E.S. Spring Convention be held April 30-May 1, 1970 at the Monteleone Hotel provided the hotel stipulates in writing that the facilities requested by the committee will be provided." Motion carried.

Society Emblem, Jewelry and Banner—Mr. Adams, chairman of the committee to select a society emblem, banner and jewelry, reported the committee suggested a contest be held among the society members to design a new lapel emblem. The committee requested that the announcement of the contest be in the next issue of the LOUISIANA ENGINEER.

Motion by Mr. Odom, seconded by Mr. Hogue, "that the L.E.S. have a contest among its members to design an emblem to be used by the Society and the winner be given a year's free dues in the Society." Motion carried.

Motion by Mr. Szabo, seconded by Mr. Hogue, "that we continue to use the stationery design with the traditional L.E.S. Emblem (the circle with L.E.S., 1898 in the center) until the new emblem is selected." Motion carried.

Letter to Louisiana Legislators—Mr. Vogt read a letter drafted by the deans of the engineering schools of Louisiana that they propose be mailed on L.E.S. stationery to the senators and representatives of the Louisiana Legislature before the next regular session. The letter asked the support of the legislature to prevent the introduction of legislation that would be detrimental to the profession of engineering and to the public welfare.

Motion by Mr. Brown, seconded by Mr. Moody, "that the letter from the deans be mailed with the endorsement of the president of L.E.S." Motion carried.

Higher Education Study—Mr. Vogt intoduced Dr. Richardson, Dean of the College of Engineering at L.S.U. Dean Richardson discussed the need for studying long range needs of higher education in Louisiana. He stated the engineering profession needs to concern itself with the direction of higher education as it pertains to engineering in particular. The committee on Higher Education recently established by the legislature is beginning to organize. Mr. Vogt stated that Dr. Sliger, chairman of the committee on Higher Education, had been contacted by L.E.S. and that the society would work with the committee where needed. Dean Richardson stated Louisiana should consider outside advice by professionals in determining the needs for future education of engineers.

Mr. Szabo suggested the society meet with the deans of the colleges of engineering to get their ideas.

Mr. Brown reminded the Board that the problems involved with higher education in Louisiana were now under discussion by the L.E.S. Education Committee.

Motion by Mr. Hogue, seconded by Mr. Moody, "that the Ad Hoc Committee with Mr. Brown, chairman of the Education Committee, as chairman be appointed to locate and recommend to the Board an unbiased committee of educators recognized in the field of engineering education to come into Louisiana, study and recommend appropriate action as to the future needs of engineering education. This Ad Hoc Committee will study cost of such a survey and report back to the Board of Direction before action is taken." Motion carried.

Committee Studying Changes in Registration Law as it pertains to Land Surveyors—Mr. Moody reported that the five organizations appointed to the composite committee have held three meetings and are in the process of developing a report to the respective organizations represented on the committee. Each organization will review the proposed changes and recommend changes, concur or object to the report, then a final decision will be made.

Manual of Practice—Mr. Moody, PEPP Chairman, reported the following: The PEPP "Manual of Professional Practice" committee, consisting of Albert J. Mayers, Chairman, Edward M. Jolly, Fred C. Culpepper, Howard L'Hereux, A. J. Szabo, Raoul Levy, Art Meyer and Lamon Moody, unanimously recommended adoption of the "Manual" as amended.

The Executive Committee of PEPP accepted the Committee recommendation; and unanimously recommends to the L.E.S. Board of Direction the adoption of the "Manual" as amended.

Mr. Moody stated the committee is encouraging all engineers in private practice to use the manual as a guide in their business.

Motion by Mr. Moody, seconded by Mr. Myers, "that the Manual of Practice for Professional Engineers in Private Practice be amended to date be adopted and further that copies of the manual be mailed to the members of the Board of Directors."

Substitute motion by Mr. McGough, seconded by Mr. Stokes, "that the members of the Board of Direction review changes in the Manual." Motion defeated.

Question was called for on the original motion—Motion carried.

Membership Report—Mr. Grundmann, chairman of the membership committee, reported the following contest standings as of October 23, 1969:

Position	Chapter	Quota	Applications	% Quota
1	Bayou	4	4	100.000
2	Alexandria	13	5	38.462
3	Shreveport	21	7	33.333
4	Monroe	15	3	20.000
5	New Orleans	79	14	17.722
6	Lake Charles	13	2	15.385
7	Baton Rouge	56	8	14.286
8	Lafayette	16	2	12.500
	Totals	217	45	20.737

Mr. Grundmann encouraged chapter presidents to stress the lack of action on the part of membership committees and asked for a concentrated effort in this area during the coming month.

Mr. Simmons reported the following resignations: Ned Dufour, Baton Rouge; Eugene S. Rose, New Orleans; Raoul LeRoux, Baton Rouge; Bernard A. Maristany, Baton Rouge; and Robert L. Huck, Baton Rouge.

The Board accepted the reinstatement of Mr. E. J. French.

The next meeting of the Board of Direction will be held Friday, December 12, 1969, in Baton Rouge. The meeting was adjourned.

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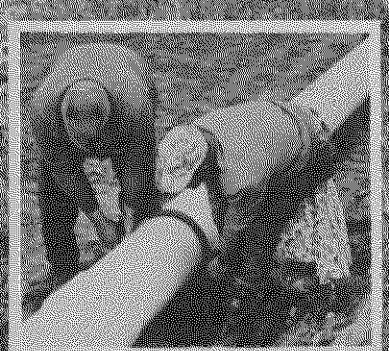
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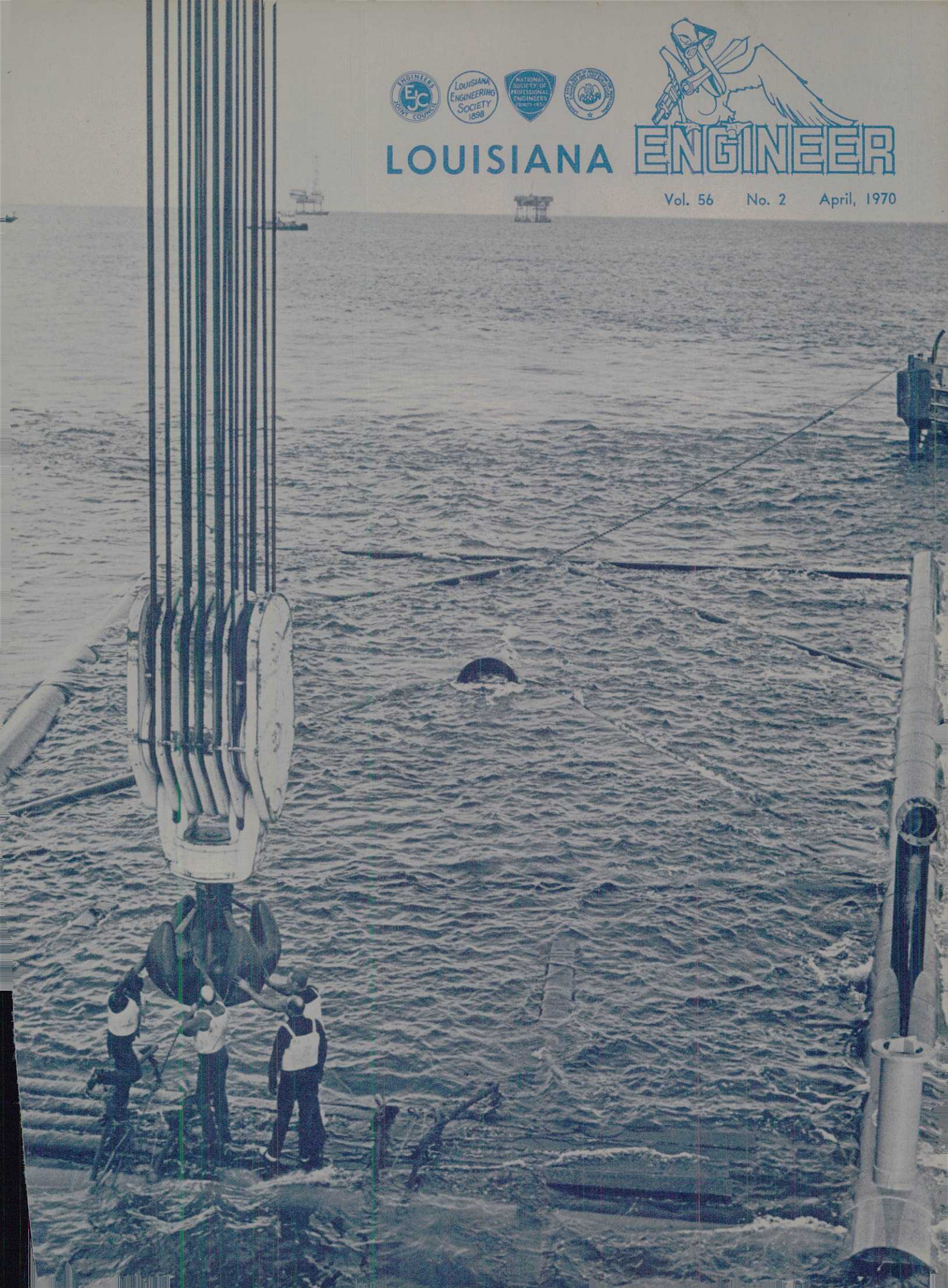
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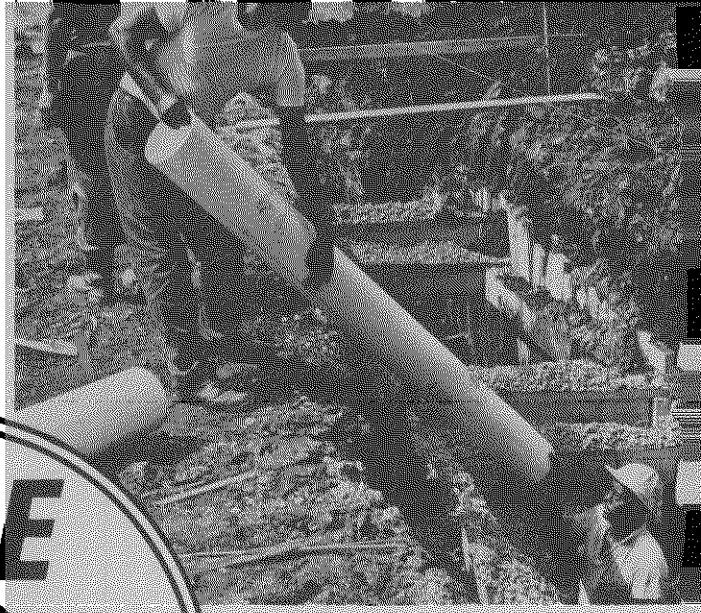




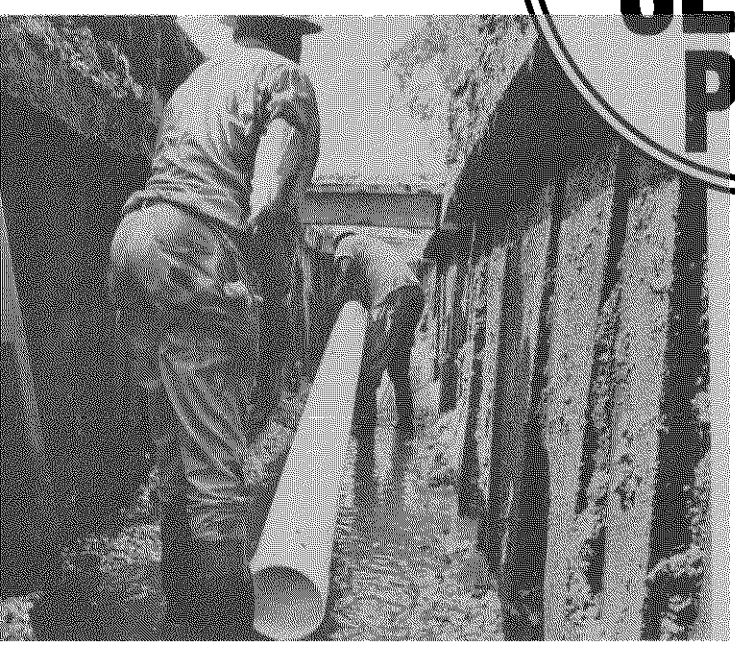
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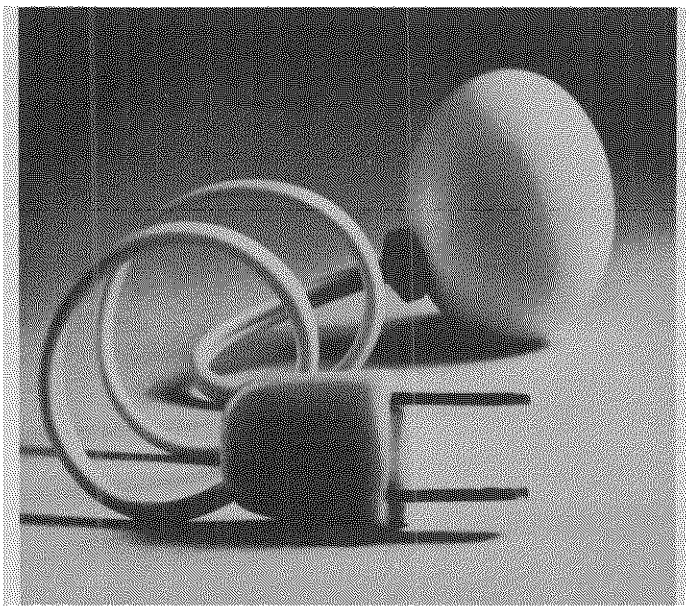
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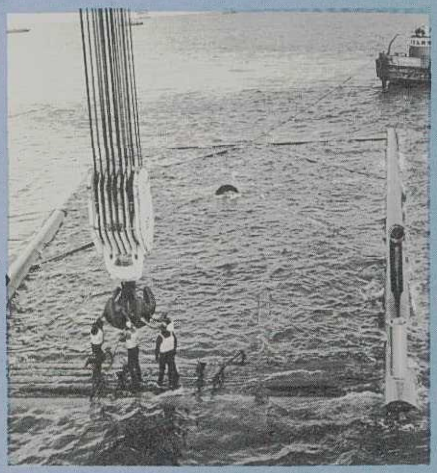
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COVER

Position measurement, or offshore surveying, has a vital role in the recovery of our undersea resources for the welfare of mankind. Our cover this month shows the importance of offshore surveying in setting a production jacket in the Gulf of Mexico. The full story begins on page 12.

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PRESIDENTIAL PRIVILEGE

LES President John F. Vogt, Jr.



It's convention time in New Orleans!

The annual opportunity for us to develop the image of the Louisiana Engineering Society again presents itself at the Spring Convention scheduled to begin on April 29th at the Monteleone Hotel.

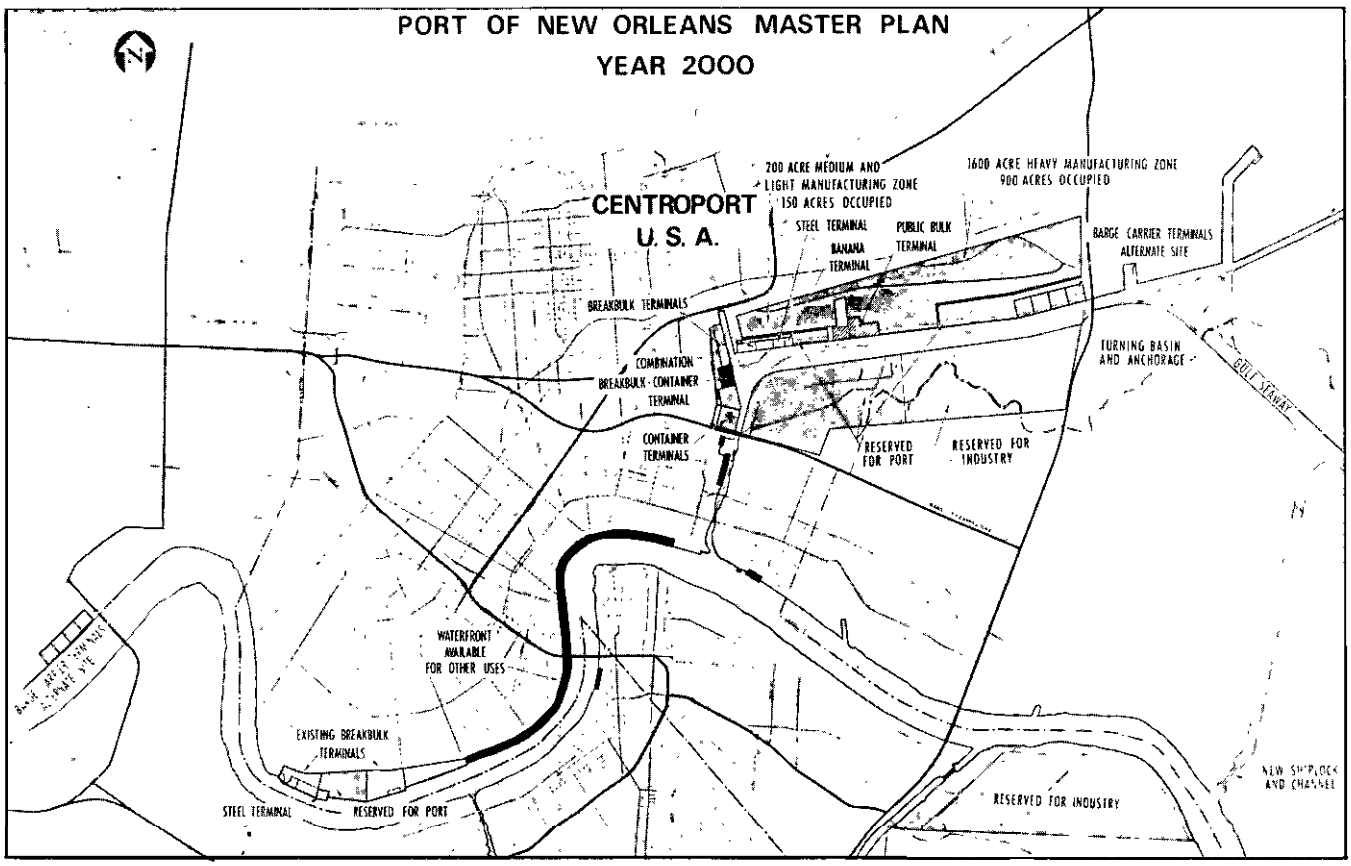
This year the meeting format will be basically the same as in other years. We are indeed pleased that the members of the Mississippi Engineering Society will participate in the Convention.

The wholehearted support, attendance and active help in promoting this program by the entire Louisiana membership, not just a small segment of it, is mandatory if we are to achieve the high degree of success intended.

Your particular attention is focused on two items of special importance. On Thursday afternoon a general Society meeting will be held to present the opportunity to all members of becoming acquainted with the vital projects that have been initiated this year; and on Friday afternoon a special session is scheduled for the purpose of discussing three petitions proposing changes in the constitution of the Society related to annual dues, forfeiture of membership, and selection of the nominating committee.

Let us all recognize the importance of our individual role as a professional engineer and make both our presence and ideas felt at the Convention.

New Orleans Centroport





WILLIAM H. LEWIS, Associate Port Director, Board of Commissioners of the Port of New Orleans

NEW ORLEANS CENTROPORT U.S.A.

New Orleans, because of its location and water orientation, compares with Rotterdam as one of the great ports of the world. It is the hub of a giant waterway system and is endowed by a gigantic inland transportation network which has no equal. The port is the center of Louisiana commerce, industry and agriculture and the gateway to the world for two-thirds of the United States. The Port of New Orleans is a prime contributor to the economy of Louisiana.

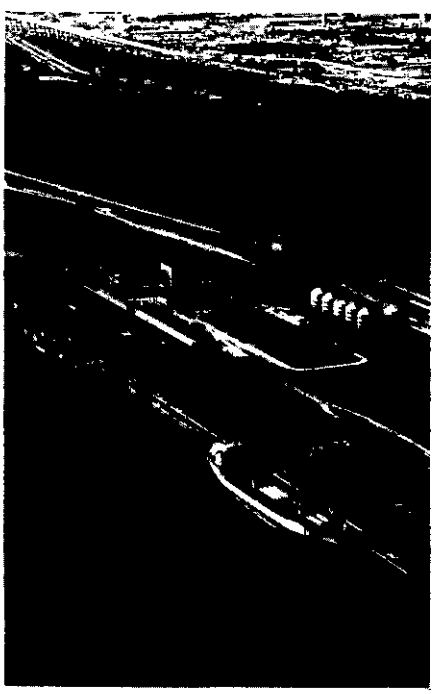
Existing public port facilities extend along the waterfront of the Mississippi River, the Inner Harbor-Navigation Canal and the Mississippi River-Gulf Outlet, having a total frontage of over 54,500 lineal feet with an area of 10,850,000 square feet. These facilities include extensive general purpose terminals for the handling of high-valued cargo moving in foreign trade and also include the specialized facilities of the Public Grain Elevator, Public Commodity Warehouse, Foreign Trade Zone No. 2 and Public Bulk Terminal. Cargo handled over the public facilities of the port in the last year amounted to over 19 million tons valued at $2.626 billion.

In spite of its present size and volume of shipping activities, the Port of New Orleans, as well as other world ports, is faced with the dual challenges of new concepts in transportation technologies and aging port facilities. Many of the general cargo terminals are old and deteriorated. Others are obsolete and unsuited for modern trends in shipping. These factors, together with the national growth of trade, call for modernization, expansion and new development.

Evolving technology has revolutionized the transportation industry. Containerships, barge carrier ships (such as LASH and SEABEE), unit trains, growing use of truck delivery, new techniques for consolidating and handling cargo, and the need for effective integration of intermodal systems seriously challenge the ability of the port to function effectively. Existing wharves can meet these needs only temporarily and to a limited extent.

New types of terminals must be designed and built to realize the full potential of new cargo handling, shipping and transportation technologies. For exam-

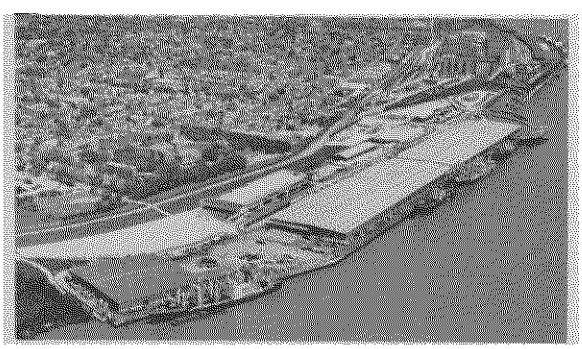
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Public bulk terminal scheduled for expansion under plans for CENTROPORT U.S.A. (Photo by Sam Sutton)

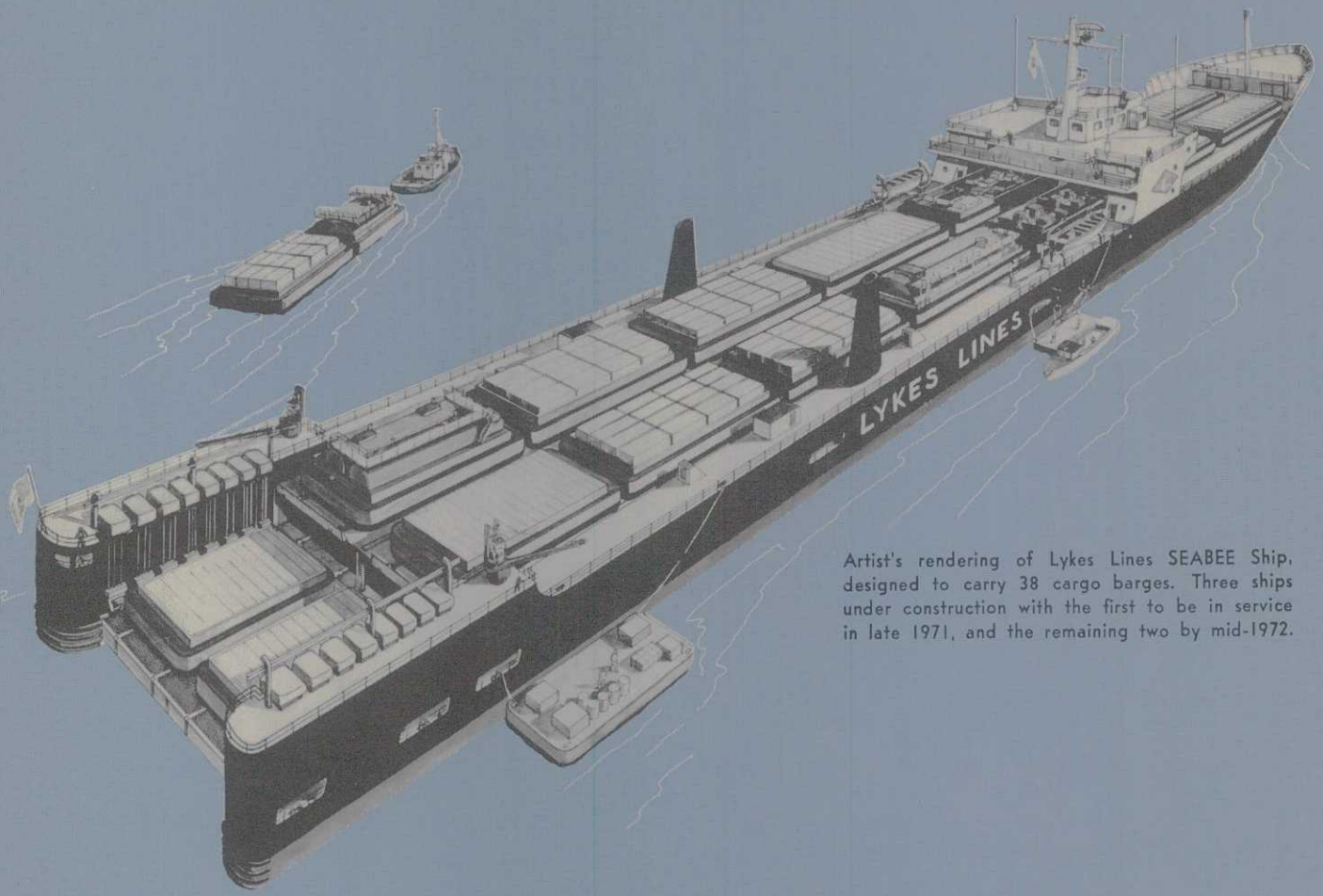


M/V Acadia Forest first LASH (Lighter-Aboard Ship) vessel in service, departing The Port of New Orleans loaded with full complement of 73 cargo barges.

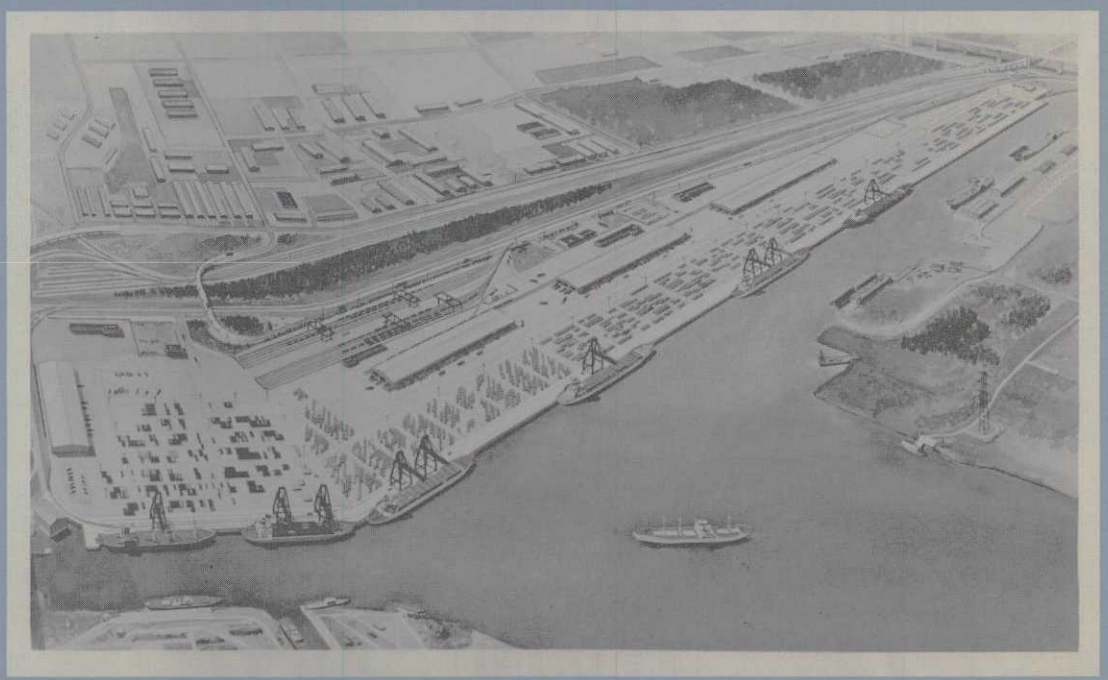


Henry Clay - Nashville Avenue wharf complex. Public grain elevator and public commodity warehouse in upper right background. (Photo by Sam R. Sutton)

Centroport (Continued)



Artist's rendering of Lykes Lines SEABEE Ship, designed to carry 38 cargo barges. Three ships under construction with the first to be in service in late 1971, and the remaining two by mid-1972.



Artist's rendering of France Road Terminal when fully developed.

ple, a container terminal requires special facilities to lift, move and marshall containers as well as consolidate and distribute cargo within containers. Terminals for barge carriers will also be unique, requiring the capability to load and unload fleets of barges rapidly. Both types of terminals require extensive backland areas and excellent highway and railway access.

Rotterdam of Gulf

To meet these challenges the Port of New Orleans has developed a comprehensive master plan for the long-range phased development of the port based upon critical evaluation and analysis of projected needs. The plan involves the creation of CENTROPORT, U.S.A., that will combine port and industrial activities in the area along the Mississippi River-Gulf Outlet in a $395 million investment to make New Orleans the "Rotterdam of the Gulf Coast."

The approved port facility program calls for expenditures in the next four years of $60 million, over one-half of which is required for construction of new container terminals and construction of terminal facilities for barge carrier vessels. Other funds are scheduled for limited rehabilitation of existing general cargo wharves, for the expansion of bulk handling facilities and for construction of terminals to handle other specialized cargoes.

Funds in the amount of $30.8 million were authorized in the 1969 Session of the State Legislature for this program. These funds are being applied to initial construction of containership facilities in the France Road area on the Inner Harbor-Navigation Canal, for structural rehabilitation of several riverfront wharves and for expansion of storage facilities at the Public Bulk Terminal.

An on-going program of port development and transformation will require the additional expenditure of approximately $15 million per year. A critical need exists for additional capital funds to initiate construction of a barge carrier terminal. Seven barge-carrying ships will be in service in the Port of New Orleans by 1972 This factor and the tremendous growth projected for barge carrier cargo requires that these terminals be constructed with all possible speed.

An intensive, in-depth study of trends in world trade and attributes of the Port of New Orleans reveals that if new facilities are provided in a timely manner the tonnage of general cargo on foreign trade handled over the public wharves should increase to a level of 14.3 million tons per year in the next 30 years, or earlier. At that time the amount of general cargo handled in containers alone will be over five million tons per year, approaching the total through-put of general cargo experienced by the port today.

The amount of cargo handled by barge-carrying vessels such as LASH and SEABEE will eventually exceed the growth in containerized cargo. Within a 30-year period over five million tons of general cargo per year will be handled over the public wharves for the giant barge-carrying ships, with additional barges from the ships passing through the port with cargo to inland terminals.

Conventional freighters will still account for much of the trade between New Orleans and Africa, parts of Asia and South and Central America. However, their share of the total cargo will begin to decrease as soon as new facilities are available at New Orleans to serve containerships and barge carriers. By 1980 the amount of breakbulk cargo carried annually by conventional freighters will have decreased to a level of about four million tons per year.

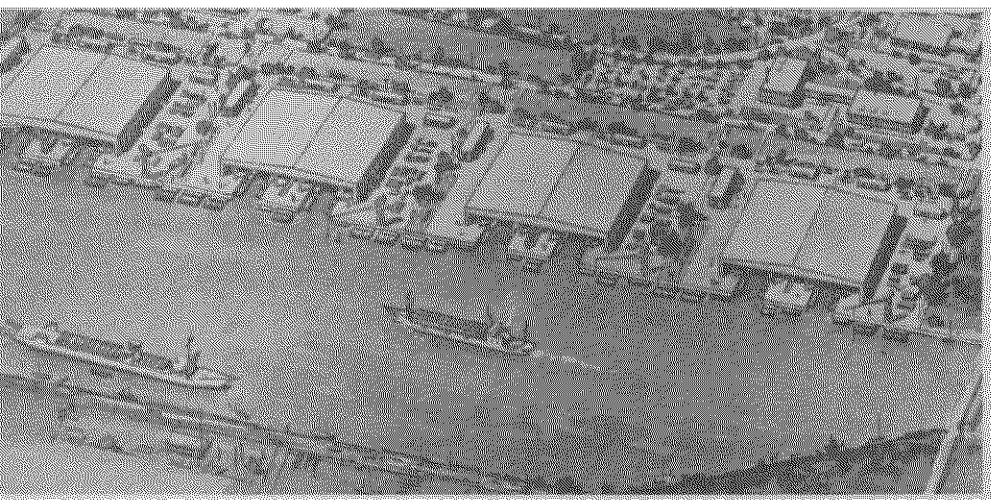
Terminal Nearing Maturity

The amount of export and import cargo handled at the Public Bulk Terminal has increased to one and one-half million tons since the terminal began operations in the early 1960's. It is expected that the bulk terminal will reach full maturity by 1980, handling at that time over five million tons of cargo per year. This growth will continue as a result of a natural increase of trade and expansion of port-related industry, and by the year 2000 over 11 million tons of dry bulk cargo will be handled at the terminal annually.

The marriage of port and industry is recognized as being extremely beneficial to both partners. The port serves industry with an extensive transportation complex, while industry provides the port with captive cargo and provides revenue for use of port owned land. Evaluation of candidate industries indicates a high potential industrial development in the port area with extensive benefits to the economy of this region.

With a vigorously promoted and adequately financed industrial development program, it is projected that by the year 2000 more than 1,000 acres of land in the new port area will be occupied and fully utilized by port-related industry. This will represent 15,000 jobs, an annual payroll of $120 million and a total investment by industry of over $400 million. An additional 20,000 jobs will be created to service and support this direct employment. Indirect benefits will accrue to the region and State in the form of increased tax revenue and in reduced welfare and other social costs.

The long-range solution to the problems of obsolescence, new transportation technologies, future growth in traffic and in-



Artist's rendering of proposed barge carrier terminal, showing covered bargeways for cargo handling.

dustrial build-up requires that the new CENTROPORT be created away from the congested riverfront. Several thousand acres of land and 20,000 feet of waterfront are required to accommodate the full complement of port facilities and the associated industrial development which is projected for the future.

In addition, these areas must be well situated with regard to the regional transportation network to permit free flow of cargo to, from and within the port. The comprehensive master plan shows the recommended location, size and configuration of port facilities, industrial tracts and area to be reserved. Areas which may be released along the riverfront for other uses are identified.

The Mississippi River-Gulf Outlet provides a shorter and more direct route to the sea, and also provides the areas needed for expansion with the means of good highway and railway access. The move will be gradual, accomplished over the next 30 years, and will free areas of riverfront land which may be used for residential, commercial and recreational purposes. This move also will provide relief of congested traffic conditions within the built-up metropolitan areas.

Wharves to Be Retired

The retirement of some 29 existing aged and obsolete wharves is spaced over the 30-year period of the plan, and will proceed in accordance with the age, condition and use of the wharves at the time of retirement. It is forseen that by the year 2000 only the Henry Clay, Nashville Avenue and Napoleon Avenue wharves will be still active on the riverfront.

The accompanying illustration shows the new port as it will look in the year 2000. This shows the basic outline of the Port's long-range master plan — the movement away from the congested riverfront and its transformation into CENTROPORT U.S.A., a concentrated, highly efficient port installation in the core of a large industrial development which is an essential part of the Port.

Total cost of the project over the next 30 years will be $395 million, at the present value of the dollar. Of this $223.6 million will be for port facilities, $99.4 million for industrial development and $72.0 million for other purposes. A breakdown of the investment in new facilities is shown here.

The Port's participation in industrial development will be devoted primarily in preparing land for industrial use during early phases of the plan, with some financing of improvements for tenants. Other required areas for Port investment include land acquisition, rehabilitation and modification of existing facilities and participation in port related Government projects.

Throughout its history the Port of New Orleans has met and resolved the challenges of change and growth. Endowed by its vast waterways and transportation network, a highly productive labor force and the dedication of its people, the Port is in a singularly favorable position to meet the challenges of today.

The key elements in realization of the Port's potential are timely planning of appropriate facilities and the provision of sufficient funds for required new construction and development. Stimulating each other to greater activity, port and industry will bring new employment and a greater prosperity to the metropolitan area and the State with a monetary return exceeding by many times the cost of the undertaking. ■

SUMMARY OF INVESTMENT IN NEW PORT FACILITIES

(Total of 30-Year Investment in Millions of Dollars)

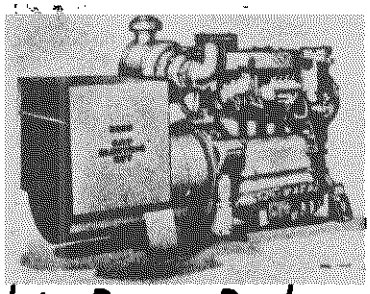
Container Terminals	Barge Carrier Terminals	Combination Container-Breakbulk Terminals	Breakbulk Terminals	Public Bulk Terminal	Special Purpose Terminals
46.8	74.4	14.5	46.0	26.4	15.5

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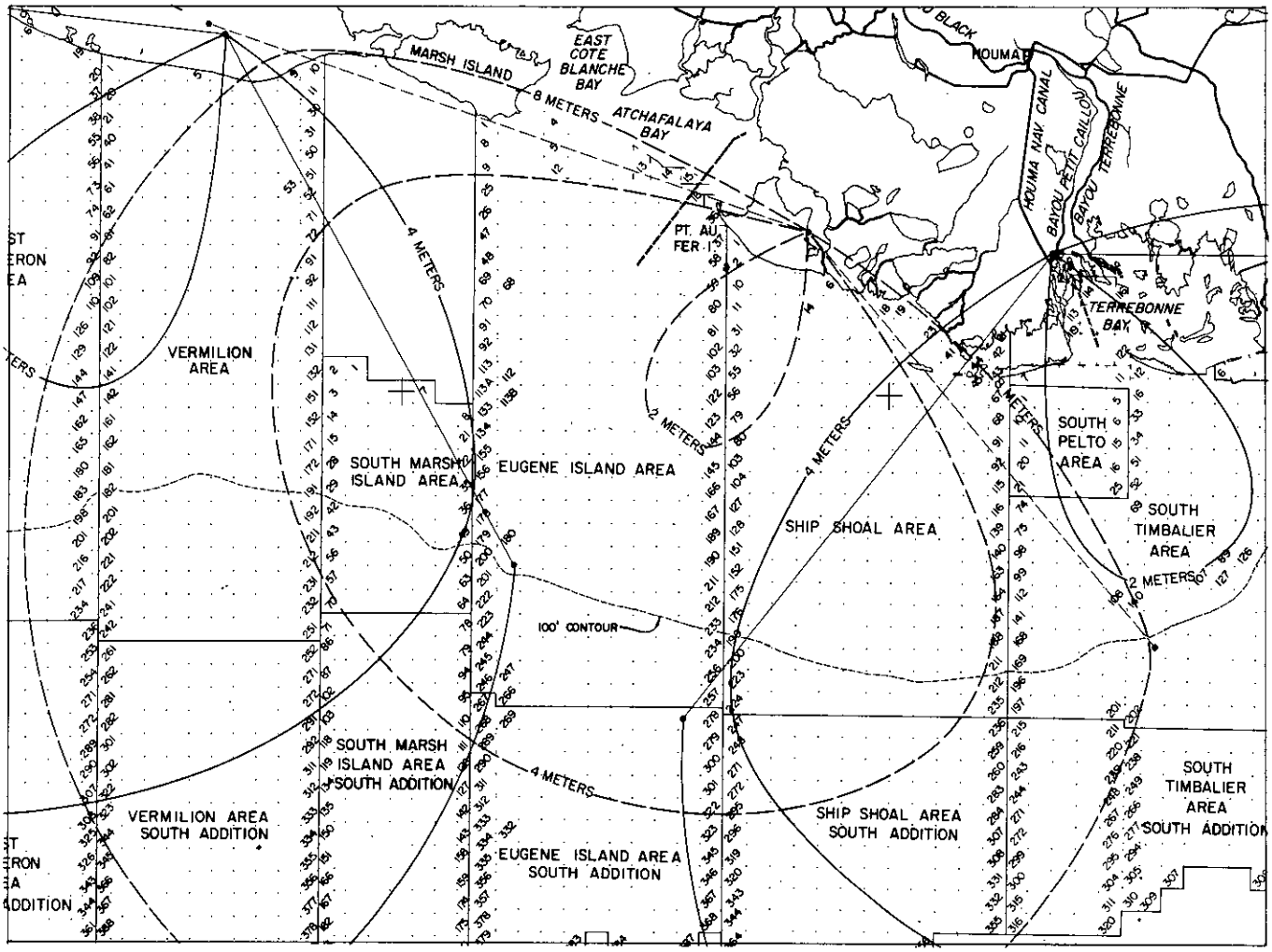
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Offshore Surveying



Accuracy chart for one type of survey system.

Industrial activity in the development of our offshore subbottom resources has taken much abuse in the press lately. Charges of corporate irresponsibility have been lodged against American petroleum enterprises by a variety of complainants, including government officials, as well as some of our easily stirred youth using their stereotype expression of card burning (this time it was credit cards). The dignity with which our industrial giants have suffered their public scourge in relative silence makes one want to hear a clearer presentation of the economic and moral facts if only to satisfy one's sense of justice.

But that conflict must await another article. It is mentioned here because of its influence in focusing the public mind on the need for cooperation and coordination between government, science and industry in the recovery of our undersea resources for the welfare of mankind.

Position measurement, or offshore surveying, has a vital role in this activity. Government, science and industry each have growing needs in their respective functions of control, research and development. The demands they make will, in turn, shape and expand the future capabilities of the offshore surveyor. If he is to meet their challenge he will be in line for significant changes in the scope of his operations.

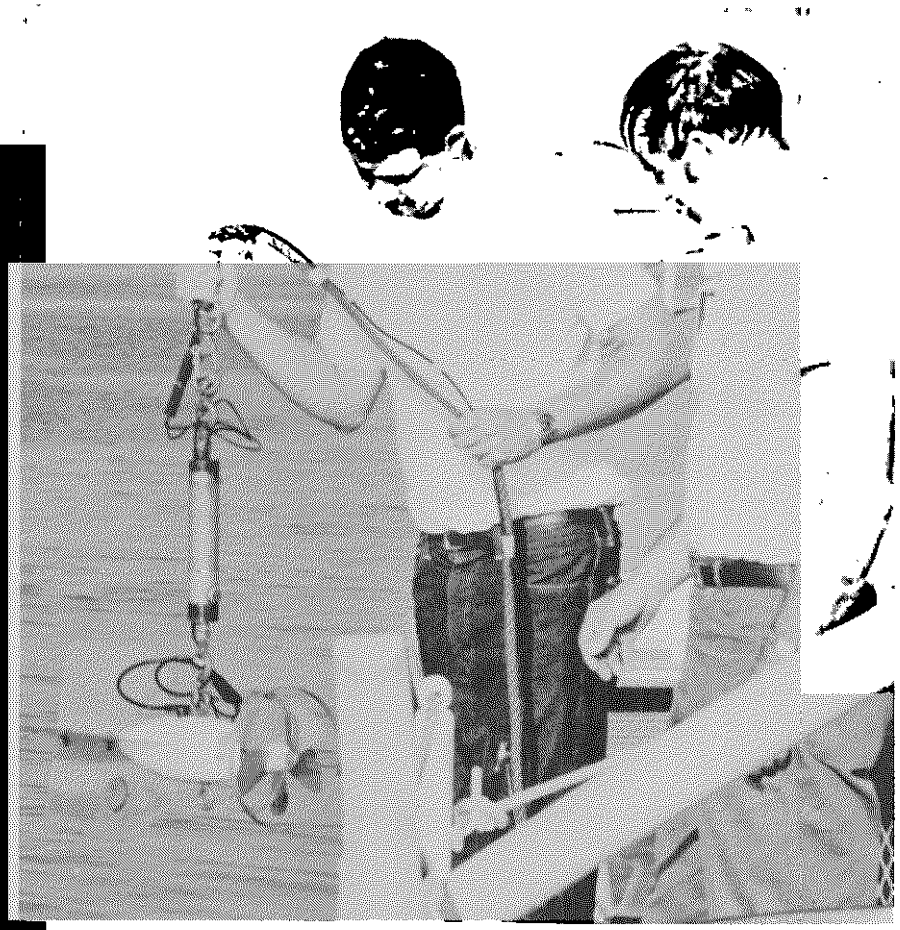
Science has borne well the burden of discovering our ocean resources and providing the basic research for their recovery. Scientific work also includes studies on maintenance of ecological balance so that mankind may convert some resources to good use without destroying others. During these studies much data are accumulated to help scientists define both natural and unnatural changes in the ocean environment. Measurements such as depth, water temperature, salinity, temperature gradients, current velocity and direction, bottom consistency, are included. Much of this data is meaningless without knowledge of the geographical position at which the data are taken. By getting repeated data samples at the same positions, scientists learn a great deal about the ocean environment.

Their conclusions provide the basis for regulations and design criteria which help preserve ocean ecology. Many benefits have been and will be derived from this work.

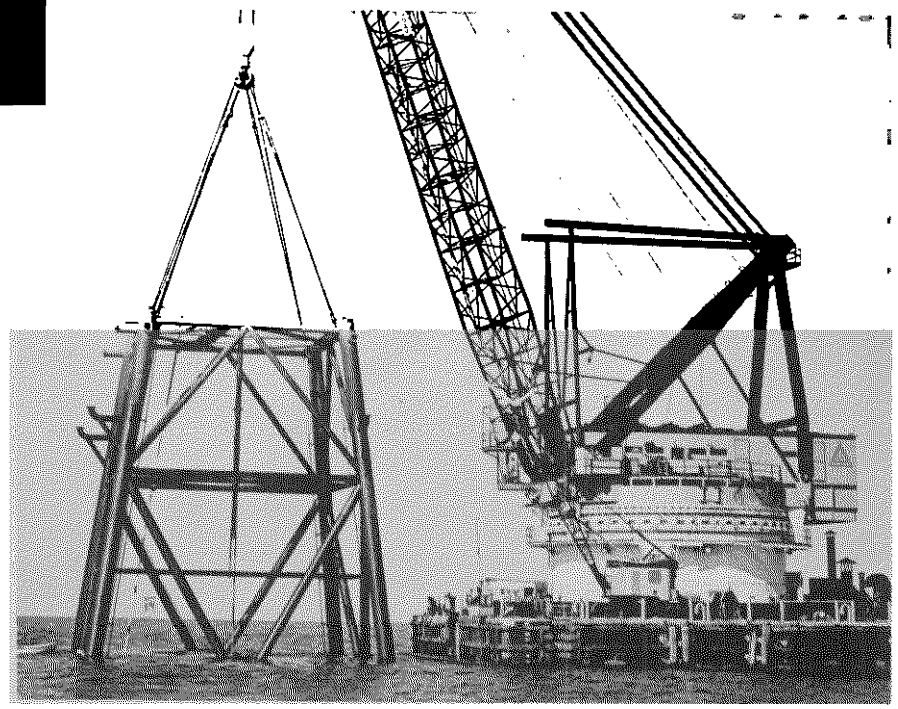
The supervision and regulation of the discovery and exploration of ocean resources are primarily the responsibility of the Federal government. The results of industrial activity and scientific study carried on by private concerns help the government agencies form constructive legislation which should allow for the orderly recovery and use of our resources. Leases for subbottom mineral deposits are defined by geographical coordinates established by Federal and state agencies.

The shipping lanes serving navigation to and from our world markets must be excavated and maintained to project depths and clear obstacles. Government regulations restrict the building of offshore structures in the shipping lanes, and in coastal areas government dredging activities keep the channels open for ocean-going traffic. Proper positioning of the dredges during the performance of their work is a major activity of the offshore surveyor.

Accurate positioning is often critical to ensure the efficient use of industrial capital for building and maintaining profitable recovery facilities offshore. Oil and gas wells, for example, are always drilled in specific geological formations. Their positions must be known so that the drilling rigs can be set up over them. These formations are discovered and their positions recorded during seismographic exploration surveys. Each pipeline laid on the ocean floor must follow its prescribed right-of-way granted by government permit. The position of the pipeline must be recorded so that it can be relocated for tie-in of



Coastal Studies Institute scientists, above, are shown making current velocity measurements in the Gulf of Mexico. Photo courtesy of Coastal Studies Institute. Below, a production jacket is accurately placed in position.

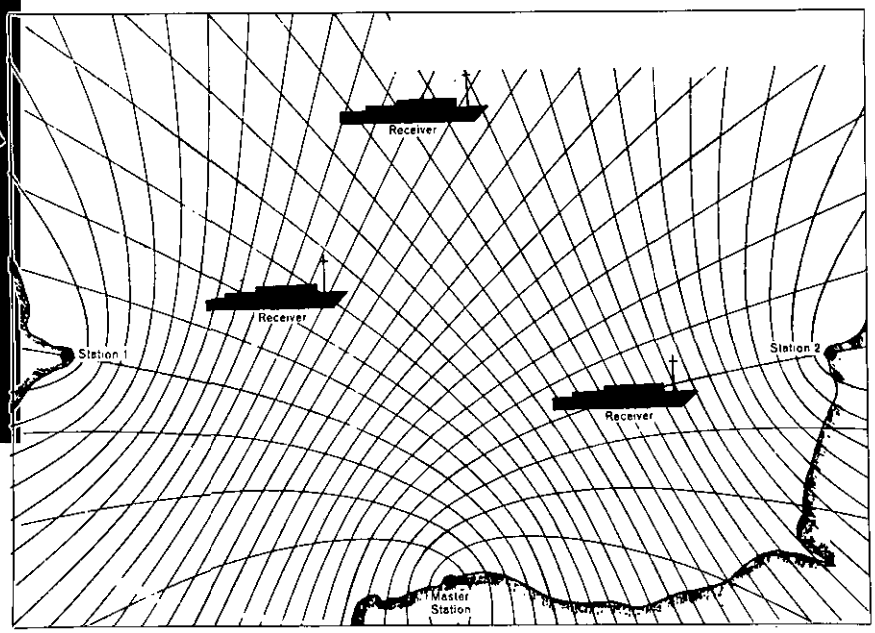


future lines and for maintenance and leakage repair projects which may be necessary to avoid pollution in the future. Virtually every industry operating offshore is position oriented with varying accuracy requirements. As industrial expansion in offshore areas continues, the needs for accuracy and responsibility increase and the offshore surveyor is expected to provide them.

The emerging new field of offshore surveying is providing most of the technology for accurate position measurement. The words "emerging" and "new" are used advisedly. The field is still in its infancy compared to the contribution that can and must be made. Charting of the seas has been necessary ever since the first sailor dared venture beyond sight of land. But position measurement within accuracy standards customarily assumed on land has been attempted offshore only during the past 25 years.

Surveyors who work offshore find that their versatility is limited by high capital investment requirements in equipment and personnel. The fact that there is a large variety of equipment available to the offshore surveyor only serves to increase his dilemma. The high cost of equipment and training of personnel forces most offshore surveying firms to confine their scopes to familiarity with one or two equipment choices. The attendant operational limitations inherent in the equipment restricts the activity and scope of the surveyor's operation.

The proven techniques of triangulation and trilateration using the theodolite and transit can produce quality results in open water when used with care and precision by experts. But these instruments are limited in open water survey application because they must be operated on line-of-sight. Objects or locations beyond the horizon are out of their range. Even those newer microwave electronic instruments, whose high frequency transmission signals do not follow the earth's curvature, suffer this range restriction. Of course, optical instruments are further limited by fog or haze which is frequently present at sea.



Hyperbolic patterns. Master and both slaves at fixed points ashore.

The surveyor must look toward new technological developments to meet the range, accuracy and flexibility requirements and cost considerations of his clients. He must be prepared to study the full array of position measuring devices and have a working knowledge of their operations and limitations.

Among the newer space age developments is the satellite positioning system. Much like celestial navigation, this system makes use of man-made orbiting satellites traveling along computed pathways. It is possible with the use of satellites to determine the position of vessels with accuracies of up to 150 feet. One such system including the digital computer and attendant Doppler sonar costs over one-quarter million dollars (excluding the satellite of course). Its high cost and low accuracy reduce its appeal among the various survey methods available.

Some promising techniques were developed during World War II for use in military navigation systems. Expensive commercial units have since become available for purchase or lease and are being used with success today. They are low frequency systems whose signals follow the curvature of the earth thus allowing longer ranges. Through the use of semi-permanent shore-based transmitting stations an electronic grid pattern is established over a wide work area. The separation distance between land stations affects the size of the work area in direct proportion and inversely influences accuracy contours. A good compromise on range and accuracy for systems of this type is in the order of 200 miles of range and an accuracy of eight meters. The accuracy increases to within two meters closer to shore.

Large Investment Required

The offshore surveyor seems inescapably destined to assume a new look if he is to provide the full range of services re-

quired by users. In a field not noted for its sources of capital, the offshore surveyor faces large investments for equipment before he can open for business. The data used in the electronic systems are generally not in engineering language and must be processed by a computer. Data reduction programs and access to a central processing unit are additional investment items.

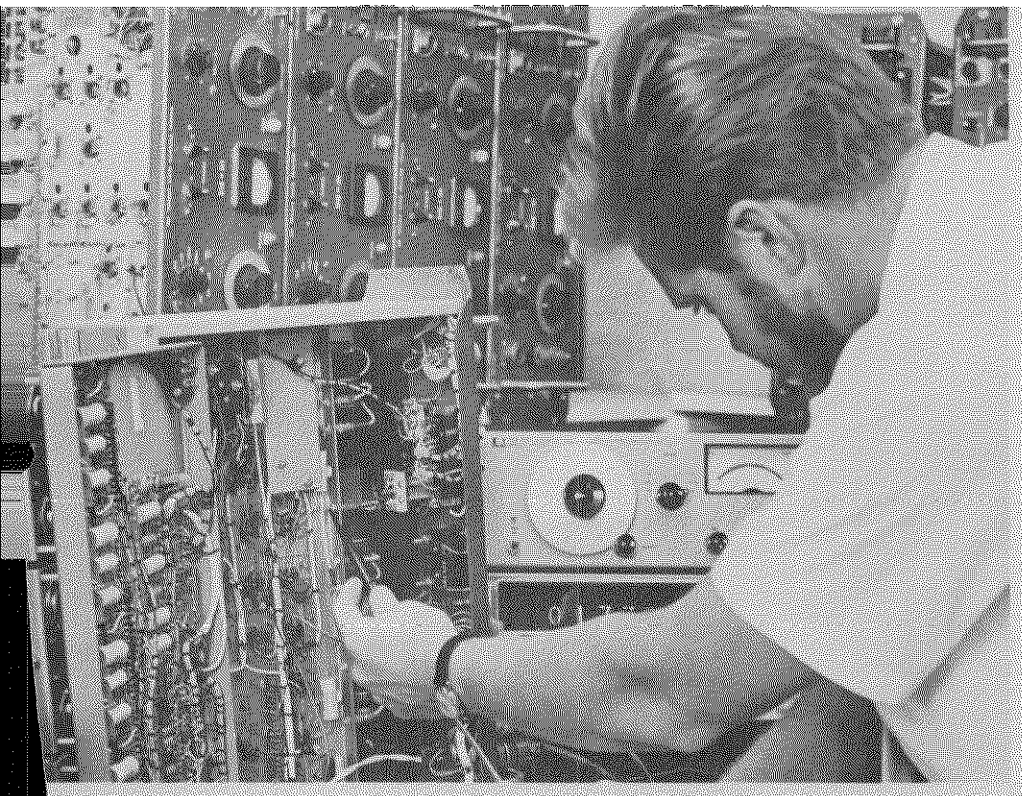
Personnel training is another significant cost. To use electronic systems effectively a substantial training of operators is necessary if the surveyor intends to provide quality results to his clients. Operator-trainees with electronic backgrounds are preferred because they are best able to evaluate the equipment performance and results. The nature of the work requires that operators perform their jobs while removed from supervision and must make more decisions than are normally required in land surveying. Operators must, therefore, generally be of higher mental capability than required for the average land instrument men. Once an operator has become qualified he cannot be easily replaced, and permanent payrolls are necessary in a field in which the custom of hiring on a per job basis has been the rule.

The offshore surveyor who wants to give continuous service to his clients must provide for maintenance of equipment on the job in order to minimize lost time. Electronic technicians are therefore required on his payroll. Good ones are expensive and hard to find.

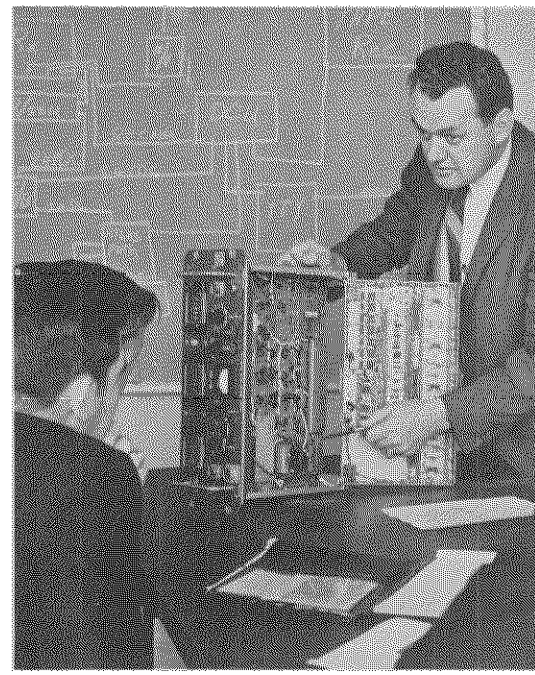
Since the field is relatively new, many technical system problems are still unresolved. Practical research is lacking. It must be provided by the surveyor adding still more specialized talent to his payroll to assure high quality service.

And above all this investment and diversification the offshore surveyor must not lose his stature as an engineer and surveyor. He must remain the guardian of professional standards in accuracy and thoroughness. He must be a prime mover in stimulating and influencing new and better survey systems designs. Aggressive planning for the future is necessary to influence new electronic developments and to provide the trained staff of operators and technicians necessary to complete offshore survey assignments efficiently.

It's a tall challenge but one which must be met if man's future in ocean development is to be served properly. ■



Electronic technicians are required to provide for maintenance of equipment in order to minimize lost time. Personnel training is necessary for the surveyor to provide quality results to his clients.



1969 Annual Report — State Board of Registration

The regular meetings of the Board were held in February, March, May, June and August. In addition to these, there were two special meetings.

The following is a tabulation of the applicants considered during the year:

PROFESSIONAL ENGINEERS

Applicants considered	412
Applicants approved on the basis of:	
Graduation plus Experience	203
Long Established Practice	14
Reciprocity	145
Experience plus Examination	17
Applicants disapproved	23
Applications withdrawn	10

LAND SURVEYORS

Applicants considered	16
Applicants approved	12
Applicants disapproved	4
Applications withdrawn	0

The following is a tabulation of the total number of Professional Engineers, Land Surveyors and Professional Engineers (Public Employees) and Engineers-in-Training holding registration on December 31, 1969:

Professional Engineers	9226
Professional Engineers (Public Employees)	163
Land Surveyors	255
Engineers-in-Training	829

The following is a tabulation by branches of the Professional Engineers who were registered as of February 1, 1969:

Agricultural	109
Chemical	715
Civil	3367
Civil/Industrial	1
Electrical	1498
Industrial	7
Mechanical	2429
Mechanical/Industrial	61
Metallurgical	19
Mining	27
Petroleum	830
Petroleum/Industrial	1

The Board gave examinations in fundamental engineering subjects to 224 applicants on April 19, 1969 and to 230 applicants on December 6, 1969. These examinations were given at four locations in Louisiana: Louisiana Polytechnic Institute in Ruston, Louisiana State University in Baton Rouge, University of Southwestern Louisiana in Lafayette and Tulane University in New Orleans.

Examinations in the branch areas of engineering and in land surveying for those persons who applied for registration on the basis of Experience plus Examination were given in New Orleans on April 15, 1969 and September 27, 1969.

In accordance with the amendments to the registration law made during the 1968 Session of the Louisiana Legislature, the Governor appointed two Board Members—Mr. Leo M. Odom of Baton Rouge and Mr. Waldemar S. Nelson of New Orleans. Both Mr. Odom and Mr. Nelson are Professional Engineers in private practice as specified in the amendment to the law.

Mr. Odom is a consulting engineer with the firm of Pyburn and Odom in Baton Rouge. The Board is pleased that Mr. Odom consented to serve another term as a member. He has had a total of more than twenty-four years of experience with this Board and with its predecessor, the Louisiana State Board of Engineering Examiners. Mr. Odom is a past president of the Louisiana Engineering Society and the Louisiana Section of the American Society of Civil Engineers.

Mr. Nelson is President of Waldemar S. Nelson and Company, Inc., a consulting engineering firm in New Orleans. For many years he has been a leader in the engineering profession. He is a Fellow of the American Society of Civil Engineers, a past president of the Louisiana Engineering Society and a past chairman of the American Society of Mechanical Engineers.

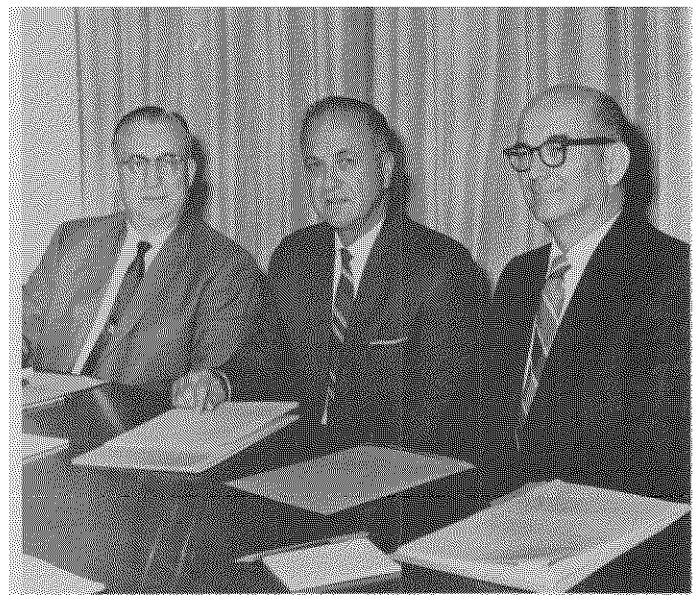
Governor McKeithen reappointed Dr. Jesse Coates and Mr. Roy T. Sessums as Members of the Board. Each will serve a nine year term. Mr. Sessums was Chairman of the Board during 1969 and is a Director of the National Council of Engineering Examiners. During the annual meeting of the National Council of Engineering Examiners, Dr. Coates received a Distinguished Service Award.

A total of 122 cases involving possible violations of the registration law were investigated. Of these 92 cases were settled to the satisfaction of the Board. The balance is still under investigation. The Fourth Circuit Court of Appeal in Louisiana acted in favor of the Board in its case against Mr. Herman J. Young doing business as Air-Flo Engineering Company. In substance the Court ruled that the word "engineer" or "engineering" in the title of a firm or corporation (without modifying or explanatory words to remove all doubt) would, to the average person, constitute an offer to provide professional engineering services. This case is important because the precedent established will be helpful in future legal actions of the Board.

A list of the firms that have complied with the regulations of the Board is published in the **Yearbook.** The regulations governing corporations and partnerships, also published in the **Yearbook**, require each qualifying firm to submit a list of principals and full-time employees who are registered in Louisiana. A new list must be submitted prior to July 1 of each even numbered year. Firms that submit lists during 1970 will normally not be required to submit a new list until 1972.

Professional Engineers and Land Surveyors

State Board of Registration officers for 1970 are, from left, Calvin T. Watts, vice chairman; Eugene E. Taylor, chairman; and W. S. Nelson, secretary.





Shown in session at its annual meeting are members of the Louisiana State Board of Registration for Professional Engineers and Land Surveyors. Seated left to right are: Ardis D. Jackson, Leo M. Odom, Calvin T. Watts, Eugene E. Taylor, Waldemar S. Nelson and Dean Ben T. Bogard. Standing from left to right: C. J. Tircuit, Land Surveyor Assistant to the Board; Dr. Daniel H. Vliet, Executive Secretary; Wood Brown, attorney for the Board; Roy T. Sessums and Dr. Jesse Coates. Missing in the photograph is Dr. F. W. zurBurg.

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PROGRAM

WEDNESDAY, APRIL 29

6:00 p.m.-8:00 p.m.

Registration—Mezzanine

7:00 p.m.-8:30 p.m.

Early Bird Cocktail Party — Ladies Welcome — Bienville Room (Cash Bar)

THURSDAY, APRIL 30

8:00 a.m.-5:00 p.m.

Registration—Mezzanine

9:00 a.m.

General Session — Queen Anne Room

"COMPANY EMPLOYMENT POLICIES CAN FOSTER ENGINEERING PROFESSIONALISM"

George Kinsman, Senior Vice President, Florida Power & Light

(Florida Power & Light received the 1968 NSPE Industrial Professional Development Award in recognition of their engineering employment policies.)

Session Chairman — Michael J. Cade, Vice President, New Orleans Public Service Inc.

10:00 a.m.

Coffee—Queen Anne Room

10:30 a.m.

General Session — Queen Anne Room

"LAYING OFFSHORE PIPELINES FROM A SPOOL"

Ben C. Tisdale, Manager of Marine Operations, Aquatic Contractors & Engineers, Inc.

Session Chairman — Richard F. Brunner, Vice President, Contract Administration, Avondale Shipyards, Inc.

11:30 a.m.

Beer and Po Boy Luncheon — La Nouvelle Orleans Ballroom (Eat famous New Orleans po boys and view the exhibits.)

1:30 p.m.

Society Business Meeting — Queen Anne Room

President J. F. Vogt, Jr., P.E., Presiding

Formal Reports Scheduled:

1. Legislation in the upcoming session affecting Engineering Profession — Lamon L. Moody, Jr., P.E.
2. Proposed changes to Registration Law concerning registration by branches and exemption from registration requirements of engineers in industry and government —James S. Janssen, P.E.
3. Engineering Education — Proposed Study of State's Engineering Schools by LES and Engineering Administration, Continuing Education Programs — Hoyt W. Brown, Jr., P.E.
4. Financial and Membership Reports — Jack J. Thigpen, P.E.

2:30 p.m.

Coffee—Queen Anne Room

3:00 p.m.

Functional Section Meetings

Education—Bienville Room

Government—Andrew Jackson Room

Industry — Robert E. Lee Room

Private Practice — Iberville Room

6:30 p.m.-8:30 p.m.

Exhibitor's Cocktail Party—La Nouvelle Orleans Ballroom

Ladies Welcome (Party hosted by all exhibitors)

FRIDAY, MAY 1

8:00 a.m.-12:00 noon

Registration—Mezzanine

8:45 a.m.

General Session—Queen Anne Room

"ECOLOGICAL CONSIDERATION IN RESOURCE MANAGEMENT"

Theodore A. Schlapfer, Regional Forester, Southern Region

Session Chairman — Roger P. Guissinger, P.E., Chief Location and Design Engineer, Louisiana Department of Highways

9:45 a.m.

Coffee—Queen Anne Room

10:15 a.m.

Student Technical Papers — Queen Anne Room

Louisiana Polytechnic Institute

University of Southwestern Louisiana

Tulane University

Louisiana State University

12:00 noon-12:30 p.m.

Cocktail Party — Ladies Welcome—Bienville Room

(A cocktail party in the exhibit area.)

12:45 p.m.

Awards Luncheon—Queen Anne Room

Recipients of Various Society Awards and Life Members will be honored.

Guest Speaker—
Honorable Edwin Edwards,
Congressman, 7th Congressional District, Louisiana

2:30 p.m.

Society Meeting — Iberville Room
Consideration of Constitutional Amendments

3:00 p.m.

Committee Meetings
(Locations will be posted)

4:00 p.m.

Board of Directors — Andrew Jackson Room

LADIES ACTIVITIES

THURSDAY, APRIL 30

9:30 a.m.

Hospitality Room, Coffee served —Skylite Room

11:00 a.m.

Elmwood Plantation for Lunch (Dutch Treat)
Tour of Longview Gardens immediately following Lunch

6:30 p.m.

Cocktails (with men)

FRIDAY, MAY 1

9:00 a.m.

Hospitality Room, Coffee served —Skylite Room

9:30 a.m.

Ladies Advisory Committee Meeting, Skylite Room

10:30 a.m.

Short Program

12:00 noon-12:30 p.m.

Cocktails (with men)

12:45 p.m.

Luncheon (with men)

FUNCTIONAL SECTION AGENDAS

PROFESSIONAL ENGINEERS IN INDUSTRY

1. Call to order
2. Minutes of last meeting
3. Old business
   a. Liaison committee report on proposed registration law changes by PEI.
   b. Letter from Mr. Brinsmade.
   c. PEI-Education committee meeting, October 23, 1969, New Orleans.
   d. Southwestern - Southeastern Regional meeting, New Orleans, October 23, 1969.
   e. NSPE Professional Development Award.
4. New business
   a. Nominating Committee.
   b. Delegates to National meetings.
   c. Letter from Mr. Egerer.

PROFESSIONAL ENGINEERS IN PRIVATE PRACTICE

1. Report on the "Manual of Practice For Professional Engineers in Private Practice"; present status of joint PEPP-CEC Manual Committee and discussion of "Guide For Professional Engineer's Services" as published by the PEPP Section of NSPE.
2. Report on the status of the Plan Review Board Committee.
3. Report of the PEPP-Associated General Contractors Meeting in Baton Rouge on January 16, 1970 and discussion of continuing relationships with AGC-Louisiana Highway and Heavy Construction Branch.
4. Discussion and action on proposed changes to the registration law relative to the elimination of the present registration according to the branches of practice and the elimination of the exemptions for registration requirements as provided in the 1950 Act for engineers employed in industrial operations (Section 18.a3) or in government work (Section 24.c, d, and e).
5. Report of the Sewage Committee.
6. Report of action taken by PEPP on the proposed consolidation of NSPE-PEPP, CEC and AIC.
7. Report on Standard Contract Study Committee.
8. Report on legislation concerning the engineering profession pending before the Louisiana Legislature.
9. Report from the Nominating Committee for PEPP Officers for 1970-71; nominations from the floor; election of new officers.
10. Open for old or new business.
11. Annual Report of outgoing Chairman.

PROFESSIONAL ENGINEERS IN GOVERNMENT

1. Discuss placing in PEG By Laws that the PEG Governor (our representative at the NSPE PEG Board of Governors meeting) be elected for a 3 year term or the PEG chairman also be the PEG Governor.
2. Discuss having PEG nominate the Engineer in Government when vacancies on the State Board of Registration occur. (Two Board members are required to be Engineers in Government.)
3. Report on proposed Legislation.
4. Report on NSPE Professional Development Award for STATE Government Agency, 1971.
5. Report on collection of two dollar ($2.00) PEG assessment.
6. Election of officers, 1970-71. (Report by nominating committee and election.)

PROFESSIONAL ENGINEERS IN EDUCATION

Panel Discussion: Technical Assistance by Industry to Engineering Design Education

3:00 P.M. Opening Remarks: Mr. H. L. Henry, Chairman, Professional Engineers in Education

3:10 P.M. "Industry Cooperation in a Creative Design Project in Engineering Graphics"
Dr. W. E. Street, Louisiana State University, Baton Rouge, Louisiana

3:45 P.M. "The Senior Course in Chemical Engineering Design — An Industry Viewpoint"
Mr. Sam W. Bergeron, Humble Oil and Refining Company, Baton Rouge, Louisiana

4:20 P.M. "Industry Assistance to a Mechanical Engineering Design Course"
Dr. G. D. Whitehouse, Louisiana State University, Baton Rouge, Louisiana

4:55 P.M. General Discussion

Announcing: 1971 Professional Development Award

THE 1971 GOVERNMENT PROFESSIONAL DEVELOPMENT AWARD FOR STATE AGENCIES

The National Society of Professional Engineers Government Professional Development Award is presented annually to the government agency unit employing engineers which has made the most outstanding contribution to the advancement and improvement of the engineering profession through its employment practices. This award reflects NSPE's desire to publicly and nationally honor the governmental organization which has shown outstanding achievement in adopting and implementing progressive professional employment policies for its engineering personnel.

Limited to State Agencies

Because of the difficulty of comparing agencies of different levels of government, the award is rotated among three basic governmental levels: (1) Federal, (2) State, (3) Local, including county, city, metro, port authority, sanitary district, etc. The 1971 award will be presented to the best state government unit nominated. Thus, the nomination forms should be completed only for a state government unit.

The Award Itself

The award consists of a metal plaque mounted on a wooden block. It is to be presented by the president of NSPE at the Winter Professional Meeting of the National Society to an official of the agency receiving the award. Following the Winter Meeting, a feature article will be written for the Professional Engineer, the Society's magazine, detailing the reasons why the particular agency was selected for the award and giving a history and outline of the development of its current employment practices. In addition, news stories will be released to the engineering and general press.

Nominations must be submitted by the state societies to reach the NSPE headquarters office not later than September 15, 1970.

Nominations by Professional Engineers, or chapters (with all forms completed) for Louisiana should reach the Executive Secretary, Gerald A. Simmons, by August 1, 1970. Forms may be secured from Gerald A. Simmons or Frank M. Heroy, Jr., Chairman, PEG.

