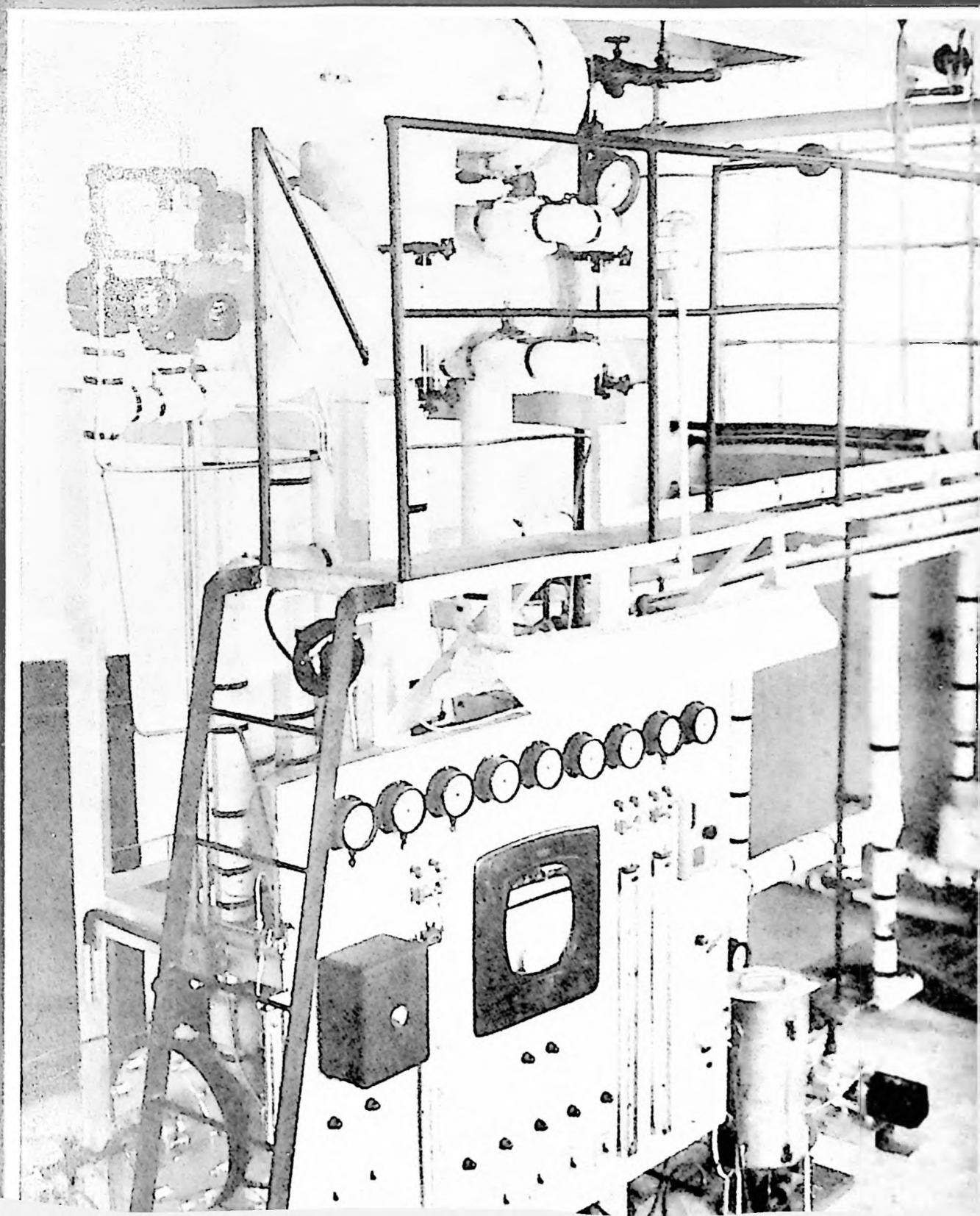


*THE*

LOUISIANA

ENGINEER



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Published February, April, June, August, October, December, by the  
Louisiana Engineering Society, under the auspices of the  
Committee on Publication

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CHESTER A. PEYRONNIN, JR., Editor

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The Louisiana Engineering Society does not guarantee the accuracy  
of statements made or necessarily concur with opinions  
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Subscription, \$2.00 per annum

Single copy, 50 cents

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## ADVERTISING RATES

|                       | One Year | Half Year |
|-----------------------|----------|-----------|
| Full page .....       | \$60.00  | \$33.00   |
| Half-page .....       | 33.00    | 18.00     |
| Quarter-page .....    | 18.00    | 12.00     |
| One-eighth page ..... | 12.00    | 7.00      |

For the back outside cover add 50 per cent to the  
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the above rates.

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Address all communications to  
CHESTER A. PEYRONNIN, JR., Editor, Tulane University  
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Second Class mail privileges authorized at New Orleans, Louisiana

Acceptance for mailing as special rate of postage provided for in section 1105  
Act of October 3, 1917, authorized August 1, 1918

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# THE LOUISIANA ENGINEER

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Vol. 43

FEBRUARY, 1957

No. 1

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*Cover: Small developmental supercharged boiler*



**WALDEMAR S. NELSON**  
**President, 1957**

## WALDEMAR STANLEY NELSON

### New President

Waldemar Stanley Nelson, new president of the Louisiana Engineering Society, is a Consulting Engineer and president of his firm, Bedell & Nelson Engineers, Incorporated.

He was born in New Orleans July 8, 1916, the son of Bernard Stanley Nelson, a mechanical and electrical engineering graduate of Tulane University, and Mary Hutson Nelson, a civil engineering student of Texas A & M College. Five uncles were also engineers, so that in the words of a Federal judge before whom he was testifying as an expert witness, he was "born an engineer".

Waldemar attended R. M. Lusher public grammar school, Warren Easton and Fortier public high schools, and Tulane University, graduating from the College of Engineering with a B.S. degree in mechanical and electrical engineering in 1936, one month before he was 20 years old.

After he went to work for A. M. Lockett & Company as a field engineer on construction of a large gas compressor station in Indiana. Returning briefly to New Orleans, he then went to Texas with the same company on the removal from New Iberia, Louisiana, and reconstruction at Brazoria, Texas, of the Jefferson Lake Sulphur Company mining plant.

Upon completion of the plant, he remained in Texas with Jefferson Lake Sulphur, as civil engineer on construction of reservoirs, roads, canals, power lines, pipe lines, and plant additions, making well locations, ore reserve calculations, subsidence surveys and production estimates.

Returning to Louisiana in 1938, Nelson worked for the Public Belt Railroad, making the original surveys and soil borings for fourteen railroad-highway overpasses and underpasses in the City's major grade separation program. Following this he worked for James M. Todd as resident engineer on the construction of drainage pumping stations and levees in Flaquemines Parish.

Upon completion of this assignment in 1939, Nelson opened his own practice as consulting engineer and engineering contractor, and made power distribution studies, constructed a diesel power plant, and high-voltage automatic substation, and did heating, ventilating, and air conditioning engineering and installation.

On mobilization for World War II, he went with W. Horace Williams Company as Assistant to the Chief Engineer on construction of Camp Claiborne near Alexandria, Louisiana. He was responsible for the requisitioning of all materials for this \$20,000,000

job. When the cost-plus-fixed-fee contracts of the contractor and architect-engineer were terminated, Nelson was placed in charge of both organizations at the job site as Senior Supervising Engineer for the U.S. Army Quartermaster Corps, and later, U. S. Engineer Corps. For the next four years his office was responsible for the preparation of design plans and specifications, letting of contracts, and supervision of construction of military cantonments and airfields, culminating in such responsibility for Camps Claiborne, Livingston, and Beauregard, and Alexandria, Pollock, and Esler Air Bases in the Alexandria area.

In 1945, Nelson returned to New Orleans as engineer for Gravier and Harper, general contractors of Alexandria, on construction of the Florida Avenue Housing Project.

On completion of this job, putting into effect plans made during the war, he joined V. J. Bedell and John G. Bedell in the formation of a general consulting engineering practice, which has grown to the present firm employing over 50 persons. In 1946 his past experience in sulphur mining enabled the firm to develop the engineering design for expansion of the Freeport Sulphur Company's Grande Ecaille mine, and the firm has since designed the Bay Ste. Elaine floating mining plant, and Garden Island Bay, Nash Dome, and Chacahoula sulphur mines for that company under his direction.

Waldemar has been active in the Boy Scouts of America for over 25 years as scout, scout leader, troop committeeman and counsellor.

He has been chairman of the building committee, vestryman, junior warden and is now chairman of the building fund of St. Andrew's Episcopal Church and a member of the board of Gaudet Home.

He helped organize the student A.S.M.E. at Tulane, the Junior Group A.S.M.E. in New Orleans, and has served on many special committees and the executive committee of the New Orleans Section of the American Society of Mechanical Engineers, serving as chairman from 1951 to 1952. He was general chairman of arrangements for the national Tenth Annual Petroleum Mechanical Engineering Conference held in New Orleans in 1955 and has just been appointed by President Ryan of the American Society of Mechanical Engineers to serve a five-year term on its national Committee on Professional Practice of Consulting Engineering.

He is a founder and past president of the Engineers Club of New Orleans and a past president of the Society of Tulane Engineers. He is a member of Tau Beta Pi, American Association for Advancement of Science, American Institute of Electrical Engi-

neers, Society of American Military Engineers, American Waterworks Association, American Wood Preservers Association, American Concrete Institute, American Petroleum Institute and the Chamber of Commerce of New Orleans and the National Society of Professional Engineers.

The Nelson family includes Waldemar, his wife Opal Miller, and five children; Mary Sue, Martha, Charles, Virginia, and Kenneth. Waldemar's hobbies include his workshop, boating, fishing, camping and photography.

\* \* \*

### **PRESIDENT'S MESSAGE**

The Louisiana Engineering Society, in this year 1957, must decide two major questions and should direct its endeavors toward four principal activities.

The first question faced by the Society is whether or not it should affiliate with a national engineering organization and if so whether that organization should be the National Society of Professional Engineers or the Engineers Joint Council. Proposals have been introduced at the Board meetings, urging consideration of both courses and committees have been appointed to investigate the advantages of each. These committees will report prior to the March Board meeting and the matter will be discussed at that meeting by the Board, including the presidents of the various State sections. Full information concerning the affiliation will subsequently be distributed to the membership and the matter decided by election in June.

The second major question faced by the Society is the advisability of seeking revision of the State engineering licensing law. An unsuccessful attempt to secure certain revisions was made at the last regular session of the legislature and if the revisions are to be made at the next regular session in the spring of 1958, much ground work will have to be done by the Legislative Committee this year.

If the Society is to continue to grow in strength and membership, its activities must be vigorously promoted from year to year. Most important for 1957 we consider to be the vocational guidance program and in particular the sponsorship of JETS clubs throughout the State. An excellent committee, which functions from school year to school year, has been working on this program and will continue to do so. We hope this year to enlarge the scope of this committee's activities and to sponsor additional JETS clubs at high schools throughout the State.

The second major activity we hope to push this year is the membership program. The Society has enjoyed a steady growth following a phenomenal spurt immediately after the war, but with the current influx of industry into the State, we hope that a substantial gain in membership may be realized this year.

The third field of endeavor which we hope to enlarge this year is in the publication of the Society's journal, recently renamed "The Louisiana Engineer". We plan to go this year from quarterly to bi-monthly publication, putting out six issues a year; to change the format and content; and particularly to increase the publication of technical articles by members of the Society and other local engineers. We feel that a great deal of valuable engineering information is presented by our engineers at the section meetings throughout the State but is being lost to the technical press through lack of publication.

The fourth important endeavor which we intend to make this year is to guide the Society into functioning as a more truly state-wide organization through better coordination among the sections on matters such as scheduling meetings and securing outstanding speakers and through holding at least four Board meetings during the year at locations other than New Orleans. We would be glad to hold these Board meetings in conjunction with monthly meetings of the various State sections if this proposition suits the schedule and the wishes of the sections.

WALDEMAR S. NELSON

February 21, 1957



## ANNUAL REPORT

The Society completes its 58th year with gains in membership, financial stability, and service.

The technical programs covered the latest in the fields of development, nuclear power plants, bridges, petroleum refining, highways, electronics and ore processing, in keeping with the varied interests of the members.

Our midyear outing, in addition to being a financial success, experienced the largest attendance ever and this will pose the problem to the new administration of finding facilities to take care of our ever increasing numbers at this function.

Vocational guidance, as always, has been fully active.

The loss of the Amendments to the Registration Act was extremely disappointing, but we shall continue our efforts at the next favorable opportunity.

Although we have increased our membership to 1660, there is a total of over 4000 Registered Engineers in this state which, I hope, will eventually become members of our Society and that we shall be able to accomplish much more through our united efforts.

During the year, requests to consider affiliation with the National Society of Professional Engineers were received from our members and President R. J. Rhinehart of the NSPE was invited to meet with the Board. Following this meeting, a committee was appointed to study the situation and to make arrangements to submit the question to the membership as soon as possible.

Also under study is a proposal to raise the requirements for new members, which I believe would increase our prestige and greatly strengthen the Society.

In the way of service, a gift of a one hundred dollar scholarship to a deserving senior was made at each of the four Louisiana engineering schools.

The JETS Program, our most rewarding service, went forward with the establishment of additional clubs at the Jesuit, McDonogh, and Cor Jesu High Schools in New Orleans, Bolton High School in Alexandria, and Baton Rouge High School. This activity is now on a firm footing and I sincerely hope that we shall see a fuller participation by all of the sections in the future.

We have enjoyed a year of respectable success, due primarily to the hardworking committees and their chairmen. To all of them, I give my sincere thanks for the splendid job that they did.

To the members of the Board of Direction and to our indispensable secretary, I am deeply grateful for their patience and assistance.

To each and every member of the Society, I thank you for the privilege of serving you.

WAYNE P. WALLACE

## In Memoriam

With a feeling of sadness, the Louisiana Engineering Society records the passing of the following members during 1956:

SAMUEL LOUIS BALENTINE, JR.

JOHN GILCHRIST BEDELL

ROBERT G. DUGUE

CHARLES H. FENSTERMAKER

IRVEN E. HANSON

NELSON L. HAWKINS

WALLACE RAY MACK

CLAIR V. MERRIAM

JOHN WARNKE MONTGOMERY

JOHN LEWIS PORTER

A. ALFRED WOODS

Included in the list are several Life Members, one a former President, whose associations with the society dated back to its youthful, struggling days. Others were men in the prime of life, active in their special fields and doing their part to bring credit to their profession. One was a young man whose career had scarcely begun.

Each of these men enriched the society by his membership in it and we were proud and privileged to have counted them among our fellow-members. It is with sincere regret that we close the book on these pleasant associations.

## ENGINEERING BRIEFS

**Insulated Windshields.** The Ford Motor Company in Dearborn, Mich., is studying different metals as a means of insulating automobile windshields and window glass against summer heat rays. Engineers there have found that a film of pure gold (about 1/30,000 the thickness of the human hair) filters out the heat-producing rays and lets cooler light beams pass through.

—*Chemical Week*

\* \* \* \*

**More Money for Research.** There will be more money for basic research in chemistry as well as other sciences if Congress goes along with White House plans to extend federal science grants. If the plan is okayed, the National Science Foundation will have approximately \$58 million to spend in fiscal 1958, compared with \$40 million this year.

—*Chemical Week*

\* \* \* \*

**Atomic Impact on Coal.** Atomic energy's impact on coal production will not be significant until 1975, say officials of the Atomic Energy Commission and Department of Interior. There are predictions of a doubling in coal production by 1980, with an increase in coal demand resulting directly from use of nuclear energy in gasification processes.

—*Chemical Week*

\* \* \* \*

**Metal Umbrella.** A Dutch building contractor has found a way to beat the weather. He erects an aluminum umbrella over his job and raises it with the building. Plastic sides complete the enclosure, while infra-red heats warm the interior when necessary.

—*Engineering News-Record*

\* \* \* \*

**First Space Lab.** The United States' first space travel simulation laboratory, capable of approximating pressures that would be encountered several hundred miles above the earth, is being built by Litton Industries, Beverly Hills, Calif., under Air Force sponsorship. Measuring roughly 15 feet in diameter the chamber makes it possible for human operators to perform tasks that might be required during space travel. Litton also has designed novel space suit, called a manipulator station.

—*Aviation Week*

**Sweet-Smelling Incinerator.** It started with a swank desert resort that had to burn its refuse without disturbing the guests. Now the product is commercially available to make the backyard incinerator less of a nuisance. The home owner sprinkles a liquid odor-masking agent on a wad of newspaper and tosses it on top of the trash burner. Instead of filling the air with the smell of charred refuse, the incinerator gives out a pleasant aroma.

—*Chemical Week*

\* \* \* \*

**Neither Humidity nor Humanity.** Spurred on by the ever-present threat of smog, Los Angeles is speedily mobilizing 463 area industries for a new anti-smog campaign. The plan: a systematic shutdown of air-polluting industries when weather conditions threaten a bad attack. More than 200 plants have already submitted emergency shutdown plans.

—*Chemical Week*

\* \* \* \*

**Russia's Muscles.** Workers at the Leningrad Optics Factory get up from their benches and do calisthenics several times a day. There's no denying it, these athletics help relieve fatigue, where too often American do not use the coffee break to stretch their muscles.

—*Factory Management and Maintenance*

\* \* \* \*

**Sic Transit—Fast.** Razing not-so-old buildings to make way for bigger ones is not new in the United States. The fastest speed has been set by the \$24-million Pacific First Federal and Loan Building in Portland, Ore. The first five floors of an eight-story reinforced concrete building had been completed, when the owners decided to enlarge it. So everything was demolished to the basement-floor level, and an eleven-story steel-frame structure went up instead.

—*Engineering News-Record*

# THE IMPACT OF SCIENTIFIC EDUCATION UPON THE ECONOMY AND NATIONAL DEFENSE

By **Monro B. Lanier\***

Mr. Wallace, members of the Louisiana Engineering Society, ladies and gentlemen, I am honored to have the privilege of speaking informally and non-technically to this large body of scientists and engineers.

I am billed as the "Key Noter" of this meeting but have been unable to obtain a satisfactory definition of the term. The only key note speech that I have heard was televised from a recent national political convention and was impressed with the interesting and glittering generalities and hence, hope that your key noter may not be held to extremely close tolerances. However, I will take as an introductory vehicle for my remarks an inversely paraphrased version, but without any implied quotation, in the form, of the dramatic queries of that golden-voiced key noter and with your indulgence, ask:

"How long, oh Lord; how long"—can we enjoy this prosperity with increasing employment and income without the control and direction of our personal and business affairs by an all powerful bureau in Washington?

"How long, oh Lord", shall private enterprise and capital be permitted to carry on the research and engineering development of our natural resources through profit incentive?

How long may industry, guided by science, continue to create new wealth from the mountains, the plains, from the damming of the rivers and from beneath the sea, whether three miles or three leagues off shore, instead of by the political appointees of the Great White Father and increased taxation.

"How long, oh Lord"—will the people be permitted to be governed by their local laws, mores and regulations of their school boards in the education of their children, rather than by the enforced dictates of a powerful minority in Washington even though in accordance with the wisdom of Marx Lenine.

"Well, Lord, don't you take time off to answer." We all know that as long as we have the courage of our convictions, independence of choice and action at the polls, and respect for our Federal and State Constitutions as written by our wise men, without

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\* *Keynote speaker, Annual Meeting Jan. 10, 1957.*

damaging amendments or interpretations as political expedients, we will all have equal opportunity for education and continued prosperity, under constructive democratic leadership of any party.

We realize the necessity of maintaining confidence of industry and risk capital unshackled by punitive taxation and the adoption of an objective program of upgrading the level of the education of our children, that they may more successfully cope with the scientific problems of tomorrow.

Gentlemen, in my humble opinion from a local viewpoint, no greater opportunity has ever existed for continuing expansion and economic stability of our Gulf Coast region since the early frontiers of America were opened to exploration by private enterprise, than through engineering and chemical research and scientific development of our mineral resources, forests, sea products, and agriculture in this remaining American frontier of which Louisiana is the hub.

What a heritage has been handed down to us as well as many of our names and traits by the adventurous spirit of the explorers the LeMoyne brothers, Iberville and Bienville, who landed on the Gulf Coast in 1699 to colonize for France the Province of Louisiana. While Bienville, presumably the engineer, remained to build the first capital at Biloxi and the ship repair yard near the village of the Pascagoulas, Iberville sailed the Gulf waters to discover the mouth of the Mississippi and then up river to higher ground, establishing a camp and trading post at Nuevo Orlean, later laid out with streets and avenues by Bienville in 1718. Iberville proceeded further up river beneath the high bluff marked by a great red stick, the Istrouma or Baton Rouge, as the boundary of the hunting grounds between the Bayougoula's and the Huma's, which I understand was subsequently taken over by the Long's. The party then proceeded to the upper reaches of the Red and Missouri to carve out an empire from the hinterlands to three leagues off shore and to seek gold for their king. Iberville never dreamed of the existence of the greater resources that lay beneath his feet and the keels of his long boats.

These treasures of natural resources were discovered and developed beginning in the early days of the 20th century, with continuously increasing tempo and scope to the present day, through engineering, geophysical and geological exploration, as well as by a considerable degree of trial and error.

All together there has been developed great wealth and greater potentialities in petroleum, gas, sulphur, salt, phosphate, and forest products, which hitched to the star of chemistry reflects greater values than that of all of the gold discovered by the white man prior to that first landing on the Gulf.

Even during the present decade there has been invested billions of dollars for plant expansion and new developments in the Gulf states and the yield from the production of minerals, agriculture, chemicals and manufactured products, represents quite a satisfactory return on America's investment in the first Louisiana Purchase. As yet, you engineers, chemists and industrialists have only scratched the surface.

These developments will continue to have a marked effect upon the economy of the entire region and of America, and the income of a large segment of the approximately 18 million people of the Gulf states.

The average take-home pay of these people has increased disproportionately to the degree of their educational attainment and that of their children in the sciences which have made these developments possible. Unhappily, a similar condition as to the trend of scientific education exists throughout the nation.

It is a sad commentary that of the 29,000,000 children who will attend elementary and high schools this year, it is estimated that 50% will not graduate from high school, 50% of the high school graduates will not enter college, that upward of 25% of the college freshmen will fail in their first year, and of those who pass only 16% will study any of the sciences, while less than 10% of the latter group will graduate in engineering courses.

The declining percentage of American students electing scientific courses in their college work and of graduates who have majored in mathematics and the sciences as compared to Russian students, is alarming. It is reported that 40% of Russian college students are pursuing scientific courses and are required to graduate.

This situation in America may be traced in part to the failure of children in elementary schools of our rural districts to receive sound basic training in the 3 R's, principally arithmetic, and, subsequently, the lack of interest in and the opportunity to study the sciences and an insufficient number of qualified science teachers.

The Honorable Louis L. Strauss, Chairman of the Atomic Energy Commission, in a recent address on "Freedom's Need for the Trained Man", stated that large numbers of our high school students have no opportunity to discover whether science and engineering appeals to them. They are not exposed to the excitement and challenge of science or to guidance in that direction by parents and teachers. Mr. Strauss further stated that more than 53% of our high schools do not even teach physics and only 4% of the students have the opportunity to study this subject. Only 8%

study chemistry, 12% plane geometry, and 27% algebra. Many high schools will give some form of diploma without requiring the study of any science or mathematics at all.

A major factor in this situation is that while the American aggregate highschool student body has increased by approximately 16% during the past 5 years, the number of qualified teachers of science and mathematics has fallen off about 53% during the same period.

Unless the American trend in scientific education is reversed it will have serious impact upon our economy and security.

This is your and my responsibility as citizens and taxpayers. This condition, I believe, is due for the most part to our failure to pay our teachers enough to make it attractive for qualified graduates to enter the profession or to continue in the work. In fact, the average pay of that indispensable segment of society to whose hands and brains is entrusted the education of our youth and hence the future of science in America, is insufficient to maintain a decent standard of living. It is no wonder that these men and women, recent graduates and experienced teachers alike, are seeking and obtaining employment in other walks of life where a fair salary is paid commensurate with training, education and skill.

We can readily understand, therefore, why large segments of the youth of our country are unprepared and must be excluded in our search for qualified science graduates and engineering talent. Yet, for each new development of science a further increase in the number of engineers is required.

This is especially applicable to perhaps the newest branch of science and the engineering profession, and which requires in one package, an engineer and scientist with adequate theoretical training to make it possible for him to obtain a comprehensive knowledge of electronics, metallurgy, chemistry, mechanical engineering and nuclear physics, which combined subject is sometimes referred to as Nucleonics. Those who become proficient in Nucleonics and are endowed with the mentality and have sufficient mastery of mathematics and other sciences to pursue the research studies are our Nuclear Engineers.

Nucleonics or nuclear engineering as afixed science was crystallized, if not born, under the athletic stadium of the University of Chicago under the direction of Enrico Fermi on December 2, 1942, when the first controlled chain reaction from the fission of the nucleus of the atom of uranium 235 was accomplished.

Subsequently, through unending study of the few available nuclear physicists, the cooperation of many technical schools and



industries and their physicists, chemists and engineers, and the multi-billion dollar expenditure by the government for plans and equipment, there has been brought forth this new development or application of nuclear science for industry and military purposes. This infant nuclear industry already has as many branches and limbs to its trunk as that of the familiar diagrammatic tree depicting coal and its coal tar derivatives.

We now stand on the threshold of a colossal engineering and physical development through scientific control of the chain reaction of fission for the creation of countless isotopes of radiological importance to industry, medicine agriculture and for the release of immeasurably large quantities of energy for the production of power of great potential value as well as for conservation of natural resources and the national defense.

It is significant that the use of electric power is expected to quadruple in the next 25 years, which might well create a critical shortage in the supply of fossil fuel, indicating the importance of the development of nuclear power. Yet the design and development of a nuclear power plant encompasses the most advanced scientific and engineering concept of physics, mathematics, electronics, chemistry, metallurgy, and mechanical engineering.

The progress in the approach to this new horizon of scientific development with its enormous economic and military potential is limited by the relatively meager number of graduates and undergraduates who have majored in mathematics and science and the insufficient number of qualified young engineers available to carry on the research as well as the collateral branches of engineering involved.

The competition in industry for such graduates, perhaps following the law of supply and demand, create at times a set of false values in the minds of these embryonic engineers. As an illustration, an amusing incident occurred in a recent interview of one of the prospective additions to our engineering staff, who, while having just been awarded his M.S. degree, and not yet employed, asked if he came with us, how soon he would earn \$50,000 per year and when would he become president. I advised that I could not vouch for the future salary scale but it had taken me 30 years to become a corporation's president, but with his education and indicated aggressiveness it was possible that he could make it in short order. He declined the job, however, somewhat to my relief.

Rear Admiral H. G. Rickover, Chief of Naval Division of Reactor Development, U. S. Atomic Energy Commission, and Assistant Chief, Bureau of Ships, USN, for Nuclear Propulsion, in-

dicates, from his writings and recent addresses to scientific societies, that he is greatly concerned with the lack of available talented under-graduates and young college graduates. He has stated, in effect, that one of the most important things that he has learned from interviews of more than 1000 college graduates over the past ten years in the search for qualified young engineers is that of the relatively few who had a sufficiently comprehensive background of the sciences and mathematics and satisfactory class standing in their under graduate work, they know many facts but have learned few principles and acquired little knowledge of their application. In this connection, it is pertinent to state that Admiral Rickover grasped the basic principles of nuclear fission and applied it to the propulsion of undersea vessels, as exemplified in the NAUTILUS, which has rendered obsolete the naval undersea fleets of the world and has, in fact, revolutionized the concept of naval strategy. He has provided the sandbags to fill the breach in the levee, holding back the flood for a while, until America can complete counter-measures in our educational program to offset the Russian advance in the cold war of the classroom, looking to major industrial expansion as well as for electronic push-button nuclear hot war.

There is a present shortage of approximately 40,000 engineers in the United States; in 1954, 50,000 engineers were graduated in Russia as compared to only 23,000 in America and it is estimated that a minimum input of 30,000 engineers per annum are required to maintain the present level of industry and the immediate projections of the Defense Department.

Mr. Allen Dulles, Director of the U. S. Central Intelligence Agency, has recently reported that in the decade ending in 1960, Soviet Russia will have graduated 1,200,000 scientists and engineers as compared to 900,000 in the United States and the rate of attrition in Russia is lower than ours because of their lower average age of graduation. Therefore, it is obvious that Russia is speedily outsmarting us at the peril of our international industrial supremacy and possibly our future national existence as we now live it.

You may well ask, "What is the answer?" That may be the 64-billion dollar question. I am not sufficiently didactic or otherwise fitted to offer scientific formulae or original suggestion in regard to the problems and politics inherent to the profession of public school education. I have read radical views as to government intervention in the educational affairs of the States and of participation in the gigantic cost of increasing the quantity and quality of education to the level of Europe and, especially of Russia, but always with amendments and riders to the proposed bills, which have defeated the purpose.

Summarizing from what I have read of reports on the subject and my layman observation, it seems that the basic flaws in our educational system and the shortage of qualified teachers of the sciences and especially in mathematics, and lack of properly prepared engineering graduates in sufficient numbers, stems from:

1st. Lack of interest of the parents and teachers in encouraging the interest of students in scientific studies.

2nd. Failure to stress concentration of attention on arithmetic in the lower grades of the elementary school and algebra, plane geometry, elementary chemistry and physics in high school, as the sub-foundation of a scientist and engineer.

3rd. The indicated policy in public education to develop the courses of study in favor of the average IQ and slow learner, while holding back the progress of students of high IQ, the rapid learners, to the lower level of the average, as hereinafter discussed.

4th. Inadequate scientific and mathematical curricula in many high schools to qualify graduates for engineering courses.

5th. The large segment of high school graduates capable of taking higher education who fail to enter college.

6th. Insufficient number of college students electing courses in science, especially physics, chemistry and higher mathematics.

7th. Last, and most important, insufficient number of qualified science teachers due to the unjustifiably low salaries paid, resulting in an excessive ratio of pupils per teacher.

To meet this situation, at least in part, Admiral Rickover, in an address before the Thomas A. Edison Foundation a few weeks ago, offered many concrete recommendations. Among them, according to my own interpretation of his scientific discourse and in my layman language, were, in effect:

1. Segregation of intellect by "separating the wheat from the chaff", letting the medium IQ slow learners proceed together in accordance with the present average rate of advancement, but separate the students of higher IQ, the fast learners, and advance them by a more rapid schedule, without prejudice to balanced education.

2. Increase the scholastic year from 180 school days to 210 days, thereby reducing the educational span from elementary school through college by two years. This might permit completion of military service and two years of post-graduate work for the high IQ students within the present average time of graduation with a BS degree from American universities and the lower IQ group perhaps two years longer.

3. Increase the public funds for education, not alone for new buildings and equipment, but primarily to drastically increase

salaries of qualified teachers, commensurate with salaries paid in other occupations for equal training and education.

Admiral Rickover goes a step further in suggesting the establishing of model academic secondary schools in 25 centers in the United States, financed by industry and various foundations, and made free to all who can pass the examination on a competitive basis. Teacher salaries in these schools would be in accord with the highest scholastic quality. All classes would be staffed with one teacher to a maximum of 20 pupils.

The school would start with the fifth grade and carry on through high school on a 210 scholastic day basis per year with concentration of effort and training in mathematics and science. Admiral Rickover points out that such a program would demonstrate that which could be accomplished in education throughout the nation with qualified teachers and an adequate length of school year under proper direction.

Admiral Dickover also advocates that industry step into the breach and give sabbatical leave to its topside engineering group for periods of one year each, as volunteer teachers in the high schools of their community in order to increase the interest in science, looking to the development of engineers for the future.

All of these sound recommendations will doubtless gradually be made effective. Meanwhile, I can think of no greater immediate service that you as individuals and your society can render to your profession, to industry and to your country, than to take upon yourselves the duty of encouraging the youth of your community, both boys and girls, through their parents, the PTA, and school faculties, to pursue scientific studies that lead to engineering; as an engineering society invite and urge acceptance by the Oak Ridge Institute of nuclear studies of the National Science Foundation and Atomic Energy Commission to bring their spectacular science road show on wheels to the high schools, particularly in the rural districts which teach sciences in your State. This would, in my opinion, do much to expose youth to the excitement of science. Such demonstrations could readily be followed up with road shows of your own, manned by volunteer chemists and physicists which I am sure would be gladly furnished by the industry.

You should urge your respective boards of education and the faculties of the schools and colleges throughout your State to provide more comprehensive and thorough courses in science, especially in mathematics, as the foundation for any engineering course; urge your legislature, county boards, and city councils to call

(Continued on page 28)

# **THE SUPERCHARGED BOILER AND ITS FUTURE IN POWER GENERATION**

**E. L. Daman and R. J. Zoschak**

**Foster Wheeler Corp.**

With the ever increasing interest of the power industry to achieve more economical production, it appears of interest to examine the supercharged boiler cycle. This paper will deal with the following:

- 1—Supercharged Cycle Arrangement, Economy and Application
- 2—Supercharged Boiler Design
- 3—Supercharged Boiler Development Work

## **Cycle Arrangement, Economy and Application**

The particular cycle considered here is shown schematically in Fig. 1. It may be seen that the air required to burn the fuel is compressed in a compressor "C" driven by a gas turbine "T" which also drives an alternator for the generation of electric power. Steam from the boiler is used to drive a conventional steam turbine electric generator. The conversion of heat into work in the gas turbine adds to the overall efficiency and reduces considerably the fuel consumption below that obtained with conventional steam cycle of the same power. The extent of this saving depends on various factors such as gas turbine inlet temperature, basic steam cycle conditions, arrangement of feedwater heating cycle, fuel fired, etc. It has been found that, with present equipment, the following conditions on the combustion gas side of the cycle are most advantageous.

- 1—Air compressor discharge pressure from 4 to 6 atmospheres.
- 2—Gas turbine inlet temperatures from 1350° to 1450° F.
- 3—Pressure drop from compressor outlet to gas turbine inlet approximately 4% of compressor discharge pressure.
- 4—Excess air ratio approximately 15%.

With conditions as listed above, the reduction in specific fuel consumption may amount to 5% for a 1800 psi 1050°F. Reheat supercharged cycle to 8.5% for a 850 psi 900°F supercharged cycle when compared with the respective conventional steam cycle of equivalent capacity and steam conditions. One of the great attractions of the supercharged cycle is the fact that it can be super-imposed on any basic steam cycle including the super-

critical cycle. Another attraction is the fact that this cycle is not restricted to large units such as the supercritical cycle but is equally (if not more) attractive for small units. This fact alone should make this one of the most broadly applied cycles of the future.

A simplified boiler control diagram for a supercharged cycle is also shown on Fig. 1. This particular arrangement is for a two-shaft gas turbine. The combustor between boiler and gas turbine is used to maintain high plant efficiency at lower boiler loads. Gas turbine power is kept near maximum from full boiler load to half boiler load by keeping compressor air flow substantially constant while varying the boiler fuel rate, and controlling gas temperature to the turbine by means of the combustor.

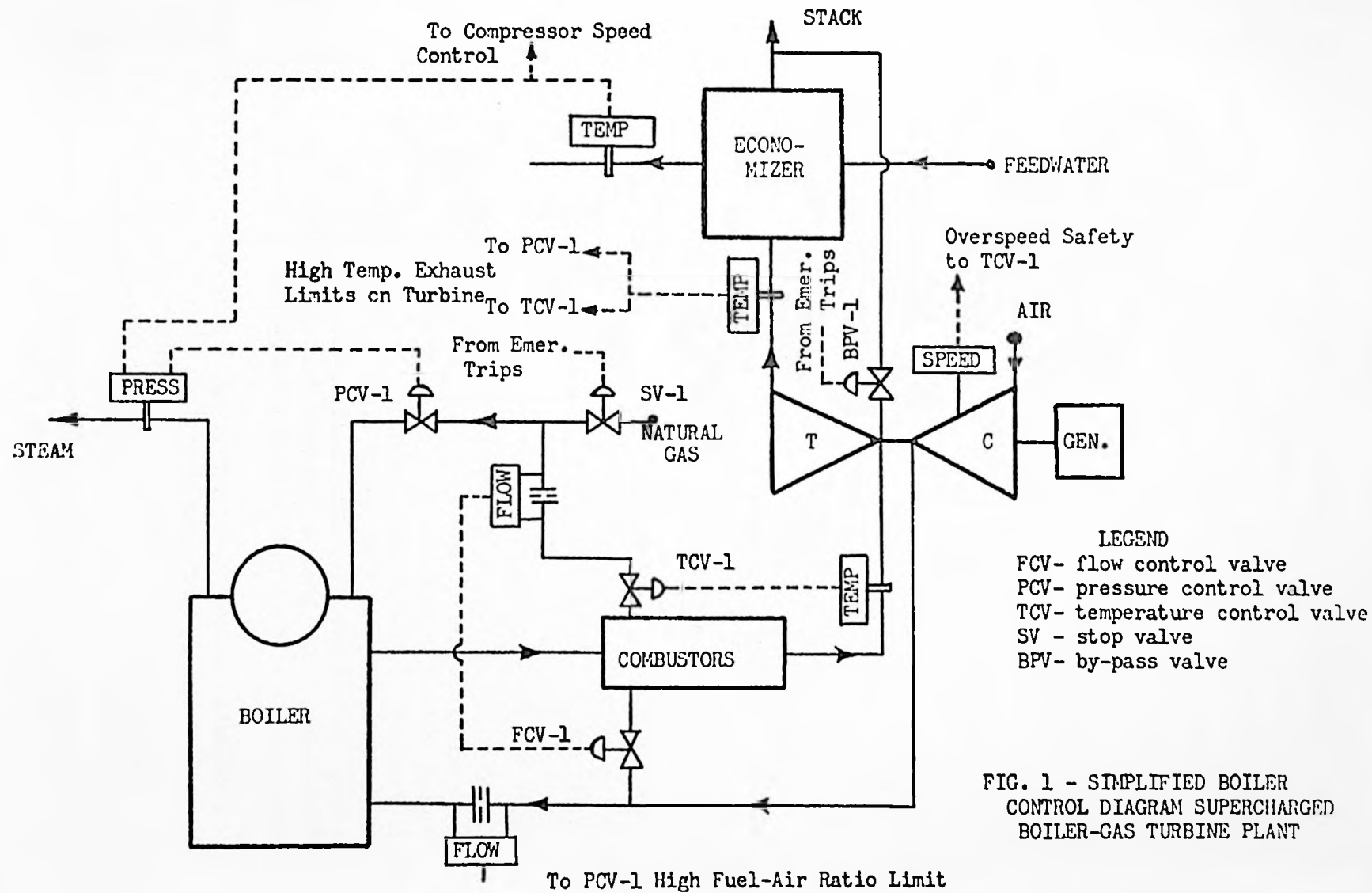
Basically, the boiler fuel rate follows the steam turbine load demand to maintain throttle pressure constant as in a conventional plant. Combustor fuel rate is controlled by gas turbine inlet temperature, with limiting safety controls overriding in case of high gas turbine exhaust temperature or compressor overspeed. Other safety controls reduce compressor speed to reduce gas mass flow if feedwater temperature leaving the economizer becomes too high at low boiler loads, and also prevent fuel-air ratio to boiler from exceeding safe limits in either direction.

#### **Supercharged Boiler Design**

The supercharged boiler differs principally from the conventional boiler in that the designer is confronted with containing the relatively high pressure combustion gases in an absolutely tight pressure shell. As might be expected, this changes the geometry of the boiler considerably. Since one of the more efficient shapes for containing pressure is the cylinder, our supercharged boilers are generally cylindrical in design.

Another difference has to do with heat transfer. In the supercharged boiler there is a substantial increase in heat transfer rate particularly in the convection passes. Convection heat transfer is mainly a function of mass flow and hence in a supercharged boiler in which the density of gases is high, it is possible to achieve high heat transfer rates by using high rates of mass flow with only moderate draft loss. Within the draft loss limitations set forth previously, heat transfer rate in the convection passes may be of the order of 50,000 to 150,000 btu/hr-ft<sup>2</sup>. The radiant heat transfer rate is also increased. This is due to the higher emissivity of the combustion gases under pressure and to a higher heat release rate which increases flame temperature.

The gains in heat transfer rate are such that a supercharged boiler may be designed to have no more than one quarter of the surface of a conventional stationary boiler. However, due to tube



metal temperature and tube spacing limitations, it is not always possible to achieve this much reduction in surface.

The steam-water side of the supercharged boiler presents no unusual or undersirable problems. We have found after building both natural circulation and forced circulation boilers have maximum heat absorption rates up to 400,000 btu/hr-ft<sup>2</sup>, that natural circulation is adequate and more desirable than forced circulation.

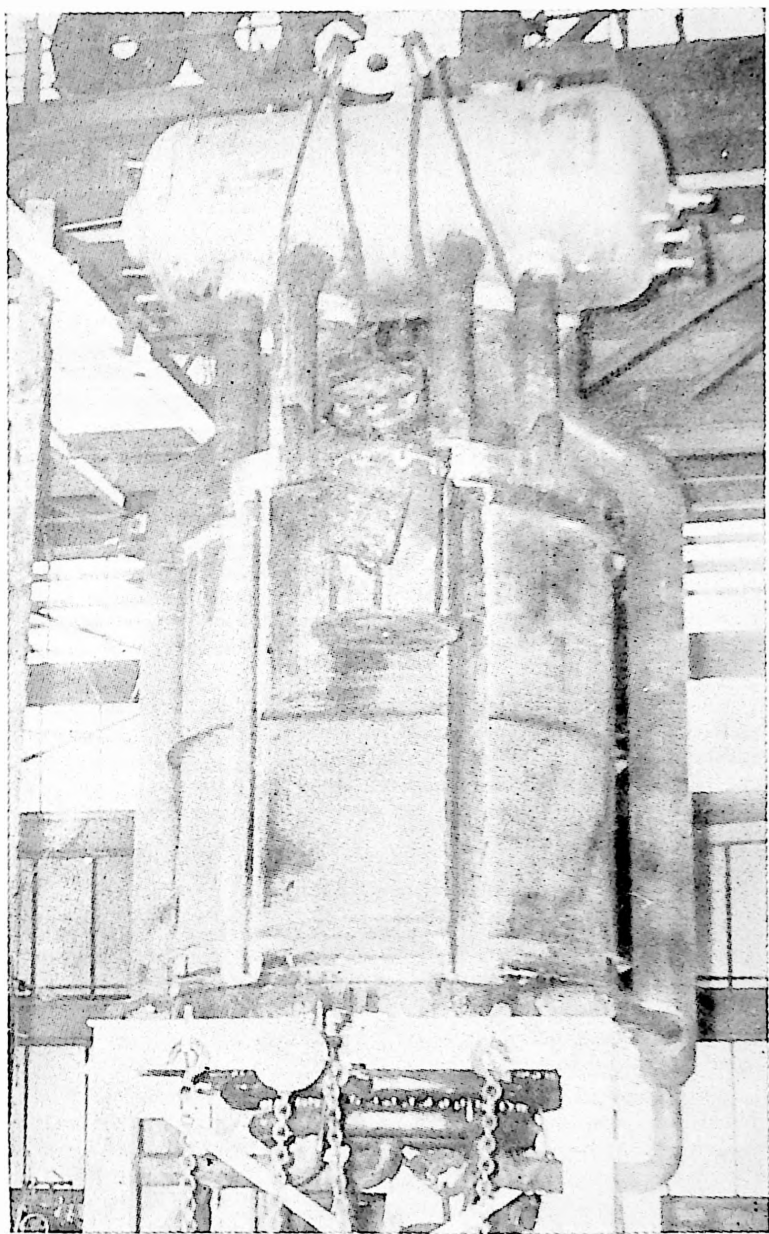
It may be of interest also to talk briefly about the superheater of a supercharged boiler with respect to tube metal temperature. It is in the superheater and reheater where the limitation in metal temperatures previously mentioned requires careful attention to arrangement of superheater surface and materials used. Therefore, it is often necessary on high steam temperature installations to section the superheater and subject the portions containing cooler steam to the high temperatures, or in other words, to use a parallel flow section. This often requires an all-alloy superheater or reheater. However, due to the much smaller amount of surface required, the cost of this is not as much as might be expected. Also, due to the much smaller superheater surface required, a higher mass flow can be used on the steam side for the same overall pressure drop as used in a comparable conventional unit, resulting in higher steam side film coefficients and hence better cooling of the tube.

Fig. 2 shows a supercharged boiler of the package type. This boiler is suitable for distillate oil or gas fired plants with unit capacity up to 350,000 lbs/hr steam. This design up to the size mentioned may be furnished as a shop assembled unit with the exception of external piping and drum.

It is a down-fired, cylindrical, natural circulation boiler with the steam drum and downcomer system external to the pressure casing. Combustion takes place in a cylindrical, completely water wall enclosed furnace. The combustion gases travel down, turn radially outward and flow over screen tubes and thence over a pancake coil superheater. After leaving the superheater, the combustion gases turn upward and flow through a convection generating section and then out through suitable piping to the gas turbine.

Feedwater enters the steam drum, mixes with the saturated water and flows down through external downcomers to supply the lower ring headers. The steamwater mixture rises in vertical tubes to the top ring header and thence flows through external risers to the steam drum. Dry steam leaves the drum and passes downward through a pipe to the superheater inlet header below the boiler. After being superheated, the steam leaves the boiler through the outer superheater ring header.





**FIGURE 2**

Extreme care has been taken to arrange heating surfaces in a symmetrical pattern, thus minimizing the possibility of uneven heat inputs. This is particularly important where heat absorption rates are high. It is interesting to note that due to the cylindrical arrangement very little refractory is used.

A large reheat supercharged boiler has been designed for a 150,000 KW 1800 psi 1050°-1000°F plant. It is an up-fired natural circulation unit with divided furnace suitable for distillate oil or gas firing.

Combustion gas flow upward through a furnace on both sides of the division wall—turns radially outward and then flow down across superheater and reheater surface and finally generating surface before leaving the boiler through two connections to the gas turbine.

Superheat and reheat are controlled in part by differential firing. The superheat and reheat surface is proportioned on the two sides so that temperature control can be maintained to 50% of load.

The furnace walls, superheater, reheater and convection bank sections are arranged in an octagonal pattern surrounded by a cylindrical pressure shell. This permits shop assembly of the furnace wall panels and convection surface tube banks and also eliminates bending of superheater and reheater tubes in a horizontal plane.

The circulating system is similar to the one described for the small boiler. The superheat and reheat sections are connected to the steam supply and final outlet through external piping. Each superheat tube panel is supported at both ends on riser tubes connecting the upper convection generating header to the upper furnace header.

### **Supercharged Boiler Development Work**

Progress has been made in the design of equipment for the combined gas turbine steam turbine cycles. Equipment is available today which will allow construction of such plants when utilizing light fuels. However, to obtain a reasonably broad market, the supercharged boiler and gas turbine must be capable of sustained operation on residual oils.

In a supercharged boiler with close tube spacing and high furnace temperature, the firing of straight Bunker "C" oil would involve risk of heavy deposits on tubes with consequent reduction in heat absorption, and plugging of gas passes with prohibitive increase in pressure drop. In the case of high vandaliuim oils, an additional risk of corrosion of high temperature surfaces such as supports, baffles and superheater tubes is involved. Gas turbine

manufacturers have been faced with this same problem and have done considerable development work on methods of making Bunker "C" suitable as a gas turbine fuel. Intensive work is now in progress to develop steam generating equipment for this cycle which will use heavy fuels. The cover shows the test setup of a small supercharged boiler which is being used to develop a design suitable for Bunker "C" oil firing in the Foster Wheeler Research Laboratory.

The laboratory boiler consists of a horizontally fired combustion chamber followed by furnace exit screen tubes and superheater tubes in that order. The gas after leaving the superheater is cooled further by spraying water into the outlet pipe upstream of the throttle valve which maintains the combustion gas side pressure at 4 atmospheres. Plant air, steam preheated, is used for combustion. Screen tube and superheater tube spacings are similar to that found in larger units as is the gas temperature in the screen and superheater region. The steam-water side is a low pressure natural circulation system with a condenser built into the steam drum. Dry steam from the plant system is introduced into the superheater and allowed to escape to atmosphere after passing through the superheater and the air preheater.

This test unit is being used to evaluate the performance of Bunker "C" fuel in a supercharged boiler. Various oil treatments and additives are being investigated in order to avoid heavy sticking ash deposits and corrosion in the screen and superheater sections. The treatment is of importance not only for the boiler, but also for the gas turbine. In this sense we have been guided largely by the work already conducted by gas turbine manufacturers.

A program to develop coal burning supercharged boilers is under way. The magnitude of such a program can be realized by briefly considering some of the problems involved in firing coal into a furnace operating at a pressure of several atmospheres and discharging combustion gas to a gas turbine. The principal problem involved is minimizing the amount of ash in the gases leaving the combustion zone. Ideally, gas leaving the combustion zone should contain no ash. Then the problem of keeping heat transfer and turbine surfaces clean and free of erosion would not exist. The closer the final design to this ideal, the lower will be the initial cost and maintenance charges.

This ideal may be approached in two different ways. The first way is by indirect firing of the coal using clean gas generated in a gas producer. This will involve development of a simple, reliable and efficient producer which can be built without a prohibitive increase in capital investment and which operates with losses

small in comparison with the gain in cycle heat due to supercharging.

The second approach is by direct firing of coal into the furnace. A slagging type furnace is indicated in this case. This will introduce the problems of continuous removal of molten slag and preparation and feeding of the coal under pressure.

In conventional boilers, the gas temperature leaving the furnace is kept below the fusion temperature of the ash to ensure that vaporized and fluid ash constituents are sufficiently chilled to prevent slag accumulation on closely spaced convection surfaces. If this is necessary in the supercharged boiler, the boiler size will be nearly the same as a conventional unit with attendant higher first cost, to say nothing of the difficulties involved in putting a pressure casing around so large a unit. Thus there is the problem of operating at highest possible furnace exit temperatures consistent with reliable operation and minimal first cost.

In addition, it will probably be necessary to remove the remaining fly ash from the 1500°F gas steam between the boiler and gas turbine.

Although the problems mentioned are difficult, they are not insurmountable, and it is the opinion of the authors that the efforts required to broaden the application of this cycle are justified by the very attractive possibilities of achieving a significant improvement in power generating efficiency.

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## WANTED

Advertising manager for "The Louisiana Engineer." Any member interested in a challenging assignment please contact the editor or the president. Duties will be to take charge of the advertising sub-section of the publications committee. This will be good experience. Starting salary zero with periodic raises in multiples of original salary.

## *Field Notes*

The 1957 Nuclear Congress, to be held in Philadelphia on March 11-15, promises to be the largest and most comprehensive review of atomic energy ever attempted in the Western Hemisphere. Of particular interest is the fact that 24 professional societies have announced their sponsorship of this event. This is an indication of the extent to which the field of nuclear energy has cut across the traditional fields of specialization. The Congress will feature technical sessions, conferences for business executives to acquaint them with potential uses of nuclear energy, and many exhibits.

\* \* \*

In New York the A.S.M.E. and A.I.E.E. have combined to offer a series of evening courses designed to help engineers qualify for the professional engineering license. These review courses will meet once a week for twenty weeks. In addition there will be special self-improvement study groups in effective speaking and modern technical report writing. Any local people interested in a similar project?

\* \* \*

Much has been said recently about salaries in Universities. In a recent Newsletter of the Manpower Commission of Engineers Joint Council the following figures were given. (Reference National Education Association Bulletin Vo. 34, No. 3). The average salary paid in all colleges and universities surveyed was \$5,243 for all ranks. Distribution by ranks was as follows:

|                            |         |
|----------------------------|---------|
| Professors .....           | \$7,076 |
| Associate Prfoessors ..... | 5,731   |
| Assistant Professors ..... | 4,921   |
| Instructors .....          | 4,087   |

Distribution by types of institution is revealed in the following set of figures for all academic ranks of personnel:

|                            |                          |
|----------------------------|--------------------------|
| State universities .....   | \$5,649                  |
| Private universities ..... | 5,585                    |
| Municipal .....            | 6,435 (only 12 reported) |
| Land-Grant colleges .....  | 5,458                    |
| State Colleges .....       | 4,992                    |
| Teachers colleges .....    | 5,401                    |

Of all the types studied the private colleges show up to worst effect. Median salaries in those with more than 1,000 students enrolled were \$4,756; those with enrollments between 500 and 1,000 paid \$4,411; and those with enrollments of less than 500 paid median salaries totalling only \$4,081. By way of comparison, secondary school teachers enjoy a median salary of \$4,350.

The National Society of Professional Engineers has adopted a "Criteria for Professional Employment of Engineers". Topics included in the booklet are recruitment, indoctrination, technical, administrative, personality, and professional development of the individual, salaries, engineering titles, personnel practices, and termination practices. Single copies of the 23 page booklet may be obtained for 25 cents from the National Society of Professional Engineers, 2029 K Street, N.W., Washington 6, D. C.

\* \* \*

The readers will note that this issue has been labelled "February". We have started to publish "The Louisiana Engineer" six times a year. This means that we need to have more technical papers to print in order to keep it interesting. You will also note the new cover and the addition of a few pictures within the magazine. Your new publications committee is taking an active part in cooperating with the editor to give you a more interesting magazine. We still need your cooperation in sending us news of happenings in the state.

\* \* \*

#### KEYNOTE 1957

(Continued from page 18)

elections for authorization of appropriation of funds to provide larger and better paid teaching staffs with smaller classes per teaching unit.

By this means, you can assist in awakening our youth to the necessity of taking a constructive place in the complex industrial and scientific development of this modern age. You will assist in causing the upgrading of education in arts as well as science and accelerate the rate of graduation of qualified science and mathematic teachers and engineers to ultimately succeed you and to build up adequate scientific personnel required for the continued expansion of industry with balanced economy, and to contribute to the security of the nation.

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## OBITUARY OF C. V. MERRIAM

On April 30, 1956, C. V. "Mike" Merriam died. His death ended a distinguished electrical engineering career with an industry and company dedicated to public service. His family, friends and community lost a man whose understanding of the humanities made him a good father, loyal companion and outstanding citizen.

Mr. Merriam was born in the state of Minnesota. He graduated from the University of Washington where he received a degree in Electrical Engineering. He began his more than 33 years of engineering service with the Puget Sound Power and Light Company of Seattle, Washington. He came to this area in 1923 and has considered this "home" ever since.

While Mr. Merriam's position as manager of Gulf States Utilities Company's Baton Rouge Division carried many responsibilities and made many demands on his time, he always had time to help his community put across an important civic project. He had innumerable friends that were drawn to him by his friendly and sincere manner. He was a devoted husband and father. Fitting the definition of a good executive, Mr. Merriam was never "too busy to do the right thing."

In his work with Gulf States Utilities Company, Mr. Merriam is remembered for his friendly smile and warm hand shake, as well as his fair dealings with associates. He called most employees by their first names. A conscientious and generous executive, his passing is mourned by legions of friends both in and out of his company.

Mr. Merriam is survived by his wife, the former Dorothy Denny, and son, C. V. Merriam, Jr.

Be it therefore resolved that this obituary be read at a meeting of the Louisiana Engineering Society, entered into the minutes and published in the proceedings of the Society, and that copies be sent to members of the family.

Signed:

R. J. Robertson  
H. L. Landry  
D. F. Latimer

## OBITUARY OF IRVEN EDWIN HANSON

The Louisiana Engineering Society, the world sulphur industry, the engineering profession, and his many friends have suffered a great loss with the death on October 19, 1956, of Irvén Edwin Hanson.

He was born on February 29, 1892, at Peach Point, near what is now Freeport, Texas. His first job was with Westinghouse Church Kerr, the construction firm that built the Bryan Mount sulphur mining plant at Freeport. When construction was completed, he joined the Freeport Sulphur Company on July 1, 1913. After two years of Army service, starting September 1917, he rejoined the Freeport Sulphur Company May 1919, and was promoted through the engineering department, serving with continuously increasing responsibility as the company expanded to national and international scope.

Mr. Hanson assisted in the construction of seven of the nation's 21 mining plants that have produced sulphur by the Frasch process, and actively supervised construction of five of the seven plants. These include Bryan Mound, Hoskins Mound, and Nash Dome in Texas, and Grande Ecaille, Bay Ste. Elaine, Garden Island Bay, and Chacahoula in Louisiana.

In June 1942, he was made Chief Engineer in New York City where he supervised the design of the Nicaro Nickel Plant, and moved to Nicaro, Cuba, to supervise construction of this plant, February 1944. He returned in January 1945 to supervise engineering and maintenance at the Grande Ecaille plant, then moved to New Orleans to supervise design of a fifty percent expansion of that plant, November 1946 to August 1947, and back to construct the addition and operate the plant.

Mr. Hanson returned to New Orleans April 1951 as Chief Engineer of a plant construction office and supervised design and construction of the Bay Ste. Elaine, Garden Island Bay, and Chacahoula power plants previously mentioned. He established residence at 2115 Joseph Street, New Orleans, and took active interest in the Louisiana Engineering Society, the New Orleans Engineers Club, the Chamber of Commerce, and other community projects.

Previous to his first illness in June of 1956, he had initiated construction of his eighth sulphur plant at Lake Pelto, southwest of New Orleans, and was making preliminary assembly of organization and design data for his ninth sulphur plant to be constructed in the Gulf of Mexico, off the central Louisiana coast.

When tackling future design and construction problems, those who have worked with Mr. Hanson—many for twenty to twenty-five years—will remember his complete application to the problems at hand, the importance he attached to many small details, the unswerving desire to uncover all information concerning a problem, and the painstaking care of coordinating the work of design-



ers, the expediting of construction materials, and the work of constructors.

He was a man of patience and understanding, and was ever ready to offer held, advice, and encouragement whenever he could. Those who have moved with him from Freeport, Texas, to Port Sulphur, Louisiana, to New Orleans, to New York, to Cuba, and back to New Orleans, will not forget the consideration he had for members of his organization and their families, and his untiring efforts to secure for them the best available living conditions and opportunities in the new locations.

All who knew him will remember him as a man who liked to go fishing, play golf, and be a good friend to everyone.

He is survived by his widow, Mrs. Olga Standley Hanson; one daughter, Mrs. R. G. Lansford of Port Sulphur, Louisiana; one son, Irvn Edwin Hanson, Jr., of Baton Rouge, Louisiana; one sister, Mrs. Albert Runnels of Peach Point, Texas; and three brothers, George Hanson of Port Sulphur, Louisiana, James Hanson of Freeport, Texas, and Robert Hanson of Brazoria, Texas.

Be it resolved that this obituary be read at a meeting of the Louisiana Engineering Society, entered into the minutes and published in the Proceedings of the Society, and that copies be sent to members of the family.

Z. W. Bartlett

D. L. Morris

T. H. Zumwalt

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## OBITUARY OF JOHN LEWIS PORTER

The Louisiana Engineering Society lost one of its Past Presidents, a life member and a most distinguished engineer through the death on December 4, 1956 of John Lewis Porter. Surviving are his wife, née Nadine Hunter, three sons, John Lewis Porter, Jr., Arthur Clinton Porter, and David Fowler Porter; two daughters, Mrs. William B. French and Mrs. J. A. Snyder; one brother, Keyes Porter and nine grandchildren.

He was educated in the public schools of North Adams, Mass., and was graduated from the Massachusetts Institute of Technology in 1900 as a Civil Engineer. He was president of the Massachusetts Institute of Technology Club of the South.

After his graduation Mr. Porter came to New Orleans to investigate the feasibility and most economical method of purifying Mississippi River water, on what he thought was a temporary assignment with the Sewerage and Water Board. He remained with the board for some 30 years and spent the remainder of his life in Louisiana.

He later became assistant engineer with the board on design and construction of the initial water purification plants for the city and on their completion was placed in charge of their operation and maintenance. In 1922, he was placed in charge of design and construction of extensions to the water purification plants.