Basis for the Award

The primary basis for the selection of the winner will be the information supplied on the nomination form and checklist completed by the agency and verified by the state society. Among the engineering employment practices which will be considered are those relating to:

- Education
- Registration
- Recruiting and Indoctrination
- Salary
- Participation in Professional and Technical Society
- Professional Environment
- Merit System, Position Classification

Information and Instructions

1. The size of a state government unit's engineering staff in itself, WILL NOT be a material factor to be considered by the Committee in making its selection.
2. Nominations may be originated by either a Professional Engineer in Government practice section, or a chapter. Each state may submit one entry, and must verify the accuracy of information presented. State society presidents must sign nominations.
3. The organizational component selected for nomination (or the governmental "unit") should be that department, division, office, installation, or other unit which is sufficiently autonomous to have effective authority to set and administer policies of the type outlined, but which is small and cohesive enough to preclude significant variation in implementation among subordinate organizational components. As a rule, a nomination unit would normally not include more than about 200 engineers. However, this is merely a guideline, and not a requirement. Larger units might be more proper in some cases. It is expected that most units nominated would have fewer than 100 engineers. Generally, a unit employing fewer than 15 or 20 engineers would not have sufficient policy-making authority to form the basis for a nomination.
4. If the nomination is for a "unit" which has installations or offices in more than one chapter area, the nomination may be submitted by any chapter or practice section in which the unit has such facilities involving engineering operations.
5. Where a nominee has received a state Government Professional Development Award, please include this information in the Transmittal Form.
6. Submit six (6) copies of the Transmittal Form, Nomination Form and all attachments to:

   Government Professional Development
   Award Committee
   National Society of Professional Engineers
   2029 K Street, N. W.
   Washington, D. C. 20006
7. The Government Award Committee reserves the right to request additional or clarifying information from the chapters, PEG sections, and state societies, or directly from the state agency, if deemed necessary. ■

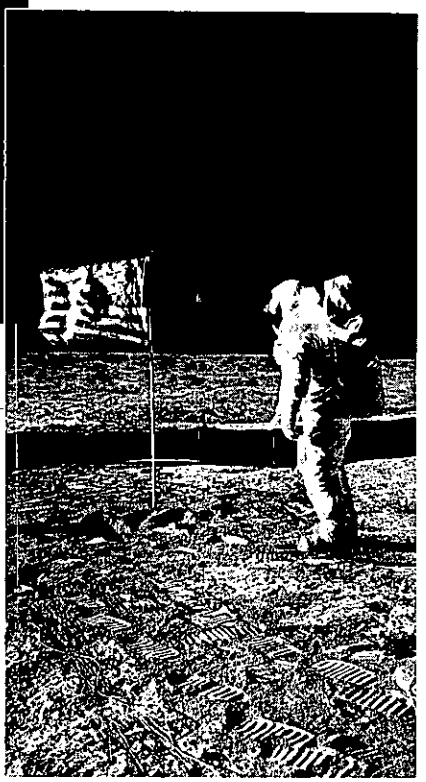
Outstanding Engineering Achievements of 1969

The outstanding engineering achievements of 1969 were the Apollo moon landing and the Boeing 747, the National Society of Professional Engineers announced. Two systems of air and water pollution control, a respiratory device for infants, and the New York-Washington high speed rail service also received much favorable comment by the NSPE selection committee.

The air pollution control system of Metropolitan Edison Company's pilot plant at Portland, Pennsylvania, was praised for removing 90 percent of the sulfur dioxide and 100 percent of the fly ash before discharge into the air. Designed by Monsanto Environment-Chemical Systems, St. Louis, it converts the sulfur dioxide into a marketable product.

The other pollution control project selected was that of Armco Steel Corporation, Middletown, Ohio. Costing nearly $39 million to build, it uses a giant water clarification plant treating up to 100,000 gallons a minute (equal to the combined treatment capacity of Dayton and Cincinnati). When all facilities are completed in 1972, it is expected that water and air pollution will be virtually eliminated.

The respiratory device developed by Dr. L. J. Arp of Virginia Polytechnic Institute increases the survival rate of newborns suffering from respiratory diseases to more than 85 percent, against 50 percent otherwise. Respiratory distress has been the largest single cause of death during the first week of life.



Introduction of high speed rail transportation between New York and Washington by the Penn Central was another favorite.

Five other engineering achievements singled out for recognition were:

"Big Muskie" — A 220 cubic yard dragline for mining previously unrecoverable coal and reclaiming land. Called the world's largest mobile land machine, it uncovers 325 tons a minute. Its bucket could accommodate 12 automobiles.

Icebreaker - Tanker "Manhattan" — In only six months, a tanker was converted so it could make the first trip of a commercial vessel through the "Northwest Passage."

Khazzan Dubai I—A 22 million gallon underwater oil storage tank, it was built on the shore of the Arabian Gulf. It must withstand 40 foot waves and 100 mile an hour winds. Costing $7 million, it will save $11 million by allowing oil tankers to load while floating over the off-shore oil fields.

Newport Bridge — Spanning Narragansett Bay from Jamestown to Newport, Rhode Island, this is the largest suspension bridge in New England (2.13 miles). Engineering innovations include (1) a new method of constructing suspension cables; for the first time in the history of bridge-building, shop-fabricated parallel wire strands were cut to length, socketed, and reeled for shipment to the job site, then pulled over the towers on a catwalk and compacted to form two 15-inch thick suspension cables, (2) a new cable anchorage design, (3) use of new plastic wrapping method for cable protection, and (4) new method of bridge pier construction.

Storage of sewer overflow—Karl R. Rohrer Associates, Akron, Ohio, designed steel-framed rubber tanks, anchored underwater, to provide temporary storage of storm overflow from combined sewers. Constructed at Sandusky, Ohio, under a Federal Water Pollution Control Administration contract, the two tanks can store overflow from a 1-year storm. The method is estimated to offer up to 50 percent savings over conventional construction of separate sewers, which the federal agency says could cost $48 billion nationwide. ■

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JOAN CADO
Eleventh Grade, Slidell High School

EDITOR'S NOTE: This essay, written by a high school student, was the first place winner of the New Orleans Chapter's essay competition for National Engineers Week.

Three centuries have passed since the first settlers set foot on these shores. Since then a great nation has emerged. Yet today we realize that we are rapidly destroying the land upon which it rests.

It would seem appropriate that I begin this essay by enumerating the problems amidst which we now find ourselves. And yet, to state the facts about the condition of mankind becomes hackneyed and boring, and we begin to lose patience upon hearing them. Still, one cardinal thing is clear: Pollution is huge and varied. It stalks us from all directions—through water, down from the skies—it knows no class nor creed and adheres to no system of politics. The rich cannot escape and the righteous are not spared. It is here. Now. And it seems that this agony exists as a result of that simple faith in technology, "Better living through chemistry." This mania for technology has taken its present course because it was not matched by knowledge of the complex relationships between the human and his surroundings.

Merely the fact that we realize this now is a giant leap forward in curbing the tide of pollution. This realization is leading us to re-examine our position, and those man-made troubles are initiating man-made solutions.

Such hard science problems, I feel, *can* be solved. Much "ecologically" oriented science will be carried out in the future by task forces made up of assorted scientists and engineers whose different skills and potential contributions will call a halt to pollution.

The study of such ecological problems in our technological society will generate a new knowledge that will rejuvenate that *spirit*, that essential ingredient that sparks the American creativity and ingenuity required in engineering that constitutes practical applications to these problems. We can hope for new types of research and institutions in which this relevant knowledge can be directly channeled to permit the development of effective *action* programs.

Already the challenge of our turbulent age is being met in numerous ways. A comprehensive account of such programs and new developments would require far more time and space to explain than I have here. Yet special mention should be made of the major programs instituted by industries through which many of our rivers are being made safe again: Development of agricultural supplies that have no divestive effects (i.e. DDT), and the current trend to develop a car engine which does not release pollutents into the air.

These are but a few of the programs through which an interplay between science and engineering has created *practical* solutions. It is a progressive trend for which there is forecast much that is *productive*.

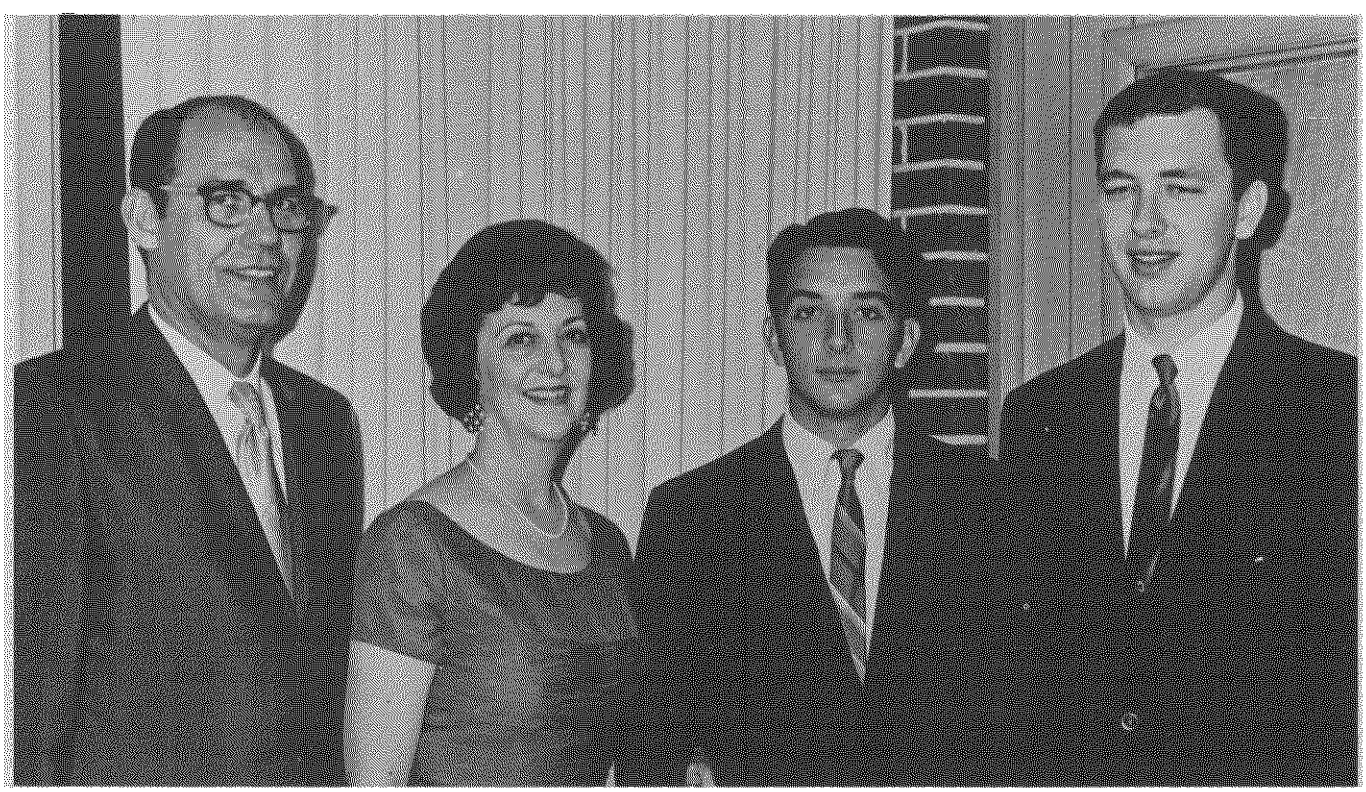
It is in the true spirit and tradition of this nation that I state that we, as Americans, have certain inalienable rights. The right to pure air. The right to clean water. The right to unpoisoned food. The right to the natural unspoiled land. Without these rights there will be no good life on this earth.

A vast rechanneling of our power is needed. It is a challenge to the ingenuity of our engineers, but it is not beyond their means. If we reconstruct so that we put first things first, there is waiting for us a chance for lives that hold meaning and wholeness for all.

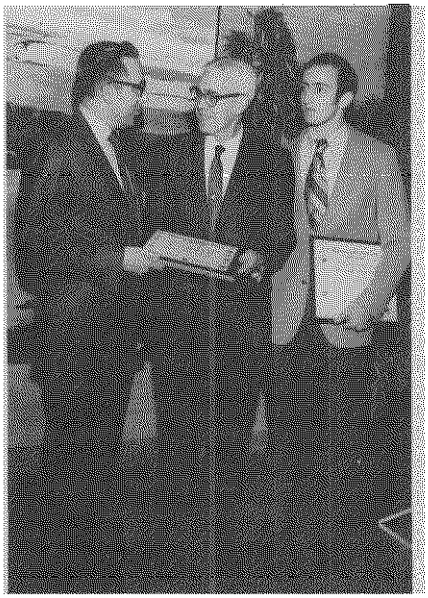
Yes, there are solutions, for all of which *time* is the dictator. ■



Attending the signing of the National Engineers Week proclamation in the Mayor's office in New Orleans from the left are: Malcolm M. Guillot, A.S.M.E.; Joseph G. Stassi, A.S.C.E.; Seymour Cambias, Jr., I.E.E.E.; Victor H. Schiro, Mayor; John F. Vogt, Jr., L.E.S.; Guy J. Seghers, Jr., L.E.S.; R. Dale Mackie, L.E.S.; and James W. Joyner, I.E.E.E.

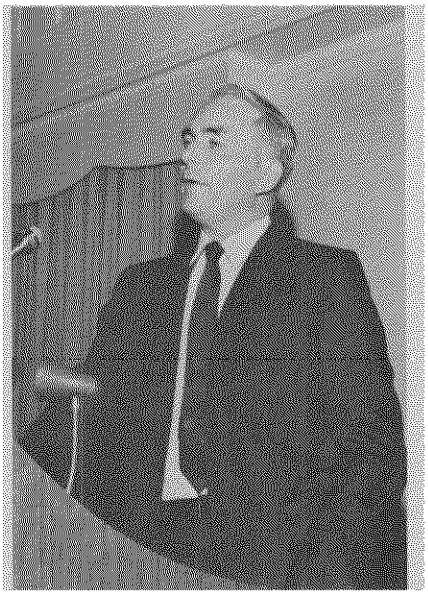


Auxiliary award winners are shown during Engineers Week activities in Lake Charles. Pictured from left are Richard See, president Lake Charles Chapter; Nancy See, chairman awards committee, LES Auxiliary; Leo Boutte, McNeese engineer, recipient of LESA award for outstanding engineer in Junior Class; and Ronald Fittz, McNeese engineer, recipient of LES award for outstanding engineer in Senior Class.



Dr. J. J. Thigpen, center, head of the Department of Mechanical Engineering at Louisiana Tech and State Secretary-Treasurer of LES, was presented the 1970 Engineering or Scientific Award by the Engineering and Scientific Council of Shreveport. He is shown receiving his award from Dr. Charles Berry, left, director of medical research and operations for NASA. Also shown is Gayer McFarland, high scorer in Shreveport on an engineering aptitude test.

A. D. Mookhoek, technical coordinator of the Arctic Marine Task Force for Humble Oil, was the main speaker at Baton Rouge's Engineers Week activities.





W. E. McGough, president of the Monroe Chapter, is shown, above left, receiving a special proclamation from West Monroe Mayor W. B. Hatten during Engineers Week.

Mr. William Carpenter, vice-president of corporate relations, PPG Industries, Pittsburgh, speaks to engineers in Lake Charles at Engineers Week banquet. Title of his presentation was "Environmental Engineering for the '70's—Managing a Tornado."



ENGINEERS IN THE NEWS

Guy J. Seghers, Jr., President of the New Orleans Chapter of LES, has been named director of the New Orleans Insuring Office of the Federal Housing Administration.

Seghers, a native New Orleanian, was named to the position by Eugene A. Gulledge, assistant-secretary for mortgage credit, FHA commissioner, Department of Housing and Urban Development.

Since 1958 he has been associated with his father, Guy J. Seghers Sr., as consulting engineers and land surveyors.

During this period, he served as a consultant during the design and construction of many structures, including single and multi-family residences, schools, medical facilities and commercial buildings in Louisiana and Mississippi.

He has served on the Mayor's Advisory Committee to the New Orleans Community Renewal Program.

He is a vice-president of the Metropolitan New Orleans Chapter, Institute of Municipal Engineers. He is a past board member of the New Orleans Chapter, American Society of Civil Engineers.

Seghers is a member of many professional engineering associations and was the recipient of the Louisiana Highway Department's honor award in 1956.

IN MEMORIAM

ARCHIBALD DUNLAP

Archibald L. Dunlap, a former professor of mechanical engineering at Tulane, and president of the Louisiana Engineering Society in 1934, died recently.

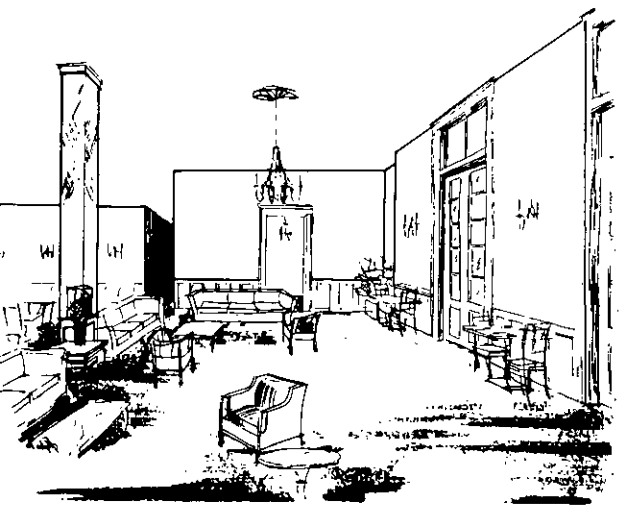
A native of Landsdowne, Pa., Mr. Dunlap was educated at the University of Pennsylvania. In 1968, after 41 years on the faculty at Tulane, he retired and moved to Swarthmore, Pa.

DANIEL HALLARON, JR.

Daniel Hallaron, Jr., a member of the Louisiana Engineering Society, died January 2, 1970 in New Orleans at the age of 67.

Mr. Hallaron was a 1923 graduate of the Tulane University College of Engineering and spent his entire career in the electric utility field. He had more than 42 years service with New Orleans Public Service Inc., specializing in electric distribution and electric transit systems. He held the position of Senior Electric Distribution Engineer with that firm when he retired in 1967.

RECEPTION LOUNGE



ENGINEERS CLUB

New Orleans engineers are eagerly awaiting the opening, at a new location, of the Engineers Club of New Orleans.

To be located at 546 Carondelet St., the club is scheduled to open in August and will replace the present facility on Gravier St.

Dining accommodations will be available for 150 persons and a private dining room can seat 26 persons. An area of the main dining room will also be available for meetings for as many as 45 persons.

Food will be prepared by The Court of Two Sisters.

Club officers for 1970 are George J. Groh, president; Ronald P. Cressy, first vice president; William F. Harrell, second vice president; Harry Hammett, treasurer; and George Irwin, secretary.



In a demonstration of support to the recently introduced course in acoustical engineering at Louisiana Polytechnic Institute, AMF Beaird, Inc., Shreveport, recently presented to the institution a number of acoustical instruments. Pictured above formally making the presentation to Dr. R. F. Barron, left, is E. J. Halter, manager of Maxim research and development, AMF Beaird, Inc.

NEW ENGINEERS

PROFESSIONAL ENGINEERS GRANTED REGISTRATION

February 11, 1970

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

Albritton, E. Wayne—Mechanical
Baton Rouge, La.

Arthur, Jett C.—Chemical
Metairie, La.

Baharoglu, Ergun N.—Civil
Hagerstown, Md.

Bankston, Roy V.—Civil
New Orleans, La.

Barthold, John L.—Civil
Gretna, La.

Beecher, Jess S.—Chemical
Morristown, N. J.

Berniard, Lester P., Jr.—Mechanical
Baton Rouge, La.

Berryman, Raymond J.—Civil
Santa Ana, Calif.

Bishop, Thomas R.—Mechanical
Houston, Texas

Bounds, Henry L.—Mechanical
Shreveport, La.

Brennan, John W.—Civil
Vicksburg, Miss.

Chavoen, James E.—Mechnical
Carol Stream, Ill.

Chenault, Charles V.—Mechanical
Houston, Texas

Christiansen, Clarence A.—Mechanical
Murray Hill, N. J.

Copeman, Jack C., Jr.—Civil
Hot Springs, Ark.

Cox, Jackie J.—Mechanical
Longview, Texas

de Jongh, Alberto J.—Electrical
Baton Rouge, La.

DiRamio, Harold A.—Civil
New Orleans, La.

Eyre, William P.—Petroleum
Mandeville, La.

Farrow, David J.—Civil
Lakeland, Fla.

Faust, Edmond L., Jr.—Civil
New Orleans, La.

Freeman, Robert C., Jr.—Electrical
West Monroe, La.

Gasell, John A., Jr.—Electrical
Lakeland, Florida

Gegauff, Gustav—Civil
Coral Gables, Florida

Johnson, Frank B.—Chemical
Baton Rouge, La.

Keiser, John M., Jr.—Civil
Shreveport, La.

Kurpel, Jerome J.—Petroleum
New Orleans, La.

Lowry, William W.—Petroleum
Marrero, La.

Marr, Gilbert—Civil
Staten Island, New York

McClintock, Neil A.—Chemical
Verona, Pa.

McNair, James E., Jr.—Civil
New Orleans, La.

Menville, Charles A.—Mechanical
Baton Rouge, La.

Merrick, Max M.—Civil
Cottonport, La.

Miller, Ernest G.—Mechanical
Baton Rouge, La.

Mills, Billie C.—Civil
Phoenix, Arizona

Mitchell, William D., Jr.—Petroleum
New Orleans, La.

Moise, John R.—Chemical
Houma, La.

Picciola, Marco J., II—Civil
Cut Off, La.

Ragan, Douglas O.—Electrical
Morris Plains, New Jersey

Rogers, Clarence E.—Civil
Metairie, La.

Rubin, Gerald J.—Chemical
Baton Rouge, La.

Sanders, Floyd H., Jr.—Mechanical
Beaumont, Texas

Schiller, Michael—Civil
Summit, New Jersey

Swartz, Roland R.—Civil
Metairie, La.

Whitehouse, Gerald D.—Mechanical
Baton Rouge, La.

Smith, Donald M.—Land Surveyor
Baton Rouge, La.

PROFESSIONAL ENGINEERS GRANTED REGISTRATION

March 24, 1970

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

Africh, Alfred J.—Mechanical
Metairie, La.

Amos, Ralph W., Jr.—Mechanical
Baton Rouge, La.

Barron, Oscar N.—Chemical
New Orleans, La.

Blanchard, Harris P., Jr.—Mechanical
New Orleans, La.

Bonnin, Antonio J.—Civil
Union City, New Jersey

Broussard, Johnnie J.—Mechanical
Lake Charles, La.

Buck, David E.—Electrical
New Orleans, La.

Cogbill, Alfred M., Jr.—Petroleum
Lafayette, La.

Coughlin, Richard D.—Civil
San Diego, Calif.

Crawford, Paul A.—Electrical
Alexandria, Virginia

Crenshaw, Paul L.—Petroleum
New Orleans, La.

Curry, Edwin F.—Chemical
Baton Rouge, La.

Davis, Edwin D., Jr.—Chemical
Lafayette, La.

Ferlito, Andrew A.—Civil
Freeport, New York

Glover, Wayne A.—Chemical
Summit, New Jersey

Goldberg, Jack R.—Electrical
Baton Rouge, La.

Gonzalez, Luis J.—Electrical
Baton Rouge, La.

Goodman, Joseph S., Jr.—Civil
Baton Rouge, La.

Halling, Eldon L.—Petroleum
Houston, Texas

Harral, Richard D.—Electrical
Greeley, Colorado

Hartrampf, William J. Jr.—Mechanical
Atlanta, Georgia

Hearne, Larry J.—Electrical
Nederland, Texas

Hines, Thomas W.—Civil
Houston, Texas

Hooper, John M.—Civil
St. Petersburg, Florida

Hooter, Walton W.—Civil
Lake Charles, La.

Horadam, James F.—Civil
Long Beach, Calif.

James, Clark F., Jr.—Civil
Louisville, Kentucky

Johnson, Arvis A., Jr.—Electrical
Baton Rouge, La.

Julich, Paul M.—Electrical
Baton Rouge, La.

June, Richard N.—Industrial
Houston, Texas

Knowles, Thomas G.—Electrical
Bossier City, La.

Lepkaluk, M. Myron—Civil
Washington, D. C.

Leruth, Felix—Civil
Toledo, Ohio

Loesch, Robert F.—Mechanical
St. Louis, Missouri

Mayes, Joe A.—Civil
Marietta, Georgia

McKellar, Louis A.—Mechanical
New Orleans, La.

Melear, Richard D.—Electrical
Dallas, Texas

Moore, Robert A.—Mechanical
New Orleans, La.

Mottley, James R.—Petroleum
Metairie, Louisiana

Myers, Hewitt J.—Civil
New Orleans, La.

Peak, Rowland H., Jr.—Civil
Metairie, La.

Phillips, Robert W.—Petroleum
New Orleans, La.

Place, Fredrick R., Jr.—Civil
Covington, La.

Putman, John G., III—Civil
DeRidder, La.

Quimby, Rauel D.—Mechanical
St. Louis, Missouri

Rentrop, Rodney J.—Mechanical
Lake Charles, La.

Rockwell, Frank E., Jr.—Chemical
Brandon, Florida

Roys, Kenneth R.—Mechanical
Houma, La.

Runyan, Gilbert K.—Civil
Pompano Beach, Florida

Ruyan, Masis Y.—Civil
Pittsburgh, Pa.

Salman, Samir S.—Civil
Baton Rouge, La.

Seeman, Kenneth J.—Electrical
New Orleans, La.

Simmons, William L.—Electrical
Shreveport, La.

Simpson, Calvin L.—Mechanical
Baton Rouge, La.

Sosa, Luis R.—Electrical
Gretna, La.

Sweany, Ralph S.—Mechanical
New Orleans, La.

Valdo, Alex R.—Metallurgical
Baton Rouge, La.

Van Zelfden, Gordon C.—Petroleum
Winnie, Texas

Zimbelman, Frank A.—Mechanical
New Orleans, La.

NEW MEMBERS

ALEXANDRIA

Robert S. Lowry
P. O. Box 1430

BATON ROUGE

William J. Bodin, Jr., P.E.
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12710 Arlingford Dr.

John W. Couvillon, P.E.
14986 S. Bolivar Dr.

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1104 American Bank Bldg.

Bruce A. Duco
7701 Berg St.

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Kenner, La. 70062

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N.O.P.S.I.—527 Magnolia

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6153 Carlisle Ct.

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Arabi, La. 70032

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Henry L. Bounds, P.E.
P. O. Box 1407

Jacky S. Brown
P. O. Box 1407

Richard F. Griswold
P. O. Box 1407

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IN MEMORIAM

BATTAILLE HARRISON WADE

Battaille Harrison Wade, age 67, a registered professional engineer of the State of Louisiana and State of Mississippi and member of the Louisiana Engineering Society, died February 3, 1970.

Mr. Wade, a charter member of the Lake Charles Chapter, served in various engineering capacities with the Louisiana Department of Highways for 37 years, retiring January 1, 1969 as Assistant District Engineer in Construction.

Membership Contest Standings

RULES OF THE CONTEST

1. A Chapter must reach its 10% quota to qualify as the Contest winner.

2. The Chapter with the greatest percentage increase, based on application and reinstatement requests received by the state LES office through the week prior to the June annual meeting will be the winner. Transfers into a Chapter or grade changes will not be counted as part of the quota. Students upon graduating will be counted for a Chapter only if the Chapter gets them to fill out an Application form with up-dated information and, also, if they reside in the Chapter's Area.

Standing	Chapter	Applications	Quota	Percent
1	Bayou	8	4	200.000
2	Lake Charles	14	13	107.692
3	Lafayette	17	16	106.250
4	New Orleans	65	79	82.278
5	Alexandria	10	13	76.923
6	Shreveport	15	21	71.429
7	Monroe	9	15	60.000
8	Baton Rouge	25	56	44.643
Total as of April 7, 1970		163	217	75.115

Minutes-LES BOARD

January 23, 1970, Hilton Inn, New Orleans, La.

President Vogt called the meeting to order with the following Board members present: Fred C. Culpepper, Jr., P.E.; Kenneth E. Deal, P.E.; Carl Heck, P.E.; Frank Heroy, Jr., P.E.; T. J. Hogue, Jr., P.E.; M. L. Hurstell, P.E.; John H. Livingston, P.E.; James L. Meyer, P.E.; Lamon L. Moody, Jr., P.E.; Waldemar S. Nelson, P.E.; Leo M. Odom, P.E.; Richard See, P.E.; Guy J. Seghers, Jr., P.E.; Charles W. Stokes, P.E.; A. J. Szabo, P.E. and Jack Thigpen, P.E. Others present were: Roger Battle, P.E.; Larry C. Grundmann, P.E.; Lee C. Hill, P.E.; James S. Janssen, P.E.; E. P. Williamson, P.E. and Gerald A. Simmons, Executive Secretary.

The minutes of the Board of Directors meeting of December 12, 1969, were corrected and approved. The motion for approval was made by Mr. Stokes; seconded by Mr. Hurstell and passed.

Financial Statement—The Financial Report was given by Mr. Thigpen for the month of December 1969. Total receipts through December, year to date, were $41,299.43 and expenses through December, year to date, were $38,986.23. Motion by Mr. Meyers, seconded by Mr. Hogue, "that the financial report be accepted as presented." Motion carried.

Review of Publication Expenses and Receipts—Mr. Thigpen submitted a report to the Board of Directors reviewing expenses and receipts of the LOUISIANA ENGINEER for the last four issues. The report is as follows:

Receipts

July	$ 1,278.50	
August	346.55	
		$ 1,625.05
September	$ 1,288.40	
October	1,462.53	
		$ 2,750.93
November	$ 45.00	
December	2,099.98	
		$ 2,144.98
January	$ 618.05	
Balance due January 13, 1970	1,677.10	
Undeposited checks	15.00	
		$ 2,310.15

Total income for 4 issues	$ 8,831.11
Average income per issue	$ 2,207.78*

Expenses	
June Issue	$ 2,952.47
August Issue	$ 2,993.83
October Issue	$ 2,958.52
December Issue	$ 3,010.86
Total expenses for 4 issues	$11,915.68
Average expenses per issue	$ 2,978.92**

* Does not include receipts from State Board of Registration to help defray cost of publication.
** Does not include staff time, expenses or bookkeeping costs.

Mr. Nelson noted that the LOUISIANA ENGINEER is the official publication of the State Board of Registration. Circulation increases with increased registrations since it is mailed to each engineer registered in the state of Louisiana.

Mr. Nelson encouraged each chapter to make a real effort to furnish the LOUISIANA ENGINEER with chapter news and to help secure advertisers for the magazine.

SECTION REPORTS

Professional Engineers in Education—Professor Williamson reported for Mr. Henry, chairman of the Education Committee. Mr. Williams informed the Board that the brochures on Professional Engineers in Education have been ordered and will be distributed as soon as they are received.

Professional Engineers in Government—Mr. Heroy, chairman of the Government Section, reported that President Nixon has issued Executive Order No. 11491 which supercedes Executive Order No. 10988. The effect of the new Executive Order is that it eliminates formal and informal recognition of organizations of government employees to speak for its members. Instead, it suggests to government employees that they seek exclusive recognition of one organization to represent their interests. In addition, the terminology is changed so that participating groups are now officially designated as "labor organizations" instead of "employee organizations." Mr. Heroy stated he will report on any further developments at later meetings.

Professional Engineers in Industry — Mr. Richard was absent, therefore no formal report was given by the P.E.I. Section.

Professional Engineers in Private Practice — Mr. Moody, chairman of the P.E.P.P. section reported that the section participated in a panel discussion held by the Associated General Contractors at their annual meeting in Baton Rouge. The discussion centered around problems common to engineers and contractors.

Mr. Moody distributed copies of the new "Manual of Practice" to the board members. He reviewed the manual committee's recommendation for financing the cost of the "Manual of Practice."

Motion by Mr. Moody, seconded by Mr. Heck, "that the following procedure be used to handle the financing of the 'Manual of Practice' ":

1. Establish a joint manual committee composed of PEPP and CEC members with authority to distribute the Manual and handle the money.
2. The Manual Committee should screen PEPP and CEC rosters to eliminate duplication of mailing regarding the Manual.
3. As a joint effort, assess the PEPP and CEC individual membership a sufficient amount per copy to cover cost of printing and mailing to every engineer in PEPP and CEC plus enough contingency money in the price per Manual to offset those who will not pay the assessment.
4. Getting copies of the Manual to heads of public agencies should be a welcomed chore for those engineers doing business with the public agencies and those who anticipate doing business with public agencies. The Manual should be presented in person. Costs of these copies would be paid for by outright purchase through the Manual Committee.
5. For interim financing, several individual firms could divide the overall cost of printing with the understanding that these firms would be repaid as Manuals are sold.

Motion carried.

COMMITTEE REPORTS

Membership—Mr. Grundmann, chairman of the membership committee reported the following contest standings of each chapter as of January 23, 1970:

Position	Chapter	Applications	Quota	% Quota
1	Bayou	6	4	150.000
2	Lake Charles	11	13	84.615
3	New Orleans	53	79	67.291
4	Shreveport	11	21	47.619
5	Monroe	7	15	46.667
6	Alexandria	6	13	46.154
7	Baton Rouge	17	56	30.357
8	Lafayette	8	16	12.500
		119	217	55.000%

Mr. Grundmann requested that any chapter not interested in inviting non L.E.S. member engineers included on the listing mailed to each chapter to join L.E.S., to please return the listing to the state office so that the state membership committee can invite these propects to join.

Liaison with State Board of Registration—Mr. Janssen, chairman of the Liaison Committee, gave a comprehensive report on the composite committee's recommendation studying changes in the state registration law as it pertains to Land Surveyors.

Motion by Mr. Odom, seconded by Mr. Moody, "that the recommendations of the Liaison with the State Board of Registration Committee, which reads as follows, be adopted":

1. The present Board of Registratoin is composed of nine members. Proposed changes will not increase the Board membership, however, at least one member of the Board shall be a registered professional engineer who is also a registered land surveyor, one of whose principal activities is in the field of land surveying.
2. There will be a separation of the Civil Engineer and the Land Surveyor License. After September 1, following the passage of these changes into state law, all Civil Engineers presently registered will be issued a Land Surveyor License without charge and without application. Thereafter, it will be necessary to pay the annual renewal fee for both the Civil Engineer and the Land Surveyor licenses.
3. After September 1, following the passage of these changes into state law, all Civil Engineers presently licensed as a "Civil Engineer as a Public Employee" will be issued a Land Surveyor license without charge and without application. The license will be restricted to land surveying for the State of Louisiana on a salary basis only. Thereafter, it will be necessary to pay the annual renewal fee for both the Civil Engineer as a Public Employee and the Land Surveyor as a Public Employee licenses.
4. After September 1, following the passage of these changes into state law, all land surveying must be performed by a Registered Land Surveyor.
5. It shall be unlawful for any Recorder of Deeds of any parish to record any survey map that does not have the personal signature and seal of a Registered Land Surveyor affixed thereto. (Note: This recommendation will be introduced as a separate act since it is not presently part of the Registration Law.)

It was noted in the Liaison with the State Board of Registration Committee report that these recommendations were in accord with guidelines previously adopted by the L.E.S. Board of Directors.

Mr. Meyer stated that the Alexandria chapter in regular meeting discussed the proposed changes to the registration law and prepared amendments.

Motion by Mr. Meyer, seconded by Mr. Stokes, "that the original motion be amended to include the following changes in the proposed changes to the State Registration Law":

73-2(F): It is proposed that the definition of land surveying be deleted in its entirety and amended to read as follows:

F. Land Surveying. The "Practice of Land Surveying" within the meaning and intent of this Act refers specifically to cadastral type work and 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, and the plotting and monumenting of lands and subdivisions thereof. (delete and mapping and topographical work)

Amendment Failed.

Motion by Mr. Meyer, seconded by Mr. Heroy, "that the original motion be amended to include the following changes in the proposed changes to the State Registration Law":

73-17: It is proposed that this Section be deleted in its entirety and amended to read as follows:

(a) Private Practice. After September 1, following the passage of this Act, all registered professional civil engineers, except those registered under Sub-section (b) of Act 73, who were qualified to practice land surveying at the time this Act became effective shall be registered by the Board as land surveyors to practice land surveying in addition to being registered as professional engineers to practice civil engineering in accordance with the registration they hold under the present law without examination or other investigation of any nature; and those so registered shall be issued certificates of registration as land surveyors immediately, without charge, except for the annual renewal fee as provided for in Section 16 of this Act, upon application. No other person shall be registered as a Professional Engineer to practice civil engineering or as a land surveyor to practice land surveying without meeting all requirements of this Act and in particular Sections twelve (12) and thirteen (13) of this Act.

(b) Public Employees. After September 1, following the passage of this Act, all registered civil engineers in public employment who were registered under Sub-section (b) of Section 17, who were qualified to practice land surveying at the time this Act became effective shall be registered by the Board as land surveyors to practice land surveying in addition to being registered as civil engineers to practice civil engineering in accordance with the restrictions of said Sub-section (b) of Section 17, without examination or other investigation of any nature upon the condition that such persons restrict his practice of land surveying to any work that he may do as an employee of the State of Louisiana on a salary basis; provided that nothing in this Section shall be construed to permit any person registered as a land surveyor as herein provided to accept employment as a land surveyor on a fee or commission basis from any firm, person or corporation or by the State of Louisiana, any of its political subdivisions, or by any parish, city,

town or other public body or agency; and those so registered shall be issued certificates of registration to practice land surveying as a public employee immediately, without charge upon application therefor, this registration shall be renewed yearly upon the payment of one dollar.

Amendment Failed.

Question was called for on the original motion. Motion carried.

Mr. Janssen submitted to the Board of Directors, the following report:

The second matter that was assigned to the Liaison Committee pertained to changes to the registration law that were suggested by the Functional Section for Professional Engineers in Industry. These changes were: first, the elimination of registration by branches of practice and, second, the elimination of the exemptions from registration requirements for professional engineers in industry or in government employment. In both cases the Liaison Committee was in favor of the proposed changes but in neither case was there unanimous agreement.

Three of the five members (including the chairman) are in favor of eliminating registration by branches. Of the two members that oppose this proposed change, one feels that as long as education is by branches, registration must be by branches. The other negative vote was on the basis that specialized registration is necessary to restrain professional engineers from practicing beyond their specialized capabilities. Opposition to this proposed change has been expressed by a majority of the engineering educators in the state according to a survey conducted by H. L. Henry of Louisiana Polytechnic Institute who is chairman of the Section for Professional Engineers in Education. Presumably, the Professional Engineers in Industry are for this change since the recommendation started with them. A letter was received from this Section for Professional Engineers in Government signed by Mr. Frank Heroy, stating that that group had "no comment for the present." No comment has been received from the Professional Engineers in Private Practice. The principal argument against general registration as contrasted to specialized registration seems to be a fear of engineers practicing in fields in which they are not qualified. It is felt that this can be overcome by the use of a method used in some other states (Alabama, for instance) in which the registrant indicates the field or fields in which he is qualified to practice. This appears in the registration board's files but not on the registrant's license. Thereafter, ethics and the added exposure and consequences of practicing outside of his field are deemed sufficient deterents to malpractice.

The principal argument for elimination of registration by branches is that with the present and inevitable trend toward additional branches, it is rapidly becoming more and more impractical to retain such registration. There are at least thirty recognized disciplines of engineering with others being added from time to time as our technology advances. Only nine of these are recognized by the Louisiana Registration Board. Others are haphazardly covered by registration in the most closely allied field (i.e. aeronautical engineers registered as mechanical engineers). It is felt that "non-specialty" registration would put the registration of professional engineers in line with the practice among other learned professional groups.

Since very few states register by branches, reigstration by transfer or reciprocity of engineers across Louisiana state lines is complicated and hampered. It should be noted that the "Model Law" does not provide for registration by branches.

It was felt by several that the change which would require registration by industry-employed or government-employed engineers would meet with considerable opposition and that it should therefore not be attempted. Others did not feel that this was a valid reason for not attempting to effect the change.

The principal argument for the registration for engineers in industry or in government employment is basically the same as the reason for the registration of any other professional engineers, namely the protection of the public. A secondary reason is the protection and strengthening of engineering as a profession. That is to say that no unregistered and therefore possibly unqualified person should be allowed to practice. Again, three of the five Liaison Committee members favored elimination of the exemption for industry and government engineers and two opposed it for the reasons given above.

The suggestion has been made that the entire registration law be studied and rewritten at one time instead of making piece-meal changes from time to time. While this is the way that engineering problems are normally best solved, there is doubt that this is the most expeditious way to handle changes in our registration law. In the first place, the need for these changes manifests itself over a period of years and should thus be provided for as the need becomes apparent. Secondly, many changes at one time engender more opposition and thus reduce the changes for adoption. It is recommended that changes at this time be limited to the changes for surveyors, the elimination of registration by branches and the elimination of the exemption for registration for engineers in industry and in government.

It is suggested that local hearings be held, preferably by L.E.S., to hear objections and secure support for the changes relative to elimination of registration by branches and exemptions for industry and government engineers before legislation is submitted for adoption. It is also suggested that the opinion and support of the State Board of Registration be secured on these points. This procedure should not be necessary on the surveyor changes.

Motion by Mr. Odom, seconded by Mr. Moody, "that a composite committee consisting of representatives from the technical societies representing the various branches found in the registration law as well as the functional sections of L.E.S., be created to discuss the Liaison Committee's report dealing with the elimination of registration by branches of practice as recommended by the P.E.I. Section."

Further, "that hearings be held by each chapter of L.E.S. on the local level and their findings reported to the L.E.S. Board of Directors for submission to the composite committee."

Motion Carried.

Mr. Moody noted that voting rights of each organization comprising the composite committee should be protected and evenly distributed.

Motion by Mr. Hogue, seconded by Mr. Stokes, "that the following report of the Liaison Committee be accepted":

The chairman of the Liaison Committee expressed concern over a recommendation of the Public Affairs Research Council. This is presently in the form of a "confidential" and preliminary draft of a report relative to "Occupational Licensing in Louisiana" dated December, 1969, however, an article on this report appeared in the *New Orleans States-Item* on Wednesday, January 21, 1970. This thirty-two page report ends with eleven recommendations including merging "all existing occupational licensing boards, commissions and agencies" with the Department of Occupational Standards under a single Director appointed by the Governor for four-year terms, deposition of licensing fees in the general fund and financing through state appropriations, et cetera.

It is difficult to see how the public, the engineering profession or the State Board of Registration would profit by such a move. It does not seem consistent with the recent recommendations from many quarters for citizens to become involved in government affairs. It is suggested that the L.E.S. Board go on record with the P.A.R. Council, the State Registration Board, and possibly others objecting to this proposed action.

Motion Carried.

Motion by Mr. Culpepper, seconded by Mr. Nelson, "that the Liaison Committee with the State Board of Registration be commended for a job well done."

Motion Carried.

L.E.S. Convention—Mr. Hogue, chairman of the L.E.S. Convention, reported that the chapters have responded to his request for nominations to the standing convention committees and all appointments are being made. As soon as the committees are formed, they will meet to formulate plans for the convention. Mr. Hogue requested that all chapters begin notifying their membership of the convention dates and work to get a good attendance at the meeting.

Ad Hoc Committee on Higher Education—Mr. Szabo, Secretary of the Ad Hoc Committee on Higher Education, reported the committee had met with Dr. Bernard Sliger of the Higher Education Coordinating Council. Dr. Sliger commended the L.E.S. on its efforts to conduct a study of engineering education in the state. He said the council would welcome such a report and give it thorough study in formulating recommendations for higher education at the council's 1971 spring meeting.

Mr. Szabo stated the committee has set a new target date of December 1, 1970 for completion of the study. The committee is recommending that five educators study the programs of eleven institutions and that they make on site inspections of each one. The committee is now working to establish an estimated cost for the study and will report back to the Board at its next meeting.

Mr. Odom asked if the committee had taken any action on L.S.U.'s request for the establishment of a Ph.D. program in Civil Engineering. Mr. Szabo reported that the committee had talked to Dr. Sliger and recommended that permission be granted to L.S.U. to establish the program. Dr. Sliger stated that three criteria were used by the Council in making such a determination—(1) need for the program; (2) cost of the program and (3) qualified faculty. He stated he would express the committee's views to the Higher Education Coordinating Council.

Vocational Guidance—Professor Williamson reported that Dr. Holstead, chairman of the Vocational Guidance committee, would like to inform the board that in the Monroe area several JETS chapters have been established and he would like to encourage the other sections to attempt to form chapters in their areas.

Engineering Technicians—Mr. Battle, chairman of the Engineering Technicians Committee, reported that he had met with Dr. Street and Dr. Hall at L.S.U. and organized an ASCET chapter. Temporary officers were elected. Mr. Battle stated he was in the process of working with Nicholls State College to begin a Student ASCET chapter in Thibodaux.

Motion by Mr. Odom, seconded by Mr. Nelson, "that $25.00 be alloted to the L.S.U. ASCET chapter for initial organization needs." Motion carried.

Honors & Awards Committee—Mr. Odom, chairman of the Honors and Awards Committee, urged chapter presidents to submit nominees for the five awards to be submitted at the L.E.S. Convention. The final date for submitting nominees is March 1st.

Report on Chapter Activities—The New Orleans and Shreveport chapters gave a detailed report on activities within their respective chapters. President Vogt thanked the chapter presidents for the reports and encouraged them to continue the good work. President Vogt urged all chapters to be prompt in answering requests from committees and the secretary chairmen. Some chapters have been lax in this area.

Mr. Simmons reviewed the list of delinquent members in L.E.S. for 1969, and stated that their names will be published in the February issue of the LOUISIANA ENGINEER, then dropped from the rolls of the Society.

The next meeting of the Board of Directors will be held Friday, March 6th in Lafayette at 3:00 p.m. at Poor Boy's Riverside Inn on Pinhook Road.

Corrections to December 12, 1969 minutes:

List of Deaths & Resignations—show Mr. Frank M. Ritchie as deceased.

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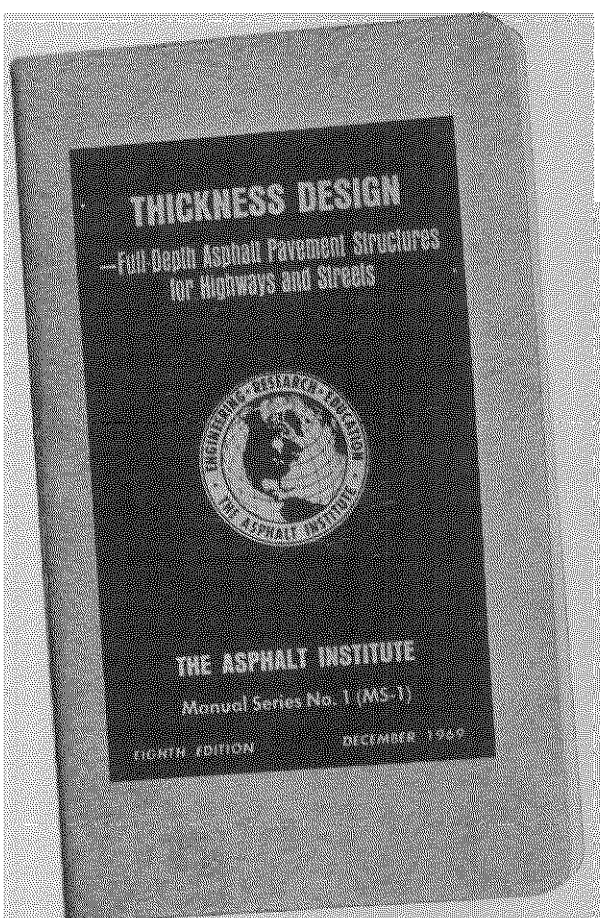
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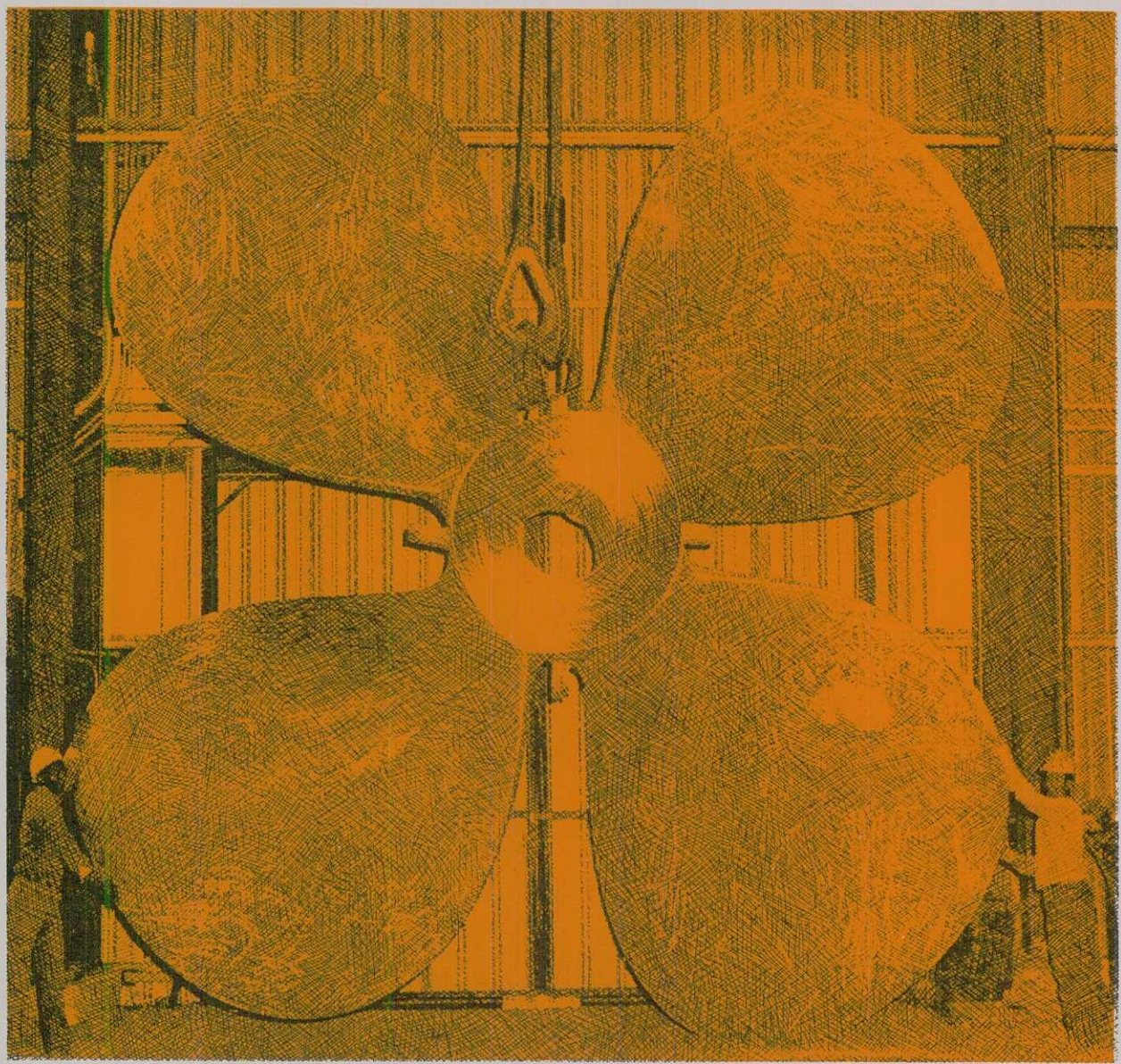
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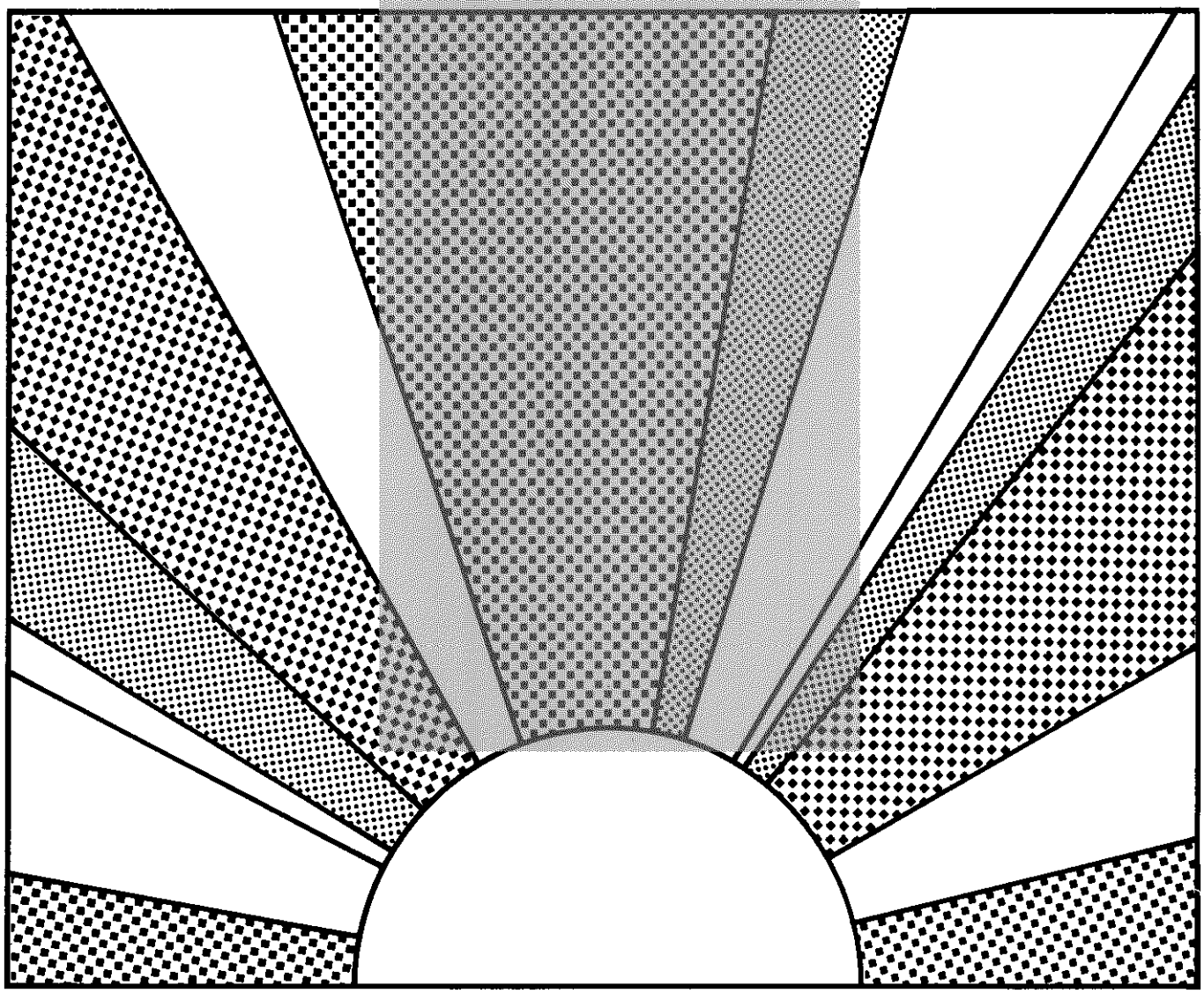


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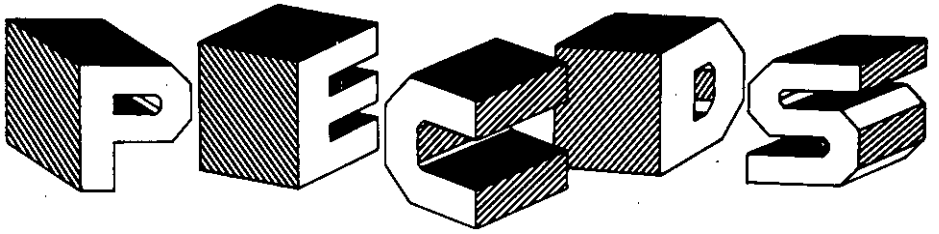
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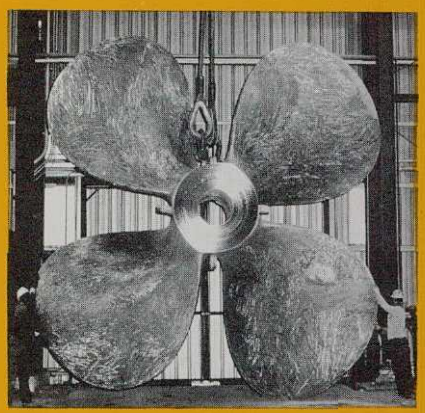
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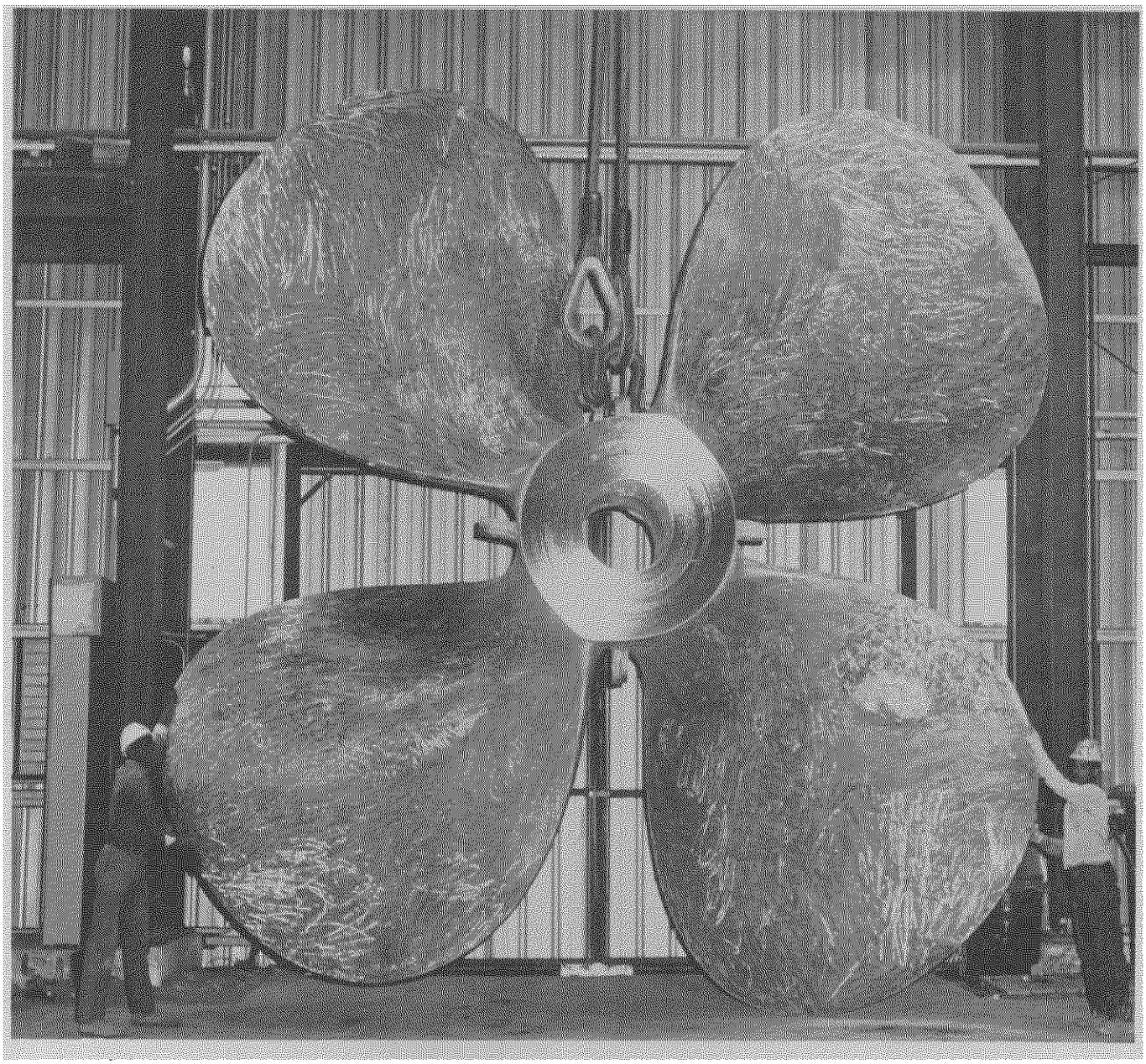
In the August, 1969 issue of the LOUISIANA ENGINEER I outlined certain goals of the 1969-70 Administration. How well we performed in attaining these goals you can judge from the following retrospective examination of the year's principal activities.

1. Financial resources of the Society should remain at approximately the same level that existed on June 30, 1969. This is indicative of a balanced budget, although many fine programs were perhaps stymied by lack of surplus funds.
2. We will complete the year with better than 100 percent attainment of new members as compared to quota. At this time the newly formed Bayou Chapter leads in our membership contest.
3. We have made great strides in the exercise of our influence, in the many attempts to solve the varied problems besetting the engineering profession during the year.
4. Although our legislative battles must of necessity continue to be waged, we have at this time, in concert with other organizations, secured favorable action at the legislative level on many bills we felt were either detrimental to us or that should be supported as part of our state law. Unfortunately, one of our own bills—that involving the separation of the Civil Engineering License from the Land Surveyors License—met disaster in committee.
5. Several JETS Chapters were established in the Monroe area, as well as Engineering Technicians Chapters (ASCET) in New Orleans and Baton Rouge.
6. We have experienced an extremely successful program of continuing engineering education. In our Engineering Management course, co-sponsored by LSU, classes were conducted in New Orleans, Baton Rouge, Alexandria and Shreveport during the Spring semester. This fall will probably see additional classes in Lafayette/Lake Charles and in Monroe. A review course for applicants for the professional engineering examination was also conducted at New Orleans and attendance had to be limited to match the size of the classroom.
7. The LES has throughout the year been engaged in the planning phases for a study that could be made during the fall of 1970 to offer guidance to the newly formed Louisiana Coordinating Council for Higher Education in developing a master plan of overall engineering education to meet the needs of the State of Louisiana.

As a final word to the members, in August I pleaded with each to lend their wholehearted support to this administration. Many have done just this and your spirit and dedication have been most gratifying. I must add, however, that the job is yet incomplete—your continued support of our legislative program until the regular Session of the Legislature is terminated is sorely needed, as is your support of the constitutional amendment to provide for additional income to the Society by increasing Society dues!

To all of our Officers, Directors and Committee Chairmen may I also say thank you for your splendid cooperation during my tenure in office; your friendship and trust I shall always treasure.

Heaviest Bronze Propeller Cast in this Hemisphere



The heaviest bronze propeller ever cast in the Western Hemisphere was cast on January 20, 1970, by the Service Foundry Division of Avondale Shipyards, Inc. The propeller is 23 feet in diameter, having four blades and a weight of approximately 45 net tons. It was cast in Nickel Aluminum Bronze, MIL-B-21230, Alloy 1, a high-strength bronze. This propeller is to be installed on the first ship of Avondale Shipyards' contract for eleven LASH ships.

The LASH concept, designed and developed by the marine engineering and naval architecture firm of Friede and Goldman, is the ultimate in containerization. These ships load and unload either barges or containers by means of a traveling crane and, consequently, hold down time in port to a minimum.

The present LASH contract at Avondale calls for six of these sophisticated vessels to be built for the Pacific Far East Line of San Francisco and five for Prudential Lines, Inc. of New York. The total cost of the contract is $234,586,000.

To be in a position to cast such huge propellers, the Service Foundry Division had to design and build a completely new facility. Over two years ago a 36-acre site, located three miles above Avondale's main yard on Louisiana Highway 18, was purchased for this purpose. A rigid frame building 150′ x 300′ was designed to handle 70-ton cranes with a hook lift of 35 feet.

Because of the soil conditions in southern Louisiana, it was necessary to drive 70′ pilings under each craneway column; four straight and two batter

piles at 15° from the vertical. All pilings under each column were capped with ten cubic yards of concrete. Columns were spaced on 25′ centers. The main craneway now carries one 70-ton crane with a 10-ton auxiliary and one 50-ton crane with a 10-ton auxiliary.

The main craneway serves the furnaces and the large casting molding area including propellers. Bronze castings, from 5,000 lbs. up to 75 net tons, are molded in the large casting molding area. These large castings are mostly propellers, stern tube bearings, rolling mill screw boxes and other large miscellaneous bronze castings for industrial and marine use.

The small craneway carries a 10-ton crane with a 25′ lift. This crane serves the five tilting gas fired crucible furnaces and the small casting molding area. Bronze, brass, monel, inconel and aluminum castings from ¼ pound up to 5,000 pounds are molded in this area. These would be propellers, impellers, pump cases, valves, and other miscellaneous castings that are not standard "shelf" items.

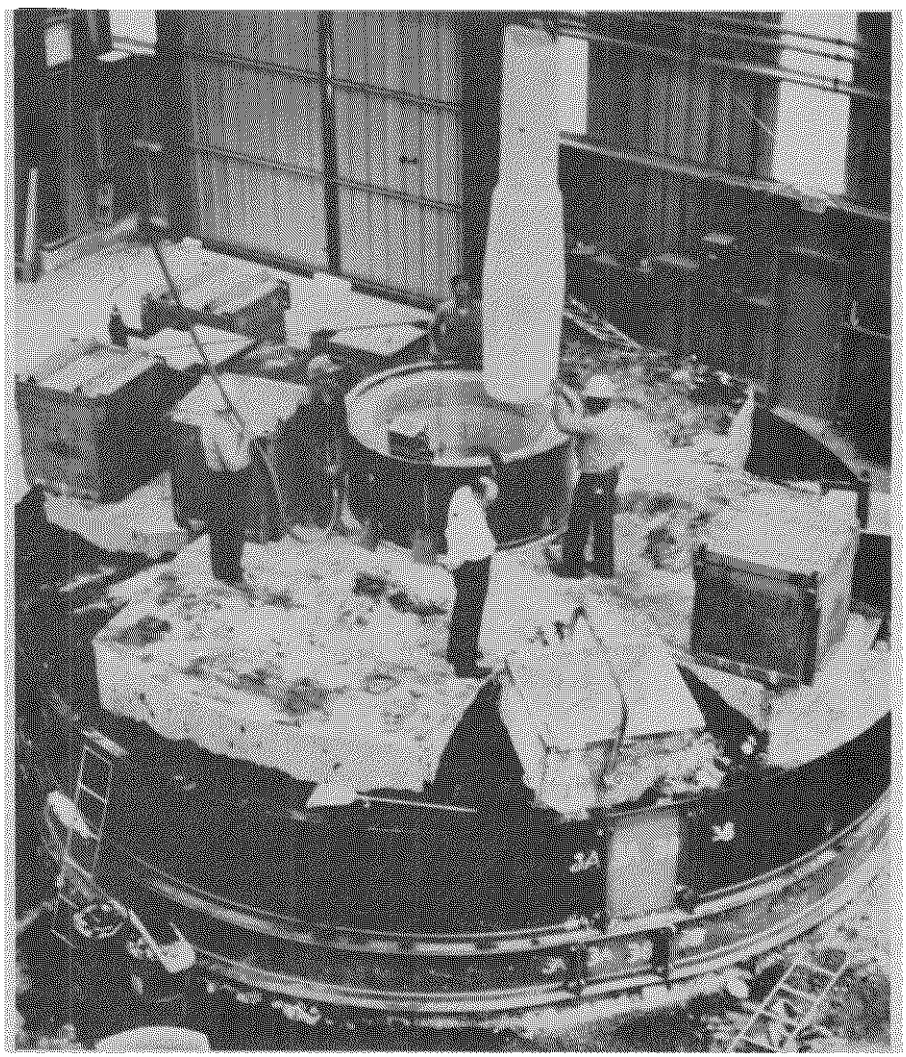
The entire floor is paved with concrete, from six to thirty inches thick. The floor areas, where the large propellers are molded and poured, are poured with 30-inch thick concrete and are further reinforced with 27″, 177 lb., wide flange steel beams radially positioned from a center spindle. In addition, to permanently insure level floors, mud jacking pipes are regularly spaced in the floor.

To insure satisfactory lighting, the building contains corrugated tinted translucent fiberglass panels over 5% of the side areas and 10% of the roof area. For night time lighting, mercury vapor lamps are installed over the entire working area. Adequate ventilation is secured by manually controlled louvers on the building sides and six electrically operated exhaust fans installed in the apex of the roof. Fan capacity is 50,000 cu. ft. per minute each.

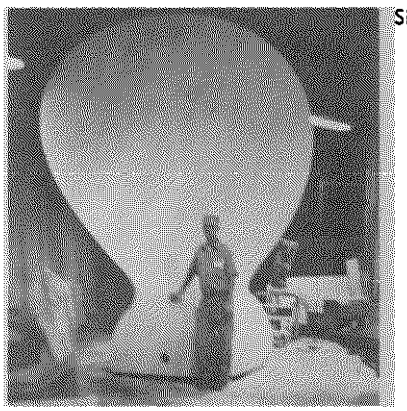
Molding sand for the LASH propellers is prepared in two separate completely automated sand systems. The molding sand is made with washed subangular silica sand bonded with 9% portland cement. The system making this sand stores 300 tons of sand in an overhead hopper by belt conveyor and elevator or pneumatic manipulation unloaded from trucks. Sand is automatically proportioned by a batch hopper and dropped into a Simpson muller. Cement is proportioned by a rotary plate feeder and timer. Water is added by volume also by automatic timer. The mixing cycle is controlled by previous setting. The mix is discharged on a belt conveyer system which loads self-discharging containers.

Backing sand for the LASH propeller molds is prepared in the second automated system. This system stores 300 tons of sand in an overhead hopper by belt conveyer and elevator. Sand is proportioned by batch hopper and dumped into a second Simpson muller. Bentonite is proportioned by a rotary plate feeder and timer. Water is added by volume by automatic timer. The mix is discharged on a belt conveyer and is distributed to other hoppers by belt conveyers and elevator.

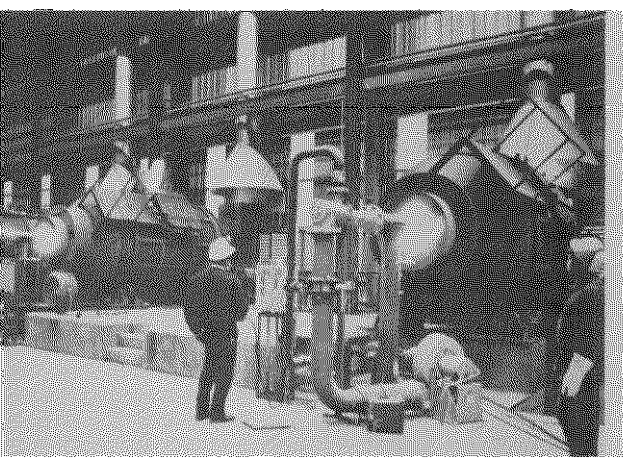
Mold preparations.



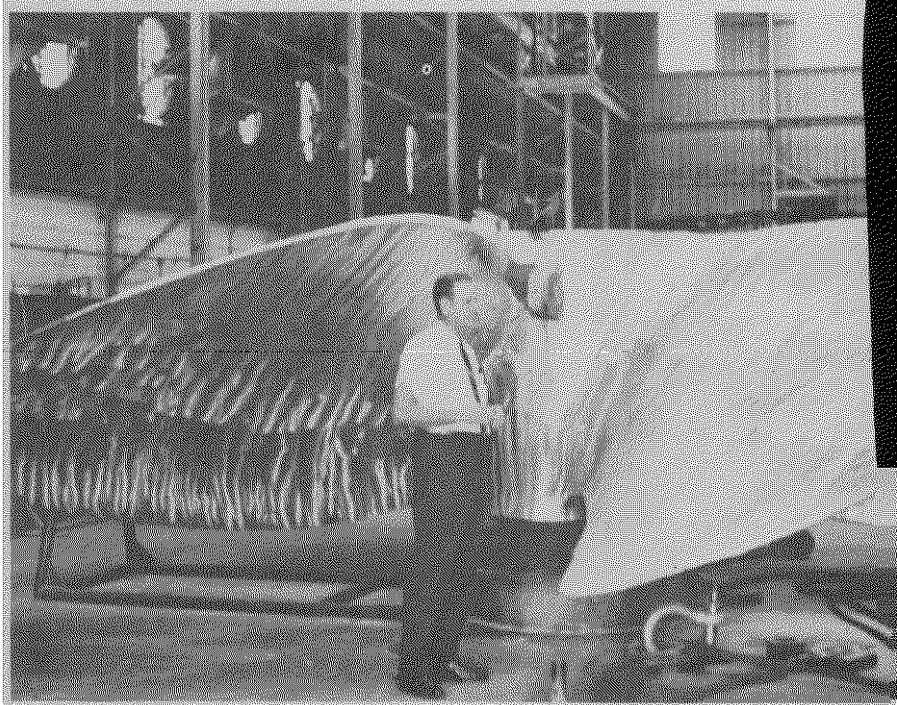
Heaviest Bronze Propeller (Continued)



Single blade wooden pattern.



Rotary gas fired furnaces.



Cast bronze propeller.

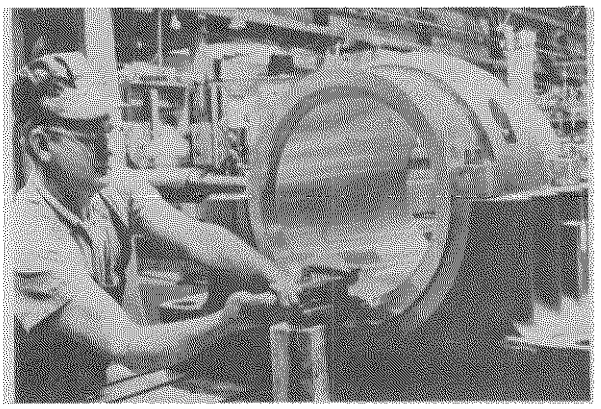
Metal for the LASH propellers is melted in three air-natural gas fired, rotary, reverberatory furnaces. The design of these furnaces was adapted for Service Foundry's particular need by Service Foundry engineers and technicians. One furnace is of 18 NT capacity and the other two will melt up to 25 NT each. Over 135,000 pounds of metal was melted to cast the first LASH propeller. All necessary facilities for a fourth furnace are already installed. The fourth furnace will probably be added later this year. This furnace will add an additional 25 NT of capacity.

Details Given

Making the mold for the LASH propeller a 26 ft. diameter steel drag flask is placed on the 30″ thick concrete floor section. The drag flask is so positioned that a vertical floor mounted spindle is in the exact center. Wet cement bonded sand is delivered from one automated sand system and added to the flask until it is approximately two feet deep. Cement bonded sand lumps from previous molds are then added to the drag to the extent thirty or forty per cent of the drag volume. The lumps are added for the purpose of increasing drag permeability so that there is no chance of gas building up during pouring. Cement bonded molding sand is next added to the top of the lumps until a wet sand surface is available to the drag side of the pattern face. Each blade is molded separately using a single blade wooden pattern. When the drag is completed, a wooden form is positioned over each blade separately. Wet cement bonded sand is added to the form to a depth of approximately eight inches. A steel lifting arbor is then imbeded in the wet sand. Dry lumps are then added to the form to within six or eight inches of the top. Again the lumps are for the purpose of increasing the permeability of the cope. Wet cement bonded sand is added to the top of the form and leveled. Each cope section weighs approximately 38,000 pounds.

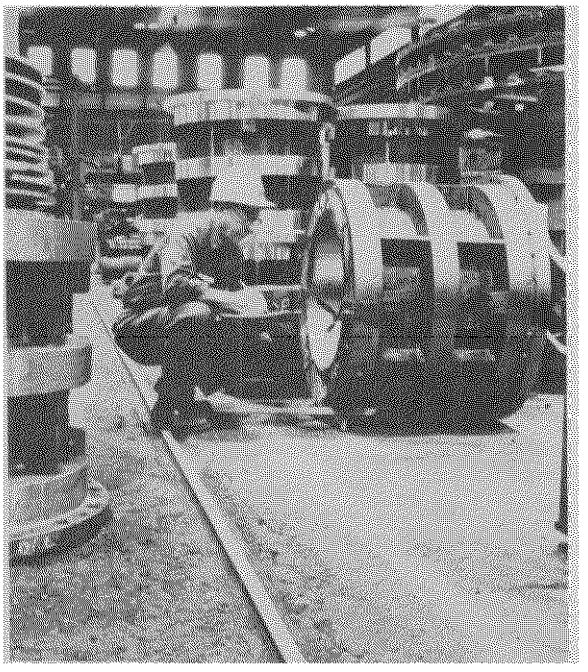
Upon completion and drying overnight of each cope section the mold is assembled for further drying. A forced air gas fired mold dryer is placed over the hub location without the center core in place. The mold is dried for about a week. The center core for the bore is dried for about a week. The center core for the bore is dried separately by gas oven.