Subsequently, he joined the United States Public Health Service and was assigned to the Louisiana State Board of Health to assist the Bureau of Sanitary Engineering as assistant director of the state's malaria-mosquito control program. He served from 1933 to 1938, at a time when malaria was one of the most serious health problems of the state, and was in charge of all malaria control drainage operations carried on by various relief organizations.

Later, in 1938, he was appointed assistant chief of the division of public health engineering of the Louisiana State Board of Health. His activities included work relating to water purification, sewerage, drainage, stream pollution and other major sanitation problems; and, as Chief of the division's section of insect-vector control, he was in charge of drainage and other activities for control of the insect-borne diseases.

From 1942 to 1946 he was state director of a joint project of the State Board of Health and the U.S. Public Health Service for malaria control in war areas.

When Mr. Porter retired from the Louisiana State Department of Health in June, 1950, malaria was no longer a major problem in Louisiana, thanks largely to the effect of programs under his direction.

The Louisiana Public Health Association awarded the Agnes Morris Memorial award to Mr. Porter for his long record of public service. He was one of the first to receive this award.

During his career, prior to his connection with the State Department of Health, Mr. Porter:

Served as referee chemical engineer on odor control studies in Jefferson parish conducted by the State Board of Health on industries there.

Served as consulting engineer to the Celotex Company on water supply and purification, as well as on the design of a water purification plant for Amite and an incinerator plant at Houma.

He was associated with various consulting engineers on supervision of construction at Camp Sheridan at Montgomery, Alabama during World War I; design and supervision of drainage and sewerage facilities for Monroe, La., and Portsmouth, Va.; on the feasibility of bringing natural gas to New Orleans, and on a water purification plant for Donaldsonville, Marrero, East Jefferson Waterworks District No. 1 and Opelousas.

Following his retirement from the State Department of Health Mr. Porter was associated with the firm of Fromherz Engineers. His principle duties were in connection with the design of water treatment and distribution facilities. His work with this firm included among others the participation in the design of the water treatment plants of Westwego, Caddo Parish Water Works District No. 1, E. Jefferson Water Works District No. 1 and St. Charles Parish Water Works District No. 2.

Mr. Porter became a member of the Louisiana Engineering Society in 1909. He was a Life Member and served as president of the Society in 1928. He was a charter member and past president of of the Louisiana section of the American Chemical Society.

He belonged to the American Water Works Association, the Southwest Waterworks Association, the American Public Health Association and the National Malaria Society.

He was a charter member of Osiris Lodge No. 300, Free and Accepted Masons, a charter member of the University Club, a charter member of the Engineers' Club of New Orleans, a member of the Round Table Club and a charter member of the New Orleans Symphony Society and the old Philharmonic Society of New Orleans. He was a life-long member of the Baptist Church.

John H. O'Neill,  
Frank Fromherz  
James P. Henderson  
Frank W. Macdonald

## SUMMARY OF ACTIVITIES

### Baton Rouge Section

Year of 1956

Following is a summary of the activities of the Baton Rouge Section for the year of 1956. All in all, we have had a very successful year. Our attendance at the meetings has generally increased and made approximately a 10% increase in members.

**JANUARY.** The Statewide annual meeting was held in Baton Rouge on January 19th, 20th, and 21st. This was a very successful meeting and we had an extremely large turn-out from over the entire State. I might say that this meeting was financially self sustaining, and money was returned to the State treasury from the proceeds of this meeting.

**FEBRUARY.** We had our meeting on February 23rd, during Engineers Week. Colonel W. H. Lewis, District Engineer of the Corps of Engineers in New Orleans gave a very interesting talk entitled "The Old River Control Project". Colonel Lewis had illustrations and maps showing the various phases of the work planned and in progress. Approximately 55 persons attended. There were also several other activities during Engineers Week—Our President, Mr. F. G. Hornsby, appeared on both radio and TV in behalf of Engineers Week.

**MARCH.** On March 19th a joint meeting was held with the Baton Rouge Section of the American Society of Industrial Engineers. Professor Chas. A. Reynard of L. S. U. spoke on the subject—"Negotiation and Arbitration of Grievances in Collective Bargaining". This meeting was well attended—there being approximately 60 persons present.

**APRIL.** On April 19th a visit was made to the Louisiana State Prison in Angola, La. This was a tour which was made by bus by approximately 55 persons. There was a very interesting inspection trip of all of the facilities, ending up with dinner being served at the prison. Everyone greatly enjoyed this meeting.

**MAY.** On May 8th, a joint meeting was held with the Student Section of the American Society of Civil Engineers at L. S. U. Mr. J. E. Walters, Project Manager for the Louisiana Bridge Co. was the speaker. The title of his talk was "Construction of the Lake Pontchartrain Causeway. Mr. Walters also showed a color movie of the construction operations. There were approximately 75 persons present for this meeting.

**JUNE.** On June 9th we held our Annual Joint Meeting with the New Orleans Section at the United Commercial Travelers Park. This was a very enjoyable afternoon of horseshoe pitching and refreshments. The meeting later adjourned to the Log Cabin where prizes were awarded and dinner was served. Approximately 95 persons attended this meeting.

**SEPTEMBER.** On September 26th, we held our first fall meeting. Mr. R. H. Annin, District Turbin Specialist of the General Elec. Co., from Atlanta, Ga., gave a most interesting talk, together with illustrated slides. The title of his talk was "Progress Report on Gas Turbines". There were approximately 55 persons present.

**OCTOBER.** On October 25th, we held a meeting at which Mr. J. B. Chatelain, Project Manager of Freeport Sulphur Company's Nickel and Cobalt pilot plant at Braithwaite, La., spoke on "Recovery of nickel and cobalt from Cuban Laterites". This talk completely described the operation both in Cuba and in Louisiana. There were approximately 40 people present.

**NOVEMBER.** Our next meeting was held on November 13th, as a joint meeting with the American Inst. of Electrical Engineers. The subject was "Static Electricity in Industry". This talk and demonstration was given by Mr. G. M. Kintz of the Bureau of Mines—Dept. of Interior. It was voted at this meeting that in view of the excellent meeting and great interest shown that we should write a letter of thanks to the Bureau of Mines for this meeting. There were approximately 110 people present for this meeting.

**DECEMBER.** On Saturday, December 15th, our Annual Dinner meeting was held at the Bellemont Motor Hotel. Election of officers took place at this meeting and the following persons were elected:

President, Mr. Randall Meyer; 1st vice-president, Mr. W. R. Sutton, 2nd vice-president, Mr. Tom Alexander; secretary-treasurer, Mr. Douglas A. Donald. Mr. Jack Burk was elected to the Executive Committee in place of Mr. J. B. Carter.

This was a very successful meeting and had the largest turnout ever had at one of these meetings. There were 151 persons present.

TOM ALEXANDER, Secretary-Treasurer

## MINUTES OF THE MEETINGS AND BUSINESS OF THE SOCIETY

### Minutes of Meeting of the Board of Direction Held on Monday, October 8, 1956

The meeting was called to order by President Wallace with Messrs. Bogard, Cassagne, Drawe, Hetherwick, Hornsby, Nelson, Seago, Smith, Taylor and Fernandez present. Mr. F. W. Macdonald, former president of the society, also was in attendance. Dr. Taylor moved that minutes of the preceding meeting be accepted as read, seconded by Mr. Hornsby and carried.

A report prepared by the special committee named to suggest nominees for appointment to the Louisiana State Board of Registration for Professional Engineers and Land Surveyors was read, in which the following nominees were submitted: Frederick N. Billingsley, Ben T. Bogard, Lionel J. Cucullu, N. Nash Ogen, James M. Todd.

Mr. Seago moved that the board approve the names suggested and that the list be submitted to the Governor. The motion was seconded by Mr. Nelson and carried, whereupon Dr. Wallace stated that he would make these recommendations to the governor.

A report of the Committee on Honors and Awards submitted by Mr. H. N. Ogden, Chairman, was read. Mr. Hornsby moved that the committee recommendations be accepted and that Mr. Irven E. Hanson be awarded the Louisiana Engineering Society Technolgoical Assocplishment Medal for 1956. The motion was seconded by Mr. Cassagne and carried. Mr. Ogden's report also recommended that Dr. George P. Meade be made an Honorary Member of the society, and the secretary announced that this recommendation would be submitted to the Honorary Membership Committee for processing.

A letter from Mr. Joseph R. Mooney, Chairman, Vocational Guidance Committee, to the Director of the JET program at Michigan State University was read, in which Mr. Mooney advised that three JET chapters were assured in New Orleans and that efforts were being made to establish three others.

The secretary announced that all candidates for membership named in the September ballot had been elected to their respective grades.

A letter from Mr. S. G. Henry, Ethyl Corporation, soliciting funds for the Science Fair Conference held at Louisiana State University on October 4-6 and sponsored by the Louisiana Academy of Sciences was read. The secretary was instructed to reply and express the society's approval of the objectives of the conference and regret at its inability to assist financially.

Discussion followed on the selection of a possible date for a board meeting with Mr. Rinehart, President of N.S.P.E. Mr. Nelson moved that the board invite Mr. Rinehart for November 19, seconded by Mr. Seago and carried. It was understood that at the regular meeting of the board on November 12 an agenda would be prepared for the meeting with President Rinehart.

Mr. Hornsby moved that the matter of group insurance be tabled until the next meeting, seconded by Mr. Smith and carried.

Mr. Nelson moved that the resignation of Mr. Benjamin S. Dalton, Oakland, Calif., be accepted with regret, seconded by Mr. Cassagne and carried.

Mr. Nelson was instructed to contact Mr. John F. Vogt with reference to the chairmanship of Engineers' Week for 1957 and assist in initiating the planning for this committee.

Mr. Bogard moved that the Nominating Committee to select candidates for the society's 1957 officers be appointed as follows: R. M. Seago, Chairman, John H. O'Neill, Ole K. Olsen. Motion seconded by Mr. Cassagne and carried.

Dr. Taylor moved that Colonel J. T. Knight, Jr., be nominated to receive the society's annual Certificate of Appreciation for his fine work in initiating the JET program. Mr. Hornsby moved that the nominations be closed, seconded by Mr. Smith and carried. Colonel Knight therefore was unanimously selected to receive this honor.

Discussion followed on Presidents' Night and it was decided that the First Vice-President should be Master of Ceremonies and that this policy should be followed generally in succeeding years.

There being no further business, the meeting adjourned.

JOHN P. FERNANDEZ, Secretary-Treasurer

**Minutes of Regular Meeting of the Louisiana Engineering Society****Held on Monday, October 8, 1956**

The meeting was called to order by President Wallace with approximately 100 members and guests present. The president welcomed those in attendance. Reading of minutes of the preceding meeting was dispensed with, after which the secretary read minutes of the September meeting of the Board of Direction.

President Wallace then called on Mr. Z. W. Bartlett, Vice-President, Freeport Sulphur Company, who introduced the speaker of the evening, Mr. J. B. Chatelain, Project Manager of the company's Nickel-Cobalt Pilot Plant, who gave a most enlightening talk on "Recovery of Nickel and Cobalt from Cuban Laterites".

After the usual question period, the meeting adjourned with a rising vote of thanks to the speaker.

JOHN P. FERNANDEZ, Secretary-Treasurer

**Minutes of Meeting of the Board of Direction****Held on Monday, November 12, 1956**

The meeting was called to order by President Wallace with Messrs. Bogard, Cassagne, Drawe, Nelson, Seago, Taylor and Fernandez present. Mr. Seago moved that minutes of the preceding meeting be accepted as read, seconded by Mr. Drawe and carried.

Mr. Nelson presented the quarterly financial report and advised that \$5,000 could be invested temporarily in short-term savings certificates at the beginning of the fiscal year and cashed as needed during the year. Dr. Taylor moved that the financial report be accepted, seconded by Mr. Bogard and carried.

The secretary read letters received from Tulane, L.S.U. and S.L.I. thanking the society for the scholarships recently established. An acknowledgment from L.P.I. had been received and read at an earlier meeting. Recipients of the scholarships for the 1956-57 year were as follows:

Tulane University, Lionel J. Skidmore; Louisiana State University, Wayne T. Davis, Southwestern La. Institute, James M. McClanahan; La. Polytechnic Institute, Charles R. Connaughton.

A letter from Mr. Bogard was read in which he advised that Governor Long had reappointed him to serve on the Louisiana State Board of Registration for Professional Engineers and Land Surveyors and expressed his thanks to the society for recommending him to the governor.

Discussion followed concerning the forthcoming visit of President R. J. Rhinehard of the National Society of Professional Engineers to New Orleans, and it was decided to hold a dinner meeting at Arnaud's Restaurant on Monday, November 19 at six p. m., and that Messrs. Germano, Molaison and Sessums would be invited.

Mr. Seago moved that Mr. Cary B. Gamble and Mr. Dan P. Mabel be appointed Vice-Chairmen of the Publicity and Program Committees, respectively, for the 1957 Annual Meeting. The motion was seconded by Mr. Nelson and carried.

Discussion took place concerning the reading of obituaries of out-of-town members and it was decided that these should be read at the local section meetings wherever possible.

Upon the recommendation of the board, President Wallace appointed a committee consisting of Messrs. Zumwalt, Chairman, D. L. Morris and Z. W. Bartlett to prepare an obituary for the late Irven E. Hanson. In like manner a committee consisting of Messrs. George A. Heft, Chairman, C. C. Barnard and T. Edward Ernst was appointed to prepare an obituary for the late A. Alfred Woods.

A petition requesting that Mr. Charles M. Kerr be made an Honorary Member of the society was presented and was turned over to the Chairman of the Honorary Membership Committee for processing.

Mr. Cassagne moved that the society place an order for two medals of each type awarded for future use. The motion was duly seconded and carried.

Mr. Nelson moved that, should the Honors and Awards Committee submit a recommendation prior to the meeting with President Rhinehardt, the board consider same at that time. Motion seconded by Mr. Taylor and carried.

There being no further business, the meeting adjourned.

JOHN P. FERNANDEZ, Secretary-Treasurer

**Minutes of Regular Meeting of the Society Held Jointly with the  
New Orleans Section, AIChE on Monday, November 12, 1956**

The meeting was called to order by President Wallace with approximately 130 members and guests present. President Wallace welcomed members and guests of AIChE, after which Mr. Nelson moved that the reading of minutes of the preceding meeting be dispensed with. Motion seconded by Mr. Benton Babin and carried. The secretary then read minutes of a meeting of the Board of Direction held on October 8.

President Wallace announced that the Nominating Committee would receive recommendations for nominees for the 1957 election of officers for a period of ten days following the meeting.

Mr. Cassagne then read an obituary of the late Samuel L. Balentine, after which it was moved that the obituary be incorporated in the minutes of the society, published in the Proceedings and copies sent to the family of the deceased. Motion seconded by Mr. Levey and carried, after which a moment of silence was observed in memory of the deceased.

The chair then was relinquished to Mr. Carl W. Peters, Chairman, New Orleans Section, AIChE, who called on their program chairman to introduce the speaker of the evening, Mr. J. E. Archer, Director, Patent Department, American Cyanamid Company, who gave a most interesting lecture on "The patent Law as Applied to Engineering". After a very lively and informative question period, the chair was returned to President Wallace, who adjourned the meeting with a rising vote of thanks to the speaker.

JOHN P. FERNANDEZ, Secretary-Treasurer

**Minutes of Meeting of the Board of Direction Held on Monday, December  
10, 1956 at the Engineers' Club, New Orleans**

The meeting was called to order by President Wallace with Messrs. Cassagne, Seago, Hornsby, Nelson, Smith, Drawe, Bogard and Fernandez present. Mr. Nelson moved that minutes of the preceding meeting be accepted as read, seconded by Mr. Hornsby and carried.

A telegram from Mr. E. M. Freeman authorizing Mr. Bogard to act as his proxy in any business brought before the meeting was read. Mr. Bogard stated that the reason for this was that he wished to present an important resolution to the board. The resolution then was read and Mr. Bogard moved that it be adopted, seconded by Mr. Smith. Mr. Drawe then offered a substitute motion amending part of the resolution, also seconded by Mr. Smith. Mr. Nelson offered a second substitute motion adding to the resolution, seconded by Mr. Hornsby. The Board then adopted the amended resolution unanimously, as per copy attached to these minutes.

President Wallace then appointed a committee consisting of Messrs. Roy T. Sessums, Ben T. Bogard, E. M. Freeman, R. A. Smith, Charles E. Cassagne, Jr., and William J. Drawe, Jr., to advise the secretary and furnish the necessary information to be mailed to the membership at large.

Mr. Seago presented the report of the Nominating Committee as follows:

- For President, Waldemar S. Nelson
- For First Vice-President, Ernest M. Freeman
- For Second Vice-President, Roy T. Sessums
- For Secretary-Treasurer, John P. Fernandez
- For Director for 2 Years, Walter H. Scales
- For Director for 2 Years, Francis M. Taylor.

Mr. Drawe moved that the report be accepted and presented to the membership at the regular meeting, seconded by Mr. Bogard and carried.

Letters of regret from the following former presidents of the society who were unable to attend Presidents' Night were read: Lionel J. Cucullu, C. Glenn Cappel, F. N. Billingsley, Donald Derickson, James M. Todd.

A letter from Mrs. B. S. Nelson thanking the society for copies of the Louisiana Engineer containing the obituary of her late husband was read.

A letter of thanks from Charles R. Connaughton, scholarship recipient at Louisiana Polytechnic Institute, was read.

The secretary reported that material had been received from the National Society of Professional Engineers and that copies of our constitution and by-laws had been forwarded to them.

The secretary advised that several persons were needed to make presentation of certificates and medals at the annual meeting. It was decided



not to name the persons presenting certificates in the program, but to include those making presentation of medals.

Mr. Cassagne moved that Mr. John C. Jordy be dropped in accordance with his own request, seconded by Mr. Hornsby and carried.

Upon the recommendation of the board, President Wallace appointed Messrs. Frank W. Macdonald, Chairman, Frank C. Fromherz, James P. Henderson and John H. O'Neill to prepare the obituary of the late John L. Porter.

Mr. Smith moved that the secretary obtain an appraisal of the office furniture now held in his possession and report same to the board. The motion was duly seconded and carried.

Mr. Drawe moved that the February meeting date be set for the 18th in keeping with the observance of National Engineers' Week, seconded by Mr. Nelson and carried.

Mr. Nelson moved that Mr. Henry LeMieux be appointed Vice-Chairman of the Publicity Committee for the Annual Meeting, seconded by Mr. Bogard and carried.

Mr. Smith moved that the Board set in motion the necessary steps to require a professional license as qualification for admission to Membership in the society, seconded by Mr. Drawe and carried. President Wallace then appointed the committee on N.S.P.E. membership named in these minutes to include this matter in its duties.

Mr. Hornsby moved that a committee be appointed to determine the feasibility of awarding scholarships to deserving members of JET clubs, seconded by Mr. Seago and carried. President Wallace advised that he would appoint this committee at a later date.

The meeting then adjourned.

JOHN P. FERNANDEZ, Secretary-Treasurer

#### RESOLUTION

WHEREAS the Louisiana Engineering Society has as its purpose the improvement of the Engineering Profession; and

WHEREAS the Louisiana Engineering Society has pioneered the development of the professional of engineering in Louisiana since 1898; and

WHEREAS the march of industry in the South has brought about a need for coordination of professional engineering relations across state boundaries; and

WHEREAS interstate activities of professional engineers create problems not readily resolved by the professional engineering society of a single state; and

WHEREAS the need for national unity among professional engineers and their organization is of paramount importance to the profession; and

WHEREAS the Louisiana Engineering Society is in a position, through its leadership, to contribute to the improvement of the engineering profession on a national level; and

WHEREAS the National Society for Professional Engineers, with headquarters at 2029 K Street Northwest, Washington 6, D. C., is a national organization with aims and purposes that parallel those of the Louisiana Engineering Society; and

WHEREAS the National Society of Professional Engineers is a growing organization of some 38,000 members; and

WHEREAS the National Society of Professional Engineers is affiliated with professional engineering societies in 42 states and the District of Columbia; and

WHEREAS the President of the National Society of Professional Engineers has met with the Board of Direction of the Louisiana Engineering Society to explain the advantages of affiliation of the national society with state societies of professional engineers and has extended an invitation for the Louisiana Engineering Society to affiliate with the National Society of Professional Engineers; and

WHEREAS the Board of Direction believes that it would be in the best interests of the Louisiana Engineering Society to accept this invitation and affiliate with the National Society of Professional Engineers: Therefore be it

RESOLVED, That the membership of the Louisiana Engineering Society be apprised of the factors involved in such affiliation not later than March, 1957; and be it

RESOLVED, further, That the membership be polled by mail ballot on the question of whether the Louisiana Engineering Society should affiliate with the National Society of Professional Engineers; and be it

RESOLVED, further, That said ballot to be mailed to the membership not later than July, 1957, with allowance of 30 days for the return of the completed ballot.

RESOLVED, further, That a committee be appointed promptly to advise the secretary and furnish the necessary information to be mailed to the membership at large.

**Minutes of Meeting of the Louisiana Engineering Society Held Jointly With  
The New Orleans Section, A.I.E.E. Monday, December 10, 1956**

The meeting was called to order by President Wallace with approximately 125 members and guests present. The president welcomed members and guests of A.I.E.E. It was moved, seconded and carried that the reading minutes of the preceding meeting be dispensed with. The secretary then read minutes of the November meeting of the Board of Direction.

Mr. Nelson then called on all former presidents of the society in attendance to come to the dextrum. He thanked them and expressed the society's gratitude for their service, after which a certificate of appreciation was presented to R. Mallard Seago, who served as President of the society during 1955. Similar certificates had been presented to the other former presidents in prior years.

President Wallace then read Article III of the constitution and explained the process of electing officers of the society, after which Mr. Seago, Chairman of the Nominating Committee, presented the committee's recommendations as follows:

- For President, Waldemar E. Nelson
- For First Vice-President, Ernest M. Freeman
- For Second Vice-President, Roy T. Sessums
- For Secretary-Treasurer, John P. Fernandez
- For Director for 2 Years, Walter H. Scales
- For Director for 2 Years, Francis M. Taylor

He then moved that these nominees be placed on the ballot, seconded by Mr. Hornsby and carried. President Wallace then called for any nominations from the floor but none were forthcoming. Mr. Abraham then moved that the nominations be closed, seconded by Mr. Lehmann and carried.

The chair then was relinquished to Mr. Daniel S. Vliet, Chairman of the local section of A.I.E.E. After conducting the business of that society, the principal speaker of the evening was introduced: Mr. T. F. Bost, Jr., District Sales Manager of BROADCAST, General Electric Company, Atlanta, gave a most interesting lecture on the subject of industrial closed circuit television entitled "To See Where You Can't Be".

The chair then was returned to Dr. Wallace, who thanked the A.I.E.E. for obtaining the speaker and the meeting adjourned with a rising vote of thanks to Mr. Bost.

JOHN P. FERNANDEZ, Secretary-Treasurer

**Minutes of Annual Meeting of the Board of Direction with Representatives  
of State Sections Held at Arnaud's Restaurant on Friday, January 11, 1957**

The meeting was called to order by President Nelson with Messrs. Casagne, David, Freeman, Drawe, Fernandez, Riess, Scales, Seago, Sessums, Smith, Sorensen, Taylor, Wallace and Ward present. Each introduced himself, after which the secretary read minutes of the 1956 meeting.

President Nelson reported that a very important resolution had been passed at the December meeting of the Board of Direction, a copy of which is attached to the minutes of said meeting. Copies of the resolution were circulated among those present and Mr. Freeman was called on to explain the objectives of the N.S.P.E. and the requirements for affiliation with that organization.

After some discussion on this subject, Mr. Fernandez moved that the following resolution be adopted, seconded by Mr. Scales:

WHEREAS, the Board of Direction of Louisiana Engineering Society has appointed a committee to study the feasibility of affiliation with the National Society of Professional Engineers, and

WHEREAS, the Louisiana Engineering Society has in the past worked closely with the Engineers' Joint Council, an organization with headquarters located at 29 West 39th Street, New York City, whose aims and purposes are similar to those of N.S.P.E., and

WHEREAS, the Engineers' Joint Council recently has recognized and now accepts affiliation with local engineering societies, and

WHEREAS, the membership of Louisiana Engineering Society should be familiar with both organizations before deciding upon affiliation with either, therefore

BE IT RESOLVED, that a committee be appointed, with duties parallel to those of the committee on N.S.P.E., to gather and prepare information on Engineers' Joint Council, said information to be disseminated to the society's membership along with the data on N.S.P.E.

BE IT FURTHER RESOLVED, that the membership of Louisiana Engineering Society be polled by mail on the question of national affiliation as follows:

- (1) No affiliation
- (2) Affiliation with N.S.P.E.
- (3) Affiliation with E.J.C.

Mr. Freeman moved that the resolution be amended insofar as to delete the last paragraph, seconded by Mr. David and carried. The resolution, minus the final paragraph, then was put to vote and carried unanimously, whereupon President Nelson appointed Messrs. L. J. Cucullu, Chairman and F. W. Macdonald, R. M. Seago, Roy T. Sessums, F. M. Taylor and James M. Todd to carry out the objectives of the resolution.

President Nelson announced that the new Engineering Building at Southwestern Louisiana Institute would be dedicated in the Spring and that Dr. zurBurg, Dean of the Engineering School, had invited the L.E.S. to participate. Mr. David moved that President Nelson be authorized to accept this invitation, seconded by Mr. Wallace and carried.

A copy of a letter from the World University Service, New York, addressed to the Tulane University Student Council, was read, in which the procedure for placing a Hungarian refugee student at the university was explained. A note from the office of the Dean of Engineering at Tulane, inquiring whether the society could assist in defraying a part of the personal expenses of a Hungarian student, also was read. Dr. Taylor moved that the society express its regret at being unable to render assistance. The motion was seconded by Mr. Sorensen and carried.

President Nelson appointed Messrs. Freeman, Chairman, and Wallace and Fernandez to constitute a Finance Committee and instructed the committee to include stenographic assistance for the secretary in its budget for 1957, to be presented at the first regular business meeting of the new Board of Direction.

Dr. Wallace moved that the President and the Secretary-Treasurer be authorized to sign checks drawn against the society's account, seconded by Mr. Sorensen and carried.

Dr. Taylor moved that the President and/or the Secretary-Treasurer be authorized to have access to the society's safety deposit box, seconded by Mr. Scales and carried.

President Nelson appointed Mr. Chester A. Peyronnin, Jr., Editor of the Louisiana Engineer for 1957, and urged all those present to secure papers and news items for the magazine.

The president appointed Dr. F. M. Taylor as the society's representative on the Chamber of Commerce.

Dr. Wallace stated that he would like to see meetings of the Board of Direction held at out-of-town locations occasionally during 1957. Discussion followed on whether the meetings should be held on the first or second Monday of the month, but no decision was reached.

Mr. Ward suggested that a schedule of speakers should be circulated among the sections as soon as possible after it has been arranged, so that speakers could be invited to address two or three local sections in rapid succession. This would permit speakers to schedule several stops in one visit and would permit the sections to secure better lectures for their meetings.

Mr. Riess announced that the Annual Meeting was running smoothly but that he was not content with the interest of the membership-at-large. He believed that a different type of program, such as a general discussion or forum in which all could participate, might arouse more interest and bring out a larger attendance. He also stated that the officers of affiliated societies should not sponsor individual meetings.

Discussion followed on various professional matters, one member desiring that another salary scale survey be made and that this time it be published. It also was desired that a study be made to determine the proper engineering fees for consulting work of various kinds, as well as a study of infractions of the registration law, unethical practices, and other abuses.

A letter from the Young Men's Business Club of New Orleans enclosing a resolution objecting to the proposed construction of an International Building on the New Basin Street neutral ground was read. Dr. Wallace moved that this communication be referred to the Committee on Professional, Civic and Industrial Affairs as soon as it has been appointed. The motion was duly seconded and carried.

Messrs. Drawe and Seago expressed their appreciation for having been privileged to serve on the Board of Direction for their tenures of office, after which the meeting adjourned.

JOHN P. FERNANDEZ, Secretary-Treasurer

#### **Louisiana Engineering Society, Lafayette Section**

The last meeting of the Lafayette Section was held at Poor Boys Restaurant at 7 o'clock on November 20, 1956.

The meeting was called to order by president Hatherwick and several topics of interest were discussed.

Mr. Dave Perkins, a leading architect in Lafayette and a member of the faculty at S.L.I., delivered a very interesting talk on transition of Southern Architecture. Mr. Perkins also showed several slides pertaining to the subject.

The meeting was then adjourned by the president.

J. BRIANT FOURNET, Secretary-Treasurer

#### **Minutes of the Annual Meeting of the Louisiana Engineering Society, Lake Charles Section, January 11, 1957**

The annual meeting of the Lake Charles Section of the Louisiana Engineering Society was held on Monday night, January 11, 1957 at the Pioneer Club, with sixty members and their wives and other guests were present.

The meeting opened with a Smorgasbord Dinner, after which the regular order of business was called by President Gordon B. Wooster. A motion was made and carried that the reading of the previous meeting be dispensed with.

President Wooster gave a brief review of the activities and accomplishments of the Society during 1956 and expressed his appreciation of the work done by the officers and committee members during this period.

The results of the election of officers for 1957 was announced as follows:

President, R. R. L. Ward; Vice-President, Glendon L. Smith; Secretary-Treasurer, Fred R. Adams.

The incoming officers were then introduced and the gavel turned over to incoming President Ward.

Rev. Carl F. Leug, Pastor of the First Methodist Church gave a very interesting discussion on a recent tour of the Holy Land and other parts of the Middle East made by a theological group.

The talk was illustrated by a large number of color slides taken by Rev. Lueg himself.

Following the talk with Rev. Lueg the meeting was adjourned.

FRED R. ADAMS, Secretary-Treasurer

**Minutes of the Meeting of the Lake Charles Section of The Louisiana  
Engineering Society, December 10, 1956**

A dinner meeting of the Lake Charles Section of the Louisiana Engineering Society was held at Sammy's Restaurant on December 10, at 7:30 p.m. Thirty-three members and guests were present.

The meeting was called to order by Vice-President R. R. L. Ward. After a short informal introductory period, the minutes of the last meeting were read and approved.

Mr. W. M. Davis gave a report on the election of officers for 1957. Those elected were: President, Richard R. L. Ward; Vice-President, Glendon L. Smith; Secretary-Treasurer, Fred R. Adams.

Mr. Ray E. Burgess informed the group that our annual meeting would be held on January 14, 1957, at the Pioneer Club. He outlined the program and urged all to be present.

Vice-President Ward formally introduced our guest speaker, Mr. Charles R. Colbert of Colbert and Lowery, Architects, New Orleans, Louisiana, and now with the Division of Architecture, Texas A. & M. College, College Station, Texas. Mr. Colbert gave a very interesting talk on "City Planning".

A question and answer period followed his talk. The meeting was adjourned at 9:30 p.m.

GLENDON L. SMITH, Secretary-Treasurer

**Minutes of the Monroe Section of the Louisiana Engineering Society  
December 4, 1956**

The Monroe Section of the Louisiana Engineering Society met in the Cameo Room of the Virginia Hotel, Monroe, Louisiana, on December 4, 1956. The meeting was called to order at approximately 7:15 p.m. by the President, Mr. R. A. Smith. The minutes of the previous meeting, September 4, were read and approved.

The speaker of the evening, Dr. Glen Lee Corrigan, presented a most interesting discussion on "Oil in the Middle East—A Vital Subject in a Tense Area." An interesting and lively discussion period followed the formal presentation.

Upon completion of the question-and-answer period, the following reports were made:

Financial—Arthur C. Thigpen, Secretary-Treasurer

Membership Committee—Oren H. Atkins

Vocational Guidance Committee—A. D. Williams

Rules Committee—Ben T. Bogard

Program Committee—J. R. McKinley

Upon motion by Mr. S. P. Gill seconded by Mr. A. P. Andrews, the Monroe Section of the Louisiana Engineering Society voted to have the December meeting of the Society as a formal dinner meeting.

The Nominating Committee report recommended the following officers to serve the Monroe Section for the calendar year, 1957.

President—Mr. M. M. Funderburk

First Vice-President—Mr. John H. Hoffman

Second Vice-President—Mr. C. H. Edwards

Secretary-Treasurer—Mr. Thomas Henry

Upon motion by Mr. Herbert Dickard, duly seconded, the section voted that nominations for officers be closed and that the above named be elected by acclamation. This motion was approved unanimously by the section.

Following the election of officers a drawing for the door prize was held. The prize, a K&E pocket slide rule donated by the James Machine Works of Monroe, Louisiana, was won by Mr. S. S. Gill.

The meeting adjourned for refreshments at approximately 8:50 p.m.



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## NEW MEMBERS

The following have been elected to membership in our Society:

### FOR MEMBER

- JAMES O. ADAMS**, Baton Rouge; age 43. Endorsed: T. E. Alexander, G. K. Broussard, W. G. Stewart, Jr. University of Oklahoma, B.S.Ch.E. 1941. Member AIChE, Texas Society Prof. Engrs. Registered Ch.E., La., Ch.E., M.E., Tex. Phillips Petroleum Co., Okmulgee, Okla., Jr. Engr., General Yard Supt., Chief Drafting Supervisor in charge M.E. Dept., 1941-47. Dow Chemical Co., Process Piping Group Leader, Asst. Chief Mech. Engr., Section Mgr., Cost Control Div. 1947-56. Chief Estimator, May 1956-date.
- HENRY ALCUS, JR.**, New Orleans; age 55. Endorsed: F. L. Alcus, Ole K. Olsen, Claiborne Perrilliat. Cornell University, C.E. Degree, 1924. S. T. Alcus Lumber Co., C.E., 1924-26. Auto-Lec Stores, Appliance Sales, 1927-29. Hinderer's Iron Works, Owner and Operator, 1930-date.
- JOSEPH R. BURDETTE**, Baton Rouge; age 30. Endorsed: W. G. Stewart, Jr., T. E. Alexander, G. K. Broussard. Mississippi State College, B.S.M.E. 1950. Registered, Tex. Pan-American Pipe Line Co., Dist. Engr. Longview, Houston, Snyder, Tex., 1950-56. Dow Chemical Co., Area Engineer, 1956-date.
- JACK H. CLABAUGH**, Baton Rouge; age 31. Endorsed: T. E. Alexander, G. K. Broussard, W. G. Stewart, Jr. Oklahoma A&M College, B.S.M.E. 1951. Associate Member ASME. Registered M.E., Okla., Texas, La. Dow Chemical Co., Design Engineer, Project Leader, Project Manager, Chief Mechanical Engineer, La. Div. 1951 to date.
- JOHN C. COPES, III**, Slidell; age 33. Endorsed: L. J. Lassalle, C. S. Pugsley, J. B. Swanson, Jr. La. State University, B.S.M.E. Feb. 1947. Associate Member ASME, Member SAME. Registered M.E., La., Tex. Esso Laboratories, Mech. Design Engr., 1947-50. Ethyl Corp., Development Engr. Asst. Supervisor, 1950-56. Frederick R. Harris, Inc., N. O., Head, Mechanical Section, Mar. 1956-date.
- RALPH L. DAVENPORT**, New Orleans; age 33. Endorsed: T. S. Broyles, W. C. Lehigh, W. H. Rhodes. University of New Mexico, B.S.C.E., 1951; soil mechanics, 1952. Engineer-in-Training, N.S.P.E. Member Sigma Tau, Chi Epsilon. Registered C.E., La. Corps of Engineers, Albuquerque, N. Mex., Junior Engineer, Paving Engineer, 1952-55. Shell Oil Co., Asphalt Representative, 1955-date.
- JOHN M. FRIDGE**, Lake Charles; age 29. Endorsed: G. L. Smith, C. W. Stokes, E. E. Toney. La. State University, B.S.M.E., 1949; M.S.M.E., 1950. Member Instrument Society of America. Consolidated Vultee Aircraft Corp., Ft. Worth, Draftsman, June-Sept. 1950. Tennessee Valley Authority, Knoxville, Mech. Engr. I, 1950-51. Cities Service Refining Corp., Lake Charles, Draftsman, Jr. Engineer, General Engineer, Design Engineer, May 1951-date.
- JOHN J. FINEGAN**, New Orleans; age 43. Endorsed: A. J. Fransen, H. Schill, E. J. Welsch. East Technical School, Cleveland, O., Diesel Engineering course, 1937-38 (night). Hemphill Diesel School, Long Island, N. Y., Diesel Eng. Certificate, 1942. ICS Extension course, 1947-48, Mechanical Engineering Certificate. U. S. Naval Experiment Station, Annapolis, Md., Maintenance Engr., 1941-42 and 1946-47. U. S. Coast Guard, Washington, D. C., Engineering Officer, 1942-45. V. A. Hospitals, Oteen, N. C., Marlin & Dallas, Tex., New Orleans, Asst. Chief, Chief, Engineering Division, 1947 to date, presently responsible for mtce. and operation of buildings, grounds, mechanical equipment, utility systems, laundry, power plant and guard force. Prepare operational and construction budgets, design and supervise construction of all additions & betterments.

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- CHARLES W. HAIR, JR.**, Baton Rouge; age 37. Endorsed: H. B. Meyers, L. M. Odom, F. H. Walk, W. P. Wallace. La. State University, B.S.C.E. 1941. Associate Member ASCE, Member SAME. Registered C.E., La., Tex. U. S. Army Corps of Engineers, active duty, Lt. Col., 1941-45. Humble Oil & Refining Co., Houston, Civil Engineer, 1946-47. Stone & Webster Eng. Corp., Field and Office Engineer, 1947-49. Mundet Cork Corp., Dallas, Project Mgr., 1949-51. Pyburn & Odom, Civil Engineer, 1951 to date.
- ROBERT A. HART, III**, Baton Rouge; age 34. Endorsed: D. F. Latimer, W. L. Sutton, C. W. Wall. La. State University, B.S.E.E. 1943. Member AIEE, IES. Registered E.E., La. General Electric Co., Schenectady, Electrical Engineer, 1945-46. Istrouma Water Co., Inc., Baton Rouge, General Manager, 1947-52. John McCain Consulting Engrs., Baton Rouge, E.E., 1952-53. Robert A. Hart, III & Associates, B. R., President, 1954-56. H. E. Bovay, Jr., Consulting Engrs. Baton Rouge, Electrical Engr., 1956-date.
- JOE D. HUFFMAN**, New Orleans; age 42. Endorsed: H. A. Liles, T. B. Lockett, Jr., S. V. Massimini. University of So. Calif., 1932-33. Henryhill College, Rosemeade, 1933-36. B.S.M.E. University of Michigan (overseas extension) 1946-48, Industrial Management. Member A.W.S., Aruba Engineering Society. Los Angeles County Bureau of Eng., design of pumping installations, 2 years. Industrial Maintenance Co. of Los Angeles, Jr. Engineer, Supervisory Engr., 4 years. Petrolas Mexicanos, Mexico, Area Engineer, 1944-48. Standard Oil of N. J., Engineering & Supervisory work in large oil refinery. American Cyanamid Co., Fortier Plant, Asst. Mech. Supt., 1953 to date.
- WALTER C. KOHFELDT**, Baton Rouge; age 31. Endorsed: R. E. Lee, Jr., R. H. Bretz, J. W. Affolter, Jr., Purdue University, B.S.Ch.E. Oct. 1945. Associate Member AIChE. Esso Standard Oil Co., Chemical Engr., 1946 to date.
- ROBERT A. LONGMIRE**, Baton Rouge; age 29. Endorsed: R. W. Ammon, R. H. Bretz, R. E. Lee. Tulane University, B.S.Ch.E. 1949. Associate Member AIChE. Esso Standard Oil Co., Engineer, Head of Alcohol Group, Chemical Technical Service Dept., 1949 to date.
- CHARLES R. MONTEIRO**, New Orleans; age 59. Tulane University, B.E. in C.E., 1931. Registered C.E., La. U. S. Lighthouse Service, N. O., Detroit and Portland, Oregon, Jr., Asst., Associate Lighthouse Engineer, 1931-39. U. S. Coast Guard, Seattle, Lt., Chief of Aids to Navigation Section, 1939-41. 10th CG District, San Juan, P. R., Chief of Civil Eng. Section and Acting Chief, Eng. Div., Lt. Commander, 1942-43. USCG, New Orleans, Chief, Civil Eng. Section, Lt. Cmdr.-Cmdr., 1943-50. USCG, Asst. Chief, Civil Eng. Div., Washington, D. C., 1950-54. 8th CG District, N. O. Chief Eng. Division (Cmdr., Captain) in administrative charge of all engineering work in district, 1954-date.
- JAMES E. MOODY**, Shreveport; age 51. Endorsed: C. P. Knost, D. P. Mabel, L. E. Wenk, R. B. Williamson. Alabama Polytechnic Institute, B.S.E.E. 1926. Associate Member AIEE. Registered E.E., La. General Electric Co., Test Course, Induction Motor Design Engineer, Industrial Engineer, Application & Sales Engr., 1926-32. Burke Electric Co., Asst. Sales Manager, 1933-35. Swanson-Nunn Electric Co., Evansville, Ind., Electrical Engr., 1935-36. Southwestern Gas & Electric Co., Industrial Engineer, 1936-date.
- GEORGE L. OTIS, JR.**, Baton Rouge; age 26. Endorsed: I. M. Gregorie, L. S. Freeman, J. L. Price, F. J. Prehoda. Duke University, B.S.C.E. 1951. U. S. Navy, CEC, 1951-54. Esso Standard Oil Co., Mech. Eng. Dept., June 1954 to date, Project Engineer.
- JOSEPH MACK PARISH**, Baton Rouge; age 42. Endorsed: T. E. Alexander, G. K. Broussard, W. G. Stewart, Jr. Texas A&M College, B.S.M.E. 1940. Member ASME, NSPE, Texas Society P.E., American Academy of Science, Tau Beta Pi. Registered M.E., La., Tex. Dow Chemical Co., 1940 to date, now Chief Engineer, Louisiana Division.
- CHARLES L. PAYNE**, Lake Charles; age 42. Endorsed: V. M. Brown, R. S. Clark, C. W. Stokes. La. State University, Mechanical Drawing course, 2 hrs. 1939. ICS, selected units course of engineering subjects now being taken. Registered M.E., La. U. S. Engrs., Memphis Dist., Marine Engr. and allied work, 1929-37. E. I. DuPont and Westinghouse Mfg. Co., Machinist, 1938. Hartford Steam Boiler Inspection & Insurance Co., boiler and machinery inspector, N. O. Dept., 1942-46. Columbia-Southern Chemical Corp., Maintenance Supt., 1946-date.

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- ASA M. RAY**, Monroe; age 34. Endorsed: C. M. Dunlap, R. A. Smith, A. C. Thigpen. La. Polytechnic Institute, B.S.C.E. 1953. Registered C.E., La. U. S. Engr. Corps., Leesville, La., Eng. Aide, 1940-42. Benham Architect-Engineer, Eng. Aide, 1942-43. U. S. Army, survey, map & instrument work, 1943-46. Zia Engineers, Los Alamos, N. Mex., Party Chief, 1946-47. International Paper Co., La. & Miss., Party Chief, plant layout, 1947-50. La. Polytechnic Institute, student, 1950-53. Phillips Petroleum Co., Sweney, Tex., Design Engr., 1953-54. La. Dept. of Highways, Project Engr., 1954-date.
- ALFRED G. RAYNER**, Baton Rouge; age 36. Endorsed: A. J. Loup, H. Le-Mieux, W. P. Wallace. Tulane University, B.S.C.E. 1949. Prat Institute, N. Y., Architecture (evenings) 1937-40. Member American Concrete Institute, 1953. Registered C.E., Architect, La. Gustave W. Iser, Architect, N. Y., 1937-40. Mason & Hanger Co., Wisconsin & Virginia, Field Engr. and design on chemical plants, etc., 1940-42. Chas. I. Main Co., Kingsport, Tenn., Field Engr., 1942-43. Higgins Aircraft, Inc., N. O., Tool Designer, 1943-44. Consolidated Vultee, Inc., Ft. Worth, Tex., Steel & Tool Designer, 1944-45. E. M. Freeman & Associates, Structural Draftsman, 1949-50. Knappen, Tippetts, Abbott & McCarthy, New York, C.E., bridge, highway & building design, 1950-52. Bodman, Murrell & Smith, Baton Rouge, Structural Engr. in charge of all structural design, 1952-date.
- ALBERT H. REPSCHA**, Lafayette; age 52. Endorsed: R. E. Jenkins, Z. L. Loflin, F. W. zurBurg. University of Maine, B.S.M.E. 1925. Iowa State College, M.S.M.E. 1930. Univ. of Maine, M.E., 1931. Univ. of Pennsylvania, courses for Ph.D., 1938-42. Life Member ASME, Member ASEE. Registered M.E., Pa., La. Drexel Inst. of Technology, Philadelphia, Professor of M.E., 1926-54. Schramm, Inc., Westchester, Pa., Director Research & Development, part-time basis, 1940-50. Swarthmore College, Pa., Associate Professor of M.E., 1944-46 (leave of absence from Drexel). H. L. Yoh Co., Philadelphia, Consultant, 1952-54. Los Angeles State College, Chairman of Eng., 1954-55. Southwestern La. Institute, Professor of M.E., 1955 to date.
- RICHARD C. ROBERT**, Baton Rouge; age 35. Endorsed: E. J. Dantin, N. J. Everard, W. P. Wallace, La. State University, B.S.C.E. Aug. 1951. Jr. Mbr. ASCE 1951. Registered C.E., La. East Baton Rouge City-Parish Dept. Public Works, 1951 to date. Present position, Right-of-Way Engineer, supervise preparation of all maps, plats, etc., for requisition of rights of way for street and drainage improvement program.
- OSCAR G. RODRIGUEZ**, Baton Rouge; age 33. Endorsed: F. J. Prehoda, J. L. Price, S. B. Reynolds. La. State University, B.S.M.E. 1949. Carter Oil Co., Tulsa, Okla., Jr. Petroleum Engr., 1949-51. Cities Service Refining Co., Lake Charles, Mechanical Engineer, 1953-54. Esso Standard Oil Co., Baton Rouge, Mechanical Engineer, 1954-date.
- EUGENE E. TAYLOR**, Ferriday; age 45. Endorsed: B. T. Bogard, J. M. Doyle, F. W. Macdonald. La. State University, B.S.E.E. 1933. Registered E.E., La. Rural Electrification Admin., Washington, D. C., Engineer and Administrative Asst., 1940-48. Concordia Electric Coop., Ferriday, La., Manager, 1948 to date.
- CHARLES E. TURRENTINE**, Alexandria; age 39. Endorsed: B. T. Bogard, Barnet Brezner, T. C. David. Louisiana Polytechnic Institute, B.S.M.E. 1947. Registered M.E., La. United Electric Service, Engineer, 1947-48. Jimmie Walker Appliance Co., Engineer, 1948-50. Longston & Ingram, Inc., Engineer, 1950-55. Turrentine-White Co., Engineer-Owner, 1956 to date; design and supervision, installation of air-conditioning, heating and refrigerating equipment.
- WALTER L. WILLIAMS**, Monroe; age 38. Endorsed: W. E. McGough, D. E. Bivins, H. H. Mullins, W. S. Ware. University of Houston, 1938-41. Hughes Tool Co., Houston, Time Study Engineer, time & motion study, estimating, methods and cost reduction, 1936-50. Continental Can Co., Houston, Industrial Engineer, time & motion study, standardization, Olin-Mattheison Chemical Corp., W. Monroe, Industrial Engineer, duties same as above, Jan. 1956 to date.

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**JAMES H. WILSON**, Metairie; age 35. Endorsed: M. C. Abrahm, W. C. Purdum, J. F. Vogt, Jr. A&M College of Texas, B.S.M.E. Feb. 1948. Ingersoll-Rand Co., New Orleans, Sales Engineer, Feb. 1948 to date.

**GRAYSON S. YOUNG**, Baton Rouge; age 32. Endorsed: J. W. Affolter, H. R. Bretz, R. E. Lee. La. State University, B.S.Ch.E., 1949. Associate Member AIChE. Esso Standard Oil Co., Baton Rouge, Engineer, operation analysis and process design, 1949 to date.

### FOR TRANSFER FROM JUNIOR TO MEMBER

**GEORGE C. ADAMS**, Alexandria; age 31. Louisiana Polytechnic Institute, B.S.M.E. C. T. Roberts, Architect, Draftsman, 6 mos. City of Alexandria, Building Inspector, 3 years. R. J. Jones & Sons, Estimator and Engineer, 2 years.

**BEN D. ATCHLEY, SR.**, Shreveport; age 34. Louisiana Polytechnic Institute, B.S.C.E. Registered, La., Tex. City of Shreveport, Engineering Dept., 1949-54. Private Practice, 1954-date.

**JAMES G. ATTEBERRY**, Baton Rouge; age 30. Louisiana State University, B.S.C.E. 1948. Construction Engineer, Gulf Oil Co. Project Engineer, La. Dept. of Highways. Construction Engineer, Baton Rouge City-Parish Dept. Public Works. 1948 to date.

**PHILIP L. BENFIELD**, Charlotte, N. C.; age 31. Clemson College, B. S. Agri. Eng. Univ. of Ill., M.S. Agri. Eng. L.S.U., courses in M.E. Registered, La. L.S.U., Agri. Engr. Res., 3 years. USDA, Plant Industry Station, Beltsville, Md., Refrigeration Engr., 1½ yrs. Douglas Fir Plywood Ass'n, field representative, present position.

**ROGER BISSINGER**, New Orleans; age 31. Cornell University, B.E.E. Graduate work at Univ. of Penna. Registered, La. RCA, Camden, N. J., Television Design Engineer, 1946-49. Electrical Sales Co., Sales Engineer, 1949 to date.

**DANIEL F. BURKHALTER, JR.**, Monroe; age 33. La. Polytechnic Institute, B.S.E.E. Registered, La. Sales Engineer, 4 years. Consulting Professional Engineer, 2 yrs. part-time, 2 yrs. full time.

**THOMAS D. CLARK**, Lafayette; age 31. Southwestern La. Institute, B.S.M.E. 1951; La. State University, M.S.M.E., 1956. Southwestern La. Institute, Instructor in Mechanical and General Engineering, 1951 to date.

**AUBIN J. COLEMAN, JR.**, Morgan City; age 31. Southwestern La. Institute, B.S.E.E. 1953. General Electric Co., Test Engineering Program, 1952-54. General Electric Co., Aircraft Products Dept., Field Supervisor, 1954-date.

**CHRIS DEMOPULOS**, Shreveport; age 32. Texas A&M College, B.S. Eng. E.M. Freeman & Associates, 1947-52. Demopulos & Ferguson, partner, 1953-date.

**PAUL A. DiGIOVANNI**, Lake Charles; age 33. Southwestern La. Institute, B.S.C.E. 1950. Registered C.E., La. Tennessee Gas Transmission Co., Field Engr., 2 years. Petroleum Chemicals Inc. (formerly Cities Service Ref. Corp. Butadiene Plant), General Engr., 4½ yrs.

**WESLEY D. GLASSELL**, Shreveport; age 31. La. State University, B.S.C.E. Registered La., Ark. R. P. Farnsworth Co., Project Engr., 1950-51. Caddo Const. Co. & J. A. Jones, Consulting, 1951-52. W. D. Glassell Co., Design & Building, commercial & residential, 1952-date.

**THOMAS R. HENRY, JR.**, Monroe; age 32. La. Polytechnic Institute, B.S.C.E. Registered, La. Columbian Carbon Company, Engineer, 8 years.

**KEITH A. HETRICK**, Shreveport; age 31. Shreveport Trade School, drafting & engineering, 1½ years. City of Shreveport, Water Dept., rodman, party chief, Field Engineer, 10 years.

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- NEWTON HIMEL, New Iberia; age 34. Southwestern La. Institute, B.S.E.E. Jan. 1948. Central La. Electric Co., Inc., Electrical Engineer, 9 years.
- LEWIS B. HOWE, Minden; age 35. La. Polytechnic Institute, B.S.C.E. Registered C.E., La. La. Dept of Highways, Chief of Party, Project Engr., 1949-52; Senior Project Engr., 1952-56.
- IRWIN ISAACSON, JR., New Orleans; age 31. Tulane University, B.E. U. S. Navy, Radio & Radar courses. Registered, La. Leo S. Weil & Walter B. Moses, Consulting Engrs., 9 years.
- SAMUEL R. JOHNSTON, III, Shreveport; age 30. Centenary College, 1 year. Registered Land Surveyor, La. McClenaghan & Barr, Rodman 1945-46. City of Shreveport, Instrumentman, 1947-48. Ryall Eng. Co., Little Rock, Recorder Plane Table Topography, 1948-49. Minor & Shoup, Instrumentman, 1949. Geo. E. Dutton, Party Chief, 1949-51. Ben E. Ramsey, Party Chief, 1951-52. Jessie C. McLemore, Party Chief, 1952-56. Presently practicing surveying for own account.
- EMILE S. KROUSE, JR., Baton Rouge; age 32. L.S.U., B.S. Agri. Eng. Registered, La. Gulf States Utilities Co., Agricultural Engineer, 5 years.
- M. CONWAY LUSK, Baton Rouge; age 31. La. State University, B.S.C.E. 1951. Registered, La. La. Dept. of Highways, Senior Bridge Detailer, 1951-52. Sverdrup & Parcel, Inc., St. Louis, Draftsman, 1952-53. La. Dept. of Highways, Bridge Designer, 1953 to date.
- GEORGE E. McLEAN, New Orleans; age 32. St. Louis University, B.S. Aero. Eng. 1½ yrs. aircraft design, 3 years selection and servicing of power plant and mechanical equipment, 1½ yrs. research, development and testing power plant and equipment design and installation.
- HAYWOOD A. PERKINS, Beaumont, Tex.; age 32. Southwestern La. Institute, B.S.Ch.E., 1951. Magnolia Petroleum Co., Technical Dept., 5 years.
- JAMES R. POTTER, New Orleans; age 32. Clemson A&M College, B.C.E. Registered C.E., La. Frochling & Robertson Inspection Engrs., Richmond, Va., 1 year. Gulf Refining Co., Productive Div., in charge of construction work in La., 8 years.
- H. M. RHODES, New Orleans; age 32. La. Polytechnic Institute, B.S.E.E. 1951. Registered, La. 5 years experience as design engineer.
- JOSEPH V. ROY, Baton Rouge; age 31. La. State University, B.S.E.E. 1951. U. S. Army Corps of Engrs., 1st Lt., 1951-52. Copolymer Rubber & Chemical Corp., Engineer, Electrical & Mechanical fields, 1953 to date.
- ELMORE G. RUSSELL, JR., New Orleans; age 35. Southwestern La. Institute, B.S.E.E. Sperry Gyroscope Co., Field Engineer, 6 years.
- HERMANN SCHLUTER, JR., Baton Rouge; age 31. La. State University, B.S.E.E. 1950. Inspection petroleum refinery equipment and cathodic protection design, 2 years. Design, drafting, specifications, coordination and cost estimating for refinery electrical installations, 1½ years. Refinery chemical engineering, 1½ years.
- WINFRED J. SPANO, Baton Rouge; age 32. Southwestern La. Institute, B.S.E.E., 1950. La. Dept. of Highways, Chief of Party; Kaiser Engineers, Estimating & Design; J. G. White Engineering Corp., Field & Office Engineer; Baton Rouge Fabricators, Inc., Design, detailing and estimating. Buquet & LeBlanc, Inc., Vice-Pres., Estimating, purchasing design.
- ASHBY B. STEVENS, Schenectady, N. Y.; age 32. Southwestern La. Institute, B.S.E.E., 1948. Registered, La. Central Louisiana Electric Co., Power Plant Engineer, Asst. Power Plant Electrical Construction Engr., Asst. Substation Construction Engineer, 1948-56. Attending an advanced Power System Engineering Course in Schenectady, Sept. 1956 to May 1957.
- ENOCH TALLEY, Baton Rouge; age 33. La. State University, B.S.E.E. Registered, La. Southern Bell Tel. & Tel. Co., eng. design and layout, 2 years. Esso Standard Oil Co., engineering design, presently responsible for design of changes to high voltage electrical dist. system for Baton Rouge Refinery, 5 years.

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**Z-823 Swimming Pool Equipment** — Narrow grate type drain practical for walks, gutters and other narrow installations. Complete selection of durable drainage and recirculating fittings available for pool application.



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SIDNEY N. TANNER, Bunkie; age 36. Southwestern La. Institute, B.S.E.E. 1951. Central La. Electric Co., 1951-53. Western Geophysical Co., 1953-54. Lorac Service Co., Tulsa, Okla., 1954-date. Presently Chief Technician of Morgan City network.

FULTON G. TAYLOR, Alexandria; age 31. Louisiana State University, B.S.E.E. 1949. Southern Bell Tel. & Tel. Co., Junior Engineer, 4½ years.

JOSEPH H. WATERFIELD, Lake Charles; age 31. University of Tennessee, B.S. Industrial Management, including 3 yrs. Electrical Engineering. United Gas Corp., 6½ years, present position District Engineer.

LUEL T. WATKINS, Conroe, Tex.; age 31. Southwestern La. Institute, B.S.C.E. Missouri Pacific Railroad, 3 yrs. general engineering. Texas Highway Dept., all phases of highway engineering, 2½ years.

BILLY A. WEISFELD, Metairie; age 37. Tulane University, B.S.E.E. 1949. Registered, La. Weisfeld & Son, Electrical Engineer, 1949-52. Chrysler Michaud Plant, E.E. in charge development & expansion program, 1952-54. U. S. Navy Dist. Public Works Office, Electrical Design, 1954 to date.

#### FOR AFFILIATE MEMBER

WILLIAM H. TURNER, Sterlington; age 52. Endorsed: C. D. Brooks, C. L. Denson, R. L. Phillips. High school graduate. Fort Wayne, Metering Engineering, 1938. Louisiana Power & Light Co., Boiler Room Fireman, Electric Maintenance, Asst. Switch Board Operator, Switch Board Operator, 1928-56. Present duties: In charge of Control Room, synchronizing generators, maintaining voltage switching in 110 K.V. switchyard (Sterlington Station), switching in other 100 K.V. switchyards by supervisory controls.

#### FOR JUNIOR MEMBER

LEONARD T. GALSTER, Baton Rouge; age 28. Endorsed: L. J. Lassalle, J. E. Leavines, W. C. Randall. La. State University, B.S.E.E. Feb. 1956. Registered E.E., La. Kaiser Aluminum & Chemical Corp., Electrical Engineer Trainee, Feb. 1956 to date.

PETER L. GREEN, New Orleans; age 29. Endorsed: A. L. Dunlap, J. H. Peebles, Jr., C. A. Peyronnin, Jr. Tulane University, B.S.M.E. 1956. Registered M.E., La. Off-Shore Raydist, New Orleans, Draftsman, marine topography, Aug. 1953-Jan. 1954. Lone Star Cement Corp., Engineer-Draftsman, May-Sept. 1955 and June 1956 to date.

EDMOND F. HINDS, JR., Baton Rouge; age 24. Endorsed: T. J. Innes, Jr., L. S. Major, C. R. Neff. Georgia Institute of Technology, B.M.E. Sept. 1956. Atlanta & West Point Railroad, Rodman Co-op Student, surveying, drafting and misc. supervised engineering, 6 mos. 1950. Birmingham Southern Railroad Co., Same as above, 15 mos., 1953-55. Esso Standard Oil Co., Baton Rouge, Project Engineer, Sept. 1956 to date.

LARRY R. LUCAS, Lafayette; age 26. Endorsed: F. A. Consterdine, J. E. Jarman, W. P. Wallace. U. S. Military Academy, B. S. General, 1952. La. State University, B.S.C.E., 1956. Jr. Member ASCE. Registered C.E., La. La. State Dept. of Highways, Lafayette, Chief of Party, Inspector of construction, June 1955 to date.

GORDON J. MUNZEY, Baton Rouge; age 29. Endorsed: L. J. Lassalle, W. C. Randall, W. M. Robbins. Louisiana State University, B.S.E.E. Aug. 1954. Tennessee Coal & Iron Div. of U. S. Steel Corp., Fairfield, Ala., Industrial Engineer, 1954-56. Kaiser Aluminum & Chemical Corp., Baton Rouge, Special Design Draftsman, May 1956 to date.



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## JUNIOR MEMBERSHIP AWARDS

DAVID A. MOYNAN, JR., New Orleans; age 24. Graduate of Tulane University in Civil Engineering, June 1956.

JOSEPH C. SKINNER, JR., New Orleans; age 21. Graduate of Tulane University in Civil Engineering, June 1956.

## FOR MEMBER

WILLIAM E. AIKLEN, JR., Baton Rouge; age 29. Endorsed: V. A. Forte, W. C. Randall, W. M. Robbins, M. G. Zervigon. Tulane University, BSEE Jan. 1949. Member AIEE, Soc. Tulane Engineers, International Ass'n. Electrical Inspectors. Registered E.E., La. U.S. Corps of Engineers, N.O. Engineering Draftsman, 1948-50. L. N. Goodman & Associates, Jr. Design Engineer, 1950-51. Foothill Electric Corp., Area Engr., 1951-53. J. F. Pritchard & Co., Electrical Engr., 1953-54. L. H. Goodman & Assoc., Design Engr., 1954-55. Kaiser Aluminum & Chemical Corp., Electrical Engineer, 1955 to date.

GAYLE K. BROUSSARD, Baton Rouge; age 31. Endorsed: T. E. Alexander, D. C. Delaune, R. Meyer. U.S. Naval Academy, Annapolis, Md., B.S. Eng. 1946. U.S. Marine Corps, Engineering Officer, 1946-54. Pacific Pumps, Inc., Sales Engr., 1954-56.

OSCAR H. COLLINS, Monroe; age 58. Endorsed: J. H. Drake, J. F. Mallette, J. E. Ross. I.C.S. Engineering course, 3 years. Registered C.E. (Public Employee), La. Long Bell Lbr. Co., Instrumentman, 1919. La. Dept. of Highways, Instrumentman, 1920-22. Parish of Beauregard, Parish Highway Engineer, 1923. Stone & Webster Construction Co., Instrumentman, 1924. La. Dept. of Highways, Instrumentman, 1925-29; Project Engineer, 1929-37; Instrumentman, 1938-43. Boeing Aircraft Co., Seattle, Wash., Inspector, 1943-45. La. Dept. of Highways, Project Engineer, 1947-53; Permit Engineer, 1953-date.

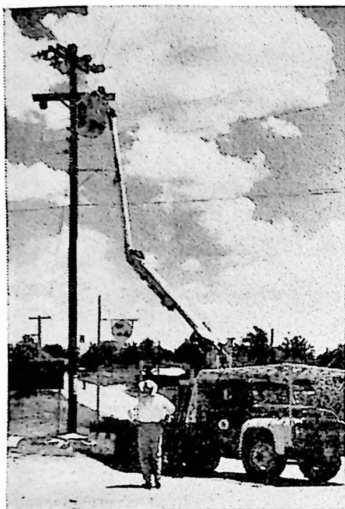
L. L. DENSON, Metairie, La. Age 31. Endorsed: B. M. Dornblatt, B. A. Grehn, H. W. Herbst. Mississippi State College, B.S.M.E., May 1949. Member ASME. Registered M.E., La., Miss. Ebasco Services Inc., New York, Senior Designer, Field Engr., Mechanical Supervisor, Resident Engr., 1949-55. B. M. Dornblatt & Associates, Mechanical Engineer, Sept. 1955-date.

JOSEPH F. EGAN, JR., New Orleans; age 42. Endorsed: W. K. Bankston, F. J. Hoffman, R. M. Seago. Loyola University of the South, Ph.B. Arts & Science, June 1936. N. O. Public Service, May 1937-date, with exception of 4½ years active duty with armed forces (1941-46). Positions held, Chemist Assistant, Market St. Steam Electric Generating Station, 4 yrs.; Test Engineer, Asst. Engineer, A. B. Paterson Station, 1947-date.

EUGENE R. FELTON, Baton Rouge; age 34. Endorsed: D. A. Donald, T. J. Innes, Jr., R. Meyer. Virginia Polytechnic Institute, B.S.E.E., 1951. Associate Member AIEE Registered E.E., La. Esso Standard Oil Co., Electrical Engineer, 1951-54; Division Foreman, Electrical Dept., 1954-date.

RICHARD F. FENTON, JR., Baton Rouge; age 39. Endorsed: R. Meyer, C. S. Pugsley, W. P. Wallace. La. State University, B.S.E.E. 1936; M.S.E.E., 1939. University of Michigan, Engineering Mechanics, 1938 and 40. Registered M.E., E.E., La. (Inactive). La. State University, 1938-46 (except four years military leave); Graduate Fellow, Teaching Assistant, Instructor, Asst. Professor. U.S. Army Air Corps, Dec. 1941-45, Squadron Aircraft Engineering Officer; Esso Standard Oil Co., Project Engineer, Group Head, Mech. Eng. Dept., 1946-date.

CHARLES W. LYMAN, JR., Opelousas; age 43. Endorsed: H. R. Mason, P. J. Mayne, G. G. Hughes. Southwestern La. Institute, B.A. Engineering 1934. Member SAME, Society Automotive Engineers. Registered M.E., La. U.S. Engineer Corps, Jr. Eng. Aide, Surveys and inspection, flood control, 1934-39. International Harvester Co., Designer of farm machinery, 1939-45. Athey Products Corp., Asst. Chief Engr., 1945-48. Gantt Nicholson, Engineer, full charge of engineering on brick factory, sawmill and general contracting operations, 1948-55. Self-employed M.E. associated with M. J. Goudeau Jr., C. E., 1955 to date.



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**REGINALD A. McFARLAND**, Ruston; age 55. Endorsed: R. A. Smith, B. T. Bogard, R. C. Duchesne. La. State University, B.S.C.E. June 1923; M.S. C.E. June 1925. University of Colorado, summer 1950, Advanced C.E. Registered C.E., La. Member ASCE, ASEE, T. B. Smith, Houma, La., surveyor and consulting engineer, 1923-24. La. Highway Commission, Resident Engineer on location, road construction, 1925-26. La. Polytechnic Institute, Dept. of C.E., 1926-date. Present position, Professor and Head, Dept. of C.E.

**JAMES W. NORRIS**, Monroe; age 41. Endorsed: F. W. Adams, O. H. Atkins, H. T. Poulan. La. Polytechnic Institute, C. E. course, 1935-39. Registered Land Surveyor, No. 130. United Gas Pipe Line Co., 1941 to date: Chairman, Rodman, Instrumentman, Asst. Engineer, District Engineer. Have practiced land surveying in Monroe as a side line since 1952.

**THOMAS C. ROBERT**, Baton Rouge; age 32. Endorsed: V. A. Forte, D. H. Hovey, W. Lemann, Jr. La. State University, B.S.E.E. 1949. Registered E.E., La. The Solvay Process Co., Foreman, Electrical Maintenance Dept., 1950-56; Acting Maintenance Supervisor, 1956-date.

**RICHARD M. STEERE**, Ruston; age 43. Endorsed: B. T. Bogard, L. R. Daniel, Jr., R. A. Smith. Alabama Polytechnic Institute, B.S.E.E. 1935. Massachusetts Institute of Technology, M.S.E.E. 1948. Also hold professional degree in Electrical Engineering from API, 1942. Senior Member Institute of Radio Engineers, 1952. Member Sigma Xi, 1953. R.C.A. Mfg. Co., Camden, N. J., Electrical Engineer, Radio Engr. in advanced development labs, 1935-38. Memphis Light, Gas & Water Div., substation operation, load dispatches office, standard meter laboratory, 1938-42. Alabama Polytechnic Institute, Asst. Professor E.E., 1942-46. Massachusetts Institute of Technology, graduate student and teacher, 1946-48. Alabama Polytechnic Inst., Associate Prof. E.E., 1948-55. La. Polytechnic Institute, Associate Prof. E.E., 1955-date.

**PAUL E. WEAVER**, Baton Rouge; age 45. Endorsed: O. J. Hebert, D. H. Hovey, J. I. McCain, La. State University, B.S.M.E. June 1955. Registered M.E., La. Member Nat'l Ass'n Corrosion Engrs., Jr. Member ASME. Bureau of Public Roads, Managua, Nicaragua, Supt. of Mtce. & Transportation, 1939-44. Rome Plow Co., Cedartown, Ga., Engineer-Draftsman, 1944-45. Solvay Process Div., Allied Chem. & Dye Corp., Baton Rouge, Draftsman, 1946-47. Thornton Grab & Derrick Works, Jeanerette, La. Engineer-Draftsman, 1947-51. Solvay Process Div., M & C Foreman, 1951-date.

### FOR TRANSFER FROM JUNIOR TO MEMBER

**F. ROBERT MENDOW**, New Orleans; age 45. Tulane University, B.E. 1930. Registered M.E., La., Tex. Westinghouse Electric Corp., June-Nov. 1930. A. M. Lockett & Co., Ltd., Engineer, 1931-51; Chief Engineer, 1951 to date.

### FOR AFFILIATE MEMBER

**RAYMOND L. BOYD**, Monroe; age 38. Endorsed: H. E. Dickard, E. T. Heard, Jr., S. E. Huey. American Television Institute, Chicago, 1946-50, B.S. TV Engineering, Feb. 1950. Member National Institute of Radio Engineers, 1955. FCC Radio Telephone Operator License 1st Class. KNOE-TV and KNOE, Monroe, Feb. 1950 to date, Vice-President and Director of Engineering, responsible for technical operation of above stations.

### FOR JUNIOR MEMBER

**FRANCIS C. ROY**, Ruston; age 29. Endorsed: B. T. Bogard, L. R. Daniel, Jr., J. J. Thigpen. La. State University, B.S.E.E. June 1949. Allis-Chalmers Mfg. Co., Milwaukee, Asst. Engr., Development Test Lab, 1949-51. Jefferson Davis Trade School, Jennings, Instructor Mechanical Drawing and Related science, 1951-55. Louisiana Polytechnic Institute, Ruston, Asst. Professor Mechanical Engineering, Sept. 1955 to date.

**CLAUDE L. TAYLOR**, Baton Rouge; age 29. Endorsed: F. G. Hornsby, W. G. Stewart, B. J. Swindler. La. State University, B.S.E.E. June 1949. Louisiana Creamery, Inc., Baton Rouge, Electrical Engineer, Asst. Chief Engr. of Maintenance Dept., 1949-55. Copolymer Rubber & Chemical Corp., Baton Rouge, Mechanical Engr., Mtce. Dept., Dec. 1955-date.

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- ALFRED A. BREAUD, Graduate of Southwestern Louisiana Institute in Mechanical Engineering.
- ROBERT M. COOK, Graduate of Southwestern Louisiana Institute in Mechanical Engineering.
- JOHN D. GALLET, Graduate of Southwestern Louisiana Institute in Chemical Engineering.
- CARL M. GAUTHIER, Graduate of Southwestern Louisiana Institute in Mechanical Engineering.
- PHILIP A. GREEN, Graduate of Southwestern Louisiana Institute in Electrical Engineering.
- BURTON HARDY, Graduate of Southwestern Louisiana Institute in Mechanical Engineering.
- NORMAN E. HEARN, Graduate of Southwestern Louisiana Institute in Mechanical Engineering.
- HAROLD J. HEBERT, Graduate of Southwestern Louisiana Institute in Electrical Engineering.
- HILRY J. LANTZ, Graduate of Southwestern Louisiana Institute in Chemical Engineering.
- RENE C. MARSOLAN, Graduate of Southwestern Louisiana Institute in Mechanical Engineering.
- GERALD E. PORCHE, Graduate of Southwestern Louisiana Institute in Civil Engineering.

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# FINANCIAL REPORT OF THE SECRETARY-TREASURER

For 1956

## INCOME:

|                              |           |             |
|------------------------------|-----------|-------------|
| Advertising .....            | \$ 862.23 |             |
| Annual Meeting .....         | 247.25    |             |
| Annual Outing .....          | 1,046.34  |             |
| Certificates .....           | 26.00     |             |
| Dividends and Interest ..... | 265.33*   |             |
| Dues .....                   | 13,212.00 |             |
| Monthly Meetings .....       | 94.90     | \$15,754.05 |

## EXPENDITURES:

|                                                           |          |            |
|-----------------------------------------------------------|----------|------------|
| Addressograph Plates .....                                | \$ 45.52 |            |
| Annual Meeting .....                                      | 143.92   |            |
| Annual Outing .....                                       | 925.37   |            |
| Auditor's Fee .....                                       | 140.00   |            |
| Dues to Other Organizations .....                         | 70.00    |            |
| Dues Rebates .....                                        | 3,191.87 |            |
| Engineers' Week .....                                     | 314.47   |            |
| Floral Offerings .....                                    | 36.05    |            |
| Headquarters Rental .....                                 | 180.00   |            |
| Medals, Trophies, Gifts and Certificates .....            | 178.78   |            |
| Miscellaneous .....                                       | 87.83    |            |
| Monthly Meetings, Cost of .....                           | 610.76   |            |
| Office Supplies .....                                     | 3431     |            |
| Postage .....                                             | 378.75   |            |
| Publication (The Louisiana Engineer) ....                 | 2,414.61 |            |
| Salaries .....                                            | 3,000.00 |            |
| Scholarships .....                                        | 700.00   |            |
| Stationery and Printing .....                             | 1,338.60 |            |
| Traveling, other exp. of Secretary<br>and President ..... | 106.02   |            |
| Taxes .....                                               | 65.00    |            |
| Vocational Guidance .....                                 | 36.75    | 13,998.61  |
| Net Increase in Liquid Assets .....                       |          | \$1,755.44 |

## STATEMENT OF LIQUID ASSETS

December 31, 1956

|                                   |                |             |
|-----------------------------------|----------------|-------------|
| Cash, Whitney National Bank ..... |                | \$ 5,971.87 |
| U. S. Savings Bonds:              |                |             |
| May, 1945 .....                   | Series F ..... | \$ 980.00   |
| March, 1946 .....                 | Series F ..... | 945.00      |
| June, 1950 .....                  | Series F ..... | 1,670.00    |
| March, 1955 .....                 | Series J ..... | 735.00      |
| April, 1955 .....                 | Series J ..... | 735.00      |
|                                   |                | 5,065.00    |

\* Includes \$140.00 increase in cash value of Savings Bonds and \$62.33 increase in homestead pass books.

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## Homestead Investments:

|                                             |           |             |
|---------------------------------------------|-----------|-------------|
| Columbia Homestead Ass'n. ....              | \$ 381.58 |             |
| Commonwealth Bldg. & Loan Ass'n. ....       | 307.34    |             |
| Greater N. O. Homestead Ass'n. ....         | 2,035.18  |             |
| Security Bldg. & Loan Ass'n. ....           | 500.00    |             |
| State Savings & Loan Ass'n. ....            | 500.00    |             |
| Union Savings & Loan Ass'n. ....            | 500.00    | 4,224.10    |
| Value of Emblems on Hand .....              |           | 470.09      |
| Total Liquid Assets December 31, 1956 ..... |           | \$15,731.06 |
| Total Liquid Assets January 1, 1956 .....   |           | 13,975.62   |
| Increase in Liquid Assets during 1956 ..... |           | \$ 1,755.44 |

## 1956 MEMBERSHIP REPORT

## GAINS:

|                    |    |     |
|--------------------|----|-----|
| <b>Elected:</b>    |    |     |
| Members .....      | 70 |     |
| Affiliates .....   | 4  |     |
| Juniors .....      | 31 |     |
| Students .....     | 10 | 115 |
| <b>Reinstated:</b> |    |     |
| Members .....      | 4  |     |
| Juniors .....      | 6  | 10  |
| Total Gains .....  |    | 125 |

## LOSSES:

|                    |    |    |
|--------------------|----|----|
| <b>Deceased:</b>   |    |    |
| Life Members ..... | 3  |    |
| Members .....      | 5  |    |
| Affiliates .....   | 1  |    |
| Juniors .....      | 1  | 10 |
| <b>Resigned:</b>   |    |    |
| Members .....      | 28 |    |
| Affiliates .....   | 1  |    |
| Juniors .....      | 5  | 34 |
| <b>Dropped:</b>    |    |    |
| Members .....      | 22 |    |
| Affiliates .....   | 3  |    |
| Juniors .....      | 25 | 50 |
| Total Losses ..... |    | 94 |
| Net Gain .....     |    | 31 |

## TRANSFERS:

|                                       |    |
|---------------------------------------|----|
| Life Member to Honorary Member .....  | 1  |
| Member to Honorary Member .....       | 1  |
| Member to Life Member .....           | 7  |
| Junior Member to Member .....         | 48 |
| Student Member to Junior Member ..... | 12 |

## SUMMARY:

|                         |       |
|-------------------------|-------|
| Charter Member .....    | 1     |
| Honorary Members .....  | 13    |
| Life Members .....      | 72    |
| Members .....           | 1,204 |
| Affiliate Members ..... | 71    |
| Junior Members .....    | 276   |
| Student Members .....   | 23    |

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# THE LOUISIANA ENGINEER

FEBRUARY, 1957

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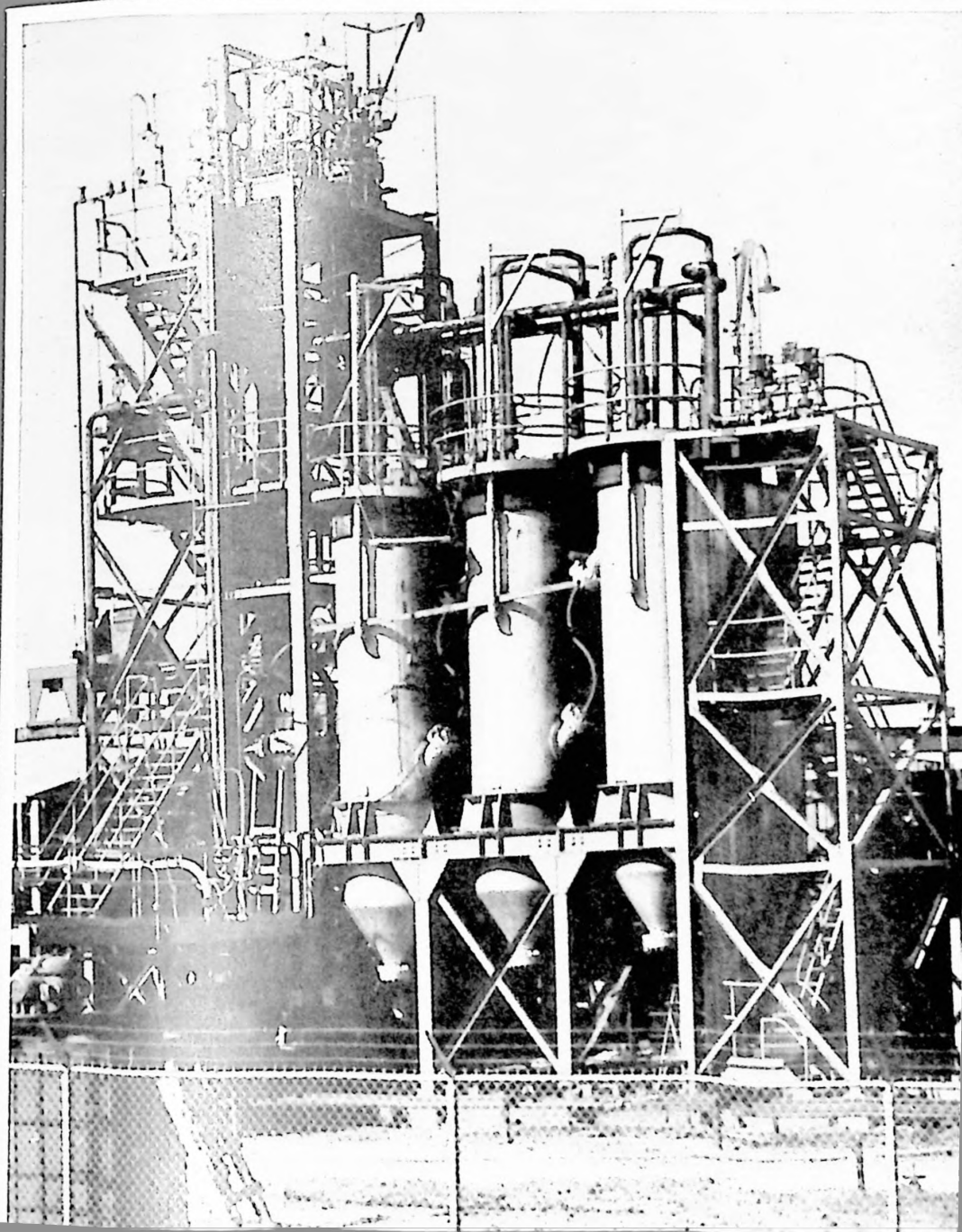
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THE

# LOUISIANA ENGINEER

APRIL 1937



VOL. 43 NO. 2

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# THE LOUISIANA ENGINEER

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*Cover: Leaching Autoclave used in the production of nickel and cobalt from Cuban Laterites.*

# AFFILIATION COMMITTEE REPORTS

March 12, 1957

In the interest of our profession, your board of Direction believes the time has come for this society to consider affiliation with a national engineering organization or organizations. It is believed that we thus could assist in bringing unity to the profession on a nationwide basis and increased prestige and benefit to its individual members.

Accordingly, your board has appointed committees to study the aims and operations of two national organizations, namely, the Engineers Joint Council and the National Society of Professional Engineers. The first reports of these two committees are presented herewith, and we plan to furnish you with additional information at a later date.

## N. S. P. E. REPORT

During the slightly more than one hundred years that national societies (American Society of Civil Engineers was organized in 1852) have represented the engineering profession, a philosophy of organization has developed that every engineer has two distinct interests: first, he is a member of the engineering profession and as such, has a common interest with every other member of the profession in the professional, social, economic and ethical fields; secondly, he has been trained in, and his work usually involves, one particular branch of the profession, establishing a community of interest and a need for organization in that particular area. Based on this philosophy, there clearly immersed two basic tenants: (1) there is a very definite need for technical branch organizations, and these should be supported and sponsored by every engineer in that particular branch; and (2) there should be an organization devoted to the professional interests of all engineers, and all engineers should likewise support and promote its activities.

In the development of the National Society of Professional Engineers, it was determined that this organization should concern itself solely with professional matters affecting engineers, and it was determined that engineers should govern its policies. In searching for a definition which would be satisfactory in distinguishing those who were engineers, it was recognized that registration laws had been most effective in other professions, and were rapidly being accepted in the engineering profession. Since these laws established a board of engineers in each state to evaluate the qualifications of those desiring to practice engineering, it was felt unnecessary for the professional organization to establish other criteria and additional review for this purpose. Registration, thus, was accepted as the qualification for membership in the professional society.

It was further decided that, since there were in existence societies dealing adequately with the technical phases of engineering, the professional organization would devote its entire effort to the professional, social, economic and ethical problems of the profession. The constitution of the National Society of Professional Engineers states, "the objectives of the national society shall be the advancement of the public welfare and the promotion of the professional, social and economic interests of the professional engineer." It is well known that N.S.P.E. does look after the professional interests of the engineer perhaps better than any other engineering society of our nation. It is a *grass-roots* organization composed of individual members from every state in the union and of affiliated state societies in forty-one states. All states south of the Mason-Dixon Line are affiliated, with the exception of Louisiana.

N.S.P.E. maintains a vigilant watch on activities of the Congress of the United States in matters concerning the engineering profession. It has been extremely active in advising the National Labor Relations Board in matters pertaining to the welfare of practicing professional engineers in industry. N.S.P.E. provides an active program of lobbying for legislation, beneficial to the engineering profession. The Society's headquarters are located in Washington, D. C., and thus, it is enabled to work closely with congressional committees and the individual Congressmen wherein matters pertaining to the



welfare of the engineering profession and the individual practitioner are being considered. N.S.P.E. publishes and distributes to its individual members a legislative bulletin with a summary report on all legislative matters directly related to the engineering profession.

N.S.P.E. assists the engineering profession in policing unethical practices of engineers across state boundaries. It is particularly helpful in matters wherein the state societies may not have jurisdiction over engineers practicing unethically within the state, while registered in another state.

N.S.P.E. publishes and distributes to large industrial firms, governmental agencies, schools and other agencies vital information on employment practices and effective utilization of professional engineers. Its broad list of publications covers every area of interest or concern to the individual professional engineer and to the employers of engineers. Its many publications on varied subjects of professional interest are available for distribution to the members of the society.

After thorough study of the matter, your committee is of the opinion that the Louisiana Engineering Society and the National Society of Professional Engineers have a common interest, and that one complements the other, indicating that the greatest good for the profession can be accomplished by unity of effort. It is believed: (1) that affiliation with the national society would be of benefit to the individual members of the Louisiana Engineering Society, since they would be better informed of the broad, national problems and concerns of the engineering profession; (2) that affiliation would bring greater prestige to the individual members of the Louisiana Engineering Society and to the Society itself before the public; and (3) that affiliation with the National Society of Professional Engineers would be a step toward greater unity and improved general welfare of the profession on a national scale, and our members should be willing to contribute to the forward progress of the engineering profession through national unity, and would not regard it a burden to pay dues to the National Society of Professional Engineers.

This report is submitted by your committee consisting of the following:

Ben T. Bogard, Chairman  
Chas. E. Cassagne, Jr.  
Wm. J. Drawe, Jr.

E. M. Freeman  
Roy T. Sessums  
Richard A. Smith

## E. J. C. REPORT

### 1. WHAT IS EJC?

EJC was initiated in 1941 as Engineers Joint Conference, composed of the presidents and secretaries of American Institute of Electrical Engineers, American Institute of Mining and Metallurgical Engineers, American Society of Civil Engineers and American Society of Mechanical Engineers. In 1942 the American Institute of Chemical Engineers joined the Conference. As the scope of activities expanded, the name was changed in 1945 to Engineers Joint Council and in 1949 a formal Constitution was adopted.

To further the objective of unity in the Engineering Profession, EJC sponsored in 1949 an Exploratory group to study and recommend the means for achieving the desired result. The following organizations participated:

American Association of Engineers  
American Institute of Chemical Engineers  
American Institute of Electrical Engineers  
American Institute of Mining and Metallurgical Engineers  
The American Society for Engineering Education  
American Society of Civil Engineers  
American Society of Heating and Ventilating Engineers

American Society of Refrigerating Engineers  
American Society of Mechanical Engineers  
American Water Works Association  
Illuminating Engineering Society  
Institute of Aeronautical Sciences  
Institute of Radio Engineers  
National Society of Professional Engineers  
The Society of Naval Architects and Marine Engineers  
Society of Automotive Engineers (withdrew in 1950)

The majority report of the Exploratory Group recommended that progress toward unity could be achieved by expanding EJC to include other qualified groups. National Society of Professional Engineers filed a minority report

that did not concur with this conclusion. Following the work of the Exploratory Group invitations to membership in EJC were accepted by American Water Works Association, Society of Naval Architects and Marine Engineers and American Society for Engineering Education. An invitation to National Society of Professional Engineers was declined by that organization.

Applications for membership from other societies have been received and processed so that, at present, EJC has 10 Constituents and 3 Associate national engineering society members and 2 state or federation Affiliates. These societies have a total membership of approximately 240,000 engineers not including students. The Constituent Engineering Societies are:

- American Society of Civil Engineers
- American Institute of Mining and Metallurgical Engineers
- American Society of Mechanical Engineers
- American Water Works Association
- American Institute of Electrical Engineers
- American Society for Engineering Education
- American Society of Heating and Air Conditioning Engineers
- The American Society of Refrigerating Engineers
- American Institute of Chemical Engineers
- Society of American Military Engineers.

The Associate Societies are:

- American Society of Agricultural Engineers
- American Institute of Consulting Engineers
- American Institute of Industrial Engineers.

The Affiliate members are:

- Kentucky Society of Professional Engineers
- Los Angeles Council of Engineering Societies.

Louisiana Engineering Society's total membership of 1660 at 12/31/56 hold approximately 600 memberships in EJC Constituent or Associate societies.

## **2. WHAT HAS EJC ACCOMPLISHED?**

**National Legislation.** EJC has participated effectively in Congressional hearings to present the viewpoint of the Engineering Profession with respect to labor legislation (Taft-Hartley Act), military service (Selective Service Act), a national water policy, and engineering and scientific manpower problems. As a result, it has been influential in freeing many engineers from enforced participation in unions not of their own choosing, while retaining the right to freedom of action with respect to membership in unions of their choice. In 1956 it filed a "friend of court" brief before the U.S. District Court of the District of Columbia in a case involving engineering employees at Buffalo, N. Y. when this matter was in question by the National Labor Relations Board. It has been instrumental in deferring technical personnel from induction into military service when they could make greater contribution to the national welfare as civilians; in permitting engineering students to complete their college work before beginning military service; and in shaping the new Reserve Forces Act of 1955.

**National and International Affairs.** A comprehensive report on the necessity for a National Water Policy and recommendations concerning the framework of the policy was prepared by an EJC committee in 1951. The importance of this subject is growing daily (as Louisiana citizens know) and the impact of EJC's report and recommendations can be very significant as national attention focuses on the problem. A National Policy Review Board is now completing a supplemental report which will evaluate the changes in the National Water Policy since 1951.

In the field of technical manpower EJC has been a most significant contributor. Its Engineering Manpower Commission, established in 1950, has a record of consistent accomplishment which is difficult to condense into the capsule form which is being attempted here. Together with the Scientific

Manpower Commission, it has cooperated most effectively with the important work of the Guidance Committee of Engineers Council for Professional Development, the National Science Teachers Association, the American Association for the Advancement of Science and the vocational guidance activities of such other groups as your society, LES. The Engineering Manpower Commission has functioned very effectively with the Department of Defense and the Office of Defense Mobilization of the Executive Office of the President in matters concerning improved utilization of young engineers during their periods of military service and military manpower mobilization problems. The Chairman and Executive Secretary of Engineering Manpower Commission are members of the Committee on Specialized Personnel of the Office of Defense Mobilization.

Engineering Manpower Commission together with SMC (Scientific Manpower Commission) publishes a news letter, widely disseminated to engineers and their employers, which has been the principal means for circulating information and interpretation of military service laws involving the training and utilization of military-age engineers. This news letter also has supplied many essential items of information for vocational guidance purposes.

Representatives of Engineering Manpower Commission testified during 1956 at the hearings of the Sub-Committee on Research and Development of the Joint Congressional Committee on Atomic Energy concerning problems of engineering and scientific manpower. The extent of Congressional interest was very significant.

EJC's president, together with the president of the American Society for Engineering Education (ASEE), represent the engineering profession on President Eisenhower's National Committee for the Development of Scientists and Engineers appointed in March, 1956. The Engineering Manpower Commission is cooperating.

The National Engineers Register is maintained by EJC on behalf of the National Science Foundation. The National Engineers Register is a "finder's list" of engineering talent in the United States who are available to identify and locate engineering personnel in the event of national emergencies. This can be of vital importance in such situations.

EJC office acts as secretariat for American Association for the Advancement of Science, U. S. National Commission for UNESCO, U. S. National Committee of World Power Conference and U. S. Committee on large Dams.

EJC functions on an international scale in a variety of roles, one of the most familiar to many Louisiana engineers being its connection with the Pan American Federation of Engineering Societies (UPADI). This organization is growing in importance, particularly among the Latin American countries, and EJC is represented on the UPADI Board by a Past President of the Louisiana Engineering Society. EJC also is the liaison between UPADI and the Conference of Representatives from the Engineering Societies of Western Europe and the United States.

**EJC's Work in Field of Employment Conditions, Compensation, Etc.** Through its Committee on Employment Conditions, EJC compiled and issued a comprehensive report entitled "Professional Standards and Employment Conditions" which has received widespread attention from engineers and organizations. This Committee is undertaking a program for holding regional seminars in various sections of the country (designed to bring together groups of engineers and managers) for discussing methods for improving professional employment conditions.

EJC compiles an annual survey on demand for engineering graduates. This report, based on information from organizations which employ over 140,000 engineers, is used as an important reference in establishing trends on the supply-demand position of engineering graduates.

Periodically EJC conducts a survey of the professional income of engineers as related to their baccalaureate year. The 1956 survey includes about 110,000 engineers and is the largest and most comprehensive engineering income study made in the United States. This survey has had a very good reception in the past by industry and by government bodies in relation to the problems of salary policy for engineers.

EJC is planning a survey of educational institutions to obtain reliable information on the crucial situation of engineering education, as a guide in the formulation of national policy recommendations.

**Work with other National Engineering Organizations.** EJC collaborates with other national engineering groups in a variety of ways. It co-sponsors a national Military-Industrial Conference under the auspices of The Society of American Military Engineers. It coordinates the annual Nuclear Engineering and Science Conference (to be held in Philadelphia this year), participated in by 20 leading engineering and scientific societies. It works closely with ECPD (Engineers' Council for Professional Development) and with the National Science Foundation and the American Society for Engineering Education.

### **3. WHAT IS THE RELATION OF A STATE OR REGIONAL ENGINEERING SOCIETY TO EJC?**

EJC's constitution provides for Affiliate membership by such organizations if the professional qualifications for voting members of these organizations are equivalent to those required of constituent societies of the Council. These requirements are that the voting membership shall be confined to individual members and that a majority of individual members shall be either engineering graduates of colleges of recognized standing or shall be licensed or registered by a state board of registration for professional engineers. Dues for Affiliates with membership of 1000-3000 (this is the range in which LES would fall) are \$50 per year. In other words, the Society pays \$50 annually and its individual members pay nothing directly to EJC. Affiliates receive periodic information on EJC activities, and are privileged to send observers to the meetings of the Board of Directors and representatives to the EJC General Assembly which is held annually.

### **4. COMMITTEE'S RECOMMENDATION.**

In view of the foregoing it is the opinion of this committee that the best interests of the Louisiana Engineering Society, in relation to the interests of the public at large and of the engineering profession as a whole, would be served by affiliation of the society with the Engineers' Joint Council.

This report is submitted by your committee consisting of the following:

Lionel J. Cucullu, Chairman  
Frank W. Macdonald  
R. Mallard Seago

Roy T. Sessums  
Francis M. Taylor  
James M. Todd

---

We hope you will give careful consideration to this and subsequent material that will be forwarded to you with a view to expressing your wishes when the matter is submitted in ballot form sometime in June or July.

Yours sincerely,

WALDEMAR S. NELSON,  
*President*

JOHN P. FERNANDEZ,  
*Secretary-Treasurer*

# **A HISTORY OF THE DEVELOPMENT OF CUBAN LATERITES AS A SOURCE OF NICKEL AND COBALT**

**By J. B. Chatelain**

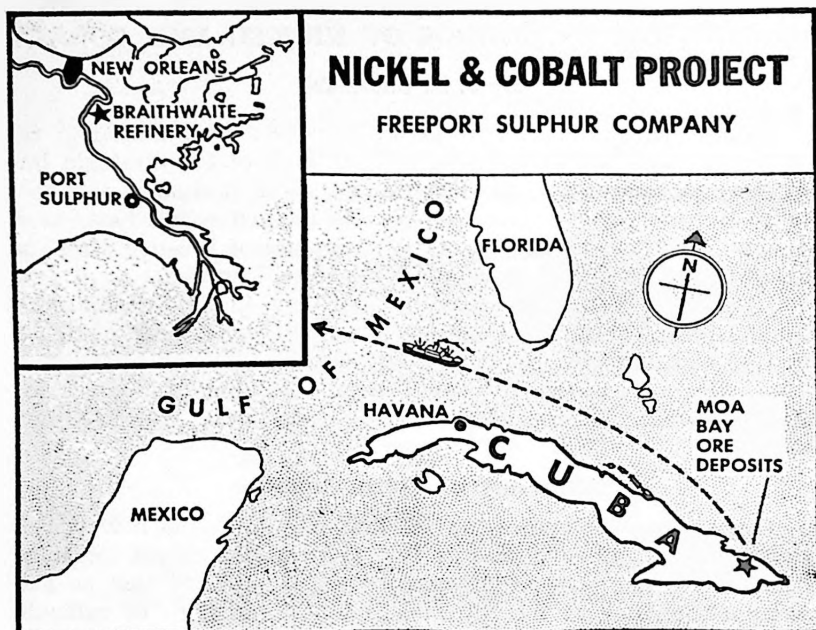
Nickel metal has been receiving considerable attention in recent years and justly so. First, because it is of top strategic importance in this age of rapid technological advancement and secondly, because it is in short supply. Nickel and cobalt have been of particular interest to Louisianians because of Freeport Sulphur Company's pilot plant work at Braithwaite, Louisiana, on a new process for recovering nickel and cobalt from Cuban lateritic ores, and the recent decision to construct in Louisiana a large plant for refining concentrates from Cuba into nickel and cobalt metal. This paper will deal primarily with Freeport Sulphur Company's interests in nickel and cobalt bearing ores over the past two decades.

## **Discovery of Cuban Laterites**

Christopher Columbus, on his first voyage to the new world, landed among other places at Boa Bay on the North Coast of Oriente Province (see map). He noted in his Journal that he had his men row him up the Rio Moa and detected signs of valuable minerals in the bed and banks of the stream. He also noted the red tinted hills. However, four hundred years were to pass before these deposits received any real attention.

Following the war of Cuban Independence in which Cuba, aided by the United States, won its independence from Spain, General Leonard Wood, the military governor, initiated a survey of the resources of the island. With General Wood's encouragement, prospectors roamed the hills of Oriente Province and soon there were exciting reports of large and valuable iron ore deposits. The lateritic ores of Cuba have been produced by weathering of the serpentine rock. These ores contain large amounts of iron oxide with lesser amounts of aluminum, magnesium, chromium, nickel, cobalt, manganese, copper and zinc all present as oxides. For example, the ores at Moa Bay average 46.5 percent iron, 1.35 percent nickel and 0.14 percent cobalt.

The surveys conducted with the encouragement of General Wood resulted in the staking of large claims by American steel companies. The largest of these was by Pennsylvania Steel Company which was later absorbed by Bethlehem Steel Corporation. The latter company constructed a town at Felton, approximately 50 miles east of Moa Bay, and invested considerable money in a mining plant as well as a plant for drying and sintering the ore pre-



paratory to shipment to the United States. This venture, however, soon met with serious difficulty as the nickel, so much sought after today, together with the chromium were regarded as contaminants resulting in little or no market for the ore.

Some iron was produced from these ores, particularly a type called Mayari iron. The properties of this iron are listed in old issues of Mark's Handbook, but this should not be confused with the series of low alloy steels now being produced which bear the name "Mayari." The latter are produced by the addition of alloying elements. The so-called "contaminants" make smelting a sticky problem, and in spite of an enormous amount of work over a long period of years, no satisfactory method of removing these contaminants has yet been developed. For this reason the Cuban ores have to this day not been used in any significant amounts as a source of iron.

Other mining claims staked out early in the twentieth century were those in the vicinity of Moa Bay, and a second group 40 miles to the west in the vicinity of a community now known as Nicaro. Many efforts were also made to develop these deposits as a source of iron but these were also unsuccessful. Then, in the late 1930's, a venture capital firm known as Pardners' Mines Corporation appeared on the scene. The officers of this company had the

imagination to visualize the importance of some of the Moa Bay and Nicaro claims as a valuable source of nickel and the courage to risk substantial sums to launch a project to bring the nickel to market. They optioned the properties and began prospecting them. The prospecting proved up approximately 10 million tons of ore at Moa Bay but greater and more accessible deposits were found in the vicinity of Nicaro where the existence of some 30 million tons of ore averaging 1.45 percent nickel was established. Pardners Mines then initiated a metallurgical research program with the goal of developing a process for nickel recovery. It generally requires a long period of years, many men of various skills, and different kinds of resources to bring a large and difficult project of this nature to a successful conclusion. It became apparent to Pardners Mines that the job should be undertaken by a company with an operating organization and preferably one with some experience in Cuba. Freeport Sulphur Company had this experience as a result of manganese operations in Cuba, and arrangements were made to interest Freeport in the project.

#### **History in Nicaro Process**

Pardners Mines had discovered that the ore deposits at Nicaro consisted of two different types of ore: a limonite near the surface averaging about 1.25 percent nickel and 45 percent iron and, underneath this, a bed of altered serpentine containing up to 1.6 percent nickel but only 12 percent iron. It was, therefore, obvious that it would be advantageous to develop a process for recovering nickel from a mixture of the two ores.

The nickel is very finely dispersed as an oxide in all of the Cuban ores and cannot be concentrated by flotation or other gravity methods as can the sulphide ores existing in Canada and other parts of the globe. Freeport's technical staff conducted a literature survey and found there were various processes that might be applied to the extraction of nickel from the Cuban laterites. One of these processes, which was attractive for several reasons, was to leach the ore with sulphuric acid. However, this had to be abandoned because the high magnesium content resulted in uneconomic acid requirements. The literature survey also turned up some work done by Dr. Caron of Holland on an ammonia leach-process. Dr. Caron had been issued patents in the early 1920's but had never carried the work beyond a small pilot plant scale. Nevertheless, the process appeared promising and work to adapt this technique to the recovery of nickel from a mixture of the limonite and serpentine was begun.

Preliminary laboratory work was encouraging and a pilot plant was constructed at Freeport's Hoskins Mound mine near Free-

port, Texas, to test certain phases of the process. This pilot plant, which did not include all process steps and was small, having capacity for treating only one ton of ore per 24 hours, had been operated for approximately four months when Pearl Harbor day came.

Between 1928 and 1940 consumption of nickel in the United States had increased from 60 to 153 million pounds annually and it was immediately apparent that the war effort was going to require greater quantities of nickel than were available. Arrangements were made with the United State Government for the immediate construction of a plant in Cuba designed to produce 32 million pounds of nickel per year in the form of nickel oxide. At the same time Pardners Mines sold its interest to Freeport, getting back its original investment plus a substantial profit in the form of Freeport stock.

A letter of intent covering arrangements with the United States Government was signed in February 1942, and design work was started immediately. Ground was broken in July 1942 and feeding of ore to the first section of the plant was started in October 1943. A small amount of nickel oxide was shipped from Cuba to the United States at the end of the same year.

Normally design and construction would have been preceded by additional pilot plant work but there was not time for this. It was necessary to design and construct full scale installations to carry out some of the complicated steps without any pilot plant testing. This was only one of the problems; efforts were handicapped by the shortage of men and material and German U-boats were operating in the Caribbean. Substitute materials such as concrete tanks up to 110 feet in diameter had to be used instead of steel for the ammonia leaching system. Construction had to be started in a mosquito infested jungle where the large metallurgical plant and modern community of Nicaro now stands. It was also necessary to train a large group of chemical operators that were drawn in the main from the cane cutters in the region. Urgency forced taking many chances but the many difficulties were surmounted, and by 1946 the plant was producing at an annual rate of 25 million pounds of nickel in the form of nickel oxide.

Freeport operated the plant for the government until 1947, when operations were terminated and the facilities placed in stand-by condition. This followed an effort in 1946 to work out an arrangement for leasing and operating the plant; however, satisfactory terms could not be arranged.

When the Korean War started, the Government decided to reactivate the Nicaro plant. At the Government's request Freeport sent a group of its engineers to Cuba to inspect the plant. This



group prepared a report recommending a rehabilitation program and a number of process changes to increase production and efficiency of the plant. This work was done and the second period of nickel oxide production at Nicaro has been continuous since 1952.

The plant is now being operated for the Government by the Nickel Processing Company, 76 percent of whose stock is owned by National Lead Company and the balance by Cuban interests. Freeport has played no part in the second period of operation at Nicaro since submitting its report for the benefit of the Government in 1950. Freeport's interest has sometimes been confused as its wholly owned subsidiary, Nicaro Nickel Company, gave its name to the town of Nicaro where the plant is located. Under a contract made a number of years ago, the Government pays Nicaro Nickel Company for the ore taken from its deposits and treated in the Government's plant at Nicaro, but Freeport has no other connection with the operation.

The Nicaro plant produced 32,123,000 pounds of nickel in the form of nickel oxide in 1956. An expansion program designed to increase the capacity by 75 percent has been completed by the Government.

All production from Nicaro is in the form of nickel oxide as powder and sinter. Some of the oxide is being converted to metal at Crum Lynne, Pennsylvania. Steps were taken during the earlier period of operating by Freeport to convert the oxide to metal in an electric furnace in the United States. It developed, however, that the oxide could be used as such and that a market existed at a price of 2 cents per pound less than the price of metal. The cost of converting the oxide to metal was greater than this, and the electric furnace process was abandoned.

### **The Nicaro Process**

The following summary of the nickel extraction process is based on the design and operation during the period when Freeport Sulphur Company operated the plant for the United States Government which ended in 1947. The operation is basically the same at the present time.

All ore is strip mined by electric powered shovels after removal of the overburden. The wet ore is mined at a ratio of two parts limonite to one part serpentine, the average ratio of these two types of ore in the ore body. Mined ore is transported approximately nine miles by rail in side dump cars to the plant site storage area.

Ore is reclaimed from storage with Gantry cranes, is transported by conveyor belt to a double roll crusher and thence to

large concurrent fired rotary driers. The ore as mined contains 30 - 35 percent moisture and the major portion is extremely fine. However, it does contain some unaltered serpentine rock that must be crushed to minus 4 mesh prior to drying. The driers are fired with bunker C fuel oil and are equipped with lifting flights to increase efficiency.

Dry ore at the rate of 3600 tons per day is conveyed over weightometers to the grinding plant. The ore is first ground in hammer mills and from these units it is conveyed to air separators. The oversize from the air separators is then ground in ball mills in closed circuit with the separators. The ground product, essentially 100 percent minus 85 mesh, is conveyed by Fuller-Kinyon pumps either to eight concrete storage silos having a capacity of 10,000 dry tons or directly to the reduction furnace feed bins. The ore is normally pumped to the silos in order to obtain the maximum control over the composition of the furnace feed. It is desired to control this as close to 36 percent iron as possible, as this is the average of the limonite-serpentine ore body.

The ore is then fed to twelve Herreshoff furnaces having sixteen hearths each. In these furnaces the ore is heated at a controlled rate to approximately 1350° F. by combustion chambers firing onto various hearths. The units are fired with bunker C fuel oil using air atomizing burners. Combustion gases free of oxygen are mandatory in order to maintain reducing conditions at all points in the reduction section of the multiple hearth furnaces. Producer gas is utilized as a source of reducing gases for converting the nickel oxide in the ore to metallic nickel. This gas is produced in Wellman-Galusha units operated on anthracite coal imported from the United States. Both rate of heating and gas composition throughout the furnaces must be closely controlled to assure maximum reduction of nickel oxide with minimum reduction of iron oxides to metallic iron.

The hot reduced ore flows through Jacoby conveyors to large rotary coolers rotating in a water bath. The cooled ore is discharged into agitated tanks where it is quenched and slurried in an ammonia-ammonium carbonate solution. Prior to quenching in the ammonia solution the reduced ore must be kept in a non-oxidizing atmosphere to prevent the reoxidation of the reduced metallic nickel.

The ore slurry from the quench tanks at a concentration of 3 parts liquor to 1 of solids flows to three leaching lines each having three stages. Each stage consists of a bank of aerators followed by a 75 foot thickener. Aeration with air in the leaching

system serves two purposes: first it causes the nickel to go into solution in the ammonia liquor and second, it oxidizes ferrous iron to the ferric state causing it to precipitate as ferric hydroxide.

The tailings from the leaching system, at a concentration of 0.75 parts liquor to 1 part of solids, flow to two washing lines each of which has four 110 foot thickeners. The purpose of the counter-current washing system is to recover all soluble nickel and to recover partially the ammonia associated with the tailings from the leaching system. Final recovery of ammonia from the tailings slurry is accomplished by steam distillation in bubble cap towers, from which the vapor stream is treated in condensers and absorbers.

All exhaust gases from the leaching aerators must be scrubbed with water to recover ammonia and all tanks must be sealed to prevent the loss of ammonia.

The pregnant liquor from the leaching system, containing approximately one percent nickel in solution, is passed through a polishing filter and is then fed to steam distillation columns. In these columns the ammonia and carbon dioxide are distilled from solution, causing the nickel to precipitate as a finely divided basic nickel carbonate. The ammonia and carbon dioxide are condensed and absorbed, and are finally returned to the leaching system as fresh make-up. The basic nickel carbonate is filtered and washed on rotary vacuum filters. The wet cake is conveyed to a counter-current calcining kiln where it is first dried and then calcined at maximum temperatures of 1800° F. The resultant hot green nickel oxide is cooled in a water cooled unit integral with the kiln and then conveyed to storage. This material is bagged prior to shipment to the United States.

All production during the period the plant was operated by Freeport for the account of the United States Government was shipped in the form of nickel oxide powder. At the present time the major portion of the production is being sintered prior to shipment.

### **History of Moa Bay Project**

Freeport has continuously conducted various studies related to nickel since its operation of Nicaro was terminated in 1947 and these led to the conclusion that the market for nickel would expand greatly and there was a tremendous need for additional productive capacity. The result was a desire to be a part of the nickel business but only on the basis of a product of such good quality and costs so low that competition with established producers could be met. Freeport, therefore, has examined properties in many parts

of the world and has been continuously at work studying metallurgical processes for recovering nickel from various nickel bearing ores.

All of this work led to the conclusion that the solution was to develop the deposits at Moa Bay through the utilization of a new process. A part of this new process is based on sulphuric acid leaching which was examined at the time the first studies pertaining to the Nicaro ore bodies were made. Another part of the process is the Chemico process which has been used with brilliant success by Sherritt-Gordon Mines, Limited at Fort Saskatchewan, Alberta, Canada. Freeport has the Cuban rights to the latter process.

Prospecting of the Moa Bay ore body in much more detail than had previously been done proved the existence of a deposit in excess of 50 million tons of ore containing 1.35 percent nickel, 0.14 percent cobalt and 46.5 percent iron. The Moa Bay deposits at first appeared similar to the Nicaro deposits but the prospecting program proved that very little serpentine ore existed beneath the limonite. This meant an ore containing much less magnesium and aluminum than the Nicaro ores making the sulphuric acid leaching process feasible. The limonite also contained a higher percentage of cobalt than the Nicaro limonite leading to the conclusion that a process for recovering this metal as well as nickel should be selected. This can be accomplished by the sulphuric acid-Chemico process but is not feasible by the process employed at Nicaro.

A pilot plant to test the new process was constructed at the Hoskins Mound Mine near Freeport, Texas, which was capable of handling 10 tons of ore a day. Other facilities in New Jersey were provided to handle the concentrates from the plant. Results from the operation of these pilot plants were encouraging and Freeport was prepared to proceed with a commercial project.

In order to get this project started financing had to be arranged and this could not be done without a purchase contract from the United States Government, the only party in a position to make such a contract. The Government was asked for two things: a certificate of necessity to allow 80 percent of the cost to be written off in five years, which was granted, and a purchase contract. The Government in turn, due to the importance of nickel and cobalt to national defense, proposed that it advance money for a 50 ton per day plant to further test the process. This was not requested by Freeport and came as a disappointment. In order to get off to an earlier start, Freeport was prepared to take the greater risks involved in proceeding on the basis of the small pilot plant work which they had financed and with the benefit of experience

gained from commercial plants using the Chemico process. However, there was no alternative as financing could not be arranged without a purchase contract.

A contract for constructing and operating the 50 ton per day pilot plant and a purchase contract on a contingent basis were signed in October 1954. The pilot plant contract provided one year for construction and one year for operation. This larger **pilot plant** was constructed on a site provided by Freeport at Braithwaite, La. The first ore was fed to the plant in September 1955, and operations were terminated in October 1956. At the peak of pilot plant



**Fig. 2 Pilot Plant at Braithwaite, La.**

operation 250 people were employed. Approximately 90 of these are now engaged in laboratory development work and design related to the commercial plant.

Concurrent with the operation of the pilot plant at Braithwaite process engineering and design of the commercial facilities were carried on. Also considerable work has been done at Moa Bay in order to allow commercial plant construction to proceed as rapidly as possible once the final decision to proceed was made. This work has included clearing an area for and building the construction camp site, providing construction facilities, construction roads and an air strip, dredging the harbor and constructing a 400 million gallon water reservoir.

It is now assured that an attractive commercial project based on Moa Bay ores will be a reality. A purchase contract with the Government was agreed on in March 1957 under which the Government will purchase 271,000,000 pounds of nickel and 23,835,000 pounds of cobalt at the present market price if Freeport desires to deliver its total production prior to June 30, 1965 to the Government. The Government also has the option to require delivery of 30 per cent of the production.

The decision to build the plant for refining the nickel-cobalt concentrates from Cuba into nickel and cobalt metal at Braithwaite, Louisiana, was announced in April 1957. Plans call for completing the plants in both Cuba and the United States by June 30, 1959. The present estimated cost of the two plants is \$100,000,000. The commercial facilities will have an annual capacity of 50,000,000 pounds of nickel and 4,400,000 pounds of cobalt.

#### **Description of Process for Boa Bay Project As Carried Out at Braithwaite Pilot Plant**

The pilot plant at Braithwaite covered the complete process including all operations to be carried out in Cuba and the United States. For the pilot plant operations approximately 17,500 tons of representative ore were shipped to the pilot plant. On a commercial basis this would not be feasible as the ore contains 1.35 percent nickel and 0.14 percent cobalt on a dry basis and the ore as mined contains approximately 30 percent free water. It is, therefore, necessary to concentrate the nickel and cobalt in Cuba and ship this concentrate to the United States for refining. Other than the division of facilities between Cuba and the United States the process which will be described below is the one to be employed commercially and is identical with the one tested at Braithwaite.

The ore as mined is slurried with water and screened to remove serpentine rock and iron ore shot larger than 20 mesh in size. The plus 20 mesh material is discarded as the nickel and cobalt content is too low to be treated economically. The slurry containing the minus 20 mesh solids, the major portion of which is minus 325 mesh, is thickened to approximately 45 percent solids before being fed to the leaching autoclaves.

The sluddy and concentrated sulphuric acid are pumped to the first of six agitated autoclaves arranged in series where the nickel and cobalt are dissolved at elevated temperatures and pressures. In addition to nickel and cobalt, the leach solution contains varying amounts of magnesium, aluminum, chromium, manganese, iron, copper, zinc and lead which are present in the ore.

To withstand the corrosion and erosion under operating conditions the steel shells of the autoclaves were first lined with a homogeneously bounded lead lining inside of which is an acid proof brick lining. All autoclave internals and connecting pipes are constructed of titanium, the only metal that satisfactorily withstands operating conditions.

The leached slurry from the autoclaves is flashed to atmospheric pressure and then pumped to a six stage counter current washing system. The tailings which have been washed free of soluble nickel are removed from the bottom of the last thickener in the system. The clear nickel-cobalt solution overflows the first thickener, following which it is treated with limestone to neutralize the free acid present. The gypsum formed is settled out in a thickener and the neutralized 0.5% nickel—0.05% cobalt solution is ready for sulphide precipitation.

Sulphide precipitation is accomplished by treating the nickel-cobalt solution with hydrogen sulphide gas produced by reacting sulphur and hydrogen. This step produces a concentrate analyzing approximately 55 percent nickel and 6 percent cobalt. The precipitate contains copper, zinc and lead that were dissolved in the leaching step, but all other materials dissolved from the ore remain in the solution which is discarded. The sulphide precipitate is filtered and washed. It is the product of this step that will be shipped from Cuba for refining in the States.

When the concentrate is received in the United States it will be slurried with water. This slurry is fed to autoclaves where it is oxidized to sulphate using air under pressure. The resultant concentrated sulphate solution is treated with ammonia to precipitate traces of aluminum which are removed by filtration. Following this the solutions are treated with hydrogen sulphide gas to precipitate copper and lead and again filtered. The resultant purified solution is then ready for treatment with hydrogen to reduce the nickel sulphate to metallic nickel powder. By proper control the nickel sulphate is reduced to metal and the cobalt remains in solution. The hydrogen employed for reduction is produced by reforming natural gas.

The solution from the nickel reduction step is evaporated and crystallized to form a double salt of the nickel, cobalt and zinc sulphates with ammonium sulphate. The salt from this concentration step is re-dissolved and treated to form a highly soluble cobalt complex. The nickel and zinc are removed by crystallization as a mixed salt with ammonium sulphate. The mixed salt is recycled for nickel recovery and the purified cobalt solution is ready for

*(Continued on page 95)*

**ENGINEERING BRIEFS**

**Gaslight Era Vanishing.** An era is ending in Philadelphia. The chief of the city's street lighting division predicts that the last gas light will be gone by 1960. About 10,496 gas lights illuminate one-third of the city's streets and alleys. The old gas veterans will be replaced by new-fangled electric light.

—*Electrical World*

\* \* \* \*

**Have Pond, Will Travel.** Engineers working in arid areas are bringing their own ponds with them to store water. For one operation, a bulldozer scooped out a pit eight feet deep, measuring 55 by 75 feet. The pit was lined with 8,000 square feet of high-pressure polyethylene film that cost \$400. The film, only 0.003 inches thick, is watertight.

—*Chemical Week*

\* \* \* \*

**Volcano's Power Harnessed.** An Italian volcano has been harnessed to generate power and supply sulphur. Steam from a volcano at Larderello is passed through dry boxes to remove carbon dioxide and hydrogen sulfide. The sulfide is then broken down to sulphur. The station generates 260,000 kw., and about 30 tons of sulphur are recovered daily.

—*Chemical Week*

\* \* \* \*

**Kids Want Electronics.** Electronics even seem to intrigue the children. The interest is given the top industry a \$5 million boost. One firm hit the jackpot with a transistor radio kit. Ranging in price from seven to ten dollars, the firm sold 500,000 kits last year. Radio controlled cars, trucks and buses are also big selling items, the magazine reports.

—*Electronics*

\* \* \* \*

**Prospectors Get Wings.** Especially equipped helicopters are taking over prospectors' jobs. The 'copters are fitted with devices on the nose, the tail and the tail boom to detect the presence of lead, copper and zinc deposits under ground. The gear indicates the size or grade of the ore body. Other equipment is carried for locating radio-active ores. Helicopters can cover more ground in a day than prospectors can in months.

—*Aviation Week*



# **SERVICES TO THE SOUTH LOUISIANA AREA BY THE U.S. COAST AND GEODETIC SURVEY**

**By Cdr. Ross A. Gilmore  
U.S. Coast and Geodetic Survey**

This year—1957—marks the 150th anniversary of the Coast and Geodetic Survey. One hundred and fifty years ago—in 1807—the Survey had its beginning when President Jefferson was authorized by Congress to establish an agency for surveying and charting the coastal regions of the United States—specifically for the benefit of the marine interests engaged in fishing and shipping in the tidal rivers and along the offshore areas of our Atlantic Coastline. Up until that time very little was known of our coastline and ship navigation along it was sketchy and very hazardous.

At first the agency was known as the Coast Survey and it was the first technical bureau in the Federal Government. It wasn't until the 1870's that the name was changed to the Coast and Geodetic Survey—after the Survey was authorized to make interior and cross-country surveys to tie down the country geographically, as it were. The Survey has always been a relatively small bureau, but a very important one. Right now it probably only numbers about 2100 people, including about 180 commissioned officers—the rest of the personnel, including our ship forces, coming under Civil Service. The Survey has always carried on a high degree of work and service to the public, and has had no small part in advancing the general economy of the nation.

It might be well at this juncture to point out just what the Survey does. No doubt many in attendance are familiar with and have made use of some of its services, but for the benefit of all it may of interest to elaborate somewhat on just what the Survey has to offer in the way of service to the public, particularly here in Southern Louisiana.