After the mold and center core have been thoroughly dried, the mold is disassembled, clean-

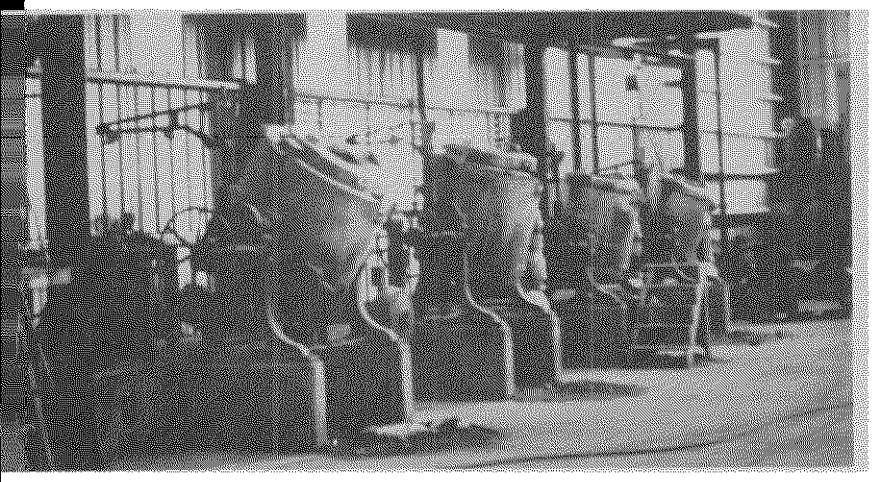


Bearings being machined.

Miscellaneous bronze castings.



Small casting and molding area.



ed and painted with a zirconium oxide wash. The center core is also painted with the wash. The mold is reassembled and the cope flask is placed on top of the drag flask. Backing sand is received from the second automated sand system and is rammed between the flask and the mold. The riser ring is placed in position and lined with an insulating material. The center core is next placed in position and shackled. Two pouring basins, 180° apart, are then installed. Approximately two hundred tons of weights are placed on the top of the mold for the purpose of keeping the copes in position during pouring. The propeller is poured using two 35-ton ladles. Pouring takes about 9 or 10 minutes. After pouring, the riser periodically receives quantities of hot metal. Twenty-four hours after the pouring, the weights are removed from the copes. When the temperature of the propeller drops to about 500° F., the copes are removed and the propeller is lifted from the drags and placed on the floor to cool to room temperature. After reaching room temperature the propeller is cleaned and the center core removed.

The riser is cut off and the propeller is faced and bored by a special mill designed by the engineers of the Service Foundry Division and built by technicians of the fabrication section of the Service Foundry Division.

Metal for the first LASH propeller was supplied by the Federated Metals Division of American Smelting & Refining Co. Federated prealloyed the bronze and supplied it in pig form.

Pigs were charged into the three furnaces and melted. The three furnaces were tapped into two ladles when the metal reached a temperature of 2250° F.

Both ladles were then degassed by flushing with dry nitrogen for twenty minutes. Four lances were used to degass each ladle. At the end of degassing the temperature dropped to 2050°F. Test bars and samples were poured from each ladle before pouring the propeller.

After rough boring, the propeller is transported by truck to the Harvey Plant Division for final machining. Here the propeller is finished, bored, and keyseated and the blades ground to proper thickness and pitch. The propeller is polished and statically balanced for shipment to Avondale shipyards for installation.

Smaller propellers for various sizes of tugs, pushboats, supply boats, etc. made of bronze or stainless steel are manufactured in a similar fashion.

Engineers, Ethics and the Law

ENGINEERS

An engineer is one who applies technical knowledge and professional judgement of the physical sciences to useful purposes for mankind. This definition of an engineer states the three requisites a person must have to practice engineering:

1. A fund of technical knowledge.
2. The ability to exercise professional judgement.
3. The ability to apply such knowledge and judgement usefully.

The nature of these requisites indicates that engineering is a profession involving education, experience and continued study to acquire and keep current a broad technical knowledge. This profession further requires the exercise of professional judgment, based on experience, observation of the field of practice, and the mental process of reasoning and balancing one idea against another until a correct conclusion is reached. Finally, the profession of engineering requires the ability to apply the knowledge and judgement acquired through education and experience to useful purposes for the benefit of mankind. This requires that the engineer be a man of action, with ability to make decisions, and that these decisions be prudent and responsible, since they will affect the public welfare, safety and interest. A bridge that collapses, a dam that breaks, a boiler that explodes, or a power line that fails may endanger the lives or welfare of thousands of people.

Engineers generally acquit themselves of their responsibilities to the public very well. The magnificent power networks, the wonderful highway systems, the reliable water supplies and sanitary works, and the splendid industrial plants that have made this nation great attest to this fact, and make engineers of the United States respected throughout the world. One need only visit some foreign countries and experience the power interruptions, the tortuous roads, the uncertain water supplies and lack of sanitation, the obsolete and inadequate industrial facilities, to realize this fact.

One sometimes hears, however, of an engineering situation in which the engineer has apparently not lived up to the high standards of the profession, and the remark is made that "they should do something" about it. These statements leave open to question who "they" are and what the "something" is that should be done. It seems useful, therefore, to review the situation with respect to engineers, ethics, and the law.

ETHICS

Engineering is a profession, and in common with other professions is governed by a Code of Ethics. The dictionary defines ethics as "a system or code of morals of a particular group or profession." This indicates that the system or code of ethics is a moral one, not a legal one, and is voluntarily adopted by the profession for its own governance to assure that the actions of its members meet the highest moral standards.

The Louisiana Engineering Society is the largest organization in Louisiana representing the whole engineering profession. Founded in 1898, it embraces all branches of practice and all fields of employment of engineers and presently has some 2,500 members throughout the state. It is affiliated nationally with Engineers Joint Council and the National Society of Professional Engineers and has adopted the Code of Ethics promulgated by the N.S.P.E. This Code, which is reproduced in full as part of this article, has developed from earlier codes and has been tested in a series of cases brought before the Board of Ethical Review of the National Society of Professional Engineers. Similar codes differing in some details have been adopted by the American Society of Civil Engineers, the American Society of Mechanical Engineers, the Institute of Electrical and Electronics Engineers and other engineering organizations.

A review of the Code of Ethics indicates that it is broad in concept in its several sections an

specific in concept in the subparagraphs developed under each section. An engineer operating under the Code of Ethics can generally determine rather quickly the ethical questions involved in a particular situation. Where there is an unusual set of circumstances the situation may be referred to the L.E.S. Committee on Ethics and Professional Conduct for determination.

Enforcement of the Code of Ethics is a function of the L.E.S. at the state level. The Constitution and By-Laws of the Louisiana Engineering Society are quite detailed with respect to the procedures and processes to be followed in such cases. "Article X—Discipline of Members," of the Constitution spells out, under six sections with numerous subheadings, the investigation and action to be taken in instances involving an alleged breach of the Code of Ethics by any member of the Society.

Note the last stipulation, "by any member of the Society." The Louisiana Engineering Society may apply the Code of Ethics and its discipline procedure only to members of the Society. It has no authority or jurisdiction over non-members. The remedies available to the Society with respect to a breach of the Code of Ethics by a member are to publicly reprimand the member, to suspend him from membership in the Society for a period not exceeding one year, or in the case of serious or continued violations, to expel the accused member from the Society.

THE LAW

Engineering is a profession serving the public in matters affecting the public health, safety and welfare. Like the medical and legal professions, which also serve the public, the engineering profession is regulated by law. The Louisiana law states, "In order to safeguard life, health and property, and to promote the public welfare, any person in either public or private capacity practicing or offering to practice professional engineering or land surveying shall hereafter be required to submit evidence that he is qualified so to practice and shall be registered as hereinafter provided." The original Louisiana Engineering Registration Act was passed in 1908, Louisiana having been the second state in the Union to have such an Act applying to the practice of civil engineering. The Act was rewritten as Act No. 73 of 1950, making it generally applicable to all branches of the profession, and has since received minor amendments. Act No. 73 of the Revised Statutes of Louisiana of 1950 is generally termed the Louisiana Engineering Registration Act.

This law establishes requirements for registration of professional engineers and land surveyors, establishes a Registration Board for the purpose of examining and registering engineers and administering the Act and provides penalties for violation of the law.

A professional engineer may be reproved or have his license suspended or revoked on three bases as set forth in the Law:

"Section 20. Revocations

a. The Board may receive and investigate complaints against Registered Professional Engineers and Land Surveyors, and make findings thereon.

b. By a majority vote, the Board may reprove (privately or publicly), or may suspend for a period not to exceed two years, or may revoke the certificate of registration of any registrant hereunder:

(1) Who has been convicted of a felony.

(2) Who has been found guilty by the Board of any fraud, deceit, gross negligence, misrepresentation, violation of contract or gross incompetency in his practice.

(3) Who has been found guilty of any fraud or deceit in obtaining his certificate or violation of any provision of this Act.

c. The Board may act either upon its own motion or as the result of the filing of written charges, by any person or persons making a complaint against a registrant, with the Secretary of the Board.

d. All charges, unless dismissed by the Board as unfounded or trivial, shall be heard by the Board within two (2) months after the date on which they shall have been preferred.

e. Before the Board shall suspend or revoke the registration of any Registered Pro-

fessional Engineer or Land Surveyor as provided in Section 20b, it shall conduct a hearing as provided herein below. Such hearing shall be public, unless the registrant requests in writing that it be private.

f. The time and place for said hearing shall be fixed by the Board, and a copy of the charges, together with a notice of the time and place of hearing, shall be personally served on or mailed by registered letter to the last known address of such registrant, at least thirty days before the date fixed for the hearing. At any hearing, the accused registrant shall have the right to appear personally and by counsel, to cross examine witnesses appearing against him, and to produce evidence and witnesses in his own defense.

A written record, including the testimony of all witnesses, shall be made and filed by the Secretary."

A professional engineer may also be charged, tried, and if found guilty, fined or imprisoned for violation of the law, and a business entity may be fined, as follows:

"Section 23. Violations and Penalties.

a. Any person who shall practice, or offer to practice, engineering or land surveying in this state without being registered or attempting to use as his own the certificate of registration or the seal of another, or any person who shall give any false or forged evidence of any kind to the Board or to any member thereof in obtaining a certificate of registration, or any person who shall falsely impersonate any other registrant of like or different name, or any person who shall attempt to use an expired or revoked certificate of registration, or any person who shall violate any of the provisions of this Act, shall be guilty of misdemeanor, and shall, upon conviction, be sentenced to pay a fine of not less than one hundred dollars ($100.00) nor more than five hundred dollars ($500.00), or suffer imprisonment for a period not exceeding three months, or both.

Any corporation, company, partnership, firm or business entity who violates any part of this Act shall be guilty of a misdemeanor and shall, upon conviction, be sentenced to pay a fine of not less than five hundred ($500.00), nor more than one thousand dollars ($1,000.00). Each day of violation shall be a separate offense.

b. It shall be the duty of the Attorney General, all District Attorneys, and all duly constituted officers of the law of this state, or any political subdivision thereof, to enforce the provisions of this Act and to prosecute any persons violating same. The Attorney General of this state or his assistant shall act as legal advisor of the Board and render such legal assistance as may be necessary in carrying out the provisions of this Act, provided, that this shall not relieve the local prosecuting officers of any of their duties under the law as such.

c. The Board is charged with the duty of seeing that the provisions of this Act are enforced and the Board shall investigate any complaint relating to the violation of any provision of this Act, and depending upon the result of such investigation, the Board shall present the facts of their findings to the District Attorney in whose district such violation has occurred and shall aid in the prosecution of the violator; or the Board may, if it deems necessary, prosecute any violator directly and in its own name in any district court of this state. Such action may be instituted by any member, officer, attorney or agent of the Board."

ENGINEERS, ETHICS, AND THE LAW

It is evident from the above discussion that the practice of the profession of engineering imposes grave responsibilities, moral and legal, on those devoting their lives to this work. To maintain high standards of competence and performance, codes of ethics are adopted and enforced by engineers through their professional societies. Because the practice of engineering affects the public health, safety and welfare, it is regulated by law in Louisiana and each of the 49 other states, and the responsibility for enforcement lies with the Board, and the Attorney General, District Attorneys and other duly constituted officers of the law of the state and its political subdivisions. In event of an alleged infraction, it must be determined whether this is a breach of ethics or a violation of law and appropriate action must be taken. The Louisiana State Board of Registration for Professional Engineers and Land Surveyors examines on the average of 400 or more possible violations per year and takes action with respect to 100 or more of these. Most are settled by voluntary action of the parties concerned or their attorneys. Where necessary the cases are brought to court, tried, and the decision reported to the profession in the LOUISIANA ENGINEER, the official journal of the Board.

Code of Ethics

Preamble

The Engineer, to uphold and advance the honor and dignity of the engineering profession and in keeping with high standards of ethical conduct:

- *Will be honest and impartial, and will serve with devotion his employer, his clients, and the public;*
- *Will strive to increase the competence and prestige of the engineering profession;*
- *Will use his knowledge and skill for the advancement of human welfare.*

Section 1—The Engineer will be guided in all his professional relations by the highest standards of integrity, and will act in professional matters for each client or employer as a faithful agent or trustee.

a. He will be realistic and honest in all estimates, reports, statements, and testimony.

b. He will admit and accept his own errors when proven obviously wrong and refrain from distorting or altering the facts in an attempt to justify his decision.

c. He will advise his client or employer when he believes a project will not be successful.

d. He will not accept outside employment to the detriment of his regular work or interest, or without the consent of his employer.

e. He will not attempt to attract an engineer from another employer by unfair methods.

f. He will not actively participate in strikes, picket lines, or other collective coercive action.

Section 2—The Engineer will have proper regard for the safety, health, and welfare of the public in the performance of his professional duties. If his engineering judgment is overruled by nontechnical authority, he will clearly point out the consequences. He will notify the proper authority of any observed conditions which endanger public safety and health.

a. He will regard his duty to the public welfare as paramount.

b. He shall seek opportunities to be of constructive service in civic affairs and work for the advancement of the safety, health and well-being of his community.

c. He will not complete, sign, or seal plans and/or specifications that are not of a design safe to the public health and welfare and in conformity with accepted engineering standards. If the client or employer insists on such unprofessional conduct, he shall notify the proper authorities and withdraw from further service on the project.

Section 3—The Engineer will not advertise his work or merit in a self-laudatory manner, and will avoid all conduct or practice likely to discredit or unfavorably reflect upon the dignity or honor of the profession.

a. Circumspect advertising may be properly employed by the Engineer to announce his practice and availability under the following conditions:

(1) Professional cards in recognized, dignified publications, and listings in rosters or directories published by responsible organizations are acceptable forms, provided that the cards or listings are consistent in size and content, not in excess of one-quarter page, and are in a section of the publication regularly devoted to such professional cards. Information given must be restricted to firm name, address, telephone number, names of principal participants, and the fields of practice in which the firm is qualified. A dignified symbol or art work representative of the firm's practice may be used.

(2) Identification of the firm name, address and telephone number on vehicles and equipment together with services related thereto.

(3) Brochures and other factual representations of experience, facilities, personnel and capacity to render service, providing they are not misleading with respect to the Engineer's direct participation in the projects described.

(4) A statement of his name or the name of his firm and statement of his type of service may be posted on projects for which he renders services.

b. An Engineer may prepare descriptive articles for the lay or technical press which are factual, dignified and free from ostentations or laudatory implications. Such articles shall not imply other than his direct participation in the work described unless credit is given others for their share of the work.

Code of Ethics (Continued)

c. Permission may be given by an Engineer for his name to be used in commercial advertisements, such as may be published by contractors, material suppliers, etc., only by means of a modest dignified notation acknowledging the engineer's participation and the scope thereof in the project described.
d. Telephone listings shall be limited to name, address and telephone number either under or with each branch listing in which he qualifies.
e. He will not allow himself to be listed for employment using exaggerated statements of his qualifications.
f. He will not use his professional affiliations or public office to secure personal advantage and will avoid any act tending to promote his own interest at the expense of the dignity and standing of the profession.

Section 4—The Engineer will endeavor to extend public knowledge and appreciation of engineering and its achievements and to protect the engineering profession from misrepresentation and misunderstanding.
a. He shall not issue statements, criticisms, or arguments on matters connected with public policy which are inspired or paid for by private interest, unless he indicates on whose behalf he is making the statement.

Section 5—The Engineer will express an opinion on an engineering subject only when founded on adequate knowledge and honest conviction.
a. The Engineer will insist on the use of facts in reference to an engineering project in a group discussion, public forum or publication of articles.

Section 6—The Engineer will undertake engineering assignments for which he will be responsible only when qualified by training or experience; and he will engage, or advise engaging, experts and specialists whenever the client's or employer's interests are best served by such service.

Section 7—The Engineer will not disclose confidential information concerning the business affairs or technical processes of any present or former client or employer without his consent.
a. While in the employ of others, he will not enter promotional efforts or negotiations for work or make arrangements for other employment as a principal or to practice in connection with a specific project for which he has gained particular and specialized knowledge without the consent of all interested parties.

Section 8—The Engineer will endeavor to avoid a conflict of interest with his employer or client, but when unavoidable, the Engineer shall fully disclose the circumstances to his employer or client.
a. The Engineer will inform his client or employer of any business connections, interests, or circumstances which may be deemed as influencing his judgment or the quality of his services to his client or employer.
b. When in public service as a member, advisor or employee of a governmental body or department, an engineer shall not participate in considerations or actions with respect to services provided by him or his organization in private engineering practice.
c. An engineer shall not solicit or accept an engineering contract from a governmental body on which a principal or officer of his organization serves as a member.

Section 9—The Engineer will uphold the principal of appropriate and adequate compensation for those engaged in engineering work.
a. He will not undertake or agree to perform any engineering service on a free basis, except for civic, charitable, religious, or eleemosynary nonprofit organizations when the professional services are advisory in nature.
b. He will not undertake work at a fee or salary below the accepted standards of the profession in the area.
c. He will not accept remuneration from either an employee or employment agency for giving employment.
d. When hiring other engineers, he shall offer a salary according to the engineer's qualifications and the recognized standards in the particular geographical area.
e. If in sales employ, he will not offer, or give engineering consultation, or designs, or advice other than specifically applying to the equipment being sold.

Section 10—The Engineer will not accept compensation, financial or otherwise, from more than one interested party for the same service, or for services pertaining to the same work, unless there is full disclosure to and consent of all interested parties.
a. He will not accept financial or other considerations, including free engineering designs, from material or equipment suppliers for specifying their product.
b. He will not accept commissions or allowances, directly or indirectly, from contractors or other parties dealing with his clients or employer in connection with work for which he is responsible.

Section 11—The Engineer will not compete unfairly with another engineer by attempting to obtain employment or advancement or professional engagements by competitive bidding, by taking advantage of a salaried position, by criticizing other engineers, or by other improper or questionable methods.
a. The Engineer will not attempt to supplant another engineer in a particular employment after becoming aware that definite steps have been taken toward the other's employment.
b. He will not offer to pay, either directly or

indirectly, any commission, political contribution, or a gift, or other consideration in order to secure work, exclusive of securing salaried positions through employment agencies.

c. He shall not solicit or submit engineering proposals on the basis of competitive bidding. Competitive bidding for professional engineering services is defined as the formal or informal submission, or receipt, of verbal or written estimates of cost or proposals in terms of dollars, man days of work required, percentage of construction cost, or any other measure of compensation whereby the prospective client may compare engineering services on a price basis prior to the time that one engineer, or one engineering organization, has been selected for negotiations. The disclosure of recommended fee schedules prepared by various engineering societies is not considered to constitute competitive bidding. An Engineer requested to submit a fee proposal or bid prior to the selection of an Engineer or firm subject to the negotiation of a satisfactory contract, shall attempt to have the procedure changed to conform to ethical practices, but if not successful he shall withdraw from consideration for the proposed work.

These principles shall be applied by the Engineer in obtaining the services of other professionals.

d. An Engineer shall not request, propose, or accept a professional commission on a contingent basis under circumstances in which his professional judgment may be compromised, or when a contingency provision is used as a device for promoting or securing a professional commission.

e. While in a salaried position, he will accept part-time engineering work only at a salary or fee not less than that recognized as standard in the area.

f. An Engineer will not use equipment, supplies, laboratory or office facilities of his employer to carry on outside private practice without consent.

Section 12—The Engineer will not attempt to injure, maliciously or falsely, directly or indirectly, the professional reputation, prospects, practice or employment of another engineer, nor will he indiscriminately criticize another engineer's work in public. If he believes that another engineer is guilty of unethical or illegal practice, he shall present such information to the proper authority for action.

a. An Engineer in private practice will not review the work of another engineer for the same client, except with the knowledge of such engineer, or unless the connection of such engineer with the work has been terminated.

b. An Engineer in governmental, industrial or educational employ is entitled to review and evaluate the work of other engineers when so required by his employment duties.

c. An Engineer in sales or industrial employ is entitled to make engineering comparisons of his products with products by other suppliers.

Section 13—The Engineer will not associate with or allow the use of his name by an enterprise of questionable character, nor will he become professionally associated with engineers who do not conform to ethical practices, or with persons not legally qualified to render the professional services for which the association is intended.

a. He will conform with registration laws in his practice of engineering.

b. He will not use association with a nonengineer, a corporation, or partnership, as a "cloak" for unethical acts, but must accept personal responsibility for his professional acts.

Section 14—The Engineer will give credit for engineering work to those to whom credit is due, and will recognize the proprietary interests of others.

a. Whenever possible, he will name the person or persons who may be individually responsible for designs, inventions, writings, or other accomplishments.

b. When an Engineer uses designs supplied to him by a client, the designs remain the property of the client and should not be duplicated by the Engineer for others without express permission.

c. Before undertaking work for others in connection with which he may make improvements, plans, designs, inventions, or other records which may justify copyrights or patents, the Engineer should enter into a positive agreement regarding the ownership.

d. Designs, data, records, and notes made by an Engineer and referring exclusively to his employer's work are his employer's property.

Section 15—The Engineer will cooperate in extending the effectiveness of the profession by interchanging information and experience with other engineers and students, and will endeavor to provide opportunity for the professional development and advancement of engineers under his supervision.

a. He will encourage his engineering employees' efforts to improve their education.

b. He will encourage engineering employees to attend and present papers at professional and technical society meetings.

c. He will urge his engineering employees to become registered at the earliest possible date.

d. He will assign a professional engineer duties of a nature to utilize his full training and experience, insofar as possible, and delegate lesser functions to sub-professionals or to technicians.

e. He will provide a prospective engineering employee with complete information on working conditions and his proposed status of employment, and after employment will keep him informed of any changes in them.

As Revised through January 1969

Society Recognizes Outstanding Engineers



Dean Bogard, left, receives his award from Dr. Jack Thigpen.



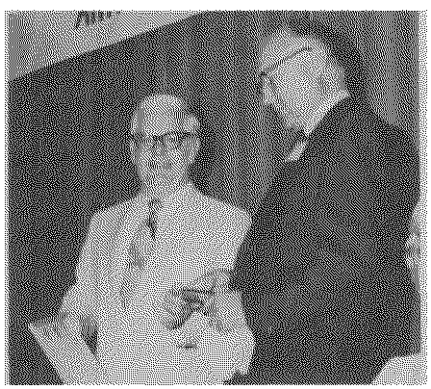
Andrew M. Lockett Civic Activities Medal

Dean Ben T. Bogard, a native of Ruston, Louisiana, attended Louisiana Polytechnic Institute where he received a bachelor of science degree in mechanical engineering in 1935. He was awarded a master of science degree in mechanical engineering from Louisiana State University in 1936 and has done additional graduate work at LSU, Louisiana Tech, the University of Texas and the University of Arkansas.

In 1937 Dean Bogard became a member of the faculty of the School of Engineering at Louisiana Tech and has worked on the staff of this school since that time. He served as assistant and later head of the Department of Mechanical Engineering and in 1952 was appointed Dean of the School of Engineering.

Since joining the faculty at Louisiana Tech, Dean Bogard has exhibited a genuine interest in civic affairs. He has been active in four areas: service clubs, chambers of commerce, the Hospital Board and his church. Probably his most significant contributions have been in his work with the Junior Chamber of Commerce and the Ruston Chamber of Commerce. As a member of the Ruston Chamber of Commerce, he played a major part in the industrial growth of the area which prior to that time had been very slow. Serving as chairman of the Industrial Committee from 1954 through 1959, he was primarily responsible for the Chamber purchasing land for an industrial park and for the construction of a railroad spur into the park. Dean Bogard served as the president of the Ruston Chamber of Commerce during 1955.

In addition to his community-wide civic activities, Dean Bogard has made significant contributions to the engineering profession. He served as president of the Louisiana Engineering Society in 1961 and has held important positions in the American Society of Mechanical Engineers and the American Society for Engineering Education. He was one of the original members of the Louisiana Engineering Registration Board and has served continuously since its formation in 1950.



J. W. Affolter, left, receives his award from Leo Odom.



A. B. Paterson Engineer in Management Award

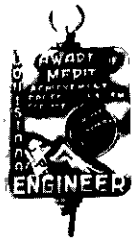
Mr. J. W. Affolter, Jr. was born in Parkersburg, West Virginia, and attended grade and high school there. He received a bachelor of science degree in chemical engineering from Louisiana State University in 1942 and did post graduate work at the Mid-South Executive Development Program.

Mr. Affolter joined Humble Oil & Refining Company in Baton Rouge in 1942 as equipment inspector in the technical division. Since that time he has served in numerous responsible management positions with the refinery, including head of the department responsible for all oxonation and steam cracking operations. He is presently head of the fuels department, the largest process operating department anywhere in the Humble Company, responsible for a major portion of the refinery's process operations. Other departments he has headed include: the department responsible for field coordination of refinery-wide maintenance and construction, the department responsible for actual performance of all maintenance and repair work associated with petroleum products operations and the construction department, responsible for both construction handled by contracts and by the refinery's own forces.

Mr. Affolter is currently active in developmental work to place the entire Baton Rouge refinery on computer control to be operated out of a single control center. This will be the largest installation of its kind in the world when completed.



Dr. Reneau, left, receives his award from Willie McGough.



Louisiana Engineer Award of Merit

Dr. Daniel D. Reneau, Associate Professor in the Department of Chemical Engineering at Louisiana Polytechnic Institute, is a native of Woodville, Miss. He attended the University of Southern Mississippi and Louisiana Polytechnic Institute, receiving a bachelor of science degree in chemical engineering in 1963 from the latter institution. His outstanding undergraduate record earned him a graduate assistantship, and in 1964 he received the master of science degree in chemical engineering from Louisiana Tech.

Dr. Reneau continued his graduate training at Clemson University, where he held an NDEA Fellowship and a National Institute of Health Fellowship. During this time he was a consultant to the South Carolina Medical School, where he presented several seminars on chemical engineering applications in medicine. He was awarded the Ph.D. degree in chemical engineering in June of 1966. He presented a paper on the subject of his dissertation, "A Mathematical Simulation of Oxygen Release, Diffusion and Consumption in the Capillaries and Tissue of the Human Brain," at the annual meeting of the American Chemical Society and was awarded the annual Honor Scroll Award (1966) for the best presentation.

In September of 1967 he joined the faculty of the Department of Chemical Engineering at Louisiana Tech, where he earned a reputation as an authority in the field of biomedical engineering. He initiated biomedical engineering courses in the graduate program in this department and has conducted extensive research programs in this area.

In February of 1969 Dr. Reneau received a $33,782 grant from the Department of Health, Education and Welfare to conduct research in the biomedical engineering area.

In April of 1969, Dr. Reneau was chairman and program coordinator for the Symposium on Chemical Engineering and Medicine of the 157th National Meeting of the American Chemical Society and at present he is functioning as chairman of the same symposium for the 1971 national meeting in Los Angeles, Calif.

Since he began working for Louisiana Tech's Chemical Engineering Department, Dr. Reneau has authored numerous technical articles and has presented many papers and lectures at various seminars. He is a member of the American Chemical Society, the American Institute of Chemical Engineers, the American Society for Engineering Education and the Louisiana Engineering Society.



Dr. Murrill, left, receives congratulations from Dr. Roger Richardson.



Technological Accomplishment Medal

Dr. Paul Whitfield Murrill, Professor of Chemical Engineering, Vice-Chancellor and Dean of Academic Affairs at Louisiana State University, Baton Rouge, received his bachelor of science degree in chemical engineering from the University of Mississippi. He completed his post graduate work at LSU, where he was awarded a master of science degree in chemical engineering and a Ph.D. degree in chemical engineering.

In 1962 he joined the LSU faculty as a part-time instructor in the Department of Chemical Engineering. The following year he became an assistant professor in the departments of Chemical Engineering and Mechanical, Industrial and Aerospace Engineering. He was promoted to the rank of associate professor in 1965 and full professor in 1968.

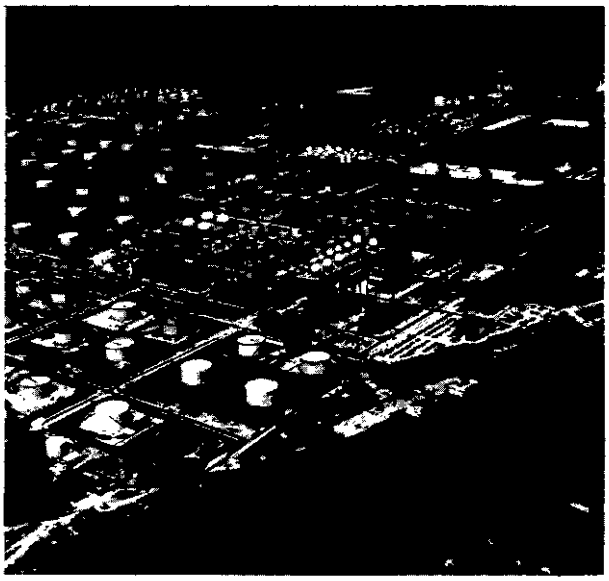
Dr. Murrill was head of the Department of Chemical Engineering from 1967 through 1969.

Dr. Murrill is presently project manager and principal investigator for the U. S. Department of Defense Project THEMIS study in Digital Automata. LSU was given this project award in 1967 and in three years the University has received over $1.2 million in research contracts and grants to conduct the study.

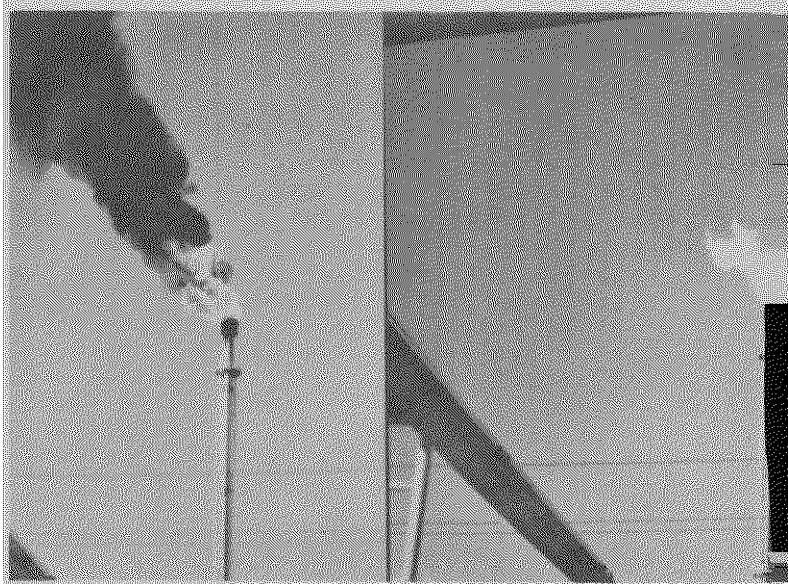
Among his professional honors, Dr. Murrill was listed in Outstanding Young Men of America in 1970 and in American Men of Science, 11th Edition, and received the 1966 Halliburton Award for Excellence in Engineering Teaching. He is a Registered Professional Engineer and member of the Louisiana Engineering Society and numerous other professional and honorary organizations.

Major companies he has done consulting work for include Dow Chemical Company, Kaiser Aluminum & Chemical Company, Humble Oil & Refining Company, E. I. du Pont de Nemours & Company and Creole Petroleum Company.

Pollution Abatement Efforts at Cities Service



View of Cities Service's Lake Charles, Louisiana operations.



This picture dramatizes the affects of smokeless flaring. Left shows ethylene plant flare with system off, while right shows system on.

Long before words like "pollution," "ecology," and "environmental control" were the common household phrases that they are today, Cities Service in Lake Charles, Louisiana, as well as in its other operating areas, was practicing pollution control—as were most other oil companies. Assuredly, controls would not have been sufficient to produce effluents of the quality required today, but they were adequate to meet requirements as they then existed.

Waste control facilities built into the refinery at the time of construction in the early 1940's included oil gravity separators, retention ponds, tanker ballast disposal facilities, oil skimming facilities, flare systems and other control devices.

Since 1943, Cities Service's Lake Charles Operations has grown from a 70,000 barrel per day refinery into a petroleum and petrochemical manufacturing complex. Today the Lake Charles facilities include a 215,000 barrel per day refinery, a lube and wax plant, a butyl rubber plant, a polyethylene plant, and a petrochemical complex which boasts plants for the manufacture of butadiene, ammonia, ethylene, propylene, ethylene oxide - glycol, and cylic chemicals. Expansion of the original facilities, coupled with the addition of new plants and imposition of stricter effluent requirements, imposed an added load to our pollution control system which necessitated expansion and additions to our waste control facilities.

Some of these facilities include a sour water stripper and an improved flaring system which incorporates the use of smokeless flare tips on two of our flare systems. We have installed sanitary sewer effluent collection and oxidation systems and have revised our oil recovery facility by creating a secondary holding pond and by the addition of skimmer baffles. We have placed floating roofs on most crude and product tankage, installed aeration equipment in the holding ponds and have placed in service a caustic gathering and neutralization system.

We have revamped one side of our sulphuric acid plant and have devised a means of disposing oil sludge. We now have an ethylene furnace quench water filter whose effluent serves as cooling tower makeup water. Other facilities added for waste control include chromate recovery from cooling tower blowdown at the butyl rubber plant, fin-fan coolers where feasible, a crumb filter on butyl rubber effluent, and many others.

Approximatey $5 million was spent in just the last three or four years upgrading waste control systems.

With the passage of the Louisiana Water Quality and Air Quality Control Act, in 1968 and 1969 respectively, studies were started in order to prepare programs to comply with these new requirements. In the area of water quality control, studies were started in all plants which comprise Cities Service's Lake Charles Operations. In addition to the basic type of treatment required, it was determined that each plant should handle and treat its own effluent. Outlines of air quality controls were also made.

An estimated $20 million will be spent in the next three years putting these programs into effect.

At the lube plant, where laboratory testing and treatability studies are in their final stages,

the problem of reduction of chromate from cooling tower blowdown and reduction of BOD and COD demand by phenol and other soluble compounds in the plant effluent will be handled by pretreatment to remove finely divided oil emulsions not removed by our oil separator. They will then be further handled by an activated sludge unit for secondary water treatment. Engineering includes segregation and collection of streams requiring treatment, necessary surge capacity for minimizing rain water effects on oxidation pond loading, and a leveling pond to serve normal surge and temperature averaging.

A treatability study is also being made at our petrochemical plant. We are now in the process of building a new ethylene-propylene plant and expanding our polyethylene plant. Our company recently announced that sections of the old butadiene and ammonia plants will be phased out as these new plants come on stream. Field studies of effluents from existing units plus anticipated loads from the new plants were the bases for synthesizing the effluent for this study. System requirements will be finalized so that installation can be completed by our deadline date.

Our butyl rubber plant is operating the first chromatic recovery system adapted to petrochemical operation. The system, which works on the ion-exchange principle, is a success and initial mechanical failures have been overcome. Also at the butyl rubber plant, filtration of zinc stearate and minute rubber particles has been reasonably successful and debugging is in progress.

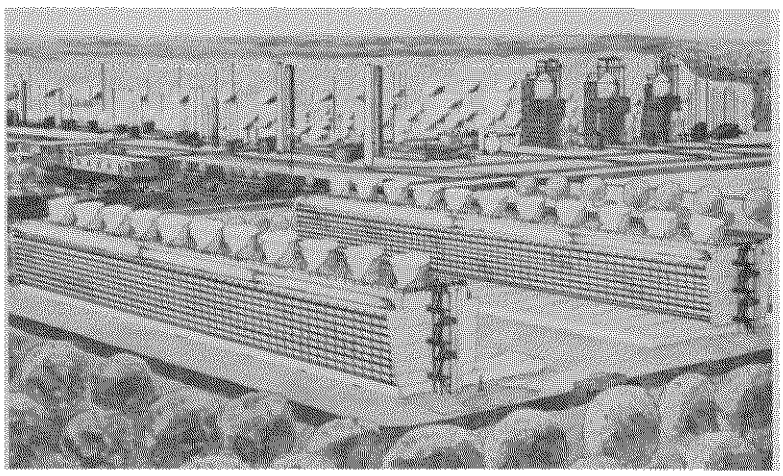
All the older parts of the refinery are cooled by once-through river water. Approximately 200,000 gallons per minute are used for this purpose, and obviously, entirely different treatment problems were encountered here than at the lube and petrochemical plants. Our first problem was to reduce the amount of river water used to a volume that could feasibly be treated.

After several months of study, a closed circulation system utilizing two cooling towers with a combined capacity of 250,000 gallons per minute was agreed upon. Individual unit towers would have required too much real estate and would have forced us to scrap our present water distribution system. Initially, the new towers will be brackish water towers.

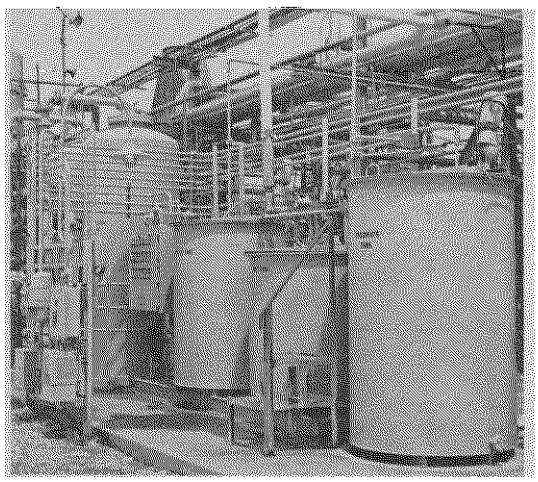
The Calcasieu River, which supplies our water, never has salinity below 1,000 ppm for more than two months of the year but rarely goes above 16,000 ppm. However, we hope to get our makeup water from water just below the surface with average chlorides of approximately 5,000 ppm. This should allow us to run two to three cycles of concentration and blowdown about 5000-2500 gallons per minute. Only biocide treatment for marine growth is planned. Secondary treatment of this blowdown will be discussed later, but the reduction in thermal pollution to the river should be noted here, approximately one and one-half billion BTU's per hour. Intake volume will be reduced some 80%.

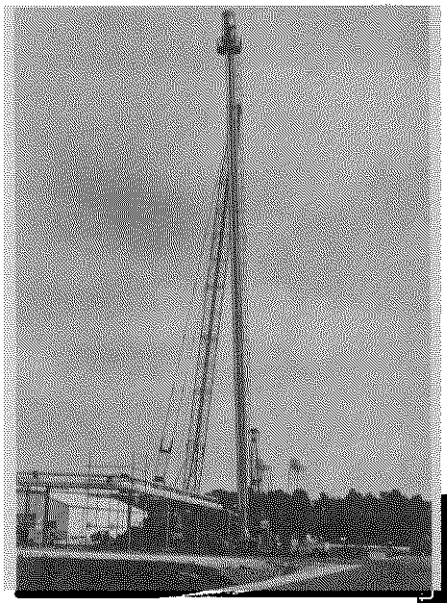
The study team determined that the existing river water pump station could be upgraded to handle the increased flow and pressure required for the new pressurized hot water collection system. New impellers and bowls will be purchased to improve the pump head. The sacrificed capacity plus additional capacity requirements will be made up with new pumps.

Architect's concept of the cooling towers for the river water conservation project. The towers, capable of handling 250,000 GPM will be the largest constructed in the Gulf-Southwest and possibly in the nation for pollution abatement purposes.



The first chromate recovery system adapted to petrochemical operations is located at the Butyl Rubber Plant of Cities Service's Lake Charles operations.





Smokeless flare tips similar to this one are planned for all flares throughout the complex.

The new hot water return system will consist of reinforced concrete pressure pipe varying in size from 48" diameter for laterals to 84" diameter mains for hot water to the towers. Cool water will gravity flow from the towers to the pump station, a distance of approximately 3,000 LF, through two 90" diameter reinforced concrete lines. Major underground piping inside an old refinery is always a difficult job, and although only laterals have to be laid in areas with major obstructions, some overhead lateral piping will be required. The larger diameter lines will be routed in relatively clear areas. The earth displaced by the total water return system will be approximately 6 acre-feet, a sizeable disposal problem.

The cooling towers, as depicted, will be approximately 300 feet long by 60 feet wide rated at 125,000 gpm each. Design water temperatures are 120°F in and 90°F out, with 81°F wetbulb 50 feet upwind. They will be of double flow design, equipped with 200 horsepower fans, and with vibration monitors and shutdowns. Fibercast headers and valves will be used and tower metallurgy will be designed for brackish water. Cooling tower basins will be above ground to increase the head available for gravity flow to the pump house. Oil skimming will be incorporated in the blowdown facilities at the tower basin.

Site clearance contracts have been let, and it is expected that the tower basin and relatively clear runs of the larger diameter pipe will be completed this year. Completion of the total river water conservation project is expected late next year.

Treatment of brackish tower blowdown water is expected to be accomplished in an aerated lagoon. Further study will be required to determine the method for removal of chromate from blowdown of our existing towers which are on well water makeup, and from the new tower once it is put on fresh water makeup.

Other plant streams requiring secondary treatment include oil separator effluent, acid and caustic neutralized water, desalter waters, and H_2S stripper waters. Studies are still under way but indication here points to secondary treatment by activated sludge units.

We have installed steam injection smokeless burning tips on our worst flares. This program is continuing in the complex, and we expect to have all flares equipped with smokeless tips under the current program. One refinement being engineered into our refinery system is a flare gas recovery compressor which will recover normal flare loads to the fuel gas system.

Other pollution abatement items approved include modernization of the second side of our sulphuric acid plant which, along with our revised "A" side, will reduce sulfur dioxide emissions 90%. Enlarged sour water disposal facilities and a sulfur recovery unit is in engineering. Numerous other items like coker oil, vapor and fines recovery, surface condensers at our vacuum units, and others round out our pollution control items.

The goal of our multi-million dollar program is to meet state and federal regulations at our Lake Charles Operations by December 1972. We are confident we will realize that goal.



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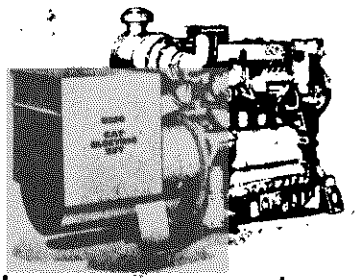
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Convention Photos

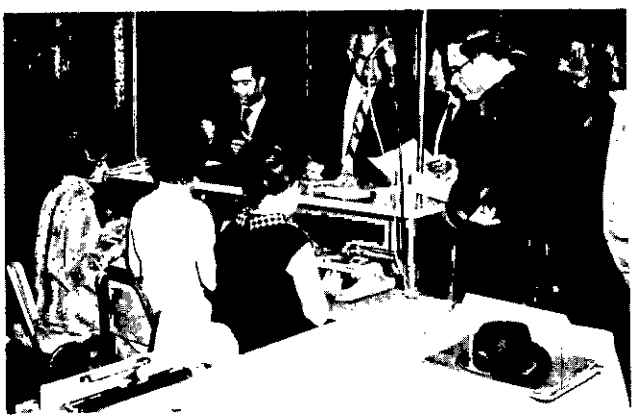
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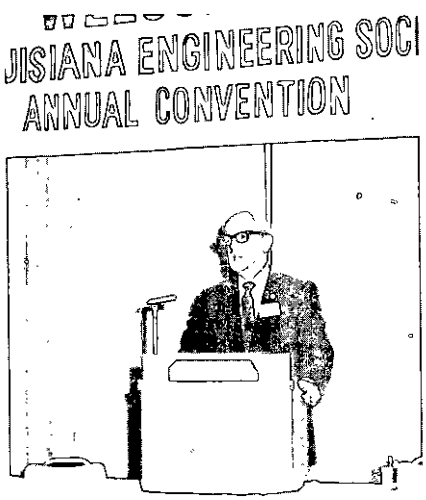


ANA ENGINEERING SOCIETY
NUAL CONVENTION

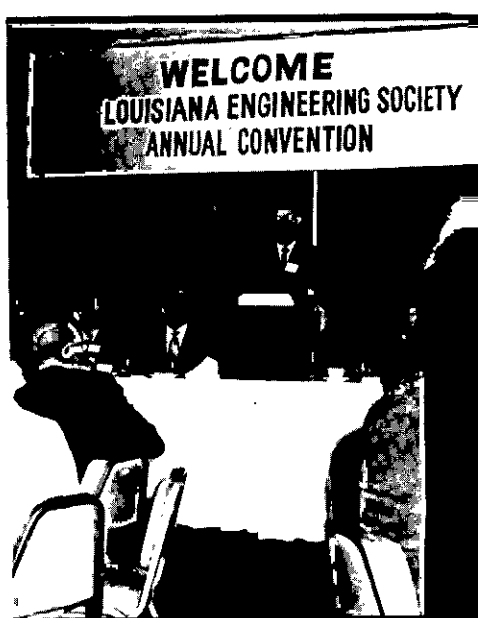
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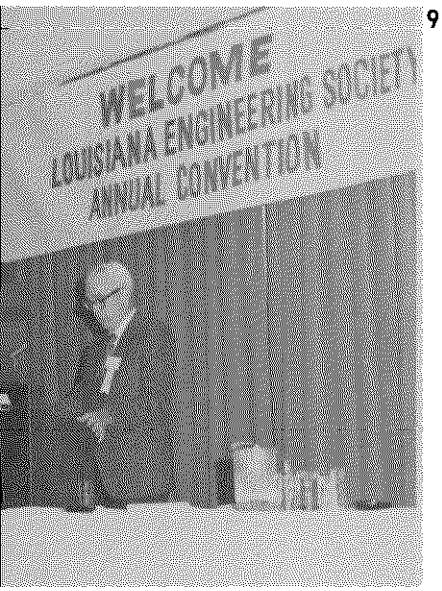
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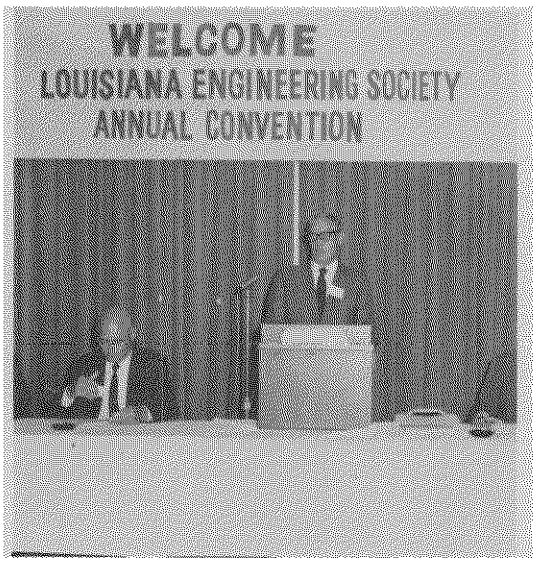
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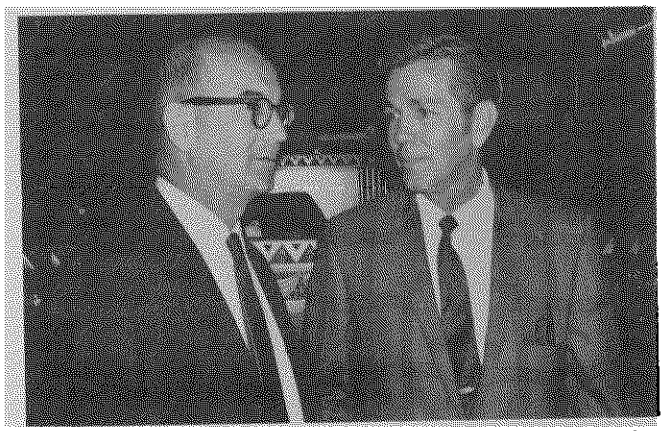


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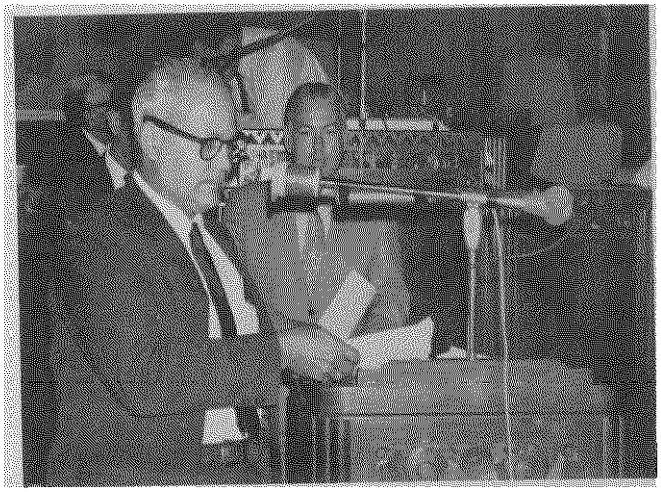
1. L.E.S. Vice President T. J. Hogue Jr. addresses the general membership of the Society.
2. Edwin Edwards, Congressman of the Seventh Congressional District, was the guest speaker before the Awards Luncheon and talked on the engineer's responsibility toward the environment.
3. The ladies at the registration desk were kept busy.
4. Partial view of those attending the Professional Engineers in Education meeting during the conference.
5. From left to right are Richard Brunner, vice president of Contract Administration of Avondale Shipyards; L.E.S. Vice President T. J. Hogue Jr.; and Ben Tisdale, manager of marine operations for Aquatic Contractors & Engineers. Mr. Tisdale addressed a general session on "Laying offshore pipelines from a spool."
6. George Kinsman, senior vice president of Florida Power and Light, spoke on "Company employment policies can foster engineering professionalism."
7. President of L.E.S. John Vogt presided over the Awards Luncheon honoring outstanding engineers and Life Members of the Society.
8. Several hundred members and their guests viewed the many engineering product exhibits in the exhibit hall.
9. Jack J. Thigpen, secretary-treasurer of the Society, gave a report on the Society's finance and membership standing.
10. President Vogt conducted the organization's business session.
11. Another shot of members viewing the exhibits.



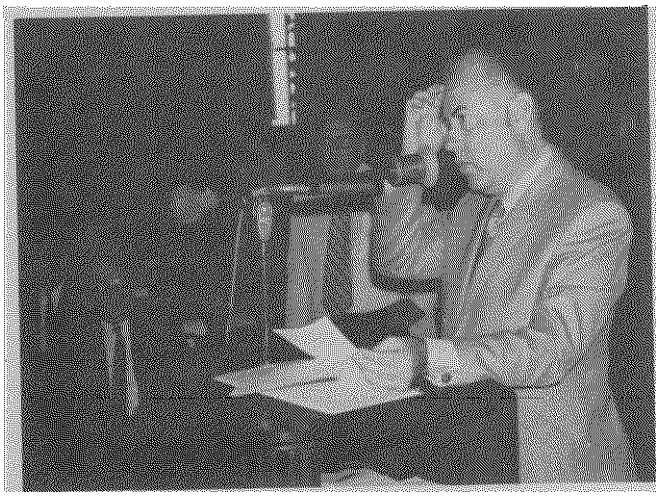
The Louisiana Engineering Society has been extremely active during the present session of the Louisiana Legislature. Above, Waldemar S. Nelson, representing the State Board of Registration, is shown prior to his appearance before a House committee studying proposed changes to the engineering registration law. At right is Lamon Moody, chairman of the Society's legislative committee.



State Representative Eugene McGehee, at speaker, handled several bills of interest to engineers for the Society. At left is C. J. Tircuit, legislative chairman for the Louisiana Land Surveyors Association, and, at right, is Representative Fred Hayes of Lafayette.



Dr. William Wintz of LSU's Engineering Department also testified before a House committee studying bills affecting engineers.



Former state representative Joe Keogh, attorney for the Louisiana Engineering Society, answers questions during his testimony before a Legislative committee.



Kenneth Daspit, the Baton Rouge Chapter's outgoing President, is shown presenting a $1,000 check to Dean Roger Richardson of LSU for the new Center for Engineering and Business Administration.



Outgoing President of the Baton Rouge Chapter Kenneth Daspit is shown at left with his wife. Next to him is Charles Barnard, the new Chapter President, and his wife. At right is Raymond Pillow, the chapter's new President Elect, and his wife.

Membership Contest Standings

RULES OF THE CONTEST

1. A Chapter must reach its 10% quota to qualify as the Contest winner.

2. The Chapter with the greatest percentage increase, based on application and reinstatement requests received by the state LES office through the week prior to the June annual meeting will be the winner. Transfers into a Chapter or grade changes will not be counted as part of the quota. Students upon graduating will be counted for a Chapter only if the Chapter gets them to fill out an Application form with up-dated information and, also, if they reside in the Chapter's Area.

Position	Chapter	Applications	Quota	% Quota
1	Bayou	10	4	250.000
2	Lafayette	26	16	162.500
3	Alexandria	19	13	146.154
4	New Orleans	96	79	121.519
5	Lake Charles	14	13	107.692
6	Shreveport	21	21	100.000
7	Monroe	12	15	80.000
8	Baton Rouge	38	56	67.857
Total as of June 1, 1970		236	217	108.756

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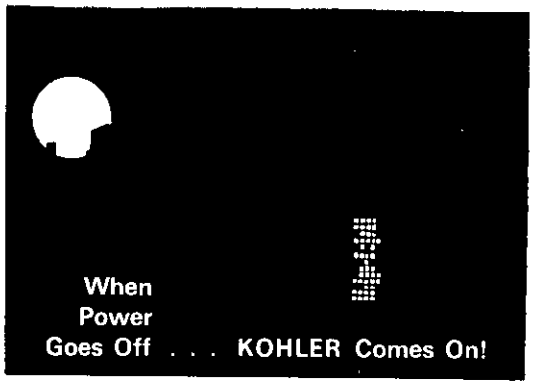
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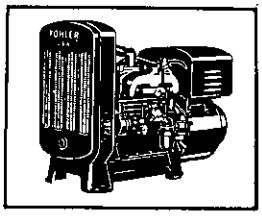
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New Orleans Engineers Club

After many months of hard work, a lease for the Engineers Club of New Orleans' new quarters was signed recently. As previously announced the new club will be located on the ground floor at 546 Carondelet Street. This is an ideal location immediately behind historic Gallier Hall, one block off the main Mardi Gras parade routes, one block from Poydras St., five blocks from Canal St., four blocks from the Superdome, convenient parking and abundant public transportation passing the front door.

The special projects committee consisting of Ed Pavia, Pete Stafford and Rudy Duelfer has done an excellent job and this same committee has agreed to stay on and handle all the negotiations with the interior decorator and the contractor. Final plans for the renovations are now being prepared and it is hoped that the alterations will be completed between August 15 and September 1.

The facility will be something every member can be proud of, with wall to wall carpeting, all new drapes, a new bar, a large board room, new furniture, movable walls to allow for setting up two private dining rooms in addition to the main dining area and the board room. The club is also planning an outdoor patio, will have private telephone space available, and will install a sound and projection system.

New Orleans Woman's Auxiliary

New officers of the Woman's Auxiliary to the New Orleans chapter of L.E.S. are:

Mrs. C. J. Sperry, Jr.—President; Mrs. William B. Martin, Jr.—President Elect; Mrs. Seymour Cambias, Jr. — Vice-President; Mrs. Richard Messina, Honorary Vice President; Mrs. Francis Favaloro—Recording Secretary; Mrs. Donald E. Tousley—Corresponding Secretary; Mrs. Blaise Carriere—Treasurer; Mrs. Lawrence C. Grundmann, Jr.—Financial Secretary.

Members of the Executive Board are as follows:

Mrs. Robert B. Anderson, Mrs. Ronald P. Cressy, Mrs. James S. Janssen, Mrs. John L. Martinez, Mrs. John K. Mayer, Mrs. Herbert A. Schaeffer, Mrs. M. A. Steele, Mrs. George W. Webb, Mrs. Mario G. Zervigon.

IN MEMORIAM

ERNEST GILLEN SR.

Ernest M. Gillen Sr., 64, retired 4th District engineer with 40 years of service with the Louisiana Department of Highways, died recently in Shreveport, La.

Listed in "Who's Who in the South and Southwest," Mr. Gillen was serving as president of the Retired State Employees Assn. at the time of his death.

He was a charter member of the Louisiana Highway Engineers Assn., and a charter member and past president of the Shreveport Section of the Louisiana Engineering Society. He held membership also in the Louisiana Engineering Society.

JESSE C. WATSON

Jesse (Jack) C. Watson, 75, registered professional engineer, State of Louisiana, died March 29, 1970 in a Lake Charles, La. hospital.

Mr. Watson was employed by the Louisiana Department of Highways for 37 years and had served as district engineer for the Lake Charlse, Lafayette, and Alexandria districts.

After his retirement from the Department of Highways in 1958, he joined T. L. James & Company as staff engineer, Lake Charles office, until his retirement in 1969.

Mr. Watson was a native of Winn Parish and had resided in Lake Charles for the past 18 years.

Survivors are his wife; five sons, including Judge Jack C. Watson of Lake Charles; one daughter; one sister; 12 grandchildren, and several great grandchildren.

Honorary pallbearers were former associates with the Department of Highways and T. L. James & Company, Inc.

CHARLES M. BUTLER

Charles Mathews Butler, a native of St. Francisville and a partner in the firm of Brown and Butler, consulting engineers in Baton Rouge, died April 2, 1970.

Mr. Butler, who was a graduate of the Sewanee Military Academy, Sewanee, Tenn., and Louisiana State University, was a veteran of World War II, having served in the South Pacific Theater. He was a member of the Louisiana Engineering Society, the City Club of Baton Rouge, the American Society of Civil Engineers and Delta Kappa Epsilon fraternity, and a former member of the Boston Club, New Orleans.

NEW ENGINEERS

PROFESSIONAL ENGINEERS GRANTED REGISTRATION

May 19, 1970

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

Abernathy, Edward L.—Civil
Shreveport, La.

Bassett, Curtiss D.—Mechanical
Ypsilanti, Mich.

Bennett, Harvey R.—Electrical
Sulphur, La.

Botich, John A.—Elect. & Mech.
Huntington Beach, Calif.

Bouis, Charles E.—Civil
Atlanta, Ga.

Brown, Leroy—Civil
New Orleans, La.

Burnham, Kenneth B.—Chemical
Pittsburgh, Pa.

Burns. Tommy V., Jr.—Mechanical
Baton Rouge, La.

Canright, Robert E.—Metallurgical
New Orleans, La.

Cavanaugh, William, III—Mechanical
Little Rock, Ark.

Celles, August L.—Civil
New Orleans, La.

Clark, Ben H.—Civil
Chalmette, La.

Coomes, Anthony E.—Civil
Atlanta. Ga.

Cordell, William N.—Mechanical
Lafayette, La.

Daily, Joseph I., Jr.—Civil
Malvern, Pa.

Danielson, George E.—Civil
New Orleans, La.

Davis, Harold—Chemical
Gretna, La.

Ellis, James Wesley—Electrical
Huntsville, Ala.

Ellis, William C., Jr.—Electrical
New Orleans, La.

Entenman, Alfred M., Jr.—Civil
Grosse Pointe Park, Mich.

Erb, Carl L.—Civil
Mission Hills, Kan.

Fabre. Alphonse L., Jr.—Civil
New Orleans, La.

Farnsworth, John T.—Civil
New Orleans, La.

Harrison, James D.—Civil
San Antonio, Tex.

Hart, A. Webb, Jr.—Civil
Monroe, La.

Hart, Theodore R., Jr.—Mechanical
Slidell, La.

Hudspeth, Alvin R.—Mechanical
Lake Charles, La.

Hurley, Stephen G.—Civil
Doraville, Ga.

Hymer, Alvin E., II—Chemical
Baton Rouge, La.

Jeanes, Joe W.—Civil
Houston, Tex.

Kopecky, Roy F.—Civil
Houston, Tex.

Kotter, James I.—Mechanical
Metairie, La.

Linam, William C.—Civil
West Monroe, La.

Loggins, John T.—Civil
New Orleans, La.

Lynch, Lawrence R., Jr.—Mechanical
Metairie, La.

Lynn, Phillip W.—Civil
LaPlace, La.

Manning, Michael N.—Civil
Kirkwood, Mo.

Mayard, Lewis J.—Chemical
New Orleans, La.

Miller, Marvin M.—Chemical
Houston, Tex.

Mohr, David M.—Chemical
Baton Rouge, La.

Morrissette, Norman H.—Chemical
Fort Knox, Ky.

Olivier, Mark J., Jr.—Mechanical
Metairie, La.

O'Neill, Daniel R.—Mechanical
New Orleans, La.

Peterson, Randall W.—Chemical
Baton Rouge, Louisiana

Powell, William D.—Civil
Boise, Idaho

Prihoda, Clarence H.—Petroleum
Lafayette, La.

Reickert, Frederick A.—Civil
Libertyville, Ill.

Rester, William O.—Electrical
New Orleans, La.

Rich, Leonard B.—Electrical
Olivette, Mo.

Russo, Edwin P.—Elect. & Mech.
New Orleans, La.

St. Cyr, William W., II—Mechanical
Slidell, La.

Sayre, Clifford M., Jr.—Chemical
Metairie, La.

Schexnayder, Isby L., Jr.—Mechanical
Jeanerette, La.

Schilling, Louis C.—Mechanical
Baton Rouge, La.

Schlaifer, Phillip S.—Mechanical
Baton Rouge, La.

Sheffield, Paul R.—Civil
Vicksburg, Miss.

Shill, Walter E., Jr.—Mechanical
Bristol, Tenn.

Shutt, Kenneth G.—Electrical
Charleston, S. C.

Simmons, John L.—Civil
Baton Rouge, La.

Sipes, Jerry G.—Electrical
Sterlington, La.

Smallwood, George E.—Civil
Houston, Tex.

Stewart, Billy S.—Mechanical
Pearlington, Miss.

Storm, Arthur W.—Mechanical
Toledo, Ohio

Tabor, Robert B.—Petroleum
Springhill, La.

Teague, Ronald D.—Electrical
New Orleans, La.

Wedenoja, Wilbert J.—Civil
New Orleans, La.

Wells, Kenneth F.—Petroleum
New Orleans, La.

Wilson, William W.—Mechanical
New Orleans, La.

Zapffe, Fred—Chem. & Petrol.
Oklahoma City, Okla.

Aucoin, Rudy R.—Land Surveyor
Houma, La.

Fulkerson, Francis M., Jr.—Land Surveyor
Kenner, La.

Lachney, Jessie P.—Land Surveyor
Marksville, La.

Miguez, Simonet R.—Land Surveyor
New Iberia, La.

Milligan, Russell J., Sr.—Land Surveyor
Baton Rouge, La.

Simoneaux, Herbert J.—Land Surveyor
Marksville, La.

Veteto, George E., Jr.—Land Surveyor
Fort Worth, Tex.

NEW MEMBERS

ALEXANDRIA

Norman R. Meyer
P. O. Box 1927

BATON ROUGE

William A. Loudon, Jr.
P. O. Box 15084

Bernard F. Mahfoud, P.E.
P. O. Box 22573, L.S.U.

Alfred N. Montestruc, P.E.
6223 Arbor Vitae

BAYOU

Edward C. McGee, Jr., P.E.
P. O. Box 12
Houma, La. 70360

Harold J. Terracina, P.E.
1107 Lafourche Dr.
Thibodaux, La. 70301

LAKE CHARLES

Charles L. Carmouche, P.E.
626 Broad

Charles H. Terrio
2960 Lake St., Apt. 182

NEW ORLEANS

August J. Barbier, Jr., P.E.
2120 Airline Park Blvd.
Metairie, La.

Walter E. Bond, Jr., P.E.
3410 River Oaks

Roy D. Boudreaux, P.E.
Rt. 2, Box 115
Port Sulphur, La. 70083

Thomas J. Bowen, P.E.
2214 Napoleon Ave.

Simeon O. Coxe, P.E.
105 Dorrington Blvd.
Metairie, La. 70005

Robert F. Eve, P.E.
P. O. Box 15421

Numa C. Hero, Jr., P.E.
427 Planters Canal Rd.
Belle Chasse, La. 70037

William M. Lloyd
P. O. Box 60340

John L. Marchese, P.E.
205 La Voisien
Gretna, La. 70053

Frank Nicoladis, P.E.
5704 Arlene St.
Metairie, La. 70003

Larry A. Perrin
P. O. Box 13625

Robert L. Vaccaro, P.E.
118 Stella St.
Metairie, La. 70005

Sukhdev Singh Walia
P. O. Box 60340

Robert D. Ziegler, P.E.
9516 Arbor Lane

ALEXANDRIA

Cater F. Aplin, Jr., P.E.
Box 192
Harrisonburg 71340

James L. Broadwell, Jr., P.E.
Box 4304

A. J. Brouillette, L.S.
P. O. Box 2056
Natchitoches 71457

Malcolm C. Justice
4500 Parliament Dr., Apt. 130

Randolph B. LaCroix, L.S.
311 Tioga Road
Pineville 71360

Louis B. Miller
509 Bobwhite Lane

Horace W. Rand
American Supply Co.
3333 Broadway

BATON ROUGE

Edwin F. Curry, P.E.
5428 Hermitage Dr.

Miss Patience P. Stair
336 West Parker, Apt. 14

LAFAYETTE

T. J. Labbe, P.E.
Rt. 1, Box 270
Carencro, La. 70501

Gerald G. Reaux, P.E.
407 Daniel Dr.

James W. Reeves, P.E.
104 Kim Dr.

C. L. Jack Stelly, L.S.
201 Belle Ridge

LAKE CHARLES

Raymond Duddleston, P.E.
1614 Oak Park Blvd.

Colin K. Ringle
P. O. Box 1361

MONROE

John B. Keats
Louisiana Tech—Eng. Dept.
Ruston, La. 71270

Milton E. Parker, P.E.
40 W. Elmwood Drive

NEW ORLEANS

Donald L. Chamberlain, Jr., P.E.
Rt. 2, Box 119
Port Sulphur, La. 70083

Robert E. Gunter, P.E.
P. O. Box 96
Harvey, La. 70058

Daniel M. Houser, P.E.
8011 Hickory St.

Pat H. Miller, Jr.
926 St. Philip St.

Prosper L. Potin, P.E.
5801 Sylvia Dr.

Timothy H. Terrell, P.E.
1002 Pere Marquette Bldg.

SHREVEPORT

James B. Remmel
P. O. Box 4443

Eric S. Williams, P.E.
433 Town South Dr.

Minutes-LES BOARD

May 1, 1970, Monteleone Hotel, New Orleans, La.

President Vogt called the meeting to order with the following Board members present: C. P. Barnard, P.E.; Fred C. Culpepper, P.E.; Ken Daspit, P.E.; Ken Deal, P.E.; Carl E. Heck, Sr., P.E.; H. L. Henry, P.E.; Frank M. Heroy, Jr., P.E.; Malcolm Hurstell, P.E.; John H. Livingston, P.E.; James L. Meyer, P.E.; Lamon L. Moody, P.E.; Willie E. McGough, P.E.; Leo M. Odom, P.E.; Richard M. See, P.E.; Guy Seghers, Jr., P.E.; Charles Stokes, P.E.; A. J. Szabo, P.E.; and J. J. Thigpen, P.E. Also present were Farrell W. Adams, P.E.; Larry Grundmann, P.E.; and Gerald A. Simmons, Executive Secretary.

The minutes of the Board of Directors meeting of March 6, 1970 were approved. The motion for approval was made by Mr. Odom, seconded by Mr. Szabo and passed.

Financial Report—The financial report was given by Mr. Thigpen for the month of March, 1970. Total receipts to date were $55,390.51, with the budget year to date reflecting expected receipts of $55,046.53. Total expenses to date were $59,101.79, with the budget year to date reflecting expected expenditures of $62,647.18. Motion by Mr. Thigpen, seconded by Mr. Szabo, "that the Financial Report be accepted as presented." Motion carried.

SECTION REPORTS

Professional Engineers in Education—Dr. Henry, chairman of the P.E.E. Section, presented the following report:

The officers of PEE started to work on the By-Laws of the section soon after the 1969 convention. These By-Laws were prepared and submitted to the Board of Directors. The Board approved the By-Laws at a regular meeting of the Board on October 23, 1969. With this action, PEE became an official practice section.

The first meeting of PEE took place in Alexandria on September 20, 1969. Prior to this meeting the engineering faculty in the state were asked to submit their suggestions for projects or activities that PEE should pursue. The most common suggestion was relations with industry, especially as these relations affect engineering design and the teaching of engineering design. As a result of this survey, the theme of the PEE program at the 1970 Annual Meeting was Relations With Industry

PEE was involved in several intersociety activities during the year. Working with PEPP, a policy was finally approved by the Board setting forth the policy of the Society regarding professional practice by engineering faculty. The Liaison Committee requested PEE to express its views regarding the proposed changes in the registration laws. Again, the engineering faculty in the state were asked to express themselves on this matter. They did, and the information was transmitted to the Liaison Committee.

The Chairman of PEE was asked by the Board to sponsor the Vocational Guidance Committee. This was accepted.

The Chairman was present for most of the Board meetings. When he could not attend a Board meeting, one of the other officers attended.

It is believed that in the year ahead, there is good opportunity to draw the professional engineer in education into the mainstream of activities of other professional engineers, and in the process all should be in a better position.

The following PEE Section officers were elected for 1970-71:

Chairman—F. L. Larue
Vice Chairman—F. R. Groves
Secretary—E. P. Williamson
Program Chairman—Grover Trammell

Professional Engineers in Government—Mr. Heroy, chairman of the PEG Section, presented the following written report:

Meeting was called to order by Chairman Frank Heroy at 3:20 a.m.; 13 members present.

The minutes of the meeting held September 14, 1969, in Alexandria, La., were read and adopted.

A report on salaries was given by Mr. Hu B. Myers, noting that Federal employees were given a six percent (6%) raise. In State service an attempt by the Louisiana Department of Highways and the Department of Public Works was being made to upgrade the District Engineers.

Mr. Plaisance attended the Board of Governors' meeting in Atlanta, Georgia. As he was unable to attend this meeting, he sent in his report which was rather lengthy. Mr. Heroy stated that he would condense the report and comment on it at the next meeting.

A discussion was held as to how the representative to the PEG Governors' meeting would be chosen. It was finally decided to let it remain as in the past by letting the chairman attend these conferences.

Government representation on the State Board of Registration was the next item on the agenda. A resolution was made and adopted unanimously that when a vacancy occurs on the State Board of Registration for Government, that PEG be permitted to furnish names for consideration.

A discussion was held on the consolidation of the branches in engineering for registration. It was decided that more information is needed before any action would be taken.

The next item on the agenda was the 1971 NSPE Development Award. After a brief discussion a motion was made and carried that only an agency with L.E.S. members be considered for the award.

The last item on the agenda was the election of officers. The nominating committee, consisting of Mr. Dan Cresap, Chairman, Mr. Roger Guissinger, and Mr. Hu B. Myers, nominated the following:

Chairman—Mr. Jerry Dyson
Vice Chairman—Mr. Steve Nasca
Secretary—Mr. A. R. Theis

A motion was made and adopted that these men be elected by acclamation.

Mr. Heroy requested that the portion of the report dealing with government representation on the State Board of Registration be included on the LES Board of Directors agenda for the next meeting.

Professional Engineers in Industry—Mr. Grundmann reported for the PEI Section. He encouraged chapter presidents to begin hearings at the chapter level on the report of the Liaison committee concerning registration of engineers.

Professional Engineers in Private Practice—Mr. Moody, chairman of the PEPP Section, reported the section had two resolutions for consideration by the Board of Directors. The first is as follows:

BE IT RESOLVED that whereas it is in the public interest to promote the Health and Welfare of the residents of the State of Louisiana by providing adequate sewerage facilities for the prevention of Water Pollution and; whereas the Congress of the United States of America through Section 8 of Public Law 84-660 as amended has attempted to encourage the construction of said adequate sewerage facilities by the creation of a construction grant program which is administered by the Louisiana State Board of Health; and whereas, under the construction grant program any State, municipality, or intermunicipal or interstate agency can qualify for a construction grant of up to 33% of cost of the necessary treatment works to prevent the discharge of untreated or inadequate treated sewerage or other waste into any waters and for the purpose of reports, plans, and specifications in connection therewith, if the State does not through the appropriate legislation supplement PL 84-660 as amended, this grant can be increased to 50 per centum if the State agrees to pay not less than 25 per centum of the estimated reasonable costs (as determined by the Secretary) of all projects for which Federal grants are to be made, if enforceable water quality standards have been established for interstate waters into which the project discharges, in accordance with Section 10 C of the Federal Water Pollution Control Act as amended, and under State Law in the case of interstate waters.

THEREFORE BE IT FURTHER RESOLVED that:

1) The Louisiana Engineering Society is in accord with the Public Policy fostered by Congress by the enactment of PL 84-660 as amended.
2) The Louisiana Engineering Society shall request that the Louisiana legislature pass legislation and appropriate the necessary monies needed to comply with the provisions of Section PL 84-660 as amended which could increase the construction grant maximum from 33% of the sewerage treatment facilities to 50%.
3) The President of the Louisiana Engineering Society authorize the legislative committee to assist in the drafting of the necessary legislation.

Motion by Mr. Moody, seconded by Mr. Heck, "that the resolution be adopted." Motion carried by unanimous consent.

Mr. Moody presented the following resolution for consideration at the next meeting of the LES Board of Directors:

Resolution: Resolved that the PEPP Section recommend to the State Board of Direction that the Louisiana Engineering Society request that the PEPP Section of the National Society of Professional Engineers negotiate with the appropriate office of the Farmers Home Administration, U. S. Department of Agriculture, at the National level for a revision of the standard from FHA 442-19, as follows:

Section A—Engineering Services, item 15. Delete item 15 and substitute the following:

15. The ENGINEER will provide general engineering inspection of the work of the contractors as construction progresses. **Compensation for reimbursable expenses as defined in Section E hereof incurred while providing general inspection may be made within the limits established therefore in the project budget.** The ENGINEER will provide detailed construction inspection as provided in Section C hereof upon the written request of the OWNER and for the additional compensation set forth in Section C. The ENGINEER does not guarantee the performance of the contractor(s) by the ENGINEER'S performance of such detailed construction inspection. The ENGINEERS undertaking hereunder shall not relieve the contractor of his obligation to perform the work in conformity with the plans and specifications and in a workmanlike manner; shall not make the ENGINEER an insurer of the contractor's performance; and shall not impose upon the ENGINEER any obligation to see to it that the work is performed in a safe manner.

Mr. Moody reported that the Louisiana PEPP Section is opposed to consolidation of PEPP, CEC and AICE. The section has corresponded with NSPE expressing its views.

COMMITTEE REPORTS

Membership—Mr. Grundmann, chairman of the membership committee, gave the following report:

Position	Chapter	Applications	Quota	% Quota
1	Bayou	10	4	250.000
2	Lafayette	26	16	162.500
3	Alexandria	19	13	146.154
4	New Orleans	93	79	117.722
5	Lake Charles	14	13	107.692
6	Shreveport	19	21	90.476
7	Monroe	10	15	66.667
8	Baton Rouge	36	56	64.286
Total as of April 29, 1970		227	217	104.608

Legislative Committee—Mr. Moody, chairman of the Legislative Committee, stated his report of the legislative committee was complete as given to the convention delegates at the Society Business Meeting.