First, the chief function of the Survey, operating as a Bureau of the United States Department of Commerce, is to produce and distribute the nautical and aeronautical charts for water and air navigation for the U.S. and its possessions. This is no small job when it is noted that the Survey publishes over 900 separate nautical charts and 1550 aeronautical charts, all of which have to be revised or new editions published from time to time. The task of keeping these up to date is quite a problem in itself. During fiscal 1956 alone 43,000,000 aeronautical charts and 3/4 of a million nautical charts were issued.

Secondly, the Survey establishes all the basic geodetic horizontal and vertical control for the U.S. and its possessions. This control is the basic foundation for practically all extensive mapping and surveying and large engineering projects. Without it, there would be no true correlation between adjacent maps or charts or individual surveys. A good many of you already know the value of the Survey's geodetic control, whether it be horizontal control points, usually called triangulation stations, with known geographic or plane coordinate positions, or whether it be vertical control points, called bench marks, of known elevation based on mean sea level. From these stations and bench marks, one can take off and know he is tied in to state and nation-wide-adjusted control nets, horizontally and vertically, whichever the case may be.

Thirdly, the Survey makes tidal and current surveys and produce the tide and current predictions that are published annually for every day of the year for hundreds of locations in the United States and foreign ports. In the latter connection the Survey collaborates with other countries, interchanging data for our mutual benefits. The tides are predicted by the same elaborate predicting machine, nicknamed "Old Brass Brains", that was completed in 1910 almost 50 years ago—one of the first mechanical brains. It mechanically solves equations involving 37 components. The Survey is now building a new predicting machine which may be finished this year.

The Survey also makes magnetic surveys to determine local variation of the compass—used in indicating the compass roses on the charts and at airports, and for producing Isogonic charts—the latter important to the engineer in his survey work. Magnetic surveys also are important to the military and communications people in connection with the effects of the earth's magnetic field on radio waves. Magnetic determinations have been made in practically every county seat in the U.S. and repeat determinations are made in many of them to find the secular changes. Also, seismological and gravity surveys and studies are made—the former important to engineers and designers in connection with large engineering projects such as dams, bridges, etc., the gravity surveys are particularly important to the geophysicist and geologist in oil and mineral exploration work. Fifty seismographs are operated along the San Andreas earthquake fault in California alone and there is a seismic sea wave warning system in the Pacific to prevent catastrophe from tidal waves following marine earthquakes.

The foregoing was just a brief resumé of the highlights of the Survey's work. Now it would be well to get down to cases and see what the Survey has to specifically offer to Louisiana, particularly for this immediate area. It is well known that Louisiana

has considerable shoreline and inshore tidal areas. Well, the survey has nautical chart coverage for all of that, plus a separate series of charts for the Intercoastal Waterways, and even one for Lake Pontchartrain, and a special harbor chart for New Orleans, the latter produced in 1954 at the special request of the New Orleans Dock Board. There are 24 individual nautical charts for Louisiana alone, i.e., including the Intracoastal Waterway charts. Currently, there is a survey party basing out of Morgan City that will be doing the photogrammetric field work for a new chart of the Atchafalaya River area between Morgan City and Old River—one that has been requested by the numerous tow boat interests and the Coast Guard. Also, the Survey publishes aeronautical charts of this area: the New Orleans Sectional Chart, Approach Landing Charts, and Obstruction Charts for your airports, besides having coverage in the World Aeronautical series.

In connection with the nautical charting operations, in order to get shoreline details, the Survey produced a series of T-Sheets—planimetric maps—that found wide use among the local people, both engineers and sportsmen. No provision was made for keeping these maps up to date, so their present distribution is limited to individual orders for reprints from the original manuscript. However, they still seem to be in considerable demand, oftentimes being the best available map information of some of the marsh areas. These maps were produced from some of the Survey's earliest photogrammetric mapping efforts, over 20 years ago. In later years the Survey has coordinated its topographic work with the Geological Survey and the U.S. Engineers and are producing topographic maps along the Louisiana Coast tidal areas in the regular 7½ minute quadrangle series. These are being published by the Geological Survey. Some of these quadrangle maps are already published and others are being compiled and are currently being field edited, just prior to publication. This mapping is being done by photogrammetric methods, based on nine-lens and single-lens aerial photographs taken by the Survey. Recently—just this past fall—the Survey rephotographed a considerable portion of the Atchafalaya River and the Louisiana Coastal areas, both to help in producing the Atchafalaya River chart, previously mentioned, and to bring up-to-date areas now being compiled. Infra-red aerial photographs were also taken at that time of some sections of the shoreline in connection with low water line studies which are very important to those concerned with state mineral leases. The Survey has the only existing 9 lens aerial camera in the world—it was designed by a former Survey officer. At a height of 14,000 feet it can take a photograph covering 125 square miles.

Most people know that the newspapers of any coastal or seaport town usually print the local time of high and low water for each day of the year. They obtain this information from the Survey. Here in New Orleans, the Survey furnishes tidal data to 3 newspapers, the radio and TV stations, as well as to several civic organizations along the immediate Gulf Coast. This information is taken from the regular Tide Tables published a year ahead and the values are determined by 'Old Brass Brains' from the data obtained from standard tide gages that the Survey has operating year in and year out in certain strategic places. In the New Orleans District, there are 9 operating gages, 4 of which are in the Louisiana Coastal area. These gages operate continuously throughout the year and supply the data to help make the published tidal predictions. The Louisiana gages are operated on a cooperative basis with Texas A&M, oil companies and the Coast Guard.

Some Louisianians only know the Survey for its geodetic work, especially the engineers and surveyors engaged in geophysical explorations or location surveys. They know that there are a considerable number of triangulation stations for which the Survey can furnish the geographic positions, or better still, the plane coordinate System. The Survey did considerable triangulation in Southern Louisiana in 1927 and 1933, and during the course of the intervening years many of the stations were lost due to one cause or another, particularly from storm action along the coastline. No one paid too much attention to this until the sudden activity—mostly right after World War II—in oil exploration work in the Louisiana marches and ultimately offshore. Then, the need for control was keenly felt—or it should be said the lack of control was keenly felt. In 1955, through the efforts and cooperation of 15 of the larger oil companies, the Survey re-triangulated the entire coastline of Louisiana, recovering or re-establishing horizontal control points about every 5 miles or closer along the shoreline, as well as establishing stations on specified permanent offshore oil platforms. This survey began about the 1st of March 1955 and was completed by mid-July—about 4½ months. A total of 135 marked triangulation stations were built and occupied, and in addition, 103 intersection stations were located. Two full-scale geodetic triangulation parties, involving a total of 4 officers and about 65 men, were engaged on the project. One party began at the mouth of the Pearl River, working west, and the other began at the Sabine and worked east to a common junction at the east end of Atchafalaya Bay.

Anyone who has surveyed in the marches and along the coast of Louisiana knows that it is not easy work and is fraught with lots of problems. Well, the Survey people had theirs too! Some of

the offshore platform stations located were well over 20 miles from the nearest land and involved observing lines up to 32 miles length. Anyone who has had anything to do with making long distance observations in the Gulf area, knows that it isn't easy and takes considerable time and patience, as there are many obstacles that stand on ones way. For one thing, there are very few, if any, natural elevations along the Louisiana Coast and high observing towers must be used for all long lines. Towers as high as 136 feet (to the light platform) were employed on shore, and as high as 100 feet on the offshore platforms. The Survey's men are the best in their line as far as land triangulation work is concerned—but when it came to the offshore end of the work, accompanied by its water hazards, etc., that was something else again! Most of the men came from the inland states and had very little prior experience if any, with work on the water and had to learn the hard way.

At any event, the work was satisfactorily completed with not too many mishaps. The Survey did lose a couple of steel towers, one from an offshore platform during a line squall, and another in Vermilion Bay-dumped off of a barge in rough weather. Also, one man fell from a platform into the Gulf and one Breton Sound party had a very close call due to a boat breakdown and was marooned on Breton Island for about 36 hours until the Coast Guard got the party off.

Field computations on the triangulation project went along simultaneously with the observing and by the time the project was completed, the field parties were able to furnish the various oil companies' engineers copies of the preliminary positions. As a matter of fact, preliminary positions were given to some engineers working in the area even before the work was completed. In a few cases, requests were made for some station positions while the men were building the observing towers! That was really rushing things! Within 4 months from the time the field data was transmitted to Washington, the work was adjusted and the geographic positions (as well as the plane coordinates) published and available to the public, along with the necessary station descriptions and sketches. In the meantime, the preliminary positions were still made available through the New Orleans District Office. Of course the Survey can't always offer such service, but this particular project was given special priority due to the urgent need for the control data.

Another local project that the Survey participated in not too long ago was the recently completed Lake Pontchartrain Causeway.

Here, it helped the project engineers establish the centerline of the causeway—a very important item considering that the causeway was to be about 24 miles long. Back in 1953, when the project was first being formulated, the Survey established 4 horizontal control stations on survey jackets in the lake by running an arc of triangulation across the lake. These stations became the basic control points for later establishment of the causeway centerline. Then later in 1955, when the Survey had the triangulation parties down here on the coastal triangulation work, a small unit of one of the parties worked with the project engineers in laying out the centerline. A 103 foot observing tower was erected on the New Orleans end of the causeway site and a 90 footer on the Mandeville end and 5 intermediate centerline points were established on survey jackets at equal distances across the lake. The centerline was determined by use of signal lamps and radio by “talking-in” a signal light at each of the intermediate survey jacket stations.

Another recent local service by the Survey was the making of a first-order level crossing in 1955 in the vicinity of the new Mississippi River Bridge for elevation control for the engineers during the construction phases of the bridge and approach structures. This was necessitated due to the unstable nature of some of the bench marks in this area. The Survey had already re-leveled in the New Orleans area in 1951 but enough settlement had been noted by the engineers to warrant releveing again in 1955.

Most local engineers are aware of some settlement in this area and it has been noted that even where elevations have been established on deep well casings changes in elevation have taken place. From preliminary studies of our leveling in the New Orleans area, a general settlement of about  $\frac{1}{2}$  foot has occurred from 1918 to 1955. Certain marks in the general vicinity of Chef Menteur have settled about 2 feet and there are some city marks that have settled more than a foot.

In 1955, the Survey re-leveled across the State of Louisiana, starting at Biloxi, Miss. and ending at Orange, Texas, generally along route 90. Several spur level lines were also run. The area around New Orleans has been re-leveled several times—particularly in 1938, and as mentioned previously, in 1951 and again in 1955. Some time this winter the Survey plans to get a precise level unit down here to establish some bench marks on Timbalier Island so as to eventually determine some MSL elevations along that part of the coast. We have a standard tide gage operating in cooperation with one of the oil companies about 1500 feet north of the island where a take-off will be made from a tidal bench mark there.

In closing, it would be well to explain the Coast Survey set-up here in New Orleans. The Survey divides the country into 13 districts with a field office in each, located in the principal city of the district. The New Orleans District comprises the states of Alabama, Mississippi, Louisiana, Arkansas, all of coastal Texas and the western parts of Kentucky and Tennessee. The New Orleans office is located in the Customhouse where it has been for about 40 years. It is mainly an office set-up, with a very small force, to carry on liaison between the Survey's field parties that may be working in the district and also as liaison with other government and municipal agencies in mutual affairs. Also, the local office has on hand all the available geodetic control data in the district, and a complete stock of all the Survey's nautical and areonautical charts, Coast Pilots, and Tide and Current Tables. In addition, it stocks a supply of the various published survey manuals and state plane coordinate tables that have become quite popular with land surveyors in recent years. The office does not stock topographic maps but has information copies of various maps on hand for the convenience of the public, particularly for the engineer. During the last 2 years, the office has kept one man in the field on a program of triangulation station and bench mark recovery and preservation. There has always been a high "mortality rate" on our monuments through vandalism, new construction work, or just from the adverse forces of nature. The Survey has been trying to cut down on the loss of stations as they not only represent considerable monetary loss, but also a lot of inconvenience to engineers, who, having planned to use them, find to their disappointment that they have been destroyed. The New Orleans office would appreciate any information on the condition of the Survey's marks or any help in their preservation. What the office would like is to be advised ahead of time if a mark is in the way of new construction so that it can be moved.

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## OBITUARY OF SEBASTIAN VINCENT MASSIMINI

It was with a great deal of shock and regret that this Society learned of the sudden death on January 10, 1957, of one of its most active members in civic affairs and one of the most respected members of this Society.

Sebastian Vincent Massimini was born in Castel Frentano, Italy, on January 20, 1890. He entered this country alone at the age of thirteen and started to work immediately as a coal tender to a steam shovel at Safe Harbor, Pennsylvania. Numerous jobs of all types, such as mining, railroading and construction, were held by Vincent, principally in Pennsylvania and New York, until he became associated with the Westinghouse Machine Company, which was finally incorporated with the Westinghouse Electric Corporation. He specialized chiefly in turbines, gears, condensers, and pumps.

Vincent was a self-educated man. He attended night schools in many towns and cities, and took the advantage of attending special engineering courses provided by Westinghouse. He became an American citizen in Pittsburgh, Pennsylvania, in 1918.

Westinghouse next sent him to Newport News, Virginia, where he supervised installation of mechanical equipment on U.S.N. destroyers and the U.S.S. Maryland, and actually saw these ships launched.

Eight months later, in the year 1921, he was transferred by Westinghouse to New Orleans as assistant to their Port Engineer. He finally became supervisor of all Westinghouse work in this area.

Vincent finally left the Westinghouse Corporation in 1924 and formed his own business organization under the name of Gulf Engineering Service and Speciality Company, which was later incorporated into the firm of Gulf Engineering Company. This business flourished tremendously, dealing principally in marine and stationary repair work.

In 1940 he was summoned to Washington by the Maritime Commission, then under Admiral Land, and given the job of repairing the S.S. Conti Biancomano, which had been badly sabotaged, and could not be towed to New Orleans because of the Caribbean Sea being infested with German submarines. In about three days, seventy-five men and repair equipment were on their way to Central America. No replacement parts were available, nor



could they be obtained. In spite of this, six months later, at a cost of one-half million dollars, the ship was afloat at sea under its own power.

In 1945 he was sent to Italy by the Maritime Commission to study equipment and war material in need of repairs, principally because of his command of the Italian language. In January 1947 he was presented with a "Certificate of Commendation" by Vice Admiral E. S. Mills U.S.N., Chief of the Bureau of Ships, in appreciation of his service to the United States Navy.

Besides his membership in this Society, he was a member of the Engineers Club, Kiwanis, Propellor Club, Shriners, Executive Council of the Chamber of Commerce, Board of Directors of International Trade Mart, International House, Traffic Club, and numerous other organizations and clubs.

Vincent's ambitions in life, which were realized, were the construction of a Kiwanis children's recreation camp near Lacombe, Louisiana, and the Crippled Children's Hospital here in New Orleans. In these, and many other pursuits in which he was still active, Vincent will surely be missed, but his memory will linger on forever.

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## CUBAN LATERITES

*(Continued from page 85)*

processing to cobalt metal powder. This is accomplished by hydrogen reduction in autoclaves in a manner similar to that employed for production the nickel powder.

Commercial plans call for briquetting and sintering the major portion of the nickel and cobalt metal powder produced.

In conclusion it might be said that all pilot plant results were most encouraging from the standpoint of recoveries realized, quality of metal produced, equipment and material requirements. This proof of the commercial economic feasibility of a new process will mean another source and increased production of nickel and cobalt of such strategic importance for producing jet planes, and atomic energy, as well as older uses such as corrosion resistant and high temperature alloys. It will also mean not only a large new industrial plant for Louisiana but a plant that will make Louisiana the leading producer of nickel in the United States and the leading producer of cobalt in the Western Hemisphere.

## FIELD NOTES

A revision of the well known "Flow of Fluids" paper by the Crane Company has been announced in the "Valve World". The new edition is the result of many years of research at Armour Research Foundation and the Crane laboratory. It will present theory, applications, useful information, physical properties of fluids and flow characteristics of valves, fittings, and pipe.

\* \* \*

Engineering Unions now claim 60,000 of the nation's 500,000 engineers, according to a study just completed by the National Industrial Conference Board. To determine why unionism occurred among a group considered "unorganizable", the Board questioned executives of companies whose engineers were unionized, officials of unions, engineering societies, and engineers themselves. The findings showed that many engineers are not happy with their financial position, their status as professionals, and their treatment as "individuals."

The answer to discontent, say union leads, is unionism. The engineering societies, who believe that unionism is incompatible with the engineer's professional status, point out that employers have the power to improve employment standards for engineers. The arguments for and against this important topic and possible solutions are included in the pamphlet "Unionization Among American Engineers", Studies in Personnel Policy, No. 155, National Industrial Conference Board, 460 Park Ave., New York 22, N. Y.

\* \* \*

The first Engineering Secretarial Course in the United States has been announced by the Business Training College in Pittsburgh. Modelled after the Medical Secretarial program this new program is planned to give training to students planning to become secretaries of administrative aids to engineers. One of the more important aspects is that of technical terminology. The school has requested engineers to submit copies of dictation, booklets, employee manuals, specifications, etc. which contain technical words and phases used by engineers. It might be a good idea for some of our local engineers to see if a similar program could be instituted somewhere in Louisiana.

"What would you keep the perfect solvent in?" was a well known question in our college days. The answer of course was, "In a container frozen from itself". This apparently was the key to the answer to one of the problems facing American valve manufacturers. In atomic energy applications valve engineers have resorted to freezing the fluid, such as liquid sodium, to form the valve seal. This should serve as a reminder to other engineers that imagination should not be restrained when searching for the answer to any problem.

\* \* \*

The Louisiana Engineering Society lost one of its most distinguished engineers and member of the Board of Directors through the death on April 3, 1957, of Charles E. Cassagne, Jr. At the time of his death he was the administrative engineer of the New Orleans Terminal Board and Chief Engineer of the Mississippi River Bridge Authority. The obituary of Mr. Cassagne will appear in a later issue of this publication.

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## NEW MEMBERS

The following have been elected to membership in our Society.

**DONALD Q. BROWN**, Baton Rouge; age 31. Endorsed: T. J. Innes, Jr., R. Meyer, W. C. Gaddy. University of Illinois, B.S.C.E. Feb. 1949. Member Tau Beta Pi, Chi Epsilon. Esso Standard Oil Co., Baton Rouge Refinery, Feb. 1949 to date. Engineer, Equipment Inspection Dept., 1949-52; Engineer, inspection of new construction, 1952-55; Project Engineer, M.E. Dept., April 1955-date.

**BROADUS M. BRYANT**, Baton Rouge; age 36. Endorsed: D. A. Donald, W. A. Gulick, C. H. Hall. University of Alabama, B.S.I.E. 1952. Associate Mbr., Am. Institute Industrial Engrs. Western Electric Co., Greensboro, N.C., Asst. Engr., Wage Incentives Dept., 1952-54. Ethyl Corp., Baton Rouge; Time Study Engr., Asst. Supervisor Time Study, Manpower Control Engr. Prepare manpower data for budgets, analyze variances in operating labor and other cost areas, recommend action, Feb. 1954-date.

**PERICLE A. C. CHIERI**, Lafayette; age 51. Endorsed: Z. L. Loflin, R. G. Stevens, F. W. zurBurg. University of Genova, Italy, Naval Arch. & Marine Eng., 1921-27, degree received, DR.ING., 1927. University of Naples, M.E. degree, 1927. R. Polytechnic Institute, University of Rome, 1927-28, degree received, D.AERO E. Registered Professional Engr., Italy, New Jersey; M.E., Louisiana. Member Inst. Naval Architects, London. Inst. Aeronautical Sciences, N.Y. (Associate Fellow); ASME, SAE, ASEE, ARS, NSPE, SESA, ISA, AAS, AAUP, LTA. Italian Navy Yard, LaSpazia, Italy, 1929-31. Navigazione Libera Triestina, 1931-35; Chinese Govt. Commission on Aero. Affairs, Nanchang, China, Tech. Advisor, 1935-37. Chinese Govt. Central Military, Director, Aircraft Test Materials Lab., 1937-39. Italian Embassy, Washington, D.C., Office Air Attache, 1939-41. Tri-State College, Angola, Ind., Faculty Member Aero E. Dept., Director, Wind Tunnel, 1942. Aeronautical Products, Inc., Detroit, Aero Eng.-helicopters, 1943-44. University of Toledo, M.E. Dept., Assoc. Professor, 1946-47; Newark College of Eng., Assoc. Prof. M.E. & granduate div. faculty member, 1947-52. Southwestern La. Institute, Head, M.E. Dept., 1952-date. Naturalized American Citizen, 1952.

**FRANCIS E. DAVID, JR.**, Alexandria; age 52. Endorsed: W. E. Flowers, L. M. Odom, W. D. Roland. University of Notre Dame, B.S.C.E. 1928. Registered C.E., La. U.S. Corps of Engrs., N.O., La. & Jamaica, B.W.I., design and construction of airfields, training camps, levees, dredged waterways and other flood control work, 1928-42. U.S. Army, active military duty, European Theatre, 1943-46. U.S. Corps of Engrs., N.O., Head, Reports Section, supervision of preparation of preliminary examination, survey and review on R&H, flood control and multiple purpose projects, 1946-51. U.S. Corps of Engrs., Chief, Design Br., E. Atlantic Dist. review of all design by A&E contract for U.S.A.F. depot and bomber bases in French Morocco, 1951-53. U.S. Engr. Corps, N.O. District, Head Reports Section, same as above, 1953-54. Welch Grape Juice Co., Inc., Project Engr. for design and supervision of construction of major structural repairs of multistoried reinforced concrete buildings, 1954 to date.

**ALFRED J. DIAMOND**, New Orleans; age 31. Endorsed: W. E. Blessey, F. J. Dalia, F. H. Fox. Tulane University, B.S.C.E. 1949. Associate Mbr. ASCE. Registered C.E., La. Fromherz Engineers, design, drafting & surveying for water treatment plants and dist. systems, 1949-51. Geo. P. Rice, same work on industrial plants, football stadium, sewage systems, 1951-56. Curtis & Davis, New Orleans; structural design and drafting on school, office and industrial buildings, May 1956-date.

**JULIAN S. GILLS**, Alexandria; age 34. Endorsed: T. C. David, A. M. Moore, P. E. Randol. Virginia Polytechnic Institute, B.S.Ind.Eng. Dec. 1947. Member AIEE. Virginia Electric & Power Co., Power Sales Engineer, Jan.-Oct. 1948. General Electric Co., Alexandria, Oct. 1948-date, Sales Engineer.

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**MARION D. HOGAN**, Metairie, La., age 53. Endorsed: H. G. Armatis, W. E. Blessey, L. Duclos. Oglethorpe University, surveying, 1920-23. Member SAME. Georgia State Hwy. Dept., Instrumentman, road location, 1923-24. Duval County, Fla., Bridge Designer, 1924-28. Sahlman-Hogan Const. Co., General Contractors, part owner, 1928-30. La. Hwy. Dept., Bridge Designer, Asst. Res. Engr., 1930-32. U.S. Engr. Corps, N.O., Asst. Engr. flood control work, 1933-35; Ocala, Fla., Asst. Engr. bridge design, 1935-36; San Francisco, Assoc. Engr. Structural design, 1936-37; Honolulu, Assoc. Engr. Fortifications, 1937-38; N.O., Assoc. Engr., Area Engr., flood control, structures & bridges, 1938-41. U.S. Army. Major, Area Engr. in charge military construction in southern La., 1942-44; Lt. Col., Area Engr. in charge military construction \$40,000,000 hospital, Honolulu, Hawaii, 1944-46. Hogan Bros. Const. Co., general construction, part owner, 1948-52. Shamrock Const. Co., owner, 1952-57.

**WILLIAM N. HOPKINS**, Bogalusa; age 30. Endorsed: W. C. Barnwell, M. R. Guell, C. H. Hundemer, Louisiana State University, B.S.C.E., 1950. Missouri Pacific Railroad, Instrumentman, 1950-52. Gaylord Container Corp., C.E., responsible charge, Feb. 1955-date. Registered C.E., La.

**JOSEPH S. LODATO**, New Orleans; age 34. Endorsed: F. M. Crum, N. Hymel, W. G. Leibe. La. State University, B.S.E.E. Feb. 1953. Associate Member I.R.E., A.I.E.E. Member Tau Peta Pi, Engineers Club of N.O. Registered E.E., La. U.S. Maritime Service, Chief Radio Operator aboard merchant vessels, 1941-46. WJBW Broadcasting Co., N.O., Broadcast Engineer, maintenance, emergency repairs, watch standing, 1946-47. Shell Oil Co., N.O., Shoran Technician, mtce. of VHF communication equipment, radar and shoran equipment, 1947-48. La. State University, attended 1948-53. WDSU Broadcasting Corp., Video Engineer, Feb.-April 1953. Dept. of Navy, Bureau of Ships, N.O., Electronics Engr., 1953-date.

**PHILIP S. MENTZ**, Baton Rouge; age 26. Endorsed: W. Gulick, M. A. Lea, R. E. Phillips. University of Ala., B.S.I.E. Aug. 1951. Purdue University, M.S.I.E. June 1955. Member Nat'l Management Ass'n, American Society for Eng. Education. Associate Member, American Institute of Industrial Engineers. Sandia Corp., Albuquerque, N.Mex., Staff Member, Production Engr., Packaging Engr., 1951-53. Purdue University, Instructor, Dept. of General Eng. Taught laboratory and lecture classes in basic eng. drawing, machine drawing, slide rule and graphical practice, 1953-55. Ethyl Corp., Baton Rouge, Time Study Engineer, 1955-56; Technical Supervisor, tetraethyllead manufacture, Aug. 1956-date.

**WILLIAM J. METRAILER**, Baton Rouge; age 40. Endorsed: R. H. Hudson, T. J. Innes, Jr., F. D. Richards. University of Notre Dame, B.S.Ch.E., 1939. Member American Chemical Society. Associate Mbr. AIChE. General Chemical Company, Chicago, Engineering Trainee, 1939-40. Dupont, Carney's Point, N.J. and Wellington, Tenn., Quality control laboratory and unit operations supervisor, 1940-41. Ford, Bacon & Davis, Ordnance Engr. supervising ammunition loading at Arkansas Ordnance Plant, Jacksonville, Ark., 1941-45. Esso Standard Oil Co., Chemical Engineer, 1945-date.

**SAM J. MUERY, JR.**, Houma; age 37. Endorsed: B. A. Axelrad, E. J. McNamara, D. L. Morris. University of Texas, B.S.Ch.E., 1940. Member AIEE. Registered Ch.E., Tex., La. Freeport Sulphur Co., Chemical Engr., Asst. Supt. Sulphur Operations Lab., 1941-48. Chemical Engr., 1948-52. Design & construction Engr. on new sulphur mining plant, 1952-53; Supt. of Production, sulphur mining plant, 1953-54. Houma, La., Asst. Supt. Bay St. Elaine Mine, Supt., 1955-date.

**DONALD P. O'BRIEN**, Alexandria; age 47. Endorsed: T. C. David, H. L'Heureux, D. D. Sandefur. Penn College, Cleveland, O., B.S.C.E. 1938. Registered C.E., La. Member Texas Surveyors' Ass'n, American Congress on Surveying & Mapping. National Surveys, Inc., Cleveland, Instrumentman, Party Chief, 1936-40. Tennessee Valley Authority, Asst. C.E., Water Control Planning Dept., Maps & Surveys Div., 1940-46. Atlantic Refining Co., Dallas, Party Chief, Land Surveying Dept., April 1946-date.

**IRVING B. RAU**, New Orleans; age 30. Endorsed: F. L. Alcus, R. G. Cappel, W. P. Wallace. La. State University, B.S.C.E. 1948. Mass. Institute of Technology, S.M.C.E. 1949. Assoc. Mbr. ASCE, Mbr. American Concrete Inst. Registered C.E., La., Miss. Miller & Polizzio, Consulting Engrs., N.O., Structural Designer of reinforced concrete, steel foundations, 1949-50. R. P. Farnsworth Co., Inc., Civil Engr., estimating, project engr. 1950-55. Private practice of civil & structural engineering, 1955-date.

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OTIS B. ROWLAND, JR., Bastrop; age 39. Endorsed: Jesse Coates, R. L. Day, L. J. Lassalle. La. State University, B.S.Ch.E. 1938. Registered Ch.E., La. Humble Oil & Refining Corp., Houston, Engineer Trainee, Jr. Engr., Field Engr., 1938-42. Active military duty, Captain, 1942-46. Partnership, farming & cattle raising, 1946-56 (during this time spent approx. 1 year in design and building of food blending equipment for own use). Commercial Solvents Corp., Sterlington Plant, Technical Supervisor of gas preparation in production of ammonia & methanol, April 1956-date.

GEORGE S. SCHRENK, New Orleans; age 43. Endorsed: A. G. Code, C. J. Ledoux, W. P. Wallace. Tulane University, B.E. in C.E., 1935. Registered C.E., M.E., La. Registered Structural E., Civil E., Texas & Miss. Shell Oil Co., Transitman, 1935-36. Gulf Research & Development Co., Surveyor, 1936-40. Godat & Heft, Engineer, design & field work, 1940-45. Gulf Refining Co., Office Engineer, 1945-46. Favrot & Reed, Architects, Structural Design, 1946-49. David W. Godat & Associates, Partner, 1949-54. Geo. S. Schrenk, Consulting Engineer, 1954-date.

SPENCER G. SMITH, New Orleans; age 35. Endorsed: A. J. Arnold, H. R. Davies, Jr., W. S. Nelson. Tulane University, B.E. in M.E., May 1942. Mass. Institute of Technology, Certificate in Naval Arch. & Marine Eng., Sept. 1942. Associate Member ASME, Member Engineers Club of N.O. Registered M.E., La. U.S. Navy, Engineering Officer, Ship construction and repair supervision, 1942-45. Flintkote Co., N.O. Mech. Engr. in charge construction, 1946-47. Freeport Sulphur Co., Mechanical Designer, 1947. American Bureau of Shipping, N.O., Marine Surveyor, 1950-51. Kellex Corp., Muscle Shoals, Ala., Field Mechanical Eng., supervision of construction \$100,000,000 Nerve Gas Chemical Plant for U.S. Army, 1952. Bedell & Nelson, Engrs., Eng. design supervisor, 1952-56; Vice-Pres. in charge design of nickel mining & processing plant for Freeport Sulphur Co., Oct. 1956-date.

JOSEPH G. WEDDINGTON, New Orleans; age 43. Endorsed: O. E. Barron, W. D. Walthall, R. O. Williams. Louisiana State University, Civil Eng. 1935-37. Southern Bell Tel. & Tel. Co., Junior Engineer, Supervising Engineer, Exchange Plant Engineer, District Engineer, June 1937 to date.

### FOR TRANSFER FROM JUNIOR TO MEMBER

RAGAN C. DEFREESE, New Orleans; age 34. Louisiana Polytechnic Institute, B.S.E.E. 1948. Southern Bell Tel. & Tel. Co., Engineering Dept., 1949 to date.

EMERY DOMINGUE, Lafayette; age 31. Southwestern La. Institute, B.S.C.E. University of Illinois, M.S.C.E. Registered C.E., La. La. Dept. of Highways, Head Right-of-Way Draftsman. East Texas Const. Co., Field Engineer; La. Dept. of Highways, Party Chief. Southwestern La. Institute, Asst. Professor of C.E.

WILLIAM H. DYER, JR., Baton Rouge; age 35. La. State University, B.S.E.E. 1951. Registered, La., Miss. Private practice of consulting engineering, Ogden, Woodruff & Dyer, Inc., 1950 to date.

NORMAN P. FAUCHEUX, Arabi, La.; age 33. La. State University, B.S.E.E. Jan. 1949. La. Power & Light Co., Maintenance Engr., Operating Staff Engr., Supervisor Reduction Cell Repair, Maintenance Planning Supervisor, 8 yrs.

GEORGE J. GROH, New Orleans; age 31. Stevens Inst. of Technology, Hoboken, N.J., M.E. Degree, Feb. 1947. Registered M.E., La. R. J. Tricon Co., Trainee, Engineer, design of conveying equipment for various industries, 1947-date.

H. JACK HINRICHS, New Orleans; age 29. Tulane University, B.M.E. 1946. Registered M.E., La. U.S. Navy, active duty, 1946-48. James M. Todd & Associates, Design Engineer, 1948-49. Shelby Construction Co., Engineer, 1949-50. Federal Housing Admin., Construction Examiner, 1950-52. Pan-Am Southern Corp., Refinery Engineer, 1952-53. David W. Godat & Associates, Design Engineer, 1953-56. Consulting Engineer, self-employed, 1956-date.

STANLEY P. KOLTUN, Metairie, La.; age 31. La. State University, B.S.Ch.E. 1948. Registered, La. General Chemical Div., Allied Chemical & Dye Corp., Chemical Engineer, ½ yr. U.S. Corps of Engineers, Hydraulic & Civil Engr., 2½ years; Southern Regional Research Lab., U.S.D.A., Physical Chemist, Chemical Engineer, 3 years.

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- THEODORE J. LALA**, New Orleans; age 28. La. State University, B.S.M.E. 1948. Registered M.E., La. Hepinstall Steel Works, Engineer, 1948 to date.
- FRANK P. McNAMARA**, Sulphur, La.; age 32. La. State University, B.S.C.E. 1948. Registered C.E., La. Cities Service Refining Corp., refinery drafting, survey party chief, design engineer, estimating and field engr., 1948-55. Lone Star Cement Corp., General engineering associated with construction and maintenance of a cement plant, 1955 to date.
- GUY W. MILLER**, Baton Rouge; age 31. La. State University, B.S.E.E. 1948. Registered, La. Geophysical Service Inc., Junior Observer, Seismograph Crew, 1948-49. Gulf States Utilities Corp., Junior Engineer, Engineer-Distribution Planning, Project Engineer, 1949 to date.
- JOSEPH L. NANNEY**, Baton Rouge; age 32. Virginia Polytechnic Institute, B.S.C.E. 1951. Registered C.E., Va. Esso Standard Oil Co., La. Div., Baton Rouge, Project Engineer, M.E. Dept., 1951-53; Project Engineering Group Head, M.E. Dept., 1953-55; Asst. Head, M.E. Dept., 1955 to date.
- E. REID POWELL**, New Orleans; age 37. La. State University, B.S. Pet. Eng. Mente & Co., Inc., Production Manager, 1948-53. Delco Products Div., General Motors Corp., Sales Engineer, 1954-55. Gulf-York, Inc., Sales Engineer, 1955-56 York Corp., Sales Engineer, 1956 to date. Military service: U.S. Army Corps of Engrs., Aviation Eng. Battalion, construction, maintenance and repair of airfields for fighter and bomber planes, 5 years.
- HERBERT P. REINSCH**, Aruba, Netherlands Antilles; age 31. La. State University, B.S.M.E., 1950. J. B. Beaird Co., Shreveport, Engineering Draftsman,  $\frac{1}{2}$  yr. Florida Southern College, Lakeland, Fla., Instructor of Mathematics,  $1\frac{1}{2}$  yrs. Esso Standard Oil Co., Baton Rouge Refinery, Project Engr., Fire Protection Engr., 6 years. Lago Oil & Transport Co., Ltd., Engineer, Technical Service Dept., Sept. 1956-date.
- CALVIN J. ROACH**, Brewerton, N.Y.; age 31. Southwestern La. Institute, B.S.M.E. 1951. General Electric Co., Test Engineering Training Program, Sales Training Program, Supervisory Development Program, Electronic Manufacturing & Training Program. Instructor, Manufacturing Training Program.
- FRANK STEWART**, New Orleans; age 32. Georgia School of Technology, B.C.E., 1949. Registered, La., Tex. Farnsworth & Chambers, Inc., Field Engineer, 1949-50. Robert E. McKee, Field Engineer, 1950-51. U.S. Army Corps of Engineers, Platoon Leader, 1951-52. Farnsworth & Chambers Co., Inc., Office Engineer, Estimator, Project Manager, Purchasing Agent, 1952 to date.
- JAMES E. ST. GERMAIN**, New Orleans; age 32. Mass. Institute of Technology, B.S. Aeronautical Eng. 1944. U.S. Navy, Aircraft Maintenance Officer, 1944-46. Glenn Martin Aircraft, Junior Aerodynamicist, 1946-47. Simplex Mfg. Co., Development Engineer, 1947-50. Pan-Am Southern Corp., Marketing Dept., Architectural Draftsman, Piping Draftsman, Chief Draftsman, Asst. to Chief Engineer, Construction Field Engineer, 1950 to date.
- CARL H. THOMAS**, Baton Rouge; age 31. Clemson Agricultural College, B.S.A.E. 1950. La. State University, 1 year graduate study, 6 years research and teaching.

#### FOR AFFILIATE MEMBER

- JAMES K. AYMOND**, Alexandria; age 38. Endorsed: T. C. David, W. E. Flowers, W. D. Roland. Pan American Engineers, On-Job Training, G.I. Bill of Rights, Drafting, 1946-49. Pan American Engineers, Draftsman, Engineering Aide, 1946-52. England AFB, Alexandria, Engineer Office, Supervisory Engineering Draftsman, preparation and supervision of all projects prepared by Installation Engineer Forces, 1952 to date.
- DANA D. McCORMICK**, Shreveport; age 25. Endorsed: B. D. Atchley, Sr., S. R. Johnston III, J. C. McLemore. Ben E. Ramsey, Shreveport, Rodman, 1948-50. J. C. McLemore, Shreveport, Rodman, Instrumentman, 1950-54. McLemore & Atchley, Shreveport, Party Chief, 1954-date.

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**FOR TRANSFER FROM JUNIOR TO AFFILIATE MEMBER**

**HEBERT E. RUSSELL**, Winnsboro; age 33. Member La. Hwy. Engrs. Ass'n. Registered C.E. (Public Employee) La. Associated Contractors & Engineers (Pipeline Contractors), Rodman, 1946-47. La. Dept. of Highways, Rodman, 1947-50; Instrumentman, 1950-53; Chief of Party, 1953-55; Project Engineer, 1955 to date.

**ROGER C. WILKINSON**, Shreveport; age 30. Centenary College, 2 yrs. pre-eng. International Correspondence Schools, 2 yr. course in Mapping & Surveying. J. C. McLemore, Shreveport, employed as Party Chief, 1948-51; Field Supervisor, 1951-53; Office Manager, Jan. 1953 to date.

**FOR JUNIOR MEMBER**

**JAMES R. BARFIELD**, Baton Rouge; age 27. Endorsed: D. A. Donald, F. J. Prehoda, W. B. Root. Georgia Institute of Technology, B.I.E. 1955. Esso Standard Oil Co., Project Engineer, engineering and coordination of mtee. and construction projects within refinery, June 1955 to date.

**FRANK W. BENNETT, JR.**, Baton Rouge; age 22. Endorsed: W. C. Barnwell, B. B. Pierce, M. R. Guell. La. State University, B.S.C.E. 1956. Gaylord Container Corp., Mill Div., Sept. 1956-date. Registered C.E., La. Junior Member ASCE.

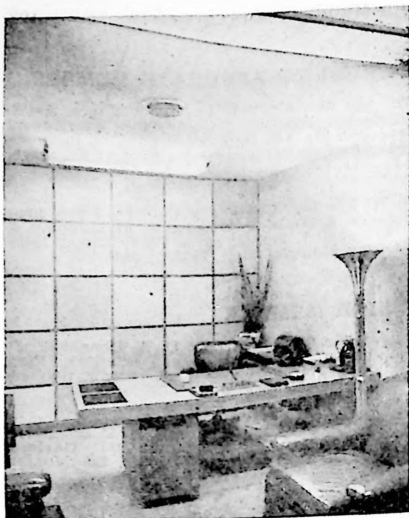
**JOHN M. GREEN**, Baton Rouge; age 23. Endorsed: W. O. Crabtree, A. N. Gordon, C. R. Neff. Alabama Polytechnic Institute, B.M.E. Mar. 1953. Junior Member ASME. Esso Standard Oil Co., Baton Rouge, Project Engineer, M.E. Dept., general engineering and design, March 1953 to date.

**JEROME P. GUY**, Baton Rouge; age 22. Endorsed: L. Duclos, F. M. Heroy, Jr., A. D. Jackson. University of Alabama, B.S.C.E. 1956. Registered C.E., La. La. Dept. of Highways, Baton Rouge, Aide IV, road design, calculating of grades and earthwork, other highway planning duties, May-Nov. 1956; Prof. Engr. I, Bridge Design, Nov. 1956 to date.

**CHARLES B. MCCARTHY**, New Orleans; age 25. Endorsed: B. A. Grehan, H. B. Fowler, W. D. Weidner. Georgia Institute of Technology, B.C.E. 1953; graduate school, Civil Engineering, 1955-56. Registered C.E., La. Jr. Mbr. ASCE, Mbr. Chi Epsilon, Associate Sigma Xi. The Texas Co., New Orleans, Construction Engineer, 1953-55. State Highway Dept. of Georgia, Junior Highway Engineer, 1955-56. Frederic R. Harris, Inc., New Orleans, Foundation Engineer, Aug. 1956-date.

**THEODORE A. SUNDIN**, Ft. Worth, Texas; age 24. Endorsed: E. W. Johnson, A. O. Lee, J. J. Ryan, University of Minnesota, B.M.E. Mar. 1955. Registered M.E., La., Minn. Junior Mbr. Minnesota Soc. of Professional Engrs., Mbr. Society of Automotive Engrs., Society of American Military Engineers. Allison Div., General Motors Corp., Indianapolis, Mar.-June 1955. U.S. Air Force, Lake Chas. Air Force Base, 806th Installations Squadron, 1955-56; Carswell AFB, Texas, 1st Radar Bomb Scoring Group, Installations Engineer, April 1956 to date.

**JOHN R. ZIERCHER**, Baton Rouge; age 26. Endorsed: C. H. Filgo, W. C. Gaddy, Jr., C. P. Senyard. University of Missouri, B.S.C.E. June 1955. Jr. Mbr. ASCE. Registered C.E., La. Esso Standard Oil Co., Baton Rouge, Equipment Inspector, Project Engineer, June 1955 to date.



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## MINUTES OF THE MEETINGS AND BUSINESS OF THE SOCIETY

Minutes of Annual Meeting held on Thursday, January 10, 1957

The meeting was called to order by President Wallace in the Claiborne Room, St. Charles Hotel with approximately 100 members and guests in attendance. The invocation was given by Dr. Fuller B. Saunders, Pastor, Central Baptist Church.

It was moved, seconded and carried that reading of minutes of the preceding meeting of the society and of the board of direction be dispensed with. President Wallace then introduced the presidents of L.E.S. state sections who were in attendance and announced that the newly elected presidents of the sections for 1957 were as follows: Mr. Howard B. L'Heureux, President, Alexandria Section; Mr. Randall Meyer, President, Baton Rouge Section; Mr. R. M. Hetherwick, President, Lafayette Section; Mr. Richard R. L. Ward, President, Lake Charles Section; Mr. M. M. Funderburk, President, Monroe Section, and Mr. Chas. B. Foster, Jr., President, Shreveport Section.

The president then called on Mr. Roy T. Sessums to introduce the keynote speaker, Mr. Monro Lanier, President, The Ingalls Shipbuilding Corporation, who gave a very interesting address on the subject "The Impact of Scientific Education on the Economy and National Defense". Following the lecture, President Wallace thanked Mr. Lanier and the audience gave him a rising vote of appreciation.

The secretary-treasurer presented his annual report, a copy of which appeared in the February issue of The Louisiana Engineer.

The president gave his annual report, outlining the highlights of his administration. Mr. E. M. Freeman then introduced certain resolutions, copies of which are attached to these minutes, and moved that they be accepted. The motion was seconded and carried.

The president then awarded certificates of merit to the following speakers at the student conference and presented them with prizes for their effort: Charles Roberts, Louisiana Polytechnic Institute "Vibration Control in Compressor Stations."

Ralph E. Drexel, Louisiana State University "Development of the Rocket Motor."

Richard Weaver, Tulane University "The Lack of Education in Engineering."

Frank Breeden, Southwestern Louisiana Institute "Nuclear Energy—The Key to New and Improved Engineering Materials."

President Wallace then awarded certificates of life membership to the following who have completed thirty years of active membership in the society: Clarence N. Bott, Philip H. Campbell, Robert J. Dreuding, Arthur A. Grant, Paul F. Hoots, Harry S. Salzer, David Stayer,

The president requested Mr. Henri J. Molaison to escort Colonel John T. Knight, Jr., to the rostrum, where the latter was presented with the society's annual Certificate of Appreciation for his generous and unselfish service in its behalf.

The president then called on Mr. David W. Godat to make presentation of a certificate of Honorary Membership to Mr. Charles M. Kerr. Mr. Kerr was escorted to the rostrum by Mr. Ole K. Olsen.

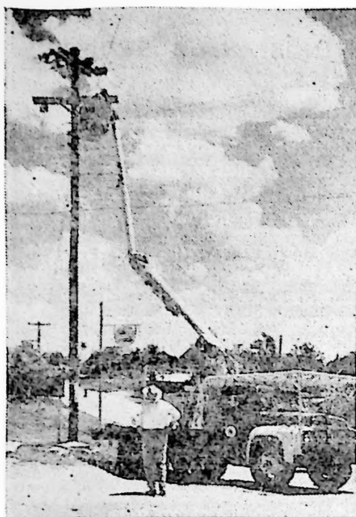
Likewise Dr. Leo J. Lassalle was called on to present Honorary Membership in the society to Dr. George P. Meade. Mr. C. S. Williamson, Jr. escorted Dr. Meade to the rostrum.

Mr. R. Mallard Seago, Chairman of the Nominating Committee, then presented the Teller's Report, stating that 346 ballots were cast in the election of officers for 1957. He stated that, in addition to the newly elected officers who would be introduced, the Board of Direction for 1957 would include the Presidents of State Sections elected by their local memberships whose names were announced by President Wallace earlier in the meeting. He then requested the following gentlemen to escort the respective officers and board members to the rostrum:

Mr. Reinhard A. Steinmayer, escorting Mr. Ben T. Bogard, incumbent board member.

Mr. Frederick H. Fox, escorting Mr. Charles E. Cassagne, Jr., incumbent board member.

Mr. Chas. S. Williamson, Jr., escorting Dr. Francis M. Taylor, newly elected board member.



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Mr. Ole K. Olsen, escorting Mr. Walter H. Scales, newly elected board member.

Mr. Wm. H. Rhodes, escorting Mr. John P. Fernandez, Secretary-Treasurer.

Mr. Lionel J. Cucullu, escorting Mr. Roy T. Sessums, Second Vice-President.

Mr. Frederick N. Billingsley, escorting Mr. E. M. Freeman, First Vice-President.

Mr. Michael C. Abrahm, escorting Mr. Waldemar S. Nelson, President.

Retiring President Wallace then handed the gavel to President-Elect Nelson, who accepted the office with thanks and outlined his platform for the year.

Mr. Frank Riess, General Chairman of the 1957 Annual Meeting, then presented to retiring president Wayne Wallace a token of appreciation for his leadership during the past year.

Following announcements of the remainder of the program, the meeting adjourned.

JOHN P. FERNANDEZ, Secretary-Treasurer

#### Minutes of Meeting of the Board of Direction Held on Monday, January 28, 1957

The meeting was called to order by President Nelson with Messrs. Cassagne, L'Heureux, Scales, Sessums, Wallace and Fernandez present. President Nelson welcomed Mr. L'Heureux, newly elected president of the Alexandria Section. The secretary then read minutes of the December board meeting, after which Mr. Cassagne moved that the minutes be accepted as corrected. Motion was seconded by Mr. Wallace and carried. The secretary read minutes of the annual meeting of the Board of Direction with State Section officers held on January 11, after which Mr. Scales moved that these minutes be accepted as read, seconded by Mr. Sessums and carried.

It was decided that the next Board meeting would be held on March 11, the date of the regular monthly meeting of the society.

The annual report of the Employment Committee submitted by Mr. E. L. Fithlan, Chairman, was read.

The secretary reported that the registered attendance at the Annual Meeting was as follows:

|          | Out of town<br>Registrants | Local<br>Registrants |
|----------|----------------------------|----------------------|
| Thursday | 115                        | 164                  |
| Friday   | 14                         | 68                   |
| Saturday | 8                          | 10                   |
|          | 137                        | 242                  |

The secretary reported that all applicants named in the December ballot had been elected to their respective grades and that they had been so informed.

The secretary advised that the following stocks had been purchased at the direction of the Finance Committee :

| Cert. No.                           | Par Value  |
|-------------------------------------|------------|
| 4048 Columbia Homestead Ass'n.      | \$1,000.00 |
| 4908 Commonwealth Savings Ass'n.    | 1,000.00   |
| I-8049 Security Bldg. & Loan Ass'n. | 1,000.00   |
| J- 148 State Savings & Loan Ass'n.  | 1,000.00   |
| 8899 Union Savings & Loan Ass'n.    | 1,000.00   |

Mr. Sessums moved that the resignations of the following be accepted with regret and that Messrs. J. O. Herpin and C. J. Mahaffey be dropped from the rolls in accordance with their own requests. Motion was seconded by Mr. Cassagne and carried.

| Name                | Grade     | Section      |
|---------------------|-----------|--------------|
| Cecil W. Biggs      | Member    | Monroe       |
| Joseph G. Chumley   | Member    | Monroe       |
| Tom C. Davis        | Junior    | Non-Resident |
| A. F. Fritchie      | Member    | Baton Rouge  |
| John G. Huffman     | Member    | Shreveport   |
| Dick R. Kinser      | Affiliate | Non-Resident |
| William J. Lank     | Member    | Shreveport   |
| Henry M. Morris     | Member    | Non-Resident |
| James C. Rachal     | Member    | Non-Resident |
| Charles Roudane     | Member    | New Orleans  |
| Gerald D. Watkins   | Member    | Monroe       |
| Richard O. Wilson   | Junior    | Non-Resident |
| Kenneth H. Woodward | Member    | Houma        |

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In the absence of Mr. Bogard, Chairman, Mr. Cassagne reported on the progress of the committee appointed to study the matter of affiliation with the National Society of Professional Engineers. President Nelson gave a similar report for the committee studying affiliation with Engineers' Joint Council.

Mr. Sessums moved that all mailing of information concerning affiliation with national societies be handled by the secretary of the Louisiana Engineering Society. Motion seconded by Mr. Wallace and carried.

Mr. Scales moved that the reports of the committees on affiliation with N.S.P.E. and E.J.C. be circularized among the board members prior to discussion at a board meeting. Motion seconded by Mr. Sessums and carried.

Mr. Sessums moved that board members be furnished with copies of minutes of the December 10, January 11 and January 28 board meetings, and all future meetings of the Board of Direction and the Society. Motion seconded by Mr. Scales and carried. It was decided to hold board meetings on the first Monday of each month, beginning in April.

The secretary was instructed to have the obituaries of Messrs. John L. Porter and Irven E. Hanson read at the meeting of the society to be held on February 18.

The secretary advised that Weisman's Auction Exchange had offered \$75.00 for the conference table and 8 chairs owned by the society, and that in his opinion this was not an adequate price. Mr. Cassagne moved that the secretary be authorized to sell the chairs for the best price obtainable, seconded by Mr. Sessums and carried.

Dr. Wallace, acting for the Finance Committee, presented the budget for 1957. After a slight modification, he moved that the budget be accepted as follows, seconded by Mr. Cassagne and carried:

#### INCOME:

|                                    |           |             |
|------------------------------------|-----------|-------------|
| Advertising .....                  | \$ 875.00 |             |
| Dividends & Interest .....         | 475.00    |             |
| Dues .....                         | 14,000.00 |             |
| Unexpended Balance from 1956 ..... | 1,775.44  | \$17,125.44 |

#### DISBURSEMENTS:

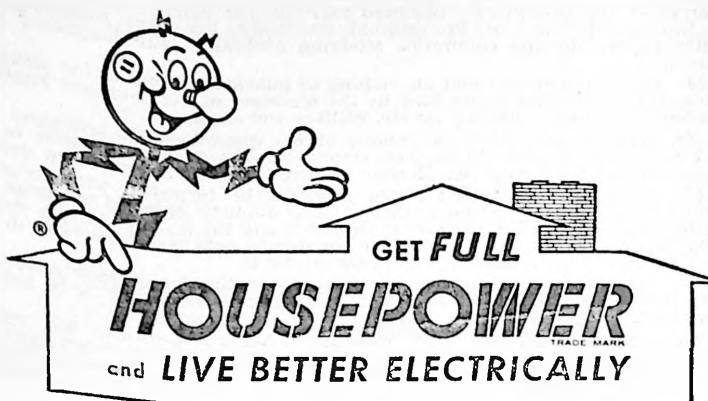
|                                                               |           |             |
|---------------------------------------------------------------|-----------|-------------|
| Auditor's Fee .....                                           | \$ 140.00 |             |
| Dues to Other Organizations .....                             | 70.00     |             |
| Dues Rebates .....                                            | 3,500.00  |             |
| Engineers Week .....                                          | 350.00    |             |
| Floral Offerings .....                                        | 60.00     |             |
| Headquarters Rental .....                                     | 180.00    |             |
| Medals, Trophies, Gifts, Certificates .....                   | 80.00     |             |
| Miscellaneous .....                                           | 200.00    |             |
| Monthly Meetings .....                                        | 550.00    |             |
| Outing and Golf Tournament .....                              | 100.00    |             |
| Postage .....                                                 | 400.00    |             |
| Publication .....                                             | 3,600.00  |             |
| Scholarships .....                                            | 400.00    |             |
| Salaries .....                                                | 3,300.00  |             |
| Stenographic Assistance .....                                 | 1,040.00  |             |
| Stationery and Printing .....                                 | 1,555.00  |             |
| Traveling, other Expenses of<br>President and Secretary ..... | 350.00    |             |
| Taxes .....                                                   | 125.00    |             |
| Vocational Guidance .....                                     | 100.00    |             |
| Unbudgeted .....                                              | 1,025.44  | \$17,125.44 |

President Nelson appointed Mr. Wiley L. Poole chairman of a committee of his own choice to prepare the obituary of the late Robert J. Dugue. He also appointed Messrs. Robert N. Habans, Chairman, C. Glenn Cappel, Ole K. Olsen to prepare an obituary for the late Nelson L. Hawkins, and Messrs. Karl P. Kammer, Chairman, Allen W. Betz and Bernard Louviere to prepare an obituary for the late Sebastian V. Massimini.

Discussion followed on the selection of 1957 standing committee personnel and it was decided that the president would contact those selected before official appointments would be made.

The meeting then adjourned.

JOHN P. FERNANDEZ, Secretary-Treasurer



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**Minutes of Meeting of the Society Held in the Beauregard Room, St. Charles  
Hotel on Monday, February 18, 1957**

The meeting was called to order by President Nelson with approximately 120 members and guests present, including ladies and student members of JET clubs. The president welcomed members and guests. Mr. Macdonald moved that the reading of minutes of the preceding meeting be dispensed with, seconded by Mr. Babin and carried. Mr. Macdonald also moved that the reading of minutes of the last board meeting be dispensed with, seconded by Mr. Cuculla and carried.

President Nelson reported that several esteemed members of the society had passed away recently and that the reading of memorials was in order. Mr. DeWitt Morris then read the obituary of the late Irven E. Hanson; Mr. Macdonald read the obituary of the late John L. Porter; and Mr. Karl P. Kammer read the obituary of the late Sebastian V. Massimini. It was moved seconded and carried that these obituaries be incorporated in the minutes of the society, published in the Louisiana Engineer, and copies forwarded to the families of the deceased. The audience then rose and observed a moment of silence in memory of these departed members.

The president announced that the February meeting date had been postponed one week in order to coincide with and celebrate National Engineers' Week, February 17-23. He then called on Mr. John F. Vogt, Jr., Chairman of Engineers' Week Committee, who requested the representatives of the local engineering groups participating in National Engineers' Week to stand and be recognized. He also introduced the members of his committee.

President Nelson then introduced the principal speaker of the evening, Mr. R. J. Rhinehart, President, National Society of Professional Engineers, who spoke on "Engineering—America's Great Resource". A lively question period followed, after which the meeting adjourned with a rising vote of thanks to the speaker.

JOHN P. FERNANDEZ, Secretary-Treasurer

**Minutes of Meeting of the Board of Direction Held on Monday, March 11, 1957**

The meeting was called to order by President Nelson at 3:00 p.m. with the following members in attendance: Messrs. Bogard, Freeman, L'Heureux, Meyer, Scales, Sessums, Taylor, Wallace and Fernandez. Messrs. T. E. Alexander, R. N. Seago, R. A. Smith and J. M. Todd also were present by invitation. Dr. Taylor moved that minutes of the preceding meeting be accepted as corrected; motion was seconded by Dr. Wallace and carried.

Correspondence relating to the respective visits to New Orleans of Messrs. Harold P. Skamser, Director, JET Program, Michigan State University, and R. J. Rhinehart, President, National Society of Professional Engineers, was read.

Dr. Taylor moved that Messrs. H. L. Henry Jr. and John D. Murry Jr. be reinstated to the grade of member and that Messrs. Thomas H. Arnold and Eugene J. Frisch Jr. be reinstated to the grade of junior member in the society. The motion was seconded by Mr. Meyer and carried.

Upon the advice of the board, President Nelson appointed Mr. H. L. Lehmann to head a committee of his own choice to prepare the obituary of the late Carl J. Helbak. He also appointed a committee consisting of Messrs. Herrick J. Lane Sr., Chairman, C. Glenn Cappel and R. E. Gosa to prepare an obituary for the late W. Horace Williams.

Mr. Scales moved that the following members be dropped from the rolls in accordance with the constitution since they have been delinquent in dues for more than one year and their present addresses are unknown:

| Name               | Grade  | Former Address                                    |
|--------------------|--------|---------------------------------------------------|
| J. W. Allee        | Member | New Orleans                                       |
| D. W. Boensel      | Junior | (Award winner—did not<br>return application form) |
| G. L. Breece       | Member | New Orleans                                       |
| R. L. Calhoun      | Junior | Alexandria                                        |
| John J. Guth       | Junior | Shreveport                                        |
| Oswald A. Minieris | Member | Baton Rouge                                       |
| Ralph Owen         | Junior | Arkansas                                          |
| George S. Patrick  | Member | South America                                     |
| Fred J. Paul       | Member | Texas                                             |
| Richmond J. Tourne | Junior | New York                                          |
| Chas. C. Trahan    | Junior | Lafayette                                         |

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The motion was seconded by Mr. Sessums and carried.

The secretary reported that 8 chairs belonging to the society had been sold for \$65.00, a much better price than had been offered previously.

Mr. Freeman moved that the secretary be authorized to purchase a photo reproducing machine at a cost not to exceed \$450.00. Motion seconded by Dr. Wallace and carried.

The president read a letter from the Shreveport Section inviting him to address its April meeting to be held near the end of the month. Discussion followed on the matter of holding a board meeting in Shreveport on the same date, and Mr. Bogard moved that a board meeting be held on April 29 at 6:00 p.m. at 1103 Beck Building, Shreveport, provided this date is agreeable to the Shreveport Section. The motion was seconded by Mr. L'Heureux and carried.

The next board meeting scheduled to be held in New Orleans on April 1 was postponed until April 8.

President Nelson appointed a committee consisting of Messrs. Wm. J. Drawe Jr., Chairman, Ben Bogard, Z. L. Loflin and W. P. Wallace to study the advisability of giving scholarships to JET club members.

The reports submitted by the committee studying affiliation with N.S.P.E. were read by the secretary and a report by the committee studying affiliation with E.J.C. was read by the president. Literature on both organizations was distributed to members present, and Messrs. Bogard and Smith displayed copies of all publications issued by N.S.P.E.

Mr. Freeman then offered the following motion, seconded by Dr. Wallace:

"Whereas the Board of Direction believes that it would be to the interest of the Louisiana Engineering Society and the Engineers Joint Council for the two organizations to be affiliated, and

"Whereas the cost of such affiliation would be \$50.00 annually to the society and there would be no additional cost to its individual members,

"Therefore it is moved that the L.E.S. become an affiliate member of Engineers Joint Council provided such action does not prejudice any consideration of possible affiliation with the National Society of Professional Engineers."