He reviewed the activities of a new lobby group, the Construction Industry Legislative Council, recently formed. He stated that LES was not affiliated or associated with the group. The only engineering organization known to LES as an affiliate of the organization is CEC. Statements have been made that the new lobby group, CILC, is speaking for all engineers in its deliberations. Mr. Moody suggested the LES board take official action concerning this matter.

Motion by Mr. Szabo, seconded by Mr. Livingston, "that LES meet with representatives of CILC to discuss the advantages of belonging to their organization, but in the meantime, a letter be written to CILC stating that CEC does not represent all engineers." Motion carried.

Mr. Moody discussed the need to have a decision making body in the absence of the Board of Directors available during the regular session of the legislature to assist the legislative committee in making decisions immediately when necessary. The Board stated that the President or President-Elect in the president's absence be authorized to give direction to the legislative committee as needed.

Mr. Moody suggested the Society publish a newsletter during the legislative session to inform the Society of matters affecting engineers. The state office will assist the Legislative Committee during the session to carry out the Society's legislative program.

Mr. Moody discussed hiring legal counsel during the session.

Motion by Mr. Heroy, seconded by Mr. Barnard, "that the chairman of the legislative committee be authorized to contact legal counsel to assist in the coming session and further that other engineering organizations be contacted to help defray the expenses of an attorney to assist in opposing legislation requiring unionization of engineers." Motion carried.

Nominating Committee Report—Mr. Odom, chairman of the Nominating Committee, gave the following report:

The Nominating Committee nominates the following officers for 1970-71:

President-Elect—T. J. Hogue, Jr.
Secretary-Treasurer—J. J. Thigpen
Second Vice President—Hoyt Brown, Jr.
NSPE National Director for 2 years—Waldemar Nelson
State Director for 2 years—Marshall B. Ewing
State Director for 2 years—Farrell Adams

Motion by Mr. Heroy, seconded by Mr. Hurstell, "that the nominating committee's report be accepted." Motion carried.

The next meeting of the Board of Directors will be held Friday, May 22, 1970, at the Chateaux Charles in Lake Charles at 3:00 p.m.

March 6, 1970, Poor Boy's Riverside Inn, Lafayette, La.

President Vogt called the meeting to order with the following board members present: Charles P. Barnard, P.E.; Fred C. Culpepper, P.E.; Kenneth E. Deal, P.E.; Frank M. Heroy, Jr., P.E.; Malcolm L. Hurstell, P.E.; John H. Livingston, P.E.; Jim Meyer, P.E.; Leo M. Odom, P.E.; S. J. Richard, P.E.; Richard See, P.E.; Charles W. Stokes, P.E.; A. J. Szabo, P.E.; J. J. Thigpen, P.E. and Gerald A. Simmons, Executive Secretary. Others present were: Farrell W. Adams, P.E.; Leo Bankston, P.E.; J. J. Broussard; G. J. Groh, P.E.; Larry C. Grundmann, P.E.; Lee C. Hill, P.E. and R. M. Primeaux, P.E.

The minutes of the Board of Directors meeting of January 23, 1970 were corrected and approved. The motion for approval was made by Mr. Odom, seconded by Mr. Szabo and passed.

Financial Statement—The financial report was given by Mr. Thigpen for the months of January and February, 1970. Total receipts year to date through February were $50,947.26 and expenses of $54,372.45. Motion by Mr. Hurstell, seconded by Mr. Hogue, "that the financial report be accepted as presented." Motion carried.

SECTION REPORTS

Professional Engineers in Government—Mr. Heroy, chairman of the P.E.G. Section, reported that the N.S.P.E. Government Award will be presented to an outstanding state agency this year and encouraged each chapter to begin selecting agencies for nomination.

Professional Engineers in Industry—Mr. Richard, chairman of the P.E.I. Section, stated that the deadline for submitting nominees for the N.S.P.E. Industrial Development Award had been extended. He urged chapters to submit their nominees to the L.E.S. office as soon as possible.

Mr. Richard also requested chapter presidents to schedule meetings as requested to give the membership an opportunity to express their feelings concerning registration of engineers as Professional Engineers without reference to engineerig discipline.

Report of Ad Hoc Committee on Higher Education—Mr. Szabo reported for the committee in the absence of Chairman Brown. The committee report is as follows:

1. The Coordinating Council for Higher Education is now engaged in an effort to have a general higher education survey study prepared. It does not at this time have funds to participate in an engineering education survey study, according to the Director, Dr. Bernard Sliger. He has indicated that the proposed study would be most helpful and would be welcomed by the council. He stated that without such a study decisions with regard to engineering education would be made on the basis of available information, and reports from the various schools within the state, which will undoubtedly be biased. He even indicated that the council would like to see all professional groups conduct such an independent study.

2. At present there are 13 schools within the state which are offering accredited engineering curricula, unaccredited engineering curricula, or pre-engineering courses of study. These are L.S.U.-Baton Rouge; L.S.U.-New Orleans; L.S.U.-Alexandria; L.S.U.-Eunice; Louisiana Polytechnic Institute, Ruston; University of Southwestern Louisiana, Lafayette; Southern University and A. & M. College, Baton Rouge; McNeese College, Lake Charles; F. T. Nicholls State College, Thibodaux; Northeast State College, Monroe; Northwest State College, Natchitoches; L.S.U.-Shreveport; Southeastern Louisiana College, Hammond. Delgado School in New Orleans is offering an engineering associate degree training program. Private institutions, primarily, Tulane, and to a lessor degree, Centenary are also offering engineering training. Tulane is, of course, accredited.

3. The Committee feels that the study should be for the purpose of obtaining creditable recommendations on the development of engineering education in Louisiana and should give guidelines on engineering disciplines which should be offered in geographical areas and institutions, the present and future demands for engineering education, the need for graduate programs now and into the future and other information which would serve as a guide in the development of engineering education in Louisiana. A team of experienced, eminently qualified, widely recognized, distinguished and respected engineering educators should be engaged. These should be from outside Louisiana in order that their findings might be completely unbiased and might be considered as such by all institutions and personnel in the state. There are several such individuals who have made similar surveys in other states, such as California, Nebraska, Tennessee, and others. Your committee has contacted many individuals and has narrowed its consideration to eight imminently qualified engineering educators.

4. It is recommended that a team of four distinguished engineering educators be engaged to make a study of engineering education, the present and future needs for such education, and guideslines for a suitable system to be established to meet the needs of the state for engineering education. The persons recommended to be asked to undertake such a study are:

Dr. Newman Hall, Executive Director, National Academy of Engineering, as chairman;
Dean M. R. Lohmann, College of Engineering, Oklahoma State University;
M. J. Goglia, Vice-Chancellor, University of Georgia System; and
Paul Grogan, University of Wisconsin.

Alternates recommended by the committee, in order of preference are:

Frank A. Thomas, President, Lamar Tech;
Merritt Williamson, Vanderbilt University;
Thomas Martin, Dean of Engineering, S.M.U.; and
F. N. Peebles, Dean of Engineering, University of Tennessee.

5. The committee has considered travel expenses, honorarium rates, and so forth. It is estimated that the cost of the study to inspect the seven engineering schools (omitting L.S.U.-A, L.S.U.-E, L.S.U.-S, Southeastern, Northeastern and Northwestern from the inspections), and considering the contribution of all schools listed above with regard to their contribution to engineering education and their potential for future contribution, including the private institutions, would cost approximately $12.000.00. To include the inspections of the other six institutions which have been omitted, it is estimated that an additional $2,500.00 would be required.

6. It is recommended that a committee be appointed by the president of the Society to investigate ways and means and to, with board approval, seek to raise the funds needed for such a study. It is suggested that consideration be given to soliciting contributions from all members of the society and the profession, with a $10.00 amount suggested for individual contributions. It is further suggested that contributions be sought from industry in Louisiana, which has a vested interest in engineering education. The possibility of an outstanding engineer in the state as chairman of this committee or as co-chairman to solicit industry would be helpful.

7. In order to administer the study team, it is recommended that a committee also be appointed by the president to handle negotiations with study team members, to assist them in obtaining information which would reduce their time involved, to assist in preparing itineraries for transportation within the state, to handle all public or institutional contact and publicity regarding the study, and to keep the society advised and to follow the society's board of direction guidance in implementing the recommended study. It is recommended that the team members be retained to accomplish the study; that they be advised that no work should be undertaken for which compensation would be given until the funds have been received and are in hand by the Society; and that at that time the study undertaking would be authorized.

It is recommended that the committee also be responsible to direct the efforts of the Society office to assist in obtaining the statistical data and other information which the study team would require both prior to their visit to Louisiana and for any post visit collection of data and material.

8. This committee recognizes that the area of engineering technician or technological training is an area in which Louisiana does not excel and in which there are additional needs at this time. However, due to the variety of training as it is now given in Louisiana and the great need for an in depth study and guidance in the development of such training, it is thought that this should be divorced from the presently recommended study. It is recommended that the Society consider sponsoring a study of engineering technician training as soon as funds are available and the arrangements can be made, as a follow up to the presently recommended study of engineering education.

9. The committee recommends that the state administrative branch (Governor's office), the Coordinating Council for Higher Education, the legislature, the State Board of Education, and the L.S.U. Board of Supervisors be advised of this study when it is undertaken. It is also necessary that each of the institutions be advised of the undertaking of the study and that their cooperation and invitation to visit be solicited. Upon the successful completion of the study and the receipt of the report, which should be made available in 100 or more copies, the availability of the report should be publicized, a summary should be printed in the Louisiana Engineer and copies should be furnished to L.S.U. and all institutions studied, the State Board of Education, the L.S.U. Board of Supervisors, the Legislature, the Coordinating Council and the Governor's Office. Also, if our undertaking is successful, it would be desirable to suggest to other professional groups, such as the medical and legal professions, the accountants, architects, and others that similar professional educational studies be made.

10. The charge which this committee suggests be given to the study team members is as follows: "In order to offer assistance and guidance to the newly formed State of Louisiana Coordinating Council for Higher Education as they seek to develop a master plan for higher education in this state, the Board of Direction of the Louisiana Engineering Society requests that you and the study team (a) make an in-depth study of engineering education in the publicly supported institutions of Louisiana and (b) recommend guide lines for a plan of short term and long range development of overall engineering education to best afford the opportunity for engineering training and to meet the needs for the state of Louisiana with regards to numbers and locations of colleges and fields of study

while best utilizing funds available to adequately support all such programs."

Mr. Szabo stated the committee commends Mr. Brown for his excellent work as chairman of the Study Committeee.

Mr. Vogt expressed the thanks of the Board of Directors for the work of the committee. He further stated that the State Board of Registration commends the committee for their efforts in compiling the report.

Mr. Odom and Mr. Culpepper raised the question as to whether or not information requested by the committee is not already available from previous studies. Mr. Szabo stated that to the committee's knowledge such information is not available, but anything that would be made available to the Engineering Educators engaged to make the study would be used in order to eliminate duplication.

Motion by Mr. Culpepper, seconded by Mr. Szabo, "that the report of the Ad Hoc Committee on Engineering Education be accepted." Motion carried.

Motion by Mr. Szabo, seconded by Mr. Hogue, "that the Board of Directors authorize the president of L.E.S. to appoint a finance committee to make detailed recommendations to the Board on procedures needed to raise the necessary funds to conduct the study and upon board approval take the necessary steps to raise the funds." Motion carried.

Motion by Mr. Szabo, seconded by Mr. Hurstell, "that the president of L.E.S. appoint a Liaison Committee to approach the men selected to do the study and retain their services until the necessary funds are secured and in the meantime begin corresponding with the schools involved." Motion carried.

Convention Report—Mr. Hogue, chairman of the 1970 convention, reported the convention committees are meeting and formulating plans for the biggest L.E.S. convention in the history of the Society.

Mrs. Jane Richard has been selected Chairman of the Ladies Activities and she is in the process of arranging a program for the Ladies.

The Registration Committee is requesting each chapter to do everything possible to get a good attendance from throughout the state for the convention.

Larry Grundmann reported that the program committee has met and has an outstanding group of speakers selected. He reported the program will be completed soon and made available to the members.

The Exhibits Committee is actively working contacting companies interested in exhibiting at the convention. To date 10 booths have been sold. Mr. Hogue urged the chapter presidents and board members to contact prospective exhibitors and encourage them to secure a booth at the convention.

Education Committee Report—Chairman Brown submitted the following written report to the Board of Directors in his absence. Enrollment is as follows in the Engineering Management Program:

New Orleans	
Business Finance	25 students
Engineering Economics	21 students
Management	26 students
Baton Rouge	
Management	25 students
Economics	22 students
Alexandria	
Finance	23 students
Shreveport	
Management	35 students

L.E.S. Officers Nominating Committee—Mr. Vogt called to the attention of the Board of Directors that the nominating committee must be appointed 3 months before the end of the administrative year.

Motion by Mr. Culpepper, seconded by Mr. Livingston, "that the nominating committee be composed of the three past presidents of the Society." Motion carried.

L.E.S. Graduate Membership Award—Mr. Adams reported that the L.E.S. graduate membership award was available to an outstanding senior student from the four accredited engineering schools—L.S.U., La. Tech, Tulane and Southwestern. He stated only La. Tech has taken advantage of the award and encouraged the chapters located near the other schools to do likewise. He suggested the Executive Secretary write to the deans of the schools asking that they participate in this awards program.

Membership Report — Mr. Grundmann, chairman of the membership committee, reported the following standings of the chapters in the membership contest:

Position	Chapter	Applications	Quota	% Quota
1	Bayou	8	4	200.000
2	Lake Charles	11	13	84.615
3	New Orleans	63	79	79.747
4	Lafayette	12	16	75.000
5	Shreveport	14	21	66.667
6	Monroe	8	15	53.333
7	Alexandria	6	13	46.154
8	Baton Rouge	23	56	41.071
	Total as of March 4, 1970	145	217	66.820

Honors and Awards Committee Report—Mr. Odom, chairman of the Honors and Awards Committee, reported the committee had reviewed the nominees from the respective chapters and the following men were recommended to receive awards:

Andrew M. Lockett Medal—Dean Ben T. Bogard

Louisiana Engineering Award of Merit—Dr. D. D. Reneau

A. B. Patterson Engineer in Management—Mr. Jerry W. Affolter

Technological Accomplishment Medal—Dr. Paul W. Murrill

Motion by Mr. Odom, seconded by Mr. Meyer, "that the L.E.S. Board of Directors authorize the presentation of the above mentioned awards at the 1970 LES Convention." Motion Carried.

Old Business

Mr. Vogt urged all chapter presidents to begin as soon as possible to hold hearings on the changes in the state registration law recommended by the Liaison Committee dealing with registration of engineers by branches. He stated that members of the Liaison Committee and Dr. Dan Vliet, Executive Secretary of the State Board of Registration, have agreed to attend any of these hearings if requested to do so.

Mr. Vogt volunteered to attend any chapter meeting to discuss the financial situation of the Society and the proposed constitutional amendment revising the dues structure of LES.

Mr. Simmons reviewed the list of delinquent members for 1969 and the deaths and resignations to date.

Mr. Simmons requested the Board of Directors consider discussing with interested insurance companies the possibility of instituting a group auto insurance program for L.E.S. members.

Motion by Mr. Hogue, seconded by Mr. Culpepper, "that the Secretary-Treasurer and the Executive Secretary of L.E.S. meet with interested insurance companies to study the feasibility of group auto insurance plan for L.E.S. members and report their findings back to the Board of Directors." Motion carried.

The next meeting of the Board of Directors will be held Friday, May 1, 1970 at the Monteleone Hotel in New Orleans.

Corrections to January 23, 1970 Minutes:

(1) Page 8, 5th paragraph, last sentence, add: "These men were dropped from the rolls of the Society as of January 1, 1970."

BUSINESS MEETING

May 1, 1970, Monteleone Hotel, New Orleans, La.

President Vogt called the meeting to order. He stated this was a Society Business Meeting called to discuss three proposed amendments to the constitution. He then read from the constitution that portion that outlined the procedure for amending the constitution.

Proposal No. 1—Article IX Forfeiture of Membership

Three months after January 1st, the Secretary-Treasurer shall notify in writing any member whose dues are in arrears for the current year, except as provided for in Article VIII, that unless his dues are fully paid before July 1, his membership in the Society shall cease. The names of members dropped from the rolls for nonpayment of dues shall be published in the LOUISIANA ENGINEER.

Mr. Thigpen discussed the proposal and explained the procedure now used. In the 10th month, each member who has not paid his dues is notified that unless his dues are fully paid before the end of the year he will be dropped from the rolls of the Society. This proposal cuts short the time a member can pay his dues and could result in a loss of members and revenue. The proposal was then discussed in some detail.

Motion by Mr. Stokes, seconded by Mr. Hurstell, "that this proposal be referred to a committee to be appointed by the president for further study." Motion carried.

Proposal No. 2—Article III Officers and Directors

Section 2. The Board of Direction shall select and the President shall appoint, not later than three months before the end of the administration year, a Nominating Committee. It shall consist of the immediate Past President as Chairman and one voting member from each of the local chapters. The committee shall nominate Officers, except President, and Directors of the Society for the ensuing year. The First Vice President shall be considered President-Elect and shall automatically become President in the year following his term as First Vice President. Should the First Vice President (President-Elect) be unable to assume the presidency, the Nominating Committee shall nominate a candidate for President.

Mr. Seghers expressed opposition to the proposal and suggested the procedure remain as is at present. The proposal was then discussed in some detail.

Motion by Mr. Seghers, seconded by Mr. Grundmann, "that the proposal be referred to a committee to be appointed by the President for further study." Motion carried.

Proposal No. 3—Article VI Dues Structure

Section 1. The annual dues shall be as follows:

Member	$25.00
Junior Member	17.00
Affiliate Member	28.00
Student Member	1.00
Non-Resident Member	14.00
Non-Resident Junior Member	10.00
Non-Resident Affiliate Member	16.00
Privileged Member	5.00

Motion by Mr. Adams, seconded by Mr. Stokes, "that the proposal be amended to read: 'The amount of annual dues shall be determined by the Board of Direction in the bylaws and shall not exceed the following amounts:'

Member	$25.00
Junior Member	17.00
Affiliate Member	28.00
Student Member	1.00
Non-Resident Member	14.00
Non-Resident Junior Member	10.00
Non-Resident Affiliate Member	16.00
Privileged Member	5.00

The amended proposal was then discussed in some detail and was passed.

The meeting was adjourned.

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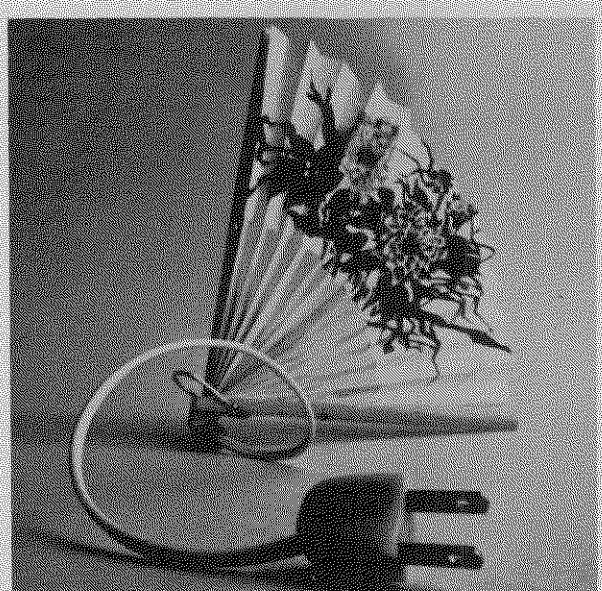
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LOUISIANA ENGINEER

Vol. 56 No. 4 August, 1970



LOUISIANA ENGINEER

COVER

Our cover this issue is a portrait of A. J. Szabo, P.E., President of the Louisiana Engineering Society. He outlines his program for 1970-71 on pages 4-5.

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The New President of the Louisiana Engineering Society

A. J. SZABO



A. J. Szabo has been a principal in the consulting engineering firm of Domingue, Szabo & Associates, Inc., Lafayette, since 1957.

A native of Baton Rouge, he graduated from LSU in civil engineering and received a Master of Science degree from Harvard University in sanitary engineering. Following service in World War II in the Aviation Engineers, he joined the Louisiana Department of Health and served until 1955 as a Public Health Engineer in the North Louisiana area, headquartered in Monroe, and in the Southwest area, headquartered in Lafayette. In 1955 he joined the faculty of the College of Engineering of the University of Southwestern Louisiana, Lafayette, as an associate professor of civil engineering.

He has served the American Society of Civil Engineers both as faculty advisor and contact member for the U.S.L. Student Chapter, and on the Board of Directors of the Louisiana Section. He has served as a Louisiana Trustee and a member of the Southwest Section of the American Waterworks Association. He has received the Arthur Sidney Bedell award of the Water Pollution Control Federation and has served as president of the Louisiana Conference on water supply and sewerage.

He is also a member of the American Society for Engineering Education, the American Association of Airport Executives, Chi Epsilon, honorary civil engineering fraternity, and N.S.P.E. He has been certified as a Diplomate in the American Academy of Environmental Engineers.

President Szabo has served the Louisiana Engineering Society during the past few years as Director, PEPP Section Chairman, Vice-President, and President-Elect. He assumed the presidency of L.E.S. in July, 1970.

In his community he has served as president of the Lafayette Rotary Club. He is a member of the Chamber of Commerce, and he serves in the First Baptist Church as a deacon, Sunday school teacher, and church treasurer.

He is married to the former Ruth Goss, and has two sons and a daughter. Robert is a student in law and John is a student in engineering at L.S.U. Becky is a junior high school student.

PRESIDENTIAL PRIVILEGE

First let me express to the membership of the Louisiana Engineering Society my appreciation for your confidence. I consider it a real privilege to be able to serve the Louisiana Engineering Society as President during 1970-71.

As I look forward into the year and the many things that could be done to enhance the engineering profession through this professional Society, it gives me reason for concern—but it is also a challenge. However, the many dedicated members and the leadership which has been elected by the Society are reassuring. Surely, if everyone of us will pull our part of the load and provide the leadership in each place of responsibility, then we will get the job done in an acceptable way.

This administration will follow in the footsteps of many years of dedicated leadership. Much progress has been made in the last several years. There has been a steady growth in membership and in prestige. The Society has advanced to the point that it is poised and ready to step forward and to accomplish much of what has been sought after for many years. It is my hope that this year will see a continuation of what has been started, and that there will be passed on to the succeeding administration a strong, active organization which is a real force leading each of us individually, and the profession as a whole, that we may truly serve the public.

During the annual meeting in Shreveport on June 20, I outlined for those present several areas of activity, or goals, to which I hope we can give special attention and make additional progress during this year. These are somewhat in keeping with the goals stated by NSPE president Harry C. Simrall during the State President's Conference at Purdue University on April 9, 1970. Our needs to which I call your attention and your support during the coming year are briefly outlined as follows:

MEMBERSHIP - REGISTRATION

The Society has made real gains in membership during the last few years. Unfortunately there have also been losses. It is hoped we can continue to gain members and retain them during the months ahead. We certainly want to continue to emphasize registration of engineers and to enlist engineers in our Society.

In view of recent action by NSPE, many of our members who are non-registered are now eligible for NSPE membership. We might gain additional members by seeking those who can now join NSPE to also become members of our Society as affiliates. Membership can be conserved by development. Development comes from utilization. More participation by members will strengthen the Society.

STATE MEETINGS

There is a need for strengthening our statewide meetings. These deserve more support by the membership. This year the annual Planning Conference will be held in Alexandria at the Holiday Inn Motel on September 11 and 12. You will soon be receiving more information on this meeting, and a program appears in this issue of the "Louisiana Engineer." All Chapter officers and committee members, both at state and local levels, and all state officers should be in attendance. All who are interested in the Society and its future and its potential will find much of interest at this meeting.

We annually have a convention meeting. Final arrangements are being planned at this time. A decision will be made by the Board of Direction in early August as to the dates and location of this meeting. We hope that it can be as outstanding as the 1970 meeting in New Orleans at the end of April. Those who did not attend the April meeting were the losers.

The Chapter Officers Conference and Annual Meeting is generally held at the end of the administrative year to install officers and to indoctrinate chapter officers. It is hoped that a format with more emphasis on officer indoctrination at the chapter level can be adopted for our next such meeting.

LOCAL CHAPTERS

The local Chapter is the heart of the Society and is the primary contact with the individual member, which is the Society's real strength. Enlistment of each member in Chapter activity is essential in order to keep him informed and interested. Active local committees will materially assist in reaching legislative goals, in maintaining good public relations, in obtaining higher

ethical standards and in maintaining good fellowship. The NSPE Chapter handbook and other publications can be of real assistance. The Chapter evaluation procedure will serve as a guide in developing a good program. Regular executive committee meetings are essential. A local newsletter will be most helpful. May each local Chapter have an outstanding year.



PRACTICE SECTIONS

All four functional sections are now operating on a basis of continuity that has not been achieved previously. The foundation has been laid and each is ready to build by activity that will bring real strength to these groups and, thus, to the entire Society. These sections must emphasize the responsibility of the engineer to the public and the necessity for ethical practice. This emphasis with a corresponding analysis of compensation and other considerations will help to balance the varied interests of the professional engineers in the Society.

ENGINEERING EDUCATION

There has been a great start in the continuing education program for engineers in the state. Much credit is due the committee and those leading during the last administrative year. Surely this work will be continued and developed because of the general interest to the engineering profession and the benefit to be derived from such a program.

Ground work has also been laid for our Society to be of real assistance to the higher education Council in planning for engineering education in the State of Louisiana. It is hoped that the study of higher education can be accompished during this year and the results will be of material benefit in planning adequate engineering education for Louisiana in the years and decades to come.

INVOLVEMENT

The engineer is trained and is capable and should become involved. He should be engaged in seeking the best solutions for the problems which arise in our society. We are faced today with many types of problems. Many so-called solutions are advanced by various groups to help us find a better way to preserve our environment and to live in safety. The individual engineer needs to be in the forefront in seeking answers. He needs to be active in public affairs in order that his ideas and his knowledge can be utilized in the determination of the public policy. There are some engineers who are now involved, but their involvement is not always known, either by the public or by their fellow engineers. We need to improve our program of public relations and public information which will be of real benefit to the public we serve.

STRENGTH AND UNITY

Both in the profession and in the Society there is a need to be strengthened by seeking common goals through cooperation and unity of purpose. Within the Society there is a need for full committee organization functioning, since it is through committees that a large organization such as the Louisiana Engineering Society must operate in order to make progress. These committees should report to the Board of Direction at least quarterly and their goals should be clearly set forth and progress should be marked.

Within the Society there is a need for more adequate financial support. This support can only come through the members of the Society and the engineering profession. Additional financial support through increased dues, larger membership and conservation of membership will be necessary if all of the services which the Society needs to render and wants to render can be realized.

The Society must take its place in unifying the various technical and special interest groups within the profession. The liaison between these various bodies is essential if we are to accomplish, as a profession, those goals which we have in common. The legislative efforts during the past session demonstrate what can be done when there is cooperation and what is difficult or impossible to do without cooperation.

These and many other things can be done if we will all dedicate a reasonable portion of our time to the task at hand. Let us recognize the problem and our opportunity and responsibility to help meet the needs.

Very truly yours,

A. J. Szabo, P.E.
President

Way Is Paved for Pontchartrain Hurricane Protection

Editor's Note: This is the first of a two-part series on the Lake Pontchartrain hurricane flood protection program. The concluding article will be in the next issue of LOUISIANA ENGINEER.

Action by the Legislature has paved the way for continuing work on the massive hurricane flood protection program known as the Lake Pontchartrain and Vicinity Hurricane Protection Project.

The Legislature approved a constitutional amendment that will authorize the Orleans Levee Board to levy up to 2½ mills in taxes, the proceeds of which would be used solely to help pay the Orleans Parish portion of the hurricane protection project. A similar constitutional amendment was approved that will authorize the Pontchartrain Levee Board and the St. Tammany Parish Police Jury to levy up to 2½ mills to help pay portions of the project for Jefferson, St. Charles and St. Tammany Parishes.

The amendments contain provisions that the millage can be used only to help pay local share portions of the hurricane protection project, and that once a sufficient amount for those portions is accrued the millage may no longer be imposed.

Both constitutional amendments will be placed before the voters in the November 10 general election.

Orleans Levee Board president Edward N. Lennox praised the Legislature for passing the amendments. "Without this approval," he said, "the project would have come to a halt in 1971 for lack of local share funding. Now we seek approval of the state's voters so that work can proceed on this vitally important project that will mean so much to the future safety of hundreds of thousands of people who live in the vicinity of Lake Pontchartrain."

"Now we seek approval of the state's voters so that work can proceed on this vitally important project that will mean so much to the future safety of hundreds of thousands of people who live in the vicinity of Lake Pontchartrain."

EDWARD N. LENNOX
President,
Orleans Levee Board

Lennox said the Orleans Levee Board could issue about $30 million in bonds against the proposed millage for hurricane protection projects.

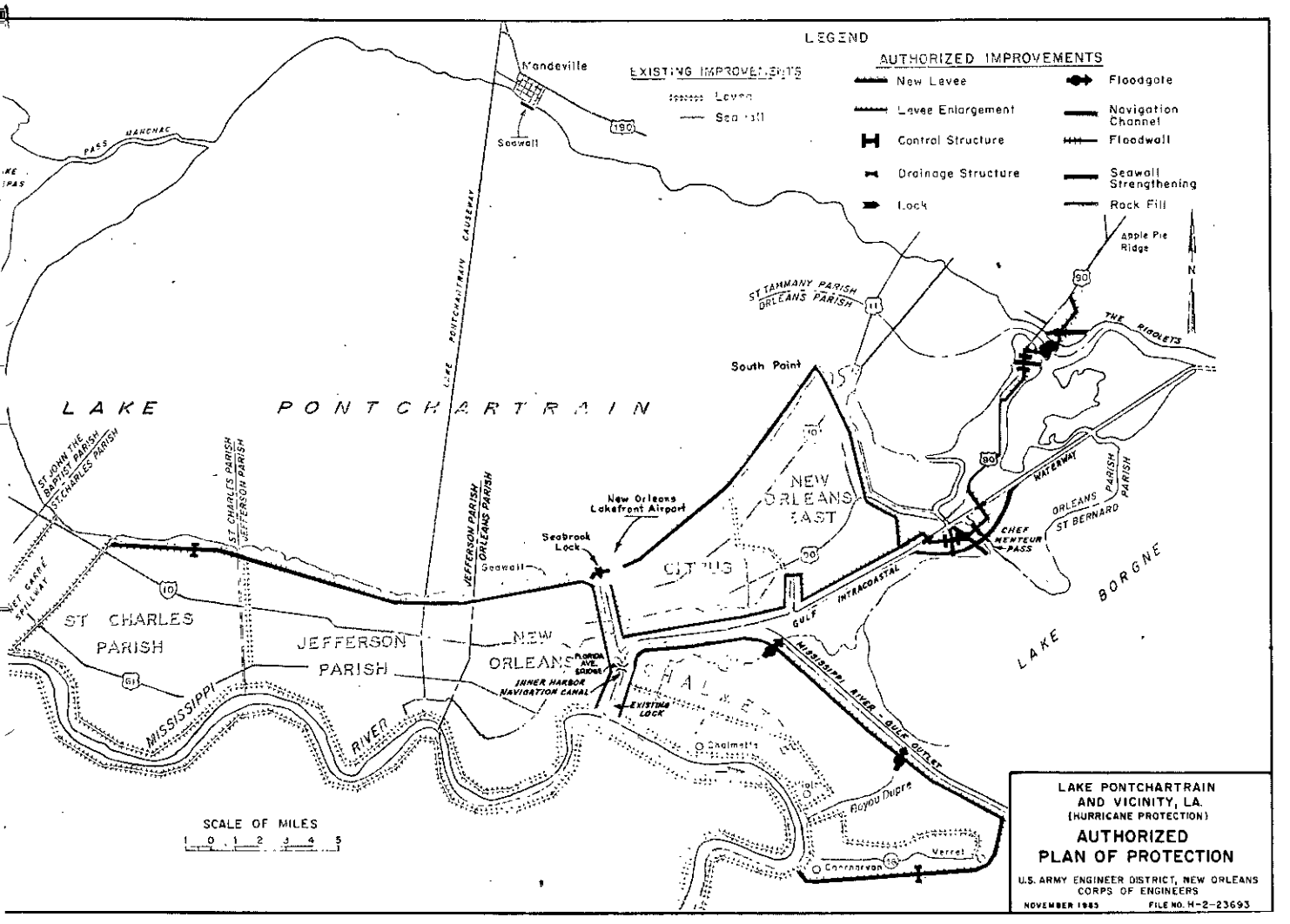
The hurricane protection project is a federally authorized program under direction of the U.S. Army Corps of Engineers. It includes miles of new or improved levees and construction of control structures, navigation locks, flood-gates, closure dams at Chef Menteur Pass and the Rigolets, and a lock at the lakeward terminus of the Industrial Canal at Seabrook.

Total cost of the project is now estimated at $216 million, of which $149 million is to be supplied by the federal government and $67 million by local interests. The Orleans Levee Board has been designated as the assuring agency for the project.

Target date for completion of the Lake Pontchartrain and Vicinity Hurricane Protection Project is July, 1978.

Lennox said the Army Engineers have informed the Orleans Levee Board that starting with the 1971-72 fiscal year they intend to seek federal appropriations totaling $20 million a year in order to complete the project by the target date.

"Such a schedule," he said, "would require about $8.5 million a year in local contributions



from Orleans Parish through the Orleans Levee Board and from Jefferson, St. Charles and St. Tammany Parishes.

"Funds presently available to the Orleans Levee Board are not sufficient to meet the Orleans Parish portion of the local contribution to project costs.

"Final passage of these amendments is urgently needed to provide funds sufficient to finance the local contribution required to continue construction of the project and complete it by the 1978 target date," he said.

The project is designed to protect New Orleans and other areas surrounding Lake Pontchartrain from what the Army Engineers define as a standard project hurricane. This is one that may be expected from the most severe combination of meteorological conditions that are considered reasonable characteristics of this region.

Lennox said that either Betsy in 1965 or Camille last year — with just a slight alteration in course—could have affected the New Orleans metropolitan area in the way a standard project hurricane would have.

"These narrow escapes in a short period of time should convince everyone that we who live in this area are extremely vulnerable and in great danger," he said.

The Orleans Levee Board has spent about $10 million on levee work for the project since it was authorized by Congress in 1965. The bulk of the future work will involve implementation of the lake barrier plan, the key to the success of the project, which includes about $72 million in locks, dams, levees and control structures at the Rigolets, Chef and Industrial Canal.

"Without completion of the lake barrier plan," Lennox said, "effectiveness of the greatly improved levee system will be severely diminished or even rendered useless should a project hurricane strike this area. That's why final passage of these amendments is so necessary now to provide sufficient local funding to assure continuation of the federal government's large share of this project. The urgency of the situation cannot be overstated. Delay could be catastrophic."

The Legislature and Professional Engineers



LAMON L. MOODY, JR., P.E., Legislative Committee Chairman, Louisiana Engineering Society

Over the last several years there has been an increasing work load on the Louisiana Legislature during its even year, 60-day Regular Sessions. During the session just ended, there were some 2,500 House and Senate bills, Concurrent Resolutions, etc., filed for legislative action. None of these bills were acted upon by House or Senate Committees until several days after the session convened. From a practical viewpoint, all of the bills affected us in the engineering and surveying professions, either as a private citizen or as professionals.

During the chaotic opening days of the session it was a monumental task to scrutinize all of the bills filed to ascertain those bills which would directly affect the engineering or surveying professions. It was not possible just to scan the titles of bills that had been filed to determine the full intent of a proposed legislative action, and it was difficult to obtain copies of all bills during the early days of the session. But this is the first step in conducting a legislative program on behalf of the Louisiana Engineering Society.

To assist the Society's Legislative Committee the services of a firm specializing in studying proposed legislative actions was engaged. It also assisted in the procurement of copies of bills. Following the closing date for pre-filing bills in the Legislature there were 55 bills which directly affected the engineering and surveying professions. These were the bills your Legislative Committee endeavored to follow during the entire session. The possibility that some bill affecting our professions might have been overlooked was a haunting refrain throughout the session.

Since the Louisiana Engineering Society is the single Society representing all branches of Professional Engineers and Land Surveyors in the State of Louisiana, the Society has a tremendous responsibility to members and nonmembers throughout Louisiana. The State Legislative Committee of the LES is composed of a State Chairman, Vice-Chairman and the Local Chairmen and Vice-Chairmen of the Legislative Committees of each of the eight chapters of the LES. Your Legislative Committee is subservient to the Officers, Board of Directors and the membership of the Society.

Communications concerning the legislative program prior to and during the 1970 session were the primary consideration of the Legislative Committee. Preparations for the 60-day session were made many months prior to the opening date of the session.

The Louisiana Engineering Society prepared three bills that were sponsored by the Society. They were: (1) Separation of the Civil Engineers and the Land Surveyors licenses, (2) A mandatory requirement that the Clerks of Court record only those maps and survey plats pertaining to sale or mortgage of property that have been sealed by a Registered Land Surveyor, and (3) A bill to authorize the State of Louisiana to provide $15 million in matching funds for construction of sewage treatment facilities.

The first two of these bills were put in final draft form as a result of approximately two years of committee work in the Louisiana Land Surveyors Association and the Louisiana Engineering Society, plus efforts by the Consulting Engineers Council, American Society of Civil Engineers, Louisiana Society of Professional Engineers in Civil Service, State Board of Registration and the American Congress on Surveying and Mapping. The third proposed bill, concerning grants for sewage treatment facilities, originated in the Professional Engineers in Private Practice Functional Section of the LES at the instigation of Carl Heck, Jr. Following approval, the Society's Board of Directors instructed the Legislative Committee to prepare a legislative bill to accomplish the intent of this action.

Through these procedures communications with the practicing engineers and land surveyors were maintained on bills proposed and sponsored by our professions. The unknown quantity in communications with the membership of the Society centered around those unknown bills that were yet to be filled during the session.

Plan of Action Prepared

During a meeting prior to the session, the Society's Board of Directors authorized the Legislative Committee to: (1) Issue weekly Legislative Bulletins to approximately 325 state and chapter officers and committeemen, (2) Issue periodic Legislative Bulletins to the entire membership of the Society, (3) Contact the President or, in his absence, the President-Elect of the Society for immediate decisions concerning the legislative program during the session, (4) Have available during the 60-day session the services of Gerald A. Simmons, Executive Secretary of the Society, and (5) Engage the legal services of Mr. Joe Keogh, attorney, who has assisted the Society in Legislative programs in the past, and Mr. Tom Phillips, attorney, who specializes in labor law. The authorization for the engagement of Mr. Phillips was predicated upon the basis that if his particular services were required he would be engaged.

It was thus that the battle plans were made. It is worth reiterating that the Society sponsored only three legislative measures while in the final analysis it became known that we must fight defensive battles for the profession against bills proposed by others to the detriment of the profession, and fight for some

The Legislature and Engineers (Continued)



Legislative Committee Chairman Lamon L. Moody Jr. is shown in action at the State Capitol. In upper left he consults with Glen Baker, immediate past president of the Louisiana Land Surveyors Association, and C. J. Tircuit, LLSA legislative chairman. In upper right photo he explains a bill to Ronald Cressy, New Orleans Chapter President. Above left Moody thanks Representative Eugene McGehee for handling the LES legislative package in the House. At right he is shown with Senator L. W. Eaton, floor manager of the LES package in the Senate.

bills proposed by others that would aid the profession.

To carry out any battle plan, the first requirements are manpower and money. It was necessary to pay the additional expenses of the Society's state office for such services as secretarial help, postage, telephone calls, telegrams, etc. Major expenditures were also required for legal services.

There was unprecedented interest and cooperation from the officers, directors, committeemen and membership of the Society during the legislative session. This spirit of dedication and cooperation was realized not only from the Louisiana Engineering Society, but from most other professional societies and organizations. There was a general spirit of enthusiasm, dedication and self-sacrifice by innumerable professional engineers and land surveyors from all areas of the state. This was true not only of the practitioners, but of our own State Board of Registration as well.

Your Legislative Committee was never refused when a request was made for assistance of any nature. This cooperation is required to assure a successful legislative program for our practitioners. It has been necessary in the past and will be emphasized in the future with every single legislative session.

In the legislative process it is necessary to make personal appearances before the various House and Senate committees to speak as proponents or opponents of proposed legislation. It is commonly stated that the chances for killing a proposed bill are "a thousand to one" easier than successfully passing a proposed bill. It is frightening to realize and experience that bills may be either killed or sanctioned in the various committee hearings prior to action by the House or Senate as a whole. As a consequence, it behooves either the proponents or opponents appearing before these Committee Hearings to "have all guns loaded," or, to use another cliche, "put the best foot



Louisiana Governor John J. McKeithen signs an act to provide $15 million in matching funds for construction of sewage treatment facilities. Observing, from left, are Representative Lawrence Delaroderie, LES Executive Secretary Gerald Simmons, Representative Salvadore Anzelmo, Carl Heck Jr., and Lamon Moody.

forward." Subject matter must be thoroughly known to debate an issue.

Once a bill passes a committee it goes to the floor of either the House or Senate. Upon passing the first governing body, it is referred to the second governing body and assigned to another committee hearing. When the bill gets to the floor, only Representatives or Senators are allowed to debate the issue and ultimately vote upon the measure. It is therefore obvious that Representatives or Senators should be selected to handle bills on the floor who understand the intent and purposes of the proposed legislation. It is again imperative that communications be established with each of the 105 Representatives and the 39 Senators. Many of our Society members, and others, were called upon to personally contact their respective elected legislators either at home or at the State Capitol in Baton Rouge during the session to explain our position relative to proposed bills.

Separation of Licenses

Our bill to separate the Civil Engineers and Land Surveyors licenses was originally assigned House Bill No. 661. This bill was killed in a House committee early in the session by a vote of 6 to 4. The Legislative Committee of the LES was contacted by Professional Engineers and Land Surveyors from throughout the State inquiring if there were any possible way of reviving this bill. With the aid of Mr. Keogh and Representative Eugene McGehee, a means of resurrecting this bill was found. The Louisiana Architects Association gave us House Bill No. 910, which they had abandoned. This was amended and became, in effect, our original H.B. 661 containing amendments meeting the approval of the Louisiana Society of Professional Engineers in Civil Service and the Louisiana Section of the American Society of Agricultural Engineers.

The bill was again heard in a House committee and received a

The Legislature and Engineers (Continued)

unanimous vote of approval. It then went to the House where it was assigned a new number, H. B. 1645, and ultimately received a passing vote of 70 yeas and 12 nays. The bill was then assigned to a Senate committee where it received a favorable report by a vote of 5 yeas and 4 nays. Ultimately it passed the Senate by a strong vote of 32 yeas and 1 nay. It has now become law.

House Bill No. 662 relative to the recordation of survey maps and plats has also become law.

Perhaps the greatest service that our professions rendered for the municipalities of the State of Louisiana during this legislative session was our original House Bill 924 which was consolidated with H.B. 866 concerning federal and state grant monies for sewage treatment facilities. Until this bill became law, local governing subdivisions of the state could only expect to obtain a 30% grant from the federal government on sewage treatment facilities through application with the Louisiana State Department of Health. Your Legislative Committee worked with Carl Heck, Jr., the Louisiana State Department of Health, the New Orleans Sewerage and Water Board, Representative Laurence Delaroderie, Representative Salvador Anzelmo, the Louisiana Municipal Association, and others in preparing and assisting in the passing of this bill into law. The bill received almost unanimous approval in all committee hearings, the floor of the House and the floor of the Senate; and it was declared emergency legislation by Governor McKeithen and signed into law on June 29 as Act 171 of 1970. The municipalities of Louisiana will now receive 50% grant monies from the federal government for construction of sewage treatment facilities rather than the 30% grant that had been received in the past.

A bill strongly opposed by LES was H.B. 588, providing for the consolidation of licensing boards, including our own Board of Registration, under the Department of Occupational Standards. Your Legislative Committee had the bill amended to exempt the Louisiana State Board of Registration for Professional Engineers and Land Surveyors. Following this exemption, and other professional exemptions, the bill was ultimately defeated in a House Committee. Had this bill been successful it would have brought our Board of Registration under the direction and financial responsibility of the Department of Occupational Standards and would have been administered by that Department along with many other non-professional licensing boards. This matter will most assuredly reappear in future sessions and must be defeated.

Registration by Legislation

Some of the bills which were successfully opposed would have granted Professional Engineering Licenses to at least three non-qualified individuals. One or more of these individuals had applied to the Board of Registration for a license but could not be licensed under any provision of the registration law. As a consequence, they endeavored to obtain a license by legislative action. The basic reason for licensing professional engineers and land surveyors is for the protection of the life and property of the citizens of the state. Our registration law sets forth the minimum requirements of education, experience and background for recognition of the state in issuing a license to practice engineering and land surveying. It is most distasteful to encounter individuals who would endeavor to circumvent the laws. There will be others in the future and it behooves our professionals to be on guard against these special interests.

There were three bills proposed during the legislative session concerning the "hold harmless" clauses between owners, contractors, engineers, land surveyors and architects. The language of these bills would have adversely affected the engineering and land surveying professions and were opposed by industry, government and professionals. Your Legislative Committee actively opposed these bills and ultimately all three were defeated.

Several bills concerning the creation of the "Louisiana Occupational Health and Safety Commission" were proposed. This legislation would have created a new state commission for controlling safety aspects of design in industry. While the intent of this legislation was good, some of the bills contained features, such as the composition of the membership of the commission, which was actively opposed by the Legislative Committee.

Space just does not permit a recapitulation of all of the proposed legislation that affected the professional engineering and land surveying professions. The LES Legislative Bulletins have reported the periodic and final status of our legislative program for 1970. Now that it is all over, your Legislative Committee is happy to report that by the grace of God and the sincere interests and cooperation of the members of the Society our legislative program was 100% successful.

We can not and must not rest on our laurels. We must commence immediate plans and activities for future sessions of the Louisiana State Legislature. Even though our Society may not sponsor legislation in future sessions it will become increasingly necessary to fight defensive battles if we are to maintain our professional status, and if indeed, we are to keep the "walls of Jericho from tumbling down upon us." ■

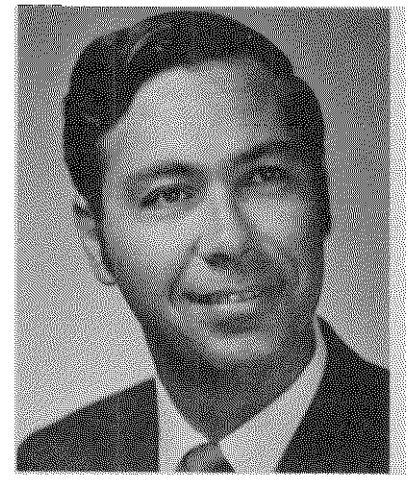
Chapter Presidents - 1970-71



R. M. PRIMEAUX, P.E.
Alexandria



CHARLES BARNARD, P.E.
Baton Rouge

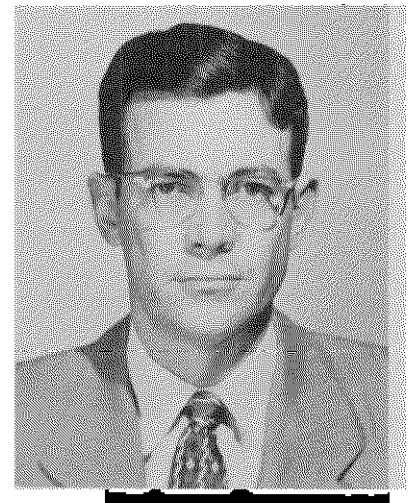


F. E. MILFORD, JR., P.E.
Bayou



LEE C. HILL, P.E.
Lafayette

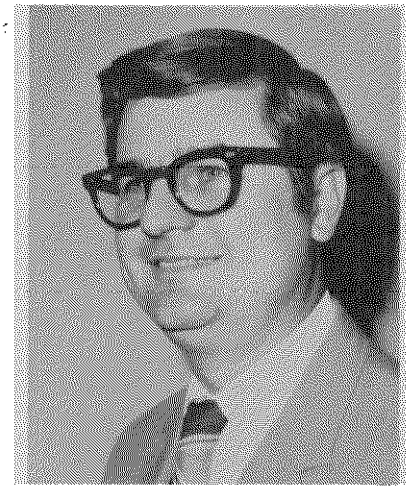
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Leaders



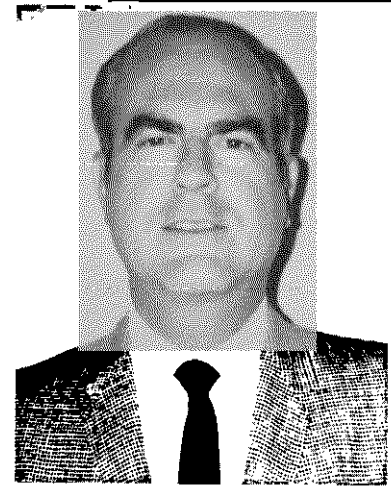
JOHN BROUSSARD
Lake Charles



G. L. HELLER, P.E.
Monroe



RONALD CRESSY, P.E.
New Orleans



JOE L. DAVIS, III, P.E.
Shreveport

Solons Separate Civil Engineering from Surveying

Last month, when the Louisiana Legislature enacted House Bill No. 1645, the engineering registration law was significantly modified. In substance the change amounts to separating the practice of Land Surveying from Civil Engineering, effective September 1, 1970.

Louisiana was probably the first state to recognize the need for a law to regulate the practice of Land Surveying and engineering. Before 1900 the Louisiana Engineering Society was active in advocating legislation for the regulation of the practice of Civil Engineering and Land Surveying.[1] The Wyoming legislature passed the first engineering-land surveying registration law in 1907 followed by Louisiana in 1908.

In the early part of the century just about every engineering student was required to take one or more courses in land surveying that constituted almost twenty per cent of his undergraduate curriculum. Professional Civil Engineers were expected to be well qualified in surveying since land surveying constituted a major fraction of the engineering services to the public. It is, therefore, understandable that Louisiana would have a registration law that would recognize a Civil Engineer as a person qualified to practice land surveying.

In 1950, when the law was changed to provide for the registration of engineers in other branches, land surveying was still recognized by the authors of the legislation as an area in which all civil engineers should be competent.

According to Professor McNair[2] of Cornell University, about 30 years ago schools began to drop surveying as a required course for all engineers, and a decrease in the required instruction in surveying for civil engineers began. Now about half the civil engineering curricula of schools in this country contain no surveying and the required courses in most of the other curricula is minimal and perhaps at a subprofessional level.[2] By comparison with other schools the engineering schools in Louisiana have strong programs in surveying. Undoubtedly, part of the motivation for this has been the legal requirement that all persons registered as Civil Engineers in Louisiana be recognized as persons qualified to practice land surveying.

The Louisiana State Board of Registration for Professional Engineers and Land Surveyors has been aware of the changes that have taken place in the education and in the practice of civil engineering. Nevertheless, since the law had recognized every Civil Engineer to be proficient in land surveying, the Board was obligated to examine the competence in land surveying of each applicant, regardless of whether or not the applicant considered this to be part of the professional services he intended to offer to the public.

The amended registration law does not completely separate land surveying from engineering. On the contrary, the composition of the Board remains the same as it had been except that at least one member must be a registered Professional Engineer also registered as a Land Surveyor who is active in the practice of land surveying. In addition the requirements for registration as a Land Surveyor recognize the value of an engineering education with required courses in surveying as desirable preparation for a professional career in land surveying.

The original Act of 1950 had no provision for a person to become registered as a Land Surveyor on the basis of reciprocity or comity with another state. The new law provides for such registration and at the same time recognizes that a Land Surveyor should be familiar with the laws, procedures and practices peculiar to the state in which he intends to practice. All persons who become registered in Louisiana on the basis of their registration in another state must pass a written examination of at least four hours duration that contains questions on surveying laws and procedures.

Under the provisions of the amended statute all persons who are currently registered as Civil Engineers will be issued certificates as Land Surveyors. The certificates will be mailed just as soon as they are prepared, beginning September 1, 1970. No charge will be made for this service. Civil Engineers who have allowed their registrations to lapse will be issued certificates as Land Surveyors provided they renew their registrations before August 31, 1971. After December 31, 1970, those Civil Engineers who were granted registration as Land Surveyors as a result of the "Grandfather's Clause" of the act must renew their registrations as Land Surveyors each year and pay the appropriate fee.

The complete copy of House Bill 1645 follows. Persons who desire copies of the law as it existed before the amendment are encouraged to send requests to the Louisiana State Board of Registration for Professional Engineers and Land Surveyors, 1055 St. Charles Avenue, Suite 415, New Orleans, Louisiana 70130.

ACT 685

BY: MR. HOLSTEAD, CHAIRMAN, COMMITTEE ON JUDICIARY, SECTION D (SUBSTITUTE FOR

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[1] Odom, Leo M., "History of Professional Registration in Louisiana," *Louisiana Engineer*, Vol. 54, No. 2, April 1968.

[2] McNair, A. J., "The Appalling Plight of Surveying Education," *J. of Engineering Education*, Vol. 59, No. 2, October 1968.

HOUSE BILL NO. 910 BY MR. FORTIER)

AN ACT

To amend and reenact Sections 683, 684, Subsections A and C of Section 692, Sections 693, 695, Subsections A and B of Section 697 and Subsections A and D of Section 698, and to amend said Section 698 by adding thereto a new Subsection H thereof, all of Title 37 of the Louisiana Revised Statutes of 1950, relative to the registration and regulation of civil engineers and surveyors, to provide for the qualifications of members of the State Board of Registration for Professional Engineers and Land Surveyors, nominations to the board, requirements for registration of engineers and land surveyors, applications for such registration and registration fees, certification of engineers and land surveyors, registration of professional engineers as land surveyors, renewal of registration, applicability of the provisions of this Act, and to otherwise provide with respect thereto.

Be it enacted by the Legislature of Louisiana:

Section 1. Sections 683, 684, Subsections A and C of Section 692, Sections 693, 695, Subsections A and B of Section 697 and Subsections A and D of Section 698, all of Title 37 of the Louisiana Revised Statutes of 1950 are hereby amended and reenacted and further to amend said Section 698 by adding thereto a new Subsection H all to read as follows:

§683. Board; appointments; terms

A State Board of Registration for Professional Engineers and Land Surveyors is hereby created whose duty it shall be to administer the provisions of this Chapter. The board shall consist of nine professional engineers. The board of nine professional engineers presently serving shall continue to serve, each man serving for the remainder of the term for which he was appointed. All future appointments shall be for a nine-year term. At all times hereafter, at least two members of the board shall be registered professional engineers who are active in the private practice of engineering, and for the purposes of this section an engineer engaged in private practice is a person legally qualified in the profession of engineering who practices engineering as a principal business and who provides analytical, creative, design and design implementation capabilities, devoid of judgment-biasing commercial or product affiliations to clients on a fee basis. At least two of the members of the board shall be registered professional engineers in government employment, at least two of the members of the board shall be registered professional engineers employed in the field of industry, and at least two of the members of the board shall be registered professional engineers employed in the field of education. Not less than one member of the board shall be a professional engineer who is also a registered land surveyor, and who is engaged in the field of land surveying. The procedure for appointment of all future members of the board shall be as follows:

The governor shall appoint members to the said board from among nominees recommended by the Louisiana Engineering Society or its duly recognized successor. All such nominees shall have the qualifications required by R.S. 37:684. At least five nominations shall be made for each appointment required, and each appointment shall be for a term of nine years, which appointment shall be made within thirty days after nominations have been submitted to the governor in the same manner as the predecessor appointees were selected; provided, however, that in the event of the death or resignation of any member of the board, the appointment by the governor of his successor shall be only for the remainder of the current term of such member who dies or resigns.

Each member of the board shall receive a certificate of his appointment from the governor, and before beginning his term of office, shall file with the secretary of state his written oath or affirmation for faithful discharge of his official duty. Each member shall serve until his successor has been appointed and qualified. It shall be the duty of the president of the Louisiana Engineering Society, duly authorized and acting on behalf of the said society, to make the nominations described above within sixty days after receipt of notice of the death or resignation of a member of the board, and at least thirty days prior to the expiration of the term of a member of the board.

§684. Qualification of board members

Each member of the board shall be a citizen of the United States and a resident of this state, and shall have been engaged in the practice of engineering or teaching of engineering or the practice or teaching of land surveying for at least twelve years, and shall have been in responsible charge of important engineering or land surveying work for at least five years. Responsible charge of engineering or land surveying teaching may be construed as responsible charge of important engineering or land surveying work.

§692. Requirements for registration

A. General. The board shall register each applicant in the branch or branches of engineering or as a land surveyor as specified herein, which may be requested by the applicant, when, in the opinion of the board, and after the applicant has met the requirements of this Chapter, that applicant is proficient and qualified to practice as such.

Professional engineers will be issued certificates of registration in one or more of the following branches: agricultural, chemical, civil, electrical, industrial, mechanical, metallurgical, mining and petroleum engineering.

The following shall be considered as minimum evidence satisfactory to the board that the applicant is qualified for registration as a professional engineer or land surveyor, respectively:

(1) As a professional engineer:

(a) Engineers; Graduation plus experience. Graduation in an approved engineering curriculum of four years or more from a school or college approved by the board of satisfactory standing; together with the applicant's specific record of character, education and ability of a character satisfactory to the board, and indicating that the applicant is competent to practice engineering, provided that in a case where the evidence presented in the application does not appear to the board conclusive nor warranting the issuing of a certificate of registration, the applicant may be required to present further evidence for the consideration of the board, and may also be required to pass an oral or written examination, or both, as the board may determine; or,

(b) Engineers; Experience plus examination. A specific record of eight years or more of experience in engineering work of a character satisfactory to the board and indicating that the applicant is competent to practice engineering; and successfully passing a written, or written and oral, examination designed to show knowledge and skill approximating that attained through graduation in an approved four-year engineering curriculum;

(c) Engineers of long established practice. The board shall register an applicant without written examination, who presents the written recommendations of five or more professional engineers registered under this Chapter, and, who submits proof that he has had at least twenty years of successful practice, satisfactory to the board, not less than twelve years of which shall have been in the respon-

sible charge of important engineering work.

(2) As a land surveyor:

(a) Have a Bachelor of Science degree in an approved curriculum including the successful completion of at least six semester credit hours in surveying courses and present evidence satisfactory to the board that, in addition thereto, he has had at least four years of combined office and field experience in Land Surveying with a minimum of two years experience in responsible charge of Land Surveying projects under the supervision of a registered Land Surveyor and who has passed the oral and written examinations as required by the Board.

(b) Two years of formal education in an approved curriculum above the high school level with at least 60 semester credit hours passed or equivalent quarter-hours, or the equivalent approved by the Board, and must include the successful completion of at least six semester credit hours in surveying courses, and present evidence satisfactory to the Board that in addition thereto he has had at least six years of combined office and field experience in land surveying with a minimum of four years experience in responsible charge of Land Surveying projects under the supervision of a registered Land Surveyor and who has passed the oral and written examinations as required by the Board.

(c) Surveyor of Long Established Practice—plus Examination. A specific record of eight years or more of experience in surveying work of a character satisfactory to the Board with a minimum of six years experience in responsible charge of Land Surveying projects under the supervision of a Registered Land Surveyor, and successfully passing a written, or written and oral, examination in surveying prescribed by the Board.

(d) Registration by comity or endorsement. A person holding a certificate of registration to engage in the practice of land surveying issued on comparable qualifications from a state, territory or possession of the United States, will be given comity consideration. However, he may be asked to take such examinations as the Board deems necessary to determine his qualifications, but in any event he shall be required to pass a written examination of not less than four hours duration, which shall include questions on laws, procedures and practices pertaining to practice in this state.

C. Teaching credits. In considering the qualifications of applicants, engineering teaching may be construed as engineering experience and land surveying teaching may be construed as land surveying experience.

§693. Application and registration fees

Application for registration shall be on forms prescribed and furnished by the board, shall contain statements made under oath, showing the applicant's education and detailed summary of his technical work, and shall contain not less than five references. Three or more of the five references furnished by applicants for registration as professional engineers shall be registered professional engineers having personal knowledge of his engineering experience as such. Three or more of the five references furnished by applicants for registration as land surveyors shall be registered land surveyors having personal knowledge of his land surveying experience as such.

The registration fee for professional engineering shall be twenty-five dollars, which shall accompany the application.

The registration fee for interstate registration as a professional engineer or land surveyor shall be twenty-five dollars and shall accompany the application.

The registration fee for land surveyors shall be twenty-five dollars and shall accompany the application.

Should the board deny the issuance of a certificate of registration to any applicant after written examination the fee deposited shall be retained by the board. An unsuccessful applicant must pay the prescribed registration fee for each subsequent re-examination.

§695. Certificates; seals

The board shall issue a certificate of registration in the branch or branches of engineering in which the applicant has qualified upon payment of the registration fee as provided for in this Chapter, to any applicant who, in the opinion of the board, has satisfactorily met all the requirements of this Chapter. In the case of registered land surveyor, the certificates shall authorize the practice of land surveying. Certificates of registration shall show the full name of the registrant, shall have a serial number, and shall be signed by the chairman and the secretary of the board under the seal of the board.

The issuance of a certificate of registration by this board shall be prima facie evidence that the person named therein is entitled to all the rights and privileges of a registered professional engineer, or a registered land surveyor, while the said certificate remains unrevoked or unexpired.

Each registrant hereunder may upon registration obtain a seal, of a design authorized by the board, bearing the registrant's name and the legend Registered Professional Engineer in _____ insert the branch of engineering in which the registrant is registered, or Registered Land Surveyor. All registrants engaged in the practice of engineering or land surveying either in a private professional practice or as an employee of a corporation, company, partnership, individual or other private employer shall impress with his official seal all plans, specifications, plats, maps, studies, reports or other drawings or documents which he shall prepare or which shall be prepared under his supervision.

All registrants who are employed by the state of Louisiana or some political subdivision thereof, or by a parish, city, municipality or any department, branch or agency of the United States government or any other public corporation, body or agency, may, if they wish, impress their seal upon all plans, specifications, plats, maps, studies, reports or other drawings or documents which they prepare in the practice of engineering or land surveying, but such impress is not mandatory.

§697. Practioners at time Chapter became effective

A. Private practice. At any time within one year after July 26, 1950, upon due application therefor and the payment of the registration fee for professional engineers, the board shall issue a certificate of registration in the branch or branches of engineering in which the applicant has been practicing, without oral or written examination, to any engineer who shall submit evidence under oath satisfactory to the board that he is of good character, has been a resident of the state of Louisiana for at least one year immediately preceding the date of his application, and was practicing or had the necessary qualifications to practice engineering on July 26, 1950; provided, that the above provisions of this paragraph shall not apply to the practice of civil engineering or land surveying. All civil engineers and land surveyors who, on July 26, 1950, were registered under the civil engineers and surveyors licensing law, Title 37, Chapter 8, Sections 681-697 of the Revised Statutes of Louisiana of 1950, shall be registered by the board as professional engineers to practice civil engineering or as land surveyors to practice land surveying in accordance with the registration they held under those laws without examination or other investigation of any nature; and those so registered shall be issued certificates of registration immediately without charge and without the necessity of application therefor.

Immediately after September 1, 1970, all professional engineers who are at present registered in the branch of civil engineering who hold

current certificates as such shall be registered by the board as land surveyors without examination or other investigation of any nature, and those so registered shall be issued certificates of registration as land surveyors immediately without charge and without the necessity of application therefor. Thereafter during the period beginning September 1, 1970 and ending August 31, 1971, if any professional engineer who was previously registered in the branch of civil engineering and who had lapsed such registration and holds no current certificate as such, shall renew his registration as provided in Section 696 of this Title, such professional engineer shall be issued a certificate of registration as a land surveyor immediately without charge and without the necessity of application therefor. From and after August 31, 1971, no person shall be issued a certificate as land surveyor under this statute unless he shall qualify as such in accordance with Section 692 et seq. of this Title, except that any person granted a license as a professional engineer on the basis of earning a Bachelor of Science degree in engineering from an accredited school, college or university, requiring surveying within the curriculum, approved by the board as of satisfactory standing, and who has successfully completed the engineer-in-training requirements as established by the board, and who has further successfully completed no less than six (6) semester credit hours of surveying courses approved by the board, and who further complies with the requirements of Section 692, paragraph (1), (a) of this Chapter, may be granted a license by the board to practice land surveying without further written examination provided such person makes application to the board. The minimum hours for semester credits in surveying shall apply to all engineer-in-training applicants subsequent to September 1, 1970. The registration as land surveyor as provided in this Section 697 as amended shall be renewed annually upon the payment of a fee as provided in Section 696 of this Title. The provisions of this and the preceding paragraph shall not apply to public employees who have been registered under Subsection B of Title 37, Section 697.

No other person shall be registered as a professional engineer to practice civil engineering or as a land surveyor to practice land surveying, without meeting all requirements of this Chapter and in particular R. S. 37:692 and 37:697.

B. Public employees. Any person employed on a full time salary basis by the Louisiana Department of Highways in the year 1950 to perform duties requiring the practice of civil engineering, and who on July 29, 1964 had a rating of Engineering Aide IV, and who applied within one year from July 29, 1964, for registration under the provisions of this Chapter, and who shall have been registered by the board to practice civil engineering as a public employee, without examination, shall practice civil engineering as a public employee upon the condition that such person restrict his practice of civil engineering to any work he may do as an employee of the state of Louisiana or any of its political subdivisions on a salary basis; provided that nothing in this Section shall be construed to permit any person registered to practice civil engineering as a public employee without examination on the basis herein provided to accept employment as a professional engineer on a fee or commission basis from any firm, person or corporation, or by the state of Louisiana, any of its political subdivisions, or by any parish, city, town or other public body or agency. In addition, such registrant shall not engage in the practice of architecture as regulated by R.S. 1950, Title 37, Chapter 3, as amended, nor shall he use the term architect or any derivation thereof. The initial registration fee of any person registered hereunder shall be one dollar. This registration shall be renewed yearly upon the payment of a fee of one dollar.

All such persons registered by the board to practice civil engineering as a public employee, without examination, shall immediately after September 1, 1970 be registered by the board as land surveyors without examination or investigation of any nature, subject, however, to the limitation that such person restrict his practice as a land surveyor to any work that he may do as an employee of the state of Louisiana or any of its political subdivisions on a salary basis; provided that nothing herein shall be construed to permit any person registered hereunder, without examination on the basis herein provided, to accept employment as a land surveyor on a fee or commission basis from any firm, person or corporation, or by the state, any of its political subdivisions or by any parish, city, town or other public body or agency. Thereafter during the period beginning September 1, 1970 and ending August 31, 1971, if any person registered by the board to practice civil engineering as a public employee and who had lapsed such registration and holds no current certificate as such, shall renew his registration as provided by the board, such civil engineer in public employ shall be issued a certificate of registration as a land surveyor immediately without charge and without the necessity of application therefor. From and after August 31, 1971, no person shall be issued a certificate as land surveyor under this Title unless he shall qualify as such in accordance with Section 692 et seq. of this Title. The initial registration of any such person as a land surveyor, by the board, shall be without fee. This registration shall be renewed yearly upon a payment of a fee of one dollar.

§698. Public and private work; application of provisions

A. Persons performing sub-professional work as defined in the rules or bylaws of the board or acting as construction or process superintendents or foremen need not be registered under this Chapter, but their work shall be supervised by a registered professional engineer when their work involves the practice of engineering, and by a registered land surveyor when their work involves the practice of land surveying.

D. From and after September 1, 1970, all land surveying shall be performed by a registered land surveyor, who, for purposes of this Sub-section, shall be any person who practices the profession of land surveying within the meaning and intent of this Act, and who by verbal claim, sign, advertisement, letterhead, card, or in any other way represents himself to be a land surveyor.

H. Professional Agricultural Engineers are exempt from the provisions of Title 37, Chapter 8, Section 698, Paragraph D while performing land surveying work pertaining to drainage, irrigation, erosion control, mapping and topographical work required in agricultural engineering activities.

Section 2. If any provision or item of this Act or the application thereof is held invalid, such invalidity shall not affect other provisions, items, or applications of this Act which can be given effect without the invalid provisions, items or applications, and to this end the provisions of this Act are hereby declared severable.

Section 3. All laws or parts of laws in conflict herewith are hereby repealed.

JOHN S. GARRETT
Speaker of the House of Representatives

T. C. AYCOCK
Lieutenant Governor and President of the Senate

Governor of the State of Louisiana

This bill having been submitted to the Governor and no action having been taken within the time provided by the Constitution, said bill becomes law without his approval.

Review of 1969-1970 Administration

The 1969-70 administration of the Louisiana Engineering Society has come to the end of its purpose. I am sure my fellow officers who have had the privilege of directing the Society throughout this past year will join in my thanks for your confidence and in my appreciation for the opportunity that was given to us to accomplish what we could for our profession.

How well we performed can best be examined through the following retrospective examination of the year's principal activities.

Budget Problems

The membership was apprised of a serious financial condition in the Society by the officers throughout the year, in our attempt to "sell" to all chapters the need for a dues increase. I am pleased to advise that the Board and particularly our Treasurer, J. J. Thigpen, through some heroic efforts, have managed to see us through with a balanced budget. Although our income was not quite as good as expected, expenses were held to a minimum and we will net out about even. We will publish an auditor's report at a later time. This situation was helped when the State Board of Registration for Professional Engineers and Land Surveyors increased their subscription to our publication, and by T. J. Hogue and his Spring Convention Committee in netting about $3,000 from this activity.

Inasmuch as the Society is faced with the need for expanding its activities to serve properly all aspects of the profession, additional revenue is a **must** to allow future officers to devote their time to this end, rather than, of necessity, continually trying to keep the Society in a somewhat stable financial position. Needless to say, passage of the constitutional amendment to increase dues would have gone a long way toward providing a satisfactory financial state. For those who haven't heard, this amendment did not receive a full ⅔ majority.

Membership

The membership drive this year under the guidance of Larry Grundmann has been a very successful one. We will complete the year with better than 100% attainment of new members as compared to quota. Our newly formed Bayou Chapter was winner of the membership contest. This is indeed a great stride for a chapter that is only one year old.

Public Affairs

We have, at the state level, taken an active interest in becoming involved in public affairs, particularly in the many attempts to solve the varied problems besetting the engineering profession from outside sources. Our practice sections were prime forces in spurring us in this direction. At least seven specific policy statements were brought to the Board by the sections and adopted after due deliberation. These, of course, were made known in the name of the Society to various state agencies, political leaders and influential persons in state and local governments. Examples are:

1. Qualifying engineers as city planners.
2. Encouraging engineering faculties to participate in outside work.
3. Opposing rigid administration of prohibition of individual sewage disposal facilities.
4. Supporting the airport assistance act for federal funding for capital improvements of airports.
5. Opposing elimination of tax exempt status of state and municipal bonds.
6. Opposing federal registration of engineers, and
7. Supporting public policy fostered by Congress and assisting in drafting necessary state legislation to promote adequate sewerage facilities and prevent water pollution by creation of a construction grant program in the state.

Engineering Education

We have experienced an extremely successful program of continuing engineering education under the direction of Hoyt Brown. In the Engineering Management Course, co-sponsored by LES and LSU, classes were conducted in New Orleans, Baton Rouge, Alexandria and Shreveport during the Spring Semester. This fall will probably see additional classes in the Lafayette/Lake Charles area and in Monroe. A review course for applicants for the professional engineering examination was also conducted at New Orleans and attendance had to be limited to match the size of the classroom available for the course.

The LES has also been engaged in the planning phases for a study that could be made during the fall of 1970 to offer guidance to the newly formed Louisiana Coordinating Council for Higher Education in developing a master plan of overall engineering education to meet the needs of the state. (This is a good example of being stymied for lack of capital.) This fine program has proceeded to the point of having a top notch team of nationally known educators anxiously awaiting our go ahead sign to perform this study; of course, we cannot authorize the start until we have adequate funds in our hands. About $12,000 is required and we are working now at financing. Unfortunately, Mr. Szabo will fall heir to this challenge as it cannot be completed during the remainder of this term.

Liaison with State Board

We have utilized our liaison committee with the State Board under James Janssen's active leadership as the final review committee of all changes suggested in the Registration Law. Several modifications to the law were under study during the

course of the year, including one providing for the separation of the civil engineering license from the land surveying license as recommended by an inter-society committee set up to draft changes in the law. This change received Board approval and proposed legislation was drafted. Two other changes—elimination of registration by branches, and elimination of the exemptions from registration requirements for professional engineers in industry or in government employment — were considered favorably by Liaison Committee. As suggested by this committee, the LES Board agreed to refer these questions to a composite committee consisting of representatives from the technical societies representing the branches found in the registration law as well as the functional sections of LES; and further, that hearings be held by each LES chapter and their findings reported to the LES Board of Directors for submission to the composite committee.

In general, a much closer working relationship between the LES and the Licensing Board for Engineers has been developed which should prove of mutual benefit to both organizations.

Legislative Action

As had been previously forecast, organizing the program of our Legislative Committee this year required an extensive amount of preparation, since the Legislature was in regular session. I would be remiss if I failed to specifically point out that the drive and dedication of Lamon Moody, our Legislative Committee Chairman, has been a keen force in upholding the ends of the engineering profession. His committee started early in preparing the Society for some strong battles. You may recall that even last year arrangements had been made to have the various legislators meet with local chapters to hear our professional engineering points of view on suggested legislation. This has proven helpful as has a letter prepared by the deans of the colleges of engineering in the state, outlining the responsibilities of engineers as contrasted to architects. This letter, with the sanction of the LES, was circulated to every legislator in the state long before the regular session began. As a result, our Legislative Committee was a recognized group as they went about their business during the session. Mr. Moody has a full report on action by his committee in another section of this issue.

Executive Secretary

We are indeed all genuinely pleased with how well Gerald Simmons is settling down in this responsible role for the LES. With just a year's experience he has indicated that he can handle all assignments that confront his office, and with his energy, intelligent manner and background can get a job done well. He was a tremendous help to me and I'm sure will be of even greater service to the officers, members and profession in the years to come.

Publications

The excellence of the LOUISIANA ENGINEER was continued throughout the year under the able guidance of Waldemar Nelson and Ronald Cressy. Our advertising fell off somewhat, however, and this situation should be checked into during the next fiscal year. The "Perspective Newsletter" came out on a bi-monthly basis and we hope we kept you abreast generally on society affairs with this publication. During this legislative session we are also preparing a weekly "Legislative Report" to keep all abreast of development on the bills affecting the profession.

General

There are many other activities and accomplishments of this administration. To quickly name a few:

a) The joint manual of practice prepared by PEPP and CEC terminated its year's trial and has been authorized for print with the cost to be divided between LES and CEC.
b) Several JETS Chapters were established in the Monroe area, as well as Engineering Technicians Chapters (ASCET) in New Orleans and Baton Rouge.
c) Our usual array of awards were made at the Spring Convention, and,
d) Of course, our Ladies Auxiliary program continued at a fine pace.

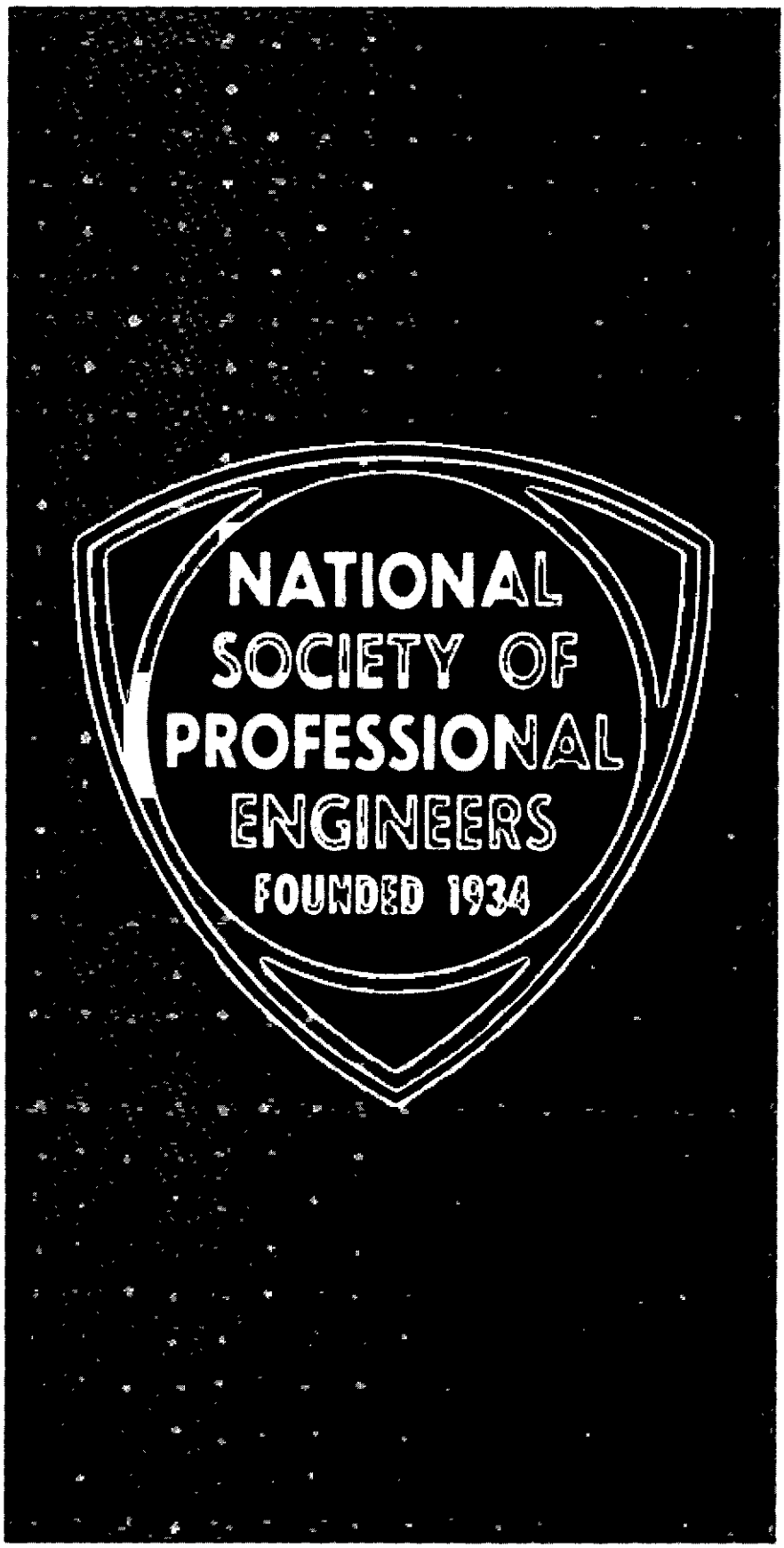
In summary, I have found this to be a lively year and wish I could have concentrated further on three areas that show up weak—

1. I'm at a loss to be able to identify specifically with Chapter activities. This is a serious mistake, which I hope won't be repeated in the future. The benefit of a Chapter Evaluation Program had been pointed out to me; now I'm convinced, it's the thing to sponsor.
2. A more concerted effort should be made in the public relations and publicity fields. We can enjoy and need more of the public limelight for our activities, and,
3. Although some thought and activity in some chapters was given to the Young Engineers, I'm not sure this was completely widespread throughout the State.

We held nine board meetings during the year in six different chapter locations—New Orleans, Baton Rouge, Alexandria, Lafayette, Lake Charles, and Shreveport.

In conclusion, to all of our officers, directors and committee chairmen I say "thank you" for your splendid cooperation during my tenure in office; your friendship and trust I shall always treasure. And to the members, my gratitude for permitting me to serve. ■

Report on NSPE Annual Meeting



The NSPE National Directors met July 8 - 11, 1970 in Portland, Oregon, and one item of business surpassed all others in interest and importance. Federal Executive Order 11491 last Fall replaced Order 10988, in effect replacing informal types of recognition of professional groups with exclusive recognition arrangements.

To create some form of non-labor-related organization the professional employees could rally to, the Directors, after hearing lengthy debate for and against establishment of some type of appendage organization, voted by narrow margin (88 to 84) for a structure change. This "California Resolution" had previously been amended to include the "Washington Resolution" which specified that such affiliate must be one not approving strikes or similar forceful methods but must conform to policies in keeping with our Code of Ethics and professionalism.

By calling for a new appendage organization the move inherently would have required a membership vote on the Constitutional change. In fact, NSPE President Pierce Ellis read his proposed release for publication pointing out the above and the fact that he would name a committee to study various forms and functions of organizational appendages.

However, this historic action was rescinded the following day by a 97-75 vote for referral to a special committee to be named by incoming President Harry Simrall. Your two Louisiana Engineering Society National Directors voted both for the first action and for the specific direction to the study committee.

Engineers in Government

The Board accepted the Professional Engineers in Government Section's proposal to revise Professional Policy 86 and Ad-

ministrative Policy 20. They now call for state societies, chapters and practice sections to speak on behalf of employed engineers to the maximum extent consistent with professional standards and to deal with Federal, state and local agencies in like manner, consistent with the law. Furthermore, the Board accepted PEG's recommendation as NSPE policy (until final action on the above organizational change is implemented) to establish limited relationships with independent professional organizations in order to aid the government-employed engineers who are cast into this unprofessional situation. No funds would be transferred from the NSPE organizations.

The Board passed another PEG resolution, revising Policy 7-G to say that all levels of government should adopt policies that preclude inequities in non-compensated assigned work hours and overtime compensation.

Debate and roll-call votes precipitated by the government-employed engineers' predicament required so much of two days' business that many reports had to be omitted.

National Finances

The current financial report indicates the Society is operating within the 1970 budget, which would result in no deficit or surplus. However, to make up last year's $95,000 deficit from this year's budget requires drastic reduction in practice section and committee meetings and other activities, and Directors (or their employers) paying per diem expenses at the Directors' meetings.

Because the Society's program must be so restricted due to the lack of funds, the Board proposed a new constitutional amendment to raise basic annual dues to $25. The previous two attempts to raise to $30 received only slightly less than the needed two-thirds vote of the membership.

The Patent Rights and Invention Rewards Committee submitted a thorough report and proposed several recommendations which were accepted by the Board: Suggest state societies make studies of pre-employment agreements and take appropriate action to secure equitable treatment; accumulate case histories of engineers' experience; and support legislation to protect rights of persons (and employers) in patent matters.

Engineers in Education

The Professional Engineers in Education Section's report dealt in some detail with the Midwest College of Engineering and its effort to receive accreditation through the Illinois Society of Professional Engineers. The PEE Section proposed a resolution to "view with concern. . . ." any conflict with the existing policy of NSPE that ECPD be the coordinating agency by accrediting engineering schools. This resolution was not accepted, however. The section proposed a policy which the Board passed endorsing professional work by faculty, so long as fees and practices are not unfair to private concerns and teaching or research effectiveness is not compromised.

Engineers in Industry

The PEI report emphasized that employed engineers are calling "loud and clear" to NSPE for economic assistance of various kinds (e.g. portable pensions and other benefits lost when changing jobs or being laid-off.)

Private Practice

PEPP submitted its report covering activities in many fields, plus two recommendations. The Board of Directors accepted the first, dealing with PEPP rules of government calling for a dues increase. The second—to make an NSPE Policy the objective that all industry in-plant engineering be performed or supervised by only registered engineers—was referred to "appropriate committees."

PEPP recently announced the availability of the NSPE Employers Retirement Program, for corporate employers and their employees (profit sharing and pension) and sole proprietor and partnership (Keough), also for employers and their employees. By using this program firms avoid spending time and money necessary to prepare submittals to IRS and they benefit from reduced rates.

This retirement program is explained in detail elsewhere in this issue.

Membership Committee

The Membership Committee urged that all states alter their constitutions to avail themselves of the large number of potential new members as now opened by the new NSPE membership grades. Many of LES' Affiliate members would now be eligible for the new NSPE grade. NSPE is currently losing almost as many members as are being admitted.

The Executive Committee's Staff Study Subcommittee filed a thorough-going report on NSPE staff efficiency. This revealed our headquarters staff is near the least in number per member of all national organizations and very efficient. The Board approved an increase in annual salary of our very able Executive Director from $36,000 to $38,000.

The above is necessarily a very abridged report, even omitting some Board actions on routine matters and failures of motions. Much noteworthy information is contained in the voluminous reports contained in each Director's "Annual Professional Meeting Handbook."

This National Director appreciates the privilege of serving the LES membership at the Annual Professional Meeting. ■

NSPE Employers Retirement Program

Editor's Note: During the Annual Meeting of the National Society of Professional Engineers held recently in Portland, an Employers' Retirement Program was announced. We feel that the plan will have widespread interest among NSPE members and are thus printing the details here.

Tax Advantages of a Corporate Qualified Plan

The tax advantages of a profit-sharing plan are that up to 15% of an owner's or an employee's salary can be set aside annually in a qualified plan. In addition, corporations could elect to establish a pension plan as well, which would allow an additional 10% of salary to be applied toward a qualified plan. Both a profit-sharing and a pension plan, therefore, could allow up to 25% to be put aside on a tax free basis.

Of equal importance in a qualified plan is the fact that money earned by the contributions to the retirement plan, whether it is a profit-sharing or a pension plan, will accumulate tax free and will thus allow for pyramiding of income. Taxation at distribution, which would be at retirement or upon total disability, would be based on an income averaging formula if funds were paid out in a lump sum. This reduces the tax liability as compared to earned income.

Insofar as estate tax savings is concerned, a qualified profit-sharing or pension plan makes it possible for a participant to avoid estate tax to the extent that the distribution stems from the employer's contributions, providing that the employee has named a beneficiary other than his estate.

NSPE Employers Retirement Plan (Profit-Sharing)

A profit-sharing plan is any plan whereby a portion of the profits of the Company is set aside for distribution to owners and employees who qualify under the plan. Up to 15% of their salary may be set aside for this purpose. The plan must not be discriminatory in that it must not discriminate against any class of employment. It may provide for quarterly or annual distribution of profits to employees as an incentive for a more proficient production. It also may be set aside in Trust for retirement purposes.

NSPE Employers Retirement Plan (Pension)

Under a pension plan employees are guaranteed definite dollar amounts of monthly pension at retirement. The employer's annual cost in order to meet this obligation is determined accordingly. This type of plan has the advantage of guaranteeing fixed amounts at retirement.

Some of the simplified provisions of the Profit-Sharing and Pension Plan include a choice between the following:

A. ELIGIBILITY REQUIREMENTS. There may either be no waiting period, a three year waiting period or a five year waiting period.

Under a Profit-Sharing Plan contributions are based on a percentage of total profits to be applied to the profit-sharing plan and may be 5%, 10%, 15%, or any other percentage deemed suitable to the member firm.

Under a Pension Plan a flat benefit, as determined by the employer, is guaranteed to the employee as a percent of the employees final average monthly compensation. The normal retirement date is age 65 or the tenth anniversary of the employees entry date, which ever is later, but not later than age 70. Various guaranteed annuity options are offered the employee at retirement.

B. VESTING PROVISIONS. Employee ownership of Company contributions may be set up to vest immediately, after five years or after ten years.

C. INVESTMENTS. Investments may be made on a basis of 25% in the Group Annuity and 75% in the Growth Fund, or on a 50/50 basis, a 75/75 basis or 100% in either of the funding vehicles.

NSPE Employers Retirement Plan (Keogh Act)

The Keogh Act applies to member firms who are sole proprietorships or partnerships.

The principal provisions of the Keogh Act are as follows:

A. A self-employed individual may set aside 10% of his net income from his practice, or $2,500, whichever is the lesser each year for his own retirement.

B. A self-employed individual can deduct 100% of the amount set aside from his income tax.

C. Contributions on behalf of the employee must be made by the self-employed individual as a percentage of salary at least equal to that percentage of net income put aside by the self-employed individual for his own retirement.

D. Funds invested under a Keogh Act program accumulate tax free until distribution.

All full time employees with three or more years must be included. A full time employee is defined as one who works twenty hours a week for five months a year. Contributions must be fully vested after three years employment. The same investment options found in the Corporate Plans are available under the Keogh Plan.

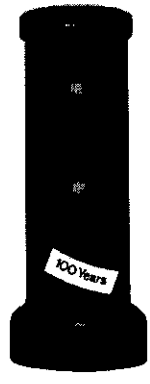
Additional details may be obtained by writing NSPE at 2029 K St. N.W., Washington, D.C. 20006.

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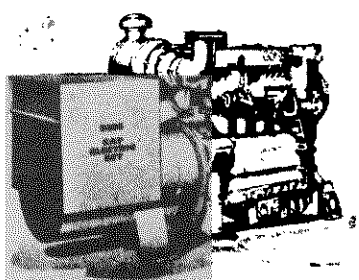
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Louisiana Engineering Society Planning Conference

September 11-12, 1970

Holiday Inn—MacArthur Dr.
Alexandria, La.

FRIDAY

11:00 A.M. - 5:00 P.M.
Registration

3:00 P.M. - 5:00 P.M.
Functional Section Meetings

7:30 P.M.
Shrimp Boil Party
Harold Miles Park

SATURDAY

8:00 A.M. - 9:45 A.M.
Committee Meetings

9:45 A.M. - 10:00 A.M.
Coffee Break

10:15 A.M. - 11:15 A.M.
General Business Meeting

11:30 A.M. - 12:15 P.M.
Buffet Lunch

12:15 P.M.
L.E.S. Board Meeting

NSPE to Accept Qualified Nonregistered Engineers

The 66,000 member National Society of Professional Engineers is opening up its membership to qualified nonregistered engineers. A constitutional amendment providing for five categories of members differing in their eligibility to vote and hold office received the necessary support of two-thirds of those voting in a recent balloting of all NSPE members.

The recent amendment to the NSPE Constitution provides for a Member grade limited to registered professional engineers. Registered engineers are entitled to full voting rights. The office of president and membership on the Nominating Committee are limited to those holding this grade.

A new Senior Associate membership grade allows nonregistered, graduate engineers with 12 years experience and membership in an approved grade of an engineering society to vote on all matters except those of a constitutional nature and hold any office except that of president.

Engineers-in-Training or graduate engineers engaged in engineering practice will be eligible for Associate membership status with voting rights on all matters except constitutional changes and eligibility for all offices except that of president. The Associate classification permits an engineer to remain in such a grade no longer than twelve years and specifies that he must advance to the Member grade as soon as eligible by registration.

The fourth membership category is that of Surveyor Member. This grade permits a land surveyor licensed to practice in any state, territory, possession, or district of the United States to become an NSPE member. The final membership classification is that of Student Member—any undergraduate or graduate engineering student.

The new amendment also specified that engineers may obtain, or retain, membership in NSPE only through a state society, except in the case of an individual residing outside of the United States who may become a Member-at-Large. A member who moves from one state to another may become a Member-at-Large of the National Society if the new state does not provide him with similar membership to that held in the state he left. An individual may be a member of any number of affiliated state societies.

EDUCATIONAL COURSES OF INTEREST TO ENGINEERS

ASPECTS OF AIR POLLUTION CONTROL

October 8-9, 1970 Fee: $50

Water Resources Center
Louisiana Tech University
Ruston, Louisiana

The Division of Continuing Engineering Education in cooperation with the Water Resources Center at Louisiana Tech University is sponsoring an institute on "Aspects of Air Pollution Control" to be held on campus October 8-9, 1970. The purpose of the institute is to bring together persons from various industries, governmental agencies, consulting firms, municipalities and universities who are interested and involved in the program subject as well as those persons affected by air pollution.

Papers will be presented on air pollution control methods used in paper mills, chemical plants, oil industries, lumber industries and municipalities. In addition, there will be papers presented on air pollution control equipment and monitoring techniques, air pollution research, and the role of state and federal governmental agencies in air pollution control. Speakers have been obtained from several states to present the information. A question and answer period will follow each presentation. Dr. John T. Middleton, Commissioner of the National Air Pollution Control Administration, will be a luncheon speaker.

Proceedings of the conference will be published. The registration fee will include admission to all technical sessions, luncheons, coffee breaks, and a copy of the proceedings.

Louisiana Tech has an active program in different areas of the environment. Research projects and educational courses are available for undergraduate and graduate students. Successful conferences have been held on various topics concerning the environment.

Anyone interested in receiving more information on the institute should contact Dr. Bobby E. Price, Director, Water Resources Center, Louisiana Tech University, Ruston, Louisiana, 71270. Telephone 318-257-3546.

MOBILE MACHINERY HYDRAULICS SHORTCOURSE

The Louisiana Tech Department of Agricultural Engineering will offer a two-day course on hydraulics Septmber 23 and 24, 1970 at the Louisiana Tech campus. The course will start with the fundamentals of hydraulics, followed by a study of components, circuits and operating practices.

The course will be taught by professionals of the hydraulics industry and members of the Agricultural Engineering Department.

For further information write to:
Department of Agricultural Engineering
Box 4337 Tech Station
Ruston, Louisiana 71270
Phone: (318) 255-6232

SEMINAR ON MAINTENANCE MANAGEMENT FOR THE PROCESS INDUSTRIES

January 27, 28, 29, 1971

Louisiana State University
Baton Rouge Campus

This program is a seminar to acquaint all persons interested in maintenance management for the process industries with the newer methods and techniques for controlling maintenance.

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

The following is an outline of the major topics to be covered in this seminar: Maintenance Organization and Systems, Preventive Maintenance, Maintenance Planning and Scheduling, Maintenance Work Measurement, Maintenance Labor Performance Measures and Spare Parts and Maintenance Material.

For additional informational concerning the academic aspects of this institute, write to: Dr. Lawrence Mann, Jr., Industrial Engineering, Louisiana State University, Baton Rouge, Louisiana 70803.

For information concerning registration or housing, write to: Coordinator, Short Courses & Conferences, Division of Continuing Education, Louisiana State University, Baton Rouge, Louisiana 70803.

NEW MEMBERS

ALEXANDRIA

C. C. Bailey
P. O. Box 583

Carl Rodney Crews
Rt. 3, Box 147

Robert R. Reed, P.E.
1805 Horseshoe

BATON ROUGE

E. Wayne Albritton, P.E.
P. O. Box 2431

Ralph W. Amos, Jr., P.E.
945 Magnolia Wood Dr.

James H. Barnett, P.E.
3066 McConnell Dr.

Eugene R. Cox, Jr., P.E.
9350 Kimberly Way

Robert T. Denbo
P. O. Box 551

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727 Burgin Ave.

Thomas A. Manning, Jr., P.E.
L.S.U.-College Engr.

Charles R. McCraw
5709 Matthews

Dean C. McKee, P.E.
L.S.U.-Civil Engr. Dept.

Ernest G. Miller, P.E.
5125 Greenside Lane

Charles E. Severance, P.E.
L.S.U.-Room 185, Knapp Hall

Calvin L. Simpson, P.E.
P. O. Box 15728

Walter L. Terrell, Jr., P.E.
P. O. Box 551

Humphreys T. Turner, P.E.
L.S.U.-Civil Engr. Dept.

LAFAYETTE

Alvin A. Amy
114 Alonda Dr.

Claude F. Aubert, Jr., P.E.
111 Maplewood Dr.

Autrey Larry Hinson
231 Brookside

Peter A. Hoppe, Jr.
206 Belle Chasse Dr.

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John B. Reeves, P.E.
Box 52449, O.C.S.

Joe N. Summars, P.E.
P. O. Box 51107

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A. Webb Hart, Jr., P.E.
Rt. 4, 305 Raymond Dr.

Frank J. Marchefski, P.E.
315 Azalea Dr.

Charles L. Rand, Jr., P.E.
2111 Edgewood Dr.

Tak Yuk Lam
809½ Glenmar Ave.

NEW ORLEANS

Lester H. Arbo, Jr., P.E.
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3013 Ridgeway Dr.
Metairie, La. 70002

Robert M. Bailliet, P.E.
P. O. Box 60193

P. Alfred Becnel, Jr., P.E.
728 State St.

David A. Bell, P.E.
4662 Dreux

Charles W. Berthold, Jr., P.E.
4620 Henican Place
Metairie, La. 70003

William H. Bingham, P.E.
5144 E. Lemans

Walter E. Bond, Jr., P.E.
3410 River Oaks

Ernest L. Bonnoitt, P.E.
I.T. E. Imperial Corp.
1937 Veterans Blvd.
Metairie, La. 70005

David E. Buck, P.E.
South Central Bell
1215 Prytania St.

Roy B. Burkart, P.E.
53 Martin Dr.

Frank V. Boylan, P.E.
Dixie Plastics Mfg. Co., Inc.
4250 Florida Ave.

Henry J. Calongne, P.E.
P. O. Box 15138

John Henry Coates, Jr.
4100 Clematis St.

John M. Currier, P.E.
Schaff & Currier
1547 N.B.C. Bldg.

Vancle E. Dykes, P.E.
1920 Fordham Place
Gretna, La. 70053

William P. Eyre, P.E.
Humble Gas Transmission Co.
1700 Commerce Bldg.

Linton A. Fleury, Jr.
3735 Barbara Place
Metairie, La. 70002

Donald R. Foval, P.E.
3654 Sommerset Dr.

Nolan P. Hymel, P.E.
4720 Lynhuber

Ashton W. Laborde, P.E.
5700 St. Charles, Apt. 5

William M. Lloyd
N.O.P.S.I.—317 Baronne St.

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5139 Page
Marrero, La. 70072

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P. O. Box 51628

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3931 Gen. Meyer

Edmund J. Nolan, Jr., P.E.
315 Avenue B
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6200 Louis XIV

Glenn H. Ortego, P.E.
625 Fairlawn Dr.
Gretna, La.

C. Gene Rogers, P.E.
5233 York St.
Metairie, La. 70001

Luis R. Sosa, P.E.
1913 Triedrica St.
Gretna, La. 70053

Dewey E. Straley
General Electric Co.
225 Baronne St.

Richard O. Wornat, P.E.
Rt. 2, Box 110
Port Sulphur, La. 70083

SHREVEPORT

Wilbur J. Avers, P.E.
P. O. Box 1111

William A. Collins, P.E.
1649 Fulton

Bernard C. Kiley, P.E.
P. O. Box 127
Barksdale AFB., La. 71110

Elwin L. McGee, P.E.
534 E. Southfield

William L. Simmons, P.E.
9223 Hillside Ave.

NEW ENGINEERS

PROFESSIONAL ENGINEERS GRANTED REGISTRATION

June 16, 1970

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

Antrobus, Dewey C., Jr.—Metallurgical
Baton Rouge, La.

Arnold, Peter—Civil
Kenner, La.

Bachemin, Paul R.—Mechanical
Metairie, La.

Benedict, James V.—Mechanical
San Antonio, Tex.

Broad, Robert J., Sr.—Civil
Jackson, Mich.

Chrone, Robert E.—Electrical
Houston, Tex.

Cunningham, Paul R.—Civil
Wheat Ridge, Colo.

Daniel, John H.—Civil
Gretna, La.

D'Antoni, Paul A., Sr.—Mechanical
Baton Rouge, La.

Dawn, Robert Chien—Chemical
Houston, Tex.

De Roussel, Larry J.—Electrical
Maplewood, La.

Gemeinhardt, John P., Jr.—Civil
Houston, Tex.

Genois, Edmond R.—Civil
Gretna, La.

Haekler, Richard C.—Mechanical
Ridgewood, N. J.

Harmon, Richard L.—Mechanical
New Orleans, La.

Hogan, Richard W.—Electrical
Jackson, Mich.

Jacob, Everett—Mech. & Chem.
Baton Rouge, La.

Langley, Ronald A.—Mechanical
Midwest City, Okla.

LeBlanc, Larry A.—Civil
Baton Rouge, La.

Lee, John R. E.—Mechanical
Baton Rouge, La.

Long, Noah H., Jr.—Civil
Pensacola, Fla.

MacNaughton, Jimmy V.—Civil
Gretna, La.

Morgan, Thomas A.—Chemical
Pampa, Tex.

Morse, Robert F.—Mechanical
Richmond, Va.

Nansen, Ralph H.—Mechanical
Slidell, La.

Nicholas, Donald H.—Civil
Houston, Tex.

Norlander, Maurice H.—Chemical
Dallas, Tex.

Rees, Thomas E.—Civil
Gretna, La.

Rosser, Paul C.—Electrical
Atlanta, Ga.

Rothenberg, Morris J.—Civil
Arlington, Va.

Scott, Robert E.—Electrical
North Palm Beach, Fla.

Simmons, E. M.—Mechanical
Houston, Tex.

Stelly, Robert J., Sr.—Petroleum
Thibodaux, La.

Sullivan, Horace D.—Chemical
Houston, Tex.

Theuns, Adrian J.—Electrical
New Orleans, La.

Wilkins, Jesse R.—Civil
Gretna, La.

July 21, 1970

Babyak, William E.—Petroleum
Lafayette, La.

Barnes, George D.—Civil
Memphis, Tenn.

Barritt, Stephen L.—Mechanical
Shreveport, La.

Boudreaux, Ronald J.—Electrical
Pasadena, Tex.

Bruns, Robert B.—Civil
Princeton, N. J.

Capehart, Edward R.—Petroleum
Morgan City, La.

Carter, Ronald T.—Electrical
Metairie, La.

Cline, Edward C.—Civil
New Orleans, La.

Cloyd, Marshall P.—Civil
Houston, Tex.

Conn, Clarence W.—Petroleumm
Lafayette, La.

Cooper, William H.—Mechanical
Winston-Salem, N. C.

Cormier, Sidney J.—Mechanical
Jonesboro, La.

Curry, Benjamin A.—Civil
North Little Rock, Ark.

DeLatte, Rudy A.—Mechanical
Houston, Tex.

Fensch, Reinhold P.—Civil
Bellaire, Tex.

Fiorello, James C.—Civil
Philadelphia, Penn.

Forshaw, Harold A.—Civil
Baton Rouge, La.

Fox, Grady I.—Electrical
Pleasant Grove, Ala.

Girouard, Whitney L., Jr.—Agric.
Baton Rouge, La.

Gresham, James C.—Chemical
Baton Rouge, La.

Griffin, William P.—Mechanical
Atlanta, Ga.

Griffiths, Larry J.—Mechanical
New Orleans, La.

Hamilton, David T.—Mechanical
Baton Rouge, La .

Hardy, Fleet K., Sr.—Industrial
Birmingham, Ala.

Keigley, Charles L.—Mechanical
Lake Charles, La.

Lafleur, Rohan B.—Civil
Baton Rouge, La.

London, William B.—Civil
Dallas, Tex.

Massey, James G.—Mechanical
Metairie, La.

Mayes, James H.—Chemical
Baton Rouge, La.

McLean, George E.—Mechanical
Metairie, La.

Nolen, Charles C.—Civil
Kenner, La.

Ossi, Fareed T.—Mechanical
Tampa, Fla.

Payne, Jesse N.—Mechanical
New Orleans, La.

Phelps, Richard R.—Civil
Dallas, Tex.

Sanders, James O.—Petroleum
New Orleans, La.

Schmidt, Frederick—Mechanical
Baton Rouge, La.

Seiter, Louis H., Jr.—Chemical
Bunkie, La.

Serbanic, Peter B.—Mechanical
Shreveport, La.

Talbot, Wayne R.—Agricultural
New Roads, La.

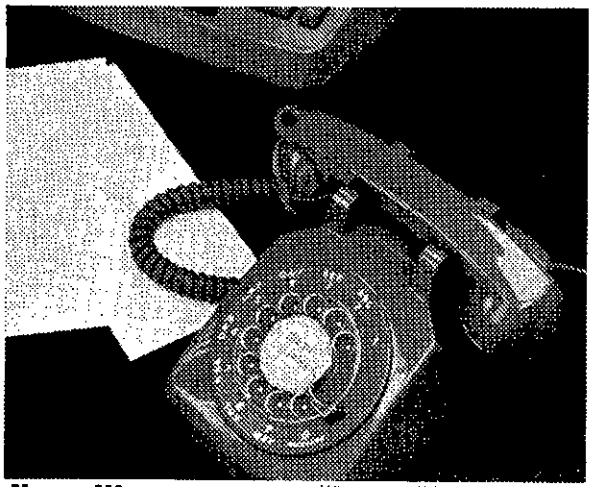
Tizian, Sylvan L.—Electrical
Stamford, Conn.

Toigo, S. Eugene—Civil
Metairie, La.

Uppencamp, George L.—Civil
Metairie, La.

Vela, George M.—Electrical
Houston, Tex.

Wells, Thomas T.—Mechanical
Detroit, Mich.



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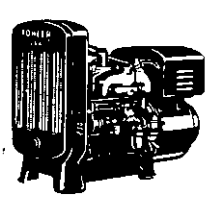
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THE GULF SOUTH'S BEST SINCE 1925 MACHINERY HOUSE

Minutes - LES BOARD

May 22, 1970, Chateaux Charles Hotel, Lake Charles, La.

President Vogt called the meeting to order with the following board members present: John J. Broussard, P.E.*; Frank M. Heroy, Jr., P.E.*; T. J. Hogue, Jr., P.E.*; Malcolm Hurstell, P.E.*; John H. Livingston, P.E.; James L. Meyer, P.E.*; Lamon L. Moody, P.E.*; Leo M. Odom, P.E.*; Billy R. Rentrop, P.E.*; Richard See, P.E.*; A. J. Szabo, P.E.*; Jack Thigpen, P.E.*; and Gerald A. Simmons, Executive Secretary. Others present were: Farrell W. Adams, P.E.*; Harvey Gold, P.E.*; and Lee Hill, P.E.

The minutes of the May 1, 1970, Board of Direction meeting were approved. The motion for approval was made by Mr. Odom, seconded by Mr. Livingston and passed.

Financial Report—The financial report for the month of April 1970 was given by Dr. Thigpen. Total receipts to date were $57,757.10 with the budget year to date reflecting expected receipts of $59,551.53. Total expenses to date were $65,571.38, with the budget year to date reflecting expected expenditures of $66,662.37. Motion by Mr. Szabo, seconded by Mr. See, that the financial report be accepted as presented. Motion carried.

Mr. Thigpen reported that the preliminary report on the Annual Convention reflected a $3,012.65 net income over expenses. It was suggested that a questionnaire be mailed to all exhibitors at the past three conventions to determine their reaction as an exhibitor.

Mr. Szabo announced the tentative dates of March 31, April 1 and 2, 1971 for the next L.E.S. convention, with the location of the convention again being in New Orleans at the Monteleone Hotel.

Mr. Thigpen discussed the need to secure the services of an accounting firm to conduct the Annual Audit of the L.E.S. financial records. Motion by Mr. Thigpen, seconded by Mr. Szabo, that L.E.S. employ our auditor for the past two years, Gustavo Gonzalez, C.P.A., to conduct the audit again this year. Motion carried.

SECTION REPORTS

Professional Engineers in Private Practice—Mr. Moody, PEPP Chairman, reported that the PEPP section had a committee appointed to study the proposition submitted by the Liaison Committee with the State Board of Registration as it deals with registration of engineers by discipline.

Mr. Moody stated that the profession is concerned about payscales for engineers falling behind that of other professionals. There is an acute need to improve the salaries of professional engineers.

Mr. Vogt appointed the following committee to investigate the problem and recommend steps that could be taken to improve the salary scales of professional engineers: Chairman Malcolm Hurstell; committee members—Lamon Moody, Jack Roach, Frank Heroy and H. L. Henry.

New Orleans Chapter Constitution—Mr. Adams reviewed recommended changes to the New Orleans Chapter constitution that were submitted to the Board of Direction for consideration. Mr. Adams suggested that the issue be delayed until the committee has had the opportunity to meet with the New Orleans chapter to discuss the suggested changes.

Report of Emblem Committee—Mr. Adams, chairman of the Emblem Committee, presented pictures of each entry to the board of directors in order to determine which emblem would be used on new lapel pins. The Board of Directors instructed Mr. Hurstell to review the entries and report to the Board of Directors a possible combination of entries suitable for a lapel pin.

Legislative Committee Report—Mr. Moody, chairman of the L.E.S. legislative committee, reviewed a number of bills introduced in this session of the legislature. His report was concise and reflected a complete study of bills affecting the engineering profession. The Board accepted Mr. Moody's report and agreed to put forth an exerted effort to bring about the enactment of the L.E.S. legislative program.

Mr. Vogt referred to a letter from the Agricultural Engineering Society requesting support of an amendment to H.B. 661 to include Agricultural engineers as land surveyors, along with civil engineers under the grandfather clause written into the bill. Mr. Vogt referred the request to the Liaison Committee with the State Board of Registration. The Board suggested that H.B. 661 not be opened for amendments at this late date.

Membership Report—Mr. Hurstell, in the absence of Mr. Grundmann, reported that there had not been an appreciable change in the membership standing since the last meeting of the Board at the convention. He urged chapters to make a concentrated effort to give engineers an opportunity to join L.E.S. before the June meeting in Shreveport.

PEPP Resolution—Mr. Moody, chairman of PEPP section, requested action on the following resolution:

Resolution: Resolved that the PEPP Section recommend to the State Board of Direction that the Louisiana Engineering Society request that the PEPP Section of the National Society of Professional Engineers negotiate with the appropriate office of the Farmers Home Administration, U.S. Department of Agriculture, at the National level for a revision of the standard Form FHA 442-19, as follows:

Section A—Engineering Services, item 15. Delete item 15 and substitute the following:

15. The ENGINEER will provide general engineering inspection of the work of the contractors as construction progresses. **Compensation for reimbursable expenses as defined in Section E hereof incurred while providing general inspection may be made within the limits established heretofore in the project budget.**

The ENGINEER will provide detailed construction inspection as provided in Section C hereof upon the written request of the OWNER and for the additional compensation set forth in Section C. The ENGINEER does not guarantee the performance of the contractor(s) by the ENGINEER'S performance of such detailed construction inspection.

The ENGINEERS undertaking hereunder shall not relieve the contractor of his obligation to perform the work in conformity with the plans and specifications and in a workman-like manner; shall not make the ENGINEER an insurer of the contractor's performance; and shall not impose upon the ENGINEER any obligation to see to it that the work is performed in a safe manner.

Motion by Mr. Moody, seconded by Mr. Odom, "that the resolution be adopted." Motion carried.

Representation on State Board of Registration—Mr. Heroy requested that future nominees to the State Board of Registration be submitted to the Board by each practice section for their consideration.

Motion by Mr. Odom, seconded by Mr. Heroy, "that when a vacancy occurs on the State Board of Registration, that each practice section be permitted to furnish names to the Board of Directors for their consideration." Motion carried.

Publication of Ladies Yearbook—Mr. Vogt read a letter from the Ladies Auxiliary requestion $300.00 for publication of the yearbook

Motion by Mr. Hurstell, seconded by Mr. Moody, "that L.E.S. provide $300.00 for publication of the yearbook." Motion carried.

June 19-20 meeting in Shreveport—Mr. Livingston, Shreveport chapter president, reviewed the program for the annual meeting and chapter officer's conference of L.E.S. to be held at the Capt. Shreve Hotel in Shreveport, June 19-20, 1970. He urged all chapter officers and members to attend the meeting which is being hosted by the Shreveport Chapter.

The next meeting of the Board of Directors will be held Saturday, June 20, 1970 at the Capt. Shreve Hotel in Shreveport at 10:30 a.m.

June 20, 1970, Capt. Shreve Hotel, Shreveport, La.

The meeting was called to order with the following members present: John J. Broussard, P.E.; Warren P. Broussard, P.E.; Hoyt Brown, P.E.; Ronald P. Cressy, P.E.; Fred Culpepper, P.E.; Ken Daniels, P.E.; Joe L. Davis III, P.E.; Kenneth E. Deal, P.E.; Jerry Dyson, P.E.; M. B. Ewing, P.E.; O. J. Futch, P.E.; Harvey L. Gold, P.E.; Larry Grundmann, Jr., P.E.; George L. Heller, P.E.; C. Hill, P.E.; T. J. Hogue, Jr., P.E.; M. L. Hurstell, P.D.; James S. Janssen, P.E.; John H. Livingston, P.E.; James L. Meyer, P.E.; E. E. Moncla, P.E.; Leo M. Odom, P.E.; Billy R. Rentrop, P.E.; Richard See, P.E.; Louis R. Soulier, P.E.; Charles W. Stokes, P.E.; A. J. Szabo, P.E.; J. J. Thigpen, P.E.; John F. Vogt, Jr., P.E.; and Gerald A. Simmons, Executive Secretary.

The minutes of May 22, 1970 meeting were approved on a motion by Mr. Meyer, seconded by Mr. Culpepper and passed.

Financial Report—The financial report for the month of May was given by Dr. Thigpen. Total receipts to date were $72,582.30, and total exepnses to date were $73,298.47. Motion by Mr. Culpepper, seconded by Mr. Brown "that the financial report be accepted as presented" was carried.

SECTION REPORTS

P.E.E.—No Report.

P.E.G.—Mr. Dyson, PEG Chairman, reported on the meeting of the PEG section. He gave a report on the January 6-7, 1970 meeting of the NSPE Board of Governors held in Atlanta, Georgia. The P.E.G. of L.E.S. was represented by Mr. Paul J. Plainsance, Jr. Mr. Plainsance substituted for Frank Heroy who was unable to go to this meeting. Two most important actions were considered at the Board of Governor's meeting. (1) They recommended that NSPE Board of Directors approve a new policy urging state societies, chapters, and sections to greatly expand their role as spokesman for employed engineers in direct contacts with government agency employers. The policy proposed would also permit separate organizations of government engineers holding exclusive recommendation rights to become affiliated with or sponsored by state societies, chapters, or P.E.G. sections. (2) As at result of NSPE budget restrictions and reductions, the Board of Governors is now considering whether it should meet once or twice annually. This problem will be resolved at the meeting July 7, 1970 which will be attended by Mr. Frank Heroy of the P.E.G., L.E.S. Files of the P.E.G. contain a complete report of the January 6-7, 1970 meeting with several attachments which include a copy of President Nixon's Executive Order No. 11491 entitled, "Labor in Management Relations in the Federal Service" and reports from various states regarding salary proceedings and unionism activities.

P.E.G. members are interested in establishing a procedure by which the Functional Section can suggest nominees to the L.E.S. Board of Direction to fill any vacancies which occur on the Board of Registration for Professional Engineers. This suggestion will be pursued in the months to come in determining a useful, objective procedure.

Considerable discussion was devoted to designing activities of P.E.G. so that larger numbers of federal and state-employed engineers would participate in its activities. It was concluded that aggressive actions regarding salaries on the part of L.E.S. will involve state employed professional engineers and result in their frequent participation of L.E.S. activities. Federal agency key personnel will be contacted to promote suggestions as to types of activities and programs that would invite federal engineer participation. As this information becomes available, it is likely that a committee will be appointed to consider the suggestions and design to program of activities for P.E.G. We think this will benefit not only the P.E.G. but also the overall L.E.S. membership.

Mr. Vogt stated that a committee had already been appointed to look into the salary scale of government employees.

P.E.I.—Mr. See reported on the P.E.I. Section activities in the absence of Mr. Richard. His report was as follows:

A. The NSPE Award for Professional Development in Industry was discussed. Malcolm Hurstell suggested that a committee be appointed to study the possibility of modifying the NSPE entry forms and rules and use them as a basis for an annual award to Louisiana industry. It was agreed that much time is required to fill out the present forms. Charles Stokes recommended further that the committee consider adopting a program for informing management what other large industrial firms in the country are doing to encourage professionalism in engineering.

B. To increase participation in and awareness of PEI section activities. It was recommended by Larry Grundmann that section activities be reported to the general membership through the chapter presidents and chapter section chairmen. Billy Rentrop suggested use of the chapter Newsletter to disseminate the information. Charles Stokes further suggested that special PEI programs be held again this year at a chapter level.

C. A lengthy discussion was held on the subject of engineering school curriculum and hours required for degrees. The following resolutions were presented and adopted:

WHEREAS: The Professional Engineers in Industry wish to express continued concern with the reduction of hours and changes in engineering curriculum in Louisiana colleges and universities which offer engineering curriculum. It is, therefore, urged that that Professional Engineers in Education include Professional Engineers in Industry in their discussions and policy decisions concerning changes in hours and curriculum in engineering education.

This resolution was presented by Hoyt Brown who moved for its adoption. The motion was seconded by John Broussard. The motion carried.

D. A second resolution was adopted for LES Board action:

WHEREAS: The Professional Engineers in Industry are concerned with the continuing changes in curriculum and reduction of hours required for obtaining engineering degrees; therefore, be it

RESOLVED: That the Board of Direction of the Louisiana Engineering Society appoint an adequate number of non-educators to serve on ECPD inspection teams in Louisiana. Be it further

RESOLVED: That ECPD be requested to contact these men so that they might take part in the activities of the inspection teams at Louisiana colleges and universities which offer an engineering curriculum.

This resolution was presented by Hoyt Brown who moved for its adoption. The motion was seconded by Malcolm Hurstell. The motion carried.

NEW BUSINESS

A. Mr. Janssen and Mr. Stokes will attend the NSPE meeting in July.

B. New officers elected by acclamation were:
Jimmy Janssen—Chairman
Jerry Affolter—Vice-Chairman
Ashby Stevens—Secretary

P.E.P.P.—Mr. Meyer reported for the PEPP Section in the absence of Mr. Moody. Mr. Meyer reported that the PEPP Section unanimously adopted the following resolution and submitted it to the Board of Directors for adoption.

Resolution:

BE IT RESOLVED that the Louisiana Engineering Society hereby repectfully request that the State Office of the Farmers Home Administration, U. S. Dept. of Agriculture, in confirmation of previous negotiations and agreements, recognize the current fee schedules of the ASCE Manual No. 45 and the LES Manual of Practice and subsequent revisions thereto, thereby automatically updating the fee schedules on a routine basis, and that this recognition apply to active projects at this time, wherever possible.

BE IT FURTHER RESOLVED that a copy of this resolution and a copy of the current ASCE Manual No. 45 and a copy of the LES Manual of Practice be mailed to Mr. Joe Rhodes, State Director, F.H.A., 3737 Government Street, Alexandria, Louisiana 71301.

COMMITTEE REPORTS

Young Engineers—Mr. Heller, chairman, reported as follows:

Efforts to establish an active State and Local Section Program of Young Engineers has had only limited success. Young Engineers are those up to age 35 and this of course includes E.I.T.'s and new graduates. About 50% or more of engineers are under age 35, yet the percent belonging to LES or who are registered is far less. This vital group needs to be contacted and LES should have them for active members, but more important, LES

must have programs oriented to their needs and benefits. They need us and we need them.

We need to expand these programs to pre-engineering levels by greater emphasis on the JETS and other educational methods to acquaint high school and college students with the true meaning of engineering. We need to educate the public to the professional status of the engineer and the dignity and contributions of the profession. There is no better way than through properly oriented programs of our younger groups with attendant publicity. We need not only to sell memberships in the Society, but we must motivate the new member and have him become involved and contributing since he alone knows best what he needs from us and the Society. The doors must be open and the new member must be given the opportunity to voice these needs as well as means for achieving their fulfillment.

Mr. Heller further reported that he had contacted the local chapters by letter but at almost all the meetings there were no representatives from the chapters. He said Lake Charles and Monroe responded. He recommended that for a start, to institute a strong program oriented to Young Engineers and set aside at least one monthly program for and by Young Engineers. He reported that the Monroe Chapter devoted Engineers' Week to Young Engineers. The JETS and Ladies' Auxiliary participated in plant trips to local industries during the week (this gave a broad view of engineering in action). Lake Charles has a good Young Engineers Program. New Orleans and Baton Rouge have instituted courses for all age levels to update and to add management skills to engineering. Other chapters are enlisting local residents and plan to have these courses in their chapters. Monroe expects to have this next term and Lake Charles, Shreveport and Lafayette have also incidated participation. Many young engineers are members and are registered, but we know the percentage is far too small—mostly because we don't reach them and keep them by good programs and good publicity. Mr. Heller asked that full support by suggestions, by cooperating and by participation with the Young Engineers Committee be given to the new chairman for the coming year.

Mr. Meyer moved that Mr. Heller's report be accepted. The motion was seconded by Mr. Culpepper and passed.

Legislative—In the absence of Mr. Moody, chairman of the Legislative Committee, Mr. Simmons reported on the activities that had taken place thus far during the session of the Legislature. He reported that H.B. 661, which is sponsored by L.E.S., was going to be brought up again under another H.B. number. He also reported on other bills of interest to the engineering profession. Mr. Simmons then went into detail as to how the legislature was operating.

Membership—Chairman Larry Grundmann gave a report on the contest standings, the winner of the membership contest was the Bayou Chapter.

Mr. Grundmann also gave the quotas for the coming year for the chapters. They are as follows:

Alexandria	15	Lake Charles	14
Baton Rouge	55	Monroe	15
Bayou	4	New Orleans	86
Lafayette	15	Shreveport	22

A copy of the membership audit was passed out to the Board. A copy is attached and hereby made a part of these minutes.

Mr. Grundmann recommended that the new and old chapter presidents work together.

Education—Mr. Brown, chairman of the Education Committee, reported that some strides have been made with the Management Program. Courses now planned are:

New Orleans—Economics, Thursday and Monday
Management, Monday
Baton Rouge—Eng. Economics, Thursday
Economics, Monday
Shreveport—Eng. Economics, Wednesday
Economics, Wednesday
Alexandria—Management, Monday
Monroe—Has 20 people who are interested
Lake Charles—will start classes soon
Bayou and Lafayette—Do not have classes planned

Mr. Brown reported that LSU-NO will offer in September a review course for the Engineering Legislation Test. This course will cost $100.00. It will last for four weeks, with meetings twice a week for three hours. This will be in preparation for the December Test. He said there was a possibility of putting the class on in Houma. There is also a possibility of L.E.S. putting on these courses; the Society would benefit in two ways (1) the Society could make some money off of this course and (2) the Society could possibly get some new members. He said that Mr. Fred J. Brown will put on the course at LSU-NO. The Society should think about putting on these courses around the State, and should check to see if Mr. Brown would be available to put in these courses around the State.

Emblem Committee—Mr. Hurstell reported in the absence of Mr. Adams. He stated that three different sizes of the emblem were made up and that all emblems regardless of size will cost about $3.00 each. A decision on the official emblem will be made at the next board meeting.

Teller's Committee Report—Mr. Vogt made the following report to the board:

Proposed Amendment—Article VI, Section I

For:	389
Against:	345
Spoiled:	6
Total Returned:	740

Officer & Board Member Ballots

President Elect:			
T. J. Hogue	683		
Write in	4		
Total	687		
Second Vice President			
Hoyt Brown	677		
Write In	7		
Total	684		
Secretary-Treasurer			
J. J. Thigpen	684		
Write In	3		
Total	687		
National Director			
Waldemar Nelson		679	
Write In		6	
Total		685	
Director			
Farrell Adams		663	
Marshall Ewing		660	
Write In		8	
Total ballots cast for Officers and Board Members:			705
Unmarked:			12
			697

NEW BUSINESS

Petition—Mr. Vogt reported that he had received the following petition which was signed by the appropriate number of members:

Whereas: The Constitutional Amendment for dues increase failed to secure the 2/3's vote for approval; THEREFORE, Be it Resolved that,

We, the undersigned, believe that this matter should be **immediately** submitted to the Membership as follows:

The amount of annual dues shall be determined by the Board of Direction in the bylaws and shall not exceed the amounts listed:

		(Present Dues)
Member	$25.00	($15.00)
Junior Mbr.	17.00	(10.00)
Affiliate Mbr.	28.00	(17.00)
Student Mbr.	1.00	(1.00)
Non-Res. Mbr.	14.00	(8.00)
Non-Res. Jr. Mbr.	10.00	(5.00)
Non-Res. Aff. Mbr.	16.00	(8.00)
Privileged Mbr.	5.00	(5.00)

The petition will be discussed at the general meeting in Alexandria on September 12th.

Mr. Vogt read a letter from Mr. Nelson with regards to L.E.S. hosting the N.S.P.E. National Convention in New Orleans at the first available date. This will be considered at the next Board Meeting.

Registration Act of 1950—Mr. Odom said there were two or three things about the Registration Act of 1950 that need to be changed. He pointed out that most states require a second examination. Louisiana does not require a second exam after the E.I.T. exam. Mr. Odom said he feels that L.E.S. needs to study this problem and get in compliance with the other states. Mr. Odom said that another is the 20 year Experience Clause. The State Board has been very careful about this matter. He suggested that the board get the feeling of the L.E.S. membership about this. It was recommended that the LOUISIANA ENGINEER be used to inform the members about this and to give them background on the subject.

Meetings—Mr. Szabo reported that the Finance Committee will meet in Monroe on July 27. He hoped a copy of the audit report would be available at that time.

It was decided that the next board meeting will be held in Baton Rouge on Friday, August 7th. Statewide meetings for the coming year are as follows:

Planning Conference—September
Convention—April
Annual Meeting—Chapter Officers Orientation—June

We have tentatively scheduled to have a meeting in Mississippi with the M.S.P.E. in 1971.

Tentative dates for the Annual Convention have been set for March 31, and April 1 and 2 in New Orleans at the Monteleone Hotel.

The Planning Meeting in September is scheduled for September 11 and 12th at the Holiday Inn in Alexandria. The program for this meeting is for the state officers to work with the chapter officers. It was suggested that the Shreveport meeting format be used for the Planning Meeting in September.

There being no further business the meeting adjourned.

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Newport Beach, California, Director of Public Works, Joe Devlin (right) with Don Webb, Project Engineer, inspect the Full-Depth Asphalt paved Westcliff Drive after completion.

Full-Depth® Deep-Strength® Asphalt pavement in Newport Beach, California, saves time and pleases taxpayers

"Construction of the street had to be completed before the start of the California rainy season," says Joe Devlin, Newport Beach's Director of Public Works. "And the merchants along Westcliff Drive were pressing for a short construction period. Due to the speed of construction provided by the new Full-Depth Asphalt pavement concept, where the Asphalt base is placed directly on the subgrade, we finished ahead of the rainy season, provided taxpayers with a superior pavement and pleased the local merchants. The street was opened to traffic on schedule."

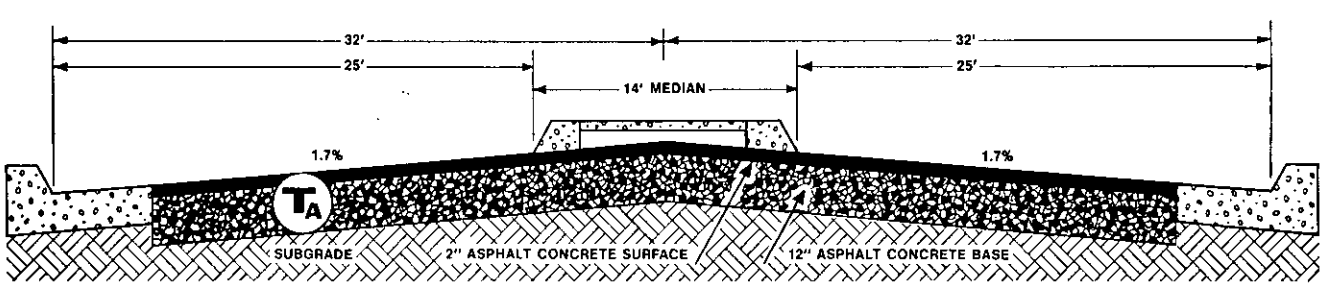
"Moreover," Devlin continued, "we saved time by avoiding utilities located 24-inches below the surface. With a conventional design, the utilities would have had to be relocated."

WESTCLIFF DRIVE PROJECT

TYPE: Full-Depth Asphalt paved four-lane medium industrial street. Length: 1800 feet.
TERRAIN: Flat.
CLIMATE: Mild.
TRAFFIC: 16,000 VPD (both directions).
TRUCKS: 4.5% (Orange County Average).
TRAFFIC INDEX: 8.5 (DTN = 85) 1978 Traffic: (est.) 29,500.
ROADWAY: Subgrade: Silty, sandy clay with R-value of 5: **Base:** 12" asphalt concrete laid in two deep-lifts. Mix aggregate was ¾" max. size meeting Newport Beach Specifications. **Surface:** 2" asphalt concrete, ½" max. size aggregate.
ASPHALT: 85-100 pen. used for both base and surface.
DRAINAGE: Runoff controlled by curbs and gutters.
COMPACTION: Subgrade: Top 6" compacted to 90% of AASHO Designation T-99. **Base and Surface:** Controlled by specifying rolling equipment and rolling technique.
CONTRACTOR: Sully-Miller Co., of Long Beach, California.

For more information on this and other projects . . . and on all the advantages of Full-Depth Asphalt pavement, please contact the Institute office serving your area . . . or write The Asphalt Institute, 406 John Hancock Building, New Orleans, La. 70130.

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(VERTICAL DIMENSIONS EXAGGERATED FOR CLARITY)



LOUISIANA ENGINEER

Vol. 56 No. 5 October, 1970

Space age ice man



Remember the ice man? He'd lug a melting, dripping slab of ice across your kitchen floor and heave it into your wooden icebox with a clunk. Messy!

But something better came along: the electric refrigerator . . . then the electric no-frost refrigerator-freezer. No mess. No drip. Great! But if investor ownership of electric utility companies had not made electricity affordable–for everyone–only a few could have benefited from these great inventions.

And electricity costs much less per kilowatt-hour today. If your total bill is higher now, it's because you're probably using much more electricity than you used to.

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Help L.E.S. Improve Engineering Education in Louisiana

In order to offer assistance and guidance to the newly formed Louisiana Coordinating Council for Higher Education as it seeks to develop a master plan for higher education, the L.E.S. is anxious to conduct an in depth study of engineering education in the publicly supported institutions of Louisiana. The study will recommend guidelines for a plan of short term and long range development of over-all engineering education to meet the needs for the state with regards to numbers and locations of colleges and fields of study best utilizing funds available to adequately support all such programs.

This vitally needed study of engineering education in Louisiana has been discussed with engineering educators and the Coordinating Council for Higher Education. Everyone agrees that a study such as proposed by L.E.S., conducted by a team of qualified individuals, would be invaluable to the state of Louisiana in developing plans for providing necessary engineering educational opportunities.

This study is being brought about by a growing concern of engineers and employers of engineers in Louisiana. The question of the number of state supported engineering schools now offering courses or degrees . . . the question of state funds to support the 13 engineering schools in Louisiana . . . the question of the number of students awarded degrees from each school . . . the question of why Louisiana doesn't have an engineering school rated in the top 50 in the country . . . the question, are we truly providing the quality education of engineering to the best of our ability with funds now available from the state—or is there a better way to educate potential engineers? These questions and a number of others need to be answered.

An unbiased team of men has been selected by the Board of Directors of L.E.S. to investigate and report back to the Society recommendations on ways to improve engineering education in Louisiana. The team is composed of the following four men:

Dr. Newmann Hall, P.E., Executive Director, National Academy of Engineers, Washington, D.C. Dr. Hall is a native of Pennsylvania, an outstanding engineering educator with experience in research and education, and serves as Executive Director of the National Academy of Engineers.

Dean M. R. Lohmann, P.E., College of Engineering, Oklahoma State University. Dean Lohmann is a native of Minnesota and is presently Dean of the College of Engineering at Oklahoma State University. He has worked as an engineer in government and industry. His interests are in the field of engineering organization and management. He is now president of E.C.P.D., the accrediting agency for engineering schools.

Dr. M. S. Goglia, P.E., Vice Chancellor, University of Georgia System. Dr. Goglia is a mechanical Engineer and now serving as Vice Chancellor of the University of Georgia. He is an outstanding educator and was Dean of the college of engineering at Notre Dame.

Paul Grogan, P. E., University of Wisconsin. Mr. Grogan received his degree from the University of Wisconsin and is now chairman of Engineering Extension Office for the University of Wisconsin. He is a recognized lecturer and has experience in the consultant field. He is a recognized authority on extension education in the field of engineering.

This team was selected with the desire of obtaining eminently qualified, recognized individuals outside the state of Louisiana, and surrounding sister states. The Board feels just such a team as has been selected can provide an unbiased study for the Coordinating Council in determining engineering education needs of Louisiana.

Funds are now being accumulated primarily from industry in Louisiana. In order to do the necessary job, it is estimated the cost will be between $12,000 and $15,000. This money will be used for travel expenses, on site inspections, honorariums, reports and miscellaneous costs involved.

We need your help—a $5.00 per member contribution would assure the success of this undertaking. What a small investment on our part to guide the future course of Engineering Education in Louisiana. Use the clip out below to mail your check.

Higher Education Study Fund
Louisiana Engineering Society
P. O. Box 2683
Baton Rouge, La. 70821

Enclosed is my check for $_____.

Name _____

Address _____

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COVER

Hurricane Betsy tidal surges in 1965 crested above protection levees in the New Orleans area and flooded large areas of the city. Our cover scene shows a bridge of the Industrial Canal that was used as a center for rescue operations. An article on the need for continuing hurricane protection projects in the Lake Pontchartrain area begins on Page 6.

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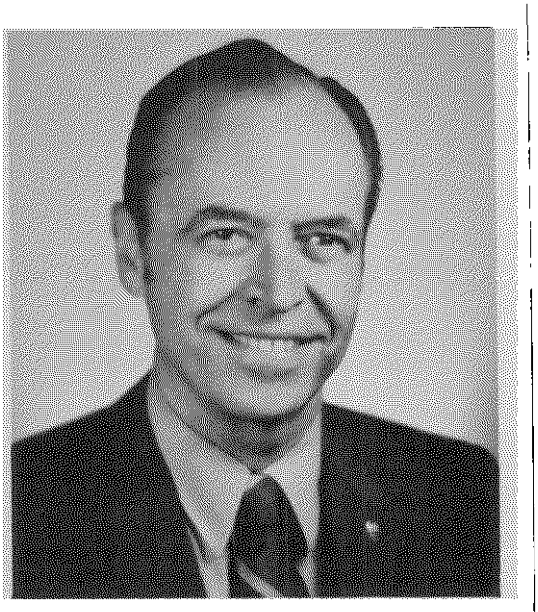
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PRESIDENTIAL PRIVILEGE



Now that one quarter of this administrative year has passed, the activities of the Chapters, Practice Sections, and committees should be well under way. The Alexandria Planning Conference was well attended and there was much interest in the planning process. In the remaining eight months, the plans which were made must be executed if we are to have a successful year in the Society. Surely each committee chairman, each section chairman, each chapter president will follow through and see that this one time opportunity to accomplish our goals is realized.

You will notice in another section of this magazine an article on the proposed survey of the engineering educational facilities and institutions in the state of Louisiana. This information will be made available to the Louisiana Coordinating Council for Higher Education. Without this study by engineering educators, long range decisions may be made by those unfamiliar with the unique aspects of engineering education. Your Society has proposed that four outstanding, nationally renowned engineering educators be employed to conduct the survey. These men have agreed to serve and at the time of this writing are preparing to make the study. It must be available by the first of January in order to be most useful to the Coordinating Council.

The Ad Hoc Education Committee through co-chairman for finances, past president John F. Vogt, is seeking to raise funds to finance the study. Industrial interests and other large employers of engineers are being solicited. The response is gratifying but it does appear that there may be a need for additional support. In order that each engineer may indicate his interest in this important undertaking, you are being given the opportunity to make a donation by sending a check to the Society for this purpose. Actually, if each registered engineer in the state of Louisiana would donate one dollar, we would have sufficient funds. If each member of our Society would invest five dollars, we would have sufficient funds. You are encouraged to evidence your support and your interest in your profession and its future by contributing to this important project.

Please be aware of the planned statewide meetings of your Society. There will be a spring meeting in New Orleans in March. There will be a work session for each section and committee to consolidate its plans to complete its work. There will be outstanding speakers, and honors and awards will be presented. Then on July 22-24, 1971, there will be a joint meeting of the Louisiana Engineering Society in Biloxi with the Mississippi Society of Professional Engineers. It will include the Chapter officers indoctrination clinic and the state officer installation. There will be joint sessions plus plenty of time for recreation in a vacation atmosphere. Plan to take your family. Then in 1972, the Mississippi Society will meet with us in New Orleans.

Keep up the good work.

Very truly yours,

A. J. Szabo, P.E.
President

TO BE VOTED UPON NOVEMBER 3

New Orleans Hurricane Protection Is Giant Engineering Project

An extensive area of New Orleans east of the Industrial Canal was under water following tidal surges of Hurricane Betsy in 1965. Here, dredge boats are pumping water from the flooded area into the Industrial Canal.



The fate of one of the most ambitious engineering projects ever undertaken in Louisiana, designed to safeguard the lives and property of hundreds of thousands of people, is at stake in the November 3rd general election.

At that time the people of the state will vote on two proposed constitutional amendments—Nos. 7 and 11 on the ballot—which will determine whether local interests will be able to fund their 30 per cent share of the Lake Pontchartrain and Vicinity Hurricane Protection Project.

Cost of the project, which Congress authorized in 1965 after Hurricane Betsy's tidal surge caused hundreds of millions of dollars of damage in the New Orleans area and other sections of Southeast Louisiana, is now estimated by the U. S. Army Corps of Engineers at $216,000,000.

Amendments Nos. 7 and 11 to be voted upon November 3 involve that portion of the project that is designed to protect areas bordering on Lake Pontchartrain, including New Orleans, the east banks of Jefferson and St. Charles Parishes, and St. Tammany Parish.

Cost of the Lake Pontchartrain phase of the project, which includes barrier structures at Rigolets and Chef Menteur Pass on the eastern edge of the lake and at Seabrook on the Industrial Canal in New Orleans, is estimated at $172,170,000.

The other phase of the Lake Pontchartrain and Vicinity Hurricane Protection Project involves tidal flood protection for St. Bernard Parish through construction of an extensive high-elevation levee system. Cost of this phase of the project is estimated at $43,830,000.

The Orleans Levee Board has been designated as the local assuring agency for the $172 million Lake Pontchartrain project, and as such is responsible for funding the 30 per cent local share of the costs.

Amendment No. 7 would authorize the Orleans Levee Board to levy a 2½-mill tax on Orleans parish property which would be used exclusively to help pay the parish's share of the Lake Pontchartrain project. Amendment No. 11 would authorize the Pontchartrain Levee District and the St. Tammany Parish Police Jury each to levy up to 2½ mills of property taxes for the same purposes in their areas of jurisdiction. The Pontchartrain Levee District is responsible for flood protection in those sections of Jefferson and St. Charles parishes east of the Mississippi River.

Could Halt Project

Edward N. Lennox, president of the Orleans Levee Board, said that if the amendments are not approved the hurricane protection project will come to a halt in 1971.

"The fact of the matter," he said, "is that funds presently available to the Orleans Levee Board are not sufficient to meet the Orleans Parish portion of the 30 per cent local contribution to project costs. Although Orleans Parish must pay by far the greatest portion of the local costs, additional revenue is also needed by the Pontchartrain Levee District and the St. Tammany Parish Police Jury to pay project costs involving Jefferson, St. Charles, and St. Tammany Parishes.

"The U. S. Army Corps of Engineers has informed the Orleans Levee Board as local assuring agency for the project that starting with the 1971-72 fiscal year they intend to seek federal appropriations totaling $20 million a year in order that the project may be completed by the target date of July, 1978.

"Such a schedule would require approximately $8½ million per year in local contributions from Orleans Parish through the Orleans Levee Board and from Jefferson, St. Charles, and St. Tammany Parishes. The Army Engineers Corps has stated that if we cannot meet these costs then they cannot seek federal appropriations to carry on the program.

"The Orleans Levee Board believes that the people of the New Orleans metropolitan area and the other affected parishes cannot afford any delay in carrying this project to completion. Such a delay would subject the hundreds of thousands of people who live in the vicinity of Lake Pontchartrain to a possible disaster of almost unimaginable proportions."

The project is designed to protect New Orleans and other areas bordering on Lake Pontchartrain from hurricanes of varying intensity up to what the Army Corps of Engineers defines as a standard project hurricane. This is one that may be expected from the most severe combination of meteorological conditions that are considered reasonable characteristics of this region.

The major threat to the Greater New Orleans Area lies in hurricane surges and higher-than-normal tides being pushed into Lake Pontchartrain from the Gulf of Mexico and thereby significantly raising the water level of the lake.

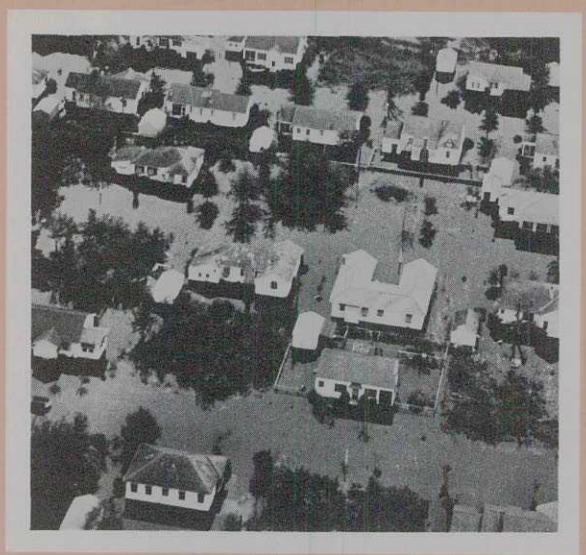
The occurrence of a standard project hurricane would produce tides of 11.2 feet along the south shore of the lake, 12.5 feet at Mandeville, 12.5 feet at the Citrus and New Orleans East back levees, and 13 feet at the Rigolets and Chef Menteur Pass.

As the eye of the hurricane passes, the counter-clockwise winds would drive the abnormally high water against the south shore, in effect tilting the lake as one would a basin of water. The resulting water level would be at a much higher elevation than that to which levees could be built, both from an aesthetic and economically justified basis.

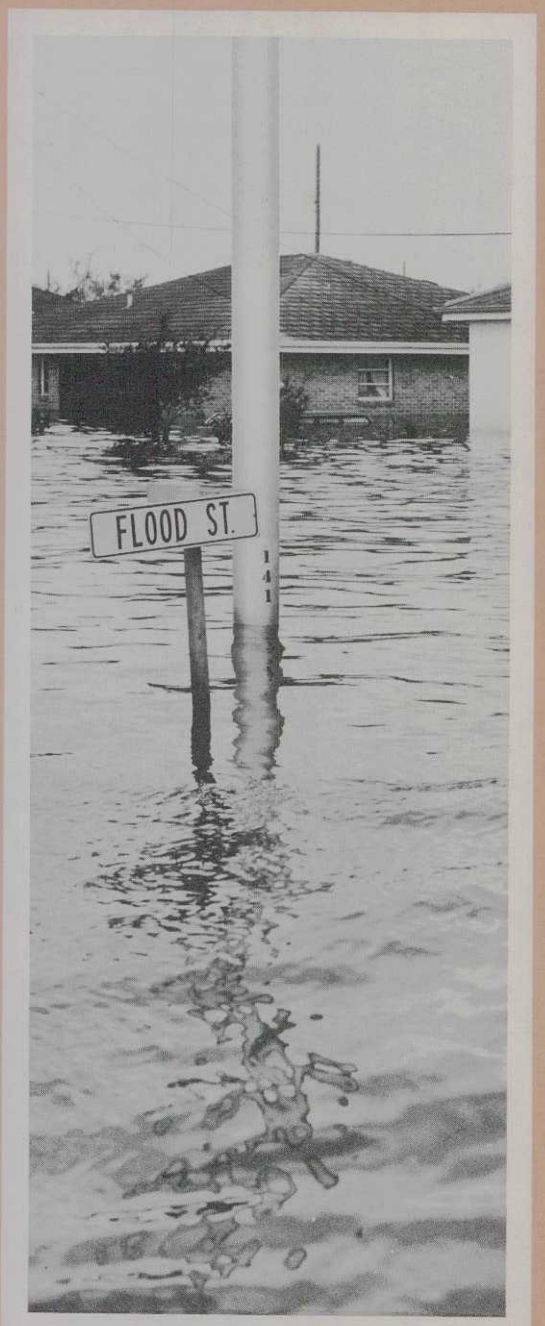
Since levees high enough to protect the south shore were unfeasible, the Corps keyed the protection project on structure complexes that would prevent the entrance of hurricane driven tides into the lake. These complexes are to be built at the points of access—the Rigolets, Chef Menteur Pass, and at Seabrook where the Industrial Canal enters the lake.

At the Rigolets, the complex will consist of a gated control

"...a delay would subject the hundreds of thousands of people who live in the vicinity of Lake Pontchartrain to a possible disaster of almost unimaginable proportions."







structure, to allow for interchange of normal tidal action; a shallow-draft navigation lock to pass commercial and pleasure craft; and a closure dam.

At the Chef Menteur Pass, a short reach of the Gulf Intracoastal Waterway will be rerouted. A control structure similar to but smaller than the one at the Rigolets will be built. A navigation flood-gate and a closure dam will also be constructed.

For Seabrook, plans include construction of a shallow-draft navigation lock with supplementary flow structure. Stone dikes will tie the structures into the lakefront levees.

The total construction cost of these three major complexes is $70 million.

Tidal Barrier Concept

The overall Lake Pontchartrain and Vicinity Hurricane Protection Project also provides for the enlargement of many existing levees, such as those along the Gulf Intracoastal Waterway and on the lakefront; the construction of concrete floodwalls along the banks of the Industrial Canal in New Orleans, and a new levee along the St. Charles Parish lakefront.

Key to the success of the hurrican protection project, however, is the tidal barrier concept.

"Without completion of the lake barrier plan," Orleans Levee Board President Lennox has said, "effectiveness of the greatly improved levee system will be severely diminished or even rendered useless should a project hurricane strike this area. That is why approval of Amendments Nos. 7 and 11 is so necessary to provide sufficient local funding to assure continuation of the federal government's large share of this project."

Col. Herbert R. Haar, New Orleans District Engineer for the U. S. Army Corps of Engineers, says that planning on the three complexes has advanced to the stage where construction may begin in the 1971-72 fiscal year.

"Present scheduling," Col. Haar said, "envisions essential completion of the project in the 1978 fiscal year. This, however, depends upon the timely appropriation of funds."

Of the total $216 million cost of the Lake Pontchartrain and Vicinity Hurricane Protection Project, Col. Haar reports, $28.1 million has been expended as of the fiscal year ending July 1, 1970. Of this $28.1 million, local interests have spent $14.8 million while federal funds expended a total of $13.3 million.

Since the hurricane protection project was authorized, the Orleans Levee Board alone has spent approximately $10 million on levee and floodwall work, and at this time has approximately $8 million in credits for work that has been completed as part of the project.

Lennox emphasizes that this amount of credit is not sufficient to justify a continuation of the project by the federal government beyond the 1970-71 fiscal year unless assurances are forthcoming that additional revenues would be available from local sources to meet the annual federal funding of $20 million for the project.

He said that approval of Amendments Nos. 7 and 11 will give the Army Corps of Engineers such assurances, and urged support of the proposals by all the people of Louisiana.

"The proposals do not involve any new taxes for anyone in Louisiana except those living in Orleans, Jefferson, St. Charles, and St. Tammany Parishes," Lennox said. "It is up to the people of the areas bordering Lake Pontchartrain to raise the funds necessary for their protection.

Needs Statewide Approval

"However, for the amendments to pass they must receive a majority vote both statewide and in the four parishes that are affected. The people elsewhere in the state have nothing to lose by voting for these proposals. On the other hand, they do have much to lose if the amendments are not approved because the economy of the entire state would suffer greviously if disaster in the form of massive flooding struck the Greater New Orleans area.

"Either Betsy in 1965 or Camille last year—with just a very slight alteration in course, the first eastward and the second westward—could have affected the New Orleans area in the way a standard project hurricane would have. In other words, in a five-year period, we have been bracketed by potential standard project hurricanes.

"These narrow escapes in a short period of time should convince everyone that we who live in this area are extremely vulnerable and in great danger. In 1962, when the Army Corps of Engineers completed the study that led to authorization of the hurricane protection project, the calculated damage to the New Orleans area from a project hurricane would have been in excess of $475 million. Today, of course, that figure would be much higher.

"Much of the developed area in New Orleans and Jefferson Parish is below lake level, with some land six to eight feet below mean sea level. Flooding as deep as 16 feet above ground level could result from such a storm.

"In New Orleans, 65 per cent of the land area between the Jefferson Parish line and the Industrial Canal would be subject to inundation. All of the Citrus area, extending from the Industrial Canal to Paris Road between the lake and the Mississippi River-Gulf Outlet, would be subject to flooding, as would the New Orleans East area.

"Because of the low-lying topography of this area, flooding from a tidal surge would last for days or even weeks until the water could be pumped out. This would cause enormous damage to property, create serious hazards to life and health, disrupt business and community life, and require immense expenditure of public and private funds for evacuation and subsequent rehabilitation.

"The urgency of the situation cannot be overstated. The people of Louisiana should give their full support to the Lake Pontchartrain and Vicinity Hurricane Protection Project by voting for Amendments Nos. 7 and 11." ■

Planning for Louisiana Water Resources

The following is a summarization of a report made by Daniel V. Cresap, P.E., Chief Engineer, Louisiana Department of Public Works, to the Louisiana Water Resources Study Commission at its August 1970 meeting.

"Water, water everywhere,
*Nor any a drop to drink."**

This is not the case in Louisiana and the state is currently involved in many studies to insure that its citizens, industry, agriculture, and wildlife will not have to suffer for lack of water to drink.

Act 20 of 1942 delegated to the Louisiana Department of Public Works the responsibility for coordination of water resources activities of the state of Louisiana.

In 1964, the Water Resources Study Commission was established by the Louisiana Legislature and given the charge "to conduct a study of the water policy of this state, the need for revision of such policy, the method of carrying out the revised policy, and the manner in which the revised policy should be administered." In 1968 the legislature extended the life of the commission and increased its membership to 20 members, representing all state agencies and public interests concerned with water resources in the state. The 1964 act designates the Director of Public Works to be ex officio chairman of the commission. Also noteworthy is the fact that the 1968 legislation extended membership to the president of the Louisiana Engineering Society.

In 1966, the department was given the responsibility of developing a comprehensive water and related land resources plan to assure that all our present and future water needs would be provided for. This is a coordinated study in which all of the state and federal agencies interested in water and related land resources are participating.

Through this comprehensive water resources study, we will be able to recommend a plan which will be the basis to insure that Louisiana's present and future water needs will be provided for.