Some discussion of the matter followed, after which Messrs. Freeman and Wallace requested that the vote be deferred.

Dr. Taylor moved that the E.J.C. report be appended with a paragraph setting forth the committee's recommendations. Motion seconded by Mr. Sessums and carried.

Mr. Sessums moved that both reports as revised be disseminated to the membership with a letter of transmittal as soon as possible. Motion seconded by Mr. Freeman and carried. The meeting then adjourned.

JOHN P. FERNANDEZ, Secretary-Treasurer

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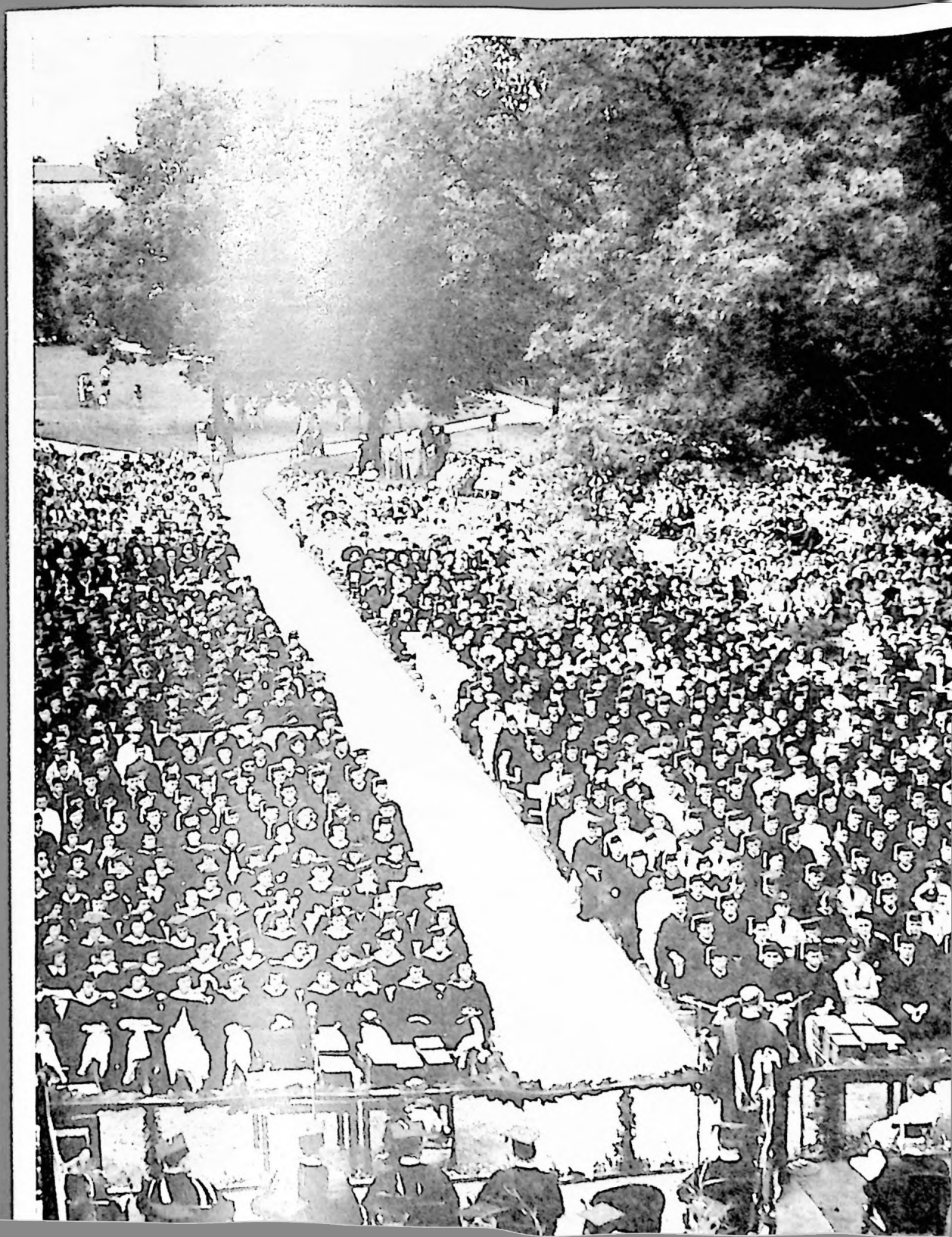
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Porcelian Pipe, Valves, Fittings  
Pulsafeeder Proportioning Pumps  
Meeco  
Moisture Analyzers  
Nebraska Boiler Co. Inc.  
Small Water Tube Boilers  
Cosa Corp.  
Gas Calorimeters  
S. Morgan Smith Co.  
Cone, Butterfly, Ball Valves  
Wickes Boiler Co.  
Boilers

# THE LOUISIANA ENGINEER

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Vol. 43

JUNE, 1947

No. 3

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*Cover: Commencement Week—how many new Engineers have been signed up as new L.E.S. Members?*

*—(Photo courtesy Tulane Univ.)*

## ENGINEERING BRIEFS

**Offshore Filling Stations.** Within one year, some 40 offshore gas stations will dot the Atlantic seaboard, from Panama to Canada. Backers of the offshore bunkering stations feel that ship operators will save the tug, pilot and dock fees of ports. The "floating-turret" type terminals will cost about \$1 million apiece, and will provide one-stop fuel and fresh water services for vessels up to three miles from shore.

—*Platt's Oilgram*

\* \* \* \*

**Soviet Atomic Battery.** The Russian newspaper, "Moskovski Komsomcets" has reported that Soviet scientists are working on an "atomic battery" to power automobiles and motorcycles. The paper said such a battery filled with strontium, had been created, but that it was too weak to move a bicycle. However, Russian scientists are working on a "more powerful" battery, and claim it will be on the market "within the next few years."

—*Electrical World*

\* \* \* \*

**Manhattan Under Cement.** To get a non-statistical idea of the size of the new highway building program, some comparisons were worked out by the McGraw-Hill Department of Economics. Just the aggregates that will go into base course construction, they estimate, would form 500 conical piles, each the size of the largest pyramid, Cheops. With the paving material needed, it would be possible to bury all Manhattan under a 17 foot layer of concrete and asphalt.

\* \* \* \*

**Thirsty Town Saved.** Water-short Chanute, Kan., is meeting the crisis by re-using 50 to 60 per cent of its sewage works effluent. The city's sewage treatment plant reportedly puts out an effluent of better quality than its receiving water. City officials credit the plan as a big factor in keeping the population of over 10,000 supplied with water.

—*Engineering News Record*

\* \* \* \*

**Plumb-Over the Trees.** To run a centerline survey through trees and brush between points two-miles apart, Toledo Edison surveyors hitched a plumb to a helium-filled balloon. They then took a transit reading from the starting point when the balloon was maneuvered directly over the terminal point.

—*Electrical World*

# The Olin Mathieson Story

Kenneth C. Frazier

I am delighted to be here and to have this opportunity to talk with you about Olin Mathieson. It is one of my favorite subjects, although I must admit to feeling a little more at home when discussing it across a customer's desk than before an audience of this size and distinction. But I promise you that tonight I will try very hard to forget that I sell chemicals for a living. I want to try to tell you a bit about Olin Mathieson, the company—what it is, what it does, and a little about how it got that way. For our company has had a rather unusual development—one in which a great deal has been compressed into a relatively short time.

Olin Mathieson had its beginnings in two small companies founded, as it happened, in the same year, 1892, although in widely separated parts of the country. One, which came to be known as Olin Industries, Inc., started on the banks of the Mississippi, in East Alton, Ill., just a few miles above St. Louis, to make blasting powder for the then rapidly expanding coal fields of southern Illinois. The other, which is probably more familiar to this audience, was called the Mathieson Alkali Works and was formed to produce alkalis from the salt and limestone of southwestern Virginia.

These two companies grew and prospered over the years, and, as most of you know, joined hands in 1954 to become Olin Mathieson Chemical Corporation.

Olin Mathieson today is a world-wide organization with annual sales of more than \$600,000,000 and giving employment to 43,000 men and women in 57 plants in the United States and 21 in other countries.

Louisiana, I might mention, has the distinction of being the home of more Olin Mathieson plants than any other state. We have six plants located here. Your small neighbor to the West—Texas—and Illinois are next, with five plants each.

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*Editor's Note: The Lake Charles Section has set aside one meeting each quarter for a talk on various industries. Each major industry will be invited to sponsor the speaker, and if they wish, the refreshments or dinner. This is the first in their series.*

In Louisiana the company also has a greater variety of plants than in any other state. Our operations here at Lake Charles and at Bossier City are chemical in nature. At Burnside, we have under construction a major part of our large new undertaking in the aluminum field. And at Shreveport, West Monroe and Winnfield, we have important lumber and paper operations.

In fact, I doubt if it is very generally realized that Olin Mathieson is, from an operations standpoint, predominantly a southern company. Eleven out of 12 of our chemical plants, and 32—or well over half—of our total domestic plants are located south of the Mason and Dixon line. The only state south of this line in which Olin Mathieson does not have a plant is South Carolina.

It will also be of interest to this audience, I believe, that of our various southern plant locations, Lake Charles has contributed somewhat more than its proportionate share to the general management ranks of the company. As many of you know, the announcement was made just a couple of weeks ago of the promotion of Jim Newell, who managed the Lake Charles plant from 1945 to 1954, to the post of assistant general manager of our Industrial Chemicals Division in Baltimore. This is the largest of the Olin Mathieson divisions, accounting for almost a quarter of the company's total sales.

Also, Charlie Hightower, who succeeded Jim as manager of the plant here and who has been a resident of Lake Charles for 23 years, is now in the process of moving to Baltimore to assume Jim's former job of division production manager, which means general responsibility for all twelve of the division's plants.

But lest the local trees, impressive as they are, obscure the larger view of the Olin Mathieson organization that it is my purpose to bring you this evening, let us return to the corporation as a whole. I would like to touch for a moment on the functional scope and character of our activities.

Olin Mathieson's activities today fall into a very definite pattern—a pattern which is essentially product oriented, and which had its origin in the planned development of the two predecessor companies. This pattern consists of three broad fields of activity: **Chemical, metals, and packaging materials.** Every product manufactured by the company falls into one of these three groups.

The chemicals group is the largest, accounting for roughly half of total Olin Mathieson sales. Under chemicals we have organic and inorganic industrial chemicals; agricultural chemicals, including

fertilizers and pesticides; medicinal chemicals and drugs; industrial explosives; and high energy chemical fuels.

The metals group, which is next in order of size, includes basic production of copper-based alloys and aluminum, the fabrication of structural forms of these metals, and the fabrication of certain finished metal articles, at the present time principally sporting arms and ammunition under the famous Winchester and Western brand names.

In the packaging materials field, the company is a manufacturer of both fine and kraft papers, and of cellophane and polyethylene sheeting, the two most widely used transparent packaging films. Extensive lumbering and sawmill operations are also carried out in the South, primarily in Louisiana and Arkansas.

Not only do these three areas of chemicals, metals and packaging encompass all of the company's present activities, but management has declared in a policy statement issued a year ago that all foreseeable future expansion of the corporation will be confined to these areas.



Left to right: J. P. Tucker, Lake Charles Section, program committee chairman; W. C. Mosely, Manager of Lake Charles Plant; Kenneth C. Frazier, Manager General Products Sales; A. V. Thompson, Assistant Manager Lake Charles Operations.

In every instance where the company has entered a new product field within one of these categories, there has been a logical reason for so doing from either a marketing, a production, or a raw material standpoint. Had you been able to look over top-management's shoulder during the past two years, you would have seen numerous projects rejected on the ground that "it does not fit into our pattern of development."

With this brief background, let me take you now on a quick tour of our activities in each of these three major fields.

### CHEMICALS

Olin Mathieson's chemical activities today consist essentially of the operations of the former Mathieson Chemical Corporation, plus some important additions.

To better understand the chemical part of our picture, let me take you back ten years to the year 1947. That is the year in which Thomas S. Nichols became president of Mathieson. Mr. Nichols is now chairman of Olin Mathieson. In 1947 Mathieson was primarily a regional alkali producer, with plants in Saltville, Virginia; Niagara Falls, New York; and Lake Charles. Sales of \$24,000,000 were not spectacular but represented a substantial share of the alkali business of the country.

From this as a base, the Mathieson management under the leadership of Mr. Nichols embarked upon a program of expansion and diversification which led to (1) a broader and considerably larger position in basic inorganic chemicals, (2) a growing organic chemicals operation based on both coal and natural gas, (3) a position as one of the country's principal producers of fertilizers and pesticides, (4) a major place in the drug manufacturing industry, and (5) a substantial lead in the new and rapidly developing field of high energy chemical fuels.

In carrying out this program, which was not significantly altered by the merger with Olin in 1954, time and money were gained by acquiring existing facilities while at the same time pursuing a plan of active growth from within. As a result, about half of our expansion in chemicals since 1947 can be attributed to acquisitions and half to internal development.

Of the basic chemicals consumed in the United States in largest volume today, Olin Mathieson is a major producer of six: soda ash, caustic soda, chlorine, sulfuric acid, ammonia and methanol.



We produce soda ash at Saltville, Va., from salt and limestone and here at Lake Charles from salt and oyster shell lime. Our salt here is obtained from the West Hackberry dome and we receive oyster shells by barge from inactive beds in Galveston Bay and the Sabine River. The glass industry is the largest consumer of soda ash. Important tonnages go also into the manufacture of paper, textiles, detergents and other chemicals.

At both Lake Charles and Saltville, some of our soda ash production is converted into caustic soda, by the so-called lime soda process. Most caustic soda is produced by the electrolysis of salt, which yields chlorine as a co-product. However, the soda ash route to caustic is useful in giving some flexibility to the chlorine-caustic balance, and it also provides a very high grade caustic.

Olin Mathieson produces electrolytic caustic soda and chlorine at Saltville, at McIntosh, Alabama, and at Niagara Falls, New York. We are presently in addition marketing chlorine and caustic produced at the Huntsville, Alabama plant of National Distillers Products Corporation; caustic soda produced at the Anniston, Alabama, plant of Monsanto Chemical Company; and chlorine produced at the Arvida, Quebec, plant of Aluminum, Ltd. We will soon start marketing the chlorine to be produced at the new plant of Kaiser Aluminum and Chemical Company at Gramercy, Louisiana. The caustic produced at this plant will be used by Kaiser in its new alumina operation at that location.

With the completion of the Kaiser plant Olin Mathieson will have five shipping points for chlorine in the South.

Other related products in the chlor-alkali field made by the company are bicarbonate of soda, fused soda ash, sodium chlorite, and HTH calcium hypochlorite products for water purification and general sanitizing work. Carbon dioxide is recovered as a by-product of soda ash production and sold in both the liquid and solid—or dry ice—forms. Our dry ice operation at Saltville is believed to be the largest in the country.

In his development of Mathieson, Mr. Nichols' aim was first to lay a broader foundation in basic chemicals and then increase the use of these chemicals by the corporation itself through expansion into intermediates and finished consumer products.

In accordance with this plan, the company acquired in 1949 the Standard Wholesale Prosphate & Acid Works, Inc. of Baltimore and the Southern Acid & Sulphur Company, Inc. of St. Louis. It thereby became, and still is, a major producer of sulfuric acid and

fertilizers, the fertilizer industry being the largest single consumer of sulfuric acid. Sulfuric acid is made by the company at seven locations, including Houston, Beaumont, and Port Arthur, Texas, and Bossier City, Louisiana.

The former Southern Acid Plant at Pasadena, Texas, just outside Houston, in 1945 was the first to produce the modern high-analysis, pelletized fertilizers which are now widely used in the South and Middle West. To serve regional markets, regular mixed fertilizers are made at five other locations. Agricultural pesticides, including several developed in Olin Mathieson laboratories, are produced at eleven locations.

Entry into the fertilizer industry naturally led to increased interest in ammonia. The company had pioneered in the production of synthetic ammonia at its Niagara Falls plant during and after World War I, and following World War II, the ammonia section of the Lake Charles plant had been purchased from the government and expanded. This stake in ammonia was greatly increased in 1951 when Mathieson leased the former Morgantown Ordnance Works ammonia plant in Morgantown, West Virginia, which had been built during World War II at a cost of \$75,000,000. These three facilities—Niagara Falls, Lake Charles and Morgantown, make Olin Mathieson a major factor in ammonia today. In addition to its fertilizer use, ammonia has many industrial uses, including the manufacture of nitric acid, which is carried out in our plant here. The acid, in turn, is essential in the production of explosives, which is another important part of the company's business.

At this point, because it is a derivative of and closely related to ammonia, and also because it is made here in Lake Charles, I would like to mention one of our still relatively new products—hydrazine. This is an intriguing chemical whose uses stem principally from two unique properties: its unusual biochemical activity and its strong reducing action. Biochemically, hydrazine and some of its salts have the interesting ability to control the growth of plants. Maleic hydrazide, for example, is being used to slow down the rate of growth of grass along public parkways in some parts of the country, to reduce the number of mowings required. It is being used to slow the opening of buds of fruit trees when there is danger of killing by frost. It keeps potatoes, carrots, onions and other root vegetables from sprouting during storage, thus preserving the vitality of the vegetable for eating or future planting. A hydrazine derivative, isoniazid, has achieved outstanding results in arresting tuberculosis.

Hydrazine's strong reducing action is utilized in such widely different applications as rocket fuels, soldering fluxes, and deoxidation of boiler feedwater.

The first commercial-scale hydrazine plant in the country was built by Olin Mathieson in Lake Charles in 1953 at a cost of \$3,000,000. It is still the largest U. S. plant for the manufacture of the material.

In 1955 the corporation's inorganic chemical interests were further diversified with the acquisition of the Blockson Chemical Company of Joliet, Illinois, a manufacturer of phosphate chemicals.

Mathieson entered the organic chemicals field in 1952 with the construction of a \$20,000,000 plant on the Ohio River at Brandenburg, Kentucky, to make ethylene derivatives. This plant obtains its raw material by tapping into the Tennessee Gas Transmission Company's transcontinental natural gas pipeline, which passes through western Kentucky, and stripping out a light hydrocarbon fraction. Removal of these light hydrocarbons not only provides an ethane-rich chemical raw material, but actually increases the btu value of the remaining gas. The hydrocarbon mixture is piped from the stripping station about 60 miles eastward to the Brandenburg plant, where it is separated into natural gasoline and LPG's (propane and butane), which are sold as such, and ethane which is cracked to ethylene. The ethylene, in turn, is used in the plant as the starting point in the manufacture of ethylene oxide, ethylene glycol, ethanolamines, and other ethylene chemicals.

It was of course but a short step from ethylene glycol to the automotive anti-freeze business, since the glycol is the principal ingredient of permanent-type anti-freeze. Through our ammonia operations we were already producing methanol, the chief ingredient of volatile type anti-freeze. For those of you who are not chemists, it is common practice to produce ammonia and methanol interchangeably in the same equipment, simply by changing the raw material feed and the operating conditions. Olin Mathieson entered the anti-freeze formulation business—another step in the up-grading of basic chemicals to finished products—in 1953 with the purchase of the Pyro and Super Pyro brand names and anti-freeze distribution facilities of the U. S. Industrial Chemicals Division of National Distillers Products Corporation. This was followed in 1954 with the purchase of the Puritan Corporation of Rochester, New York, a leading private-label canner of anti-freeze. These two acquisitions gave the company a major position in the marketing of anti-freeze, a field in which it ranks fourth today.

Another consumer market in which Mathieson management foresaw eventual entry as a part of its upgrading program was that of drugs and pharmaceuticals. The reliance of the drug industry on chemicals—particularly the organics—as raw materials has been increasing for a number of years. One of the fundamental requirements of success in the pharmaceutical field is effective distribution. The chance to acquire an established marketing position does not occur often in the drug industry. Thus when E. R. Squibb & Sons became available in 1952, Mathieson management had to act quickly and, in effect, do some telescoping of its timetable in order to take advantage of this opportunity to add another consumer-level channel to its corporate distribution structure.

Squibb is doubtless a more familiar name to most of you than Mathieson. Operating today as a division of Olin Mathieson, the Squibb organization will celebrate its one-hundredth anniversary in 1958. Squibb products have long been known for their high standards of "Reliability, Uniformity, Purity, Efficacy" as set forth on the pillars of the familiar Squibb trade mark. These principles, expressive of the high ideals and practice of the organization's founder, Dr. Edward Robinson Squibb, are adhered to today in the production of all Squibb products.

At New Brunswick, New Jersey, Squibb antibiotic, biological and chemical manufacturing facilities cover more than 90 acres. There Squibb produces much of the medical profession's supply of penicillin and streptomycin, 85 per cent of the ether used by United States hospitals, large supplies of insulin, hypotensive and tranquilizing agents, nutritional products, hormones and many other pharmaceutical products.

Probably in no field of chemical endeavor is research more important than in drugs. Over fifty per cent of Squibb's sales last year were of products not in the catalog five years ago. Among the major research efforts now under way at the Squibb Institute for Medical Research are investigations of new agents for treating anxiety and other mental disorders, the development of steroid syntheses which it is hoped may open the doors to new compounds for study in this field, and an intensified search for new antibiotics to fill in the gaps which still exist in the therapeutic spectrum of this class of drugs. Squibb is also devoting a large amount of effort to the study of properties and medical uses of radioactive isotopes. A new building has recently been completed which is specially designed for the manufacture of these products.

Another principal field of chemical endeavor for the company is explosives. Stemming from the original Olin interest in black

powder, the Olin Mathieson line of industrial explosives today includes initiating explosives, special signaling devices, propellants, and high explosives in liquid, solid and gelatin form. The company produces explosives in seven plants in five states and in addition operates other plants producing explosives for the government.

High explosives produced by Olin Mathieson are sold throughout the world for use in blasting operations, construction, coal and ore mining, oil drilling, seismological exploration and quarrying. The company is also a large producer of railway and highway fuses and torpedoes used for railway signalling.

Among the propellants developed by the company is Ball Powder which marked a major forward step in stabilizing nitrocellulose. Ball Powder is now the standard propellant for many big game cartridges, and for the official T-65 NATO cartridge.

For many years Olin Mathieson has been working on new ways to use the energy from explosives. One such application that has already reached commercial importance is powder-actuated tools. Ramset, which is the name of the Olin Mathieson product in this field uses the power from a blank cartridge to drive a fastener through concrete, or even steel plate up to an inch thick. Ramset has eliminated hours of drilling, tapping and bolting in such industries as construction, electrical, plumbing and metal working.

Harnessing the energy from explosives to catapult a pilot from a disabled plane, to splice cables and to start diesel engines—even to tack down the living room carpet—is the concern of another growing industry. Our scientists and ballistics experts refer to it as the “packaged powder” or the “cartridge-actuated devices” industry. Today Olin Mathieson is producing specialized explosives to start jet engines, jettison gas tanks and bomb racks from supersonic aircraft, and eject pilots from jet planes under emergency conditions. The company is also experimenting with explosives to form such metals as titanium into usable shapes.

Newest and most glamorous of our chemical activities is our work in the field of high energy chemical fuels. Unfortunately, however it is the one about which we can say the least, for reasons of military security. The company has, however, been a major contributor to the research, development and production of these fuels—both the liquid and solid varieties—for a number of years. One of the earliest such fuels was hydrazine which I have already mentioned.

A major research effort has been devoted by the company for the past several years to the development of entirely new

chemical fuels which are capable of performance not possible with existing fuels and which at the same time lend themselves to volume production at practical cost and are reasonably easy and safe to handle in military operations. This research has already resulted in the development of certain advanced fuels which show outstanding performance capabilities and whose production has been demonstrated through pilot plant operation.

One of these fuels will be produced under contract for the Air Force in a \$36,000,000 plant now under construction at Model City, New York near Niagara Falls. The corporation is also building a smaller plant at the same location to make the same fuel for the Navy. We estimate that we will have put between six and seven million dollars of our own money into research and development on these fuels by the time large-scale production is reached in 1958. This is in addition to large sums received from the Department of Defense.

To speed progress in high energy fuels and supersonic propulsion development, Olin Mathieson pools its research and development work in these fields with Marquardt Aircraft Company of Van Nuys, California and Reaction Motors, Inc. of Denville, New Jersey. It has a substantial stock interest in both of these companies. Marquardt is known for its development of the supersonic ramjet engine for medium and long-range guided missiles and for specialized aircraft use. Rocket engines designed by Reaction Motors are being applied successfully to the propulsion of missiles, sounding rockets, and piloted aircraft. The joint research and development program of the three companies is known as the Omar Program.

### METALS

The company's metals operations are concentrated in the fields of brass and aluminum and the fabrication of metal parts and finished products, including sporting arms and ammunition.

During World War I the Western Cartridge Company predecessor of Olin Industries, increased its explosives and metals manufacturing facilities to meet huge government orders. When the war was over, it was left with metal fabricating capacity far in excess of the requirements of normal commercial ammunition business. It was then that the company turned to making custom brass and other copper alloys, chiefly in strips, sheets and coils. The ability to manufacture to the fine specifications required by

ammunition manufacturing enabled it to find a ready market for these products—largely in the growing automobile and electrical appliance fields.

Today, the Western Brass Division of Olin Mathieson produces more than 40 different copper-based alloys, principally brass, bronze, phosphor bronze and nickel silver all to customers' specifications. It further fabricates some 4,000 different parts from these metals and aluminum. Western Brass operates the world's largest sheet and strip brass mill at East Alton Illinois, and a second mill at New Haven, Conn.

During World War II, the company produced more than 15 billion rounds of ammunition, using in all of them its own cartridge brass. In one year, when wartime demand for brass was at its highest, Olin Mathieson's production exceeded a million pounds a day.

World War II also took the company into the aluminum field. In the course of the war it produced 100 million pounds of aluminum for the government. In 1953 a plant was constructed at East Alton to produce Roll-Bond heat exchangers out of aluminum for the refrigerator and air-conditioner industries. This patented process makes use of a novel method to obtain a tube pattern in a homogeneous sheet of aluminum. The desired pattern is first printed on a sheet of the metal with a stop-weld ink. This is then bonded to another sheet by subjecting the two together to extremely high pressure in a roll mill. A perfect weld is obtained over the entire sheet area except that covered by the ink. A hollow needle is then inserted in the edge of the bonded sheet and the tube pattern is inflated by compressed air, much as a rubber mattress is inflated.

In 1955 the company added to its aluminum fabricating facilities the plant of the Mississippi Aluminum Company at Gulfport, Mississippi. This plant now produces aluminum pipe and extruded structural shapes. A further step in aluminum fabrication took place this spring with the acquisition of the Southern Electrical Corporation of Chatanooga, Tennessee, a manufacturer of aluminum wire and cable. The company's largest and most important operations in the aluminum field, however, are now just taking form. In August of last year, Olin Mathieson and Revere Copper and Brass Inc. announced the formation of a jointly owned \$231 million company, to be known as Ormet Corporation, to produce 180,000 tons a year of primary aluminum. Ormet represents the initial entry of both of the parent companies into the private production of primary aluminum. Ormet is presently building a 250,000

tons-per-year alumina plant at a cost of \$51,000,000 at Burnside, Louisiana, 35 miles south of Baton Rouge. This plant will receive 700,000 tons a year of bauxite by water from Dutch Guiana, South America.

At Burnside, Ormet has a 4,000-acre site, of which 1,000 acres will be occupied initially by the alumina plant. A docking facility, which will be the largest on the river up to Baton Rouge, is being built to handle both sea-going vessels and river barges. The latter will take the alumina produced at the plant up the Mississippi and Ohio Rivers to Clarington, Ohio, where Ormet is building its reduction plant. This plant will reduce the alumina electrolytically to primary aluminum at the rate of 180,000 tons a year. Both plants will be completed in 1958. Power for the Clarington operation will be provided by three new 225,000-kilowatt steam generating units at Cresap, West Virginia, directly across the river from Clarington. Coal for this plant will be mined on the plant site at Cresap by the Pittsburgh Consolidation Coal Company. This will be the first time in the history of the aluminum industry that the large power requirements of the reduction operation will be provided from coal mined directly on the plant site. At the end of the ingot line in the reduction plant at Clarington, the joint effort between Olin Mathieson and Revere ends and the two companies become competitors in the production and sale of finished aluminum.

Of the total 180,000 tons produced by Ormet, Olin Mathieson will receive 120,000 tons and Revere 60,000. Half of Olin Mathieson's share—or 60,000 tons a year—will go to a new fabricating plant being constructed by the company adjacent to the reduction plant at Clarington. This plant, with more than 35 acres of machinery under its roof, will produce finished sheets and coils from ingot. The other 60,000 tons of ingot will be destined for Olin Mathieson fabricating plants at East Alton, Illinois; Gulfport, Mississippi; Chattanooga, Tennessee; and Riverside, California. The 60,000 tons received by Revere will be fabricated at plants in Baltimore and Chicago.

The remaining phase of Olin Mathieson's metals operations is probably the one you know best—sporting arms and ammunition, manufactured under the famous Winchester and Western names.

In 1866 Oliver Winchester introduced the "rifle that can be loaded on Sunday and Fired all week." First carried into Indian country by outriders on Conestoga caravans, the Winchester gained initial fame as "The Gun That Won The West."

(Continued on page 186)



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## MEMBERSHIP LIST

C. M.—Charter Member  
H. M.—Honorary Member  
L. M.—Life Member  
A.—Affiliate Member  
J.—Junior Member

C. E.—Civil Engineer  
Ch. E.—Chemical Engineer  
E. E.—Electrical Engineer  
M. E.—Mechanical Engineer  
R.—Registered, La.

### A

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- JULIUS W. COLE, (1950), C. E., R., Hovey-Cole & Associates. 818 North Blvd., Baton Rouge.
- AUBIN J. COLEMAN, JR., (1953), E.E. General Electric Co. Drawer 352. Morgan City, La.
- JAMES HOWARD COLLINS, (1929), M. and E.E., R., Ebasco Services Inc. 1310 Short St., New Orleans 18.
- JEFFREY H. COLLINS, SR., (1943), M.E., R., New Orleans Public Service Inc. 317 Baronne St., New Orleans 9.
- OSCAR H. COLLINS, (1956), C. E., R. La. Dept. of Highways. 1711 Cole Ave., Monroe, La.
- JOE C. COLVIN, (1956), M. & E.E. U.S. Dept. Agriculture, Soil Conservation Service. Rm. G-1, Courthouse Bldg., Shreveport.
- RALPH E. COMPAGNO, (1947), C. E., R. Ala., La., Miss. Farmer Construction Co., Inc. 2152 Halls Mill Rd., Mobile, Ala.
- RUSSELL G. CONE, (1949), C. E., R. Silas Mason Co. 169 Mountain View, Vallejo, Calif.
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- CHARLES W. COOK, (1950), C. E., M. E., E. E., R. La., Tex. City of Alexandria. P.O. Box 71, Alexandria, La.
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- CLARENCE E. COPELAND, (1950), Project Engr., United Gas Pipe Line Co., P. O. Box 1407, Shreveport 92, La.
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- STEPHEN H. CORDILL, (1949), Petroleum E., Union Oil & Gas Corp. of La., 1806 17th St., Lake Charles, La.
- GLEN LEE CORRIGAN, (1949), Petroleum and Geological E., R. La., Texas, Okla. Louisiana Polytechnic Institute. Tech Station, Ruston, La.
- ROBERT D. COSGROVE, (1946), M. E., R. La. Elevator Corp. 604 Tchoupitoulas St., New Orleans, La.
- HILTON I. COTTEN, JR., (1954), Ch. E., R., Olin Mathelson Chem. Corp., P. O. Box 896, Lake Charles, La.
- FRANK HUGH COUGHLIN, (1945), C. E., M. E., E. E., R., La. Texas, Central La. Electric Co. Box 111, Alexandria, La.
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- JOSEPH FRANK COURTNEY, (1937), Research & Mech. Engr. International Harvester Co. 1403 Louisiana Ave., New Orleans 15.
- EDWIN R. COUSINS, (1944), Ch. E., R. Southern Regional Research Laboratory. 120 Hathaway Place, New Orleans 19.
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- JOHN E. COYNE, C. E., R., Coyne Construction & Engineering Co. 201 Richard St., Gretna, La.
- WILLIAM O. CRABTREE, (J), (1955), C.E. Esso Standard Oil Co., La. Div. 5073 Abelia Drive, Baton Rouge..
- BENJAMIN C. CRAFT, (1952), Petroleum E., R., La. State University, Baton Rouge 3.
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- ROBERT L. DAVIS, (1956), M. E., R. Ohio. Libbey-Owens-Ford Glass Co. 845 Lark Ave., Shreveport, La.
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- STANLEY G. DINKEL, (1954), E. E., R., La., Miss. General Electric Co. 1004 Richards Bldg., New Orleans 12.
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- HOMER FLYNN, JR., (1950), C.E., R. Southern Builders, Inc. 219 E. Slattery, Shreveport, La.

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- LUIGI FRANCILO, (1948), M.E., R. Boland Machine & Mfg. Co., Inc. P. O. Box 1089, New Orleans 4.
- ALBERT J. FRANSEN, (1934), M. and E. E., R. Industrial Steel Co., Inc. P. O. Box 12024, New Orleans 24.
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- HAROLD M. FRASER, (1943), Ch.E., R., International Lubricant Corp. P.O. Box 390, New Orleans, La.
- MARION ELLIS FRATER, (1943) Architect, R., W. Horace Williams Co., 833 Howard Ave., New Orleans 12.
- ERNEST M. FREEMAN, (1939), C.E., R., La., Tex., Okla., Miss., Ark. E. M. Freeman & Associates. Henry C. Beck Bldg., Shreveport, La.
- LOUIS S. FREEMAN, (1954), M.E. Esso Standard Oil Co., La. Div. 5851 Lanier Drive, Box 149, Rt. 1, Baton Rouge.
- WILLIAM H. FRENCH, (1947), C.E., R. Freeport Sulphur Co. Box 728, Port Sulphur, La.
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- THOMAS A. FROMHERZ, (1945), C.E., R., Fromherz Engineers. 1524 Leon-tine St., New Orleans 15.
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- LOUIS K. GOOD, (1944), C. E. R. P. Farnsworth & Co., Inc. P. O. 850, New Orleans 2.
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- LOUIS N. GOODMAN, (1951), E.E., R. La., Miss., Pa. Louis N. Goodman & Associates, 405 Audubon Bldg., New Orleans 16.
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- CHARLES H. GREEN, (1937), C.E. William F. Surgi Euipment Co. P. O. Box 1309, New Orleans 10, La.
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- EDGAR J. HAGSTETTE, JR., (1935), Ch. E., R., Calif. P. O. Box 1675, Houston, Texas.
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- W. T. HOGG, (L. M.), (1913), C.E., R., Board of Commissioners, Port of New Orleans, 2 Canal St., New Orleans 12.
- TRUDEAU J. HOGUE, JR., (1949), E.E., R. Southern Bell Tel. & Tel. Co. 710 W. Michigan Ave., Hammond, La.
- JOSEPH A. HOLLAND, (1940), C.E., R. City of New Orleans. 5517 Hawthorne Place, New Orleans 24.
- C. W. HOLLENSHEAD, (1949), M.E., R. United Gas Pipe Line Co. Box 1407 Shreveport.
- T. F. HOLLENSHEAD, JR., (1950), C.E. United Gas Pipe Line Co. 2633 E. Cavett St., Shreveport, La.
- WARREN R. HOLLIER, (1949), M.E., R., Central La. Electric Co., Inc. Box 1096, Lafayette.
- WALTER HOLLOWAY, (L.M.), (1923), E.E., R. Ala. Lt. Col., USAF, 34 Washington Ave., Ocean Springs, Miss.
- WILLIAM D. HOLLOWAY, (1945), Lubrication E., Gulf Refining Co. Box 400, New Orleans 1.
- RALPH S. HOLT, (1938), Testing E., R. S. Holt Testing Laboratory, 637 Tchoupitoulas St., New Orleans 12.
- LEO LEONARD HOLZENTHAL, (1946), Ch.E., M.E., R. Southern Region Research Laboratory. 6520 Catina St., New Orleans 24.
- ROBIN M. HOOD, (1949), M.E., R. Shreveport Refrigeration Co., Inc. 633 McCormick St., Shreveport.
- PAUL F. HOOTS, (L.M.), (1927), New Orleans Public Service Inc., 317 Baronne St., New Orleans 9.
- WILLIAM N. HOPKINS, (1957), C.E., R. Gaylord Container Corp. 731 Ontario Ave., Bogalusa, La.
- FRANKLYN G. HORNSBY, (1945), E. E., Gulf States Utilities Co. 1145 Belair Drive, Baton Rouge.
- WILLIAM F. HORRELL, JR., (1953), M. E., R., New Orleans Public Service Inc., 5718 Louis XIV St., New Orleans 24.

- WALTER G. HORSTMAN, (1947), Ch. E. Plantation Pipe Line Co., Box 1743, Atlanta 1, Ga.
- JOHN R. HORTON, (1949), M. E., La. Power & Light Co., 142 Delaronde St., New Orleans 14.
- S. E. HOTTINGER, JR., (1932), M. E., E. E., R., La. Rating and Fire Prevention Bureau, 70 Hawk St., New Orleans 24.
- FRANK S. HOUGHTON, (1946), M. E., Standard Oil Co. of La. 9456 Meredith Drive, Baton Rouge.
- DAVID H. HOVEY, (1954), E. E. La., Miss. Hovey-Cole & Associates, 3734 Florida St., Baton Rouge 6.
- HENRY G. HOWARD, (1952), C. E., R. La., Me., Vt. Michael Baker ,Jr. Inc. P. O. Box 8558, Jackson, Miss.
- LEWIS B. HOWE, (1951), C. E., R., La. Dept. of Highways, P. O. Box 126, Minden, La.
- WILLIAM M. HOWE, (J), (1950), E. E., Civil Aeronautics Adm. 2410 N.W. 25th, Fort Worth 6, Texas.
- ROBERT E. HOWSON, JR., (1953), C. E., R. Avondale Marine Ways Inc. 218 Fairfax Drive, New Orleans 14.
- CHARLES P. HOYT, (1945), M. E., R. Esso Standard Oil Co., P. O. Box 864, Baton Rouge 1.
- RICHARD H. HUDSON, JR., (1950), M. E., Esso Standard Oil Co., 1035 Marylyn Drive, Baton Rouge, La.
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- STANTON ENNES HUEY, (1937), C. E., R., S. E. Huey & Co. Henninger Bldg., Monroe, La.
- JOE D. HUFFMAN, (1957), M. E. Phelps Dodge Corp. Mechanical Dept., Morenci, Arizona.
- JOHN H. HUFFMAN, (A), (1952), Petroleum E., R., United Gas Corp. Rt. 3, Lakeshore Drive, Monroe.
- EDMUND F. HUGHES, (1933), C. E., R., Sewerage and Water Board, 526 Carondelet St., New Orleans 12.
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- CHARLES H. HUNDEMER, (1947), M. E., R. Gaylord Container Corp., 806 N. Border Drive, Bogalusa, La.
- LAWRENCE N. HUNSINGER, JR., (J), (1956), C. E. La. Dept. of Highways. 1100 W. First St., Kaplan, La.
- DONALD G. HUNTER, (1951), E. E., R. City of Alexandria. 3407 Halsey St., Alexandria, La.
- MALCOLM L. HURSTELL, (J), (1950), E. E., R., N. O. Public Service Inc. 4900 Kendall Drive, New Orleans 22.
- MILES B. HUTSON, (1949), E. E., R. Industrial Electric, Inc. 321 Hillary St., New Orleans 18.
- HENRY I. HUTTO, (1954), E. E., R. Tri-State Eng. College, Angola, Ind.
- CARL J. HUVAL, (J), (1955), C. E., 1021 South St., Vicksburg, Miss.
- OLLIE L. HYDE, (A), (1950), E. E., R., Central La. Electric Co. 123 Fairmount St., Pineville, La.
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- JOHN L. ILES, (A), (1951), La. Metal Culvert Co., P. O. Box 4281, Centenary Station, Shreveport.
- JAMES F. ILGENFRITZ, (1949), M. E., R., Boyce-Harvey Machinery, Inc., 137 Diane Ave., New Orleans 23.

- THEODORE J. INNES, PR., (1949), M.E., R. Esso Standard Oil Co. 5608 Castle Ave., Baton Rouge 6.  
 FRANK W. IRLAND, (1955), M.E., R. Mo. Libbey-Owens-Ford Glass Co., 809 Cardinal St., Shreveport.  
 IRWIN ISAACSON, JR., (1947), M.E., E.E., R. Leo S. Well & Walter B. Moses. 600 Audubon Bldg., New Orleans 16.  
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- WILLIAM J. JOHNSON, JR., (1947), C. E. U.S. Corps of Engineers, New Orleans District. 536 North Market St., Opelousas, La.
- SAMUEL R. JOHNSTON III, (1952), Surveyor. R. Private Practice. 3962 Sumner St., Shreveport.
- WILLIAM H. JOHNSTON, (1945), M. E., R., F. N. Johnston, Inc., 829 Howard Ave., New Orleans 12.
- EDWARD M. JOLLY, (1950), M. E., R., E. M. Freeman and Associates. 3052 Gorton Road, Shreveport, La.
- C. LEONARD JONES, (L.M.), (1923), C. E., R., Board of Commissioners Port of N. O. 27 Maryland Drive, New Orleans 20.
- C. PALMER JONES, (1954), M. E., R. McLellan Equipment Co. 2375 Tchoupitoulas St., New Orleans, La.
- E. ROGER JONES, JR., (1955), M. E., R. Louisiana State University. 1836 Steele Blvd., Baton Rouge, La.
- FRANK W. JONES, (1953), E. E., R. La., Tex. Gulf States Utilities Co. 1665 Euclid St., Beaumont, Tex.
- JOHN PAUL JONES, (J), (1952), M. E., R., Ogden, Woodruff & Dyer, 956 Francis Harriet Drive, Baton Rouge.
- SARGENT F. JONES, (1940), C. E., R. 5422 Prytania St., New Orleans 15.
- HOWARD W. JUDSON, (1956), M. E., R. New York. Shell Oil Co. 2805 Pine Hill Drive, Birmingham, Mich.
- E. M. JULIAN, (1951), C. E., Standard Dredging Corp., Box 8092, Gentilly Sta., New Orleans 22.
- RALPH W. JUNIUS, (J), (1952), Architect, Boh Bros. Const. Co., P. O. Box 7248, New Orleans 19.

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- JAMES B. KALMBACH, (J), (1955), M. E., R. Texas Eastern Transmission Corp. 840½ Rutherford, Shreveport.
- KARL P. KAMMER, (1931), M. E., R. New Orleans Ublie Service Inc. 317 Baronne St., New Orleans 9.
- NOEL P. KAMMER, (1936), Architectural E., General Earthwork Service. 3527 Carondelet St., New Orleans 15.
- JAMES N. KAYSER, (1956), M. E., R. Esso Standard Oil Co. 1655 Goldenrod Ave., Baton Rouge 6.
- W. J. KEATING, (A), (1946), E. E., E. Levy & Co. 28 Mary St., Alexandria.
- HAROLD L. KEATON, (1951), Ch. E., R. Gaylord Container Corp. 906 Florida Ave., Bogalusa, La.
- ARTHUR R. KEILER, (1940), Chief Inspector, Hartford Steam Boiler Inspection and Insurance Co. 519 Hibernia Bank Bldg., New Orleans 12.
- MIKE KELLEHER, (1954), M. E., E. E., R. Kelleher Engineering Corp., 4707 Elysian Fields Ave., New Orleans 22.
- CHARLES KELLER, JR., (1946), M. E., R. Keller Construction Corp. P. O. Box 439, New Orleans 1.
- G. HARVEY KELLERMAN, (1954), E. E. General Electric Company. 837 Gravier St., New Orleans 9.
- CLAUDE J. KELLY, (1936), C. E., N. O. Cement Products Co., Inc. 4139 Walmsley Ave., New Orleans 25.
- CLAUDE KELLY, JR., (J), (1953), C. E., R. N. O. Cement Products Co., Inc. 4139 Walmsley Ave., New Orleans 25.
- JOSEPH E. KELLY, (J), (1952), M. E., R., J. B. Bealrd Co., Inc. 217 Russell St., Shreveport.
- CHARLES MACDONALD KERR, (H.M.), (L.M.), (1913), C. E., R. 5831 S. Robertson St., New Orleans 15.
- GERALD C. KERR, (1937), Acoustical E., Johns-Mansville Co., P. O. Box 7072, Mid-City Sta., New Orleans.
- JAMES F. KERR, (1953), C. E., R., Tex., Missouri Pacific Lines. 404 W. Alabama Ave. Houston 6, Tex.



- ROY C. KETCHUM, (1950), C. E., Public Wks. Center, Base, Navy 3002, FPO, San Francisco, Calif.
- BERNARD L. KIERNAN, JR., (1944), M. E., E. E., R., National Gypsum Co. Box 5257-B, New Orleans 15.
- BERNARD L. KIERNAN, SR., (1944), M. E., E. E., R. Jackson Brewing Co. & Kay Engineering Co. 1622 Mirabeau Ave., New Orleans 22.
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- MARVIN R. KIMBRELL, JR., (1952), E. E., General Electric Co., 1004 Richards Bldg., New Orleans 12.
- BOLDEN M. KINCHEN, JR., (1956), M. E., Esso Standard Oil Co. Rt. 2, Box 303-A, Denham Springs, La.
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- WILLIAM F. KING, (J), (1951), M. E., E. E., R. James M. Todd & Associates. 311 Board of Trade Annex, New Orleans.
- KENNETH LEE KINNEY, (1951), M. E., R. Esso Standard Oil Co. Hotel Splendid, Bordeaux, France.
- O. G. KIRBY, (1940), C. E., R. A. P. Johnston Contractor Inc. 4541 Hyacinth Ave., Baton Rouge, La.
- THOMAS W. KIRBY, (1947), Chemist, Cities Service Refining Corp. 1704 Bryant Court Drive, Lake Charles.
- MILTON E. KIRKPATRICK, JR., (1948), M. E., R., La., Ala. E. I. Dupont deNemours Co., 406 Sherwood Drive, Aiken, S. C.
- LEONARD R. KIRST, (1929), C. E., M. E., R., La. State Dept. of Public Works. 317 East Drive, Baton Rouge 6.
- JOHN T. KNIGHT, JR., (1950), M. E., R. La., Miss., Ala., Equitable Equipment Company, 410 Camp St., New Orleans 12.
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- CHARLES P. KNOT, (1944), E. E., R. Moloney Electric Company. 4018 Thalia St., New Orleans 25.
- MARION F. KNOT, (1946), M. E., Gulf Refining Co. P.O. Box 400, New Orleans, La.
- WALTER C. KOHFELDT, (1957), Ch.E. Esso Standard Oil Co. 1321 Normandy Drive, Baton Rouge.
- RICHARD B. KOHNKE, (L. M.), (1911), C. E., R. City of New Orleans. 932 Placheloup Place, New Orleans 19.
- STANLEY P. KOLTUN, (1952) Ch. E., R., Southern Research Laboratory. 28 Curry Court, Metairie, La.
- PAUL C. KOONS, JR., (1956), M. E., R. Delta Tank Mfg. Co. 4869 Highland Road, Baton Rouge.
- LOUIS I. KORN, (1933), M. E., E. E., R. U.S. Navy. Algiers Naval Station. 2201 Octavia St., New Orleans 15.
- HAROLD F. KRAUS, (1950), E. E., R. Avondale Marine Ways. 544 Carol Drive, Jeff. Park, New Orleans 21.
- S. HENRY KRONTHAL, (1950), Architectural E., Stearns-Roger. 6007 Beldart St., Houston 21, Tex.
- EMILE S. KROUSE, JR., (1952), Agri. E., R., Gulf States Utilities Co., Box 2431, Baton Rouge.
- PAUL P. KRUTAK, (1935), E. E., Westinghouse Electric Corp. 1226 Whitney Bldg., New Orleans.
- COLEMAN KUHN, (1956), C. E., R., Private practice, 1401 National Bank of Commerce Bldg., New Orleans 12.
- ROBERT J. KUHN, (L.M.), (1925), E. E., M. E., R., La., Ky., Tenn., Miss., Ind., Ark. 1643 Octavia St., New Orleans 15.
- MARSHALL F. KULL, (1954), M. E., R. Private Practice. 1017 Audubon Ave., West Monroe.
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- EDWIN A. LAFAYE, (1943), M. E., R., Egglehof Engineers, P. O. Box 13186, New Orleans 25.
- PAUL M. LAGARDE, (1947), C. E., R., Standard Fruit & S. S. Co., 123 Elvis Court, Metairie, La.
- THEODORE J. LALA, (1951), M. E., R. Hepinstall Steel Works. P. O. Box 1422 New Orleans.
- H. CARROLL LALUMANDIER, (1956), M. E., R. Esso Standard Oil Co. 4767 Arrowhead, Baton Rouge, La.
- GEORGE B. LAMBERT, JR., (1939), Engineer, M. T. Reed Construction Co. Mississippi City, Miss.
- ALBERT F. LANDERS, (1953), M. E., E. E., Self Employed. 1630 Kildeer, New Orleans 22.
- HENRY LOUIS LANDRY, (1942), E. E., R. Gulf States Utilities Co., 2222 Cedardale Ave., Baton Rouge.
- LOUIS C. LANDRY, JR., (1950), E. E., M. E., R., United Gas Corp., New Iberia, La.
- S. P. LANDRY, JR., (J), (1956), C. E., R. Bedell & Nelson Engineers, Inc. 501 Pine St., Norco, La.
- WALTER A. LANDRY, JR., (1950), M. E., R., National Gypsum Co., 109 Forest Ave., Berkley Hts., N. J.
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- HERRICK J. LANE, JR., (1946), C. E., W. Horace Williams Co., 1206 Nashville Ave., New Orleans 15.
- EDMOND J. LANGHETEE, JR., (J), (1951), Petroleum E., R. La. Land & Exploration Co., 1325 Mendez St., New Orleans 22.
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- N. E. LANT, (H.M.), (1937), C. E., R. 4780 Newcomb Drive, Baton Rouge, La.
- HILRY J. LANTZ, (J), (1956), Ch. E., Iota, La.
- FERNAND S. LAPEYRE, (1948), M. E., E. E., R., The Peelers Co., P. O. Box 1102, New Orleans 4.
- WILLIAM M. LARKIN, (1944), E. E., Gulf States Utilities, Lake Charles.
- FERDINAND L. LARUE, JR., (1954), Ch. E., Southwestern Louisiana Institute. 435 N. Sterling St., Lafayette.
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- WHITMEL E. LAZARUS, (J), (1951), E. E., Westinghouse Electric Corp., 21420 Jean Ave., Matteson, Ill.
- MAXWELL A. LEA, (1948), M. E., R. Ethyl Corp., 3970 100-Oaks Ave., Baton Rouge 6.
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- W. STONE LEAKE, (1934), E. E., R., General Electric Co. 837 Gravier St., New Orleans 12.
- JOE E. LEAVINES, (1955), E. E., R., Kaiser Aluminum & Chemical Corp., 2920 Main St., Baton Rouge.
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- WENDEL J. LECHTENBERG, (J), (1944), E. E., Olin Mathieson Chemical Gas Corp. 3721 Vinderbilt St., Lake Charles.
- STANLEY M. LECOURT, (1933), C. E., M. E., R., Self Employed. 302 Dauphine St., New Orleans 16.
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- ROBERT E. LEE, JR., (1951), M. E., Esso Standard Oil Co. 3124 Tyrone Dr., Baton Rouge 6.
- BENJAMIN F. LEEPER, (1955), M. E., E. E., R., Sperry-Rand Corp., 1457 Country Club Drive, Baton Rouge.
- PERSHNG J. LEFORT, (J), (1952), M. E. The Texas Company. P. O. Box 66, Galliano, La.
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- H. L. LEHMANN, (1937), C. E., R. La. Dept. of Highways, Baton Rouge, La.
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- HENRY F. LeMIEUX, (J), (1951), C. E., R. Raymond Concrete Pile Co. 407 Pere Marquette Bldg., New Orleans 12.
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- JAMES A. LEMOINE, (1952), M. E., Lemoine Bros., Box 298, Bunkie, La.
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- HAROLD A. LEVEY, SR., (1936), Ch. E., M. E., E. E., R. La., Texas. American Products Mfg. Co., Inc. 8127-33 Oleander St., New Orleans 18.
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- ALLISON M. LEVY, (1944), M. E., de Laoreal & Moses ,16 W. Zarrogosa St., Pensacola, Fla.
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- WILLIAM L. LEWIS, (J), (1954), M. E., R. Esso Standard Oil Co. 1767 Ormandy St., Baton Rouge.
- HOWARD B. L'HEUREUX, (1951), C. E., R., F. P. Joseph Assoc. Engrs. 720 Murray St., Alexandria.
- HUGH A. LILES, (1954), M. E., R. Allied Sales & Service Co. 4376 State Street Drive, New Orleans 25.
- RALPH E. LIND, (1930), C. E., R. 6624 Louis XIV St., New Orleans 24.

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- G. MORGAN LIPSCOMB, (1955), E. E., R. Tex., Kaiser Aluminum & Chemical Corp. Box 253-B, Zachary, La.
- WILLIAM A. LOCHTE, (1945), M. E., American-South African Steamship Co., 7935 S. Claiborne, New Orleans 18.
- ROBERT P. LOCKETT, (A), (1931), M. E., R. A. M. Lockett & Co. 308 Whitney Bldg., New Orleans 7
- ROBERT P. LOCKETT, JR., (1947), M. E., R. A. M. Lockett & Co., 308 Whitney Bldg., New Orleans 7.
- T. BENBURY LOCKETT, (1949), M. E., R., Service Supply & Eng. Co. 2130 Palmer Ave., New Orleans 18.
- JOSEPH S. LODATO, (1957), E. E., R. U.S. Government. 1211 Gov. Nicholls St., New Orleans 16.
- Z. L. LOFLIN, (1952), M. E., Ch. E., R., Southwestern Louisiana Institute. Box 353, S.L.I. Station, Lafayette.
- GEORGE L. LOGAN, (1948), Petroleum E., R., Lyons & Logan. 1500 Beck Bldg., Shreveport.
- JOHN S. LOGAN, (1949), Highway E., U.S. Bureau of Public Roads. 416 East Drive, Baton Rouge 6.
- ROBERT A. LONGMIRE, (1957), Ch. E. Esso Standard Oil Co. 748 N. Parkview Place, Baton Rouge.
- JAMES C. LORIO, (J), (1954), E. E., R. La. Dept. of Highways. 2304 Hlawatha St., Baton Rouge.
- JULES A. LORIO, (L.M.), (1921), M. E., Dibert, Bancroft & Ross Co., Ltd. 7420 Benjamin St., New Orleans 18.
- STAVROS D. LOUCHIS, (1951), M. E., R., Kaiser Aluminum & Chemical Corp., 105 Fiesta Circle, Orinda, Calif.
- ALFRED J. LOUP, JR., (1949), C. E., R. Dunham Wilson Co. 2349 Edgewood Drive, Baton Rouge.
- L. A. LOUSTALOT, (L.M.), (1913), C. E. Guaranty Bank & Trust Co., Hammond, La.
- BERNARD LOUVIERE, (1949), M. E., R., Creole Engineering Co. P. O. Box 12115, New Orleans 24.
- ELIHU R. LUCAS, JR., (1955), C. E., R. David W. Godat & Associates. 4644 Kendall Drive, New Orleans.
- LARRY R. LUCAS, (1957), C. E., R. La. Dept. of Highways. 203 Stewart St., Lafayette, La.
- C. CONWAY LUSK, (1954), C. E., R. La. State Highway Dept. 8065 Owen St., Baton Rouge 2.
- EMILE W. LUSTED, (1955), M. E., R. Delta Bank Mfg. Co. 9365 Southmoore Drive, Baton Rouge 5.
- KENNETH E. LUTZ, (1954), M. E., R. Esso Standard Oil Co. 2320 Nicholson Drive, Baton Rouge.
- CHARLES W. LYMAN, JR., (1956), M. E., R. Self-employed. Box 724, Opelousas, La.
- JAMES W. LYON, (J), (1955), C. E., R. La. Dept. of Highways. 2071 Cloverdale St., Baton Rouge.
- A. A. LYONS, (1949), C. E., R., City of Shreveport. 659 Rutherford St., Shreveport.
- BYRON PHELPS LYONS, (1949) (C. E., R., La. Dept. Public Works, 614 Drehr Ave., Baton Rouge.
- VAL A. LYONS, (1949), C. E., R., Consulting Engr. 608 Sklar Bldg., Shreve-Port.

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- DANIEL P. MABEL, (1945), E. E., Anaconda Wire & Cable Co. 601 Hibernia Bldg., New Orleans 12.
- AUBON L. MABRY, (1947), C. E., U.S. Navy Dist. Public Works Office. 101 Larchmont Place, New Orleans 14.
- FRANK W. MACDONALD, (1933), C. E., R., Tulane University, New Orleans 18.
- KENNETH W. MACKENZIE, (1939), Testing Engineer, Construction Materials Laboratory, 624 Atchley St., Knoxville, Tenn.

- RAYMOND P. MADDUX, (J), (1953), M.E., N. O. Public Service Inc. 3617 Bissonett Drive, Metairie, La.
- LEONARD F. MAGEE, (1951), E.E., R. City of Alexandria. 2425 Elliot St., Alexandria.
- CLAYTON R. MAHAFFEY, SR., (1956), M.E. Naugatuck Chemicals Div., U.S. Rubber Co., Rt. 2, Box 47, Port Allen, La.
- LELAND S. MAJOR, (1953), M.E., Esso Standard Oil Co. 4511 Highland Road, Baton Rouge.
- JOHN S. MALAHY, JR., (1951), M.E., E.E., R., La., Tex., Miss. Private Practice. 330 E. Kings Highway, Shreveport.
- JOHN J. MALARKEY (A), (1952), Draftsman. Matheison Chemical Corp. 1606 Sixth St., Lake Charles.
- JOHN F. MALLETTE, (1943), C.E., R., La. Dept. of Highways. Rt. 2, Box 293 Monroe, La.
- JOHN D. MALONE, JR., (1937), E.E., New Orleans Public Service, Inc. 317 Baronne St., New Orleans 9.
- LAWRENCE MANN, JR., (J), (1952), M.E., R., Esso Standard Oil Co. 4051 Churchill Ave., Baton Rouge.
- LOUIS B. MANN, (J), (1952), M.E., Louisiana Motors, Box 354, Lafayette.
- H. H. MANNER, JR., (1947), Architectural E., La. Metal Culvert Co. Box 2427, Baton Rouge 2.
- JOHN F. MANSON, (1951), C.E., R. P. Farnsworth Co., Inc. Box 850, New Orleans.
- S. KENAN MANSON, JR., (1942), C.E., R., King & Co., Inc. 401 Park Road, Metairie, La.
- MICHAEL J. MARCHESE, (1948), E.E., R. U.S. Navy. 1716 St. Roch Ave., New Orleans 17.
- WARREN E. MARCUM, (A), (1952), C.E., R., La. Dept. of Highways. 2045 North 17th St., Baton Rouge.
- GODFREY L. MARINE, (1951), E.E., R., Marine Electric Co., 114 E. Congress St., Lafayette.
- HAROLD O. MARQUART, (1943), C.E., Gaylord Container Corp., Mill Div. 330 N. Border Drive, Bogalusa, La.
- GORDON A. MARSALIS, (1951), C.E., R. Industrial Steel Products Co., Inc., P.O. Box 1814, Shreveport.
- RENE C. MARSOLAN, (J), (1956), M.E. 802 Knox St., Orange, Tex.
- HARRY C. MARTIN, (1955), Ch.E., R. Forest Products Div., Olin Mathieson Chemical Corp. Box 488, West Monroe, La.
- HARVEY J. MARTIN, (J), (1954), E.E., R. N. O. Public Service Inc. 2915 Tournefort St., Rt. 1, Box 120, Chalmette, La.
- PAUL G. MARTIN, (1954), C.E., R. La., Kan. Burgwin & Martin. 406 W. 7th St., Topeka, Kansas.
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- JOHN L. MARTINEZ, (1947), M.E., R., Tulane University. 2420 Pine St., New Orleans 25.
- WILLIAM A. MASSIMINI, (J), (1950), M.E., R. Gulf Engineering Co., 1000 S. Peters St., New Orleans 13.
- ALLEN J. MATHERNE, JR., (1943), E.E., Gulf States Utilities Co. 7166 LaSalle Ave., Baton Rouge.
- EMMETT LEE MATHEWS, JR., (1949), C.E., R. City of Alexandria, Route 2, Box 21, Alexandria.
- GEORGE F. MATTHES, (1953), M.E., E.E., R. Louisiana State University, Baton Rouge 3.
- E. D. MATTIX, (1947), Ch.E., Cities Service Ref. Corp. 1616 Seventh St., Lake Charles.
- GEORGE ELMER MAY, (1940), M. and E.E., N. O. Public Service Inc. 2031 Short St., New Orleans 18.
- DAN L. MAYER, (A), (1955), Sales Engr., Southern States Equipment Co., Inc. 3358 Roger Williams St., New Orleans 19.
- JOHN K. MAYER, (1933), M.E., C.E., E.E., R. College of Engineering, Tulane University. 2419 Audubon St., New Orleans 25.
- WILLIAM G. MAYER, (1950), C.E., R. La. Dept. of Highways. 301 Westfield, Bossier City, La.

- CHARLES J. MAYEUX, JR., (1947), C. E., R. Gaylord Container Corp. 305 North Border Drive, Bogalusa, La.
- PAUL J. MAYNE, (1955), C. E., R. La., Fla. Private practice. P. O. Box 293, Opelousas, La.
- JOHN E. McADAM, (1949), E. E., R. Dixie Electric Membership Corp. 381 Finchley Drive, Baton Rouge.
- SAMUEL H. McAFEE, JR., (1950), M. E., New Orleans Public Service Inc. 2838 Iberville St., New Orleans 19.
- CHARLES R. McBRIDE, JR., (1950), M. and E. E., R. Firestone Tire & Rubber Co. 207 Jeannine St., Lake Charles.
- ROBERT R. McBRIDE, JR., (J), (1954), C. E. Bonded Roofing & Specialty Co. 955 Azalea, Lafayette.
- JOHN I. McCain, C. E., R. McCain & Associates. 8200 Florida St., Baton Rouge.
- JOHN C. McCAMPBELL, (1952), Geologist. Southwestern La. Institute. Box 326, SLI, Lafayette.
- A. HEW McCANN, (1946), Architect, C. E., R., Ia., La. Partner, McCann, Prouts & Associates. 410 Howes Bldg., Clinton, Iowa.
- CHARLES B. McCARTY, (J), (1957), C. E., R. Frederic R. Harris, Inc. 1125 Amelia St., New Orleans 15.
- DANIEL B. McCARTY, (1951), C. E., Surveyor, R. La. Dept. of Highways. 1618 Louisiana St., Covington, La.
- MARVIN R. McCARTY, (1954), M. E., McCarty-Branton Inc. P. O. Box 3277, Istrouma Station, Baton Rouge.
- RALPH H. McCOLLISTER, (1954), C. E., R., Esso Standard Oil Co., 3175 Conley St., Baton Rouge.
- S. LOGAN McCONNELL, (1947), C. E., M. E., E. E., R. La. City of New Orleans. 1219 First St., New Orleans 13.
- STRUBBE McCONNELL, JR., (1955), E. E. Esso Stand Oil Co. 2284 Hillsdale St., Baton Rouge 16.
- DANA D. McCORMICK, (A), Party Chief, McLemore & Atchley. 3506 Palm Road. Shreveport. La.
- WILLIAM R. McCOY, (1953), C. E., R. Weaks Supply Co. 1101 S. 8th St., Monroe.
- JAMES P. McCULLOUGH, (1938), Ch. E., United Gas Pipe Co. P. O. Box 1407, Shreveport, La.
- THOMAS J. McDANIEL, (1951), E. E., Gaylord Container Corp. Route 3, Box 67, Bogalusa, La.
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- JOHN A. McEACHERN, (1955), C. E., R. Zonolite Co. 4309 W. 71st., Prairie Village, 15, Kansas.
- WALTER H. McELROY, (A), (1954), Southern Bell Tel. & Tel. Co. 602 Crockett St., Shreveport.
- R. A. McFARLAND, (1956), C. E., R. La. Polytechnic Institute, Ruston, La.
- WILLIAM E. McFARLAND, (1953), Ch. E., M. E., R. Henderson Sugar Refinery, Inc., 1136 Washington Avenue, New Orleans 13.
- J. LUCIUS McGEHEE, (1949), M. E., E. E., R. Delta Bag Co. Inc., 201 Pine St., New Orleans 18.
- WILLIE E. McGOUGH, (1955), M. E., R. Olin Mathelison Chemical Corp., Forest Products Div. 1712 Emerson St., Monroe, La.
- GEORGE B. McGUIRE, (1947), C. E., 867 Bradford Ave., Westfield, N. J.
- KENNETH N. McINTOSH, (1949), E. E., New Orleans Public Service Inc., 317 Baronne St., New Orleans 9.
- CHARLES M. McKAY, (1955), Ch. E., Copolymer Corp. 2503 Spain St., Baton Rouge.
- DEAN C. McKEE, (J), (1952), C. E., R., Bodman, Murrell & Smith. 3624 Geronimo St., Baton Rouge.
- PAUL A. McKIM, (1944), Ch. E., Ethyl Corp. 630 Delgado Drive, Baton Rouge 2.
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- GEORGE E. McLEAN, (1953), Aero. Eng. Gulf Engineering Co., Inc. 10000 S. Peters St., New Orleans 13.

- JAMES R. McLEAN, (1956), M. E. Copolymer Rubber & Chemical Corp. 3570 Lorraine St., Baton Rouge.
- LEAL C. H. McLEAN, (1933), M. and E. E., Jones & Laughlin Steel Corp. P. O. Box 66, New Orleans 6.
- EDWARD A. McLELLAN, (1938), M. E., R. McLellan Equipment Co. 2375 Tchoupitoulas St., New Orleans 13.
- JESSIE C. McLEMORE, (1949), Surveyor, R., McLemore & Atchley. 520 First National Bank Bldg., Shreveport.
- GEORGE C. McMILLEN, (1951), Mining E., R., La., Tex. Freeport Sulphur Co., P. O. Box 1520, New Orleans 5.
- EDWARD J. McNAMARA, (1937), C. E., R. Freeport Sulphur Co., 308 Dunboyne Place, Thibodaux, La.
- FRANK P. McNAMARA, (1949), C. E., R. Lone Star Cement Corp. 425 Phillips St., Sulphur, La.
- JOHN E. McNAMARA, (1950), Radio E. General Electronic & Engineering Service Corp. 601 South Crocker St., Sulphur, La.
- ERNEST W. McNEIL, JR., (1948), E. E., Esso Standard Oil Co. 1449 Rosemont Drive, Baton Rouge 6.
- E. S. McROBERTS, (1949), M. E., R. The J. B. Beaird Co., Inc. 6114 Henderson St., Shreveport 41.
- WILLIAM E. McWHIRTER, JR., (J), (1951), Ch. E., R., Pan Am Southern Corp. 23 Santa Ana Ave., New Orleans 21.
- GEORGE P. MEADE, (H.M.), (1936), Ch. E., Colonial Sugars Co., Gramercy, La.
- CHARLES L. MELANCON, JR., (J), (1951), M. E. Dow Chemical Co. 807 Magnolia Lake Jackson, Texas.
- LOLAN J. MELANCON, (A), (1951), E. E., R. Southern Bell Tel. & Tel. Co. 132 Tudor St., Pineville, La.
- C. GLENNON MELVILLE, (1943), C. E., R. Private Consulting Practice. 7300 West End Blvd., New Orleans 24.
- HAROLD MELVILLE, JR., (1950), Petroleum E., R. F. A. Callery Inc. Rt. 2, Box 198 GG, Lafayette.
- F. ROBERT MENDOW, (1930), M. E., E. E., R. A. M. Lockett & Co. 308 Whitney Bldg., New Orleans.
- OSKAR R. MENTON, (1948), E. E., Esso Standard Oil Co. 2855 Morning Glory Ave., Baton Rouge.
- PHILIP E. MENTZ, (1957), Ind. Eng., Ethyl Corp. 10544 Cletus Drive, Baton Rouge 6.
- CHARLES A. MENVILLE, (1952), M. E., Esso Standard Oil Co. 1251 Longwood Drive, Baton Rouge 6.
- WALTER H. MERCIER, (1947), M. E., R., Esso Standard Oil Co. 2220 Terrace Ave., Baton Rouge.
- RICHARD F. MESSINA, (1945), C. E., R. F. Messina Co. Inc. Box 13005, New Orleans.
- HENRY M. MESSINGER, (1950), Surveyor, R., Private Practice. 401 Jackson St., Bastrop, La.
- CHARLES E. METRAILER, (1955), E. E., R. Metrailer-Ingram Consulting Engrs., 3185 Government St., Baton Rouge
- WILLIAM J. METRAILER, (1957), Ch. E. Esso Standard Oil Co. Rt. 2, Old Hammond Hwy., Baton Rouge.
- EDMUND F. METZ, (1956), Ch. E. Copolymer Rubber & Chemical Corp. 835 Iris St., Baton Rouge 2.
- EDWARD R. METZ, JR., (1951), M. E., R. Walter Kidde Engrs., S. W. 6648 Sheffield Ave., Baton Rouge.
- HIRSCH C. MEYER, JR., (1955), C. E., R. La. Dept. of Highways, Box 141, Franklin, La.
- RANDALL MEYER, (1950), M. E., Esso Standard Oil Co. 240 L.S.U. Avenue, Baton Rouge.
- RAYMOND J. MEYER, (J), (1947), M. E., R. La Power & Light Co. 936 Huey P. Long Ave., Gretna, La.
- ALBERT J. MEYERS, (1933), C. E., M. E., R. Shell Oil Co., No. 60 Shell Village, Norco, La.

- GEORGE F. MEYN, (1951), C.E., U.S. Corps of Engrs., N. O. District. 4737 Venus St., New Orleans 22.
- GEORGE E. MILLARD, (1945), M.E., E.E., R. Fairbanks Morse Co. 5528 Pitt St., New Orleans 15.
- GUY W. MILLER, (1950), E.E., R. Gulf State Utilities Co. 4655 Dellwood Lane, Beaumont, Tex.
- HAROLD A. MILLER, (J), (1951), E.E., R. Consulting Engineer. 419 Jewel St., New Orleans 24.
- OTIS O. MILLER, (J), (1951), M.E., R. H. E. Bouaq, Jr. Consulting Engrs. 730 Boyd Ave., Baton Rouge.
- ERNEST L. MIRE, (1938), C.E., R. New Orleans Public Belt Railroad. P. O. Box 1240, New Orleans 10.
- EDWARD C. MISHOU, (1949), M.E., Pet.E., R. La. Minnesota Pipe Line Co. 1062 W. First National Bank Bldg., St. Paul 1, Minn.
- H. LANE MITCHELL, (1944), C.E., R. City of Shreveport. City Hall, Shreveport, La.
- DAVID L. MIZELL, (J), (1956), M.E. Gaylord Container Corp. 724 W. Third St., Bogalusa, La.
- H. C. MOFFITT, JR., (1948), C.E., R. U.S. Engineer Corps, Galveston District. 6055 Patton St., New Orleans 18.
- HENRI J. MOLAISON, (1934), Ch.E., R. Tex., La. J. E. Leininger & AAoc. 5531 Marshal Foch St., New Orleans 24.
- RALPH R. MONGEAU, (J), (1952), E.E., R. Ruckstuhl & Fick, Inc., 3032 Napoleon Ave., New Orleans 15.
- JOHN EDWARD MONROE, JR., (1944), Ch.E., R. Freeport Sulphur Co. P. O. Box 657, Port Sulphur, La.
- CHARLES R. MONTEIRO, (1956), C.E., R. U.S. Coast Guard. 1927 Milan St., New Orleans 15.
- JOSEPH T. MONTGOMERY, III, (1946), C.E., R. La., Ala. ,Miss. Bedell & Nelson Engineers Inc. 1200 St. Charles, New Orleans 13.
- DAVID MOODIE, (1933), M.E., R. N. O. Public Service Inc. 1600 So. Peters St., New Orleans 13.
- JAMES E. MOODY, (1957), E.E., R. Southwestern Gas & Electric Co. 1922 Bermuda St., Shreveport.
- JOSEPH R. MOONEY, (1951), M.E., C.E., R., Mooney Equipment Co. 5117 Louisa Drive, New Orleans 22.
- ANDREW M. MOORE, (1950), E.E., R. Central Louisiana Electric Co., Inc. P. O. Box III, Alexandria, La.
- CHARLES B. MOORE (1955), Ch.E. Esso Standard Oil Co. 2208 Cherrydale St., Baton Rouge.
- EDWARD C. MOORE, (1956), M.E., R. The Lummus Co. 4709 Banks St., New Orleans 19.
- MARION MOORE, (1954), Ch.E., R. State of Louisiana. 1302 Peniston St., New Orleans 15.
- JOHN E. MOREHISER, JR., (1938), M.E., R. Orleans Parish School Board, 148 Moss Lane, Harahan Branch, New Orleans 23.
- JAMES S. MORGAN, (1951), Ch.E., Barrow-Agee Laboratories Inc. 4355 Bayliss Ave., Memphis, Tenn.
- KEITH HAL MORGAN, (1950), E.E., R. Southern Bell Tel. & Tel. Co., Inc. 7204 Willow St., New Orleans 18.
- LELAND E. MORGAN, (1948), Agricultural E., R., Ford Motor Co., Tractor Div. 2503 E. Maple, Birmingham, Mich.
- R. DOUGLAS MORGAN, (1949), C.E., R. La., Tex. T. L. James & Co. Inc. 1060 Green Acres Road, Metairie, La.
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- RICHARD A. MORNHINVEG, (1937), M.E., R., Louisiana State University. 1042 Ingleside Drive, Baton Rouge.
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- MAGEE J. MOSS, (1952), C.E., R. La. Dept. of Highways. Rt. 2, Box 270-A. Abbeville, La.
- F. PRESTON MOTTRAM, (1948), M.E., R. Red Star Yeast Products Co. P.O. Box 6218, New Orleans 14.
- DAVID A. MOYNAN, JR., (J), (1956), C.E., R. Avondale Marine Ways. 1119 Peniston St., New Orleans.
- SAM J. MUERY, JR., (1957), Ch.E., R. Freeport Sulphur Co. P. O. Box 71, Houma, La.
- ALFRED G. MULLER, (1950), M. E., Louisiana Power & Light Co. 54 53th St., Gulfport, Miss.
- JACOB F. MULLER, JR., (1932), M. E., Muller Furniture Mfg., Co. 3 Fairview Court, Metairie, La.
- RICHARD F. MULLER, (1939), M. and E. E., Allis Chalmers Manufacturing Co. 2319 Lowerline St., New Orleans 18.
- WILLIAM M. MULLINIX, (1950), C. E. Eustis Engineering Co., 3635 Airline Hwy., Metairie, La.
- HOMER H. MULLINS, (1955), C. E., R. Olin-Matheison Chem. Corp. 1401 Trenton St., West Monroe, La.
- ROBERT S. MUNSELL, (1944), Mining E., Bechtel Corp. 6267 California Ave., Long Beach 5, Calif.
- GORDON J. MUNZEY, (J), (1957), E. E., R. Olin-Revere. 1606 N. 18th St., Baton Rouge, La.
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- STENNING C. MURPHY, (1944), Ch.E., R. Blue Plate Foods, Inc. 15 Rosa Park, New Orleans 15.
- JOHN D. MURRY, JR., (1949), C. E., R. 151 Kayla St., Shreveport, La.
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- PATRICK J. NAIN, (1949), C. E., R. C. W. Vollmer & Co., Inc., Ore City, Texas.
- CLAYTON L. NAIRNE, (1929), M. E., R., New Orleans Public Service Inc. 317 Baronne St., New Orleans 9.
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- ARTHUR J. NAQUIN, (1928), M. and E. E., R. New Orleans Public Service. Inc. 317 Baronne St., New Orleans 9.

- STEVE A. NASCA, (1947), C.E., E.E., R. La. Dept. of Highways. Baton Rouge, La.
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- CONRAD R. NEFF, JR., (1954), M.E., R. Esso Standard Oil Co., 1648 Kenmore Ave., Baton Rouge.
- LOUIS C. NEFF, JR., (J), (1951), C.E. Freeport Sulphur Co. 558 Sizeler St., New Orleans 21.
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- EUGENE H. NETTLES, (J), (1956), C.E. Eustis Engineering Corp. 3635 Airline Highway, Metairie, La.
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- CLIFTON R. NEWLIN, (1946), M. and E. E., N. O. Public Service Inc. 2216 Octavia St., New Orleans 15.
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- JAMES H. NICKELSON, (1944), Highways E., R., La. Dept. of Highways, Box 1106, Houma, La.
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- BENJAMIN F. NORMAN, JR., (1954), M.E., R. La., Tex. Freeport Sulphur Co. P. O. Box 1520, New Orleans 5.
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- JAMES M. NORRIS, (1956), Land Surveyor, R. United Gas Pipe Line Co. P. O. Box 1422, Monroe, La.
- DONALD T. NORWOOD, (1955), M.E., Copolymer Corp. 3150 Shelley St., Baton Rouge.

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- DONALD P. O'BRIEN, (1957), C.E., R. Atlantic Refining Co. 3436 Wainright St., Alexandria, La.
- JOSEPH T. O'BRIEN, (1940), E. E. Esso Standard Oil Co. 1557 Ingleside Drive, Baton Rouge 6.
- PAUL S. O'BRIEN, (1943), Metallurgical E. Socony Paint Products Co. 2140 Terrace Ave., Baton Rouge 6.
- LEO M. ODOM, (1942), C.E., R. La., Miss., Tex. Pyburn & Odom, P. O. Box 267, Baton Rouge.
- SEWALL J. OERTLING, (1948), Ch.E. Shell Oil Co. Inc.. Norco, La.
- CARL A. OESER, (1955), C.E., R. La. Dept. Public Works. P. O. Box 723, Lafayette, La.

- HORATIO NASH OGDEN, (1950), C. E., M. E., E. E., R. Ogden, Woodruff & Dyer, Inc. 1645 Nicholson Drive, Baton Rouge.
- JAMES P. OHLSEN, JR., (1954), E. E., R. L. N. Goodman & Associates. 1836 Oleander St., Metairie, La.
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- ROBBIE C. OLIVER, (1949), Surveyor, R. Caddo Parish Highway Dept. 4018 Thompson St., Shreveport.
- OLE K. OLSEN (H.M.), (L.M.), (1907), C.E., R. Ole W. Olsen Co. 823 Perdido St., New Orleans 12.
- RICHARD R. O'NEALL, (1951), C. E., R., Ark., Tex., La. Arkansas La. Gas Corp. P. O. Box 1087, Shreveport 89.
- JAMES A. O'NEILL, JR., (1955), Ch. E., Ingram Oil & Refining Co., P. O. Box RR, Chalmette, La.
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- DONALD J. O'ROURKE, (J), (1951), Land Surveyor, C. E., Southwestern Louisiana Institute. Box 157, S.L.I., Lafayette.
- ADLOE ORR, JR., (1938) C. E., R., Adloe Orr, Jr. & Associates. 315 St. Charles, New Orleans 12.
- THOMAS P. ORR, JR., (A), (1952), Draftsman, Avondale Marine Ways Inc., 222 Sauve Rd., New Orleans 23.
- ANTOINE ORY, JR., (J), (1954), M. E., N. O. Public Service Inc., 317 Baronne St., New Orleans 9.
- FRANCIS J. ORY, (1941), C. E., R. Gervais Favrot Const. Co. 312 Millaudon St., New Orleans 18.
- NEVILLE J. ORY, (J), (1952), C. E., R. The Texas Co. 2419 Palmer Ave., New Orleans 18.
- RAYMOND A. OSBORN, (1950), C. E., R. La. Dept. of Highways, Box 232, Hammond, La.
- WILLIAM P. OSTER, (1928), M. and E. E., R., Equitable Equipment Co., Inc. 410 Camp St., New Orleans 12.
- PAUL F. OSWALD, (1945), M. E. R., Thomson Machinery Co. 3031 Coliseum St., New Orleans 15.
- GEORGE L. OTIS, JR., (1957), C. E. Esso Standard Oil Co. 3225 Gilbert St., Baton Rouge, La.
- LOUIS R. OTTO, JR., (1950), E. E., R., Daniel, Mann, Johnson & Mendelhall, A.P.O. 125, New York, N. Y.
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- WALTER R. OVERTON, (1955), C. E., R. La. Dept. of Highways. 3814 DeSiard St., Monroe, La.
- ENGINE H. OWEN, (J), M. E., R. La., Miss. Owen & White, Cons. Engrs. 3170 Florida St., Baton Rouge.
- WILLIAM E. OWEN, (1946), E. E., R. Louisiana State University, College of Engineering., Baton Rouge.
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- EDGAR H. PAVIA, (J), (1951), M.E., R. La., Miss. G. A. Heft & Co., 820 Union St., New Orleans 12.
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- RICHARD E. PHILLIPS, (1952), M.E., R. La., Ohio. Ethel Corp. 2246 Stanford Ave., Baton Rouge.
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- GEORGE H. POPE, (1955), M. E., Creole Petroleum Co. Las Piedras, Falcon, Venezuela.
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- JAMES R. POTTER, (1952), C. E., R. Gulf Refining Corp., Houston Production Div. P. O. Drawer 37, Harvey, La.
- JOHN E. POTTHARST, (1937), M. E., Mechanical Equipment Co., Inc. 861 Carondelet St., New Orleans 12.
- JOHN E. POTTHARST, JR., (1943), M. E., E. E., R. Mech. Equipment Co. 861 Carondelet St., New Orleans 12.
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- BENJAMIN F. PRESTON, (1955), La.-Miss. Pipeline Construction Corp., 2327 Sweetbriar, Jackson, Miss.
- JOHN A. PRESTON, (1954), Industrial E. Cal-Metal Pipe Corp. of La. P. O. Box 248, Baton Rouge.
- KENNETH A. PRESTON, (1956), C. E., R. Trunkline Gas Co. 1815 Gibbons St., Pineville, La.
- JERE K. PRICE, (1955), M. E., R. Moody-Price, Inc. P. O. Box 4587, Audubon Station Baton Rouge.
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- WARD C. PURDUM, (1944), M. E., R., Ingersoll Rand Co. 960 S. Genois St., New Orleans 25.
- IVAN H. PURINTON, (1944), M. E., New Orleans Public Service, Inc., 317 Baronne St., New Orleans 9.
- DeWITT L. PYBURN, (1941), C. E., R., Mississippi River Commission, U.S. Corps of Engineers, Box 267, Baton Rouge.

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- PAUL E. RANDOL, (1945), E.E., R. Central La. Electrica Co., 2427 Jackson, Alexandria.
- E. SYDNEY RANDOLPH, (1937), C.E., R. Retired. 301 Stanford Ave., Baton Rouge 2.
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- JOSEPH J. RANNA, (1951), M.E., R. A. M. Lockett & Co., Ltd., 308 Whitney Bldg., New Orleans 12.
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- IRVING B. RAU, (1957), C.E., R. La., Miss. Consulting Engr., 730 Gravier St., New Orleans, La.
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- JOHNNIE E. REBOLD, (1952), M.E., R., Welding & Mfg. Co. 116 Coolidge St., New Orleans 21.
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- ROBERT N. REED, (1941), E.E., R., Esso Standard Oil Co., 3684 Winnebago St., Baton Rouge 5.
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- HERBERT P. REINSCH, (1950), M.E., Lago Oil & Transport Co. Ltd. Box 632, Lago Colony, Aruba, Netherlands Antilles.
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- JOHN RIESS, (L.M.), (1906), C. E., 804 Carondelet Bldg., New Orleans 12.
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- HENRY DAY SALASSI, (1944), C. E., R. La. Dept. of Highways. 1146 Glenmore Ave., Baton Rouge.
- HARRY S. SALZER, (L. M.), (1927), C. E., Cmdr., U. S. Coast Guard, (Retired). 6028 Catina St., New Orleans 24.
- DANIEL D. SANDEFUR, (1955), C. E., R. Lafargue & Sandefur. 1809 Bush Ave., Alexandria.
- HILARY C. SANDERS, JR., (J), (1956), M. E., R. Columbian Carbon Co. 407 Eason Place, Monroe, La.
- WADE M. SANDERS, (1950), C. E., R. La., Tenn. U. S. Air Force. Box 161, Tullahoma, Tenn.
- ELBERT H. SANGWINE, (1955), Ch. E. Kaiser Aluminum & Chemical Corp. 209 Jewel St., New Orleans 24.
- HORACE A. SAWYER, (1945), C. E., Lone Star Cement Corp. 100 Park Ave., New York, N. Y.
- WALTER HOWARD SCALES, (1929), Architectural E., R., Ind., Ill., La. Nat'l. Lumber Manufacturers Association. 550 Nat'l. Bk. of Commerce Bldg., New Orleans 12.
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- VERNON L. SCHARFE, (1955), M. E., United Gas Pipe Line Co., P. O. Box 1628, New Orleans 11.
- J. GILBERT SCHEIB, (1935), Construction E., Housing Authority of New Orleans. 2412 General Pershing St., New Orleans 15.
- DONALD B. SCHELL, (1952), M. E., Robbins & Robbins, 1037 Magazine St., New Orleans.
- HAROLD SCHILL, (A), (1951), H & W Construction Co., Inc., 650 S. Galvez St., New Orleans.
- LOUIS C. SCHILLING, (1955), M. E., Copolymer Corp. 2744 Pocahontas St., Baton Rouge.
- HERMAN SCHLUTER, (1953), E. E., Esso Standard Oil Co., 11454 Mollylea Drive, Baton Rouge 5.
- JOHN H. SCHLUTER, (1948), M. E., R., Board of Commissioners, Port of New Orleans. 5 Melodia Court, New Orleans 25.
- GEORGE H. SCHMITT, JR., (1955), E. E., N. O. Public Service Inc., 101 Celeste Ave., New Orleans 23.
- CARL SCHNEIDER, (1940), C. E., M. E., E. E., R., Consulting Engr. 7711 Plum St., New Orleans 18.
- EDWARD L. SCHNEIDER, (1944), Ch. E., R., Southern Surgical Supply Co., Inc. 225 Chappelle St., New Orleans.
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- GEORGE S. SCHRENK, (1947), C. E., M. E., R. La., Miss., Tex. George S. Schrenk, Consulting Engr., 6861 Louisville St., New Orleans 24.
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- WALTER J. SCHWARTZ, (1948), Ch. E., R., The Flintkote Co., 4500 N. Galvez St., New Orleans 17.
- ROY F. SCRIBER, (1956), The White Construction Co. 147 North 11th St., Baton Rouge.
- ROBERT MALLARD SEAGO, (1938), M. E., E. E., R., New Orleans Public Service Inc., 1600 So. Peters St., New Orleans 13.

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- GUY J. SEGHERS, (J), (1956), C.E., R. Guy J. Seghers & Associates. 1483 Mirabeau Ave., New Orleans, La.
- SOLIS SEIFFERTH (L.M.). (1920), Architect, R., La., Miss., Tex., Ga. Dreyfous & Seifert, 328 Audubon Bldg., New Orleans 16.
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- J. MURRAY SEMMES, (1943), C.E., R. Louisiana Dept. of Highways. 759 Concordia St., Baton Rouge.
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- FRANCIS B. SESSUMS, (1954), C.E., R. La., Tex. Dow Chemical Co. 2219 Myrtledale Ave., Baton Rouge.
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- RICHARD M. SHAW, (1937), C.E., U.S. Eng. Corps. 7438 Dominican St., New Orleans 18.
- GEORGE F. SHELLEY, (1944), M.E., R., Shelley Filter Co. Box 178, Rt. 2, Bayou Liberty Rd., Slidell, La.
- EMILE S. SHERRARD, (1948), E.E., Nat'l. Bureau of Standards, Div. 13.4, Washington 25, D. C.
- CECIL M. SHILSTONE, (1952), Ch.E., R. La., Tex. Shilstone Testing Lab., 814 Conti St., New Orleans 12.
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- RONALD E. SHRADER, (1956), M.E. Copolymer Rubber & Chemical Corp. Star Rt. 29, Box 240, Greenwell Springs, La.
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- LEO ROYDON SIBILLE, (J), (1949), E.E., La. Power & Light Co. 2414 Roosevelt Blvd., Kenner, La.
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- CHESTER A. STEWART, (1945), M. E., United Gas Pipe Line Co. 2420 Metairie Road, Metairie, La.
- FRANK STEWART, (1954), C. E., R. La., Tex. Farnsworth & Chambers Co., Inc., P. O. Box 332, New Orleans.
- JAMES M. STEWART, JR., (J), (1948), M. E., R., Petroleum Chemicals, Inc., 1917 Sixth St., Lake Charles.
- JEFF M. STEWART, (1953), C. E., R. Tex. Industrial Steel Products Co. P.O. Box 1814, Shreveport, La.
- LOUIS E. STEWART, (1951), M. E., J. Ray McDermott & Co., Inc. 4329 Kennon Ave., New Orleans 22.
- WM. G. STEWART, JR., (1954), M. E. Copolymer Corp. 653 Finchley Ave., Baton Rouge.
- JAMES E. ST. GERMAIN, (1920), M. E., R.. Pan-Am Southern Corp. 1621 Agriculture St., New Orleans 19.
- LOUIS A. ST. GERMAIN, (1954), C. E., R. Barnard & Burk. 1023 Nicholson Drive, Baton Rouge.
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- FELTUS B. STIRLING, (1944), E. E., R., Gulf States Utilities Co. 2005 Fern-dale Ave., Baton Rouge 15.
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- SAMUEL J. STOKES, (1944), C. E., R., Shell Oil Co. 4960 Desire Drive, New Orleans.
- PIERRE J. STOUSE, JR., (J), (1953), E. E., R. Walter J. Barnes Electric Co. 5537 Hurst St., New Orleans 15.
- RONALD J. ST. PIERRE, (J), (1953), Agri. E., R. Shell Oil Co., 444 Pine St., Norco, La.
- ARCH DONALD McD. STRANGE-BOSTON, (1949), C. E., R. Interstate Oil Pipe Line Co. 824 Oneonta St., Shreveport.
- JOHN P. ST. RAYMOND, (1950), M. E., R. Lion Oil Company. 3539 Napoleon Ave., New Orleans 25.

- HAROLD H. STREAM, JR., (1942), Ch. E., R. Union Oil Co. of Calif. 1460 Lombardy Rd., Pasadena, Calif.  
 LEO J. STROLE, (1953), M. E., United Gas Corp. 301 Parker St., Monroe, La.  
 MALCOLM W. STUMPF, (1955), E. E., R. N. O. Public Service Inc., 317 Baronne St., New Orleans 9.  
 JAMES M. SUMMERLIN, (1950), Construction E. Fish Service Corp. Box 1016, Port Arthur, Ontario, Canada.  
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 DAYTON R. TAYLOR, (1948), M. E., R., Va., Baton Rouge Water Works, Inc. Drawer 2391, Baton Rouge 1.  
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- GEORGE D. WADDILL, (L. M.), (1911), C. E., R. Retired. 7433 Maple St., New Orleans 18.
- BATAILLE HARRISON WADE, (1942), C. E., R., La., Miss. La. Dept. Hwys. Box 307, Jennings, La.
- RICHARD E. WAGNER, (1933), C. E., R., Metcalf & Eddy, 7165 S.W. 66th St., Miami 43, Fla.
- FRANK H. WALK, (1947), C. and M. E., R. Truman B. Wayne & Associates. 2813 Palmer Ave., New Orleans 18.
- ARTHUR L. WALKER, (1943), C. E., R. Tidewater Dredging Co. 328 Claiborne Towers, New Orleans 16.
- J. D. WALKER, (L.M.), (Jan. 8, 1908), C. E., R., Lang Co., 2500 Poydras St., New Orleans 19.
- CHARLES WM. WALL, (1948), M. E., Esso Standard Oil Co., La. Div. 1609 Moreland Ave., Baton Rouge.
- ARCH LEE WALLACE, (1955), E. E. New Orleans Public Service Inc., 527 Magnolia St., New Orleans.
- JOHN E. WALLACE, (1948), Field E., Gaylord Container Corp. 817 Avenue B, Bogalusa, La.
- WAYNE PAUL WALLACE, (1936, C. E., R., Southwestern La. Institute, Box 803, S.L.I., Lafayette, La.)
- STEPHEN J. WALLBILICH, (1926), C. E., R., Corps of U.S. Engineers. 4014 Vincennes Place, New Orleans 25.

- JOHN G. WALLIS, (A), (1955), Southern Coating & Chemical Co. 936 Jefferson Ave., New Orleans 15.
- C. PERCY WALTERS, (1947), Operating E., Gulf States Utilities Co., 4333 Broussard St., Baton Rouge 12.
- FRANK C. WALTERS, (A), (1950), Marine E., Esso Standard Oil Co. 1047 Westmoreland Drive, Baton Rouge 6.
- GEORGE B. WALTHER, JR., (1948), M.E., E.E., Agri.E., R. Cities Service Refining Corp 444 10th St., Lake Charles.
- ALBERT R. WALTON, (1950), Surveyor, R., F. Schutts & Sons, 108 Vine St., Maplewood, La.
- PAUL WAMSLEY, JR., (1954), Met.E. Esso Standard Oil Co., 1266 Stephens Ave., Baton Rouge.
- PHILIP W. WANG, (1952), C.E., R. Tex. Bernard & Burke, Bueche, La.
- DARRELL E. WARD, (1953), M.E., R. Esso Standard Oil Co., La. Div. 5238 Woodside Drive, Baton Rouge.
- RICHARD R. L. WARD, (1947), M.E., R., Cit-Con Oil Corp., P. O. Box 1578, Lake Charles.
- WALTER SCOTT WARE, (A), (1950), M.E. Negley Bag & Paper Co. 206 Lincoln St., West Monroe.
- FRANCIS J. WARREN, JR., (1950), E.E., R. Line Material Co. 416 - 11th St., Apt. 1, Lake Charles, La.
- JAMES S. WARREN, (1950), E.E., R., Southern Bell Tel. & Tel. Co., Houma, La.
- DAVID A. WARRINER, (1943), M.E., E.E., R. D. A. Warriner Instrument Sales & Service. 7920 Zimple St., New Orleans 18.
- ROBERT A. WARRINER II, (J), (1953), M.E., R. D. A. Warriner Instrument Sales & Service. 232 Sena Drive, Metairie, La.
- SAMUEL R WARRINER, JR., (J), (1951), M.E., R., Walter Cooke, 2902 Oak Forest, Drive, Jackson, Miss.
- JOSEPH H. WATERFIELD, (1952), Corrosion E., United Gas Corp., Lake Charles, La.
- L. T. WATKINS, (1951), C.E., Texas Hwy. Dept. P. O Box 836, Conroe, Texas.
- JESSE C. WATSON, (1949), C.E., R. La. Dept. of Highways. P. O. Box 1482, Lake Charles.
- MAX P. WATSON, (1944), M.E., E.E., Petroleum E., R. United Gas Pipe Line Co., P.O. Box 1407, Shreveport, La.
- CALVIN T. WATTS, (1948), C.E., R., Louisiana Dept. of Public Works. 506 Centenary Drive, Baton Rouge.
- CHARLES H. WEATHERLY, (1945), M.E., Bedell & Nelson Engrs., Inc., 1635 Sixth St., Apt. 1, New Orleans, La.
- PAUL E. WEAVER, (1956), M.E., R. Solvay Process Div., Allied Chemicals. 4025 Brady St., Baton Rouge.
- JOHN H. F. WEBERT, (1948), Chief Draftsman, Jones & Laughlin Steel Corp. 4115 Clermont Drive, New Orleans 22.
- JOSEPH G. WEDDINGTON, (1957), E.E. Southern Bell Tel. Co. 804 Wilson Drive, New Orleans, La.
- IRWIN C. WEIDIG, (1951), E.E., R., La. Power & Light Co. 4317 Orleans Ave., New Orleans.
- WILLIAM D. WEIDNER, (1956), C.E., R. La., Tenn., Ark., Miss. The Texas Company. P. O. Box 89, New Orleans.
- LEO S. WEIL, (L.M.), (1920), M.E., R., Leo S. Weil and Walter B. Moses, 600 Audubon Bldg, New Orleans 16.
- BILLY A. WEISFIELD, (1951), E.E., R. U.S. Navy, Dist. Public Works Office. 102 Livingston Place, Metairie, La.
- WILLIAM B. WELBORN, JR., (1955), C.E., R., La. Dept. of Highways, 139 S. St. Louis St., Lafayette, La.
- FRED E. WELCH, (1949), Maintenance E., La. Dept. of Highways. Mill St., Rt. 1, Box 182, Natchitoches, La.
- EDWARD J. WELSCH, (1952), C.E., R. E. J. Welsch & Co., Inc., 1036 Nat'l. Bank of Commerce Bldg., New Orleans 12.
- LESTER E. WENK, (1952), E.E., R., Wenk Electric Service, 737 Neal Drive, Shreveport, La.
- NORMAN D. WESLEY, (J), (1956), E.E., R. Kaiser Aluminum & Chemical Co. 1925 North 17th St., Baton Rouge, La.



- CHARLES R. WESTERCHIL, (1950), C. E., R., Gravier & Harper, Contractors. P. O. Box 851, Alexandria.
- W. V. WESTH, (1951), M. E., Gulf States Utilities Co. 5965 Government St., Baton Rouge.
- CLARENCE A. WETHERN, (J), (1954), C. E., R. David W. Godat & Associates. 2621 Ursuline Ave., New Orleans 19.
- JOHN R. WHIPPLE, (1951), E. E., R. La. Ohio, Miss. Whipple & Mayers. 1370 Stephens Ave., Baton Rouge.
- WILLIAM WHIPPLE, (1936), M. E., La. State University. P. O. Box 8524, University Station, Baton Rouge 3.
- WILL A. WHITAKER, (1945), M. E., E. E., R. Standard Oil Co. 1167 Main St., Baton Rouge 2.
- J. LESTER WHITE, (1920), C. E., R. City-Parish Government, P. O. Box 246, Baton Rouge.
- JACK W. WHITE, JR. (J), (1955), Industrial Engr., Esso Standard Oil Co. 9525 Southmoor Drive, Baton Rouge.
- JOHN S. WHITE, JR., (J), (1953), E. E., Esso Stand Oil Co., 372 Summit Ridge Drive, Baton Rouge.
- O. D. WHITE, (1950), C. E., R. La. Dept. of Highways. Box 37, Marrero, La.
- CARL B. WHYTE, (1946), C. E., E. E., M. E., R., La., Tex., Ill. Procon Incorporated, 1111 Mt. Prospect Road, Des Plaines, Ill.
- CARL B. WHYTE, JR., (J), (1955), M. E. Ingram Oil & Refining Co., 4925 St. Anthony Ave., New Orleans 22.
- CHARLES Q. WIGGINS, JR., (1946), E. E., R., Tex. Cary B. Gamble & Associates. 145 Wren St., New Orleans 24.
- RUSSELL J. WILDEY, (A), (1950), U.S. Army. P. O. Box 1352, Alexandria, La.
- CLAUDE D. WILKERSON, (1950), M. E., R. Daniel, Mann, Johnson & Mendenhall, APO 500, San Francisco, Calif.
- RICHARD KNOWLES WILKERSON, (1943), Gulf States Utilities Co. 285 E. Circuit Drive, Beaumont, Texas.
- ROGER C. WILKINSON, (A), (1951), J. C. McLemore Co. 520 First Nat'l Bank Bldg., Shreveport.
- LAWRENCE V. WILLEY, (1939), C. E., R., La. Dept. of Highways. 430 Centenary Drive., Baton Rouge 2.
- AARON D. WILLIAMS, JR., (1949), C. E., R., Columbian Carbon Co. P.O. Box 1562, Monroe, La.
- GERALD C. WILLIAMS, (1940), M. E., Esso Standard Oil Co. 1882 Cedardale Ave., Baton Rouge 6.
- MADISON J. WILLIAMS, JR., (J), (1956), C. E., U. S. A. F. Cadet P. O. Box 6569, Harlingen AFB, Texas.
- R. L. WILLIAMS, (1947), M. E., R., Freeport Sulphur Co., Box 126, Port Sulphur, La.
- ROBERT MILTON WILLIAMS, (1949), C. E., R. W. Horace Williams Co., 833 Howard Ave., New Orleans 12.
- ROBERT O. WILLIAMS, (1951), E. E., R. Southern Bell Tel. & Tel. Co. 1215 Prytania St., New Orleans, La.
- ROBERT W. WILLIAMS, (1940), Ch. E., Esso Standard Oil Co. Rt. 3, Perkins Road, Baton Rouge 7.
- W. HORACE WILLIAMS, JR., (1943), C. E., W. Horace Williams Co. 833 Howard Ave., New Orleans 12.
- WALTER L. WILLIAMS, (1957), Industrial Engr., Olin Mathelson Chemical Corp. 512 McGuire St., Monroe, La.
- CHARLES S. WILLIAMSON, JR., (L.M.), (1916), Ch. E., R. Consulting Engineer, Prof. Emeritus, Tulane University. 1739 Marengo St., New Orleans 15.
- GEORGE F. WILLIAMSON, (1939), C. E., R., Palmer & Baker, Inc. 427 Nat'l. Bank of Commerce, New Orleans 12.
- ROBERT B. WILLIAMSON, (1951), E. E., R., Williamson Sales Co., Box 1223, Shreveport.
- JAMES H. WILSON, (1957), Sales Engr. Ingersoll-Rand Co. 960 S. Genois St., New Orleans, La.

- JAMES NORMAN WILSON, SR., (L.M.), (1911), M.E., Sewerage & Water Board of New Orleans. 2425 Audubon St., New Orleans 18.
- TROY L. WILSON, JR., (1947), C.E., R. Esso Standard Oil Co. 9163 S. River Oaks Drive, Baton Rouge 6.
- W. W. WILSON, (1949), C.E., United Gas Pipe Line Co., P. O. Box 1407, Shreveport, La.
- A. R. WINGATE, JR., (L.M.), (1925), C.E., Jones & Laughlin Steel Corp., P. B. Box 66, New Orleans 6.
- JOHN D. WINK, JR., (J), (1954), M.E., R. Columbian Carbon Co. 1510 N. 7th St., Monroe, La.
- DANIEL L. WINTERS, (A), (1953), Ch.E., Central Louisiana Electric Co., Inc., 155 Duperier St., New Iberia, La.
- WILLIAM A. WINTZ, JR., (1942), C.E., R. La. State University, College of Engineering, Baton Rouge 3.
- BERNARD P. WOLFE, (A), (1955), Sales Eng., Frank P. Fischer Engineering Co., 2607 Williams Blvd., Kenner, La.
- BURRIS D. WOOD, (1947), C.E., R., La. Dept. of Public Works. 2435 Cottonwood Ave., Baton Rouge.
- CARROLL L. WOOD, JR., (1946), C.E., R., Perrilliat-Rickey Construction Co. 552 Walnut St., New Orleans 18.
- JOHN W. WOOD, (1948), M.E., Cities Service Refining Corp., 102 Madison, Maplewood, La.
- CHARLES S. WOODRUFF, (1950), M.E., E.E., R., Ogden & Woodruff, Consulting Engineers, 1645 Nicholson Drive New Orleans 18.
- DURAND F. WOODS, (L.M.), (1922), C.E., R., Lutchter, La.
- THOMAS A. WOODWARD, (1952), E.E., R. Central La. Electric Co. 114 Gibbs St., Mansfield, La.
- JOHN KING WOOLF, (1943), C.E., R., Ala., Tex., W. Horace Williams Co. (Retired), Magnolia Springs, Ala.
- GORDON B. WOOSTER, (1948), C.E., M.E., R., Cities Service Ref. Co., 716 Hodges St., Lake Charles, La.
- CHARLES J. WYLER, (L.M.), (1919), M.E., R., Retired. 2235 Magazine St., New Orleans 13.

## Y

- ALBERTA M. YOUNG, (1951), Petroleum E., R. Private Practice. 904 Nat'l. Bank of Commerce Bldg., New Orleans 11.
- GRAYSON S. YOUNG, (1957), Ch. E. Esso Standard Oil Co. 725 Parlange Drive, Baton Rouge, La.
- LOVETT YOUNG, (1943), Chemist. Gulf States Utilities Co. 9192 Wynnewood St., Baton Rouge.
- MARION E. YOUNGS, (J), (1953), M.E., Byron Jackson, Div. Borg. Warner Corp. 518 International Trade Mart, New Orleans 12.

## Z

- MARIO G. ZERVIGON, (1937), E.E., R. La., Pa. Mario Zervigon & Associates. 608 Audubon Bldg., New Orleans 16.
- JOHN R. ZIERCHER, (J), (1957), C.E., R. Esso Standard Oil Co. 2961 Greenwood Drive, Baton Rouge, La.
- ROBERT W. ZIIFLE, (1937), New Orleans Public Service Inc., 317 Baronne St., New Orleans 9.
- T. H. ZUMWALT, (1944), C.E., R., La., Tex. Freeport Sulphur Co. 161 Beverly Drive, Metairie, La.
- FREDERICK W. ZURBURG, (1952), Ch.E., R., Southwestern Louisiana Institute, Box 124, S.L.I., Lafayette, La.

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MAGNOLIA 5281

## OBITUARY OF ANDREW ALFRED WOODS

Andrew Alfred Woods, Life member of the Louisiana Engineering Society, who was born in New Orleans, Louisiana on March 2, 1876, died November 6, 1956.

He was the son of Alfred Andrew and Jeannie (Railey) Woods. Following attendance at T. W. Dyer's School for Boys at New Orleans, he entered the College of Technology of Tulane University of Louisiana. In 1895 he received the degree of Bachelor of Engineering from Tulane University of Louisiana. In 1895-1896 he did graduate work in Mechanical Engineering at the same institution.

In 1896 he began his engineering career with the New Orleans and Northwestern Railroad Company, which he subsequently served in various engineering capacities, as he did also the Alabama and Vicksburg, and the Vicksburg, Shreveport and Pacific Railway Companies. He became Superintendent of the New Orleans and Northeastern Railroad company in 1915, holding this position until 1919, when he was transferred to Cincinnati, Ohio as Chief Engineer MW&S, Western Lines, Southern Railway System. He held this position until his retirement February 1, 1946.

In his long railroad service Mr. Woods supervised extensive improvements on many portions of the Southern Railway System. Some of the larger projects carried out under his general direction include the Ohio River Bridge at Cincinnati; the Tennessee River Bridge at Chattanooga; and the Tombigbee River Bridge at York, Alabama.

Mr. Woods was married September 11, 1920 to Mrs. Jeanette Craig Maynard, the widow of James Maynard, Jr. He is survived by his widow; a son, Captain James Brison Woods, F.A., U.S.A.; and a daughter, Harriet (Mrs. Daniel Campbell); a sister, Elizabeth; and a brother, Henry.

While at Tulane University, Mr. Woods was actively interested in football, playing tackle on one of Tulane's first teams; he was captain of the team during his senior year. He was a member of Phi Delta Theta and Theta Nu Epsilon. He was later elected a member of Louisiana Beta Chapter of Tau Beta Pi. He was a member of the Cincinnati Country Club, University Club and Engineers

Club of Cincinnati. He was a member of the Boston Club and of the Louisiana Club of New Orleans. He was also a member of several carnival organizations.

In addition to being a Life member of the Louisiana Engineering Society, Mr. Woods was also a Life member of the American Society of Civil Engineers and the American Railway Engineering Association.

G. A. HEFT, Chairman

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\* \* \* \*

## OLIN MATHIESON STORY

(Continued from page 132)

In 1898 Franklin Olin produced the first Western ammunition. Since then, I am told, Western ammunition has captured every important rifle pistol and shotgun competition. In 1930, Mr. Olin purchased the Winchester Repeating Arms Company of New Haven, Connecticut. At the Winchester-Western Division's factories in New Haven and East Alton, more than 6,000 craftsmen produce one of the world's most compete lines of rifles, shotguns and sporting ammunition.

Winchester rifles and shotguns, some of them developed more than a half-century ago, are still recognized by sportsmen as among the finest examples of the gunmaker's art.

The Model 94 lever action, introduced in 1894, remains the favorite of all deer rifles, with nearly 2,500,000 in use. The Model 12 shotgun, developed nearly 50 years ago, still continues to lead its field with sales of more than two million.

Through continued emphasis on research and development, Winchester-Western is still a pioneer in its industry. The Model 50, introduced in 1953, is the world's first semi-automatic shotgun with a non-recoiling barrel. With the Model 88, Winchester recently ended a 76-year search for a lever action rifle with a front-locking bolt. An entirely new line of short-case, high-velocity cartridges has been introduced based on the company's development of Ball Powder. In 1956 the African version of the model 70 rifle was introduced in 458 caliber—one of the most powerful cartridge and rifle combinations in the world.

### PACKAGING

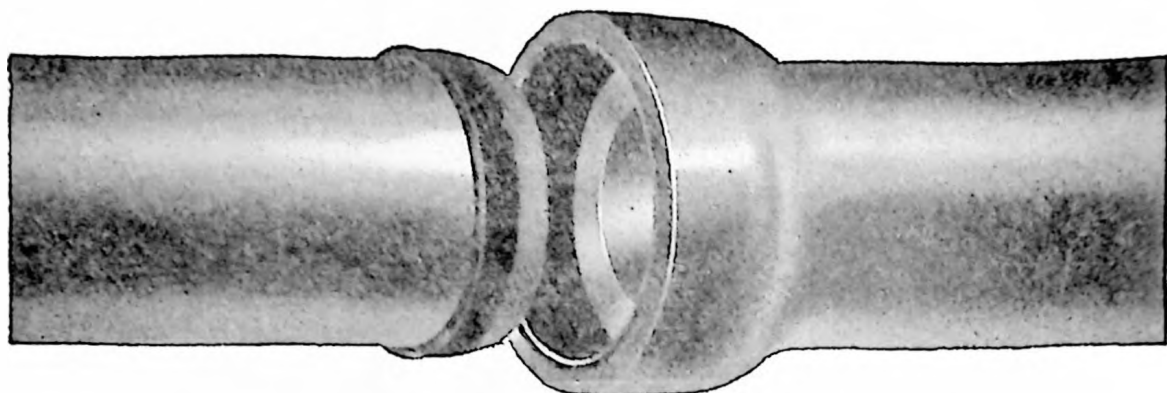
As early as 1929 Olin had contemplated engaging in cellophane manufacture because of the cellulose chemistry "know-how" it had acquired in the explosives field. The company had constructed a machine which manufactured a high grade of cellophane. It was businly engaged in solving the more difficult problem of coating when the opportunity presented itself to enter the cellophane business under Du Pont licenses, making further study unnecessary.

At the time the agreements with Du Point were negotiated, an ideal cellophane plant site became available at Pisgah Forest, North Carolina, and the company acquired the Ecusta Paper Corporation there, a leading manufacturer of cigarette and other fine flax papers. The cigarette paper operation was unusually like that of cellophane, except for the raw materials used, and therefore facilitated the establishment of the cellophane plant. Later, the company also entered the manufacture of polyethylene film and tubing. This business has grown, but it is a fabricating operation only. Olin Mathieson does not produce the polyethylene itself.

One requirement which the company foresaw when it got into cellophane was the acquisition of a sufficiently large stand of timber to support a pulp mill when needed and economically justified. Accordingly, Frost Lumber Industries, Inc. of Shreveport, with 435,000 acres of standing timber in Arkansas, Texas, and Louisiana, was acquired in 1951.

To further broaden its base in pulp and paper, the company in 1955 purchased the Brown Paper Mill Company, Inc., of West Monroe, Louisiana. This transaction included a pulp mill and four associated manufacturing plants producing kraft paper, paper bags, and paperboard boxes.

More than half a million acres of timberlands are now owned by Olin Mathieson in Arkansas and Louisiana. Forest rangers patrol these lands in cars equipped with short-wave radios, guarding against fires, caring for seedling beds and making certain that proper logging procedures are followed. Trees are harvested only when mature, when growth is retarded by overcrowded stands, or when they would be lost through insect or fire damage. Seed trees are left for natural re-seeding, and in some areas replanting is done by hand or machine.



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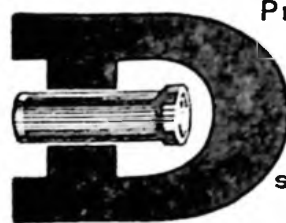
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In addition to supplying the raw material for packaging products, trees from these forests supply, on a perpetual basis, all the pine and hardwood lumber needed for the company's sawmill operations. Our Forest Products Division is presently producing 65 million board feet of lumber each year at modern sawmills at Huttig, Arkansas, and Winnfield, Louisiana.

Most of this lumber goes directly to market. Some is sent to the Shreveport plant to be converted into hardwood flooring or Wolmanized, a process involving chemical treatment for protection against termites and rot. Each year about six million board feet of lumber, in the form of poles and pilings, are pressure treated with creosote at this plant.

The company's cellophane production was doubled last year with the completion of a new plant at Olin, Indiana. We are now producing at this plant and at Pisgah Forest, North Carolina, more than 50 different types of cellophane—each determined by such factors as the product to be packaged design, climate and humidity.

The company approaches packaging problems through both marketing and technical research. The technical work is carried out at its Packaging Materials Research Center in New Haven, while package development problems are studied in the Package Development Clinic in New York City. These two packaging laboratories make available the services of technical experts, artists, package designers and even sales analysts.

The Ecusta Operation at Pisgah Forest was the first plant in the United States to produce cigarette paper successfully. This was in 1939. Until then, quality cigarette paper was made only in Europe, from rags and cuttings of discarded linen. The Ecusta process produces the paper directly from the flax fiber. An idea of some of the problems inherent in cigarette paper production can be gained from the fact that the paper must be tasteless, must burn only as fast as the tobacco, and must be of very high purity. It must be less than 1.5 thousandths of an inch thick—yet so strong that a strip an inch wide can support eight pounds.

Today on its nine Fourdrinier machines Ecusta produces paper for more than a billion cigarettes a day. Through a variety of converting operations, it produces other products for the cigarette industry, including a special type of filter tipping paper for filter

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I have mentioned research from time to time in this discussion. Research plays a vital role throughout all of the Olin Mathieson operations. More than 2000 scientists and technicians are employed in research in the company's 19 divisional laboratories in the United States. In addition, overseas research facilities and close liaison with academic research centers throughout the world keep the company abreast of international scientific developments. New products resulting from Olin Mathieson research reached the commercial market at the rate of one a week in 1956.

Except for its operations abroad, which are largely—but not exclusively—pharmaceutical manufacturing and which I will not attempt to describe at this time, the picture I have sketched for you this evening is essentially Olin Mathieson as it is today—a company which has made, we believe, rather considerable progress in a relatively short time. Traveling at this rate of speed has created some problems. We believe, however, the most of these have been overcome and are now behind us, and that we have in Olin Mathieson today a sound foundation of skills and resources in the chemicals, metals and packaging fields. We believe we are in an excellent position to meet many of the newer challenges that are already appearing on the horizons in these fields.

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## MINUTES OF THE MEETINGS AND BUSINESS OF THE SOCIETY

### Minutes of Meeting of the Society Held Jointly with the New Orleans Section, A.S.M.E. Monday, March 11, 1957

The meeting was called to order by President Nelson with approximately 120 members and guests present. The president welcomed members and guests of A.S.M.E.

Mr. Chas. P. Knost moved that the reading of minutes be dispensed with, seconded by Mr. Snyder Ellis and carried.

There being no business, the chair was relinquished to Mr. Ellis, Chairman, New Orleans Section, A.S.M.E., who called on Mr. Ed Pavia to introduce the speaker, Dr. W. H. Brandt, Manager of Engineering, Director Systems Division, Westinghouse Electric Corporation, Pittsburgh, Pa., who spoke on "Automation in Russia".

After a very lively question period, the meeting adjourned with a rising vote of thanks to the speaker.

### Louisiana Engineering Society, Lafayette Section

The last meeting of the Lafayette Section was held at Poor Boy's restaurant at 7:30 o'clock on Feb. 15, 1957.

The meeting was called to order by president Hetherwick and several topics of interest were discussed including the apparent success of Engineer's Week.

Mr. Douglas J. Nehrbass, Atty. at Law, spoke on Engineering Registration Laws and Engineers' as qualified experts in Court Room procedures. After his speech, Mr. Nehrbass discussed with the Engineers present several points of interest including subpoenas and court fees.

The meeting was then adjourned by the president.

### Minutes of the Monroe Section of the Louisiana Engineering Society March 5, 1957

The Monroe Section of the Louisiana Engineering Society held their March meeting on the Louisiana Tech campus on Tuesday, March 5, 1957. The regular meeting was preceded by the annual shrimp and oyster dinner at 6:30 p.m. in the basement of Bogard Hall, engineering building. Upon completion of the evening meal, the group moved to the Little Theater in the Dramatic Arts Building. The meeting was called to order at 7:45 p.m. by Mr. M. M. Funderburk, Sr. president, presiding, with an opening prayer. The minutes of the previous meeting, December 4, 1956, were read and approved.

Mr. Funderburk, Sr. introduced the chairman of each committee and received reports.

The report of the National Engineer's Week Committee by Mr. Herbert Dickard, chairman, and Mr. J. D. Calhoun, member, was very successful by receiving publicity over television, radio, newspapers, bulletins, displays, business luncheons, schools, etc.

The report of the Charter and Rules Committee was given by Mr. Ben T. Bogard relating steps thus far taken on the affiliation of the Louisiana Engineering Society with two National Organizations.

The program was then turned over to the Entertainment and Program Committee chairman, Mr. C. C. Boyd, who introduced the guests of individual members and the guest speaker of the evening, Mr. Floyd James of the T. L. James & Company. Mr. James gave a most interesting and informative discussion of the Study and Hearing on Pollution as it affects Corney Creek.

Corney Creek originates in Arkansas and flows through Union Parish. Mr. James has followed this study from the beginning and has been one to keep it going. A discussion on his report from the group as a whole ended the program.

The door prize, consisting of a Mercury Switch Electric Eraser, was won by Mr. H. L. Henry, Jr. of Louisiana Polytechnic Institute, Ruston, Louisiana. The door prize was donated by the Monroe Blueprint Company of Monroe, Louisiana.

A motion was given by Mr. R. A. Smith and seconded by Mr. C. H. Edward that a committee be appointed to write an "Amendment to the constitution and by-laws to hold six regular meetings per annum, rather than the four". Mr. Smith was appointed chairman with Mr. J. T. Folk and Dr. G. L. Corrigan as members.

At this meeting we had a new record in attendance with 56 members and 37 guests present. On proper motion and second, the group adjourned at 8:45 p.m.

T. H. HENRY Secretary-Treasurer

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**Minutes of Meeting of the Board of Direction Held on Monday, April 8, 1957  
at the Engineers' Club, New Orleans**

The meeting was called to order by President Nelson with Messrs. Bogard, Freeman, L'Heureux, Scales, Sessums, Taylor and Fernandez present. Messrs. E. A. McLellan and J. T. Knight, Jr. also were present by invitation. Mr. Sessums moved that the reading of minutes of the preceding meeting be dispensed with, seconded by Mr. Scales and carried. Mr. Sessums also moved that the order of business be changed so that Messrs. McLellan and Knight could report to the board and take their departure, seconded by Mr. Freeman and carried.