Specifically, the purpose of the water resources study is to develop a workable plan for determining, and ultimately providing, the future needs of high quality water for agriculture, industrial, and in-stream uses throughout the state of Louisiana. This workable plan can only be developed, however, after (1) present and future needs are determined and supplies inventoried; (2) future deficient areas are determined, and (3) the legal and institutional framework is reviewed. Completed as part of the first phase of the study was the development of three reports, "Present Municipal Water Use in Louisiana," "Present Agriculture Water Use in Louisiana," and "Present Industrial Water Use in Louisiana," which are inventories of present water usage and which served as a base for water needs projections.

"Present Municipal Water Use in Louisiana" was developed from actual survey data obtained from state and federal agencies. This information facilitated the development of the following:

a) Total per capita usage by parish and WRPA; (WRPA's are Water Resources Planning Areas which are grouped, as nearly as possible, into economic regions that most nearly coincide with major hydrologic boundaries which are also restricted to parish lines. There are six WRPA's in Louisiana.)
b) Categories of usage and their relative importance by WRPA.
c) Rural domestic usage and supply.

This report indicates that in 1967, some 139 billion gallons of water were supplied to approximately 2.9 million persons in Louisiana with an average use of 132 gallons per capita per day. Of this total pumpage, 54 per cent was supplied from surface sources principally from the Mississippi River. It was estimated that some 732,000 people, or 20 per cent of the state's population, were still considered rural self-supplied in 1967.

"Present Agricultural Water Usage in Louisiana" was based primarily on an extensive irrigation survey, including some 6,000 farms that irrigated crops in 1967. From this information, estimates of acreages irrigated by crop, annual and seasonal water-use coefficients, sources of supply, etc., were determined.

The report concentrates primarily on usage by categories (irrigation, fish farming, livestock, and poultry) by WRPA, and month, with a section identifying major supply systems.

As the report indicates, rice accounted for 95.5 per cent of all agricultural water usage including irrigation of "other crops," fish farming, livestock, and poultry. Some 602 billion gallons of water were used of which 391 billion gallons were used in the months of May and June. Approximately 62 per cent of the irrigation needs were supplied by surface sources of which the Vermilion River and the Intracoastal Waterway were the two principal supply streams.

"Present Industrial Water Usage in Louisiana" was based primarily on an industrial water use survey including some 2,250 industries in Louisiana. Approximately a 60 per cent sample by number was obtained representing approximately 80 per cent of the industrial water use. The sample was expanded to a total water estimate by developing

* Samuel Taylor Coleridge, *The Ancient Mariner*, pt. II, st. 9.

coefficients by industry type, by employment, and by expanding the sample using total employment by industry type.

The emphasis of the report is on usage by industry type, by WRPA, and by month. Statistics giving the amount used for cooling, processing, boiler feed, and sanitary purposes are presented by type of industry. Intake, consumption, and return flow data by month and industry type is presented. Industrial intake of water amounts to 993 billion gallons of this. The report shows that chemical and allied products accounted for 51 per cent of total industrial usage in 1967 and petroleum refining and primary metals accounted for 35 per cent. Sixty-nine per cent of the water was used for cooling and 19 per cent was used for processing.

Work commenced on the preliminary projections of water needs even before basic data reports were completed. Understandably the first phase of determining future water needs was to project those economic indicators correlated with water usage. They are population, income, employment, and production.

As Chart I indicates, Louisiana's population is projected to increase from roughly 3.7 million in 1970 to 7.2 million by 2020, an increase of 95 per cent, while total employment is estimated to grow from 1.2 million to 2.6 million, an increase of 117 per cent. More important, however, in terms of water needs is employment in manufacturing, which is projected to increase 108 per cent for the same period. Preliminary indications, however, are that total water use is projected to increase almost five times over the same period, a rate higher than either population or employment growth. Understandably, our per capita water use for all purposes (except water quality) is forecast to increase from 2.5 thousand gallons a day to 5.8 thousand gallons a day, an increase of 132 per cent.

The procedures involved in determining future water needs by each category of usage, agriculture, municipal, industrial, and water quality are illustrated in the charts.

Agricultural Projections

As mentioned earlier, the basic data was obtained from an irrigation survey of some 6,000 farms in Louisiana. This information, together with other data, was used to:

a) Establish coefficients, and
b) Develop projected parameters (which are acreage, livestock, and poultry numbers, etc.).

The product of the coefficients and the parameters for each category of usage gives us total irrigation needs, total fish farming needs, and total livestock needs.

Municipal Projections

Projections of municipal needs over time were developed as follows:

a) Basic economic data on population, per capita income, housing values and numbers, etc., was fed into a computer program referred to as "MAIN I" which is a system to evaluate and estimate present usage, i.e., data correlated with residential, commercial, industrial, and public unaccounted water usage was the input.
b) The results of the MAIN I analysis were verified with actual pumpage records to ascertain the system's performance and to check to see if the city in question had been described correctly.
c) Then other economic data (projections of population, income, etc.) was entered into another system called "MAIN I" to project future municipal needs for the SMSA's in Louisiana, i.e., Shreveport, Monroe, Alexandria, Lafayette, Lake Charles, Baton Rouge, New Orleans. (SMSA - Standard Metropolitan Statistical Area, consists of parishes which contain municipalities of over 50,000 population.)
d) The answers were then checked for their reasonableness.
e) Municipalities other than the SMSA's were grouped and projected utilizing correlations with the SMSA projections and basic pumpage data.

Industrial Projections

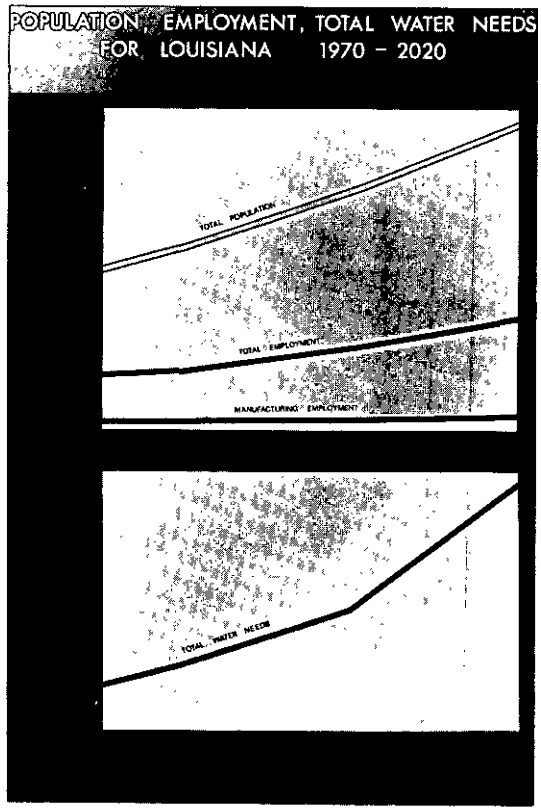
Base data from the industrial survey was aggregated by industry type to establish water-use coefficients (water use per employee). The coefficients were adjusted through time for productivity increases developed in the economic study. These water-use coefficients at a three-digit Standard Industrial Classification level were multiplied times the projected employment to arrive at projected estimates of industrial water needs. (Standard Industrial Classification is a system in which a company is listed under one group into which its primary product falls.) The analysis was conducted at the three-digit level summed to a two-digit level for reporting, by month and industry type.

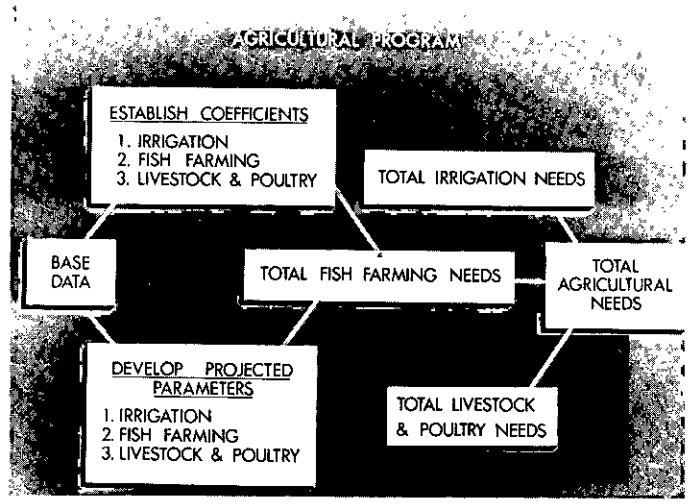
Water Quality Projections

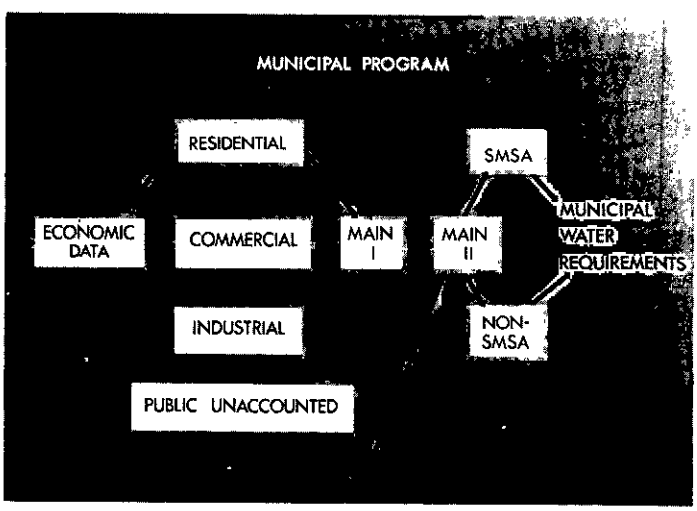
Using basic loading coefficients developed for municipalities and industries, projections of the municipal and industrial loads were determined for major water sheds in the state. A net load, after treatment, was determined from the composite to arrive at the amount of oxygen needed for decomposition. Based on the reoxygenation capacity of the stream, the amount of oxygen supplied was determined for each potential critical point of investigation—some 76 points in Louisiana. From the supply and need of oxygen developed considering Louisiana's water quality criteria, two determinations were made:

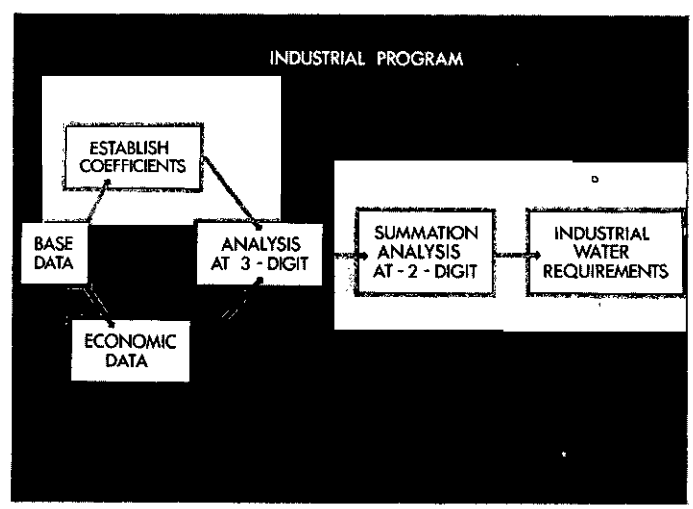
1) the amount of flow in a given stream system to assimulate the loads without violating the specified criteria; and
2) the additional amount of water needed if the amount would have to come from a specified point on the Mississippi River.

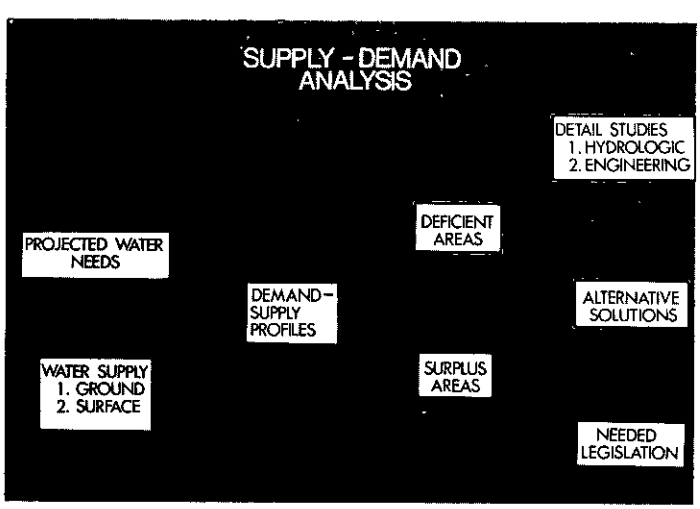
The assumption of the water

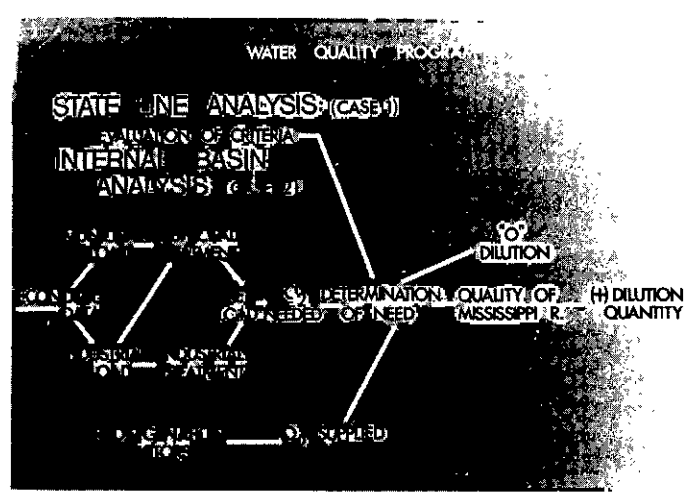

POPULATION, EMPLOYMENT, TOTAL WATER NEEDS
FOR LOUISIANA 1970 - 2020
TOTAL POPULATION
TOTAL EMPLOYMENT
MANUFACTURING EMPLOYMENT
TOTAL WATER NEEDS


AGRICULTURAL PROGRAM
ESTABLISH COEFFICIENTS
1. IRRIGATION
2. FISH FARMING
3. LIVESTOCK & POULTRY
TOTAL IRRIGATION NEEDS
BASE DATA
TOTAL FISH FARMING NEEDS
TOTAL AGRICULTURAL NEEDS
DEVELOP PROJECTED PARAMETERS
1. IRRIGATION
2. FISH FARMING
3. LIVESTOCK & POULTRY
TOTAL LIVESTOCK & POULTRY NEEDS


MUNICIPAL PROGRAM
RESIDENTIAL
SMSA
ECONOMIC DATA
COMMERCIAL
MAIN I
MAIN II
MUNICIPAL WATER REQUIREMENTS
INDUSTRIAL
NON-SMSA
PUBLIC UNACCOUNTED


INDUSTRIAL PROGRAM
ESTABLISH COEFFICIENTS
BASE DATA
ANALYSIS AT 3 - DIGIT
SUMMATION ANALYSIS AT - 2 - DIGIT
INDUSTRIAL WATER REQUIREMENTS
ECONOMIC DATA


SUPPLY - DEMAND ANALYSIS
DETAIL STUDIES
1. HYDROLOGIC
2. ENGINEERING
DEFICIENT AREAS
PROJECTED WATER NEEDS
DEMAND - SUPPLY PROFILES
ALTERNATIVE SOLUTIONS
WATER SUPPLY
1. GROUND
2. SURFACE
SURPLUS AREAS
NEEDED LEGISLATION


WATER QUALITY PROGRAM
STATE LINE ANALYSIS (CASE I)
INTERNAL BASIN ANALYSIS
DILUTION
DETERMINATION OF NEED
QUALITY OF MISSISSIPPI R.
(H) DILUTION QUANTITY

coming from the Mississippi River is being used by the Louisiana Department of Public Works to evaluate the Corps of Engineers "Export Study" — a study to determine the feasibility of transporting water from the Mississippi River to Texas and New Mexico.

Instream Program

Other instream water needs besides those for water quality purposes which have not been accounted for at this time include navigation, recreation, and conservation and development of coastal and shoreline resources. Although stream preservation may not be a direct water need, it will have an effect on water supply and will, therefore, be considered as an instream water need at the appropriate time.

The state of Louisiana is involved with the U. S. Army Corps of Engineers, and other federal agencies, the Louisiana Wildlife and Fisheries Commission and the Coastal Studies Institute in making a study of the Mississippi Delta System for the conservation and development of coastal and shoreline resources.

The general purpose is a study of the estuarine and adjacent wetlands area of Louisiana. The specific goals are:

1) Identification and evaluation of the physical and chemical parameters which, in their totality, comprise the estuarine environments; documentation of historical changes in these parameters; and projection of future changes in them.
2) Determination of the freshwater requirements so that a plan for more efficient utilization of Mississippi River outflow might be devised.
3) Development of a broad plan for effecting changes in the delta system which might enhance natural environments of the coastal zone.

On accomplishing these goals the results will be incorporated along with the other instream needs as a part of the comprehensive plan.

Water Supply

The determination of available water will complete the first phase of the study.

An exact analysis of available water is difficult to determine; therefore, certain ranges or conditions of ground and surface water supply must be assumed and investigated.

Surface Supply

In order to make a surface water supply analysis of an area, certain low flow characteristics of streams in the area must be known. As part of the study to determine water availability for the entire state, the 95 per cent flow duration, that flow which will be equaled or exceeded 95 per cent of the time each month, has been selected as one of the parameters to be investigated. Other flow durations will also be considered.

Ground Water Supplies

Preliminary projections of municipal, industrial and agricultural ground water needs were furnished the U.S. Geological Survey. U.S.G.S. personnel using this data determined, based on today's technology, the limit to which ground water supplies can be safely developed. This information along with the surface water data is being used in developing demand and supply profiles and identifying water deficient areas of the state.

Supply - Demand Analysis

The last chart shows the supply demand analysis. The supply-demand analysis chart in effect summarizes the goals and objectives of the comprehensive plan for any WRPA or sub area: Total water needs for any subject area will be compared with the supply for that area to produce a supply-demand profile. From the profile developed, deficit or problem areas can be defined.

Only after all problem areas have been delineated and alternative solutions suggested will it be possible to make detailed studies and draft needed legislation to implement a comprehensive water and related resources plan for Louisiana.

In order to provide workable solutions to the water resources problems of the state, a determination must be made, both quantitatively and qualitatively, of water deficit areas and also of areas which may yield surpluses. Currently a computer program is being developed which will facilitate us in developing supply-demand profiles for each of twenty-four regions covering the state. Preliminary results indicate several areas which may have ground and/or surface water problems in the future.

Conclusion

Louisiana's water needs in the next 50 years are projected to increase some five times. Industrial needs, which are of great importance to us as far as our future economic stability is concerned, are estimated to increase some 9 times in the next 50 years.

Despite Louisiana's ever growing water demands, Texas and New Mexico have requested some 16 million acre feet of water from the Lower Mississippi River. A massive study by the Corps of Engineers and the Bureau of Reclamation to investigate the feasibility of a diversion plan is under way at present. We must be prepared to defend our policy on Louisiana's Water for Louisiana.

In many sections of Louisiana, ground and surface water supplies seem to be adequate to meet our pressing water needs; in others, however, ground and surface supplies have been taxed heavily due to expanding municipal and industrial requirements.

There is only so much usable water in Louisiana. Right now it appears that we have an abundant supply for most of our existing needs—in fact, we have been called "water rich" by many people throughout this country. Because of its past abundance, Louisiana has been able to provide for the growing needs of our industries and municipalities throughout the state. However, these ever increasing water needs must be met and protected if we are to maintain our rapid rate of growth and our share of this nation's economic prosperity. ■



Full-Depth® (TA) Deep-Strength® Asphalt Pavement speeds up road rehabilitation in Charlotte, N.C.—traffic keeps moving.

Here's how it looks today. Good as new. And here's how it got that way. The year: 1965. The problem: to rehabilitate and modernize old two-lane Sharon-Amity Road. The decision: remove the old pavement, rebuild with four lanes to modern standards with Full-Depth (TA) Deep-Strength Asphalt pavement. During reconstruction, half of the existing roadway was left in place for one traffic lane and the stabilized shoulder for the other. When the new Asphalt base was in place, traffic was then directed onto it and the other half of the roadway was built. The Asphalt concrete surface was placed last with traffic continuing throughout the construction period.

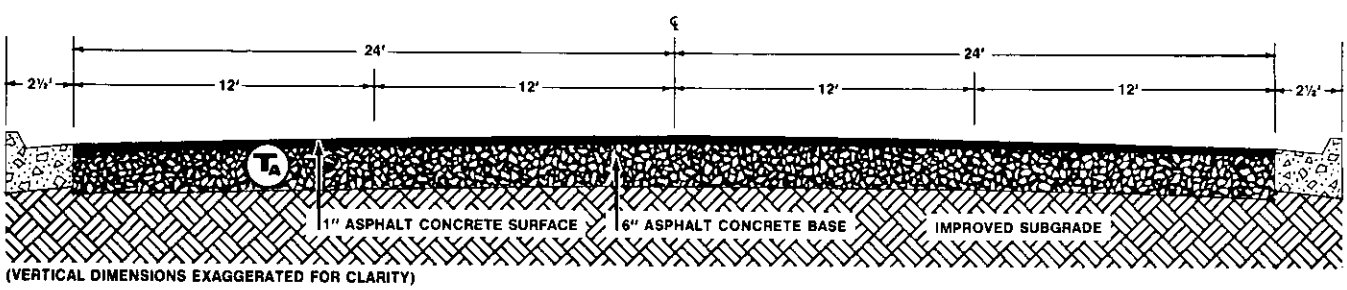
THE NEW SHARON-AMITY ROAD

TYPE: Arterial city street, two-lanes widened to four-lanes, Full-Depth Asphalt-paved. Width of driving lanes, 11′ to 12′. Length of project: 2 miles.
TERRAIN: Rolling.
CLIMATE: High average temperature: 68° August. Low average temperature: 48.4° December. Average rainfall: 39.79 inches.
TRAFFIC: 10,000 ADT.
ROADWAY: Subgrade: A5 and A6 soils (CBR of 5). **Base:** 6″ hot-mix asphalt concrete placed in one Deep-Lift®. **Surface:** 1″ hot-mix asphalt concrete.
ASPHALT: 85-100 pen for all mixtures.
DRAINAGE: Runoff controlled by curbs and gutters.
COMPACTION: Subgrade: 100% of AASHO Designation T-99. **Base:** 94% max. theoretical (averaged). **Surface:** 95% lab density.

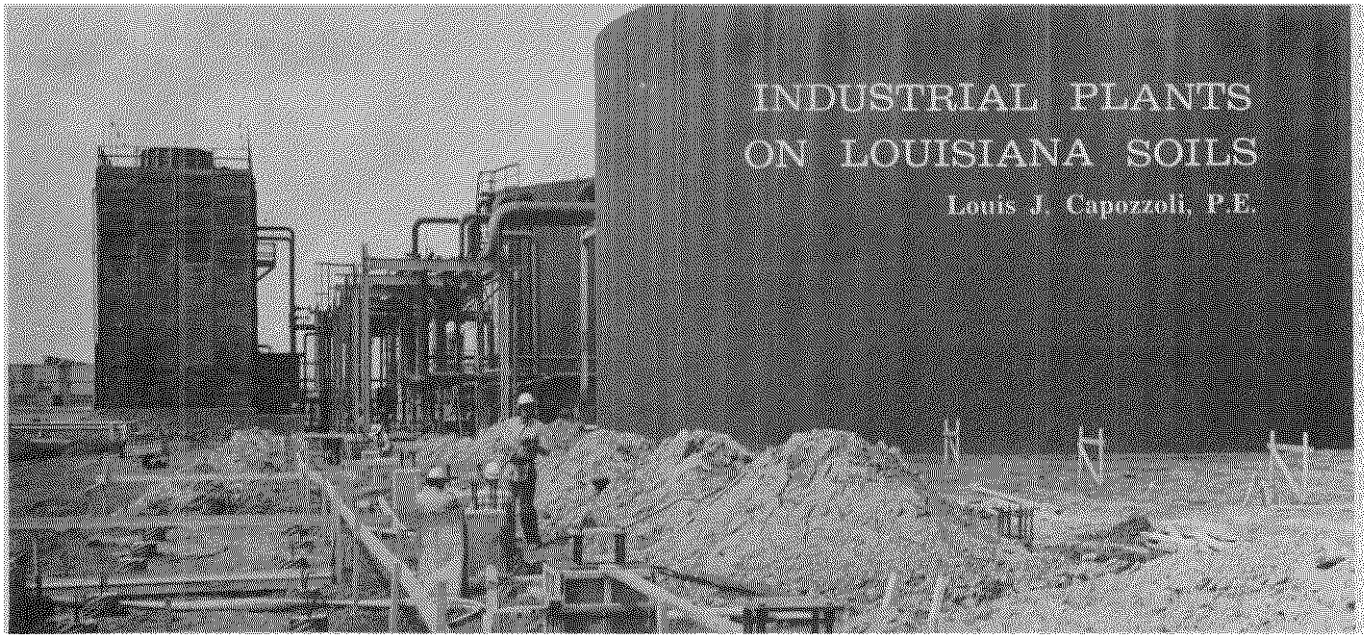
The Sharon-Amity Road project was constructed by the City of Charlotte Public Works Department. By specifying Full-Depth (TA) Deep-Strength Asphalt pavement for street rehabilitation, Charlotte's city engineers serve the best interests of taxpayers and motorists alike. It offers smoother, safer riding along with lower initial costs and reduced maintenance.

For more information on this and other projects...and on all the advantages of Full-Depth Asphalt pavement, please contact the Institute office serving your area...or write The Asphalt Institute, 406 John Hancock Building, New Orleans, La. 70130.

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(VERTICAL DIMENSIONS EXAGGERATED FOR CLARITY)



INDUSTRIAL PLANTS ON LOUISIANA SOILS

Louis J. Capozzoli, P.E.

By the standards of the farmer, rancher or plantation owner of bygone days, Louisiana's rich alluvial soils were a gift from heaven. But by the standards of a modern industrialist trying to build a plant structure weighing thousands of tons, the soft, damp soil can present a troublesome obstacle. Although Louisiana's difficult soil conditions have probably discouraged a number of businessmen from locating a new plant or refinery in the state, a large number of industrial plants today are standing soundly on all types of Louisiana land, from the highest, stiffest clay, to the lowest, wettest marsh. These structures are proof that any type of industrial building can be supported on Louisiana's soils, provided the builder has a knowledge of the soil conditions and principles of foundation engineering.

Possible Soil Conditions

Two different types of soil conditions can be found in Louisiana. These are the high ground consisting of Pleistocene clay, and river bottom lands consisting of soft clays or organic soils.

On high ground, which has never been subjected to natural flooding by the river, the predominant soil is Pleistocene, a stiff clay ranging in color from tan to light gray. On most of this high ground, the Pleistocene clay is within 20 feet or less of the ground surface. North of a line through Baton Rouge and Lafayette it outcrops and is found at the ground surface.

In river bottom lands the predominant soil is soft gray clay. It varies in depth from 30 feet to more than 150 feet, and generally overlies either the stiff Pleistocene clay or, more often, dense sand. Areas with these soils are now protected from river flooding by levees. Frequently, in the marshy areas of South Louisiana, the soft clay is covered by 10 to 15 feet of soft peat, organic soil which sometimes contains less than 20% mineral matter.

Many of these low lying areas that are protected now from the river floods by levees are currently being cleared and developed for industrial sites. The foundations used for these industrial plants will be discussed later.

Plant Structures

Typical plant structures are tanks, control houses or other light buildings, tall process towers, and critical process equipment in multi-story structures.

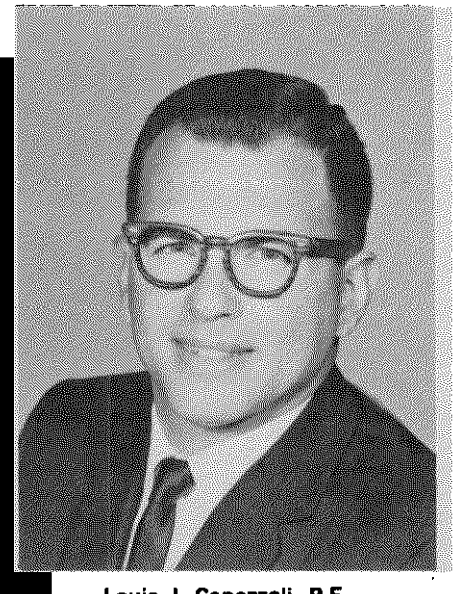
Tanks will generally vary in size from small holding tanks less than 25 feet in diameter and 24 feet high to large storage tanks 260 feet in diameter and 56 feet high. Storage tanks with petroleum products will have loadings less than the full water test load. Other tanks handling process chemicals may have loadings as much as 80% greater than the full water test load.

Control houses or other light buildings usually consist of offices, washrooms, change houses, miscellaneous light plant equipment, etc.

Tall process towers vary in size, the largest ones being about 25 feet in diameter and 250 feet high. They generally have loadings from 500,000 to 10,000,000 pounds.

Critical process equipment, including vessels, hoppers, silos, etc., is usually supported in open steel multi-story structures. Column loads for these structures will be as high as 1,000,000 pounds.

When selecting a foundation it is important to consider the settlement requirements and tolerances of the structure. Tanks can undergo major movements of



Louis J. Capozzoli, P.E.

a foot or more, since the piping hookings have considerable flexibility. The light buildings can generally take one to two inches of settlement without any detrimental effects. Towers and process equipment have strict settlement tolerances, generally ½ inch or less, which must be carefully considered in foundation selection.

Foundations on High Ground

On high ground, the top 2 to 10 feet, consisting of stiff to very stiff Pleistocene clay, has an allowance bearing pressure from 2,000 to 5,000 psf. Below the 10 foot depth the allowable bearing pressure is in the 4,000 to 8,000 psf range.

On this soil, tanks can be placed on earthen pads on the ground surface without piles or concrete mats. A small curb 12 inches square facilitates erection of and provides grade for some of the larger tanks. A tank 100 feet in diameter loading the soil to 2,500 psf will settle about 6 inches at the edge. Half of this will occur during the water test load. Control houses can be supported on shallow spread footings or monolithic slabs with negligible settlements. Tall towers can rest on mat foundations to take the load. If uplift is critical, the mat can be tied into the soil with straight sided concrete shafts or poured in place caissons.

For critical process equipment with heavy loads which could be seriously affected by differential settlements, bell bottom footings are usually the most economical foundation. For extremely heavy structures with critical settlement tolerances, such as spheres with gas under high pressures, driven pile foundations may be required. In driving piles into this Pleistocene clay, prebored holes are normally used for displacement piles, i.e., timber or closed end pipe piles. The prebored holes are not required for steel H-piles.

River Bottom Land

This soft gray clay found along the Mississippi River has an allowable bearing pressure of approximately 1,000 psf and an ultimate bearing pressure below 2,500 psf. A column with a load of 100 kips and a sustained bearing pressure of 1,000 psf on a spread footing will settle about 1 inch.

Light tanks with loadings less than 2,500 psf can economically be supported on earthen pads on the natural ground surface. Heavy tanks can also be supported on earthen pads on the natural ground surface using a controlled filling procedure. Sand drains are used to accelerate drainage during the filling period. Settlements of 2 to 3 feet are not uncommon on this soil. The only method of eliminating these settlements is to use a pile foundation. This is uneconomical, since this foundation will cost more than the tank.

Light buildings such as control houses or other miscellaneous equipment can be placed on spread footings with 1,000 psf bearing pressures or monolithic slab foundations.

Piles in River Bottom Land

To support heavy loads on this river bottom land without excessive settlements, end bearing piles must be driven to the dense sand. (Friction piles are sometimes used, but are usually uneconomical due to the relatively light loads which are further reduced by group efficiency factors.) Where the dense sand is 60 to 70 feet below the surface, treated timber piles can economically be used and are safely supporting 40 to 50 tons each.

Quite often in this river bottom land, the dense sand is found 100 to 130 feet below the surface. For this condition, various combinations of piles can be used, including patented concrete filled corrugated shell and pipe piles, straight pipe piles, or composite piles with an untreated timber lower section and concrete filled pipe upper section. The loadings for the patented concrete piles and pipe piles, depending on the tip diameter, will generally be between 50 and 100 tons. The composite timber and concrete piles can support 30 to 50 tons.

Following are costs based on recent projects completed in 1970, with the total number of piles in excess of 500. All concrete piles, either in pipe or shell, can generally be installed for $8 per ton of supporting capacity. Timber and concrete piles generally cost about $5 per ton of carrying capacity, and treated timber piles 70 feet or less in length will cost about $4 per ton of supporting capacity.

Foundations Under Tanks

Since the ultimate bearing capacity of river bottom land is less than 2,500 psf, tanks with heavy loadings could undergo a sudden shear failure if filled rapidly.

To obtain an economical foundation for heavily loaded tanks, the gain in strength of the clay under the weight of the tank and contents must be considered. The principle is that the soil strength varies with the moisture content; the drier the soil, the stronger it is. An analogy is that of a cellulose sponge which becomes hard when dry. Like a sponge, soil can be dried by aeration and evaporation of the moisture, or it can be dried by squeezing the water out. A slow filling of the tank will allow the moisture in the soft clay underneath to be squeezed out, increasing the strength of the soil, and allowing a greater load to be placed on the soil than its original strength indicated.

Analysis that considers this soil strength increase is known as effective stress analysis. This analysis takes into account the angle of internal friction in the clay, similar to the angle of friction used for analyses of foundations on sand. To determine the angle of friction, advanced laboratory analyses are used which measure the water pressure in the spaces between the soil grains.

Effective stress analysis thus computes the stability of the tank, considering the rate at which the load from the tank is transferred from the water to the soil grains. Installation and spacing of sand drains determine this rate of load transfer. For economical purposes, a four-month period is usually the minimum time for loading the tanks. Any necessary sand drains are designed on that basis, or a

longer period when possible. Sometimes a combination of soil conditions and loading times available allows a heavy tank to be constructed with a controlled loading and no sand drains.

A necessary adjunct of effective stress analysis is installation and reading of piezometers. These devices measure water pressure in the soil under the tank, enabling the controlled loading to be performed safely.

Earth surcharging of the ground surface is also used for large areas, such as under warehouses or cooling towers, to eliminate most of the settlement prior to construction. The need for driven pile foundations is eliminated by using this method.

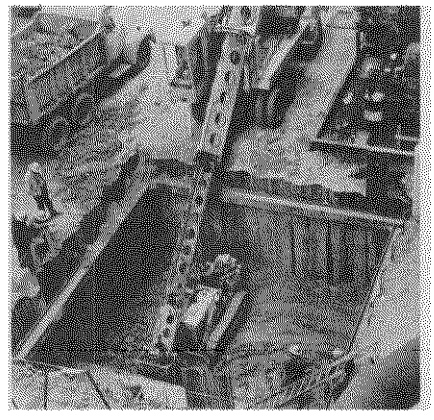
Organic Soils

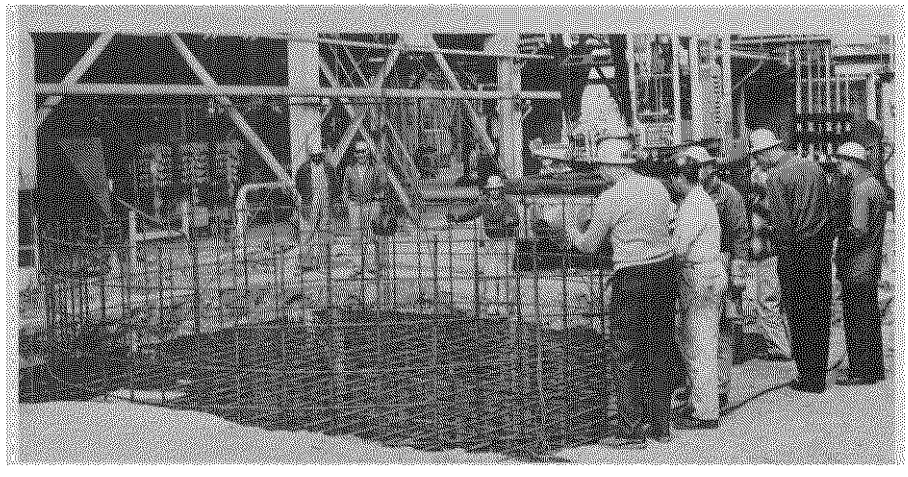
Buildings and plant structures on peat, or highly organic soil, require foundations similar to those used on soft clay river bottom land, with the following exception: even the lightest loadings on these organic soils will encounter settlements of several feet as the soil dries. Pile foundations must be used to bypass this compressible material and carry the load to a sufficient bearing stratum. For supporting tanks in these areas, either the organic material is mucked out and replaced with compacted backfill, or driven piles are used. Fortunately, these soils are not found close to the river banks. The foundation problems posed by these soils are usually not encountered in industrial plants on the Mississippi River, although they may be present 2 miles or more from the river.

Docks and River Structures

Docks and river structures must also be supported on end bearing piles beyond a depth which would scour due to the river. These river structures vary in size, from small barge loadout facilities, to large waterfront structures accommodating ocean going vessels with a 40-foot draft. Many design factors, such as river current and stage, scour action, impact, and overhead traveling cranes on the docks, are involved in selecting the depth to embed the supporting piling for these structures. Generally large piles are used, driven into a sand stratum 100 feet or more below the water level.







Summary

Building on Louisiana's soil requires a knowledge of soil conditions and how they will affect the proposed plant structures. The high ground usually presents no problems; shallow foundations of spread footings, mats or bell bottom footings can be used. River bottom land usually requires piling varying in lengths from 50 to more than 120 feet. Several types of piling have been developed to meet the long lengths and load conditions encountered here. Large storage tanks can be placed on the ground surface using a controlled filling procedure. This eliminates the need for piling and produces a foundation cost similar to that encountered for a tank on high ground.

As we have shown, foundations have been designed to support any type of industrial structure on any of Louisiana's soil types, and the rich alluvial soils which 50 years ago were supporting rows of tobacco today support oil storage tanks, silos or heavy office buildings. Constructing a plant or refinery in this state will require a carefully thought out foundation, but not necessarily a highly expensive one. ■

This address was delivered to the Baton Rouge Chapter of LES in September.

The Natural Gas Crisis - - - One Piece of the Puzzle

WILLIAM C. BAILEY, JR.
Associate Director
Louisiana Petroleum Institute

To understand what has happened and what is happening with respect to our nation's energy sources, let us first establish a few basic facts.

Petroleum—that is, oil and gas—today provides this nation with 75 per cent of its energy. Coal provides 20 per cent, hydropower 3.6 per cent and nuclear power .3 of one per cent.

Demand for petroleum has literally skyrocketed in recent years. The U. S. Bureau of Mines has forecast that while Americans consumed 100 billion barrels of oil in the first 109 years of the industry's existence, in less than a third of this time—1968 to the year 2000—domestic demand will soar to 233 billion barrels or about two and a half times the consumption of the first 109 years.

The bureau says Americans are now using 14.8 million barrels of oil per day—enough to fill 62,000 railroad tank cars which would make a train 500 miles in length—long enough to stretch from Baton Rouge, Louisiana, to Atlanta, Georgia.

Natural gas consumption, according to the Department of Interior, is expected to rise from a 1967 level of 18.2 trillion cubic feet to nearly 25 trillion cubic feet in 1980 and more than 40 trillion cubic feet by the end of the century.

In the face of this spiraling demand, the petroleum industry faces unprecedented restrictive government policies that have the effect, if not the intent, of discouraging exploration for new oil and gas reserves.

There can be no question that this nation is using oil and gas faster than new reserves are being found. Ten years ago, proved oil reserves amounted to a 13-year supply. Today, proved reserves are down to a 10-year supply.

During the same 10-year period, natural gas reserves have declined from a 22-year supply to a 15-year supply. With fields in the lower 48 states expected to pass their prime in the 1970's, this downward trend will continue unless new sources are found.

For those who are looking north to Alaska, it must be remembered that in addition to the fantastic production and transportation costs involved, the entire Prudhoe Bay field could produce only about a two-year supply of oil for this nation at the anticipated rate of consumption in the 1980's.

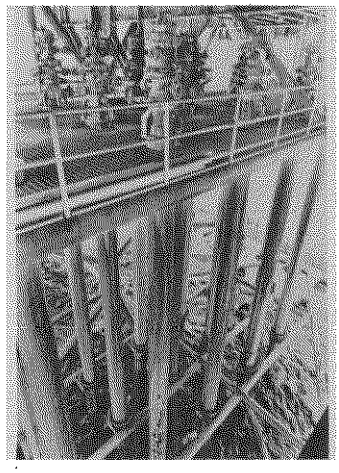
So while reserves have been dwindling and demand has been rising, where have the companies been left?

We must first recognize that the oil business is a very expensive business to get into and a very easy one in which one may lose one's shirt.

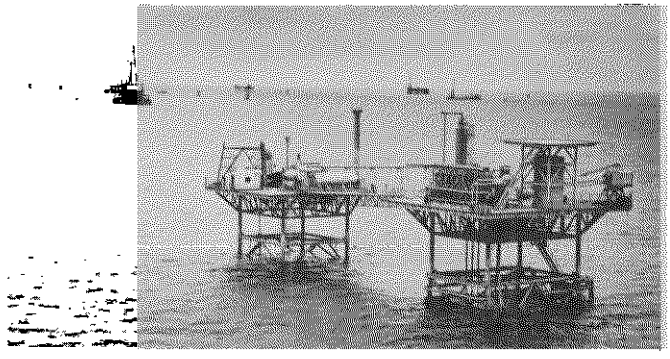
The odds against finding an economically feasible well are about one in a hundred in unproven fields. The ante can run $100,000 on land and five times that amount offshore. You can get better odds with much lower investment on any Las Vegas crap table.

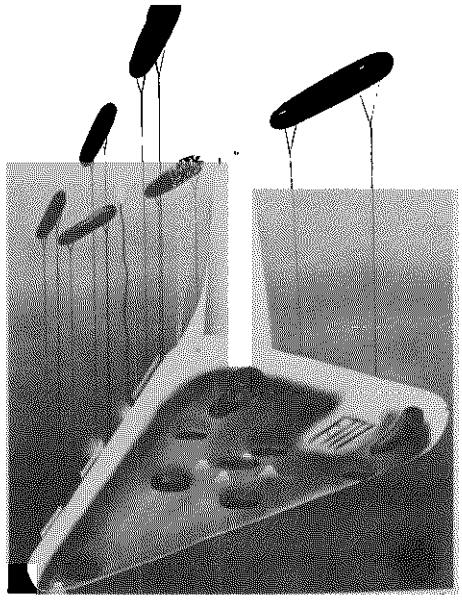
And if you win, where are you? According to the First National City Bank of New York, the average return on investment for all manufacturing a

This "forest of Christmas trees" is located on an offshore production platform in the Gulf of Mexico. These valves and fittings control the flow of oil and gas from wells.



Petroleum gathering platforms like the one in the foreground collect oil and gas produced from several wells and send it on to shore.





The petroleum industry is preparing for the time when it may be possible to send complete drilling rigs to rest on the ocean floor while searching for oil or natural gas. This drawing shows one of several concepts being studied.

year ago was 13.2 per cent, while the petroleum industry showed an average return of 12.3 per cent.

Congress, meanwhile, saw fit to cut the percentage depletion provision in our federal tax laws for the first time since it was enacted in 1926. This provision had proven very successful in encouraging oilmen to seek new reserves. Unquestionably its reduction—which cost the industry an estimated half billion dollars the first year—is doing nothing to encourage exploration for new reserves.

Then came the threat that the Mandatory Oil Import Control Program of 1959 would be scrapped and, with all its other woes, the domestic industry would be forced to compete with a flood of cheap foreign oil.

A cabinet level task force had in fact recommended abolition of the import control program, but the President of the United States read correctly the energy crisis signs that by this summer were cropping up almost daily and he very wisely decided to keep the system limiting crude oil imports to 12.2 per cent of domestic production.

This provision, by the way, was implemented in 1959 by President Eisenhower in the interest of national security and on the recommendation of the office of Civil and Defense Mobilization which saw the very existence of the domestic industry threatened by rising foreign imports.

The New York Times News Service said in a July article that the petroleum industry is seeing some of its serious warnings and forecasts proven correct—among them the folly of dependence on Middle East oil, the repercussions of federally-set low natural gas prices and the headlong rush into low-sulphur, anti-pollution legislation and regulations.

Predictions that we were making two or three years ago were branded by our critics as "self-serving." Today, some of those same critics are asking, "Why didn't you tell us this was going to happen?"

In addition to the aforementioned deterrents to exploration, gas producers have encountered a depressed pricing situation resulting from a federal take-over of price regulation in 1954 as a result of the Supreme Court's decision in the case of Phillips Petroleum Company vs. Wisconsin.

In this decision, the court ruled that the Federal Power Commission was required to regulate field prices for natural gas. Prior to 1954, the FPC had limited its regulatory authority to the rates charged by interstate pipelines for gas sold to utility companies.

Since 1954, the FPC has been struggling with countless problems resulting from this unsought addition to its jurisdiction. Exploration and development declined and thus we have the present shortage of natural gas.

What is the solution to the problem? Many of us in the industry feel that the only real solution is to get the FPC out of the price regulation business.

Other possible solutions that have been offered include imports, production of gas from

synthetic sources, and of course, stimulation of greater domestic production.

The most obvious sources are Canada and Mexico but, in addition to cost factors, these nations are facing increasing demands of their own. The potential supply of liquefied natural gas from other continents is large but here again high costs would deter importation.

Gas could be produced from coal, oil shales and tar sands but technology is untested and costs are likely to be quite high.

Nuclear stimulation of existing fields with poor recovery factors should result in increased production, but little is known about costs, the effect on recovery factors or the degree of radioactive contamination of the gas produced.

So we return to our premise that stimulation of increased exploration for undiscovered natural gas reserves within the United States is the most promising means of increasing supply.

And if we are to follow this policy, we are going to be compelled to look more and more to the offshore areas.

Louisiana, then, looms as one of the real bright spots in the future.

According to the State Department of Conservation, offshore production of natural and casinghead gas rose from 19.47 per cent of total state production in 1964 to 31.06 per cent in 1968. The department has yet to issue its report on 1969.

Offshore oil production in that same period rose from 31.6 per cent of the total to 40.36 per cent of total state production.

When we get into the offshore segment of our operations, however, still another issue interposes itself and that is concern for the environment.

We believe very strongly that this nation can enjoy a clean environment and at the same time have adequate supplies of the sources of energy that have given us the highest standard of living of any nation in the world.

Unfortunately — perhaps tragically would be a more descriptive word — a legitimate and well-meaning movement to stem pollution has in some instances been infiltrated by those who, for reasons best known to themselves, seem hell bent on the destruction of private industry, the free enterprise system and the way of life which we may sometimes criticize but which we certainly would not trade for that of any other nation in existence.

We in industry and you in the professions cannot afford to abdicate our responsibilities to those who would use ecology as a war cry when ecology is not what they are concerned with at all.

We must offer the leadership in the movement for a clean environment and we must set the example by continuing to clean up our own house.

Industry, agriculture, the professions, government and the public will win the war on pollution as partners — not as adversaries. We have the capability to put men on the moon and bring them home. We also have the capability to clean up our own mess here at home.

Amid the brickbats and the epithets, my industry will continue to perfect its operations so that in the future the leaders of our state government cannot only continue to say that the petroleum industry is not a major polluter, but can also say, without fear of contradiction, that the oil industry is not a polluter . . . period.

While the shortage of natural gas is today on the tip of our tongues and is being dramatized by dire predictions of power failures, brownouts and even rationing, it is simply one piece in a giant puzzle covering the fields of economics, conservation, trade policies, and even the future course that our technology will follow.

If the predicted fuel shortages occur in the northeast this winter, some of the most sound—and perhaps most caustic—advice will come from the chilly living rooms of the constituents of those members of Congress who have, in the name of consumer interest, helped create the crisis we face today.

The senator or congressman who advocated more imports, reduced tax incentives and lower prices in the interest of reducing fuel bills a few cents a month will find little sympathy from the constituent unable to buy the product at any price.

It is unfortunate that it takes a crisis or near crisis to get our feet back on solid earth but this is nothing new.

Supposedly intelligent and well-informed people advocated arms and material shipments to Japan just hours before Pearl Harbor. Others with equally impressive pedigrees and credentials hailed Fidel Castro as a 20th Century Benito Juarez while the firing squads were cleaning their weapons. And we can rest assured that some of our fellow Americans would advocate further restrictions on the petroleum industry right up to the point at which the valves began to close.

We in the petroleum industry are not proceeding under any illusions.

We recognize our responsibility to meet the energy needs of some 200 million Americans and we are aware that our operations are the key to the security of our nation and that of the free world.

We also realize that the support of business, industry, the free enterprise system and — if you please — the establishment, is not going to be easy in the 1970's.

As a matter of fact, I cannot recall when it was ever an easy chore, whether we were concerned with a politically motivated attack by word or in print or with a bomb planted in the dead of night in an oilfield or a skyscraper.

But support it we must and defend it we will. Because I believe from the very bottom of my heart that this great industry that I represent is the very symbol of the system of free enterprise and competitive spirit that made this nation great.

Whether as an engineer, an oilman or just a plain American, I can't recall the day when that wasn't worth fighting for. Can you? ■

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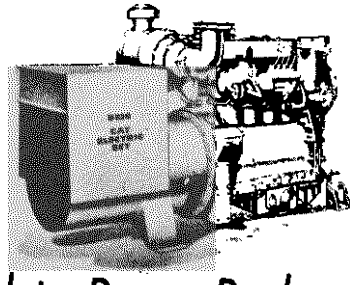
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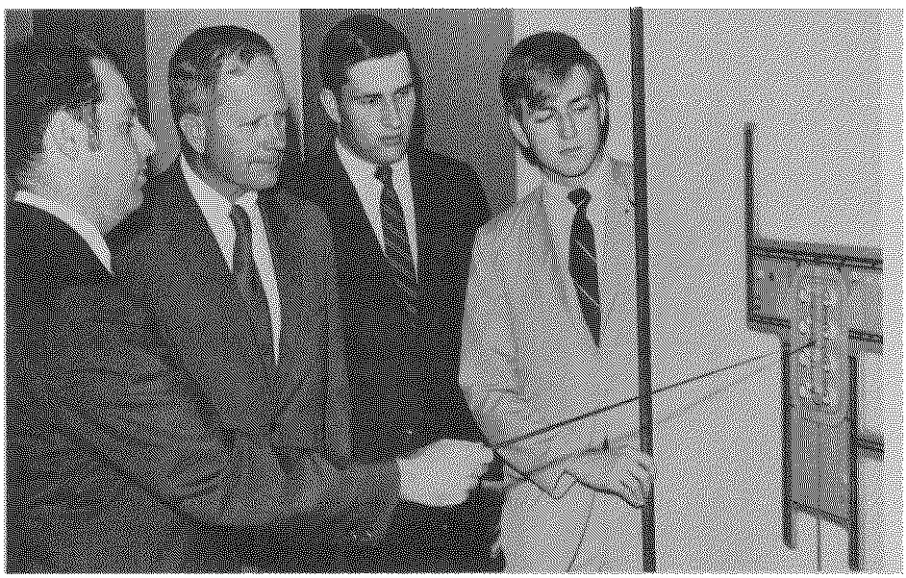
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Tulane Educates Practicing Engineers

An Interview with Professor Walter Blessey, Head of the Department of Civil Engineering



Students explain the feasibility of locating a regional airport in Lake Pontchartrain to Professor Blessey, second from left.

Much concern has been expressed in recent years about declining enrollments in engineering colleges and failure of some engineering curricula to educate engineers to practice engineering.

It is refreshing, therefore, to meet with Professor Walter Blessey, head of the Department of Civil Engineering at Tulane University, where undergraduate engineering enrollment has increased every year for the last six years, and where the graduate program in Civil Engineering has attracted an average of 60 students every year during the same time.

Notable is the fact that more than 80 percent of these are practicing engineers, employed by industry, government, or consulting firms, who take the time from their business or personal schedules to continue their education in a profession in which they have already established themselves and found employment.

This quite evidently refutes the thought, sometimes expressed, that present day engineering colleges do not properly relate to the practice of engineering—refutes it, insofar as the Tulane Department of Civil Engineering is concerned. As the dean of a college of engineering in another state said in a letter to Professor Blessey, "You must be doing something right!" This dean had written for information on Tulane's Civil Engineering program after noting the strong continuing enrollment in civil engineering at Tulane, whereas interest in this branch has declined in other areas of the country.

Professor Blessey believes it is extremely important to maintain close contact between engineering education and engineering practice. When he became department head he initiated, and has maintained since, a program of visiting lecturers who regularly teach classes in civil engineering subjects to junior, senior and graduate students.

A successful consulting engineer himself, with many notable projects to his credit, Professor Blessey believes there is no substitute for experience. The visiting lecturers are seasoned veterans in the fields of consulting practice, construction, structural design, plant operation, and contract administration; and the students who study under them get the benefit of their years of experience in the practical application of engineering principles.

The fact that industry, government and consulting firms appreciate the value of Tulane's continuing education program for engineers is borne out by the fact that they permit their engineers to arrange their working hours to attend the classes. The Department of Civil Engineering helps by scheduling many of the classes for early morning or late afternoon hours, and in evenings. Many of the industries and consulting firms also pay the tuition of their engineers for the graduate courses.

Most of the engineers in the graduate program are working toward a graduate degree, and for this the department requires a thesis. Professor Blessey thinks the thesis is very important, stating, "The presentation, both oral and written, of a formal, professionally oriented thesis is one of the most significant experiences in a young graduate student's career."

Emphasis on Thesis

Tulane's graduate students in civil engineering have turned out many excellent theses in the past 60 years, and the subject matter of these is most interesting, showing a keen awareness by the graduate engineering students of interaction of population and environment, and the constructive role of the engineer therein. Consider, for instance, the thesis:

"On the Bacterial Pollution of the Mississippi River Water by the Sewage Effluent from the City of New Orleans," by Henry E. Lemoine, in 1913—this in 1913, fifty years before the general public awareness of pollution problems.

Or consider again: "Grade Crossing Elimination Aspects of the Proposed Union Passenger Terminal Program for New Orleans" — George A. Heft — 1940, the first major step in correcting the traffic problems throttling the city's growth, or:

"An Experimental Study of Liquid Wastes from a Small Slaughterhouse"—W. C. Harris, Jr.—1959, directed toward correcting industrial pollution from such sources, or:

"A Study of Process Waste Treatment at a Petrochemical Plant on the Mississippi River" —Alvin S. Flettrich, Jr.—1967, reporting on sophisticated methods used by such plants for eliminating pollution.

Also of interest: "A Study of Harbor Pollution by Sanitary Wastes Discharged from Ships of the United States Navy and a Summary of Recent Efforts to Eliminate this Pollution"—Donald Campbell — 1967, describing attempts to eliminate government sources of pollution.



Professor Walter Blessey

Other graduate theses relate to economies of prestressed concrete construction, wave forces on engineering structures, pile capacities in alluvial soils, workover rig arrangements for offshore structures, infiltration and bedding of sanitary sewers, soil movements and their effects on pipelines, levee construction in coastal areas, shore protection, multi-story building frames, containerization, and scores of other subjects.

Since Professor Blessey assumed the chairmanship of the department in 1959 graduate enrollment has tripled, and in the last seven years the part-time enrollment has averaged just under 50 per year and the full time, 11 per year. Undergraduate enrollment in the C. E. Department has consistently been the largest in the engineering school.

Professor Blessey emphasizes that his is a practical program, directed to practicing engineers, intended to assist them in continuing their education. He states, "Since 1937 the Civil Engineering Department at Tulane has consistently followed a policy of encouraging professional engineers with Bachelor degrees to pursue graduate work leading to the Master's degree on a part-time basis while holding a full-time job." The success of the program is evident. ■

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EDITOR'S NOTE: The Committee on Ethics and Professional Practice has been authorized to present in the ENGINEER a series of cases concering misconduct or unethical practice. This is the first of the series that will appear in each of the next six issues. The subject matter will be cases handled by the Committee or selected cases from the Board of Ethical Review of the National Society of Professional Engineers. The Committee takes cognizance of the fact that every professional engineer worthy of that title is aware of his obligation to conduct himself and practice his profession in accordance with ethical standards. The purpose of these articles is to remind us all to make ethics a real force in our professional lives.

ENGINEER MEMBERSHIP IN LABOR UNIONS

A labor organization (union) represents engineers and scientists of a large corporation for purposes of collective bargaining under a certification issued by the National Labor Relations Board pursuant to the Labor Management Relations Act, 1947, as amended. Membership in the union is voluntary. Some engineers, who are also members of the state society of professional engineers, are members. The union has engaged in strikes against the company on several occasions and has, during such periods, used picket lines and banners to air their grievances. Union spokesmen have often issued public statements concerning disputes with the employer which are of a hostile and derogatory nature. On some occasions engineers who are members of the union have verbally assailed nonmember engineers for their refusal to join the union or for crossing the picket lines in order to perform their duties.

Question:

Is it ethical for an engineer to be a member of a union, or participate in union activity of a coercive nature?

References:

Canons of Ethics—Canon 8—"The engineer will act in professional matters for each client or employer as a faithful agent or trustee."

Canon 19—"The engineer will endeavor to protect the engineering profession collectively and individually from misrepresentation and misunderstanding."

Rules of Professional Conduct —Rule 1—"He will be guided in all his relations by the highest standards."

Rule 9—"He will regard his duty to the public welfare as paramount."

Discussion:

The national labor law gives an engineer, as well as any other employee, the right to be represented by a union and to be a member of it. Although not present in this case, some collective bargaining arrangements involving engineers contain a union shop clause under which the engineer-employee may be required to be a member of the union to hold his job. The National Society of Professional Engineers, as well as other national engineering organizations, has long held that professionalism and unionism are incompatible and has discouraged the union approach as a proper method for engineers to seek the elevation of their economic or professional status. In view of the extensive NSPE literature on this subject, it is not necessary to repeat the many reasons for this opposition to unions for engineers.

Standing alone, it is clear that the Canons and Rules are opposed to the basic concept and approach of unions for engineers who have a professional responsibility. Experience has demonstrated, beyond any reasonable doubt, that an engineer with a union-minded attitude cannot and does not regard his relations with his employer as that of a faithful agent or trustee. And it is likewise clear that such an attitude entails misunderstanding of the engineering profession by the public and is in conflict with the engineer's duty to maintain the highest standards of the profession and regard the public welfare as paramount to his own.

There are special circumstances, however, in which it is difficult for an engineer to avoid membership in a labor union. Where a union is strongly entrenched and most of his fellow engineers in the company, or a particular section or work unit, belong to the union the engineer is under extreme practical pressure to conform to the group, or risk an unpleasant and disruptive work relationship. There have been some instances in which an engineer under these circumstances was unable to perform his work properly and was isolated from the normal intercourse which is vital in professional team operations. There have been recorded cases in which the engineer was coerced to join the union to secure a benefit not available to nonmembers, e.g., health insurance at reduced group rates under a collective bargaining contract with the company. While it is hoped that employers would not enter into arrangements which favor union members over nonmembers, we must recognize that this is sometimes done.

There can be no question about the application of the Canons and Rules to the *conduct* of engineers, whether members of a union or not. No matter what pressure the engineer might be subjected to he cannot engage in strikes, picketing or other coercive union tactics without a direct violation of the Canons and Rules cited above. Such conduct holds the engineering profession up to contempt by the general public in placing

self above service. This is particularly true in situations involving defense operations or other critical areas. The engineer who engages in coercive union tactics divides the engineering profession into hostile camps—those who seek to continue their duties together with those in supervisory capacities, versus those who engage in coercive tactics. Coercive conduct of this nature identifies the engineer (and the engineering profession) as "labor." The entire effort and purpose of the engineering profession has been to achieve recognition and status as a profession, which can be earned only by devotion to public service and by placing the public welfare above the interests of the individual.

What we have said in this opinion does not preclude engineers from seeking *through professional means* the advancement of their economic and professional status. This can be and is being accomplished through various programs in collaboration with the professional engineering societies on the basis of cooperative relations with employers. But, it must be re-emphasized that the goal of professional advancement cannot be achieved except on the basis of full adherence to the spirit of the Canons of Ethics as well as its explicit provisions. We believe it will be helpful to call attention to the Foreword of the Canons which sets the tone for all the Canons and which is particularly appropriate to the questions raised in this case:

"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 passive observance, but as a set of dynamic principles guiding his conduct and way of life. It is his duty to practice his profession according to these Canons of Ethics.

"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. It is his duty to interest himself in public welfare and to be ready to apply his special knowledge for the benefit of mankind. He should uphold the honor and dignity of his profession and avoid association with any enterprise of questionable character. In his dealings with fellow engineers he should be fair and tolerant."

Conclusion:

Although the Canons and Rules do not refer specifically to membership in organizations, participation by an engineer in a union involves him in a nonprofessional atmosphere and prejudices his professional status. Engineers may not ethically engage in strikes, picketing, or other coercive tactics, as such conduct is a direct violation of the Canons and Rules.

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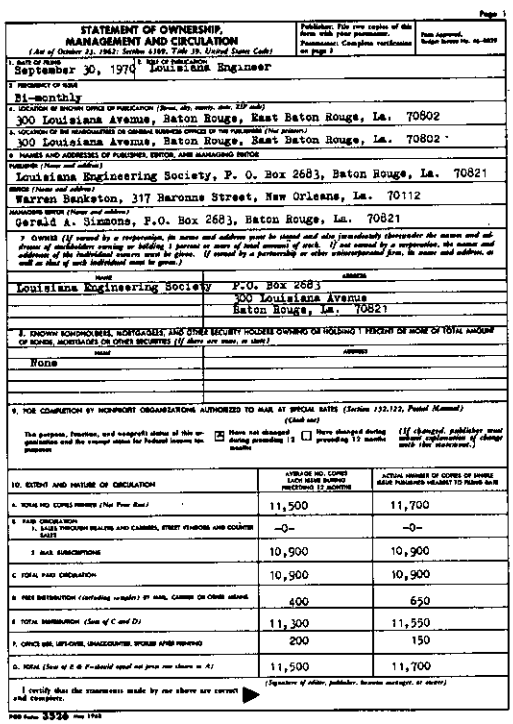
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Land Surveyors Registration Fee Increased

The Louisiana State Board of Registration for Professional Engineers and Land Surveyors announced recently that the renewal fee for Land Surveyor registration will be increased from $3.00 to $5.00 effective December 31, 1970. This increase will bring the renewal fee for Land Surveyors more in line with the $7.50 renewal fee paid by engineers registered in a single branch. Act 685 of the 1970 Legislature provided for the separation of the professions of Land Surveying and engineering and required that all persons registered as Civil Engineers on September 1, 1970 be issued certificates as Land Surveyors. The increase in the renewal fee will help to offset the increase in the operating expenses of the Board.

STATEMENT OF OWNERSHIP



STATEMENT OF OWNERSHIP, MANAGEMENT AND CIRCULATION
(Act of October 23, 1962: Section 4369, Title 39, United States Code)

Publication: File two copies of this form with your postmaster. Postmaster: Complete certificate on page 3

1. DATE OF FILING: September 30, 1970
2. TITLE OF PUBLICATION: Louisiana Engineer
3. FREQUENCY OF ISSUE: Bi-monthly
4. LOCATION OF KNOWN OFFICE OF PUBLICATION (Street, city, county, state, ZIP code): 300 Louisiana Avenue, Baton Rouge, East Baton Rouge, La. 70802
5. LOCATION OF THE HEADQUARTERS OR GENERAL BUSINESS OFFICES OF THE PUBLISHERS (Not printers): 300 Louisiana Avenue, Baton Rouge, East Baton Rouge, La. 70802
6. NAMES AND ADDRESSES OF PUBLISHER, EDITOR, AND MANAGING EDITOR
PUBLISHER (Name and address): Louisiana Engineering Society, P. O. Box 2683, Baton Rouge, La. 70821
EDITOR (Name and address): Warren Bankston, 317 Baronne Street, New Orleans, La. 70112
MANAGING EDITOR (Name and address): Gerald A. Simmons, P.O. Box 2683, Baton Rouge, La. 70821
7. OWNER (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding 1 percent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a partnership or other unincorporated firm, its name and address, as well as that of each individual must be given.)

NAME	ADDRESS
Louisiana Engineering Society	P.O. Box 2683 300 Louisiana Avenue Baton Rouge, La. 70821

8. KNOWN BONDHOLDERS, MORTGAGEES, AND OTHER SECURITY HOLDERS OWNING OR HOLDING 1 PERCENT OR MORE OF TOTAL AMOUNT OF BONDS, MORTGAGES OR OTHER SECURITIES (If there are none, so state)

NAME	ADDRESS
None	

9. FOR COMPLETION BY NONPROFIT ORGANIZATIONS AUTHORIZED TO MAIL AT SPECIAL RATES (Section 132.122, Postal Manual) (Check one)
The purpose, function, and nonprofit status of this organization and the exempt status for Federal income tax purposes: ☒ Have not changed during preceding 12 months ☐ Have changed during preceding 12 months (If changed, publisher must submit explanation of change with this statement.)

10. EXTENT AND NATURE OF CIRCULATION	AVERAGE NO. COPIES EACH ISSUE DURING PRECEDING 12 MONTHS	ACTUAL NUMBER OF COPIES OF SINGLE ISSUE PUBLISHED NEAREST TO FILING DATE
A. TOTAL NO. COPIES PRINTED (Net Press Run)	11,500	11,700
B. PAID CIRCULATION 1. SALES THROUGH DEALERS AND CARRIERS, STREET VENDORS AND COUNTER SALES	-0-	-0-
2. MAIL SUBSCRIPTIONS	10,900	10,900
C. TOTAL PAID CIRCULATION	10,900	10,900
D. FREE DISTRIBUTION (including samples) BY MAIL, CARRIER OR OTHER MEANS	400	650
E. TOTAL DISTRIBUTION (Sum of C and D)	11,300	11,550
F. OFFICE USE, LEFT-OVER, UNACCOUNTED, SPOILED AFTER PRINTING	200	150
G. TOTAL (Sum of E & F—should equal net press run shown in A)	11,500	11,700

I certify that the statements made by me above are correct and complete. (Signature of editor, publisher, business manager, or owner)

PSD Form 3526 May 1968

ENGINEWS

Mechanical Engineering Dept. At Tulane Initiates Master Of Engineering Degree

The Mechanical Engineering Department at Tulane University in New Orleans has announced a new program leading to a Master of Engineering degree. The program started with the Fall semester.

The department implemented the program in a manner such that a working engineer employed in the New Orleans area can complete it in 71 weeks of part-time effort, in a format that will conflict in a minimal way with his normal working hours.

Requirements for the degree are 24 semester hours (eight courses) of formal course work and six semester hours involving the solution of an appropriate individual problem in engineering design, analysis or research.

A baccalaureate degree in some branch of engineering or physics is required for admission.

Additional information can be obtained from the Mechanical Engineering Department at the university.

NATIONAL SOCIETY OF PROFESSIONAL ENGINEERS

Southwestern Regional Meeting

The New Mexico Society will host the annual N.S.P.E. Southwestern Regional Meeting. It will be held at Western Skies Motor Hotel in Albuquerque on October 22, 23, and 24, 1970. All N.S.P.E. members are invited, with a special invitation being extended to State Officers, Executive Secretaries, and Practice Section Chairmen.

A no-host luncheon on Thursday, October 22 will kick off the meeting. This will be followed by Practice Section business sessions on Thursday afternoon. Friday morning sessions include panel discussions on membership efforts and on relationships between the National Society and State Societies. Reports from State Societies and from Practice Sections will provide the agenda for Friday afternoon. A discussion of legislative activities and a business meeting will be held on Saturday morning. The meeting will adjourn at 12:00 noon on Saturday.

1970 EVANGELINE REGIONAL MEETING—OILFIELD POLLUTION

Municipal Auditorium—Lafayette, La.
November 9-10, 1970

Robert H. McLemore, President, Society Petroleum Engineers, Dallas, Texas, will present the 1970 Evangeline Regional Meeting's welcoming address and introduce the keynote speaker, Kenneth Biglane of Washington, D. C. Biglane, director of the division of oil and hazardous materials, Department of Interior, will speak on government guidelines for pollution control.

L. F. Davis, executive vice president of exploration and production, Atlantic-Richfield Company, New York, will be the feature speaker at the opening day luncheon. Mr. Davis will be speaking to the group on corporate views of environmental protection.

An outstanding program is planned during the two day technical sessions. Four major topics will be discussed covering Disposal Technology; Corporate Views and Legal Aspects; Equipment and Techniques; Cleanup and Environment.

Registration will be $15 for SPE members and $25 for non-members. Information on registration can be obtained from Henry E. Featherston, Halliburton Services, P. O. Box 3647, Lafayette, Louisiana 70501.

Gulf-Southwest Sectional Meeting American Society for Engineering Education

March 25, 26 & 27, 1971

Louisiana Tech University

All members will receive pre-registration information in November, 1970.

For additional information, contact:

Prof. Grover J. Trammell,
General Chairman

Dept. of Mechanical Engineering
Louisiana Tech University
Ruston, Louisiana 71270

MEMBERSHIP STANDING, SEPT. 11, 1970

Position	Chapter	Applications	Quota	% Quota
1	Bayou	2	4	50.000
2	Monroe	5	15	33.333
3	New Orleans	18	86	20.930
4	Baton Rouge	8	55	14.545
5	Lake Charles	1	14	7.143
6,7	Alexandria	1	15	6.667
6.7	Lafayette	1	15	6.667
8	Shreveport	1	23	4.348
	State totals	37	227	16.300



OLD



NEW

L. H. Rogers of the Shreveport chapter, and Don Sanders and Curtiss Mann of the New Orleans chapter, were winners of the LES lapel emblem contest. The old and new designs are shown here.

Engineering Technicians

The Board of Trustees of the Institute for the Certification of Engineering Technicians (ICET) announced that by 1973 engineering technicians will be required to take a written examination to become certified by the Institute. The change is one of three new requirements recently approved by the ICET Board. They are:

1. After December 31, 1972 each applicant for initial certification to the Junior Engineering or Engineering Technician grade who has not graduated from an accredited ECPD (Engineers' Council for Professional Development) engineering technology curriculum will be required to pass a written examination as prescribed by the Board of Trustees.

2. After December 31, 1972 each applicant for initial certification to the Senior Engineering Technician grade will be required to prepare and submit a paper of a grade and character satisfactory to the Board of Trustees. This paper will be in lieu of a written examination, it must be at least 5,000 words, and on a subject pertinent to and consistent with current engineering technology practice in the field of the applicant's technical specialty.

3. Each applicant for upgrading to the Senior Engineering Technician grade must comply with paragraph 2 after December 31, 1975.

ICET was established by the National Society of Professional Engineers in 1962 to recognize the important work being performed by engineering technicians in support of engineering activities. Some 20,500 technicians have so far received certificates on the basis of appropriate practice experience and endorsement by professional engineers, or graduation from an accredited engineering technology program.

The new ICET requirements are for the purpose of adding strength to the certification program by requiring applicants to demonstrate technical competence.

NEW ENGINEERS

PROFESSIONAL ENGINEERS GRANTED REGISTRATION

September 15, 1970

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

ALBERTSON, CHARLES
Trenton, Michigan
Civil

AMY, ALVIN A.
Lafayette, Louisiana
Electrical

ANGLIN, HOMER E., JR.
Decatur, Georgia
Mechanical

BAIR, JAMES G., JR.
Bossier City, Louisiana
Civil

BARRY, WALTER A., JR.
Evanston, Illinois
Civil

BREAUX, CHADWICK P.
Pineville, Louisiana
Mechanical

BRIGHT, ROBERT L.
Metairie, Louisiana
Civil

BRUCE, CAREY C., JR.
Beaumont, Texas
Petroleum

BRUCE, RONALD T.
Metairie, Louisiana
Civil

BURNS, RAY S.
Houston, Texas
Mechanical

CABIRO, RICHARD J.
Metairie, Louisiana
Civil

CAPPS, EDWARD E.
Lipscomb, Alabama
Civil

CAPSHAW, JOHN C.
Corpus Christi, Texas
Petroleum

CAVER, WILLIAM W., JR.
Metairie, Louisiana
Civil

COBB, ELTON L., JR.
Metairie, Louisiana
Civil

COLLINS, MAURICE J.
Detroit, Michigan
Mechanical

CROOKS, SYLVESTER J.
Houston, Texas
Civil

DANIEL, DANA E.
Fort Smith, Arkansas
Civil

DeVILLIER, JAMES O.
Plaquemine, Louisiana
Mechanical

DONNELLY, LLOYD W., JR.
Mobile, Alabama
Mechanical

DUCKWORTH, KENNETH R.
Baker, Louisiana
Electrical

DUTEL, LEWIS A.
Sulphur, Louisiana
Electrical

DUTSCH, THOMAS W.
Baton Rouge, Louisiana
Mechanical

ELLIOTT, JAMES L.
Santa Ana, California
Electrical

FINCHER, WILLIAM G.
Houston, Texas
Mechanical

FRENCH, EDWARD V.
Houston, Texas
Civil

FUNK, RABEY J.
Houston, Texas
Petroleum

GARCIA, RAFAEL J.
Reistertown, Maryland
Chemical

GERNHAUSER, JOHN H.
Oklahoma City, Oklahoma
Civil

GIANGROSSO, ROSARIO A.
New Orleans, Louisiana
Electrical

GONZALEZ, JOSE A.
New Orleans, Louisiana
Civil

HAMILTON, ROBERT L.
Minden, Louisiana
Mechanical

HARVEY, JOSEPH J., III
Langley Park, Maryland
Industrial

HECK, CARL E., JR.
Houma, Louisiana
Civil

HERBST, STEVENS G.
Corpus, Christi, Texas
Petroleum

HUVAL, MALCOLM
Lafayette, Louisiana
Chemical

JERNIGAN, EDWARD B.
New Orleans, Louisiana
Civil

JOHNSON, C. LARRY
Lake Charles, Louisiana
Civil

JONES, ROLAND E.
Slidell, Louisiana
Mechanical

JORDY, JULES J.
Metairie, Louisiana
Mechanical

KELLY, PATRICK C.
Minden, Louisiana
Mechanical

KINCHEN, RICHARD W.
Baton Rouge, Louisiana
Civil

KIRSCHKE, ROBERT H.
Jackson, Michigan
Mechanical

KNIGHT, DANIEL E., JR.
New Orleans, Louisiana
Electrical

KRAHL, DON A.
New Orleans, Louisiana
Mechanical

LORMAND, JEROME D.
Houston, Texas
Civil

LOUBIERE, WILLIAM A.
Plaquemine, Louisiana
Chemical

MANUEL, WILLARD R.
Houston, Texas
Chemical

McCRARY, JOHN D.
Alexandria, Louisiana
Industrial

MEADOWS, MARION T.
West Monroe, Louisiana
Civil

MILLER, DONALD G.
Lake Charles, Louisiana
Chemical

MITCHELL, JAMES W.
Houston, Texas
Civil

MORIARTY, DANIEL G.
Metairie, Louisiana
Petroleum

NAFFE, GERALD T., SR.
Pensacola, Florida
Mechanical

NALL, JOSEPH L., JR.
Birmingham, Alabama
Electrical

PACHECO, PHILLIP L.
Sinton, Texas
Civil

PATTERSON, ROBERT W.
Park Ridge, Illinois
Mechanical

POURCIAU, HERBY R., JR.
Morgan City, Louisiana
Civil

PROVOST, RONALD D.
Metairie, Louisiana
Mechanical

QUIROGA, CARLOS
New Orleans, Louisiana
Electrical

RICH, CHARLES A.
Monroe, Louisiana
Civil

RICHARDS, ROBERT B.
Chicago, Illinois
Civil

RIEWE, ELDOR M.
Dallas, Texas
Civil

ROMEO, RONALD J.
Metairie, Louisiana
Electrical

ROY, RICHARD J.
Metairie, Louisiana
Mechanical

RYAN, MICHAEL L.
Tyler, Texas
Civil

SANDERS, HERBERT C.
Covington, Louisiana
Civil

SHIH, PEI-CHONG
Baton Rouge, Louisiana
Civil

SMIT, GERARDUS M.
Gretna, Louisiana
Mechanical

SMITH, MITCHELL D.
Baton Rouge, Louisiana
Civil

SODERMAN, BYRON N.
Newgulf, Texas
Mechanical

ENGINEWS

STUCKER, GEORGE R., JR.
Baton Rouge, Louisiana
Chemical

SUNDQUIST, W. BLAIR
Metairie, Louisiana
Civil

SWAN, CLEMENT J., JR.
Metairie, Louisiana
Mechanical

TOROK, ANDREW G.
Shreveport, Louisiana
Mechanical

WISE, JERAL D.
Luling, Louisiana
Electrical

WISEMAN, JACK A.
Gretna, Louisiana
Electrical

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Monroe, La. 71201

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New Orleans, La. 70114

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P. O. Box 51231
New Orleans, La. 70150

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MINUTES OF BOARD OF DIRECTORS MEETING

August 7, 1970

Capitol House Hotel — **Baton Rouge, Louisiana**

President Szabo called the meeting to order with the following board members and guests present: F. W. Adams, P.E.; C. P. Barnard, P.E.; John J. Broussard, P.E.; Joe L. Davis III, P.E.; G. R. Dyson, P.E.; Marshall B. Ewing, P.E.; George Heller, P.E.; Lee C. Hill, P.E.; T. J. Hogue, Jr., P.E.; Malcolm Hurstell, P.E.; James S. Janssen, P.E.; F. L. Larue, P.E.; F. E. Milford, Jr., P.E.; Waldemar S. Nelson, P.E.; Richard M. Primeaux, P.E.; Charles W. Stokes, P.E.; and Jack Thigpen, P.E. Guests were: Cliff DeJean, C.P.A., Louis Soulier and Gerald A. Simmons, Executive Secretary.

The minutes of the Board of Directors of June 20, 1970 were approved. The motion for approval was made by Mr. Barnard, seconded by Mr. Hogue and passed.

Audit Report—Dr. Thigpen introduced Mr. Cliff DeJean of the firm of Gustavo Gonzales who presented the Auditor's report. The report generally noted that the cash position of the Society had not changed appreciably from last year. Motion by Mr. Nelson, seconded by Mr. Hill, "that the auditor's report be received as presented." Motion carried.

Financial Report—The financial report was given by Dr. Thigpen for the month of June reflecting year end receipts and expenses. Total income for the fiscal year ending June 30, 1970 was $75,192.80, and expenses for the same period were $77,313.35.

Motion by Mr. Hogue, seconded by Mr. Dyson, "that the financial report be accepted as presented." Motion carried.

Budget Committee Report—The Budget Committee, composed of Mr. Vogt, Mr. Culpepper, Mr. Szabo, Mr. Hogue and Dr. Thigpen, presented a balanced budget of receipts of $78,000 and expenses of $78,000 (a copy of which is attached and made a part of these minutes.)

Motion by Mr. Ewing, seconded by Mr. Primeaux, "that the budget as presented be accepted." Motion carried.

The Board then discussed chapter rebates for the coming calendar year.

Motion by Mr. Hurstell, seconded by Mr. Stokes, "that in the coming calendar year (1971) the chapter rebates be $3.00 per member."

Substitute motion by Mr. Adams, seconded by Mr. Hill, "that the original motion be tabled until the next board meeting." Motion carried.

Proposed Constitutional Amendment—Dr. Thigpen reviewed the status of the proposed amendment to Article IX of the Constitution.

Dr. Thigpen presented letters from more than the necessary majority of members signing the original petition requesting that the proposed amendment be withdrawn.

Practice Section Reports

Professional Engineers in Education—Mr. Larue stated there was no formal report to be presented by the P.E.E. Section.

Professional Engineers in Government—Mr. Dyson, chairman of the P.E.G. Section, made the following report:

1) **Report on July 6-8, PEG Board of Governors Meeting, Portland Oregon**—The Louisiana Engineering Society was represented at this meeting by our P.E.G. delegate, Frank M. Heroy, Jr. A number of resolutions were acted on at this meeting. The most important one which has now also been adopted by the NSPE Board of Directors is a new policy to allow PEG sections, state societies, or chapters to sponsor or affiliate with professional-only organizations for the purpose of seeking recognition under federal executive order 11491. This executive order by President Nixon refers to federal employees for forming and negotiating working conditions and salaries with federal agency heads.

A more detailed report with attachments of copies of resolutions can be made available if desired.

2) **Appointment of New Delegate to NSPE Board of Governors**—The PEG delegate from the Louisiana Engineering Society to the Board of Governors has now been selected. He is Mr. Arthur R. Theis who is now serving as Secretary to the PEG. It is anticipated that Mr. Theis can possibly serve in this capacity for the next three year period and thereby retain a quality of continuity by serving for that duration. This follows the pattern of Mr. Heroy having served in this capacity for the past three years. This approach has proved beneficial to the LES-PEG.

Yet to be resolved is a method to finance travel and conference expenses to attend meetings which will now possibly be once or twice annually.

3) **Contact with Federal Agencies Seeking Information About Activities of Interest**—Contact has been made with representatives of several federal agencies in different locations of the state inquiring as to what activities the PEG could engage in that would be attractive to federal engineers. This procedure was reported to the Board at its recent meeting in Shreveport. It is intended that the PEG will become active in areas that will invite new membership from federal employed engineers and those who are already LES members. Special efforts will be made to have a progress report of a meaningful nature presented to the next meeting of the Board.

4) **PEG Delegates from Chapters**—The opportunity of this board meeting is being utilized to verbally request that each state chapter of the LES appoint a delegate and alternate delegate to represent the chapter in proceedings of the PEG. Their responsibilities and function will be to attend PEG meetings and be knowledgeable of its activities so that current reports can be presented at the chapter level for information and participation in the overall program. Additionally, the delegates and alternate delegates would also be responsible to promote participation and interest in the PEG and LES. This request will be followed by a written communication for your files and to serve as a reminder.

5) **Critical Problem: Salaries of Professional Engineers in State Government**—The outstanding challenge and problem of the PEG at this time is that of providing adequate salaries

for professional engineers in state government. Using the latest salary scale which includes recent upward adjustment and comparing this level to the federal pay scale, it is determined that generally speaking, state salaries would have to be increased about 45% to reach the level of federal pay. This condition certainly must be dealt with forceful and positive actions and such actions should be taken as soon as possible. The LES is the state wide organization which should represent professional engineers in state government.

It was reported at the Shreveport board meeting on June 20th that the LES has a committee already appointed to look into the salary scale of government employees. The PEG is intensely interested in this committee and would like to counsel with the group and present its recommendations for a satisfactory salary scale.

6) The PEG is willing to participate in programs and activities of the chapters and the societies in general. We need only to be asked.

Professional Engineers in Industry—Mr. Janssen, chairman of the P.E.I. Section, made the following report:

Messrs. James Janssen, Charles Stokes and Farrell Adams, all Louisiana PEIs, (as well as other LES members in other functional sections) attended the NSPE Annual Meeting in Portland, Oregon on July 7-11. A good portion of this meeting was devoted to functional section activities with the Professional Engineers in Industry Functional Section being well attended and active. It was interesting to note that the PEIs on a national level were as concerned as we are locally with the engineering school curriculum. There is strong feeling that this must not be left in the hands of the engineering educators alone but that we who work with or hire engineering graduates should have a voice in these matters.

Considerable time was spent both at the PEI Functional Section meetings and later at the general meetings, discussing unionization of engineers. There was some feeling that collective bargaining was being forced upon us and that it would therefore be preferable to have our own bargaining unit rather than to be grouped in a union with non-professional employees. There were others who felt that formation of such a group would be a serious step down the road toward non-professionalism. The incoming NSPE President, Harry C. Simrall of Mississippi, is to appoint a special committee to consider this matter which is of utmost importance to PEIs.

Other topics discussed were portability (from job to job) of pensions and other fringe benefits, patent rights and inventors rewards for PEIs, requirement of registration for engineers in products design (which is in line with the proposal to abolish the exemption of registration requirement for Professional Engineers in Industry), interesting young engineers in NSPE, the role of the engineering technician in industry, and establishment of employment service organizations within the states.

Arrangements have been made for those Louisiana PEIs who so desire to receive the NSPE Newsletter. A LES newsletter has been printed and will be sent to all PEIs in the state shortly.

Professional Engineers in Private Practice—Mr. Moody reported for Mr. Grosch, chairman of the P.E.P.P. Section. He stated that the Manual of Practice has been adopted by both L.E.S. and C.E.C. Both organizations are working jointly to distribute the manuals to state agencies, municipalities, industries, etc. In addition to the above mentioned, copies will be mailed to all P.E.P.P. members with a statement enclosed asking for $1.00 contribution. All requests for additional copies will be assessed $1.00.

Motion by Mr. Stokes, seconded by Mr. Primeaux, "that the P.E.P.P. section be authorized to mail the Manual of Practice with mailing costs to be absorbed by the P.E.P.P. Section." Motion carried.

Mr. Nelson reported briefly on the recent P.E.P.P. section's meeting of N.S.P.E. He stated a review of a new pension plan for engineers would be published in the next issue of the LOUISIANA ENGINEER. If additional information is desired, N.S.P.E. has brochures and material giving a full explanation.

Legislative Committee Report—Mr. Moody, chairman of the Legislative Committee, reported on the recent legislative session. He thanked the leadership of L.E.S. for its excellent cooperation. L.E.S. was 100% successful in implementing its legislative package. Three bills were introduced by the Legislative Committee and all three passed. In addition, the organization followed about 65 bills of interest to engineers. L.E.S. employed Mr. Joe Keogh as its attorney to assist in lobby activities and in digesting bills.

Motion by Mr. Hogue, seconded by Mr. Nelson, "that Chairman Moody and the Legislative Committee be congratulated on an outstanding effort in this past session." Motion carried.

Mr. Szabo then presented Mr. Moody with a plaque from L.E.S. in appreciation of an outstanding job as chairman of the Legislative Committee.

Annual Meeting Plans for 1971—Mr. Szabo recognized Mr. Primeaux for a report on the September Planning Conference in Alexandria. Mr. Primeaux reviewed the agenda and urged all chapter presidents to have a good attendance at the meeting.

Mr. Szabo reported on the meeting with the Mississippi Society to discuss the possibility of a joint meeting. M.E.S. has invited L.E.S. to meet jointly in Biloxi July 23, 24 and 25, 1971. Then L.E.S. would invite M.E.S. to meet jointly in New Orleans in 1972.

Motion by Mr. Hurstell, seconded by Mr. Hogue, that L.E.S. meet jointly with M.E.S. in 1971 in Biloxi and that they meet jointly in 1972 in New Orleans, with details to be worked out by the convention committee. Motion carried.

Motion by Mr. Hurstell, seconded by Mr. Hogue, "that there be a spring meeting of the Society in March of 1971." Motion carried.

Data Processing—Mr. Simmons reviewed briefly the services available to the chapters and practice sections through L.E.S. Each chapter can order mail labels at costs to L.E.S. Practice sections can have print outs of the members of each section and mail labels available up to the amount stated in the budget.

P.E.I. Resolutions — Mr. Janssen reported that he had received a letter from Dean Ben T. Bogard of the School of Engineering at Louisiana Tech expressing strong opposition to the resolution (below) presented by P.E.I. to the Board of Directors at the Shreveport meeting.

Resolution

WHEREAS, The Professional Engineers in Industry wish to express continued concern with the reduction of hours and changes in engineering curriculum in Louisiana colleges and universities which offer engineering curriculum,

IT IS, THEREFORE, urged that the Professional Engineers in Education include Professional Engineers in Industry in their discussions and policy decisions concerning changes in hours and curriculum in engineering education,

WHEREAS, the Professional Engineers in Industry are concerned with the continuing changes in curriculum and reduction of hours required for obtaining engineering degrees, therefore, be it

RESOLVED, that the Board of Direction of the Louisiana Engineering Society appoint an adequate number of non-educators to serve on ECPD inspection teams in Louisiana.

BE IT FURTHER RESOLVED, that ECPD be requested to contact these men so that they might take part in the activities of the inspection teams at Louisiana colleges and universities which offer an engineering curriculum.

Motion by Mr. Stokes, seconded by Mr. Nelson, "that both resolutions be tabled and referred back to the P.E.I. Section." Motion carried.

P.E.P.P. Resolution — The following P.E.P.P. resolution was discussed:

BE IT RESOLVED that the Louisiana Engineering Society hereby respectfully request that the State Office of the Farmers Home Administration, U.S. Dept. of Agriculture, in confirmation of previous negotiations and agreements, recognize the current fee schedules of the ASCE Manual No. 45 and the LES Manual of Practice and subsequent revisions thereto, thereby automatically updating the fee schedules on a routine basis, and that this recognition apply to active projects at this time, wherever possible.

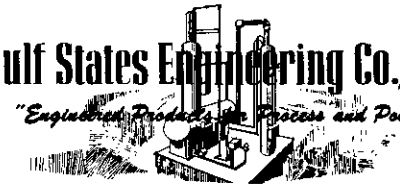
BE IT FURTHER RESOLVED that a copy of this resolution and a copy of the current ASCE Manual No. 45 and a copy of the LES Manual of Practice be mailed to Mr. Joe Rhodes, State Director, F.H.A., 3737 Government Street, Alexandria, La. 71301.

Motion by Mr. Barnard, seconded by Mr. Stokes, "that the P.E.P.P. resolution as stated be adopted." Motion carried.

Report of Lapel Emblem Committee—Mr. Adams reviewed the makeup of the suggested lapel emblem prepared by Mr. Hurstell and presented to the Board at the last meeting.

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METAIRIE SHREVEPORT

Motion by Mr. Adams, seconded by Mr. Hogue, "that a picture of the old lapel pin and the new lapel be shown in the next issue of the LOUISIANA ENGINEER." Motion carried.

Motion by Mr. Adams, seconded by Mr. Hogue, "that L. H. Rogers of the Shreveport chapter, and Don Sanders and Curtiss Mann of the New Orleans chapter, be awarded one year free membership in L.E.S. as winners of the lapel emblem contest and further that their names appear in the LOUISIANA ENGINEER as winners." Motion carried.

Liaison with State Board of Registration Committee Report—Mr. Janssen, chairman of the Liaison Committee, gave the following report:

Item 1. The bill providing for separation of land surveying from civil engineering became law (even though not signed by the Governor).

Item 2. The Consulting Engineers Council has recently appointed a committee for Liaison with the Registration Board.

Item 3. The Registration Board recently lost the court case in which a consultant who has practiced **mechanical** engineering (in which he was licensed) applied for and was denied registration as an **electrical** engineer. He had applied on the basis of "long established practice." Although the case is not finally settled in that the State Board of Registration will appeal, it does serve to point out the necessity of considering the elimination of registration by branches. There has been no indication that the L.E.S. local chapters have been having their "grass roots" meetings to determine the feeling of L.E.S. members on this matter as well as on the proposal to eliminate the exemption for registration of professional engineers in industry. It is suggested that the L.E.S. Board may care to request the incoming chapter presidents to hold such meetings. As previously indicated, individual members of the Liaison Committee are willing to attend such meetings if requested.

Item 4. Dr. Daniel Vliet has informed me that the L.E.S. Board has been officially notified that Mr. Ben Bogard's term will expire shortly. He also informs me that the Board's attorney states that Mr. Bogard is eligible for reappointment.

Mr. Szabo suggested that the Liaison Committee consider the action necessary to receive the proper nominations for a member to fill the vacancy of the term of Mr. Ben Bogard on the State Board of Registration for Professional Engineers and Land Surveyors.

Motion by Mr. Hurstell, seconded by Mr. Dyson, "that the Liaison Committee take the necessary action to determine which section should be represented in filling the vacancy." Motion Carried.

Motion by Mr. Hogue, seconded by Mr. Hill, "that the chapters be instructed by the president and practice sections by the chairman of each section to conduct meetings without delay to discuss the following:

(1) Elimination of branches in registration of professional engineers.
(2) Removal of all exemptions such as now exists for industry and government.
(3) Eliminate the granting of registration for persons who use the section "Long Established Practice" in securing registration (grandfather clause).
(4) Require a second examination in addition to the E.I.T. exam.

Motion carried.

N.S.P.E. Meeting in 1973—After reading a letter from the New Orleans Tourist Commission, Mr. Nelson discussed the possibility of inviting N.S.P.E. to meet in New Orleans in 1973 for its meeting.

Motion by Mr. Nelson, seconded by Mr. Stokes, "that N.S.P.E. be invited to meet in New Orleans in 1973." Motion Carried.

N.S.P.E. Regional Meeting—Mr. Szabo read a letter from Mr. Bovay, Vice President of the Southwestern Region of N.S.P.E., inviting the Executive Secretary to be a panelist at the meeting in October to discuss legislative activites.

Motion by Mr. Nelson, seconded by Mr. Ewing, "that the L.E.S. authorize attendance to the meeting in New Mexico, and that expenses for the meeting be paid by L.E.S. not to exceed $300.00." Motion Carried.

Signature Authority for 1970-71—Dr. Thigpen asked the Board of Directors for action on a request by the bank for signature authority for 1970-71 in order to conduct business.

The Board authorized the following officers to sign checks for the coming fiscal year: Mr. A. J. Szabo, Mr. T. J. Hogue, Jr., Mr. Leo Odom, Dr. J. J. Thigpen, Mr. Charles Barnard and Mr. Gerald A. Simmons.

Dr. Thigpen noted dual signatures will still be required in order to write checks on the L.E.S. account.

Delinquent List—Mr. Simmons reviewed the list of members who have not paid their dues for 1970. He urged chapter presidents to have the chapter board of directors personally contact each member listed and ask that their dues be remitted.

Code of Ethics—Motion by Mr. Adams, seconded by Mr. Ewing, "that the Code of Ethics be distributed to each member of the Board of Directors prior to the next board meeting for their review and then action at the September Board meeting." Motion Carried.

Committee appointments—Mr. Szabo discussed the chapter appointments to the standing committees of L.E.S.

Motion by Mr. Stokes, seconded by Mr. Nelson "that the committee appointments made by the president be approved." Motion Carried.

There being no further business the meeting adjourned.

The next meeting of the Board of Directors will be held in Alexandria, La. at the Holiday Inn, September 12th at 12:30 p.m.

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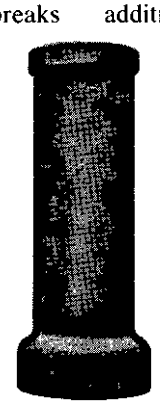
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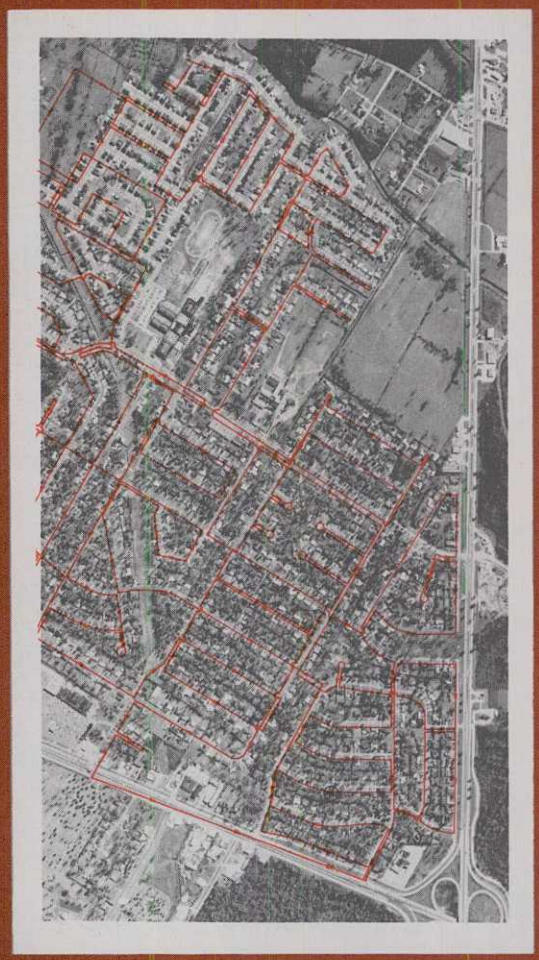
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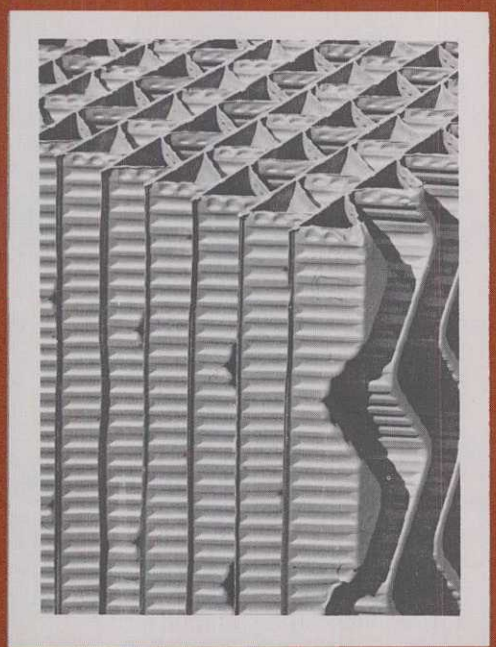
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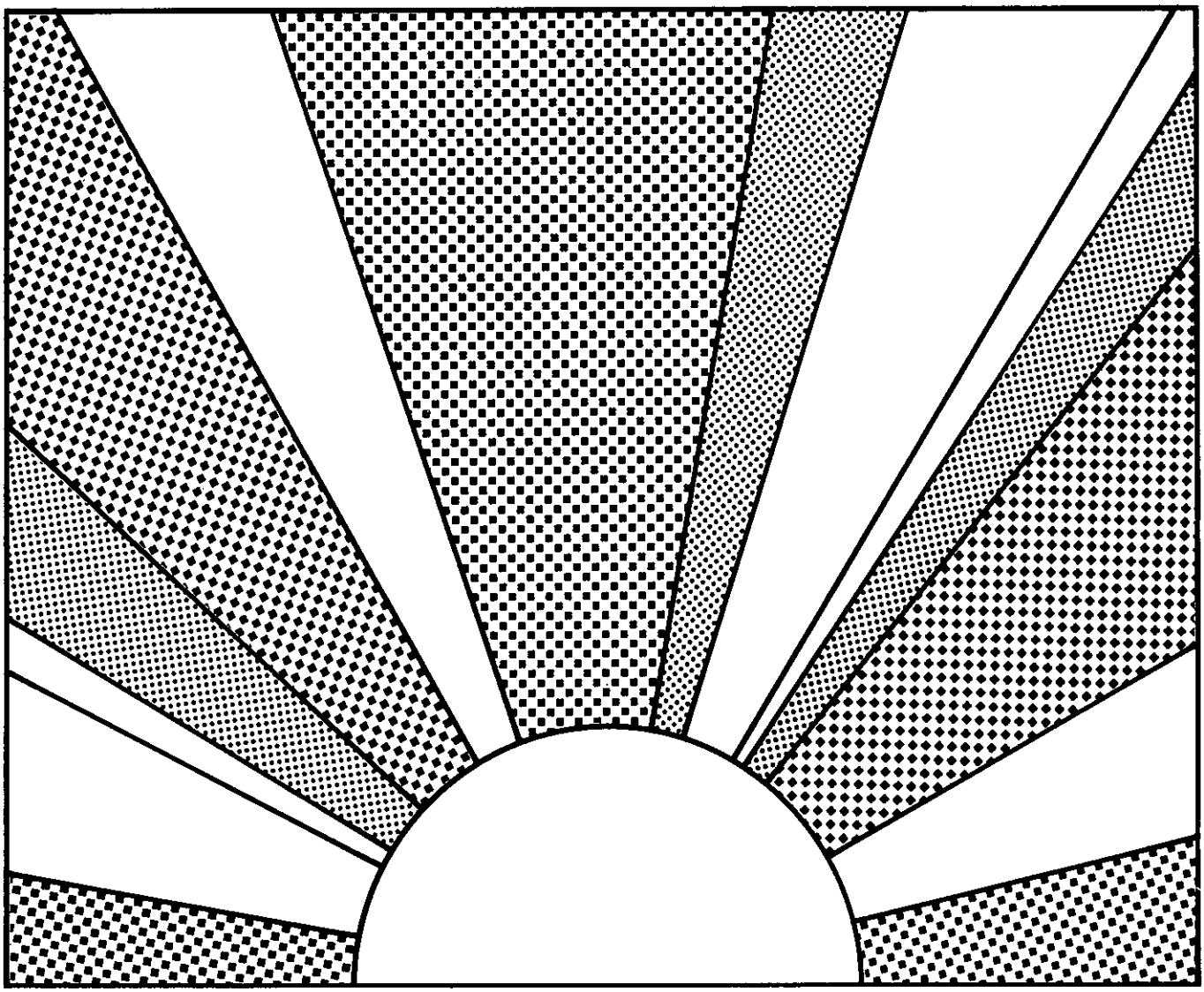
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Help L.E.S. Improve Engineering Education in Louisiana

In order to offer assistance and guidance to the newly formed Louisiana Coordinating Council for Higher Education as it seeks to develop a master plan for higher education, the L.E.S. is anxious to conduct an in depth study of engineering education in the publicly supported institutions of Louisiana. The study will recommend guidelines for a plan of short term and long range development of over-all engineering education to meet the needs for the state with regards to numbers and locations of colleges and fields of study best utilizing funds available to adequately support all such programs.

This vitally needed study of engineering education in Louisiana has been discussed with engineering educators and the Coordinating Council for Higher Education. Everyone agrees that a study such as proposed by L.E.S., conducted by a team of qualified individuals, would be invaluable to the state of Louisiana in developing plans for providing necessary engineering educational opportunities.

This study is being brought about by a growing concern of engineers and employers of engineers in Louisiana. The question of the number of state supported engineering schools now offering courses or degrees . . . the question of state funds to support the 13 engineering schools in Louisiana . . . the question of the number of students awarded degrees from each school . . . the question of why Louisiana doesn't have an engineering school rated in the top 50 in the country . . . the question, are we truly providing the quality education of engineering to the best of our ability with funds now available from the state—or is there a better way to educate potential engineers? These questions and a number of others need to be answered.

An unbiased team of men has been selected by the Board of Directors of L.E.S. to investigate and report back to the Society recommendations on ways to improve engineering education in Louisiana. The team is composed of the following four men:

Dr. Newmann Hall, P.E., Executive Director, National Academy of Engineers, Washington, D.C. Dr. Hall is a native of Pennsylvania, an outstanding engineering educator with experience in research and education, and serves as Executive Director of the National Academy of Engineers.

Dean M. R. Lohmann, P.E., College of Engineering, Oklahoma State University. Dean Lohmann is a native of Minnesota and is presently Dean of the College of Engineering at Oklahoma State University. He has worked as an engineer in government and industry. His interests are in the field of engineering organization and management. He is now president of E.C.P.D., the accrediting agency for engineering schools.

Dr. M. S. Goglia, P.E., Vice Chancellor, University of Georgia System. Dr. Goglia is a mechanical Engineer and now serving as Vice Chancellor of the University of Georgia. He is an outstanding educator and was Dean of the college of engineering at Notre Dame.

Paul Grogan, P. E., University of Wisconsin. Mr. Grogan received his degree from the University of Wisconsin and is now chairman of Engineering Extension Office for the University of Wisconsin. He is a recognized lecturer and has experience in the consultant field. He is a recognized authority on extension education in the field of engineering.

This team was selected with the desire of obtaining eminently qualified, recognized individuals outside the state of Louisiana, and surrounding sister states. The Board feels just such a team as has been selected can provide an unbiased study for the Coordinating Council in determining engineering education needs of Louisiana.

Funds are now being accumulated primarily from industry in Louisiana. In order to do the necessary job, it is estimated the cost will be between $12,000 and $15,000. This money will be used for travel expenses, on site inspections, honorariums, reports and miscellaneous costs involved.

We need your help—a $5.00 per member contribution would assure the success of this undertaking. What a small investment on our part to guide the future course of Engineering Education in Louisiana. Use the clip out below to mail your check.

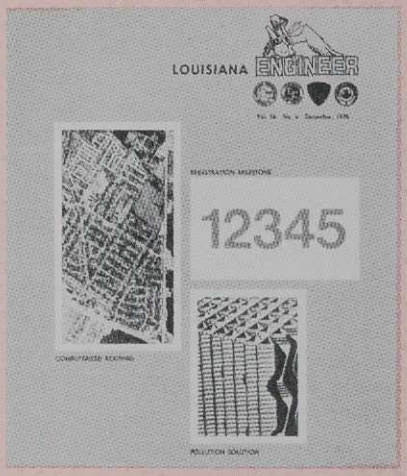
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COVER

This month's LOUISIANA ENGINEER offers readers articles on a milestone for the State Board of Registration, how computers are aiding engineers in solid waste collection, and how plastic media can be used to fight pollution.

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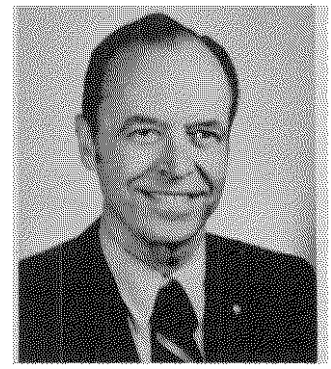
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PRESIDENTIAL PRIVILEGE



Reports are being received from various chapters which have had very interesting meetings on the proposed changes to the Louisiana Registration Law which are now under discussion at the Chapter and Section level in the Society. It has resulted in record attendance at some chapter meetings, and there have been good discussions, it is reported. Thanks are particularly due to Jim Janssen, Chairman of the PEI Section, who has led several of the discussions. If you have not had the opportunity to express yourself, let your chapter officers know your thoughts. It is hoped that the proposed changes can be considered by the Board of Direction during the Spring and that a summary report can be given during the March 17-19 meeting at the Monteleone Hotel in New Orleans.

As you know, the proposed constitutional amendments changing the makeup of the nominating committee and revising the dues structure of the Society were both approved by the membership ballot in October. The dues income will help to finance the increased activities of the Society. If you have suggestions for additional activities or for needs which the Society can help to meet, please communicate your thoughts to your chapter officers or to the state officers. The nominating committee for the year 1971-72 will be selected in accordance with the new constitution revisions.

The Spring meeting in New Orleans in March and the Annual Meeting and Chapter Officers Conference in Biloxi in July will be very important to the continuing progress and functioning of the Society. Plan now to attend. Mark your calendars for March 17-19 and July 23, 24 and 25.

The study of Engineering Education in Louisiana must be started soon if we are to make this important information available to the Coordinating Council for Higher Education by early March. At present, we are just more than halfway to our goal for funds necessary to carry on this study. Please do your part by encouraging your employer if you are in industry or in private practice to make an investment in this study for the benefit of the State of Louisiana. All engineers are invited to show their personal interest and their recognition of the need for a plan for the development of engineering education on a sound basis by making a personal contribution. Just $1.00 per registered engineer or $5.00 per LES member will make this study a reality.

Dean Ben Bogard of Louisiana Tech University has been reappointed to the Louisiana State Board of Registration for Engineers and Land Surveyors by the Governor. Our congratulations to LES member and former President Ben Bogard.

Best wishes to you and yours for a happy and prosperous 1971. May you have a time of true joy and inspiration during the 1970 Christmas Season.

Very truly yours,

A. J. Szabo, P.E.
President

L.E.S. Spring Meeting

March 17-19 — **Monteleone Hotel**, **New Orleans, La.**

L.E.S Annual Meeting and Officers Conference

July 23-25 — **Biloxi, Mississippi**

Optimization is the name of the game

EUGENE H. OWEN, P. E.
President
Owen and White, Inc.
Baton Rouge, Louisiana

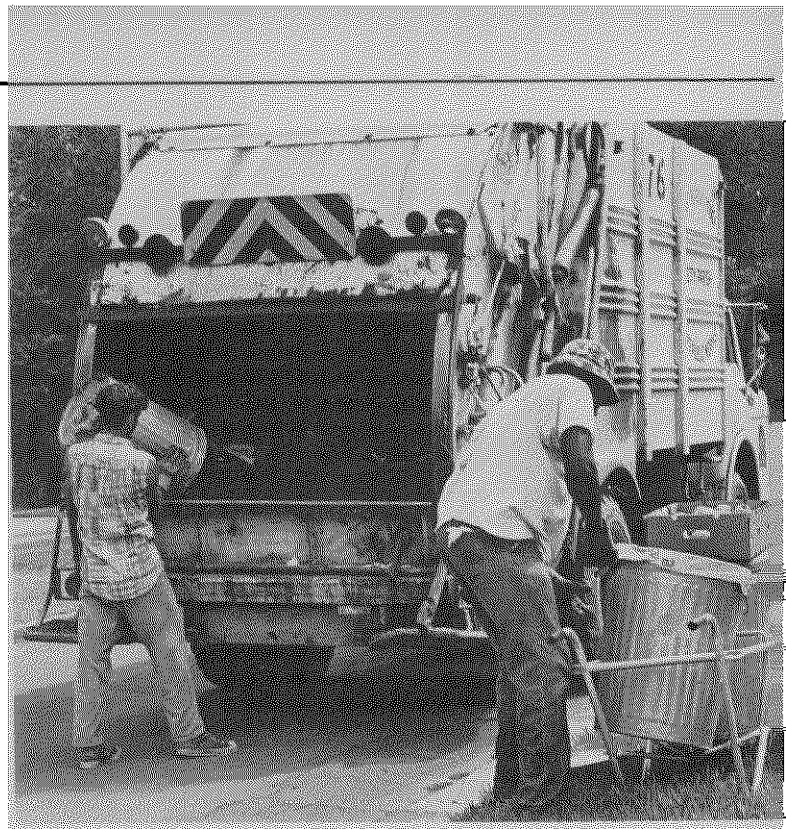


Figure 1. Solid waste disposal costs now are the third largest items in local government budgets, exceeded only by schools and roads.

The application of systems engineering to the solid waste disposal field is producing dramatic results in cities throughout the country. By using advanced computer techniques to design solid waste collection routes, maximum efficiency is obtained at minimum cost.

RAGS is the name of a newly developed family of proprietary computer programs which is successfully reducing solid waste collection costs through systems engineering methods. Proven by full scale field applications during 1970, RAGS has firmly established the value of a systems approach to the management of solid waste collection and disposal operations. The RAGS programs are already being used to plan all solid waste collection activities at Memphis, Tennessee, and at Baton Rouge and Shreveport, Louisiana. The programs will be placed into operation at San Diego during this month.

Using routing and scheduling developed by RAGS, collection costs have been reduced by 10 to 25% through balancing of routes and reductions in crew deadheading time, vehicle operating costs, vehicle accident rate, and capital investment. With equalized routes has come improved employee morale through equalization of "task" assignments.

RAGS is an acronym for Route Analysis, Generation and Simulation. The first comprehensive routing and scheduling program to be applied to the solid waste field, RAGS includes four main programs. These programs provide the routines for optimal route generation, balancing, and mapping; simulation of enroute and off-route activities; location of disposal, garage, and transfer station sites; and for routing and sequencing of containerized collections. These four programs enable the user to optimize and manage all aspects of modern solid waste collection and disposal operations.

Optimal routing has proven rewarding to the municipalities currently using RAGS. At Memphis, the number of daily routes was reduced from 204 to 175. Additionally, service within these areas was increased. Before optimization, only 62% of the homes were serviced twice weekly on a regular basis. Now all are serviced twice weekly, despite the reduction in crews. At Shreveport, the savings achieved were even more dramatic. Daily routes were reduced from 62 to 36, with service remaining at the same level. In each city, the savings amounted to more than 20% of the total solid waste collection budget. As this article goes to press, the optimal routes are being implemented in Baton Rouge with the same level of savings anticipated as was achieved at Shreveport and Memphis.

RAGS is the result of more than three years of research and developmental efforts at Owen and White, Inc. This work, in turn, utilized basic mathematical concepts developed earlier by Dr. Kenneth M. Hunter, an associate of the firm, during several years of basic research. Research and preliminary application engineering studies were conducted at Baton Rouge, Louisiana. These initial results provided the basis for the detailed development of the mathematical model and procedures which are currently used in the programs.



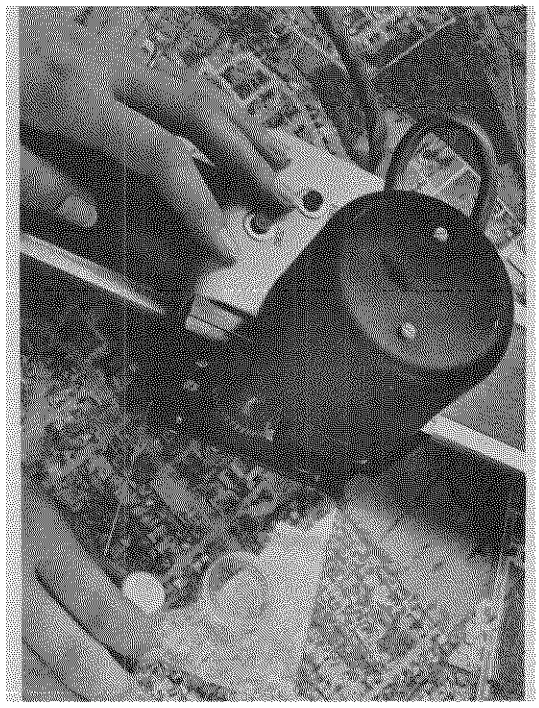


Figure 2. Digitizer is used to automatically measure and record coordinates of street intersections. Closeup of digitizer is shown.

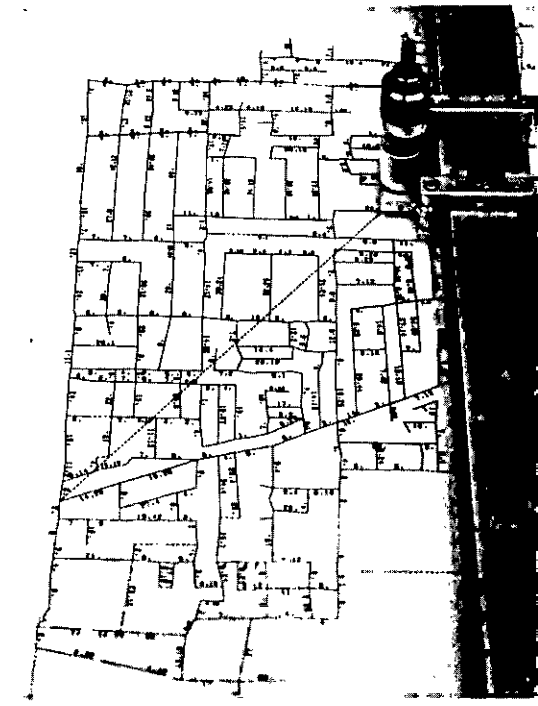


Figure 3. Computer driven plotter provides a graphic edit of principal items in data base.

Although the RAGS family includes four distinct programs, each of these programs may be operated separately as a "stand-alone" program.

RAGS COMPONENTS & FUNCTIONS

Maze

The largest and most complex of the four RAGS programs is MAZE—the route generator. MAZE generates optimal, balanced routes. Each route requires a specified working time to complete it. These time values are calculated by the program, and route lengths are established in accordance with management policies stipulated by the user. Obviously, in order to identify an optimal path and to predict travel time and refuse quantities on that path, MAZE requires a carefully prepared, accurate data base.

Collecting and editing the information required for the MAZE data base is the most costly aspect of using any of the RAGS programs. An incorrect data base produces incorrect answers. Fortunately, this initial expenditure is non-recurring, since maintenance of the data is not difficult.

To use MAZE, a good base map is also necesary. A scale of 1" = 500' has been found to be most convenient for all around utility. At this scale, the driver using a final routing map has no difficulty with either the bulk of too large a scale or the illegibility of too small a scale. A photographic map background is most helpful, particularly for illiterate or semi-literate drivers. For most projects to date, photomapping of the entire city has been provided by Owen and White as a part of the total project, although at San Diego planimetric maps are being used.

The first step in preparing the data base is to assign a unique number to each street intersection, or node. To this node number must be assigned the appropriate geographic coordinates to locate it for subsequent use by the computer. Coordinate measurement is done using the digitizing equipment shown in Figure 2.

To use MAZE, all intersections must be referred to by node number. Consequently, it is necessary as an initial step to produce a set of reproducible maps with the proper node number permanently lettered-in near each intersection. This annotation step is performed by a computer driven plotter which prints each node number at the appropriate location on each map. Annotation also serves as a graphic edit of the accuracy of all coordinates originally digitized. In case of an error, the node appears on the annotated sheet at an incorrect location. Coordinates may conform to any origin convenient to the user.

Copies of these annotated maps are used by data gatherers to develop the required information for the MAZE data base. Information is gathered by street segment—that portion of a street between two adjacent intersections. For each street segment, all houses, apartments, and commercial establishments are counted and classified. Classifications are designed to provide an index to time and garbage quantities calculated later

FIGURE 4



in the program. Consequently, the classifications consider such factors as relative affluence, lot size, age of houses (and families), character of the neighborhood, and point of garbage service (front, rear). The data on each segment also includes information on that street, such as street name; traffic classification; allowable direction of traffic flow, if one way; and other such data.

The accuracy of the data collected must be verified before the information can be permanently filed in the data base. The street segment data is presented to the computer in random fashion, and the computer automatically makes dozens of logical checks to locate any obvious errors. The computer checks for wrong node numbers, duplicated streets, gross errors in dwelling counts or classifications, and other such obvious errors. After correction of all obvious errors, a graphic edit is prepared, drawing and lettering data summaries directly on the map background using a computer driven plotter. (See Figure 3) This step literally draws a picture of the information making up the data base. By comparing the graphic output with the map background (particularly if a photomap base is used), any remaining errors can be quickly located. Any omitted streets stand out clearly at this step. After an office edit, a field check or "plan-in-hand" is given the data base.

The MAZE program uses a number of variables which operate on the data base in order to predict time and quantity. These variables are modified to reflect local conditions, productivity of the collectors, seasonal and weather factors, and other conditions. The value range of these variables is determined through several routines which perform regression analysis to determine the values of the MAZE variables. Thus, productivity standards for Memphis workers, as an example, reflect what these individuals produce under actual conditions in Memphis, as opposed to some arbitrary standard.

Upon verification of the data base and fixing the range of the MAZE variables, only the fixing of certain important constants remains. These constants include crew sizes and wage rates; truck sizes and operating costs; garage, disposal point, and transfer station locations; seasonal and weather patterns expected; and management policies controlling workday length.

The MAZE program accepts the constants specified, uses the variables identified, and operates on the data base with this information to develop a "time map" from the "distance map" which was initially provided the computer. To accomplish this, MAZE uses a built-in probablistic simulation routine to develop probable times and quantities for each segment. Then the program arranges these time segments into an optimal sequence. This optimal sequence—or optimal time path—is divided into equal lengths, each making up a one day assignment in accordance with the management policies specified.

Figure 4. Route maps are drawn automatically by computer driven plotter.

Figure 5. Route maps are easy to use, permitting distribution of route assignments directly from computer to driver.

Figure 6. Written descriptions of routes are used by supervisors to check crew performance.

FIGURE 5

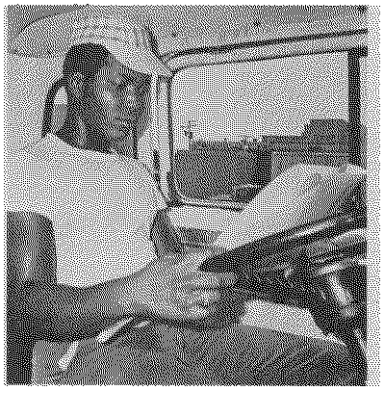


FIGURE 6

OWEN AND WHITE, INC.
BATON ROUGE, LOUISIANA

ROUTE 513 — CITY OF BATON ROUGE — SECTOR 14

LINE NUMBER	TIME HR	TIME MIN	START NODE	END NODE	STREET NAME		NO. OF HOUSES	NO. OF COMM.	CUM. WT LBS	DISTANCE MILES
46	8	8.1	40	19	40	24 DICKENS	LEFT	36	0	4399.0	5.2
49	8	20.0	40	24	40	25 PRESCOTT RD	BACK	14	0	4542.0	5.5
50	8	26.3	40	25	40	24 PRESCOTT RD	AHEAD	0	0	4542.0	5.8
51	8	27.0	40	24	40	23 PRESCOTT RD	LEFT	13	0	4712.0	6.0
52	8	31.1	40	23	41	19 LANIER DR	AHEAD	0	0	4712.0	6.1
53	8	31.3	41	19	41	20 LANIER	BACK	0	0	4712.0	6.1
54	8	31.6	41	20	41	18 LANIER	AHEAD	7	0	4804.0	6.2
55	8	32.3	41	19	40	23 LANIER	AHEAD	0	0	4804.0	6.3
56	8	33.6	40	23	40	26 LANIER	LEFT	18	1	5105.0	6.6
57	8	42.3	40	26	40	27 VIDET	BACK	0	0	5105.0	6.8
58	8	42.6	40	27	40	26 VIDET	LEFT	16	0	5215.0	6.9
59	8	46.6	40	26	40	146 LANIER	AHEAD	0	1	5381.0	6.9
60	8	48.0	40	146	40	143 LANIER	AHEAD	0	0	5381.0	7.0
61	8	48.1	40	143	40	20 LANIER	RIGHT	4	0	5433.0	7.0
62	8	49.3	40	20	40	19 HANKS		10	0	5564.0	7.2
63	8	53.1				LUNCH					7.2
64	9	13.1	40	19	40	17 DICKENS	RIGHT	12	0	5721.0	7.3
65	9	16.8	40	17	40	18 RIFFEL	BACK	0	0	5721.0	7.5
66	9	17.1	40	18	40	17 RIFFEL	RIGHT	14	0	5904.0	7.7
67	9	21.1	40	17	43	16 DICKENS	LEFT	15	0	6103.0	7.9
68	9	26.0	40	16	43	15 DICKENS	RIGHT	2	0	6126.0	7.9
69	9	26.6	40	15	40	151 GREENWELL ST	BACK	0	0	6126.0	8.0
70	9	27.0	40	151	40	15 GREENWELL ST	AHEAD	3	0	6165.0	8.1
71	9	28.8	40	15	40	14 GREENWELL ST	AHEAD	3	0	6204.0	8.2
72	9	30.3	40	14	40	35 GREENWELL ST	LEFT	4	0	6256.0	8.2
73	9	31.8	40	35	40	122 LANIER	RIGHT	6	0	6335.0	8.3
74	9	33.8	40	122	40	121 PHEBUS	RIGHT	8	0	6442.0	8.4
75	9	36.5	40	121	40	120 VELORA	RIGHT	4	0	6492.0	8.5
76	9	38.1	40	120	40	35 GREENWELL ST	RIGHT	2	0	6518.0	8.6
77	9	40.0	40	35	40	122 LANIER	AHEAD	0	0	6518.0	8.7
78	9	40.3	40	122	40	20 LANIER	RIGHT	10	0	6649.0	9.0
79	9	45.6	40	20	40	21 HANKS	LEFT	25	0	6976.0	9.3
80	9	53.6	40	21	40	132 MARIBEL	AHEAD	2	0	7002.0	9.4
81	9	54.6	40	132	40	133 MARIBEL	AHEAD	1	0	7015.0	9.4
82	9	55.1	40	133	40	135 MARIBEL	AHEAD	2	0	7041.0	9.5
83	9	56.8	40	135	40	142 MARIBEL	AHEAD	10	0	7172.0	9.6
88	10	4.5	40	142	40	26 MARIBEL	AHEAD	4	0	7459.0	9.9

When these optimal time paths are determined, MAZE draws the routes on the base map using a computer driven plotter. (See Figure 4)

The resulting map, with its directional arrows defining the route, has proven to be sufficiently easy to use so that these maps can be presented directly to the driver of each garbage truck with a minimum of explanation. A driver can successfully service the assigned route after a maximum of two supervised dry runs. (Figure 5)

In practice, this is usually accomplished by distributing maps to a foreman. The foreman checks each route assignment by driving through the route accompanied by the driver assigned to that route. Then the driver is required to drive the foreman through the route on the second dry run. Thereafter, routes are implemented with no difficulty.

In addition to a graphic output, MAZE also prints a detailed written description of the route complete with predicted time and quantity data. An example of the output is shown in Figure 6. This written description is usually used by the driver's immediate supervisor as a check on crew performance. The practical effect of this tool has proven to be a new awareness of supervisory responsibilities. Where MAZE users do not have access to a computer driven plotter, this written description can be used by a draftsman to make up a route map by hand.

In summary, MAZE determines the number of routes required; balances route length to match management policy; arranges the route segments in an optimal time path sequence; draws a route map; and prints a route description.

Drive

The second of the RAGS programs is a simulation program called DRIVE. DRIVE simulates the simultaneous operation of collection vehicles on assigned routes. DRIVE predicts vehicle interaction, such as queuing at transfer stations or disposal points; generates statistical data on refuse quantities and route mileages; and simulates changes in operating conditions, equipment and methods. DRIVE provides extensive detailed data regarding various time data for each vehicle, such as total collection time, total haul time, waiting time, together with ton miles, total mileage and other vehicular and crew efficiency in summation. These statistics in the form similar to a histogram, are produced to show frequency and extent of overtime, analysis of vehicle capacity utilization, and an analysis of the overall cost in dollars of each day's operation for each vehicle.

DRIVE can simulate on a daily basis the operation of an entire collection organization over extended periods, such as a full year. The effects of a considerable number of variables can be analyzed through simulation of varying seasonal factors, maintenance problems, crew vacations, changes in work schedules or days of collection, changes in crew size, changes in operating procedures (such as changing from can collection to disposable bags), changes in sizes and capacities of vehicles, and variations in weather.

Lots

The third RAGS program is called LOTS—an acronym for Location of Transfer Stations. The LOTS program is a non-linear location program which develops the best locations for transfer stations, garages, and disposal points. Where several disposals points or transfer stations are used, the LOTS program also develops the optimal vehicle assignment to minimize costs from an overall operational standpoint.

The problem of determining the best location for facilities such as transfer stations, garages, and disposal points is extremely complex. The road and transportation network which must be considered comprises a complex non-linear problem. This problem is additionally complicated by the fact that other variables which must be considered are highly interdependent. Land

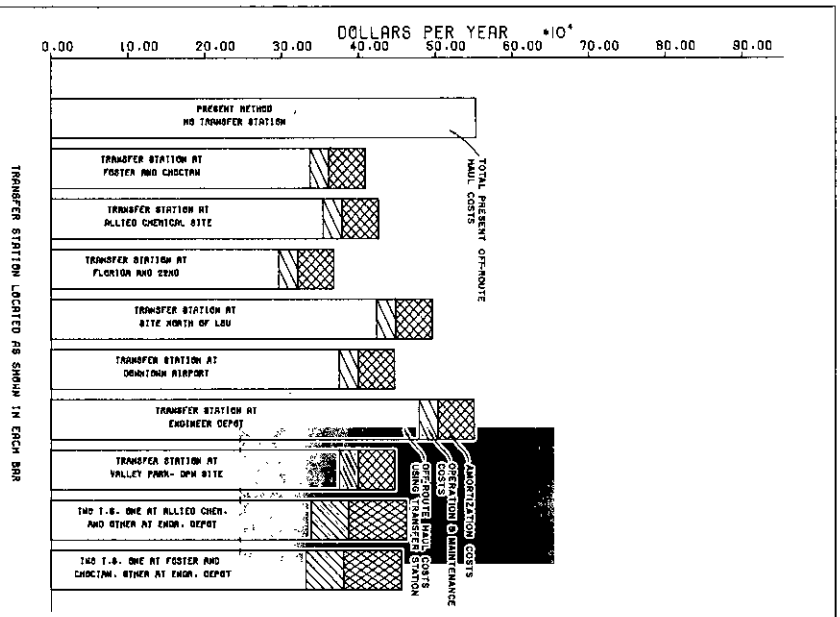


Figure 7. LOTS determines the best location for garages, transfer stations and disposal facilities.

costs, zoning regulations and soil conditions vary widely. Proposed changes to the transportation network can radically alter overall costs and feasibility. Capacity requirements for transfer stations are determined not only by their location but also by the effect of secondary costs associated with processing the tributary tonnage at the station and re-hauling this tonnage to a point of ultimate disposal.

The traditional approach to such location calculations has been a centroidal approach, sometimes combined with linear programming techniques using computers. In a centroidal analysis, effort is made by the investigator to locate the facility near the centroid of the areas to be served in such a way that haul distances are minimized. The centroid approach is sometimes satisfactory, if the problem is relatively simple. In complex problems, however, a solution by this method is usually unsatisfactory—or worse. The centroid approach ignores both high speed arterial routes and natural barriers (such as rivers) in a city, by assuming that time and distance relationships are constant, or linear. Centroidal analysis also usually ignores partial truckloads, varying operating costs, and differing sizes of trucks and crews. Secondary costs for rehandling of refuse between a transfer station and ultimate disposal points must be considered, if at all, using simplifying assumptions.

The LOTS program is an iterative non-linear solution to the location problem, free of the limitations imposed by centroidal analysis. LOTS calculates for each daily truck assignment, the minimum possible off-route haul cost. The solution uses off-route haul costs as the common denominator. Secondary costs for rehandling are considered. Each complete series of iterations fixes at a specific location the garage, transfer stations, and ultimate disposal points for that particular series. By comparing the successive results (total off-route haul costs for each series of iterations), the best location can be easily identified for each type of facility. The best location, of course, is that which minimizes total off-route haul costs.

LOTS identifies for each vehicle the best garage assignment, the best disposal point to be used during the day, and the best disposal point to be used at the end of the day. LOTS tabulates the total time involved in all off-route activities, the number of trips made each day to any disposal point, the total distance involved in off-route activities, and the total off-route costs, including secondary handling costs.

Once the most feasible locations are identified for transfer stations and disposal points, LOTS provides information which can be used as criteria for the design of these facilities. Such information provided in the program output includes the number of trips required to the ultimate disposal point, together with the time and distance required for each of these trips. Also summarized, by day-of-week, is the tonnage tributary to each transfer station and disposal point. These data provide the design criteria which permit the selection of the number of trailers, number of tractors and identification of the required transfer station processing capacity.

The LOTS program has sufficient capacity to accommodate even the largest cities. The program permits evaluation of activities and calculation of cost where vehicles originate from many separate garages and have their choice of ten or more disposal points and transfer stations. The output of the program permits graphing of the output for subsequent analysis.

Box

The fourth program is called BOX. This program develops the optimal sequence for servicing container collection routes by specialized container handling trucks. The BOX program solves a different problem from the MAZE program, although at first glance they seem to be identical. The MAZE program is required to develop an optimal path servicing the whole of each street on which collection is required. The BOX program does not require the truck to traverse every street but only to go from collection point to collection point in an optimal sequence. BOX balances collection loads between vehicles according to capacity rating, develops optimal sequences for different collection frequencies as may be required by the different customers, and allocates costs between routes as they occur. The

program permits monthly updating, providing the billing information for the month just beginning and accepting billing information for the month just completed as the input for restructuring of the model for the subsequent operation.

BOX is a useful program for private haulers as well as municipalities. This program is currently being placed into operation at Miami, Florida, by United Sanitation Services, Inc. United Sanitation is one of the largest private haulers of this type in the United States. The BOX program will ease United's dispatching problems, which currently require three full time employees, as well as achieving operating economies through route optimization.

Proven Results

RAGS has now been in full scale field operation for more than six months at Memphis and Shreveport. The results have proven the feasibility and desirability of mathematical routing and scheduling. All routes at each city are now operating well within the standard deviation forecast for each route. In Memphis, which was the first city to be fully implemented in the field, only 8% of the routes had to be subsequently readjusted to refine predicted time requirements. In Shreveport, no routes were readjusted.

During the initial development of RAGS, phychological testing was performed by Owen and White to evaluate the ability of an individual to manually develop a route with minimum backtracking through a maze approximating a street network found in a modern city. The route lengths subsequently calculated by the computer consistently averaged 21.5% shorter than the manually developed routes. This identical relationship was found at Memphis, Baton Rouge, and Shreveport in comparing the lengths of actual routes versus the overall lengths of the citys' routes after optimization. The time savings realized from this route shortening varied with the geographical relationship of the route to the disposal point. The closer the disposal point, the more nearly the time and distance saved internally within each route was transformed into overall time savings. Initial results have produced overall savings of distance of approximately 15% and total time reduction of approximately 7% due solely to route optimization.

Significantly, because of reduced exposure, and a heavy penalty which the MAZE program places on vehicles backing up, accident reduction is expected to exceed 30%. These savings, together with the accumulative effect of reducing capital expenditures for equipment not needed because of improved efficiencies, achieve an approximate overall reduction in collection cost in excess of 10% of the annual collection budget.

The remaining savings, which have amounted to an additional 10% or more, are accounted for by a variety of other factors. One of these factors is the effect of balancing all routes. The manual generation of routes is traditionally a time consuming, trial and error procedure. At most sanitation departments, once a route is generated and is working well, heaven help the man who ventures to change it. Frequently, routes have existed for more than 20 years in stable neighborhoods, in spite of changing vehicle sizes, crew sizes, traffic patterns and methods. Usually, the changes which have affected these routes are gradual. As traffic becomes more dense and more houses are built, some routes begin to get more and more difficult. Other routes have the opposite history. Houses are torn down. As families grow older, children leave home.

Refuse quantities, correspondingly decrease. In every organization, as routes age, some become easier and some become harder, creating an imbalance between the routes. Equalization of routes achieved surprising economies.

The direct cost savings produced by RAGS do not reflect its total value. Equalization of task assignments meant soaring morale and improved labor-management relationships. Establishment of realistic productivity standards was found to be attainable—and enforceable. With the knowledge and confidence provided by the system, came real management control over the whole work pattern of collection activities.

RAGS promises some relief from the log jam of imponderables demanding decisions—rapid urban growth, construction bottlenecks, changing disposal points. Management has a tool in RAGS which makes possible decisive and effective management of an area of activity which is threatening to become unmanageable without new tools.

Licensing Arrangement

RAGS is available only from Owen and White, Inc., on a licensing basis. Licensing is available to both public and private using agencies for use on their own computer by their own personnel. Licensing arrangements usually require Owen and White to perform all services (except the gathering of certain raw data) necessary to provide the licensee with an operating program accurately simulating his city's operations. This distinction is important, because the licensing agreement goes far beyond the usual software licensing agreement to include the necessary application engineering services necessary to transform a general computer program into one specifically and uniquely adapted to the licensee's particular situation.

Application services may include aerial photography; preparation of photomaps; collection of data; verification and editing of the data base; and initial route generation. Services may also include alteration of the program to permit operation on the user's computer. In such instances, user training and documentation is also provided.

Licensing fees to date have proven to be only a small fraction of the annual savings produced by RAGS. This means net cost savings from the day RAGS is placed into operation. ■

The "New Look" in Federal A-E Contracting

January 7-8, 1971

JUNG HOTEL **NEW ORLEANS**

The "New Look" in Federal A-E Contracting. A national seminar on new and revised Federal Government programs involving utilization of private architect-engineering services.

Three of the major organizations representing design professionals have joined forces in the development and sponsorship of a major conference designed to

ADVANCE PROGRAM

Thursday, January 7, 1971

10:00 a.m. **Registration Desk Open**—*Convention Lobby*

11:00 a.m. **Welcome and Introduction**—*Hall of Americas-South*
THOMAS B. ROBINSON, *President*, Consulting Engineers Council

11:10 a.m. **"A Word of Caution About Government Work by A-Es"**
GILBERT A. CUNEO, Author, "Government Contracts Handbook"

11:35 a.m. **"Major Changes in the Federal Agencies"**
AIA, CEC, & NSPE Staff

11:50 a.m. **Recess for Lunch (No planned luncheon)**

1:30 p.m. **THE "NEW" GENERAL SERVICES ADMINISTRATION . . .**
"Faster Completion, Less Red Tape, and Lower Costs Through New GSA Approaches to Projects"
ROBERT L. KUNZIG, *Administrator*, General Services Administration

1:50 p.m. **"Reorganization of the Public Buildings Service to Meet the Challenge of the 1970's"**
ARTHUR F. SAMPSON, *Commissioner of the Public Buildings Service*, GSA

2:10 p.m. **"Intergovernmental and Socio-Economic Planning for Federal Construction"**
R. I. NIXON, *Asst. Commissioner for Operational Planning*, PBS

2:30 p.m. **"New Requirements and Roles for Architects and Engineers in Design and Construction of Federal Buildings"**
WALTER A. MEISEN, *Asst. Commissioner for Construction Management*, PBS.

2:50 p.m. **Coffee Break**

3:00 p.m. **"The Architectual and Engineering Professions Talk Back"**
An opportunity for individual practitioners to express their views on GSA's new programs and procedures
Moderator: PETER WEBB, *FAIA, Chairman*—Joint AIA-CEC-NSPE Public Buildings Committee.

3:45 p.m. **"New Standard Architect-Engineer Agreement Form for Use by All Federal Agencies**
WALTER A. MEISEN, *Asst. Commissioner for Construction Management*, PBS

4:00 p.m. **Questions and Answers regarding use and implementation of the new standard form**
PETER WEBB, Moderator.

4:30 p.m. **"Meet the 'New' GSA"**—An opportunity for semi-private discussions with various members of the GSA staff.

5:15 p.m. **Recess**

6:00 to 7:00 p.m. **"Cocktails on Bourbon Street"**—A reception honoring the many key government officials participating in the "New Federal Programs" meeting.

Remainder of Evening free for conferees to enjoy New Orleans' French Quarter.

give engineers and architects in-depth insights into new government programs.

The conference, "Federal Reorganization and New Government Programs," is jointly sponsored by the National Society of Professional Engineers, Consulting Engineers Council and the American Institute of Architects. It is scheduled for the Jung Hotel, New Orleans, January 7-8, 1971.

Top ranking individuals from eight government departments and agencies will make major presentations. Agencies represented will be the General Services Administration, Department of Housing and Urban Development, Department of Health, Education and Welfare, Federal Aviation Agency, Post Office Department, Federal Water Quality Administration, Veterans Administration, and the Department of Commerce.

Registration forms and additional information are available by writing A-E Federal Programs Conference, Suite 713, 1155 15th Street, N. W., Washington, D.C. 20005.

Friday, January 8, 1971

9:00 a.m. **Reconvene** – Introductions and Review of Conference Ground Rules
THOMAS B. ROBINSON, *President*, CEC

9:10 a.m. **Hospitals, Schools and Health Facilities Under FECA (HEW)**
(1) "A Description of Plans and Policies by HEW's New Facilities Engineering and Construction Agency."
G. D. FREMOUW, *Administrator*, FECA
(2) "Systems Building and Other New Techniques on Federally-assisted Schools and Hospitals."
ROBERT W. BLAKE, *Chief, R&D*, FECA

9:55 a.m. **Questions and Answers**

10:10 a.m. **A-E Opportunities in the New U. S. Airport and Airways Development Program (FAA)**
"How $250 Million Annually in Airports Facilities Projects Will Be Spent."
CLYDE W. PACE, *Deputy Director of Airports Service*, FAA
"New Emphasis on Planning and Preview of FAA Guidelines."
ROBERT F. BACON, *Chief, System Planning Division*, FAA

10:50 a.m. **Questions and Answers**

11:05 a.m. **Reorganization and New Emphasis in HUD Programs**
"The A-E's Role in New Towns, Operation Breakthrough, and Expanded Community Facilities."
HAROLD FINGER, *Assistant Secretary for R&D*, Dept. of HUD
"New Procedures to Expedite Planning and Application Processing."
LEO MORRIS, *Director Community Facilities*, Dept. of HUD

11:50 a.m. **Questions and Answers**

12:05 p.m. **Cocktails** – Hall of Americas-North

12:30 p.m. **Luncheon** – Moderator: REX W. ALLEN, FAIA, *AIA President*
Program: "The Department of Commerce – Your Partner in Obtaining, and Better Performing, Government A-E Contracts."
HUDSON DRAKE, *Deputy Under Secretary*, Department of Commerce

2:05 p.m. **Reconvene Conference**
Moderator: MORTON S. FINE, *Chairman, NSPE-PEPP*

2:10 p.m. **Changes Expected Under Postal Reorganization**
"What Postal Reform Will Mean in the Area of A-E Procurement."
ROBERT ISAACS, *Deputy Assistant Postmaster General for Construction*
"Post Office Design in the 70's/More Than Just Architecture."
LEO ANDERSON, *Director of Process Engineering*, Post Office Department

2:55 p.m. **Questions and Answers**

3:10 p.m. **New Regulations and Programs for Pollution Abatement**
"The Engineer's New Role in FWQA Projects and Planning."
RALPH PALANGE, *Director of Construction Grants*, FWQA, EPA
"New Solid Wastes Program to Boost Public Works."
RICHARD VAUGHAN, *Director, Bureau of Solid Wastes Management*, EPA

3:55 p.m. **Questions and Answers**

4:10 p.m. **Construction of VA Medical Facilities**
"Changing Management and Control – Overlapping of Program Development and Design, Phased Construction, and Network Analysis."
L. G. SCHWEICKART, *Deputy Assistant Administrator for Construction*, VA
"Advancing Technology in Design – Systems and Modular Approach to Design of Medical Facilities."
G. E. DISTELHURST, *Director*, Research Staff, Office of Construction, VA

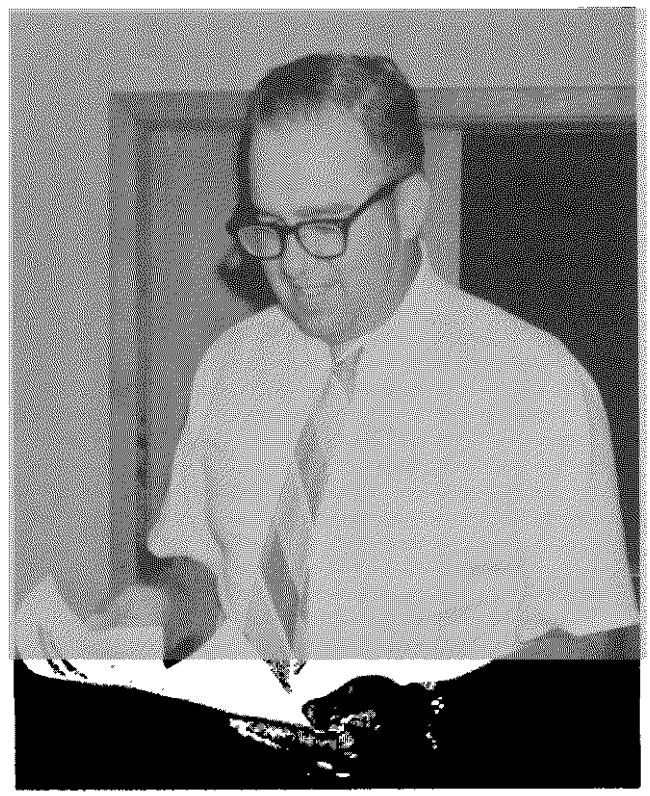
4:55 p.m. **Questions and Answers**

5:15 p.m. **The A-E's Talk Back**
An open discussion of the professional societies' role in assisting in preparation of new Federal policies and procedures and in publicizing same to the members.

5:30 p.m. **Adjournment**

Louisiana reaches a milestone . . .

LOUISIANA REGISTERS ENGINEER NUMBER 12345



Everett Jacob, general manager of the Louisiana Division of Dow Chemical, looks at his certificate #12345.

Louisiana reached a milestone of sorts during 1970 when it issued Professional Engineering Registration No. 12345 to Mr. Everett Jacob of Baton Rouge. Verification of this fact with Dr. Dan Vliet, Executive Secretary of the Louisiana State Board of Registration for Professional Engineers and Land Surveyors, prompted a review of the Board's activities for the year and a discussion of the Board's work.

The State did indeed issue Professional Engineering Registration Certificate No. 12345 during the year and through November had registered 12,550 engineers since the Board's inception in 1908. The original engineering registration law registered civil engineers only, but in 1950, the law was amended to require general registration of professional engineers except those employed in industry and by the government of the United States.

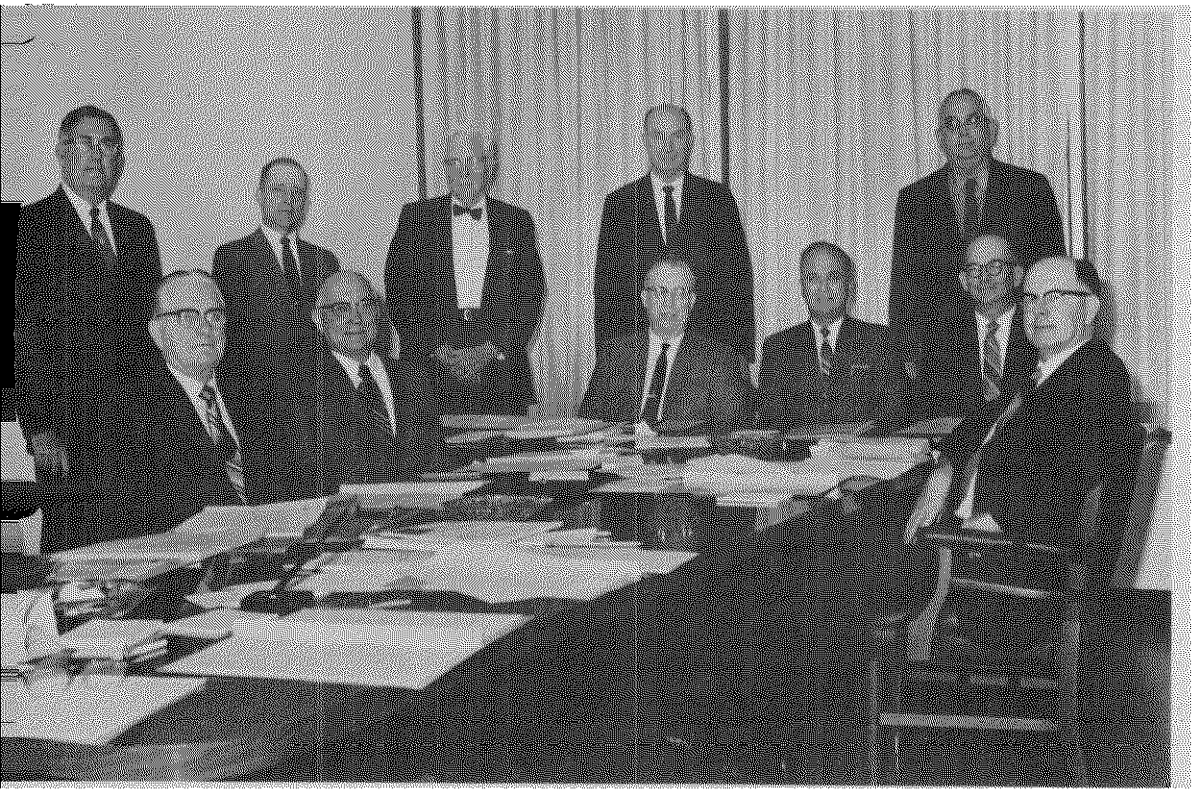
Some of the 12,550 who have been registered are deceased or have retired from the practice of engineering, but Dr. Vliet estimates that, based on past experience, approximately 11,000 will reregister this year. The end of the year is a busy time for the staff of the Board. Applications for renewal must be sent to each registrant, and the returned applications, along with renewal fees, must be processed, addresses verified, and new licenses sent.

Additional work was created by act of the 1970 Louisiana Legislature which established separate registration for land surveyors. Previously the law allowed registered civil engineers to practice land surveying automatically, and the 1970 act provided that all civil engineers registered prior to its effective date would be licensed as land surveyors. To date, 4,276 persons have qualified as land surveyors under the change. This has meant that in addition to the normal workload of the Board, 4,276 certificates have had to be prepared for the newly registered Land Surveyors. In the future, to practice land surveying, one must be registered as a Land Surveyor.

More time-consuming than renewals is the processing of new applications for registration as engineer or land surveyor. The Board is meticulous in its handling of applications and precise in its verification of education, examinations, experience, former employment, and references.

After all data is verified, the application must be rated as to quality of experience combined with education and examination factors, and then reviewed by an appropriate committee of the Board. Upon recommendation of the committee, the entire Board then reviews and acts upon the application. Applicants whose applications are unusual for some reason, such as lack of an examination in engineering fundamentals, are called in for interview by the Board. Dr. Vliet estimates that approximately 500 new applications will be processed this year, the average in recent years having been around this number.

Under the Louisiana Engineers Registration Law, engineers employed in industry are not required to be registered. However, thousands of engineers employed in industry have qualified to be registered and maintain their registration in the State. These include many of the engineers who design, construct, operate, and maintain some of the $7,000,000,000 in industrial plants constructed in



Shown in session at its annual meeting are members of the Louisiana State Board of Registration for Professional Engineers and Land Surveyors. Seated left to right are: Ardis D. Jackson, Leo M. Odom, Calvin T. Watts, Eugene E. Taylor, Waldemar S. Nelson and Dean Ben T. Bogard. Standing from left to right: C. J. Tircuit, Land Surveyor Assistant to the Board; Dr. Daniel H. Vliet, Executive Secretary; Wood Brown, attorney for the Board; Roy T. Sessums and Dr. Jesse Coates. Missing in the photograph is Dr. F. W. zurBurg.

Louisiana in the past 20 years, including out-of-state engineers who maintain registration here because their companies have operations in Louisiana.

The engineer who, by chance, received Registration Certificate No. 12345 is Mr. Everett Jacob, General Manager of the Louisiana Division of the Dow Chemical Company. Since he is an engineer in industry, he was not required to register under Louisiana law. Because of this, we felt it would be interesting to interview Mr. Jacob and get his views on the value of registration. The interview follows.

"Under Louisiana law, as an engineer in industry, you were not required to register to practice engineering in this State, but you did register. Why?

"Although registration is not required, to me it is a recognition of qualification. I am proud to be an engineer and I want my associates and my employees to know it. Personally, I value my registration, and it means the attainment of a goal.

"What is Dow's attitude toward registration for its engineers?

"Dow encourages registration. Our business in Louisiana is technically oriented, and we compete on the basis of how well we do our job. Our company realizes that registration points out a man's qualifications and capabilities. There is no magic in registration, but it does show the standard we at Dow set for our people.

"You employ a number of engineers. What do you feel will be the role of the engineer in industry in the future?

"With so much attention being given to maintaining a clean environment, engineers are devoting much of their time to pollution abatement methods. This has created an important new role for engineers in industry. This demands additional effort, for in addition to planning manufacturing processes, engineers must also resolve the effects these processes will have on the environment.

"Weren't you recently appointed to membership on the Louisiana Air Control Commission?

"Yes, I represent the Louisiana Manufacturers Association. Here I certainly see evidence of my contention of an important new role for engineers in industry. I see demands for better monitoring of emissions, reduction of emissions, and professional documentation of plans and results."

It is evident from this engineer's comment that his industry, in common with many other industries operating in Louisiana, appreciates the value of registration and actively encourages its engineers to become registered. This appears to be a trend that has been gathering strength in the last few years, and it appears probable that before long all qualified engineers employed in industry in Louisiana will have become registered.

Although this trend will increase the work of the Louisiana State Board of Registration for Professional Engineers and Land Surveyors, the Board welcomes the work as being in the best interests of the engineering profession.