Mr. McLellan, Chairman of the 1958 Annual Meeting, set forth a number of questions which were decided as follows: The 1958 Annual Meeting will be held on January 9-10-11 at the St. Charles Hotel, New Orleans. It was the consensus of opinion among those present that the participating societies should not sponsor any technical papers but that the Annual Meeting Technical Papers Committee should secure all papers and invite the local sections of national societies to attend all sessions. The suggestion to have a buffet luncheon before the general meeting was approved, and it also was agreed to consider a change in the program format if the committee wishes to submit a new form of program.

Mr. McLellan recommended the following persons to serve on the Annual Meeting sub-committees, after which Mr. Scales moved that they be appointed, seconded by Dr. Taylor and carried:

**Allen H. Jensen, General Vice Chairman**

**Banquet:**

Herbert Schaeffer, Jr. Chairman  
Bernard Louviere, Vice-Chairman

**Coordination with Woman's  
Auxiliary:**

Albert J. Fransen, Chairman  
John L. Martinez, Vice-Chairman

**Plant Inspection:**

John T. Knight, Jr., Chairman  
Edgar M. Dunn, Vice-Chairman

**Program:**

Fred J. Baehr, Jr., Chairman  
Robert H. Grehan, Vice-Chairman

**Registration:**

Charles B. Spenser, Chairman  
August J. Brodtmann,  
Vice-Chairman

**Student Conference:**

Walter E. Blessey, Chairman  
Samuel G. Davis, Vice-Chairman

**Technical Papers:**

J. Bres Eustis, Chairman  
Bernard M. Dornblatt,  
Vice-Chairman

**Publicity:**

Henry F. LeMieux, Chairman  
Norris L. Fant, Vice-Chairman

Mr. Knight, speaking for the JET program of the Vocational Guidance Committee, stated that the program was difficult to operate successfully because of the tremendous turnover in personnel, approximately 80% of the students being new each year. Faculty advisers and committeemen also change frequently, and some form of continuity in the program is most desirable. Mr. Knight stated that he believed the manpower problem could be resolved through industry plus parents of JET students and requested that a committee be appointed to consider the problems of the JET program objectively and that such a committee not be composed of Vocational Guidance committee personnel. President Nelson thanked Mr. Knight and stated he would give careful consideration to the appointment of this committee.

A financial report on the 1957 Annual Meeting was presented by the Treasurer and Mr. Bogard moved that it be accepted, seconded by Mr. L'Heureux and carried. The society's first quarterly financial report for 1957 also was presented and accepted upon motion by Mr. Bogard, seconded by Dr. Taylor.

The secretary reported that all applicants named in the March ballot were elected to their respective grades. A copy of the ballot is attached to these minutes.

A preliminary report on Engineers' Week was presented in which the chairman, Mr. John F. Vogt, Jr., suggested that the 1958 chairman be selected at an early date. Mr. Freeman moved that this report be accepted, seconded by Mr. Scales and carried.

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The secretary read correspondence from Mr. John Hall Jacobs, Librarian, New Orleans Public Library, in which he thanked the society for the loan of its work on Soil and Foundation Survey in New Orleans and vicinity, and stated that both Volume I and addenda have been reproduced on microfilm and are now available at the library.

The secretary read a letter addressed to the Sewerage and Water Board of New Orleans by President Nelson thanking them for the copy of a report by Black & Veatch on Water, Drainage and Sewerage Work in New Orleans.

Upon the advice of the board, President Nelson appointed the following chairmen and vice-chairmen to serve on standing committees for 1957:

**STATE-WIDE COMMITTEES****Section Coordination:**

Z. L. Loflin, Chairman  
Otha E. Barron, Vice-Chairman

**Professional, Civic & Industrial Affairs:**

Arthur J. Naquin, Chairman  
William M. Davis, Vice-Chairman

**Legislative:**

Louis Duclos, Chairman  
Henry L. Landry, Vice-Chairman

**Publications:**

Allen W. Betz, Chairman  
Wiley D. Poole, Vice-Chairman

**Honors and Awards:**

Michael C. Abrahm, Chairman  
Wayne P. Wallace, Vice-Chairman

**Membership:**

Daniel P. Mabel, Chairman  
Henry F. LeMieux, Vice-Chairman

**Membership Qualifications:**

(Anonymous)

**Vocational Guidance:**

Joseph R. Mooney, Chairman  
Tom C. David, Vice-Chairman

**Engineers Week:**

John F. Vogt, Jr., Chairman

**NEW ORLEANS COMMITTEES****Technical Papers:**

DeWitt L. Morris, Chairman  
Clifton R. Newlin, Vice-Chairman

**Vocational Guidance:**

Joseph R. Mooney, Chairman  
Henri J. Molaison, Vice-Chairman

**Entertainment and Outing:**

Donald B. Schell, Chairman  
T. Benbury Lockett, Vice-Chairman

**Employment:**

Raymond P. Bassich, Chairman  
Eugene L. Fithian, Vice-Chairman

**Publicity:**

Walter Cooke, Chairman  
Sydney Ellis, Jr., Vice-Chairman

**Engineers' Week:**

Edgar H. Pavia, Chairman

**Citizens Planning Committee:**

Allan T. Dusenbury, Representative  
Charles M. Kerr, Representative

**N. O. Building Code Committee:**

Alvin M. Fromherz, Representative  
John H. O'Neill, Representative

**N. O. Chamber of Commerce:**

Francis M. Taylor, Representative

**Mayor's Traffic Safety Conference:**

Arthur J. Naquin  
Bernard A. Grehan  
F. B. Grevemberg

A petition signed by former presidents of the society requesting that the form of entertainment at the annual outing be changed was read. Mr. Freeman moved that the Annual Outing Committee give serious consideration to this request and guide itself accordingly. The motion was seconded by Mr. Bogard and carried unanimously.

Discussion followed on the material supplied by Engineers Joint Council and National Society of Professional Engineers to be mailed to the membership and Mr. Sessums moved that the selected pieces be mailed with a letter from the president explaining how each of these organizations distributes its literature. The motion was seconded by Mr. Scales and carried.

President Nelson regretfully announced the death of Mr. Charles E. Cassagne, a member of the Board of Direction, on April 3, 1957 and appointed Messrs. Frank W. Macdonald, C. Glenn Melville and Louis M. Buja to prepare an obituary in his honor. The secretary advised that, in accordance with Section 4 of Article III of the constitution, the Board should appoint a director to fill the vacancy until the next general election. Mr. Sessums moved that Mr. Edward A. McLellan be appointed, seconded by Mr. Freeman and carried unanimously.

The secretary reported that Mr. Joseph R. Mooney, Chairman of the Vocational Guidance Committee, had requested funds to purchase awards to



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be presented to deserving members of JET clubs. Dr. Taylor moved that the Vocational Guidance Committee be authorized to purchase awards not to exceed \$100 in value, seconded by Mr. Freeman and carried. It was understood that this sum is to cover awards for all established JET clubs and that such awards are to be distributed equally.

The secretary advised that he had investigated many types of reproducing machines and that in his opinion a mimeograph would be best suited to the society's needs, whereupon the board authorized the purchase of a mimeograph machine instead of the photocopy machine previously authorized.

It was announced that the next meeting of the Board would be held on Friday, April 26 at 1103 Beck Building, Shreveport. The meeting then adjourned in order that the society's regular meeting could open on schedule.

JOHN P. FERNANDEZ, Secretary-Treasurer

#### Minutes of Regular Meeting of the Society Monday, April 8, 1957

The meeting was called to order by President Nelson with approximately 90 members and guests present. The president welcomed those in attendance, after which the reading of minutes was dispensed with by motion duly made and carried.

Mr. George A. Heft read an obituary of the late A. Alfred Woods and a moment of silence was observed in his memory. President Nelson thanked Mr. Heft and announced that this memorial would be incorporated in the minutes of the society, published in THE LOUISIANA ENGINEER, and copies would be forwarded to the family of the deceased.

President Nelson announced that the society had lost an esteemed member of the Board of Direction with the passing of Charles E. Cassagne, Jr., on April 3.

Mr. Lionel J. Cucullu then introduced the speaker for the evening, Mr. Fischer S. Black, Vice-President of Engineers Joint Council and Editor-Publisher of The Electrical World, who gave a most informative talk on the E.J.C. and its relation to L.E.S.

After a lively question period the meeting adjourned with a rising vote of thanks to the speaker.

JOHN P. FERNANDEZ, Secretary-Treasurer

#### Minutes of Meeting of the Board of Direction Held on Friday, April 26, 1957 1103 Beck Bldg., Shreveport, La.

The meeting was called to order by President Nelson with Messrs. Bogard, Foster, Freeman, L'Heureux, Scales and Fernandez present. Mr. Richard A. Smith also was present by invitation. Minutes of meeting of the Board of Direction held on April 8 was read by the secretary and accepted upon motion by Mr. Freeman, seconded by Mr. L'Heureux and carried.

A letter from the Baton Rouge Section concerning the annual joint meeting to be held there on June 1st was read. Mr. Freeman moved that the secretary issue meeting notices according to his discretion, seconded by Mr. Scales and carried.

Mr. Bogard moved that the resignation of William N. Tuller be accepted with regret, seconded by Mr. L'Heureux and carried.

Mr. L'Heureux moved that the following delinquent members be dropped in accordance with Article IX of the constitution, seconded by Mr. Freeman and carried:

#### Alexandria:

George M. Connell (Aff.)

#### Baton Rouge:

Robert J. Bujol (Mbr.)  
M. J. Guillory (Mbr.)  
A. E. Hutchinson (Bbr.)  
J. J. Mundinger (Mbr.)  
William Oglesby (Jr.)  
Mantz K. Susskey (Mbr.)  
C. J. Tircuit (Mbr.)  
Wm. D. Walthall (Mbr.)

#### Lafayette:

Prudent B. Cambre (Mbr.)  
Thomas C. Hollis (Jr.)  
Berton J. Perry (Jr.)  
Edward G. Saal (Mbr.)  
Vernon Q. Sibille (Jr.)  
James W. Wyche (Mbr.)  
Maurice B. Fournet, Jr. (Mbr.)

#### Lake Charles:

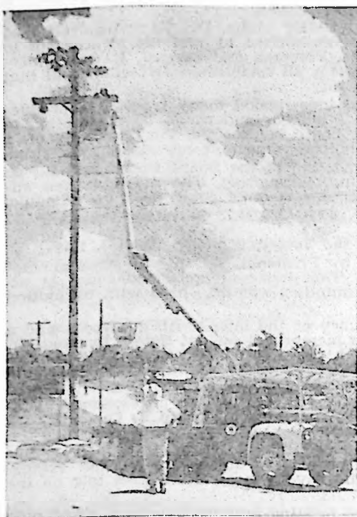
Henry G. Chalkey (Mbr.)  
Homer T. Chapman (Aff.)  
Robt. R. Chapman (Jr.)  
M. R. Hartman, Jr. (Mbr.)  
Wade H. Yawn, Jr. (Mbr.)

#### New Orleans:

Clifton J. Arnold (Mbr.)  
Richmond S. Burnside (Mbr.)  
J. I. Kotter (Jr.)  
Frank J. Miano (Mbr.)  
F. J. Richardson, Jr. (Mbr.)  
R. J. Thibodeaux (Mbr.)

#### Monroe:

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Otha C. Roddey (Mbr.)



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 W. D. Edwards Jr. (Mbr.)  
 R. L. Farabee (Mbr.)  
 John H. Hunter (Mbr.)  
 J. L. Kilpatrick (Jr.)  
 A. M. Melancon (Mbr.)  
 M. G. Myers (Mbr.)  
 R. B. Nerf (Jr.)

**Shreveport:**

A. C. Lindsay (Aff.)  
 Adrian L. Long (Jr.)  
 R. A. McClanaghan (Mbr.)  
 Neil McNelis (Mbr.)  
 E. Stravolemos (Jr.)

President Nelson appointed a committee consisting of Messrs. A. T. Dusenbury, Chairman, C. S. Williamson, Jr., and C. M. Kerr to prepare the obituary of the late esteemed member and former president of the society, Allen S. Hackett.

Mr. Scales presented a clipping from a New Orleans newspaper indicating that the New Orleans Public Library desires to acquire a collection of material of business and technical nature that would be useful to local industry, and suggested that L.E.S. join with other organizations offering their services to assist the library in obtaining such a collection. President Nelson appointed Mr. Scales to investigate the matter to determine whether the society should participate.

The secretary read letters from Messrs. Randall Meyer and Ben Bogard concerning national society affiliation. After discussion Mr. Freeman moved that, with a view to further enlightening the membership at large, the final vote on affiliation be deferred, additional information be obtained and a catechism type of report be distributed to the membership; however, final vote to be taken not later than September. The motion was seconded by Mr. Scales and carried, and the meeting adjourned.

JOHN P. FERNANDEZ, Secretary-Treasurer

**Minutes of Meeting of the Alexandria Section, Louisiana Engineering Society**

March 29, 1957, 7:30 p.m. at Herbie K's.

The meeting was called to order by President L'Heureux. The minutes of the February meeting were read by the secretary.

The president then called upon the committee chairmen for reports on committee activity. Mr. Baker, Mr. Barron, Mr. Smith and Mr. Roland gave reports on: Membership and Attendance; Professional, Civic and Industrial; Charter and Rules; and Entertainment Committees.

President L'Heureux suggested that the Executive Committee meet on Friday before each regular monthly meeting.

A motion was made by Mr. Edwards that the joint meeting with the Ladies Auxiliary in April be changed from April 18 to April 25 since the 18th would be in the week before Easter. The motion was seconded by Mr. Roland and carried.

The President then led a discussion on affiliation with the NSPE and the EJC. A questionnaire regarding the Iowa Engineering Society's affiliation with the NSPE was read by Mr. L'Heureux.

There being no further business, the meeting was adjourned.

F. G. TAYLOR, Secretary-Treasurer

**Minutes of Meeting of the Alexandria Section, Louisiana Engineering Society**

April 25, 1957, 7:30 p.m., at Herbie K's Oyster House.

This was a joint meeting with the Auxiliary. Forty-seven persons attended the meeting including members of the Auxiliary and guests. Special guests included three Korean Power Engineers.

The meeting was called to order by the President. A donation of \$50 to the Auxiliary's Scholarship Fund by the Alexandria Section was presented to Mrs. Andrew Moore, President of the Auxiliary.

There being no further business, a motion that the meeting be adjourned was made by Mr. Levy and seconded by Mr. Hall.

The meeting adjourned and dinner was enjoyed by all.

F. G. TAYLOR, Secretary-Treasurer

**Minutes of Meeting of the Alexandria Section, Louisiana Engineering Society**

Herbie K's Oyster House, May 22, 1957, 7:00 p.m.

The meeting was called to order by the President. Mr. Levy was appointed to arrange for a barbecue in July with the Auxiliary and report at the June meeting.

The President urged all members to recruit new members.

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### WILSON BAR JOISTS

The annual meeting in Baton Rouge, June 1, 1957 was discussed and members urged to attend.

Mr. Edwards reported that the Scholarship Committee had chosen Edward Sumner to be awarded a scholarship sponsored by the Ladies Auxiliary.

Mr. Edwards discussed the State Awards Committee.

The Secretary-Treasurer reported for Mr. Barron on the Sectional Coordination Committee. It was suggested that a meeting be held in Alexandria this year with members and the Ladies Auxiliary from all Sections and New Orleans be invited.

New members in attendance introduced by the President were Mr. Stevens, Mr. Turrentine and Mr. Gorsha.

There being no further business, the meeting was adjourned.

F. G. TAYLOR, Secretary-Treasurer

**Minutes of Meeting, Baton Rouge Section, Louisiana Engineering Society**

May 16, 1957, 7:30 p.m., Gulf States Utilities Auditorium.

Officers present: Randall Meyer, president; W. L. Sutton, first vice-president; T. E. Alexander, second vice-president; R. F. Leiendecker, secretary-treasurer.

Mr. Anthony Bruno, Chief Engineer of the Polymer Chemicals Division, W. R. Grace and Company, spoke on Grace's activities in the Baton Rouge area. Several articles made of polyethylene were exhibited, showing the great versatility of this product which will be manufactured at Grace's Baton Rouge plant. A movie, "House of Grace," was shown.

Mr. Harvey A. Hall reported on experience of the Florida Engineering Society following affiliation of that group with the National Society of Professional Engineers.

The appointment of Harold F. Leiendecker as Secretary-Treasurer to fill the unexpired term of Mr. W. L. Stevens, who resigned upon moving from the state, was announced.

Total attendance was 40 members and guests. Refreshments were served following adjournment.

HAROLD F. LEIENDECKER, Secretary-Treasurer

**Louisiana Engineering Society, Lafayette Section, March 20, 1957**

The last meeting of the Lafayette Section was held at the Town House Motor Hotel Restaurant on March 19, 1957, at 7:30 p.m.

The meeting was called to order by the president and several topics of interest were discussed.

The nominating committee for the 1957-58 season was elected. The members are: Mr. Warren Hollier, chairman, and Mr. A. W. Schoeffler and Mr. Z. L. Loflin.

Mr. Rex R. Meyer, District Geologists for the U.S. Geological Survey in The Louisiana area was the guest speaker and delivered a very interesting talk on the ground water conditions in Southern Louisiana.

President Hetherwick then adjourned the meeting.

J. BRIANT FORUNET, Secretary-Treasurer

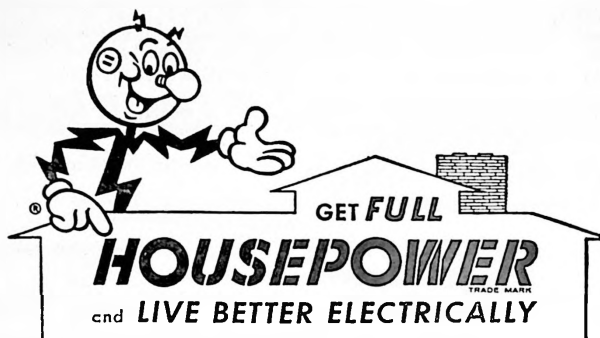
**Louisiana Engineering Society, Lafayette Section, April 17, 1957**

The last meeting of the Lafayette Section of the Louisiana Engineering Society was held at the Town House Motor Hotel Restaurant on April 16, 1957, at 7:30 p.m.

Plans were made to hold an outing on May 25 at the camp of President Hetherwick. The outing is to be held between the hours of 2 and 8:00 p.m. on that day and refreshments are to be served, however, anyone desiring food must bring their own. The members wives are to be the guest of the society and any other guests the members may wish to bring will be charged one dollar a piece.

It was also arranged that the next and last regular meeting of the Society be Ladies' Night.

At the last meeting the Society had as its guests the Seniors of S.L.I. who were members of the student chapter there.



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Mr. Frank Breeden, a student of Chemical Engineering at S.L.I. delivered his award winning paper which was well received at the last annual meeting of L.E.S.

The meeting was then adjourned by President Hetherwick.

J. BRIANT FOURNET, Secretary-Treasurer

**Minutes of the Regular Meeting, The Lake Charles Section, The Louisiana Engineering Society, March 11, 1957**

A regular meeting of the Lake Charles Section of The Louisiana Engineering Society was held on Monday, March 11, 1957 in the Science Auditorium at McNeese State College.

The meeting was opened by President R. R. L. Ward. Reading of the minutes of the previous meeting was dispensed with.

Mr. Ward then discussed a proposal now before the Society, involving affiliation with either of two national engineering groups—The Engineers Joint Council, and the National Society of Professional Engineers.

In order that the membership might be further informed on this important matter it was proposed that a discussion period be scheduled for the next meeting at which time the various proposals would be fully outlined and any questions answered.

Following this discussion Mr. Tucker, Program Chairman, introduced the speaker of the evening, Mr. George Pingree.

Mr. Pingree is manager of the Apparatus Engineering Section of the General Electric Company's Southwestern District, with headquarters in Dallas, Texas.

Mr. Pingree gave an interesting talk on the research and development program of his company, pointing up the trend of development in the electrical field. Numerous slides were used which effectively illustrated the points made by Mr. Pingree.

President Ward on behalf of the Society, thanked Mr. Pingree, and the General Electric Company for the program. Refreshments were served following adjournment of the formal meeting.

FRED R. ADAMS, Secretary-Treasurer

**Minutes of the Regular Meeting, The Lake Charles Section, The Louisiana Engineering Society, April 8, 1957**

A regular meeting of The Lake Charles Section of The Louisiana Engineering Society was held on Monday, April 8, 1957, at Sammy's Restaurant, with 21 members and 14 guests present.

The meeting was opened by President R. R. L. Ward. The minutes of the meeting of March 11, 1957 were read and approved. Mr. Ward discussed briefly the proposals for affiliation of the Louisiana Engineering Society with the Engineers Joint Council, and the National Society of Professional Engineers. Each member present was given a copy of information concerning points raised by the Iowa Engineering Society in this connection.

Mr. M. D. Garrison then introduced the speaker of the evening—Dr. Louis J. Capozzoli, Vice-President and Chief Engineer of Engineer's Testing Laboratory, Inc.

Dr. Capozzoli discussed the design and construction of foundations for a 7000 ton and 10,000 ton press. This was illustrated with a number of photographs and diagrams.

The discussion was of particular interest since these foundations involved clayey and silty formations such as are encountered in the Lake Charles area.

A question and answer period followed the talk, during which a number of items were discussed concerning local foundation problems.

Mr. Garrison then gave a brief outline of the May 13 program, after which the meeting was adjourned.

FRED R. ADAMS, Secretary-Treasurer

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THE

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# THE LOUISIANA ENGINEER

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LOUISIANA ENGINEERING SOCIETY

404 Baronne Street  
New Orleans 12, Louisiana

MESSAGE FROM THE PRESIDENT  
ON AFFILIATION WITH  
NATIONAL ORGANIZATIONS

August 15, 1957

Dear Member:

From time to time this year you have received from the Society printed material giving information on the National Society of Professional Engineers and the Engineers Joint Council, with which organizations we are considering affiliation.

In the past few months the Secretary and I have visited all of the State Sections and discussed the possibility of this affiliation with the members at section meetings. These discussions have evoked many questions whose answers may help you in making this most important decision.

The questions were forwarded to the headquarters of the organizations under consideration, and the answers were furnished by their national officers. The questions and answers are reproduced below for your careful consideration.

The Board of Direction of your Society has ordered a ballot taken on this matter prior to the September meeting. You are urged to study the information carefully, discuss it fully with other members, make your decision and cast your vote before September 3rd.

After conferring with national officers of both organizations, and considering the favorable reports of the committees appointed to study affiliation, the Board of Direction believes that national affiliation will benefit the society and recommends that the Louisiana Engineering Society affiliate with both the National Society of Professional Engineers and the Engineers' Joint Council.

Your sincerely,

WALDEMAR S. NELSON, *President*

## QUESTIONS PERTAINING TO ENGINEERS JOINT COUNCIL

1. Q. Is there a conflict in the aims and purposes of the Engineers Joint Council and the Louisiana Engineering Society?
- A. The fundamental concept of all engineering societies is the collection and dissemination of information for the Professional development of the members. EJC has the responsibility of promoting this same relationship between groups or societies of engineers. The aims and purposes of EJC, as quoted below, supplement and enhance your dedicated purposes.

### EJC Constitution—Article I

“2. The objectives of the Council shall be:

- (a) To advance the general welfare of mankind through the available resources and creative ability of the engineering profession.
- (b) To promote cooperation among the various branches of the engineering profession.
- (c) To advance the science and profession of engineering.
- (d) To develop sound public policies respecting national and international affairs wherein the engineering profession can be helpful through the services of the members of the engineering profession.

“3. To achieve these objectives, the Council shall:

- (a) Act as an advisory and coordinating agency to seek and study matters of mutual interest to the constituent societies of Council and to recommend parallel action by them.
- (b) Represent the constituent societies of the Council in instances in which constituent societies deem such joint representation to be desirable.
- (c) Administer on behalf of the engineering profession, those activities authorized by a majority of the constituent societies of the Council.”

We can state there is no conflict between the avowed purposes of the two organizations.

2. Q. Would the Louisiana Engineering Society retain the right to disaffiliate or sever connections with the Engineers Joint Council at any time if the L.E.S. board and voting membership so desire?

A. Yes, the Louisiana Engineering Society, should it become affiliated with Engineers Joint Council, would retain the right under Article IV (3) of the Constitution to disaffiliate.

"3. An affiliate of EJC may sever its affiliation upon a 90 day written notice to the Secretary of EJC."

3. Q. What restrictions, if any, will be placed by the Engineers Joint Council on the programs and activities of the Louisiana Engineering Society?

A. EJC places no restrictions on the programs and activities which are developed by the member organizations to meet their own interests. EJC programs and activities are developed for the entire profession, and of course, would be available for incorporation in any of your programs. Our work is organized by the society membership for the profession.

4. Q. Will EJC exert any control over the selection of officers for the Louisiana Engineering Society?

A. Engineers Joint Council has no control over the selection of the officers of any of the member organizations.

5. Q. What representation will L.E.S. have in the EJC?

A. Article V, Paragraphs 2(b) and (c) of the EJC Bylaws stipulate the following for affiliate members:

"(b) They shall receive notices, agenda, and minutes of the meetings of the Board and are privileged to send observers to those meetings.

"(c) Affiliates may designate representatives to take part in the EJC General Assembly meetings."

Article VI of the EJC Bylaws, as quoted below, further provides representation at the General Assembly:

**"Article VI—General Assembly—**At least once a year, at a time to be specified by the Board of Directors, there



shall be held a General Assembly for the purpose of discussing matters of general interest to the engineering profession. Constituent societies, Associates, and Affiliates have voice and vote at the General Assembly."

6. Q. Will the L.E.S. have an opportunity to present problems of general concern to the engineering profession to the EJC?

A. Problems of general concern to the engineering profession are invited from all qualified organizations but specifically from the member organizations of Engineers Joint Council.

7. Q. What financial obligation will be incurred by the L.E.S. in affiliation with EJC?

A. The dues structure for affiliates is outlined in Article V of the EJC Bylaws and is summarized as follows: The dues of affiliates shall be based upon the number of voting members in accordance with the following schedule:

|                           |       |
|---------------------------|-------|
| Societies: Less than 1000 | \$ 25 |
| 1000-3000                 | 50    |
| More than 3000            | 100   |

All of the above dues are on an annual basis.

8. Q. What publications will the Secretary and Editor receive if the L.E.S. affiliates with EJC?

A. In addition to the notices, agenda and minutes of the meetings of the Board of directors, the Secretary and Editor will receive copies of all other publications prepared in the name of Engineers Joint Council.

9. Q. What publications would be received by the L.E.S. members if the L.E.S. affiliates with EJC?

A. The limited operational funds available to EJC cannot permit the bulk distribution of publications to individual members of any of the member groups of Engineers Joint Council. However, publications are usually duplicated in booklet or pamphlet form for distribution at a nominal charge or at no cost to interested individuals who request copies. Policy statements and major reports such as the

national water policy, EJC employment conditions, the 1956 salary survey are offered to the member society magazines for publication in their entirety or in summary form depending entirely on the interest of the individual society in the particular subject.

10. Q. What advantages to individual members of L.E.S. would result from affiliation with EJC?
  - A. Your individual member benefits from membership in the Louisiana Engineering Society. Membership by the society in Engineers Joint Council provides the individual member with two way communication on problems affecting the engineering profession. It is the responsibility of the L.E.S. to keep its own membership abreast of conditions and developments which affect the individual member. In turn, it is the responsibility of Engineers Joint Council to keep its member organizations advised of conditions and developments on the national scale of interest to the profession as a whole. In reverse, the individual member is provided with one additional channel of communication. He may go not only to the L.E.S. or to his national professional organization but to Engineers Joint Council where his problem will be evaluated in terms of the national picture.
11. Q. What advantages will accrue to the Louisiana Engineering Society through affiliation with Engineers Joint Council?
  - A. The advantage of affiliation by the L.E.S. with EJC is directly related to the effort expended by your organization in the activities of the Council. The formation and continued existence of the Council is dependent entirely upon the cooperative action of the member organizations. The greater the membership interest and the greater the effort expended in cooperative action by the member groups, the greater the value of the Council as a voice for the profession. Each organization has problems which are peculiar to that organization, but upon investigation most problems are found to be fundamentally the same throughout the country. The solution of these problems can best be handled through the comparison of solutions developed by others in the same field.

12. Q. How does EJC plan to raise the standards of the engineering profession?
  - A. The standards of the engineering profession can only be raised through the concerted action of the members of the profession. Such action is reflected in the policies of the national engineering societies. EJC, as the coordinating agency for these national societies, has become a major focal point in expressing the policies and philosophies represented by the societies. To raise the standards of the profession requires positive action by the profession and such action is ultimately expressed in and by EJC.
13. Q. Will EJC be of any assistance in the event the Louisiana Engineering Society, any of its Chapters or members, becomes involved in a union organizing drive?
  - A. The structure of EJC does not permit local assistance to offset the actions of a union organizing drive, except insofar as the policy statements of EJC are useful on this subject.
14. Q. How large is EJC?
  - A. EJC is an association supported by thirteen national societies. The total membership of these societies, excluding students, is 250,000 members as of January 1, 1957. (Membership of affiliates are not included, for most of their membership is contained in the national societies.)
15. Q. What are the company affiliations and positions of some of the national officers of EJC?
  - A. President—J. W. Barker (ASME)—Chairman of the Board, Research Corporation; Vice President—Fischer S. Black (AIEE)—Editor and Publisher "Electrical World", McGraw-Hill Publishing Company; Treasurer—E. Lawrence Chandler (ASCE)—Assistant Secretary, American Society of Civil Engineers.
16. Q. What is the position of EJC with respect to collective bargaining and unionization?
  - A. The EJC believes and supports the basic premise that engineering is a profession. As such, the individual who ac-

cepts the responsibility for his part in the profession cannot delegate this responsibility to others. An extract from the EJC report "Professional Standards and Employment Conditions," is quoted as summarizing this belief. "To the engineer who feels that life provides opportunity for constructive contribution to society, collective bargaining With its attendant potentiality for creating conflicting obligations is not acceptable."

17. Q. Is there a conflict in aims between the EJC and the NSPE?
  - A. There is no basic conflict in the aims and objectives of EJC and NSPE. The methods of achieving the common objective differ in that EJC is a society organization representing the engineering members of the societies, and the NSPE is an individual membership society composed entirely of licensed engineers.
18. Q. Is there a difference in methods between the EJC and NSPE?
  - A. Yes, EJC recommends joint action by the national societies, who act individually within the interests of their members. NSPE recommends action through their state member organizations to the individual licensed engineer.
19. Q. Is there any reason the L.E.S. cannot affiliate with both EJC and NSPE?
  - A. There is no conflict of interest with respect to EJC activities that would prohibit the affiliation of L.E.S. with both EJC and NSPE.

## QUESTIONS PERTAINING TO NATIONAL SOCIETY OF PROFESSIONAL ENGINEERS

1. Q. Is there a conflict in the aims and purposes of the N.S.P.E. and the L.E.S.?  
  
A. No. The objectives of the N.S.P.E. "shall be the advancement of the public welfare and the promotion of the professional, social, and economic interests of the Professional Engineer". The Louisiana Engineering Society is dedicated to "the professional improvement of its members, the encouragement of social intercourse among Engineers and men of practical science, and the advancement of Engineering" . . . . . , and has traditionally leaned heavily toward technical programs at its meetings.
2. Q. Must we change the name of the Louisiana Engineering Society?  
  
A. No. The Society's name will remain "Louisiana Engineering Society." The letterhead, publications, and membership cards will show "Affiliated with National Society of Professional Engineers."
3. Q. Must we change the emblem of the Louisiana Engineering Society?  
  
A. No. The Louisiana Engineering Society emblem will remain unchanged. Membership cards of those members joining N.S.P.E. will show both L.E.S. and N.S.P.E. emblems.
4. Q. Would the Louisiana Engineering Society retain the right to disaffiliate or sever connections with the N.S.P.E. at any time if the L.E.S. board and voting membership so desire?  
  
A. Yes. The Society retains its autonomy.
5. Q. What restrictions, if any, will be placed by the National Society of Professional Engineers on the programs and activities of the Louisiana Engineering Society?  
  
A. None. The N.S.P.E. constitution provides "in all matters of state or local concern, the member state societies have full autonomy but may call upon the National Society for advice, counsel, and assistance". In practice, the Na-

ational Society of Professional Engineers leaves the determination of policies and activities within a state entirely to its affiliated State Society, endeavoring to provide assistance on all programs for professional development, wherever desired.

6. Q. Will N.S.P.E. exert any control over the selection of officers for the Louisiana Engineering Society.

A. No. The officers of affiliated state societies, as well as their representatives to the National Board of Directors of N.S.P.E., are determined by the State Society exclusively. It would be expected, of course, that the Director would be a member of the N.S.P.E., and correspondingly, a registered professional engineer.

7. Q. Will there be any change in status for current members?

A. No. All current members of the Louisiana Engineering Society will retain all rights, privileges and responsibilities with respect to their membership in the Louisiana Engineering Society. Since voting membership in N.S.P.E. is limited to registered professional engineers, it will be necessary for the Louisiana Engineering Society to establish some designation for those so qualified. It is hoped that a large proportion of the registered engineer members of the Louisiana Engineering Society will become members of the National Society of Professional Engineers. Current members with these qualifications will have the option of becoming members of the National Society of Professional Engineers or not.

8. Q. Must all registered engineer Members of the Louisiana Engineering Society become members of N.S.P.E.?

A. No. As indicated above, this will be optional for current Members. All new Members who are registered engineers will become members of N.S.P.E. when joining the Louisiana Engineering Society, in a voting grade.

9. Q. Would the N.S.P.E. require any definite percentage of of L.E.S. Members to be members of N.S.P.E.?

A. See answers to questions 7 and 8. The N.S.P.E. constitution requires, in time, 75% of the voting membership of the L.E.S. to become members of N.S.P.E. Normal attrition will care for this.

10. Q. Will non-registered Members of the Louisiana Engineering Society be members of N.S.P.E.?  
A. No. Those having voting privileges in the Louisiana Engineering Society will retain these privileges but will have no membership or vote in N.S.P.E., the same as registered Members who elect not to join N.S.P.E.
11. Q. Would non-voting members in L.E.S. who are registered engineers become members of N.S.P.E.?  
A. Such registered engineer members would be eligible to become members with full voting privileges in N.S.P.E.
12. Q. Would land surveyors registered by the State Board of Registration for Professional Engineers be eligible for membership in the N.S.P.E.?  
A. No. A person registered only as a Land Surveyor is not eligible for membership in N.S.P.E.
13. Q. What would be the status of non-resident registered members of L.E.S. (residing outside the State of Louisiana) with respect to N.S.P.E. membership?  
A. If registered as a professional engineer in any state in the union, the non-resident member of L.E.S. would be eligible for N.S.P.E. membership through the Louisiana Engineering Society.
14. Q. Could registered engineers residing in Louisiana be members-at-large of N.S.P.E. without being members of L.E.S.?  
A. No. N.S.P.E. requires that where a member resides in a state in which there is an affiliated state society, he can retain membership in the National Society only through a state organization.
15. Q. Can the L.E.S. continue to take Affiliate, Student, and Junior Members without limitation if it becomes affiliated with N.S.P.E.?  
A. Yes. No limitation is placed by N.S.P.E. on non-voting members of affiliated state societies.
16. Q. What representation will L.E.S. have in the N.S.P.E.?  
A. Louisiana will be entitled to one or more representatives on the Board of Directors of N.S.P.E., depending upon

the number of registered professional engineer members affiliated with N.S.P.E. through the Louisiana Engineering Society. The number of Directors to which Louisiana will be entitled is one for every 500 N.S.P.E. members, and at the Annual Meeting of the N.S.P.E. Louisiana will be entitled to one delegate for each 200 N.S.P.E. members. The expenses of the Director or Directors to three national meetings a year of N.S.P.E. are paid by N.S.P.E.

17. Q. What financial obligation will be incurred by the L.E.S. in affiliation with N.S.P.E.?
  - A. None. The State Society incurs no financial obligation to N.S.P.E., the finances of the N.S.P.E. being underwritten exclusively from the dues of individual members and such other sources as are available to the national organization.
18. Q. What will be the dues for those members of the Louisiana Engineering Society who elect to join N.S.P.E.?
  - A. For registered engineers, in addition to the current Louisiana and Local Chapter dues, the N.S.P.E. dues would be \$10.00 per year. There is no entrance fee.
19. Q. How will dues be handled?
  - A. The Louisiana Engineering Society will collect Member dues for L.E.S. and N.S.P.E. and will forward the latter dues to N.S.P.E. headquarters.
20. Q. What publications would be received by L.E.S. members who are also members of N.S.P.E.?
  - A. In addition to "The Louisiana Engineer", they will receive "The American Engineer", monthly publication of N.S.P.E., and a monthly Legislative Bulletin for those who request this service, as well as numerous other publications.
21. Q. What other advantages to individual members of L.E.S. would result from affiliation with N.S.P.E.?
  - A. There are a number of other direct advantages, such as special rates on all publications of the National Society; participation in numerous surveys and professional studies;



availability of information of personal interest by membership contact with officers and headquarters of N.S.P.E.; and many indirect benefits through promotion of national, state and local activities of benefit to the engineering profession, such as national legislative and governmental representation, extensive public relations activities, including Engineers' Week, programs for young engineers, vocational guidance, and numerous chapter activities.

22. Q. What advantages will accrue to L.E.S. through affiliation with N.S.P.E.?

A. L.E.S. will have available to it and its chapters all of the material, programs, and activities developed by the national organization and its affiliated state societies. This includes promotion material for Engineers' Week; monthly suggestions for chapter activities and public relations programs; membership promotional assistance; representation, at national expense of Louisiana representatives on Board of Directors of N.S.P.E. and at its State Presidents' and State Secretaries' Conferences; various assistance such as providing membership cards, certificates, emblems, etc.; and perhaps most important, an opportunity for Louisiana engineers to participate in discussions and policy developments for the betterment of the profession throughout the United States.

23. Q. How does N.S.P.E. plan to raise the standards of the engineering profession?

A. The entire program of N.S.P.E. is directed towards raising the standards of the engineering profession. Specific means include:

1. Encouragement of registration.
2. Broad public relations program, including Engineers' Week.
3. Service to industry as indicated by the Executive Research Survey Reports and the work in the area of employment conditions.
4. The extensive work in the area of employment conditions, including the work on the union problem, the development of the Criteria of Professional Employment, Salary Surveys, etc.

5. Governmental liaison with the continual emphasis on recognition of engineering as a profession.
  6. Work in the area of ethical standards as indicated by the Board of Ethical Review and our forthcoming brochure on ethics.
  7. Work in the manpower and National Defense areas as indicated by our policy statements and considerable activity with Government agencies.
24. Q. Will N.S.P.E. be of any assistance in the event the Louisiana Engineering Society, any of its Chapters or members, become involved in a union organizing drive?
- A. Yes. N.S.P.E. has been extremely active and alert on this subject. One of its recent publications, "A Professional Look at the Engineer in Industry," has been devoted entirely to this problem. N.S.P.E. maintains on its headquarters staff a lawyer, well versed in the professional labor relations problems. His advice and counsel, as well as the extensive experience of N.S.P.E., is available to State Societies, Chapters and members affiliated with N.S.P.E.
25. Q. What effect would affiliation with N.S.P.E. have on the probable growth of the Louisiana Engineering Society.
- A. The experience of every State Society which has affiliated with the national organization has been a pronounced increase in the growth of the state organization. What its effect in Louisiana would be, of course, can be determined only by subsequent evaluation.
26. Q. How large is N.S.P.E.?
- A. Its membership as of June 11, 1957, exceeded 42,000 dues-paying members. There are 45 affiliated State Societies, and over 460 Chapters.
27. Q. What are the company affiliations and positions of some of the national officers of N.S.P.E.?
- A. Garvin H. Dyer, NSPE President for 1957-58, Manager and Chief Engineer of the Independence Division Missouri Water Company

John B. McGaughy, Vice-President for the Southeastern Region, Senior Partner and Chief Engineer for Lublin, McGaughy and Associates, Architects and Consulting Engineers

Lindley R. Durkee, Vice-President for the Western Region. Area Representative of the Housing and Home Finance Agency, Seattle, Washington

Harry G. Kennedy, Vice-President for the Central Region. Executive Secretary of Kanawha Coal Operators' Association

W. L. Hindermann, Vice-President for the North Central Region. Division Engineer in the Midwest Area for the Asphalt Institute

Allan H. Kidder, Vice-President for the Northeastern Region. Research Engineer, Philadelphia Electric Company

Clark A. Dunn, Vice-President for the Southwestern Region. Executive Director of the Division of Engineering Research and professor of civil engineering, Oklahoma A&M College

Russell B. Allen, Treasurer. Assistant Dean of Engineering, University of Maryland.

Robert J. Rhinehart, President, National Society of Professional Engineers, 1956-1957. Division Superintendent, Arkansas Power & Light Company

28. Q. What is the position of N.S.P.E. with regard to collective bargaining and unionization?

A. The individual responsibility and independent judgment required of a professional engineer are incompatible with the regimentation fundamentally inherent in unionization.

29. Q. Is there a conflict in aims between the N.S.P.E. and the E.J.C.?

A. No. Both societies are working to advance the standards of the engineering profession.

30. Q. Is there a difference in methods between the N.S.P.E. and E.J.C.?
- A. Yes. N.S.P.E. is a national organization of individual registered professional engineer members. E.J.C. is a national council of technical engineering societies. Each group operates accordingly.
31. Q. Is there any reason why the L.E.S. cannot affiliate with both the N.S.P. E. and E.J.C.?
- A. No other state society affiliated with N.S.P.E. is also affiliated with E.J.C. The action of the state society in this regard, however, is within the prerogative of the state society autonomy.

\* \* \* \*

**Advertising Costs Rising.** Between 1945 and 1955 the average cost of a personal sales contact rose from \$10.72 to \$17.29, an increase of 61.3 per cent. During the same period, the average cost of reaching a prospective customer via business-paper advertising rose from \$0.013 to \$0.015, an increase of only 15.4 per cent. In terms of a constant dollar, the real increase in the cost of a salesman's call was 13.1 per cent, while the cost per thousand of business paper circulation has declined by 23.6 per cent since 1945.

—*McGraw Hill Research Dept.*

# West Indian and Gulf Hurricanes and Their Effect On Louisiana Sulphur Mines

T. H. Zumwalt

*FOREWORD.* The main purpose of this paper is to provide property superintendents, supervisors, and company management with recorded hurricane data concerning various sulphur plant locations on the Louisiana coast, and to assist them in properly interpreting future hurricane forecasts with respect to the hazards involved at the various locations. Information contained herein may also be helped to civic leaders of various towns, settlements, and communities, neighboring and adjoining the sulphur plants mentioned.

\* \* \* \*

In attempting to determine the effect of hurricanes on our coastal properties, it is necessary to know the approximate anticipated frequency of their occurrence, the direction from which they approach, something about their physical structure, the type of damage they can inflict, and why.

There are many opinions as to the frequency of occurrence; however, for the purpose of this consideration, it is noted that the U.S. Weather Bureau recorded 141 hurricanes of a severe nature in the Gulf of Mexico during a period of 54 years, an average of 2.6 per year, and they were free to strike any point on the entire Gulf coast. The U.S. Weather Bureau has also recorded that 16 hurricanes of a more severe nature have struck the Louisiana coast during the past 100 years, an average of 1 each 6 years. In spite of these averages, it is noted that three very serious storms have struck the Louisiana coast during the past 64 years, (1893, 1915, and 1926) in such a way that our present properties would have been greatly damaged, yet not once during the past 24 years of our operating experience has any one of our properties been exposed to the strong side of a major hurricane. Therefore, if calculated averages should have any basic meaning, it must be assumed that we have been fortunate with respect to frequency of occurrence.

Direction of approach (see chart no. 1) is determined by the location of the areas in which the storms are formed, and prevailing wind system known as the "easterlies". Most hurricanes originate in the West Indies waters, some as far east as the Cape Verde Islands, north of and near the equator, and it is in this area that the eastward rotation of the earth gives a counter-clockwise



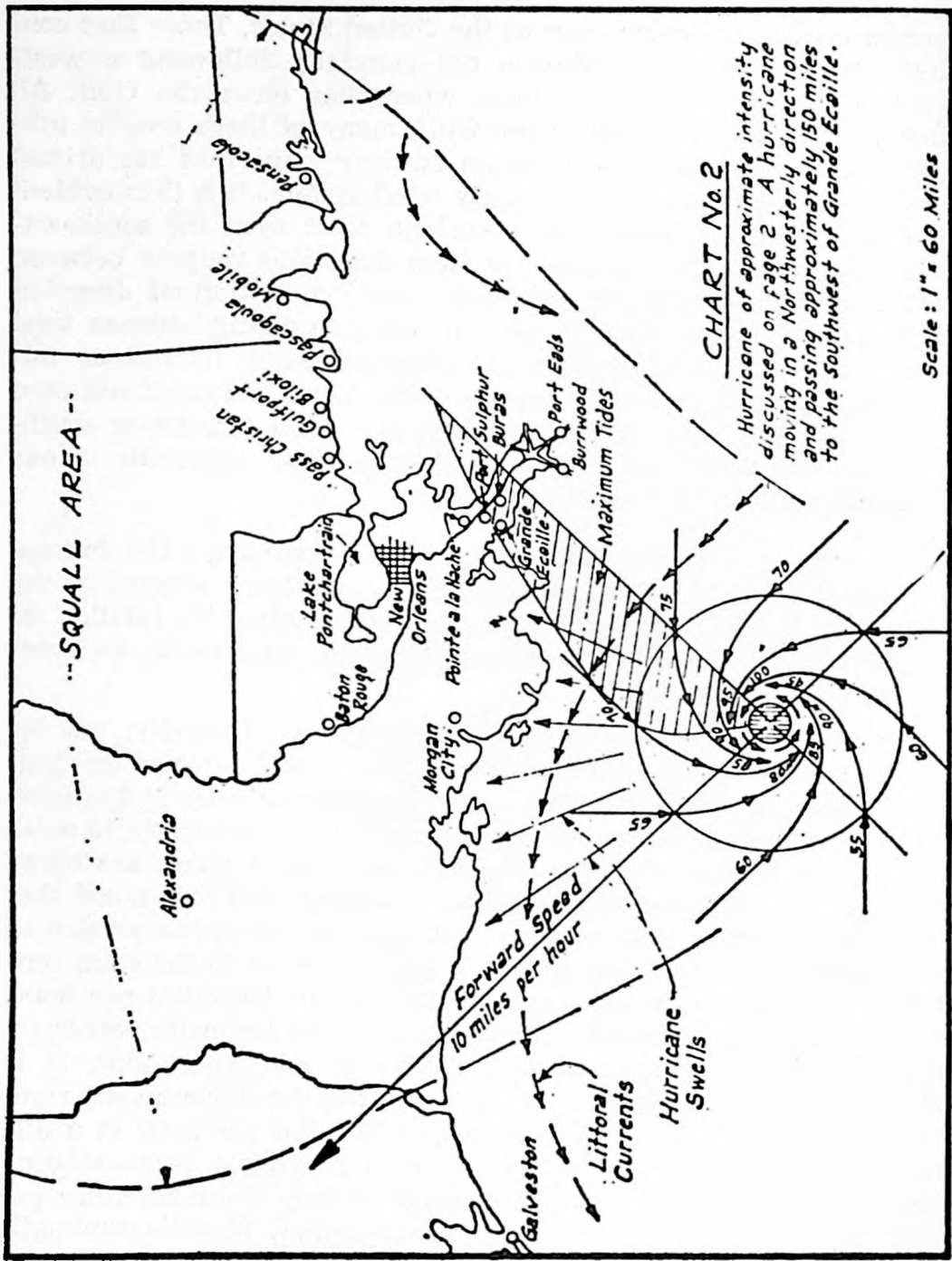
rotation to the storms that occur in the northern hemisphere. These storms generally follow the easterlies and move in a west-northwest direction for some distance. More than half of the storms so formed curve northward east of the United States. Those that continue into the Gulf of Mexico are generally following a west-northwest or a northwest course when they enter the Gulf. Although some storms form in the Gulf, many of these are the product of a low pressure area or an easterly wave that has drifted into the Gulf as part of the easterly wind system. It is thus evident that hurricanes approach the Louisiana coast from the southeasterly quadrant of the compass or from directions ranging between east southeast and south southeast. Their most normal direction of forward travel is then limited to courses ranging between west northwest and north northwest; however, some hurricanes follow these courses to locations west of the Louisiana coast and then curve eastward causing them to approach from a south or southwesterly direction. These are the storms most dangerous to our properties as will be explained later.

In order to understand the effects of, or anticipate the damage that may be caused by a hurricane, it is necessary to analyze the physical structure of the storm, and determine its relation to water bodies, natural currents, normal tides, land areas, and prevailing wind systems.

Storms vary considerably in diameter and intensity, but for the purpose of discussion, a selection is made and depicted on chart no. 2. The calm center is assumed to be about 20 miles in diameter, and its forward movement is assumed to be approximately 10 miles per hour in a northwesterly direction. Maximum winds are blowing counter-clockwise around the calm center, and it is noted that the forward speed of the storm has distorted the wind pattern to the extent that maximum winds blowing tangent to the calm center on the right side are approximately 95 to 100 miles per hour, whereas maximum winds blowing tangent to the calm center on the left side are approximately 80 to 85 miles per hour. It is further noted that winds blowing spiral into the storm on the right side have a velocity of approximately 75 miles per hour at a distance of about 45 miles from the center, whereas corresponding winds on the left side have a velocity of only about 55 miles per hour at the same distance from the calm center. This diagrammatic wind structure illustrates why the most destructive portion of the storm is on the right side or east side of the center when it crosses the coast line.

The storm is located on chart no. 2 about 150 miles southwest of Grande Ecaille, and the center is moving toward Port Arthur

Chart No. 2





with maximum danger indicated for the west coast of Louisiana; however, its position is potentially a very dangerous one for our properties since an eastward curve would place the east Louisiana coast in the maximum danger zone.

This selected location is also appropriate for the depiction of other phenomena which occur concurrent with the progress of the storm. The excessive winds blowing counter-clockwise around the calm center generate enormous waves, 40 to 55 feet high in deep water. These waves attain estimated forward velocities of about 30 miles per hour, and since the maximum velocities are on the right side, the dominant waves break away from this side and quickly outrun the main storm, traveling roughly in the same direction as the storm and some ninety degrees to the right of this direction. After leaving the area of excessive storm winds these waves flatten into long swells which are quite often observed on the coast some 200 to 400 miles ahead of the approaching storm. See charts nos. 2 and 3. The swells accomplish a considerable net transport of water and build up above normal tides along the coast line, and particularly in the bays and sounds. Tides along the coast line are thus rising in spite of the fact that winds may be blowing offshore toward the storm.

Littoral currents along the Louisiana coast move generally from east to west, relieve built up tidewaters in some cases, but cause trouble in other cases where the currents themselves are impeded by storm action.

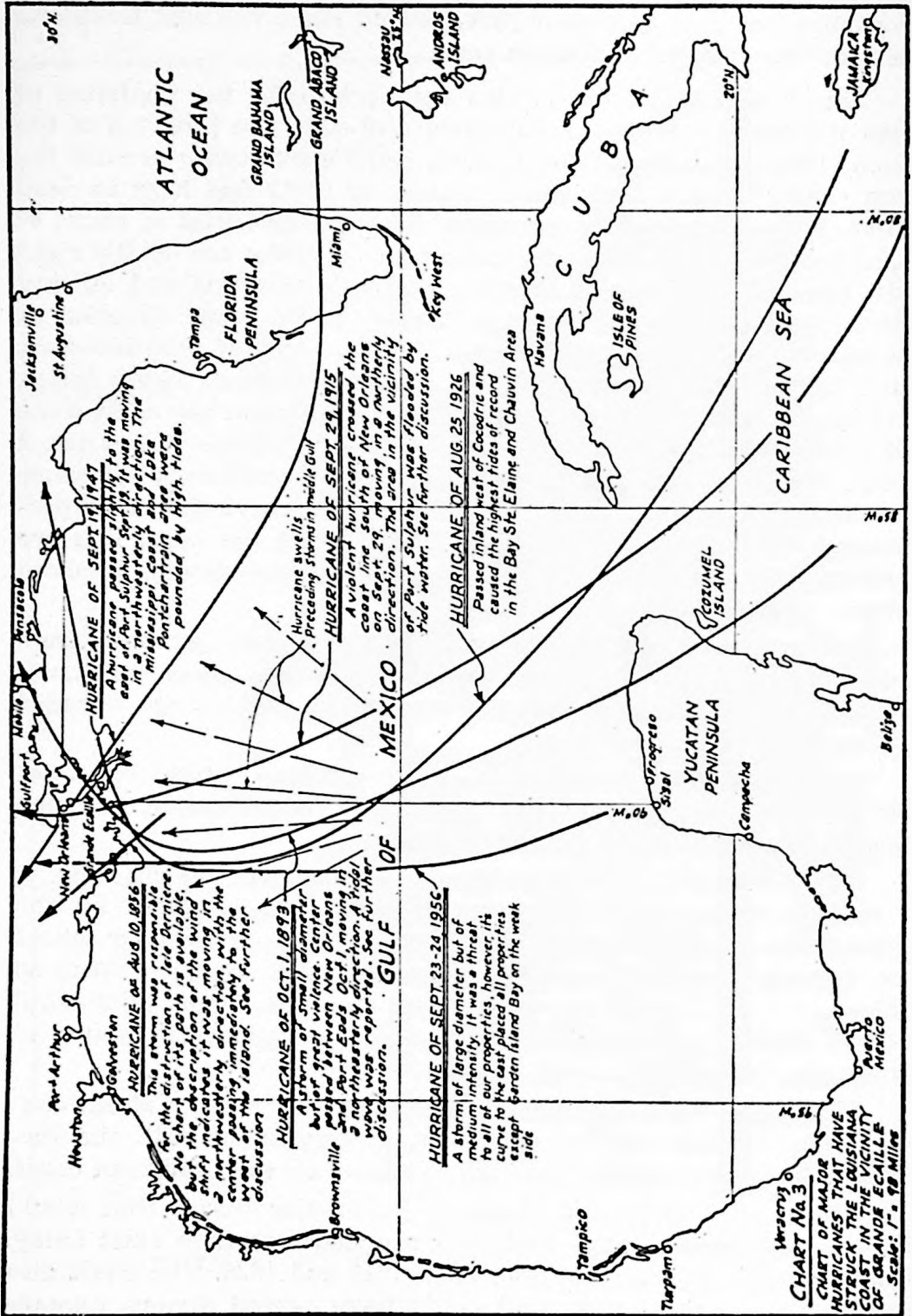
Normal high tides must be added to those caused by storm action, and normal low tides may serve to neutralize, to some extent, the tides caused by storm action.

Concurrent with the location of the hurricane on chart no. 2, a squally area would exist as indicated approximately by the dashed line. Squalls with winds of 40 to 50 miles per hour would occur as far east as Pensacola, and squalls with winds of 50 to 60 miles per hour would occur over the Louisiana and Mississippi coasts. Light rain squalls would occur throughout the states of Louisiana, Mississippi, and Alabama.

Maximum wind and tide conditions caused when a storm center moves inland will be explained in connection with the discussion of major storms that have occurred on the Louisiana coast.

Chart no. 3 shows the paths of four major storms that would have caused serious damage to our properties as they exist today. These storms occurred in 1856, 1893, 1915 and 1926. The chart also shows two recent storms that could have caused serious damage if their paths had been different. These occurred in 1947 and 1956. A separate discussion and chart is provided for each.

Chart No. 3



**Hurricane of August 9 and 10, 1856**

The celebrated hurricane of Isle Derniere, or Last Island occurred on August 9 and 10, 1856. The island at this time was a very popular resort including a hotel fronting some 1200 feet long on the beach, 15 cottages, and other miscellaneous structures.

"A high northeast wind set in at Isle Derniere on the 9th and on the 10th when the storm was at its height, the wind shifted to the southeast, flooding the island and destroying everything on it. This storm appears to have dissipated near the coasts of Louisiana and Mississippi. Thirteen inches of rain fell at New Orleans." This account from "Tannehill", Chief of the Division of Synoptic Reports and Forecasts, U.S. Weather Bureau.

An account of this storm was recently reprinted by the Picayune. Portions of this reprint dated August 12, 1856, follow:

"The excursion steamer "Star" was driven from her moorings by preliminary northeast gales and lodged fortunately in a turtle enclosure on the sand near the hotel which was on the island's highest point. The hull served as a refuge both during and after the storm. The hotel and the fifteen cottages disintegrated as the island lay under five feet of water from the bays. When the winds shifted to southeast, water rolled over the island from the Gulf. More than half of about 400 visitors were drowned. Equally serious damage was occurring throughout the marches and bays in the area. Timbalier and Caillou islands held wreckage of the steamships "Nautilus" out of Galveston, and "Manilla" from Bordeaux. The "Nautilus" had one survivor out of more than 30 aboard. The "Manilla" was blown westward for twelve hours from southwest Pass, and some seven men were lost from this ship."

This storm is typical of tidal phenomena that occur when excess water from hurricane swells is pocketed in large bays and then blown westward by maximum easterly winds when the center moves inland to the west, or southward by maximum northerly winds when the center recurves and passes to the south as will be shown by other storms. In the case of Isle Derniere, maximum winds from the northeast first blew water from the bay over the island which was impeding the flow of the water from the bay, and when the wind shifted to southeast water was again blown over the island from the Gulf. As the center moved farther inland, water from Terrebonne and Timbalier bays plus some additional water from the Gulf was blown generally westward into the Lake Pelto and Bay Ste. Elaine areas. A plant is now in operation at Bay Ste Elaine, a plant is now being constructed in Lake Pelto, and a reservoir is being constructed on Isle Derniere.



**Hurricane of October 1, 1893**

"In October, 1893, a storm of small diameter but great violence moved from the Gulf across southern States. Violent winds, estimated at 100 miles per hour or more, heavy rains and local storms attended its passage through South Atlantic States, but the greatest damage was in southern Louisiana. It passed between New Orleans and Port Eads on October 1. The storm was accompanied by what was reported to be a tidal wave which engulfed everything before it and caused a loss of life which was given in one account at two thousand persons. There was immense destruction of shipping and in the aggregate property losses ran into the millions." From Tannehill.

Another account is found in "Crosses on The Delta", an historical sketch commemorating the Diamond Jubilee of Our Lady of Good Harbor Church at Buras, Louisiana, Portions of this account follow:

"October 1, 1893, the terrifying Cheniere Caminada hurricane swept off the Gulf, cutting a swath of annihilation from Barataria to Pascagoula, Mississippi. Upward of two thousand lives were sacrificed in Plaquemines and neighboring parishes. Houses were flattened and corpses strewn the banks of the river from Pointe-a-la-Hache to the mouth of the river. Neptune, Ostrica, Point Pleasant, Doullut's, and Buras were a shambles. Roofs were gone and the courthouse was a wreck at Point-a-la-Hache."

Two local fishermen gave an account of their father who came to this country in 1888 and built a fishing camp on Grand Bayou. One of these fishermen and three other men were caught by the storm in a small fishing boat in Barataria Bay near Fort Livingston. The boat capsized but was dragging two heavy anchors, and all were saved by clinging to the boat. The tidal wave rose four feet almost instantly, and the highest water level in the Grande Ecaille area was estimated at 8 to 9 feet above sea level.

Old settlers in the area as of 1932-33 estimate that tides of 8 to 9 feet were swept up to the west bank levee throughout the area approximately from Port Sulphur down to Buras, with lesser tides down to Venice and Head of Passes.

Tides on the east bank were estimated to be much higher than those on the west bank, as is evidenced by the reported destruction at Point-a-la-Hache, Point Pleasant, Ostrica, etc., and it is indicated that damaging tides on the east bank may have extended from above Phoenix down to Head of Passes. See hatched outlines on chart.