DOING SOMETHING ABOUT POLLUTION

Plastic media for biological oxidation of wastes



JOSEPH H. BENTON, P.E.
Environmental Control Division
Ethyl Corporation

"Give a 'bug' a place to grow, some food to eat, some nutrients and some oxygen and the 'bug' will do the work."

Everybody is talking about pollution, but it takes the skill of the Engineer to design the facilities required to get the job done.

It used to be easier . . . for very small flows it was only necessary to choose the right "package" plant for the job. For a medium size town there was often enough land nearby to employ the oxidation pond concept even if a few floating aerators were needed. For the larger town a rock trickling filter plant would reduce the BOD only 85%. But for the city the activated sludge process (or some modification) was the only feasible solution, particularly if a really good effluent were required.

The job is not so easy now because higher degrees of treatment are required, trained operators are hard to get, and, since more towns and industries are being required to provide treatment, it is even more important to look long and hard at first costs and operating costs. Also, the Engineer now finds himself dealing with more industrial plants; some with pretty exotic wastes and many with waste streams equivalent to cities with very large populations.

No one waste treatment process holds the economical answer to all situations; therefore, the Engineer must be familiar with all processes. Some processes are relatively new (even though employing old principles) and the Engineer must familiarize himself with these. Some of the new processes are:

—Chemical precipitation (example; the Z-M process)
—Using oxygen instead of air (example: the Unox process)
—Reverse osmosis (not practical yet)
—Plastic media for oxidation towers

All of the old and new (aerobic) processes (except chemical precipitation and reverse osmosis) use the same principle, that is, give a "bug" a place to grow, some food to eat, some nutrients and some oxygen and the "bug" will do the work. The bugs don't seem to care whether they are holding on to a rock, a plastic surface or are in suspension in a liquid. So the Engineer has to decide which variation will work best in each situation. Toward helping him make his choice this paper will detail some of the ways in which plastic media has been used to reduce the BOD of many different wastes.

In the classic application, a plastic media filter (usually 6 ft. to 10 ft. deep) is preceded and followed by a clarifier. If an overall 85% reduction of the BOD is required, the filter can be loaded at about 130 pounds of BOD per 1000 cu. ft. of media. With about 35% reduction in the primary, a 77% reduction in the filter and final clarifier will give the desired results. Examples of this type application can be found in Clinton, Tennessee; Sedalia, Missouri; Sacramento, California; Syracuse, New York, and soon the largest of this type will be built in New Orleans. In all, there are about 15 such installations in the U. S. and a number in England.

Another popular application of the plastic media filter is as a first stage preceding an existing rock filter or activated sludge system. In this case the filter can be fed at the maximum expected flow rate and at 1-2 gpm/sq. ft. (60-120 MGAD) and be expected to remove 50%-70% of the BOD. If final clarification is available or can be provided at 600-800 gpd/ft.^{2}, the modified plant will have a capacity at least double the original. There are several excellent examples of this design. Perhaps the largest is at Cedar Rapids, Iowa, where two 122-foot filters are removing over 70% of the BOD (after primary clarification) from a waste with a population equivalent of over 400,000. These units are followed by eight existing rock filters which are now able to produce an excellent effluent.

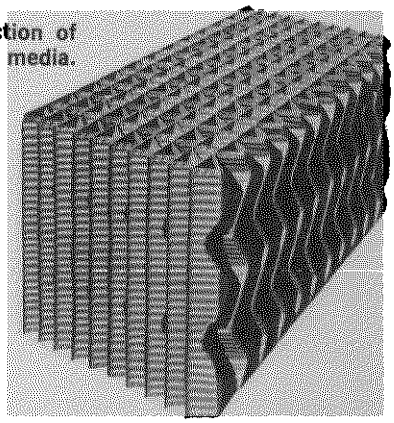
At Jerome, Idaho, a plant designed for 6000 PE (PC, TF, FC) was overloaded badly by the addition to the system of a potato processing plant and two milk plants (total 27,000 PE). The Engineer placed a plastic media filter between the clarifiers and then passed the waste to the existing rock filter and on to a small aerated pond. Cost of the project was $226,000 and treatment is expected to be 97% at full load.

In Rantoul, Illinois, a plastic media filter was constructed between an expanded primary and an existing rock filter. No problem is anticipated from the lack of an interstage clarifier and a high degree of treatment is expected.

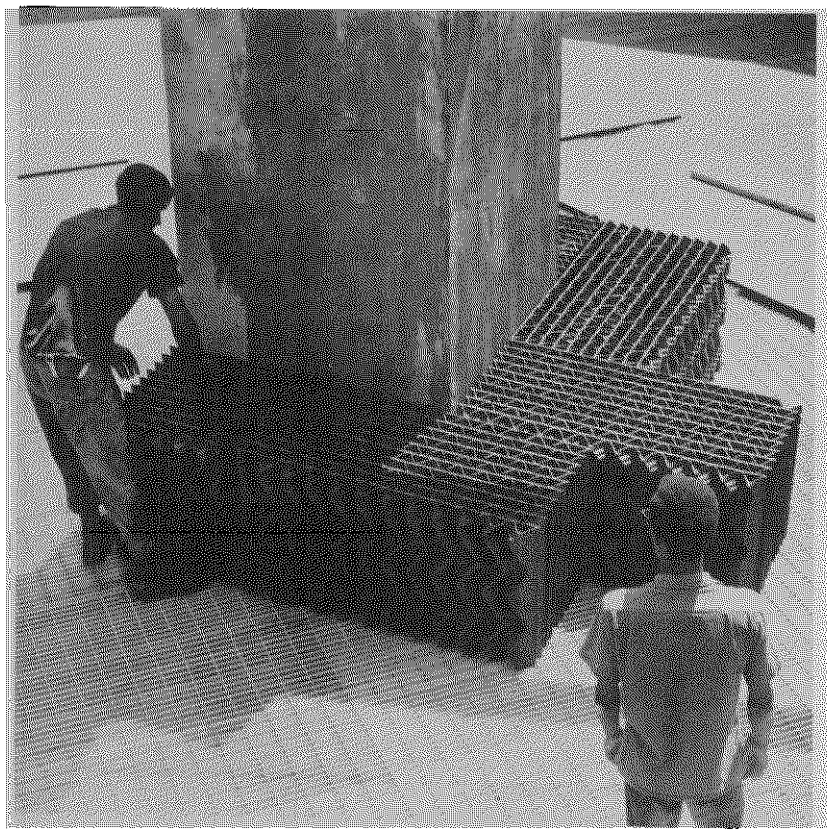
In Sheffield, England, a small (12′ x 12′ x 18′) oxidation tower is fed with raw sewage and removes 64% of the 7200 PE. This tower precedes an existing activated sludge plant. In Pudsey, Yorkshire, England, a sludge heat treatment unit was added and the supernatant (at 12,000 mg/1) overloaded the plant to the extent that the growth on the rock filters became heavy and dark and the degree of treatment dropped to an unacceptable level. A plastic media tower was added, treating a mixture of raw sewage and heat treatment liquor. The result was a return of satisfactory overall treatment and an effluent of less than 20 mg/1 BOD.

Temple, Texas, precedes two existing rock filters with a 10 ft. deep plastic media filter. No intermediate clarification is provided.

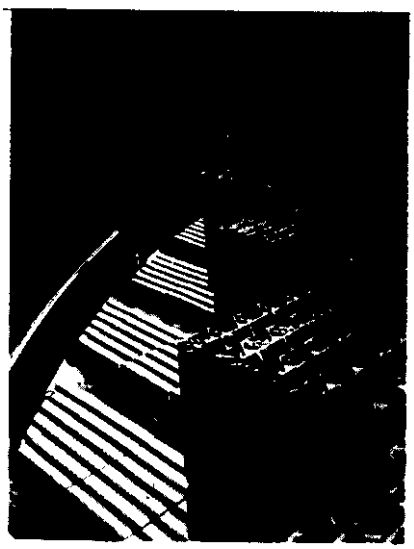
Typical section of plastic media.



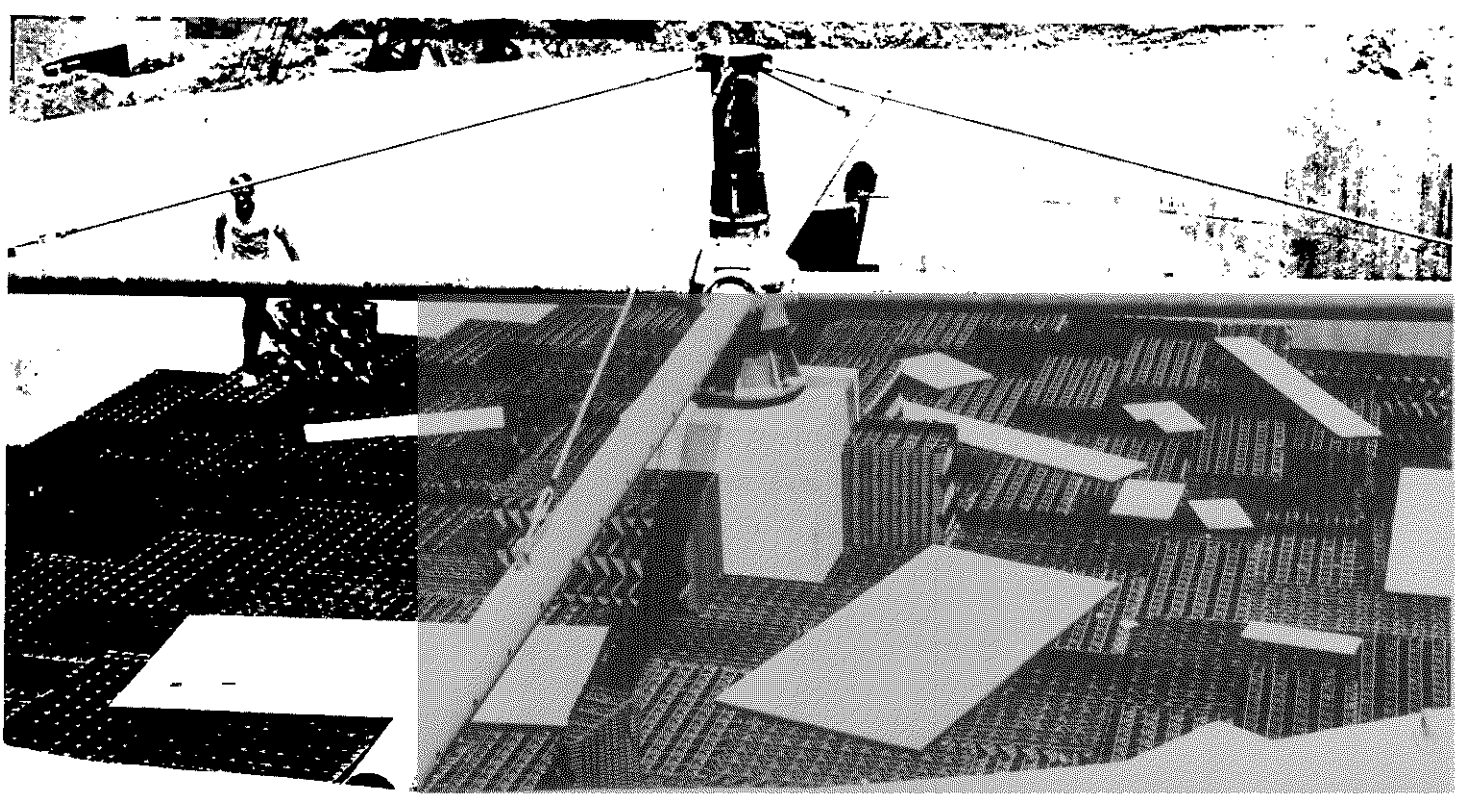
This 45′ diameter unit at Clinton, Tennessee, is designed to remove 825 lb/day in a 90% efficient system.



This view shows the unique media system.



An overall view of the Clinton, Tennessee, installation.



Several new treatment plants have been built utilizing the two-stage principle. Sacramento, California, will have two 250,000 cu. ft. filters in parallel followed by activated sludge in a 20 MGD plant. Marshall, Missouri uses two 72,000 cu. ft. filters in series. San Pablo, California, will use a plastic media tower as a first stage and will follow with activated sludge.

As yet the three-stage, all-plastic media plant has not been used for domestic sewage. However, a number of these have been used to treat industrial wastes. Results at these installations are consistently over 95%.

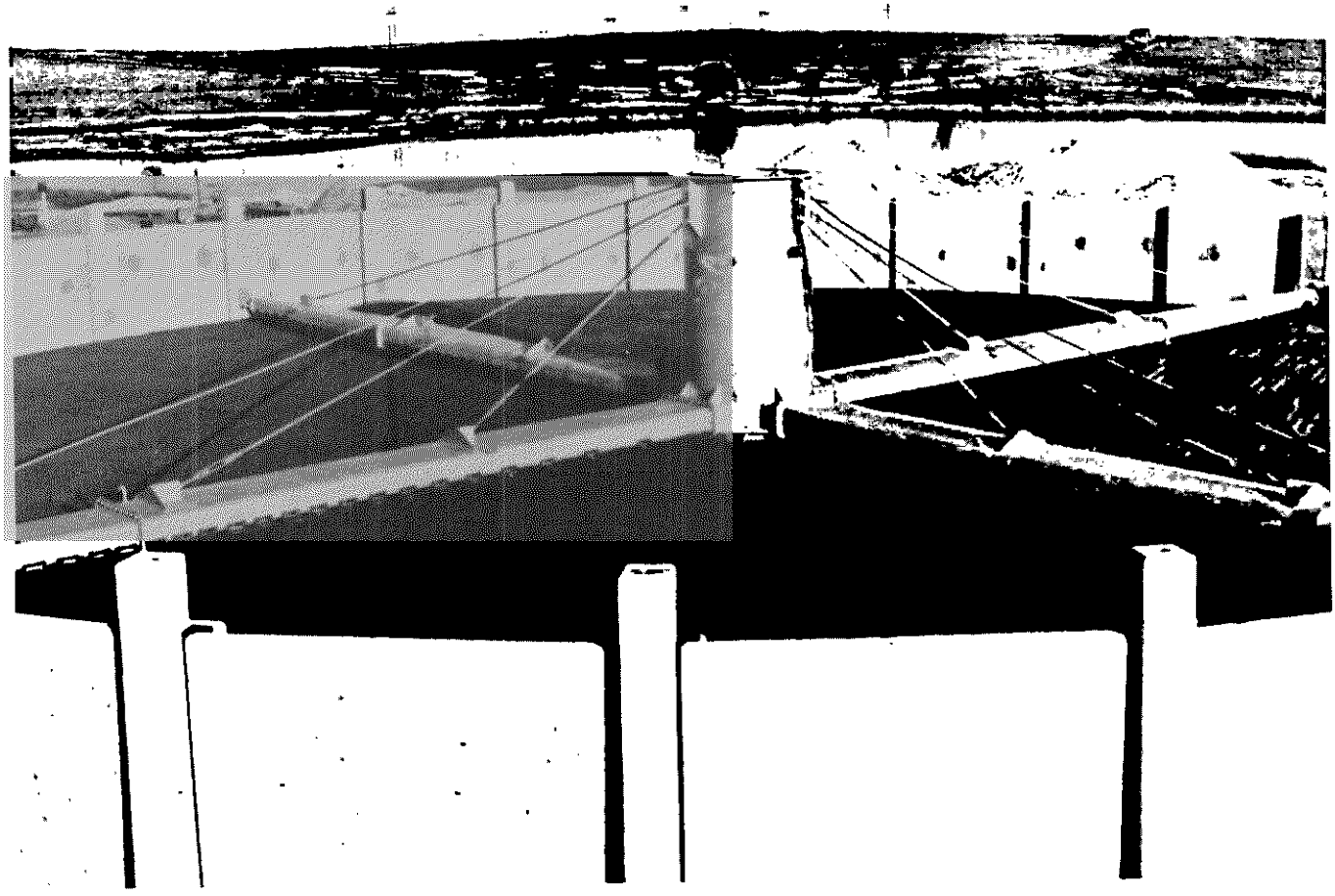
The above discussion has been limited to municipal installations. However, introduction of plastic media was begun in industrial waste treatment and the majority of the plastic media plants are in this service. With greater acceptance by state authorities, however, this picture is changing. Over 75 municipal plants are currently under design employing all of the concepts discussed above. Over half the states have approved plastic media designs utilizing organic loadings up to 160 lbs. BOD per 1000 cu. ft.

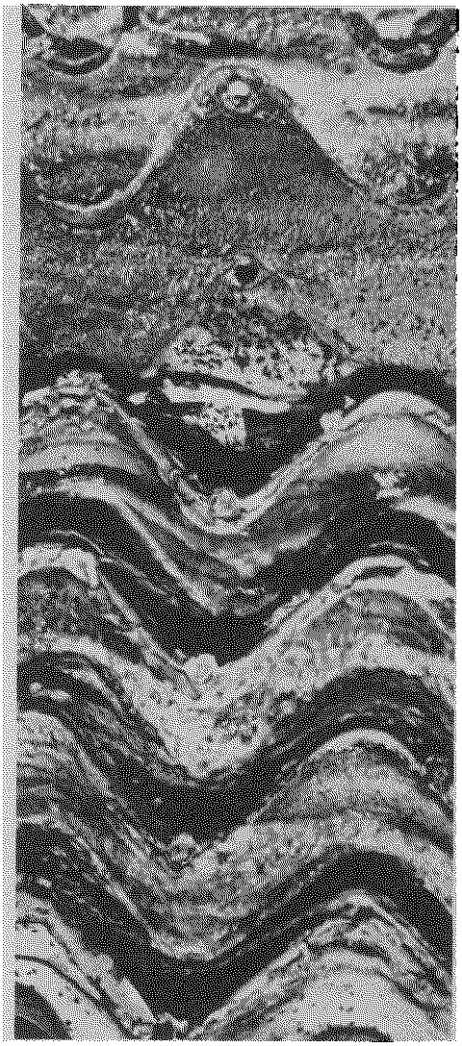
Considerable interest is currently being shown in industrial waste treatment. Congressional testimony taken before passage of a recent "clean water" bill pegged industrial waste as being about equal (in PE) to municipal waste. Consequently many Engineers, with adequate knowledge of sewage treatment plant design, are finding it necessary to study the special requirements of industrial waste treatment. Holding basins, pH control systems, nutrient feeders and automatic control concepts are becoming commonplace considerations.

Plastic media has more than adequately answered the challenge of the varied industrial wastes. There are at least 9 two and three stage plants removing 95+% of the BOD in whiskey distillery waste. These plants have a raw effluent of around 1000 mg/1 and are required to reduce this to less than 20 mg/1. In the milk industry eight full scale plants have followed the very successful research pilot installation built by the Milk Marketing Board in England. The milk industry has been unable to use the activated sludge process successfully (because of sludge bulking) and has been troubled with the large area requirement of rock trickling filters. In each of the plants utilizing plastic media, the existing rock filters (usually in alternating double filtration) are the last stages in the process. Also, in every case, the effluent quality requirement is 20 mg/1 BOD and 30 mg/1 suspended solids. Consistent performance meeting effluent requirements is reported by all these plants.

Food processing industries find themselves with waste streams of very high concentration and fairly large population equivalents. At least a half dozen of these plants have solved their problems by providing multi-stage plastic media plants. A frozen food company in Virginia, for instance, has just added a

At Temple, Texas, a 5 MGD plant will call on this 64' towers to "rough" out 60 percent of the "dissolved" BOD.





Biological growth on plastic surface.

5000 cu. ft. tower as a first stage after accumulating several years experience with a 10,000 cu. ft. tower. At last report they were ready to replace their existing activated sludge plant (now used as a third stage) with still another biological oxidation tower. Other food processing firms provide only pretreatment before dumping their waste into the local sewers. Usually this only requires a single stage system.

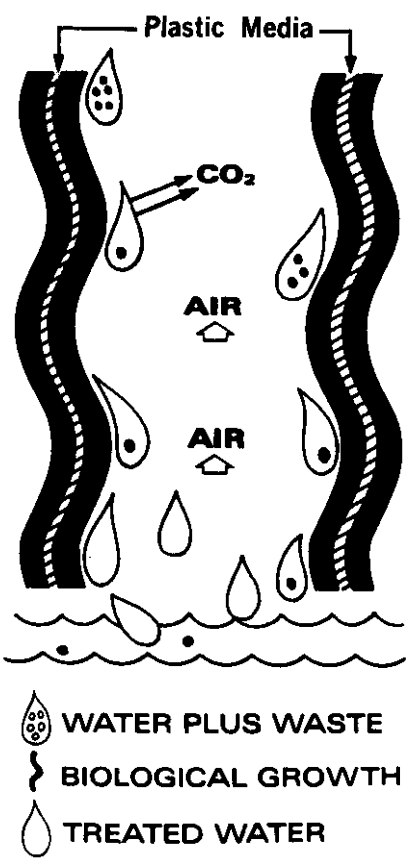
The brewing industry is large and has a sizable effluent problem. At least five systems employing plastic media have been built for this service. These systems range from a single plastic media stage coupled with some form of activated sludge to a three stage plastic media system with a holding tank and a final clarifier.

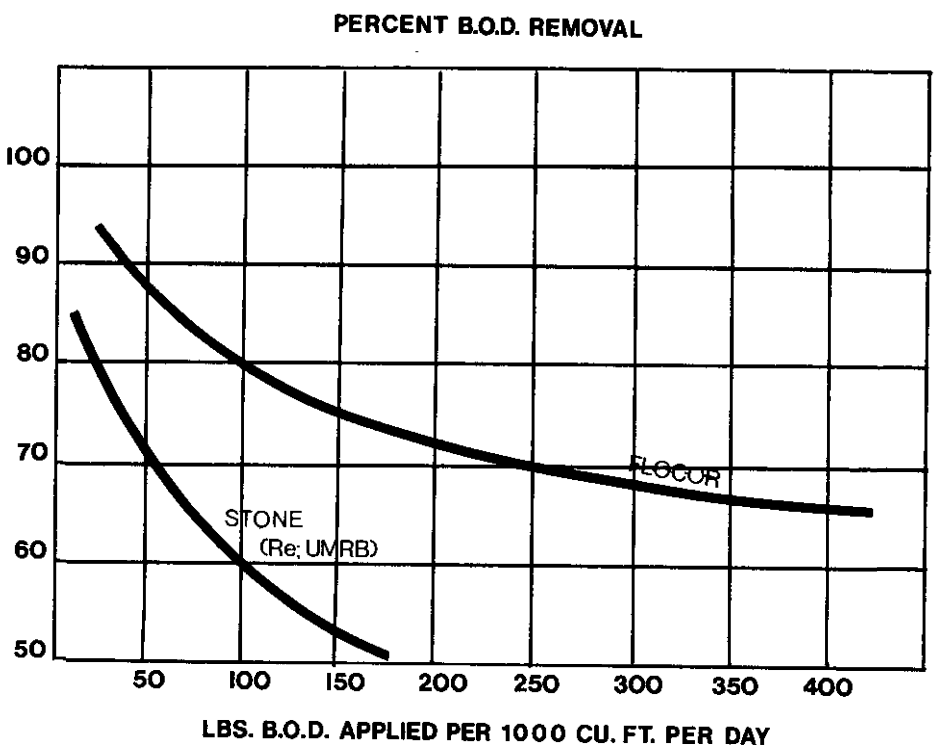
Meat processing plants generally employ the anaerobic lagoon where this is acceptable and the land is available. However, the effluent from a single anaerobic lagoon can no longer meet the more stringent requirements. At Dennison, Iowa, a two stage plastic media plant brings this anaerobic effluent up to discharge quality.

Biological oxidation rate depends on the waste being treated and the enzyme system being employed. Differences in rate will dictate slightly different designs. When exotic wastes are to be handled it may be prudent to run pilot plant tests. However, for most wastes a reasonable design can be made based on plant performance data. The accompanying BOD reduction curve is basically for domestic sewage (although this varies, too), but it presents a basis for design for most familiar wastes. This curve is valid for most situations and for hydraulic rates between 0.6 and 2.0 gpm/sq. ft.

Plastic media is available competitively from three major U. S. manufacturers. More information is available from the manufacturers or their representatives and assistance is offered for any specific waste treatment problem. Pilot plants are available for lease or purchase.

So — the engineer, the man who will bring about environmental improvement, has one more tool in his bag of tricks —plastic media for biological oxidation of wastes. His job is is now harder, but his decisions can be better with more alternatives from which to choose. ■





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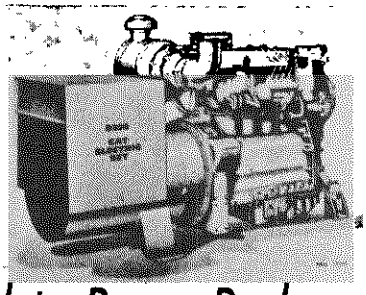
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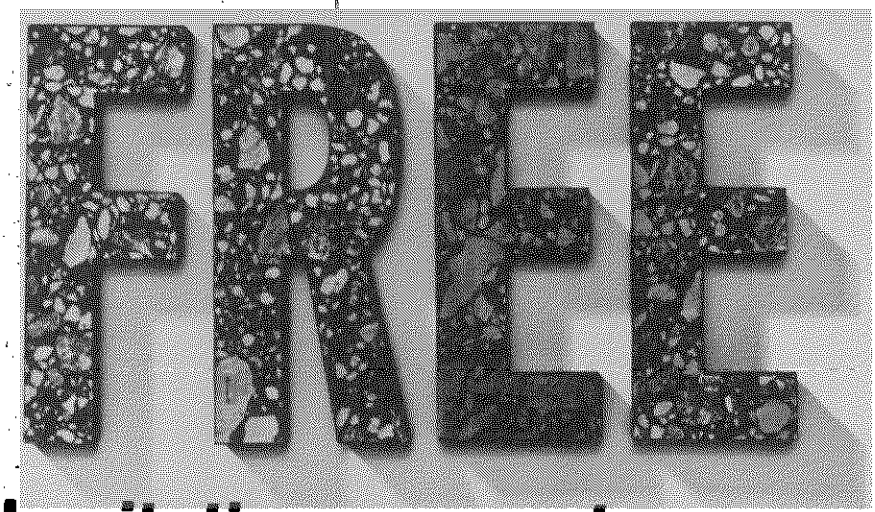
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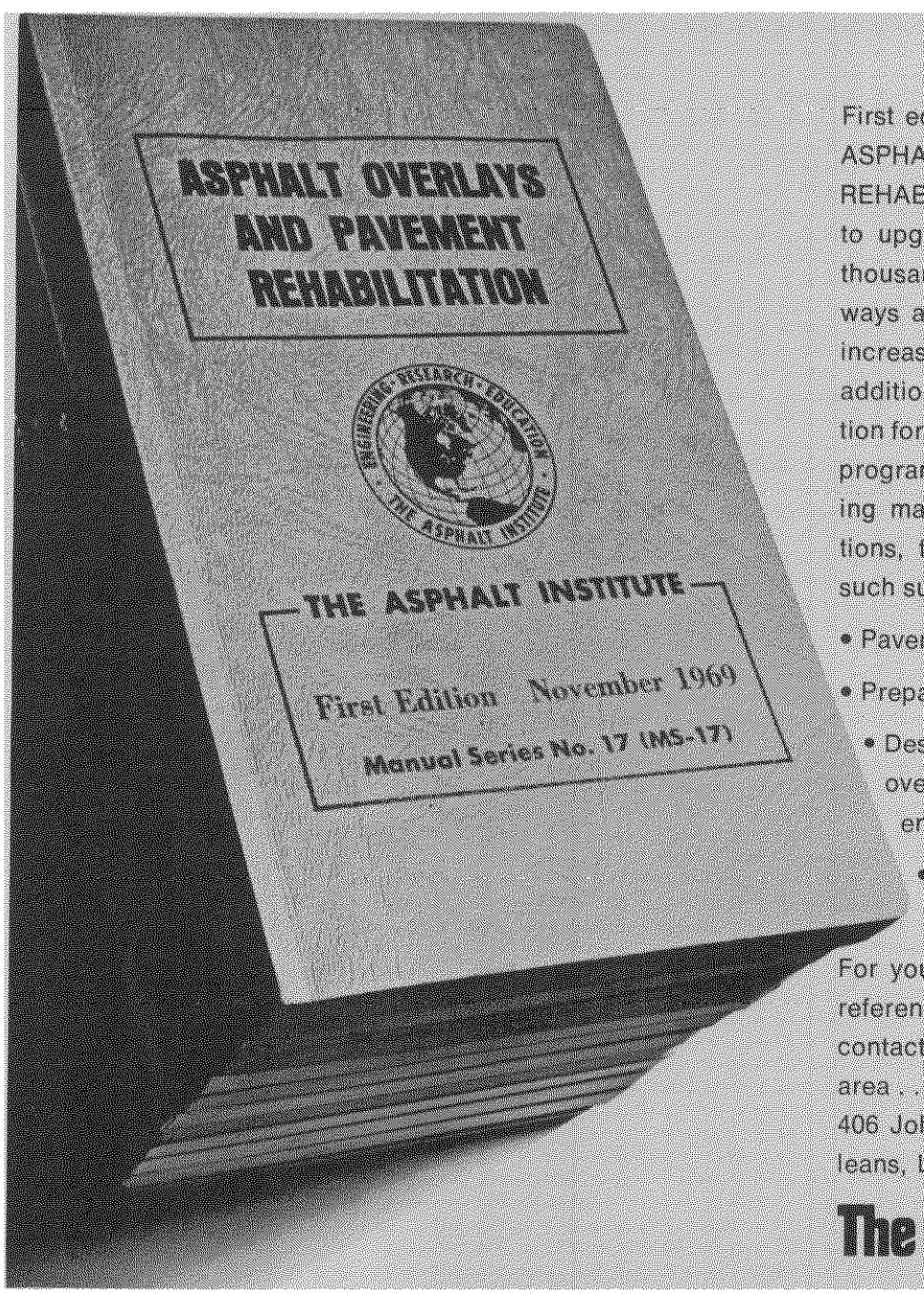
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Your Committee on Ethics & Professional Conduct

by
LEONIDAS L. DENSON, P. E.
Vice Chairman

Following a recent meeting at which the function of the Committee on Ethics and Professional Conduct was presented, one Society member asked the speaker, "Surely you aren't serious, are you?"

Your Society, as represented by the Board of Direction and members of your state and chapter organizations, is indeed serious in the conviction that dishonest actions of a member damage you, the engineer.

Article X of the Constitution of the Society authorizes appointment of a Committee on Ethics and Professional Conduct. Section 1, Article X, states:

> "It shall be the duty of this committee to investigate and report to the Board of Direction, all instances involving unprofessional conduct of/or breach of the Code of Ethics by any members of the Society . . ."

Procedure for investigation of complaints and for discipline of members is set forth in Article X of the Constitution.

In Bylaw 6, Paragraph (c) of the Society Bylaws, composition of the committee is established, to include Chairman, Vice Chairman, Board sponsor, and members from each chapter of the Society.

All matters brought before the committee are considered in confidence, and final action by the committee can only be in the form of a recommendation to the Board of Direction.

The committee acts as a sounding board to reflect to the Board an expression of opinion based upon careful review of the available facts, providing an opportunity for any concerned party to express a position.

The Code of Ethics of the National Society of Professional Engineers has been adopted as the official code of the Society. Other tools include:

An opinion dated March 16, 1964 by the State Attorney General with subsequent correspondence of July 24, 1967 and July 26, 1967, all published by the Louisiana State Board of Registration for Professional Engineers and Land Surveyors.

Constitution and Bylaws of the Louisiana Engineering Society.

"Regulations Governing Corporate or Partnership Practice or Offer to Practice Professional Engineering," adopted by the Louisiana State Board of Registration, November 14, 1967.

"Ethics for Engineers," NSPE Publication No. 1105.

"Opinions of the Board of Ethical Review," Volumes I, II, and III published by NSPE.

"Information for Registration in Louisiana as Professional Engineer and Land Surveyor," published by the Louisiana State Board of Registration, March 1, 1969.

"NSPE Policies—Professional and Administrative," NSPE Publication No. 1504.

Louisiana Revised Statutes 37681 through 37707 as amended July 1970, regulating the practice of engineering and land surveying.

Members of the Society are encouraged to report violations of ethical conduct to any member of the State or Chapter committees. The matter is brought before the entire committee, dismissed, or reported to the Board of Direction for instruction as to pursuit and investigation.

The committee is concerned primarily with conduct of members of the Society, but violations of ethical conduct or of the law by nonmembers may be reported for reference to the party or the regulatory body concerned.

Not a police organization, your committee exists as an educational and investigative body, with no power other than recommendation to the Board of Direction.

Integrity, honesty, ethical conduct: the terms are synonymous. Our heritage and the trust vested in us make mandatory that integrity be the foremost characteristic of the engineer.

Members of the committee are available to address any chapter meeting of the Society, briefly informing membership of the committee function and of available publications dealing with ethical and professional conduct. Committee members are available to plan a chapter program devoted entirely to ethical conduct, suggesting discussion by a panel composed of engineers from various activities, perhaps receiving panelists comments on a case cited by the NSPE and upon which the Board of Ethical Review has published an opinion. Your committee members are available for comments outlining committee responsibility to be published in chapter newsletters.

Outside professional groups might be advised of this facet of Society responsibility through publication in their respective newsletters of comments by Society members, and by offer of a committee member to speak for a few moments at any non-Society engineering group, outlining the responsibility of the committee.

Matters which recur repeatedly include advertising in other than a professional manner, use of the title of engineer by those who are not qualified by law, reports of engineering fees which are contingent upon project completion, reports of competitive bidding for engineering services, and reports of members of the profession failing to provide for the interest of the client in a manner representing the trust to which a client is entitled. ■

New NSPE Member Service

If you are an NSPE member and have been, or expect to soon be, a victim of current engineering layoffs, you are eligible for the National Society's newly developed Professional Engineers Employment Referral Service (PEERS). This is a program in which NSPE forwards short-form resumes of engineers to a listing of firms known to be large employers of engineers. If a firm expresses an interest in any of the individuals described on these resumes, it will contact NSPE.

Here's how the program works. To be eligible, an engineer must be an NSPE member and must be unemployed or have been notified of a date when his employment will terminate. PEERS cannot be used by members who wish to change employers for one reason or another. The unemployed engineer fills out a short-form resume and mails the coupon to NSPE headquarters. From these coupons, a compilation of brief resumes is put together. Each engineer is identified only by code number. This compilation is sent to a listing of some 1000 firms and consulting offices known to be employers of large numbers of engineers. The firms were carefully selected by NSPE, and a mailing list is maintained at National Society headquarters. The consulting engineers firms on the listing are all members of NSPE-PEPP.

Printed instructions accompanying the compilation of brief resumes ask the prospective employers to correspond with NSPE for further information about any applicant in whom they are interested. When this correspondence reaches NSPE headquarters, the engineer's name and address will be forwarded to the interested firm. At the same time, the engineer will be notified by NSPE to send a complete resume to the appropriate personnel or engineering executive of the firm expressing interest. NSPE, at this point, is out of the picture, and any further correspondence or telephone conversation is between the engineer and the prospective employer.

There is no fee to the NSPE member for using this service. A survey will be taken by the Society at a future date to determine the effectiveness of the program.

It should be emphasized that PEERS is not to be construed as putting NSPE in the position of acting as an employment agency. The Society's role is strictly that of a referral service for professional engineers who have experienced job layoff or who have been assigned a termination date for layoff. PEERS is completely confidential. No employer is given names of engineer applicants unless interest is indicated in a specific individual.

The PEERS program is a development of the Professional Engineers in Industry practice section of NSPE. It is a pilot program, and its continuance will depend on overall effectiveness and service to the membership.

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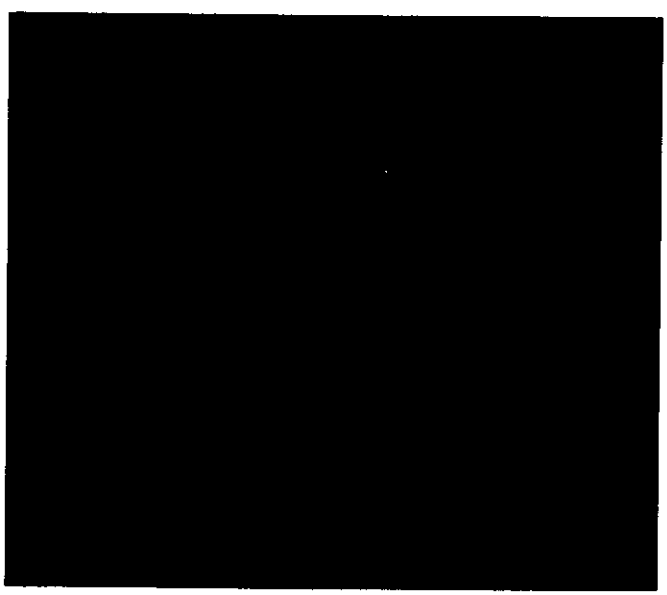
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ENGINEWS

IN MEMORIAM
James E. Reed, Jr.

James E. Reed, Jr., a registered Professional Engineer and a member of the Louisiana Engineering Society, died on August 20, 1970 in Lafayette.

Mr. Reed was born in Houston, Texas, on September 13, 1911 and had been a resident of Lafayette for the past 22 years. At the time of his death he was employed by Central Louisiana Electric Company and was a Vice President of the company.

He received his early education in Houston schools and earned a Bachelor of Science degree in electrical engineering from Rice University in 1934. After a brief period of employment with an oil exploration firm, he began a career in the utility field as an industrial engineer. He subsequently served his company as rate engineer and manager of the industrial sales and rate departments and became a corporate officer in 1964.

In 1943 he received a commission as Lieutenant (jg) in the U. S. Naval Reserve and was ordered to active duty. After World War II he remained active in the Naval Reserve program until recently and attained the rank of Commander.

In addition to the Louisiana Engineering Society, Mr. Reed was a member of the Institute of Electrical and Electronics Engineers and was serving as a Director of the Petroleum Electric Power Association. He was also active in civic affairs and was a Past President and Director of the Greater Lafayette Chamber of Commerce.

Mr. Reed is survived by his widow, the former Dorys Mitchell; one daughter, Mrs. Charles Kearney of Houston; one son, James David Reed of Houston, and three grandchildren.

OLD

NEW

The October issue of LOUISIANA ENGINEER carried a drawing of the old L.E.S. lapel emblem and another drawing of a new emblem. Louis Roeger of the Shreveport chapter and Don Sanders and Curtiss Mann of the New Orleans chapter were awarded one year free membership in L.E.S. as winners of the lapel emblem design contest. The old and new emblems are shown here. The Board of Direction is now interested in receiving comments regarding the new emblem from L.E.S. members. Comments should be addressed to Emblem, P. O. Box 2303, Baton Rouge, La. 70821.

NEW ENGINEERS

PROFESSIONAL ENGINEERS GRANTED REGISTRATION
October 20, 1970
By the Louisiana State Board of Registration for Professional Engineers and Land Surveyors

ARIZAGA, FRANCISCO D.
Houston, Texas
Petroleum

BARRAS, THOMAS R.
Shreveport, Louisiana
Mechanical

BINGHAM, WILLIAM H.
New Orleans, Louisiana
Civil

BORK, JOSEPH F., JR.
Marietta, Georgia
Civil

BOURGEOIS, JERRY M., JR.
Baton Rouge, Louisiana
Civil

BRITTON, WALTER C., JR.
Morgan City, Louisiana
Petroleum

CARTER, WILLIAM R.
Houston, Texas
Mechanical

CHOPIN, LAMY J.
Denham Springs, Louisiana
Civil

CORDELL, BEN EARLY, JR.
Dallas, Texas
Civil

CRACKNELL, FREDERICK
New Orleans, Louisiana
Mechanical

DELONEY, MACK H.
New Orleans, Louisiana
Mechanical

DEMURJIAN, ARA H.
Arlington, Massachusetts
Civil

FLETTRICH, ALVIN S., JR.
New Orleans, Louisiana
Civil

FLETTRICH, DAVID C.
New Orleans, Louisiana
Electrical

FRANKLIN, ALBERT G.
Gretna, Louisiana
Civil

HARTWELL, DONALD E.
Grosse Ile, Michigan
Mechanical

HAZBUN, ALBERT E.
Danville, California
Civil

HERRINGTON, WAYNE
Newgulf, Texas
Civil

HILBURN, JOHN L.
Baton Rouge, Louisiana
Electrical

HOERTER, HARRY E.
Chugiak, Alaska
Civil

ISAAC, GEORGE A., JR.
Metairie, Louisiana
Electrical

ISOM, CONRAD B.
Haughton, Louisiana
Civil

JOHNSON, ADRIAN E., JR.
Baton Rouge, Louisiana
Chemical

JOHNSON, BARNARD C.
San Francisco, Calif.
Civil

JOHNSON, BERNERD F., JR.
Houston, Texas
Mechanical

Membership Contest Standings

RULES OF THE CONTEST

1. A Chapter must reach its 10% quota to qualify as the Contest winner.
2. The Chapter with the greatest percentage increase, based on application and reinstatement requests received by the state LES office through the week prior to the June annual meeting will be the winner. Transfers into a Chapter or grade changes will not be counted as part of the quota. Students upon graduating will be counted for a Chapter only if the Chapter gets them to fill out an Application form with up-dated information and, also, if they reside in the Chapter's Area.

MEMBERSHIP STANDINGS, DEC. 4, 1970

BAYOU OVER THE TOP—BATON ROUGE SLIPS TO LAST PLACE!

Position	Chapter	Applications	Quota	% Quota
1	Bayou	13	10*	130.000
2	Monroe	14	15	93.333
3, 4	Alexandria	7	15	46.666
3, 4	Lafayette	7	15	46.666
5	Shreveport	10	23	43.478
6	New Orleans	33	86	38.372
7	Lake Charles	4	14	28.571
8	Baton Rouge	14	55	25.455
	State Totals	102	233	43.777

*New quota of 10 (Board ruling Anticipated 12-11-70).

New Engineers (Continued)

JUNG, JOHN BERNARD
Camp Hill, Pennsylvania
Civil

KELLY, JOHN V.
Huntington, New York
Civil

KHASAT, VIJAY P.
Toledo, Ohio
Civil

LANIER, EDWARD I.
Sulphur, Louisiana
Civil

LAVENDER, JAMES M.
Shreveport, Louisiana
Mechanical

LOPEZ, ABEL A.
Metairie, Louisiana
Electrical

MARURI, JOSE I.
New Orleans, Louisiana
Electrical

MORRISON, CLOVIS L.
Baton Rouge, Louisiana
Civil

NAQUIN, WAYNE J.
Metairie, Louisiana
Civil

NORTON, ROBERT G.
Pampa, Texas
Chemical

OLIVER, DURRETTE L., III
Lake Charles, Louisiana
Electrical

PHILLIPS, THOMAS F.
Westwego, Louisiana
Civil

PICKERING, CHARLES W.
Houston, Texas
Petroleum

RAND, CHARLES L., JR.
Monroe, Louisiana
Mechanical

RAO, SALVATORE A.
West Laurel, Maryland
Civil

RINGEL, DUANE A. LCDR.
Executive Officer
USNMCB Forty
FPO New York
Civil

RINGLE, COLIN K.
Maplewood, Louisiana
Chemical

ROM, WILLIAM J.
Greenland, New York
Electrical

SIMPKINS, HARRY M., III
Gulfport, Mississippi
Civil

SORGENFREI, DONALD F.
Morgan City, Louisiana
Civil

STAMPS, MICHAEL J.
Kenner, Louisiana
Civil

TERRAL, RANNIE, JR.
New Orleans, Louisiana
Civil

TRAMMELL, R. V.
Hurst, Texas
Civil

TURPIN, KENARD N., III
New Orleans, Louisiana
Electrical

WARRINGTON, JOE DAVID
LaPlace, Louisiana
Civil

WILSON, JAMES R., JR.
Metairie, Louisiana
Electrical

YORK, CHARLES E.
Montgomery, Alabama
Civil

BARLOW, MALCOLM G., SR.
Vidalia, Louisiana
Land Surveyor

FAIRBURN, ALVIN A., SR.
Livingston, Louisiana
Land Surveyor

FITZMORRIS, JERON R.
Covington, Louisiana
Land Surveyor

HEBERT, ROY J.
New Iberia, Louisiana
Land Surveyor

LAWRENCE L. KYZAR
Baton Rouge, Louisiana
Land Surveyor

McDONALD, CHARLES L.
Houma, Louisiana
Land Surveyor

MOREL, PAUL J.
Baton Rouge, Louisiana
Land Surveyor

STOCKSTILL, DOUGLAS D.
Picayune, Mississippi
Land Surveyor

WRAY, LUCIAN O., JR.
Gretna, Louisiana
Land Surveyor

PROFESSIONAL ENGINEERS GRANTED REGISTRATION

November 17, 1970

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

BABCOCK, DONALD P.
Baton Rouge, Louisiana
Electrical

BITTING, JAMES L.
Baton Rouge, Louisiana
Mechanical

BLACK, KENNETH L.
Metairie, Louisiana
Electrical

COOL, JOHN R.
Slidell, Louisiana
Mechanical

DONHAM, JAMES F.
Lafayette, Louisiana
Petroleum

HOLLIDAY, GEORGE H.
Houston, Texas
Civil & Mechanical

KIMMEL, KEITH W.
Marshall, Texas
Civil

LAW, ROBERT D., JR.
Baton Rouge, Louisiana
Civil

LEPIC, DONALD E.
Baton Rouge, Louisiana
Civil

MARTIN, JOHN A.
Palos Verdes Peninsula, California
Civil

MAYER, CHARLES W.
Stony Brook, New York
Industrial

MOSES, WARREN G.
New Orleans, Louisiana
Industrial

OLIVE, MARION D.
Houston, Texas
Mechanical

SANCES, SANTO J.
Baton Rouge, Louisiana
Mechanical

SHERMAN, ROGER J.
Closter, New Jersey
Mechanical

SLAVIS, CHARLES V.
Baton Rouge, Louisiana
Civil

STEVENSON, WILLIAM A.
Greenwell Springs, La.
Mechanical

STREED, HENRY R.
Jackson, Michigan
Electrical

THOMPSON, HUGH A.
New Orleans, Louisiana
Mechanical

TOLLERENE, GLENN L.
Houston, Texas
Civil & Land Surveyor

VALO, TERRY C.
Lake Oswego, Oregon
Civil

WERNER, CHARLES A.
Metairie, Louisiana
Civil

WRIGHT, CHRISTOPHER P.
Palm Beach, Florida
Mechanical

NEW MEMBERS

Baton Rouge

EARL H. CARPENTER, P.E.
447 Oak Hills Pkwy.
Baton Rouge, La. 70810

ROBERT L. KETCHUM, P.E.
Route 3, Box 56C
Baton Rouge, La. 70808

GERALD J. RUBIN, P.E.
12539 E. Sheraton Dr.
Baton Rouge, La. 70815

JOHN L. SIMMONS, P.E.
15286 Becky Lee Drive
Baton Rouge, La. 70815

JAMES C. GRESHAM, P.E.
2020 Roseneath
Baton Rouge, La. 70806

MISS RUTH SESSIONS, P.E.
2800 July St., Apt. 42
Baton Rouge, La. 70808

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Box 19086, L.S.U.
Baton Rouge, La. 70803

SEIGLE B. EASTERLY
Route 2, Box 360
Denham Springs, La. 70726

JOHN R. E. LEE, P.E.
12740 Parnell Ave.
Baton Rouge, La. 70815

Lake Charles

DALTON A. MILLER
815 Hilma St.
Westlake, La. 70669

DONALD H. ROBINS
400 Greenway St.
Lake Charles, La. 70601

Monroe

HERMAN CHAPMAN
P. O. Box 1186
West Monroe, La. 71291

HENRY H. WEAKS
2005 Pope St.
Monroe, La. 71201

O. LANDON MILES
1305 Glenmar Ave.
Monroe, La. 71201

HAROLD B. CURRY
1411 Elizabeth St.
West Monroe, La. 71291

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Monroe, La. 71201

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Monroe, La. 71201

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Monroe, La. 71201

JAMES E. BRYANT, P.E.
46 Jana Drive
Monroe, La. 71201

ZANE WISE
500 Beasley St.
Monroe, La. 71201

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3812 Tartan Drive
Metairie, La. 70003

PALMER C. LATHAM
2244 Beck St.
New Orleans, La. 70114

Shreveport

DONALD F. HULL, P.E.
6328 Sand Beach Blvd.
Shreveport, La. 71105

ROBERT A. NEFF, JR.
3500 Riviera Drive
Shreveport, La. 71107

HUGH R. PEARSON, P.E.
9083 Avalon Drive
Shreveport, La. 71108

CONRAD B. ISOM, P.E.
P. O. Box 1407
Shreveport, La. 71102

C. CONRAD WATSON
9449 Pitch Pine
Shreveport, La. 71108

J. THOMAS NESBITT
739 Ockley
Shreveport, La. 71106

Minutes-LES BOARD

September 12, 1970

Holiday Inn Motel — Alexandria, La.

President Szabo called the meeting to order with the following board members and guests present: Farrell W. Adams, P.E.; Charles Barnard, P.E.; J. J. Broussard, P.E.; Hoyt W. Brown, P.E.; Ronnie Cressy, P.E.; Joe L. Davis III, P.E.; G. R. Dyson, P.E.; Brook Ewing, P.E.; John F. Grosch III, P.E.; George L. Heller, P.E.; Lee C. Hill, P.E.; T. J. Hogue, Jr., P.E.; M. L. Hurstell, P.E.; James S. Janssen, P.E.; F. L. Larue, Jr., P.E.; Lamon L. Moody, P.E.; Richard M. Primeaux, P.E.; Charles W. Stokes, P.E.; J. J. Thigpen, P.E. and John F. Vogt, Jr.; P.E. Guests were: Kay B. Aswad, P.E.; C. L. Barber, P.E.; Richard L. Bennett, P.E.; R. L. Boutte, P.E.; Frederick J. Brown, P.E.; B. E. Crawford; Larry C. Grundmann, P.E.; C. W. Hair, Jr., P.E.; Carl Heck, Jr.; Jodie C. Holder, P.E.; R. D. Holstead, P.E.; Zeke Lofin, P.E.; James L. Meyer, P.E.; H. H. Mullins, P.E.; J. C. Myers, P.E.; Jesse C. Odom, P.E.; Robert L. Pate, P.E.; M. A. Pistorius, P.E.; Bill Rountree, P.E.; William H. Sumrall, Jr. and Gerald A. Simmons, Executive Secretary.

The minutes of the Board of Directors meeting of August 7, 1970 were approved as corrected. The motion for approval was made by Mr. Hurstell, seconded by Mr. Cressy and passed.

Financial Report—The financial report was given by Dr. Thigpen for the month of August, reflecting year to date receipts of $4,072.70 and budgeted receipts expected of $5,580.00. Total expenses year to date were $11,909.80 and budgeted expenses for the same period of $10,382.00.

Motion by Mr. Hogue, seconded by Mr. Hurstell "that the financial report be accepted as presented." Motion carried.

Section Reports

Professional Engineers in Education—Mr. Larue, chairman of the P.E.E. Section, reported that the section met and agreed to conduct a survey of engineers in education to get their comments on the possibility of requiring a second examination in addition to the E.I.T. examination by the State Board of Registration in order to become a registered engineer. When the survey is completed, a report will be made to the board of directors.

The P.E.E. Section is developing a program to stimulate interest among engineering faculty who are not presently registered with the State Board of Registration. An effort will be made to get all engineers in education registered.

Mr. Larue stated the section is also preparing to be in a position to submit names of eligible educators to the L.E.S. Board as vacancies occur on the State Board of Registration of representatives of education.

Professional Engineers in Government—The first broad and important subject discussed was the new NSPE policy which urges state societies, chapters and practice sections to affiliate with and speak on behalf of groups of Professional Engineers in collective bargaining situations as well as other conditions. Additional information regarding these procedures is needed and it is requested that the LES office write NSPE for details of these activities and guidance information. Meanwhile, the PEG section unanimously adopted a resolution that new local groups, associations, etc. desiring to affiliate with LES for negotiating purposes should contact the state society headquarters as the initial step (resolution is listed in minutes of PEG meeting and is being submitted separately). Procedures for carrying out these programs should be established by the Board of Direction such as assigning responsibility to local chapters to coordinate, obtain information and work with local area groups. Statewide groups desiring affiliation with LES could logically be assigned to the state PEG section. All such efforts should be cordinated through LES headquarters.

It is important that these steps be taken as soon as possible since at the present time there are at least two government Professional Engineer groups or associations now in existance which will probably seek assistance and affiliation at an early date. Therefore, prompt action by the LES Board is necessary.

The second major item undertaken at the PEG meeting was a review of areas and conditions that should be looked into by the LES Salary Study Committee. We were very pleased and honored to have visiting in our meeting Mr. Malcolm L. Hurstell, Chairman of the Salary Study Committee. Members in attendance informally discussed a number of inequities and inadequacies which exist in state and parish government employment of Professional Engineers. After extensive discussions, it was decided that the Executive Board of PEG would prepare a written report to submit to Mr. Hurstell which would suggest items for study by the Committee. In addition, a PEG committee can be made available when and if needed by the Salary Study Committee composed of persons who represent state and local government agencies employing Professional Engineers.

Two agenda items which were thoroughly discussed were increased LES membership dues and proposals for revision of the Professional Engineering Registration requirements. By separate resolutions and each unanimously supported, the PEG formally endorsed both of these proposals. PEG chapter delegates were instructed to return to their local chapter and present a review of PEG actions in these two matters and urge society wide support for these two proposals.

The group present considers it highly important that Louisiana continue its participation in the PEG Board of Governor's activities of NSPE. Mr. Arthur R. Theis, P.E., is our selected delegate and it is hoped that he will serve in this capacity for a three year sustained period which will enable our representative to become quite prominent and sustained in these activities. The matter of finances for the PEG delegate is not finalized but we anticipate no additional monetary burden on the LES budget.

Mr. Hirsch C. Meyer, Jr., P.E., has been appointed as membership coordinator for the State PEG Section. This appointment has been made with the idea in mind that there is a large potential for new members and increased LES member participation among government employed engineers. Our membership coordinator will be available to work with the LES Membership Committee for Information and assistance as needed.

The 1971 Government Professional Development Award is restricted to state government agencies. The basis for this award includes qualification, salary, employment requirements, merit systems, position qualification, and other matters pertaining to engineering employment practices. All of these matters are administered and carried out through the Louisiana Department of Civil Service and little or no latitude for state agency decisions remaining. Therefore, there is uniformity among Louisiana agencies instead of professional competition. This condition has resulted in the conclusion that the PEG recommends that Louisiana not submit a nominee for this award at this time.

Professional Engineers in Industry—There was a meeting at 2:00 PM on September 11, of the Executive Committee of the PEI Functional Section, followed at 3:00 PM by a general meeting of the PEI Section in Alexandria. Continued concern was expressed with the reduction of hours and with the changes in curricula in Louisiana's engineering schools. It was decided to request the PEE's to include PEI's in their discussions and policy decisions concerning these matters. It was further suggested that there be a joint PEE-PEI meeting at the next state-wide meeting in New Orleans. We were pleased to learn that such a meeting will be scheduled.

It was also decided because of the increased unemployment among engineers, to request that the Board consider reactivating the Society's employment committee. While this committee was not entirely effective in former years, it is felt that now, with a full time staff and modern methods, an effective committee and procedure could be established.

It having been reported that the national PEI section was considering studying the existing laws and customs regarding "patent rights and inventors rewards" and "portable pensions," it was decided to inform the national group of our interest in obtaining a more equitable provision of these benefits to members in industry.

The LES-PEI group expressed consternation at the Federal Executive Order relative to collective bargaining for professional engineers and expressed approval of the action of the president of NSPE in appointing a "Blue Ribbon" committee to recommend procedures in this matter.

Emphasis was placed on the request that all Chapters hold meetings to discuss and to cast opinion ballots on the proposed changes to the engineers' registration law. The offer to provide information and speakers is still in effect.

Professional Engineers in Private Practice—Mr. John Grosch, chairman of the PEPP Section, submitted the following report:

1. Mr. William Addison was appointed to fill the vacancy of secretary of PEPP Section. Existing committees will generally continue under same chairmanships except Membership which will be chaired by Larry McKee. This committee will make a concerted effort to increase NSPE-PEPP membership and will work closely with the LES membership committee to get engineers to join LES. A bylaws committee has been formed to study existing bylaws and make recommendations.

2. As requested by President Szabo, the possible changes to the State Registration Law were discussed at length. At the spring meeting, Mr. Moody had appointed a PEPP Law Reform Committee to study possible changes. Mr. Joseph Montgomery, as chairman, had submitted the attached report which recommended the following:

"(a) That registration by branches be continued.

(b) That the present exemptions for registration of certain persons doing engineering work for industry and government be eliminated, unless practical benefits to the public and useful purposes are presently derived from having such exemptions in the law."

Motions were passed that the PEPP Functional Section, accept, approve and adopt the Report as submitted by Mr. Montgomery's committee and that the report be submitted to the Board of Directors for appropriate action. It was also moved that the other two items, the elimination of registration without examination after "long established practice" and the possibility of a second examination, be referred to Mr. Montgomery's committee for action and report.

3. The distribution of the Manual of Practice to members was explained by Mr. Moody. This will be accomplished next week and all members are being requested to forward $1.00 to cover the costs of printing and mailing. The section approved

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METAIRIE SHREVEPORT

a motion not to distribute the NSPE 1970 Directory of Professional Engineers in Private Practice to Louisiana officials because of limited number of LES members listed and the costs that would be incurred in this project.

4. A discussion on the legislative action and the costs of same followed. It was felt that the entire LES membership and the engineering profession benefitted from this work, not just PEPP members. Accordingly, it was the feeling of this group that the financial burden for legislative action should not be placed on this section only as has been done in the past. The following motion was unanimously passed:

"Be it resolved that the payment of expenses incurred by the legislative committee from the funds in the PEPP Special Legislative Fund be approved and that of the $1,055.00 remaining in said fund, up to $1,000.00 be paid on the attorney's bill. Be it further resolved that in the future all sections participate in this expense and this item be included in the LES budget."

This motion to be presented to the Board for appropriate action.

5. The meeting adjourned but was reconvened with 12 members to discuss a resolution regarding septic tank installation. The following resolution was approved and the Chairman was instructed to forward it to the board for appropriate action:

Resolution

WHEREAS, the Louisiana State Board of Health adopted a resolution on Individual Sewage Disposal Facilities at their regular meeting on July 28th, 1967 making it incumbent upon all State Officials to make every effort to prevent the use of individual sewage disposal facilities, and the Board has approved code revisions which remove or modify all reference to septic tanks and individual secondary treatment facilities; and,

WHEREAS, the State Board of Health has adopted such policy on the basis that septic tanks and individual secondary treatment facilities are non-functional in the State of Louisiana in residential or commercial applications, and,

WHEREAS, this policy makes no provision that septic tanks and individual secondary treatment facilities are functional when properly designed by a Registered Professional Engineer who supervises the construction, and when properly maintained by the Owner, and,

WHEREAS, the rigid administration of this policy works a hardship and places undue financial burden on the citizens of the State of Louisiana, and,

WHEREAS, the Board of Direction of the Louisiana Engineering Society, representing over two thousand four hundred (2,400) members, oppose the rigid administration of this policy that prohibits the utilization of septic tanks and individual secondary treatment facilities when designed by a Professonal Engineer, licensed by the State of Louisiana, and thereby charged with the responsibility to do so, and, who supervises the construction of these systems, now,

THEREFORE BE IT RESOLVED, that the Board of Direction of the Louisiana Engineering Society prays that the Louisiana State Board of Health will instruct all state health officials to approve properly executed plans, specifications and construction of septic tanks and individual secondary treatment facilities when performed by and under the supervision of a competent Professional Engineer who is licensed by the State of Louisiana.

Committee Reports

Honors and Awards—Mr. Odom, chairman of the committee, had discussed the Graduate Membership Award. The committee feels the name of the award should be changed to reflect the makeup of the award. He recommended that chapters contact the Deans of the accredited engineering schools and ask that they select the winners to be awarded the honor. The committee is beginning to get nominees from the chapters for the annual awards.

Public Relations—Mr. Holder reported for the committee. He urged chapters to do a better job of reporting activities to the local news media, and the LES for the LOUISIANA ENGINEER.

Mr. Cressy reported for Mr. Nelson. He encouraged chapters to intensify their efforts in securing advertising for the LOUISIANA ENGINEER. The New Orleans chapter has mailed over 130 letters to prospective advertisers and plans a follow up on each prospect.

Legislative Committee—Mr. Crawford, chairman of the committee, reported the committee is beginning its year's activities with the goal of contacting as many representatives and senators as possible to familiarize them with L.E.S. This type contact will help in influencing legislators in the next fiscal session.

Ethics and Professional conduct—The Chairman discussed the fact that the meeting for the purpose of planning the activities for the 1970-71 Society year. It was pointed out that the Committee shall investigate and report to the Board of Directors of the LES all instances of unprofessional conduct and/or breach of the Code of Ethics by any Member of the Society; the Committee's operations shall be handled by the procedures set forth in Article X of the Constitution of the Society. Mr. Denson pointed out that all committee activities should be handled in a strictly confidential manner; this was agreed upon unanimously.

Mr. Moody pointed out that the LES Board had adopted the NSPE Code of Ethics as printed in the June 1970 Edition of the LOUISIANA ENGINEER magazine, and suggested that each member of the Committee procure their individual copy and read the article by Waldemar Nelson concerning the Code of Ethics.

The Chairman also pointed out that the "Opinions of the Board of Ethical Review," as issued by the NSPE was bound in three volumes and could be procured from the NSPE headquarters in Washington.

A rather broad discussion was held concerning publicizing **sample** or **example** cases of possible violations of the Code of Ethics. It was decided that all significant cases investigated by our Committee would be published in the LOUISIANA ENGINEER without necessarily revealing the names of members involved.

It was also felt that it would be helpful to run a series of articles in the LOUISIANA ENGINEER that would be selected from the aforementioned "Opinions of the Board of Ethical Review" of the NSPE. Mr. Cressy is to verify with Mr. Waldemar Nelson whether or not our Committee will be given space in the magazine for this purpose. Assuming this space is available to us the Committee agreed that individual members would write articles to appear in the magazine upon assignment by the Chairman.

The Chairman presented a complaint received from a firm of attorneys inquiring if the Phillips Iron Engineers, Inc. of New Iberia, Louisiana were not in violation of Louisiana Revised Statute 37:681 concerning the use of "Engineer" or "Engineering" in the title of their firm. Mr. Moody pointed out that this matter had also been presented to the State Board of Registration for their investigation and that Dan Vliet has already communicated with the legal firm on the matter. Mr. Moody pointed out that he would forward copies of the correspondence to each member of the Committee. There was an ensuing discussion concerning the jurisdiction of our Committee over such matters and it was agreed that our Committee should receive any and all complaints concerning ethics of professional practice even though any disciplinary action we might recommend could only be bonified if the individuals were Members of the LES. It was felt that we could help our profession by considering all such complaints and seeing that they were placed in the correct hands even though they might be outside of our jurisdiction.

Membership Committee—

1. The Membership Committee moved to consider student grades, especially toward the adoption of appropriate rules and application forms. In accordance with NSPE's activity in this direction affiliation by the student members with NSPE will also be encouraged.

2. It was noted that the LOUISIANA ENGINEER did not publish the membership contest standing in the August issue. Tassin-Perachi has been added to the membership mailing list; the Membership Committee respectfully requests a follow-up by the State Office just prior to publication deadlines.

3. The Membership Committee discussed the new NSPE grades covering non-registered engineers or individuals affiliated with engineering. There is an apparent need for further study and the Membership Committee requests the board to appoint an ad-hoc committee for this purpose, or appropriately charge the membership committee in this direction. The study committee should be charged with evaluating the various grades of membership available in NSPE and determine their applicability to current LES grades. Consideration for revision of LES grades, if any, should result from the study.

4. The Membership Committee recommends that the rules governing the Chapter membership contest described in Section F of the Membership Committee Manual be changed in the method of quota determination to provide that the minimum quota for any chapter be set at ten members. Specifically, pages F-1 and F-2 of the Manual should be changed as indicated on the attached copies.

Education Committee—Mr. Mullins, chairman of the Education Committee made the following report: Mr. Hoyt Brown reported that the existing management program was off from first semester. He had contacted Dr. Herbert Hicks, Professor

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of Management and Marketing and Program Coordinator at College of Business Administration at L.S.U. who is in charge of the course. Dr. Hicks told Mr. Brown that the enrollment was down from 176 registered last September to only 75 who have requested Fall courses.

Shreveport has 11 between two sessions; Alexandria has 11 for their class; all of the New Orleans classes are down. Mr. Soulier reported that 15 have been signed up for a Monroe class. As it takes 20 for any one class, there may not be enough signed up in Monroe to start a class. Dr. Hicks told Mr. Brown that the entire course had been expanded from four to six.

In a general discussion of the courses and what limit will the courses being given by L.S.U. have on a master's degree, it was brought out that only six hours can be transferred on a master's degree from one college to another.

In a discussion of percentage of people signed up to percentage of people actually finishing the course, the general average is 70%, whereas in New Orleans it has been running 88%.

A discussion of the curriculum was held and the intent of this course is to make it a meaningful thing to both engineers and the managers of industry throughout the state.

A discussion was held on the new non-thesis course leading to the degree of Master of Engineering given by Tulane University, Department of Mechanical Engineering, which has been well presented and will be offered in the fall of 1970. All are in agreement that we should give this as much coverage and publicity as possible in line with Mr. Hoyt Brown's letter to Mr. Gerald Simmons dated August 26, 1970.

The next item discussed was the preparatory course for the EIT examination. This course had been promoted at L.S.U. N.O. by Mr. Frederick J. Brown. After some discussion, it was moved by Mr. Brown and seconded by Dr. Lee Johnson, that the Education Committee request the L.E.S. Board to sponsor a refresher course as preparation for the EIT examination and further approval of preparation of a refresher course for advanced examination for professional registration. The program should be under the coordination of Mr. Frederick J. Brown. The total class would cost approximately $2,500, with 20 people, this would be $125 each.

Motion by Mr. Hogue, seconded by Mr. Hurstell, "that the Board of Directors waive the requirement for action on a recommendation from a committee until the next meeting." Motion carried.

Motion by Mr. Hogue, seconded by Mr. Hurstell, "that the LES sponsor semi-annually the course that will prepare engineers for the EIT Examination in each chapter where the need exists and where the courses can be maintained at no cost to the Society and that it be under the supervision of the education committee." Motion carried.

Vocational Guidance Committee—Mr. Holstead submitted the following report:

The plans and actions recommended for the current year are:

1. The Vocational Guidance Committee of each section will be notified of the date, time, place and director of the National Engineering Aptitude Search Center in its area and will be encouraged to aid in publicizing and administering the test.

2. Each section will be notified of the current JETS chapters in its area and will be asked to encourage and support these chapters. Each section will also be supplied information about JETS and encouraged to promote new chapters in area high schools.

3. The Vocational Guidance Committee of each section will be asked to contact the officials of the regional science fairs in their area and inquire about the need for judges. Where a need exists, it is recommended that the LES section supply the judges.

4. A copy of "Guidance of Precollege Youth. An Engineer's Responsibility" will be sent to the Vocational Guidance Committee of each section.

Inter-Society Relations—Mr. Pistorius submitted the following report:

1. The chairman presented a brief review of the activities of the past years and asked for suggestions for this year.

2. It was resolved that this committee would offer its services to the board of Direction by utilizing the various chapter representatives to work at the chapter level in gathering opinion from the technical engineering societies on the proposed Professional Engineer registration law changes. This would be done concurrent with the L.E.S. poll of opinion or, later, at the discretion of the Board.

3. It was suggested that the chapter representatives to this committee would also publicize and invite the technical societies in their area to any L.E.S. program dealing with the proposed registration changes.

4. It was suggested that each chapter representative to this committee be charged with collecting membership rolls of the technical societies in his area. This membership information would then be made available to the L.E.S. chapter membership chairman for his use in recruiting new memberships.

5. The chapter representative should encourage and endeavor to establish utilization of joint programs between the L.E.S. chapter and other engineering societies. Principally, this would best be accomplished by inviting others to our meetings when we have programs of a statewide interest, such as Engineering Professionalism, Registration Law Changes, etc. It was the feeling of the committee, that joint gatherings and presentation of programs of this nature would generate interest and show a need for membership in L.E.S.

Engineering Technicians Committee—Mr. McMannis reported the plans of the committee for the coming year as follows:

a. Continued assistance and encourage existing ASCET chapters
b. Coordination of efforts between existing ASCET chapters
c. Coordination and extension of some privileges to ASCET members by LES such as exists between ASCE and ASCET
d. Articles concerning engineering technicians in the LOUISIANA ENGINEER
e. Assistance and promotion of ICET exam
f. Formation of new ASCET chapters in state
g. Civil Service recognition of ICET certification
h. ICET acceptance by local industry, Financial and otherwise
i. Contact Sewage & Water Plant Operators School in New Orleans
   Contact Southwestern Gas Measurement Short Course (see if committees work can be coordinated with above)
j. Each member of committee to survey the potential for ICET and ASCET in his area and to investigate financial assistance for organizational functions

Special Higher Education Study Committee—Mr. Vogt reported that letters have been sent asking for funds to finance the study of Engineering Education in Louisiana. To date, 13 replies have been received pledging or remitting a total of $2,600. Twelve replies declined to participate. Mr. Vogt asked each chapter to encourage its members and industry in their area to contribute to this worthy cause. In addition, he suggested a story in the October issue of the LOUISIANA ENGINEER requesting contributions from individuals.

Statewide Meetings—Mr. Brown, chairman of the committee, stated that the joint meeting with the Mississippi Engineering Society will be held in July 1971 in Biloxi. He suggested that members begin making plans now to attend.

The Committee is looking into the possibility of moving the spring meeting up from the March date now set. If adequate facilities can be found, the meeting will be rescheduled. If not, the date will remain as is.

OLD BUSINESS

Discussion of Chapter Rebates for 1971—Motion by Mr. Vogt, seconded by Mr. Barnard, "that action on chapter rebates be deferred until after the vote on the dues increase." Motion carried.

Report of Liaison Committee—Mr. Boutte, vice chairman of the Liaison Committee reported that: The only matter of business considered was that of nominations for the position on the board presently held by Ben T. Bogard, whose term expires on October 16, 1970. Five names were required and nominations were to be made to the L.E.S. Board of Directors for their consideration.

Mr. Janssen had, prior to our meeting, contacted Dr. Dan Vliet, Executive Secretary for the Board of Registration. Dr. Vliet informed Mr. Janssen that the Registration's Attorney had advised that the seat to be vacated by Mr. Bogard could be considered the seat "at large"; since Mr. ZurBurg can still be considered in the education field even though he has retired.

On this basis, the committee reported the following nominations to the L.E.S. Board of Directors:

Ben T. Bogard, P.E.—Ruston
Raymond E. Jenkins, P.E.—Lafayette
John F. Vogt, Jr., P.E.—New Orleans
Charles W. Stokes, P.E.—Lake Charles
Farrell W. Adams, P.E.—Shreveport

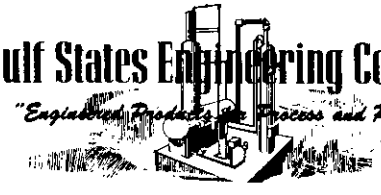
Motion by Mr. Hurstell, seconded by Mr. Heller, "that the report be accepted and the above mentioned nominees be appointed." Motion carried.

Review of Code of Ethics—The Code of Ethics as published in the LOUISIANA ENGINEER was discussed.

Motion by Mr. Ewing, seconded by Mr. Primeaux, "that the Code of Ethics as published in the June 1970 issue of the LOUISIANA ENGINEER be adopted by LES as its code." Motion carried.

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NEW BUSINESS

Mr. Szabo introduced Mr. Bill Rountree representing the Louisiana Society of Professional Engineers in Civil Service. Mr. Rountree stated that L.S.P.E. would contribute $500 to the legislative fund to help defray the costs of the recent legislative session. He suggested that engineering groups work together to better use dollars available for legislative activities.

Lafayette Chapter Bylaw Change—Mr. Hill, president of the Lafayette Chapter, asked that the Board of Directors consider granting the Lafayette chapter permission to change its bylaws to separate the offices of Secretary and Treasurer.

Motion by Mr. Brown, seconded by Mr. Primeaux, "that the rules be suspended to allow the change in the bylaws to be brought before the meeting."

Motion was objected to, therefore the rules were not suspended. The partition will then follow rules required for submission to the Board of Directors.

Chapter Newsletter—Mr. Szabo congratulated the chapters on the quality of their chapter newsletters. He asked each president to have the LES officers and Executive Secretary added to the mailing list if it has not already been done.

Chapter Admissions Committee—Mr. Szabo urged each chapter to activate their admissions committee and to use the handbook prepared for them.

Health & Safety—Mr. Vogt reminded the board of directors of action taken this past session of the legislature to establish the Industrial Health & Safety study commission. He suggested the PEI Section consider recommendations for a representative to serve on this commission.

Group Auto Policy—Dr. Thigpen reported that a preliminary investigation has been made into the possibility of a group auto policy for L.E.S. He stated that further study was needed before making a recommendation.

Pollution Study—Mr. Primeaux, president of the Alexandria chapter, recommended that a statewide Pollution Study Committee be appointed to make recommendations to the Society as to what can be done to curb pollution. The matter is to be considered at the next board meeting.

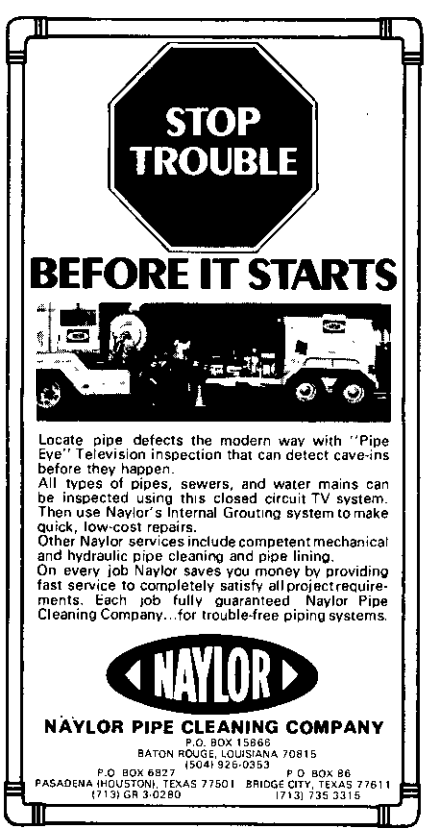
NSPE Award—The NSPE has requested a nominee for the NSPE Award presented each year to an outstanding engineer.

Motion by Mr. Hogue, seconded by Mr. Hill, "That LES submit Dr. Reneau of the Monroe chapter as its nominee for the award." Motion carried.

The next meeting of the Board of Directors will be held at 3:00 p.m. on Friday, October 16, 1970 at Baton Rouge, La.

Corrections to the Minutes of the L.E.S. Board of Directors Meeting on August 7th.

1. Page 4—separate the two PEI resolutions and assign numbers 1 and 2.
2. Page 5—2nd paragraph under "report of Lapel Emblem Committee"—add after LOUISIANA ENGINEER the words "and member comments invited."
3. Page 5—3rd paragraph under "Report of Lapel Emblem Committee" change Rogers to Roeger.



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