This chartered path of the 1893 storm shows graphically why certain reported conditions did occur, and may be used to demonstrate conditions that will occur whenever a major hurricane again follows this path, such as:

1. When the storm center moves from a position due south of Bay Ste. Elaine to position no. 1, winds in the Bay Ste. Elaine and Lake Pelto area will be maximum and will turn from northeast to northwest. When the center moves through position 2 to position 3, these winds will diminish while turning to the west. This condition will not cause maximum wind driven tides in the Lake Pelto area; however, tides of 4 to 6 feet built up in Terrebonne and Timbalier Bays by preceding hurricane swells will be driven toward Isle Derniere and Timbalier Island by maximum northeast to northwest winds as the center passes to the south.
2. As the storm center is moved into position no. 2, it is demonstrated why a very sudden rise in tide of 4 feet was reported in the southern part of Barataria Bay, and why tides of 8 to 9 feet were reported in the Grande Ecaille area. First, tides of 4 to 6 feet had been built up in Barataria Bay by preceding hurricane swells. Then, as the leading edge of the calm center reached Fort Livingston, this represented the first time that storm winds had blown Gulf water toward shore in this area. These were maximum hurricane winds from the southeast and they very quickly added the approximate 4 feet of tide to that which was pocketed in the bay. As the center moved into position no. 2, similar conditions were caused in the Grande Ecaille area.
3. Other conditions occurring in connection with the storm center in position no. 2 were:
  - (a) The storm wind system had trapped all previously built up tide water between Barataria Bay and Southwest Pass.
  - (b) It had impeded, and, to a certain extent, deflected the normal littoral currents, causing this additional water to move northward, (see dashed arrows on chart).
  - (c) The extreme low barometric pressure in the calm center caused an extra lift of about 2 feet in the tide for this storm of approximately 100 miles per hour. This is true for the center in any position.
4. As the storm center moved from position 2 to position 3, the maximum winds on the right side blowing from the south and southwest blew the pocketed tides and additional Gulf water up to the river levee and caused maximum tides in the area between the hatched lines on the west side of the river.
5. It would seem that conditions pictured herewith would cause far more serious tides on the west bank than were actually recorded. However, the saving feature here was the element of time. The 1893 storm was moving about 10

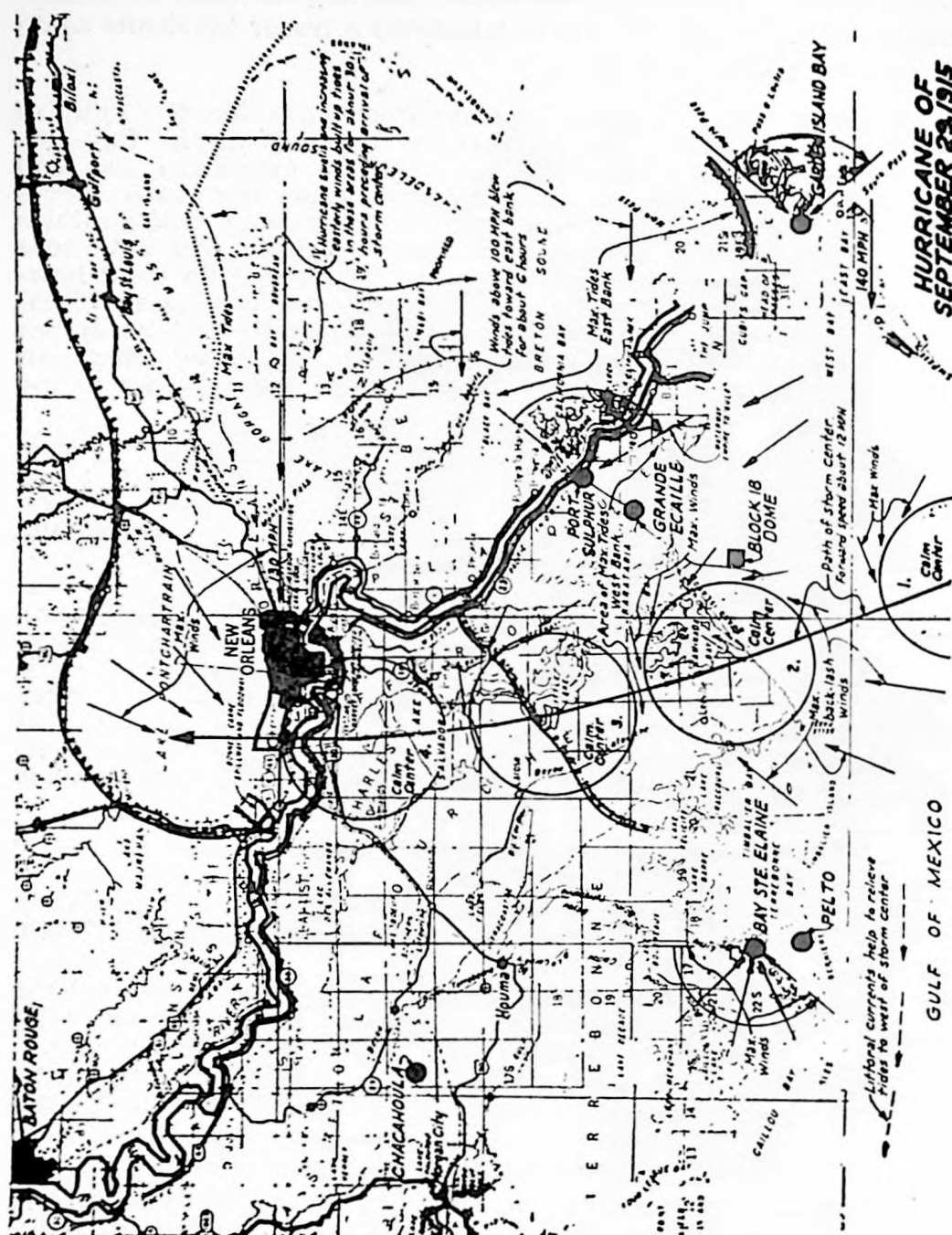






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  - (c) The extreme low barometric pressure in the calm center caused an extra lift of about 2 feet in the tide for this storm of approximately 100 miles per hour. This is true for the center in any position.
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miles per hour through this portion of its path. As the center moved from position 2 to position 3, a distance of about 40 miles, the maximum south and southwest winds had only about four hours to blow the Gulf tide into the Port Sulphur area. Some diminishing southwesterly winds would continue to blow from the Gulf toward the river after the center passed beyond position 3, but with the center at position 3, the maximum winds would be turning more to the west where they would be blowing over land.

6. The excessive and far-reaching tides caused by the 1893 storm, and other storms on the east side of the Mississippi River estuary are the product of several conditions, as follows:

- (a) Hurricanes in the middle Gulf send swells into the area east of the river continuously as they move northward, and these swells build up tides in Breton Sound, Chandeleur Sound, Mississippi Sound, Lake Borgne, and Lake Pontchartrain. This procedure may continue for 36 to 48 hours before the storm center nears the coast. During this period the prevailing winds along the coast are generally from the east. They increase in velocity as the storm center approaches, and are continually blowing the accumulated waters toward the east side of the river. Some relief is provided by littoral currents running around the delta, but not nearly enough.

- (b) When the storm center reaches positions 1 and 2 on the chart, maximum easterly winds have some 5 or 6 hours to pile the accumulated waters up against the east side levees causing excessive tides in these areas.

- (c) As the storm center moves to position 3, maximum winds turn to the southeast bringing even more water into the area, and as the center moves beyond position 3, winds begin to diminish and turn to south and southwest, but tend to obstruct the flow of water around the delta and prolong the high tides on the east side of the delta.

7. With the storm center in positions 1, 2, and 3, winds over Lake Pontchartrain are maximum and turn from northeast to northwest, and winds over Lake Borgne turn from northeast to north. It is thus obvious that the entire east side of the river from Laplace to Head of Passes is subject to flooding by tidewaters.

#### Hurricane of September 29, 1915

A hurricane described as being equal in intensity to the 1915 storm at Galveston (which was termed the greatest hurricane of the century up to that time) moved in a north northwesterly direction and crossed the coast line south of New Orleans on September 29.

Property losses on the middle Gulf coast exceeded \$13,000,000. Loss of life was placed at 275.

At New Orleans, the lowest barometer reading, 28.11 inches, was the lowest of record in the United States at that time. The extreme wind velocity was 130 miles per hour from the east.

At Burrwood, Louisiana, a perfect anemometer registration was secured showing a maximum five minute velocity of 124 miles per hour and an extreme wind of 140 miles per hour.

Destruction of buildings was very great. Of the one hundred houses in Leeville, only one was left standing. At several places on the Mississippi River below New Orleans, and on Lake Pontchartrain, 90 percent of the buildings were completely destroyed.

It was determined in discussion with members of the New Orleans Weather Bureau that the most severe tides accompanying this storm were on the east side of the Mississippi River, that they reached estimated heights of 15 to 20 feet, that levees were broken at some points, and that considerable water was blown from the east side of the river to the west side by maximum easterly winds.

Information gathered from local residents indicates that tide levels in the Port Sulphur area were in the neighborhood of 7 to 9 feet.

In 1905, a local fisherman built what is known as the Sea-Shore camp on Bayou Chalant south of Grande Ecaille. In the 1915 storm, the fisherman and three other men stayed in the Sea-Shore camp until the water rose up to the floor, then rode out the storm in a fishing boat dragging two heavy anchors and drifted about three miles. They estimated that the water at the camp near the Gulf was 9 to 10 feet above sea level, and in the Grande Ecaille area 5 to 6 feet above sea level.

It is noted that tide levels accompanying this storm are all estimated; however, by plotting the path of the storm and analyzing the wind patterns with respect to the various water bodies and land areas, it is indicated that tides should have been equal to if not in excess of the levels estimated.

The storm approached from a point in the middle Gulf to position 1 in about 30 hours. During this time continuously increasing hurricane swells were building up tides in the Gulf areas to the east of the river, and continuously increasing easterly winds were blowing these accumulated waters into the sounds and bays immediately to the east of the river. The forward movement of the storm through positions 1 to 4 was about 12 miles per hour. It is thus obvious that, as the center moved through this area, maximum easterly winds above 100 miles per hour were blowing accumulated tide waters toward the east side of the river for a period of about 6 hours.

On the west side of the river no water was driven toward shore by hurricane winds until the center reached position 2. Some tides

built up in Barataria Bay by preceding swells were then augmented by the pressure lift due to the presence of the calm center, and the onshore winds as the center moved through positions 2, 3, and 4. his combination of conditions was not nearly as serious as those east of the river.

#### **Hurricane of August 25, 1926**

On August 25, 1926, a hurricane passed inland about 20 miles west of Cocodrie, moving in a northerly direction.

Property damage was \$4,000,000 exclusive of crops in the field, and 25 lives were lost. Natives estimate that tides were about 14 feet in the Bay Ste. Elaine area and 9 feet in the Chauvin area. All homes on Bayou Petit Caillou were destroyed.

The only instrumental measurements on this storm were barometer readings of 28.31 inches at Houma, and 28.80 inches at Morgan City. By comparing the readings of 28.11 inches in 1915 causing winds of 130 miles per hour, and 28.61 in 1947 causing winds of 100 miles per hour, it is seen that winds in the 1926 storm probably exceeded 100 miles per hour.

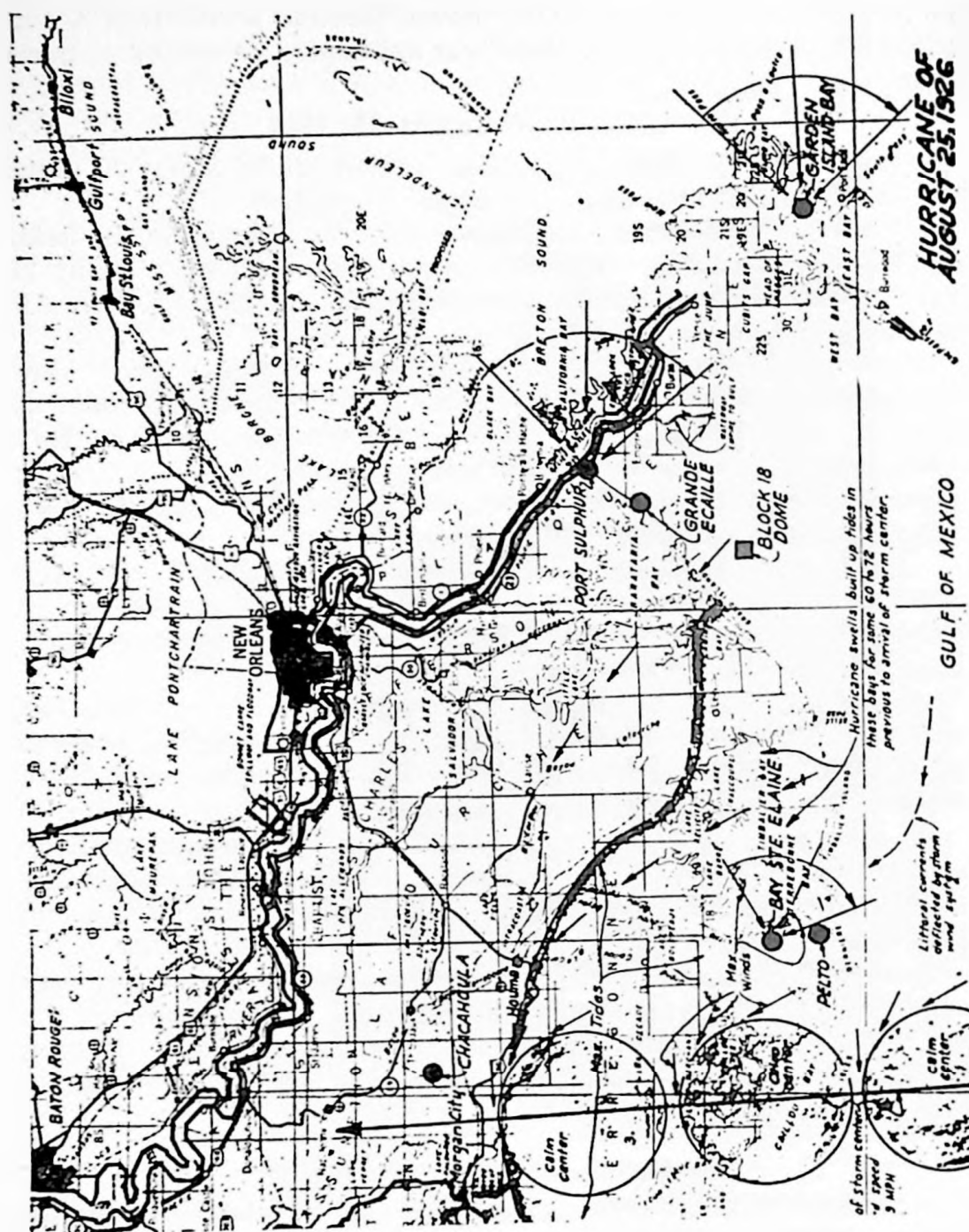
A recent meteorological and oceanographic analysis of the Lake Pelto area made for construction purposes shows that a tide of 12 feet can be caused in the area by a 100 mile storm, and that a tide of 14.6 feet can be caused by a 120 mile storm.

Referring to the charted path of the storm it is noted that two large bays, Terrebonne and Timbalier, are located immediately to the east of Lake Pelto and Bay Ste. Elaine. According to the recorded path of the storm, it had some 60 to 72 hours in which to send out hurricane swells toward the coast. These swells built up tides of probably 6 to 8 feet in the bays. After reaching position 1 on the chart, the storm moved inland, positions 1, 2 and 3 at a forward speed of only 9 miles per hour, and maximum easterly and southwesterly winds drove the accumulated waters in the bays very rapidly toward the west and northwest, piling them up against the land areas in the vicinity of Cocodrie and Chauvin. This condition is typical of recorded maximum storm tides on the west side of large bays at several places along the Gulf Coast.

#### **Hurricane of September 19, 1947**

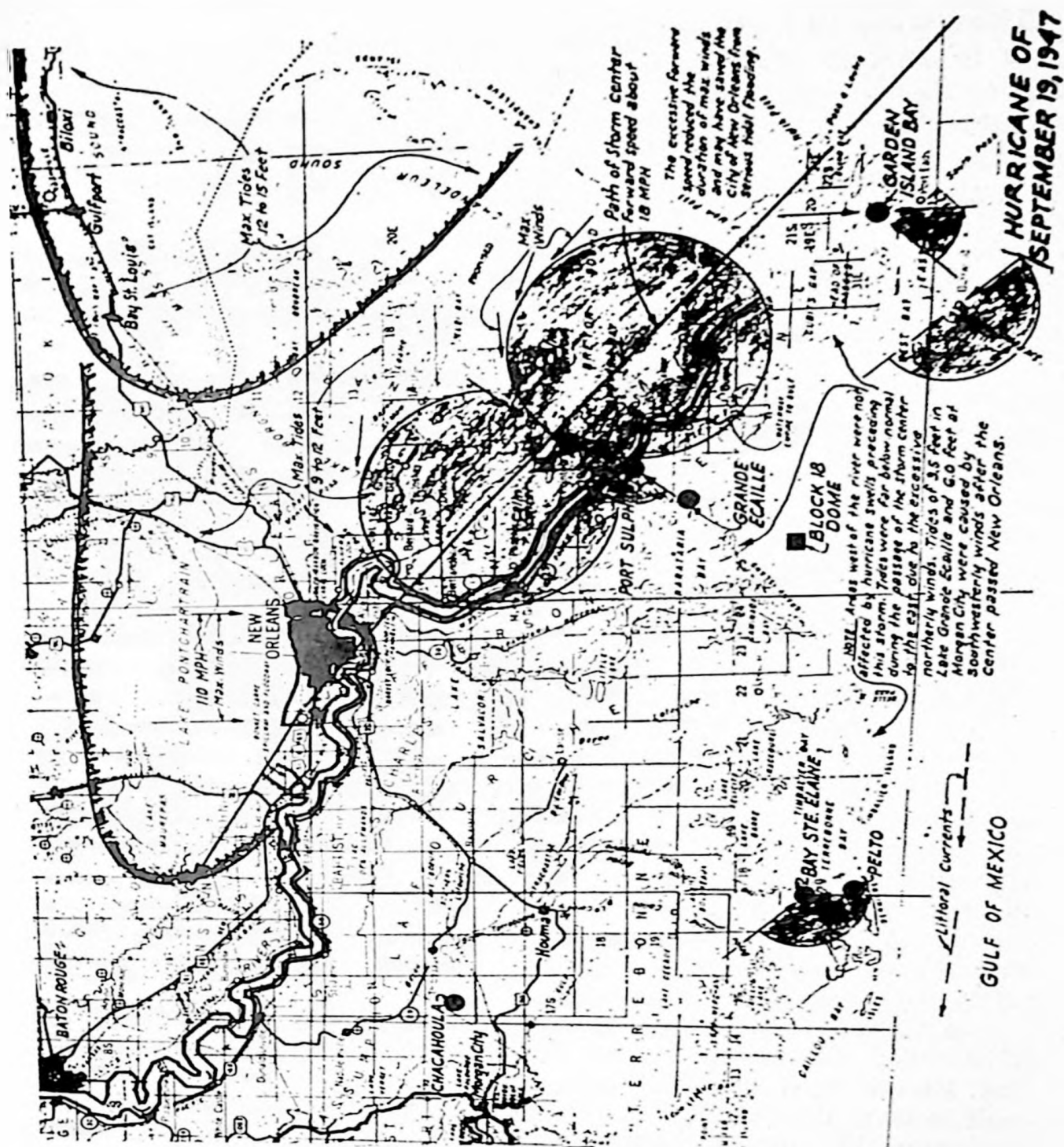
On September 19, 1947, a hurricane moved inland in a northwesterly direction, following a path approximately parallel to and about 10 miles east of the Mississippi River. It had a rather large calm center, about 30 miles in diameter. The western edge of the calm center passed over Port Sulphur, and the approximate middle portion of the calm center passed over New Orleans

A maximum wind of 110 miles per hour was recorded at the New Orleans airport. Winds of 100 miles per hour were general





# West Indian and Gulf Hurricanes



throughout a strip about 50 miles wide on the east side of the Mississippi River.

Tides were 12 to 15 feet above normal on the Mississippi coast, and 9 to 12 feet above normal in Lake Pontchartrain and Lake Borgne. The storm moved inland at a forward speed of 18 miles per hour, and the above mentioned tidal conditions could have been far worse if it had moved at a slower speed of 9 or 10 miles per hour.

A total of 34 deaths were attributed to the storm. Property losses were \$53,000,000. Total destruction included 920 homes, 882 other buildings, and 42 boats. Damage included 11,668 homes, 2746 other buildings, and 168 boats.

In spite of the fact that the eye of this destructive storm came over Port Sulphur, our properties were not seriously endangered. The west edge of the eye was the weak side, and the maximum winds in the Port Sulphur area was 90 miles per hour. Maximum winds at Port Sulphur turned from north to west to southwest, and there was no danger from wind driven tides.

#### **Hurricane of September 23 and 24, 1956**

On September 23, 1956 a tropical storm approached the coast, moving in a northerly direction and heading generally toward Morgan City, Louisiana. At latitude approximately 27.5 degrees north or about 125 miles from the coast, it attained hurricane intensity. From this location it began to curve very sharply to the east, passing about 60 miles south of Bay Ste. Elaine at 6:00 p.m. September 23, 50 miles south-southwest of Port Sulphur at midnight, and 43 miles east-southeast of Port Sulphur at 6:00 a.m., September 24. The storm had a rather large calm center, about 30 miles in diameter, the southern portion of which passed over Garden Island Bay, causing a two hour lull in the maximum winds. The center moved about 10 miles per hour through that portion of its path shown on the chart.

While the center was moving in a northerly direction on the 23rd there existed the threat of a damaging tide situation for Bay Ste. Elaine; however, as winds began to swing to the north-northeast later in the day, the eastward curve of the storm was indicated, and the tide threat was relieved. However, the easterly curve placed the properties of Grand Ecaille and Port Sulphur in line for some tide. This threat remained until midnight when winds at Port Sulphur began to swing to the northeast indicating that the storm center would pass to the south.

With the many oil companies now operating in the Louisiana marshes and in the Gulf, it is quite possible that more actual measurements and more visual estimates were made on this storm





than any other that has struck this portion of the Gulf coast. Unfortunately, there were still not enough actual measurements, and too many visual estimates. Briefly, some of these observations follow:

1: Tides

|                   |          |           |
|-------------------|----------|-----------|
| Garden Island Bay | 4.8 feet | measured  |
| Bay Ste. Elaine   | 3.8 "    | "         |
| Grande Ecaille    | 3.6 "    | "         |
| Port Sulphur      | 2.5 "    | "         |
| Ostrica           | 13.0 "   | "         |
| Phoenix           | 8.5 "    | "         |
| Grand Isle        | 8.0 "    | "         |
| Potash            | 10.5 "   | estimated |
| Cox Bay           | 11.0 "   | "         |
| Leeville          | 4.5 "    | "         |

2. Winds

|                   |           |           |
|-------------------|-----------|-----------|
| Garden Island Bay | 75-90 mph | estimated |
| Venice            | 98 "      | "         |
| Buras             | 115 "     | "         |
| Pilottown         | 90 "      | "         |
| Port Sulphur      | 75-85 "   | "         |
| Bay Ste. Elaine   | 70 "      | measured  |

3. Rainfall

|                |             |           |
|----------------|-------------|-----------|
| Golden Meadow  | 16.7 inches | measured  |
| Grande Ecaille | 12.0 "      | estimated |
| Port Sulphur   | 8.8 "       | measured  |

Some fairly accurate observations were made from a "Continental Oil Co." platform in the west delta area, shown on the chart.

Lowest barometer was 29.0 inches

Highest waves were 35 to 40 feet

Highest wind gusts 100-115 mph

Highest sustained winds 90-100 mph

Several papers have been prepared by meteorologists, and some official releases have been made by the U.S. Weather Bureau. The general consensus of this information is as follows:

Maximum wind gust—110 miles per hour

Maximum 1 minute wind—90 miles per hour

Maximum 5 minute wind—80 miles per hour

These values would apply in the front quadrants of the storm which passed over the Gulf in all cases except the Mississippi River estuary from Buras through Venice to Burrwood and Port Eads. When a storm is traveling in this direction the left front quadrant becomes one of the stronger wind quadrants due to the controlling east winds.

None of our propertise were damaged by tides. The high tides reported at Grand Isle were due to water previously built up in Barataria Bay by hurricane swells, then blown rapidly toward the island by maximum northeast and north winds as the storm center passed closely to the south. A similar situation was reported by Gulf Refining Company in the Timbalier Bay area where Timbalier Island was cut in eleven places.

The center was too far south to cause wind driven tides on the west side of the delta. The extreme tides reported on the east side of the delta were due to the same combination of hurricane swells and controlling easterly wind systems that has been explained in conection with the 1893 and 1915 storms.

#### **Weather Instruments, Forecasting and Communication**

It is highly recommended that appropriate weather instruments be installed at all of our properties. We have a spread of some 90 miles between Garden Island Bay and Lake Pelto, which not only includes Port Sulphur and Grande Ecaille, but also encompasses the proposed offshore operation at Block 18 Dome which is actually farther north than Garden Island Bay and Lake Pelto.

Steady reports of wind velocity and direction, with barometer readings and tide readings from all of these properties would enable an observer to be constantly aware of what a storm near the coast is doing. It should be pointed out that these observations will not enable the observer to forecast the storm's future movement; however, when reports fail to come throuh for one or two hours, it is very important to know what the storm is doing, and whether it is doing what it had been forecasted to do.

Forecasting of the future movement of the storm must come from the consulting meteorologist, since this depends on high and low pressure areas covering large areas, and quite often on air currents or jet streams many thousands of feet above the earth. It is therefore necessary to select a consulting meteorologist in whom one has confidence, and provide dependable communication between all parties concerned.

#### **Storm Precautions and Evacuations**

The wide spread location of our present operating properties, and their variable degree of exposure to dangerous storm tides make it imperative that each property be considered separately when a hurricane is approaching.

Using the forecasted course and intensity of the storm as a basis, management must determine the extent to which each property is vulnerable, and the extent to which each property

should be "tied down", partially evacuated, or totally evacuated. It is hoped that the preceding discussions will be helpful to the various property superintendents and to management in making these decisions. It is believed that, with the assistance of a competent retained meteorologist, such decisions can be made to provide reasonable safety for personnel and equipment. However, the experience of the writer dictates that, when evacuation of personnel is ordered by the U.S. Weather Bureau, such action should be followed immediately, regardless of other decisions that may have been made.

When evacuation is advised by management, or ordered by the U.S. Weather Bureau, assistance in safe transportation should be provided, and storm shelters and other safe places of refuge should be recommended.

Disorganized and panicky flight by individuals who do not have the correct data on the storm, and do not understand the widespread effects of a hurricane, is generally more dangerous than remaining in a well built comfortable home until the course of the storm and the danger areas are determined. Such flight must generally be accomplished in high winds and driving rains, and over flooded highways. Many low lying areas in the New Orleans area are subject to flooding by rains and hurricane tides. Some major highways such as U.S. 11, north, and U.S. 90 east, have been flooded and damaged several times by hurricane tides. Some tourist courts, motels and small hotels are built in low lying areas and are subject to flooding and in some cases, destruction, by hurricane tides. Automobiles stalled on flooded highways can cause the occupants extreme discomfort and danger.

It is therefore urged that evacuations, when necessary, be accomplished in a well planned and orderly manner.

#### **Hurricane of June 27, 1957**

On Monday, June 24, at 8:30 p.m., a shrimp boat encountered gales and heavy seas in the Gulf of Mexico west of the Yucatan Peninsula. A bulletin was issued at 10:30 p.m. which called the disturbance a tropical depression, indicated northward movement, and warned small craft along the lower Texas coast to remain in port.

At 8:00 a.m. Tuesday, June 25, the disturbance had developed into a tropical storm with winds of 40 M.P.H. near the center. By 12:00 noon, it had increased to full hurricane strength, with 75 mile winds near the center, and gales extending 100 miles north of the center. At this time it was given the name of "Audrey". At 4:00 p.m., "Audrey" was about 460 miles south of Port Arthur, Texas, moving north about 8 to 12 miles per hour, attended by



winds of 100 M.P.H. near the center, and gales extending 150 miles north of the center.

Forecast bulletins were very satisfactory on this hurricane, and bulletins from several sources agreed quite well with respect to size, intensity, and movement. The accompanying "Hurricane Plotting May" shows how successive bulletins provided a picture of the increased in size and intensity, and the coast line that would be affected.

As soon as the continued northerly movement was established, hurricane "Audrey" posed a serious threat to the entire Louisiana coast. At 10:00 a.m., Wednesday, June 26, the storm was located about 325 miles south of Port Arthur, and hurricane warnings were raised on the Louisiana coast. Tides 6 to 8 feet above normal were forecasted for the Louisiana coast. Additional bulletins during the day continued this forecast, and a bulletin released at 8:00 p.m. forecast tides 6 to 9 feet above normal on the East Texas and West Louisiana coasts, and 3 to 5 feet above normal on the East Louisiana coast as far as Breton Sound.

At 3:30 a.m., Thursday, June 27, "Audrey" was centered about 90 miles south of Port Arthur, moving north, with estimated winds of 100 miles per hour near the center, and winds of gale force with gusts to 60 miles per hour (measured) were extending out 150 miles north of the center. Tides were rising rapidly on the coast. Sabine measured 4.2 feet at 1:20 a.m. and 5.00 feet at 2:00 a.m. Cameron had 4.6 feet at 1:20 a.m. The 3:30 a.m. bulletin continued the tide forecast made at 8:00 p.m. The center was forecasted to move inland near Sabine, Texas attended by 100 mile winds near the center. Winds of 25 to 35 miles per hour with gusts to 45 were forecasted to occur as far east as New Orleans.

At 6:00 a.m. the center of the hurricane was about 60 miles south of Port Arthur, and at 10:00 a.m. about 25 miles north of Port Arthur, having crossed the coast line at about 8:00 a.m.

#### **Actual Observations**

No official releases of recorded observations are available at this time; however, sufficient preliminary data has been supplied by our weather consultant to provide an approximate picture of the severity and extent of this storm. In arriving at the proper wind pattern, an analysis of official Weather Bureau data recorded for the 1947 storm was made. This data was very complete, including maximum wind velocities, direction and time, duration of hurricane force winds, and duration of winds about 38 miles per hour, from 87 observation points in Louisiana and Mississippi. Each point was plotted in its proper location to the right, left, ahead of, or behind the center, (at a given time) the velocity and direction

of the wind with respect to the forward path of the storm was plotted, and the resultant wind pattern was found to be very similar to the approximate patterns previously discussed in this paper. This wind pattern which was tied to a west northwest direction of movement for the 1947 storm, was then reoriented to comply with the northerly direction of movement followed by "Audrey", and drawn on the accompanying chart. Wind velocities were adjusted only slightly to concur with preliminary observations now available on "Audrey". The two storms were very similar in severity and extent, although it is presently indicated that "Audrey" may have covered a somewhat wider area. The following comparison is based on preliminary and incomplete reports, and must be considered approximate:

|                  | "Audrey"                                   | 1947 at New Orleans                       |
|------------------|--------------------------------------------|-------------------------------------------|
| Maximum Winds    | 97-105 M.P.H.<br>32 mi. to rt. of path     | 98-110 M.P.H.<br>11 mi. to rt. of path    |
| Lowest Barometer | 28.60 inches<br>32 mi. to rt. of path      | 28.57 inches<br>5 mi. to rt. of path      |
| 75 M.P.H Winds   | 35 mi. W of path<br>90 mi. N&E of center   | 28 mi. W of path<br>72 mi. N&E of center  |
| 60 M.P.H. Winds  | 65 mi. W of path<br>150 mi. N&E of center  | 50 mi. W of path<br>125 mi. N&E of center |
| 40 M.P.H. Winds  | 100 mi. W of path<br>230 mi. N&E of center | 75 mi. W of path<br>200 mi. N&E of center |
| Maximum Tide     | 10.6 feet<br>22 mi. E of path              | 14.0 feet<br>43 mi. NE of path            |
| 12.0 foot Tide   | —                                          | 64 mi. NE of path                         |
| 9.0 foot Tide    | 114 mi. E of path                          | 71 mi. NE of path                         |
| 8.5 foot Tide    | 152 mi. E of path                          | —                                         |
| 6.5 foot Tide    | 185 mi. E of path                          | —                                         |
| 4.5 foot Tide    | 240 mi. E of path                          | —                                         |

Tides in the 1947 storm were pocketed between the Mississippi River Estuary and the Mississippi coast line and maximum winds drove them to considerably higher elevation. "Audrey's" path was oriented so that several hundred miles of unobstructed coast line were available for the tides to spread and relieve themselves. It also provided the opportunity to prepare a picture of the far reaching effects of a well developed hurricane, which is presented herewith in preliminary form, and which will be corrected and revised as necessary, when complete official data is available, and attached as an addendum to the foregoing paper.

**Discussion of Two Charts**

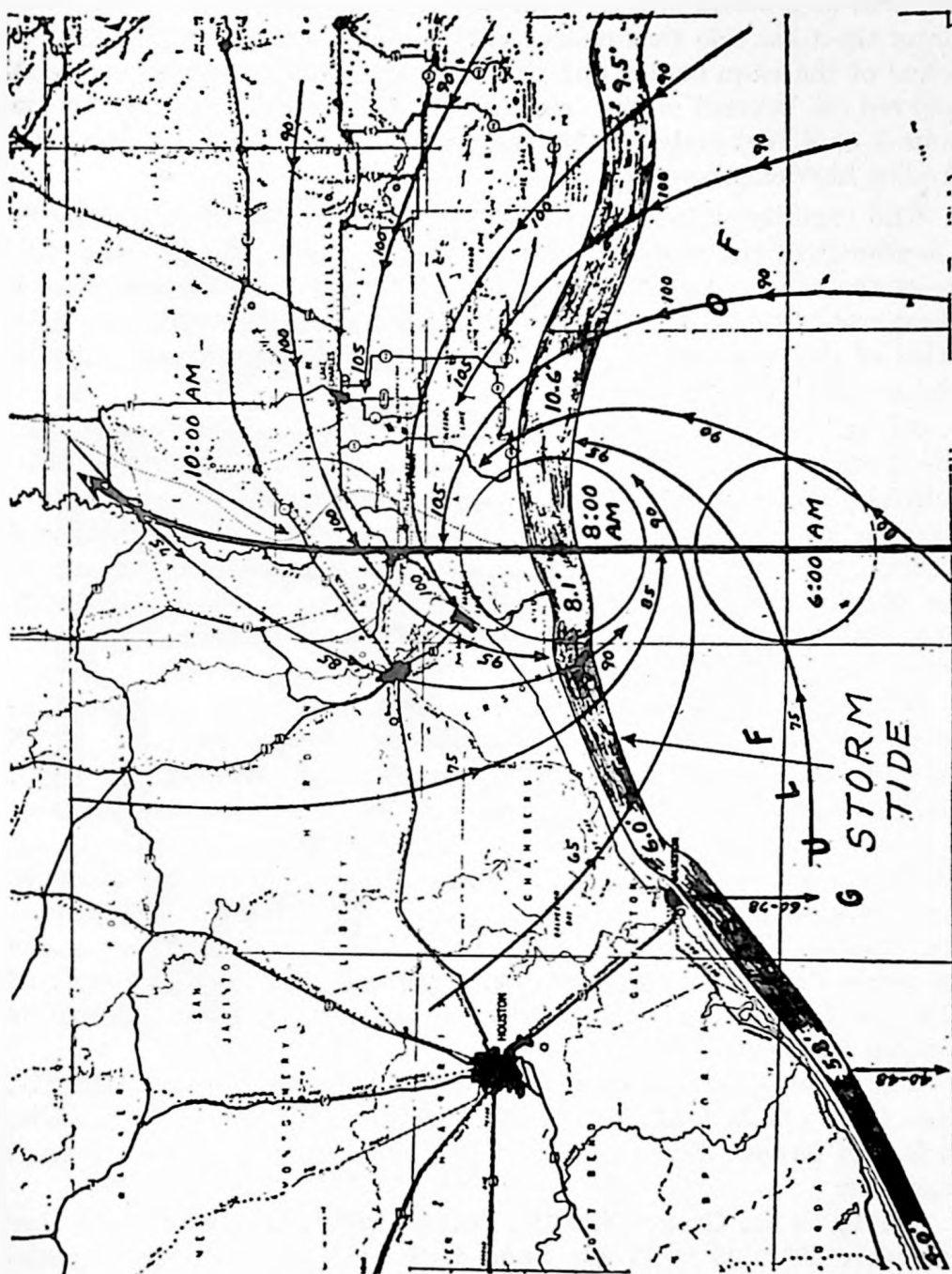
On the first chart winds at Freeport and Galveston are shown blowing from the north and are not a part of the general wind pattern. Freeport had maximum sustained winds of 40 miles per hour with gusts to 48 at 12:30 a.m., when the storm center was 90 miles to the south of Freeport. Galveston had maximum sustained wind of 60 miles per hour with gusts to 78 at 5:18 a.m. when the storm center was 35 miles to the south of Galveston.

Official locations of the calm center are shown at 6:00 a.m. and 10:00 a.m. It is estimated that the leading edge of the calm center was crossing over the coast line at about 8:0 a.m. as shown, and the wind pattern is developed about the center at this location.

Port Arthur shown at the western edge of the calm center reported 100 mile winds from the north. Sabine reported 100 mile winds from the northwest and Orange 100 mile winds from the northeast. These reports check the wind pattern at the western edge of the calm center very satisfactorily. Lake Charles 30 miles east and 6 miles north of the center reported 105 mile winds from the east, and at 9:30 a.m. reported 97 mile winds from the south southeast. These reports check the wind pattern at the north and east edges of the calm center very closely. No reports on wind velocity are available from Cameron. Beaumont reported maximum sustained winds of 72 M.P.H. and gusts to 86 from the northwest. These winds occurred when the center had moved about 30 miles to the north of Beaumont, which also checks the wind pattern. Other available observations were taken at various times, but they were plotted in their proper location with respect to the center at the time taken, and check very well with the pattern shown. Sustained winds of 58 miles per hour with gusts to 93 were reported at Lafayette, 100 miles east of the center, and winds up to 42 M.P.H. were reported at New Orleans, 220 miles east of the center.

The conditions reported from Cameron and Pecan Island are quite obvious. Cameron was at the very eastern edge of the calm center. The tide was reported to be 4.6 feet at Cameron at 1:20 a.m. and undoubtedly continued to rise steadily due to the maximum hurricane swells ahead of the storm. The time of the maximum tide of 10.6 feet was not reported; however, it is indicated that it would have occurred about 8:00 a.m., or shortly thereafter, when the spiraling winds of 90 to 100 miles per hour began to blow from the Gulf. The arrival of the calm center with the maximum pressure lift, concurrent with the shift to onshore winds causing maximum wind set-up, as depicted herewith, causes a very rapid acceleration in the rise of the tide, and this phenomena is some-





times reported as a tidal wave. It is probably more accurately described as a storm wave, or an accelerated storm tide. This portion of the total tide that occurs very rapidly, concurrent with the arrival of the calm center and the shift to onshore winds has been observed in several major storms along the Gulf Coast, to be about 3 or 4 feet added to the tide already built up by the fore-running hurricane swells.

The rapidity with which maximum winds shift from easterly to southerly at the eastern edge of the calm center depends on the size of the calm center and the speed of forward movement. Under average conditions this shift is estimated to occur within a time period of thirty minutes to one hour, and a major increase of tide level occurs within this period.

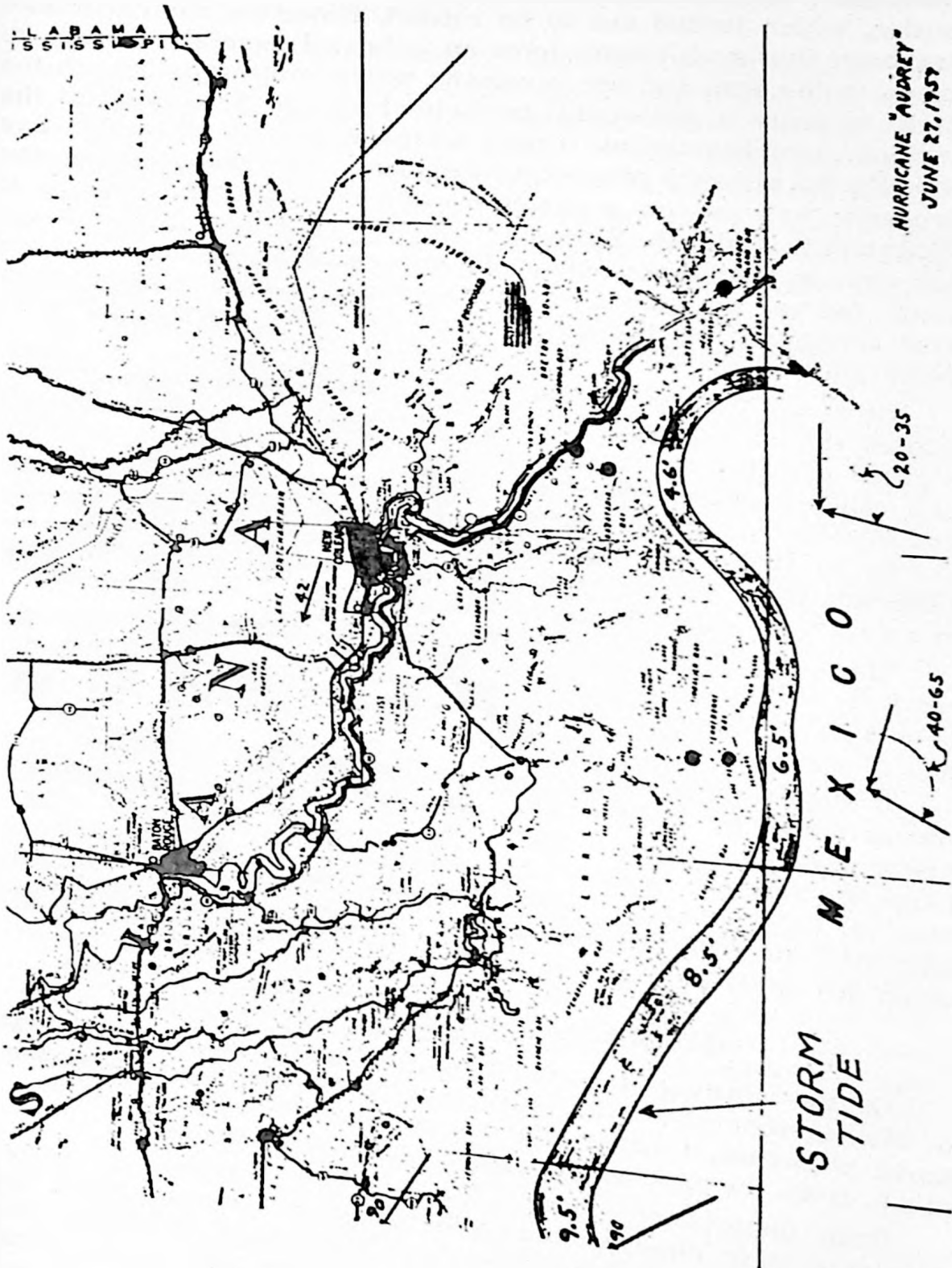
At increasing distances east of the calm center, increasing time periods are required for winds to shift from easterly to southerly, and maximum tides may occur from two to ten hours after the center has passed inland, depending on the sustained direction of forward movement and the configuration of the coast line. Maximum tides in the area from Morgan City to Port Sulphur, 150 to 250 miles east of "Audrey's" path, occurred between 12:00 noon and 6:00 p.m.

Maximum tides to the west of the storm path occur before the center passes inland. The maximum tide at Freeport of 5.8 feet occurred shortly after 2:00 a.m. when the tide was 5.0 feet. The maximum tide at Galveston of 6.0 feet occurred shortly after 4:15 a.m. when the tide was 5.6 feet. The maximum tide at Sabine, within the west edge of the calm center was 8.1 feet and probably occurred coincident with the passage of the center. These tides were mainly the product of fore-runner hurricane swells, and, as the storm center neared the coast line, they lost the impetus of these swells, and met increasing resistance from maximum winds blowing off short.

The second chart shows the extent of tides to the east. Briefly, these tides reached 8.5 feet at Morgan City, 6.5 feet at Cocodrie, 4.6 feet at Grande Ecaille, 3.6 feet at Port Sulphur, and 3.6 feet at Burrwood.

Winds in the Grande Ecaille, Port Sulphur, Garden Island Bay area were 20 to 35 miles per hour, with brief gusts to 45 in occasional squalls. They shifted gradually from an easterly to a southerly direction after the storm center passed inland and remained southerly with consistent strength throughout the day, which accounts for the continued rise of tides in this area up to 6:00 p.m.

Winds and tide conditions on the East Louisiana coast were observed to be very well in line with the conditions forecasted in the 8:00 p.m. bulletin of Wednesday, June 26. This forecast was



contingent upon a continued northerly movement of the storm center, which turned out to be correct. However, our experience has been that such storms have an indicated general tendency to curve to the east, and our hurricane watch continued through the night in order to detect this possible change in movement, at the earliest possible moment, if such a change should occur. Our Bay Ste. Elaine property was evacuated, and our Garden Island Bay property was put on a skeleton crew basis on the evening of Wednesday, June 26. Since the easterly curve did not develop, our Grande Ecaille and Port Sulphur properties were able to continue normal operations, although tides at Grande Ecaille and Port Sulphur were the highest that we have experienced in 25 years since 1933.

In conclusion, it is pointed out that "Audrey" has demonstrated the wide-spread effects of a well-developed hurricane, and a study of observations concurrent with the passage of "Audrey" and other hurricane discussed in this paper, offers an excellent opportunity to gain knowledge concerning the effects of these storms as they may pass inland at various locations along the Louisiana coast, and to acquire the ability to interpret the meaning of forecast bulletins on future storms.

The average layman is not able to interpret forecast bulletins correctly with respect to his geographical location, and must depend upon Federal and State agencies, public officials, civic leaders, or employers for guidance.

It is therefore recommended that supervisory officials of companies operating on the coast, and officials and civic leaders of towns and communities along the coast, should acquire the knowledge necessary to interpret forecast bulletins with respect to their area, in order that they may assist the general public in taking adequate hurricane precautions, or conduct orderly evacuations when necessary.

#### **Gulf Storm of August 8 and 9, 1957**

On the morning of August 8, a disturbance formed in the Gulf of Mexico about 200 miles southeast of Port Sulphur and began to move westward. Garden Island Bay reported winds of 30 to 45 m.p.h. from the east, and tide plus 3.2 feet at 8:30 a.m.

Such disturbances must be carefully watched due to their development in close proximity to the coast line, and since this disturbance was following a west-northwestward course, it was moving approximately parallel to the Louisiana coast line pushing swells into the bays and causing strong easterly winds. The ever-present possibility of a northerly curve, or an increase in intensity,

made this storm a potential threat to each succeeding portion of the coast line as it moved westward.

At 1:00 p.m. the center was 160 miles south southeast of Port Sulphur attended by 45 m.p.h. winds; at 4:30 to 6:30 p.m., 150 miles south attended by 60 m.p.h. winds; and at 10:00 p.m., 140 miles south southwest attended by 65 m.p.h. winds. Winds at Garden Island Bay were 25 to 45 miles per hour throughout the day August 8, turning from east to east southeast. A northerly curve at any time after 10:00 p.m. would have caused serious tidal conditions in the Bay St. Elaine and Lake Pelto areas, or other areas farther west on the Louisiana coast.

At 10:00 a.m., Friday, August 9, the storm center was about 110 miles southwest of Cocodrie, attended by winds of 75 miles per hour within 30 miles from the center. Cocodrie reported winds of 45 to 65 miles per hour from the southeast and a tide of plus 4.1 feet at 7:15 a.m.; and 30 to 47 m.p.h. winds from the east southeast with a tide of plus 4.4 feet at 9:00 a.m. May Ste. Elaine reported a tide of plus 5.0 feet at 9:20 a.m.

This storm was given the name of "Bertha" when it had attained winds of 60 miles per hour. Fortunately, "Bertha" continued to follow a west north-westward course, and, after gaining hurricane strength for a short period of time, 9:30 to 10:00 a.m., August 9, began to diminish in intensity. When the center moved inland over the west Louisiana coast southeast of Lake Charles, no serious wind or tide conditions were reported. Some exceedingly heavy local rains of 10 and 11 inches were reported from parts of East Texas.

"Bertha" demonstrated that even a storm of medium strength can cause dangerous tides when properly oriented. Tides built up in Timbalier and Terrebonne Bays by storm swells were driven into the Bay Ste. Elaine-Lake Pelto areas by easterly winds of 45 to 65 miles per hour, where they rose to plus 4.5 to 5.0 feet. Had the storm center curved northward and moved inland a short distance to the west of these areas, it is quite probable that tides would have risen to about plus 7 or 8 feet, with no further increase in the intensity of the storm.

### ACKNOWLEDGEMENTS

The source of most recorded information contained herein is the Ninth Revised Edition of "Hurricanes", written by Ivan Ray Tannehill, former Chief of Synoptic Reports and Forecasts, U.S. Weather Bureau, Washington, D.C. Additional information was secured through the generous cooperation of the New Orleans Weather Bureau throughout the years, 1934 to date. More recent data has been made available by local Consulting Meteorologists, A. H. Glenn and Associates, and Nash C. Roberts, Jr., with whom the writer has had the good fortune to associate.

(See editor's note on next page)

## CITY OF NEW ORLEANS ESTABLISHES COMMITTEE ON COORINATITION OF BUILDING REGULATIONS

Mayor deLesseps S. Morrison of New Orleans has appointed an Advisory Committee on Coordination of Building Regulations at the request of Mr. Bernard J. McCloskey, for the purpose of coordinating building regulations for various City and State agencies, departments and boards. The President of the Louisiana Engineering Society has been asked to serve on this board representing the engineering interests included in the Society's membership.

As every practicing engineer knows, the construction of any sizeable project involves securing permits and approvals from a great number of municipal, state and federal agencies, as well as other organizations concerned with insurance, safety, fire protection and similar features affecting the public safety and welfare. The purpose of the newly established committee is to coordinate the activities of these various groups, to eliminate conflicts in requirements and jurisdiction wherever these may exist, and to facilitate the engineers' and architects' work by simplifying procedures and expediting the required reviews and approvals.

Such an effort was initiated by the City about 10 years ago in the revision and composition of a modren building code. The Louisiana Engineering Society, together with other engineering groups, cooperated in the drafting of this code and in providing means for its continual revision. Since that time the code has been adopted or used as a guide by many communities through the State and the establishment of the present committee should, therefore, be of general interest to many persons in our Society.

Engineers or architects having problems concerned with coordination of building regulations or conflict between requirements of various regulatory groups can help the profession and the operation of the committee by directing inquires and suggestions to Mr. Bernard J. McCloskey, Director, Department of Safety and Permits, Room 7E05 City Hall, Civic Center, New Orleans.

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*Editor's Note:* For Engineers requiring more information for design purposes in the hurricane field the following should be noted. Under Public Law 71, 84th Congress the U. S. Corps of Engineers, aided by the Weather Bureau, is preparing an extensive report on hurricane damage and preventative measures. An appraisal report has already been prepared and a comprehensive interim survey report is being prepared. For further details the local District Engineer's Office should be contacted.

## OBITUARY OF CHARLES HOWARD FENSTERMAKER

The Louisiana Engineering Society lost a life member and a most outstanding engineer with the death in August, 1956 of Charles Howard Fenstermaker.

Born on January 23, 1882 of Samuel Fenstermaker and Barbara Hoshier Fenstermaker, was educated in the State of Ohio, graduated from Basil High School in 1900, attended Fairfield Union Academy in 1901, and graduated from Ohio State University in 1905.

Mr. Fenstermaker assisted in the development of the railway systems throughout Central Louisiana, having served with the Railway & Navigation Company and with the Tremont & Gulf Railroad from 1904 through 1908.

He became active in the development of the lumber industry, served with the Industrial Lumber Company from 1908 to 1943 and with Hillyer-Deutsch Edwards Company from 1943 until the time of his death. He served in numerous engineering and administrative capacities with these companies. He was a director of Industrial Lumber Company, a director of Calcasieu Paper Company, and President and director of the Elizabeth Ice Company.

Mr. Fenstermaker's willingness to give of his time and ability was evidenced by the numerous civic, church and political activities in which he was so active.

He was a member of the Ohio State University Alumni Association, and an active member and past president of the Oakdale Rotary Club.

He was a member of the Methodist Church, a thirty-second degree Mason and a Shriner.

As Mayor of the City of Oakdale from 1948 until shortly before his death, Mayor Fenstermaker gave the City an able and capable leadership accomplishing many public improvements, achieving a sound financial standing, and above all giving to the position he held the dignity and esteem with which he was always characterized.

Surviving are his wife, nee Lynn Vincent, two sons, Charles Howard Fenstermaker and Robert Andrew Fenstermaker, two daughters, Mrs. Edward K. Ahrens, Mrs. Don F. Williams and one step-daughter, Mrs. Overton LeBlanc.

All who knew Mr. Fenstermaker, will remember him for his ability as an engineer, for his leadership, for his untiring efforts in behalf of his community, and as a staunch friend to all.

Be it resolved that this obituary be read at a meeting of the Louisiana Engineering Society, entered into the minutes and published in the proceedings of the Society, and that copies be sent to members of the family.

Howard L'Heureux      James B. Smith      Louis J. Daigne

**OBITUARY OF GEORGE H. DAVIS**

Mr. Davis was born on June 10, 1863, near Oswego, New York. After graduating from Oswego Normal School, he went on to Cornell University, receiving the degree of Mechanical Engineer in 1892.

Three years later, 1895, he joined with George W. Bacon and Frank R. Ford to form the partnership of Ford, Bacon & Davis, whose initial interests were in the design, construction and management of street railways. This was the era when electricity was coming on the American industrial scene and horsedrawn trolleys were being electrified throughout the country.

His first responsibility with his firm brought him to New Orleans as Supervising Engineer in charge of the engineering and construction of the Orleans Railroad. Out of this grew so many other assignments in New Orleans that the firm maintained one of its principal offices at 921 Canal Street and Mr. Davis made his home in the city for many years.

Mr. Davis had charge of the design and construction of the Canal and Claiborne Railroad and also the New Orleans and Carrollton Railroad Company. From 1896 to 1900 he was Operating Superintendent of the Canal and Claiborne Railroad and, after it was consolidated with the New Orleans and Carrollton Railroad, he was Superintendent of Operations of the combined companies. Following a comprehensive survey he made of the properties and operations of New Orleans Railway and Light Company, he was elected a Director of the company.

During the period 1900 to 1904, following a report he made for New Orleans investment banking interests upon the Birmingham Railway, Light and Power Company, Birmingham, Alabama, he had charge of the operation of this system as Vice-President and General Manager.

As a result of certain studies he had made of United Railroads of San Francisco, of which he was a Director and in which the firm had a financial interest, he played an important role in the reconstruction of San Francisco, when it was destroyed by earthquake and fire in 1906.

From 1907 to 1911 he was Vice-President of American Cities Company of New Orleans, and from 1911 to 1913 he was President of this company. During this time he supervised the design and construction of several street railway properties in the South, including those of the Memphis Street Railway Company, Nashville Railway and Light Company, Knoxville Railway and Light Company, Little Rock Railway and Electric Company, and Houston Lighting and Power Company.



In 1914, for the Board of Commissioners of the Port of New Orleans, he directed a comprehensive report of the feasibility and projected earnings of cotton warehouses and a terminal to be located at that port. This work included extensive studies of principal harbors and terminals in the United States and Europe, including the management, operation and principal facilities. Based on this report the New Orleans Commissioners retained the firm, under Mr. Davis' direction, to design and supervise the construction of the Cotton Warehouses and Terminal and the Public Grain Elevator. He was also in charge of the design and construction of the Galveston Wharf, Galveston, Texas, and various harbor facilities in Mobile, Alabama.

In World War I he was called upon by the Secretary of War to prepare a comprehensive report on the strategic seclusion and military strength of the New Orleans area for airplanes, Army-Navy bases and operating terminals. As a result of these studies, Ford, Bacon & Davis was commissioned, with Mr. Davis in charge, to design and supervise the construction of the Army Supply Base, including warehouses, terminals, railroad yards and terminal equipment at New Orleans.

A pioneer in the aircraft industry, practically from its commercial inception, he was a Director of Atlantic Aircraft Corporation and Fokker Aircraft Corporation in the 20's.

During all of the above period Mr. Davis was a partner in Ford, Bacon & Davis. He was an important factor in the company's activities from 1895 to the date of his retirement in 1928 and thereafter remained as a director until 1942.

Mr. Davis developed a number of inventions, among them being the converted third rail system of conducting current to cars on heavy traction railroads, a duplicate system of steam piping for power stations and various accessories and devices on street cars. He also contributed numerous articles to technical publications.

Mr. Davis for many years was recognized as one of the country's leading engineers and executives in the transportation and public utility fields.

He was a member of the American Society of Mechanical Engineers, American Society of Civil Engineers, Louisiana Engineering Society, American Electric Railway Association and American Gas Institute. His clubs were Engineers, University, Cornell and City Midday in New York City, and the Boston Club in New Orleans.

At the time of his passing, May 3, 1957, he was 93 years of age. He is buried in Metairie Cemetery in New Orleans.

**OBITUARY OF ALLEN STORR HACKETT**

On May 13, 1957, Allen Storr Hackett, the son of Dr. John Alexander Hackett and Anna Storr Hackett, died in the City of New Orleans. He was born on May 20, 1880, at Shreveport, Louisiana, but at an early age he, with his family moved to Meridian, Mississippi, where he spent his boyhood.

In 1899 he entered Tulane University and in 1903 graduated from that institution with the degree of B.E. in Civil Engineering. During his college career he was very active in athletics, especially in football and baseball, in each of which sports he had excellent records.

After graduation from Tulane, for some time, he engaged in railroad location, construction and maintenance with the Southern Pacific Railroad in Texas and with the New Orleans and Northeastern Railroad in Mississippi.

Late in 1904 he became associated with Vaccaro Brothers and later with Quiamel Fruit Company as location and construction engineer in Honduras.

In 1916 he returned from the tropics and soon thereafter obtained a commission as Captain in the Reserve Corps and was accepted in the First Officers Training Camp for engineers in April, 1917.

During World War I he served in the United States Army 23rd Regiment of Engineers in France with the rank of captain.

Following the war he formed a partnership with Mr. Marcel Garsaud and engaged extensively in general contracting work until 1923 when Garsaud left the partnership to enter public service.

In 1927, with the late George A. Hero, he organized the New Orleans-Gretna Bridge company and undertook the sponsorship of a bridge across the Mississippi River using his patent of a spiral approach which would have permitted vehicles to reach ground level within the area of a single city block thus obviating the necessity for the usual long and expensive approach structures generally in use.

He joined the Louisiana Engineering Society in April, 1921, served as its President during 1936 and became a life member on January 18, 1951; he was also a member of the American Society of Civil Engineers being elected in 1930.

He was married in 1916 to the former Madeleine Bourne of Cleveland, Ohio, and is survived by his widow, by a son Richard A. Hackett and four daughters, Mrs. Albert B. Paterson, Jr., Mrs. Harold V. Cummings and Mrs. John C. East, all of New Orleans, and Mrs. Edward P. Munson, Jr. of Fort Worth, Texas; he is also

(Continued on next page)

**OBITUARY OF W. HORACE WILLIAMS**

By the death of W. Horace Williams, on February 6, 1957, the Louisiana Engineering Society lost one of its most distinguished members.

A Past President of the Society and a Life Member, he had contributed greatly to its standing and influence in professional matters and for many years had taken an active part in its proceedings. He was also a Life Member of the American Society of Civil Engineers, Member of the American Society of Mechanical Engineers and the Society of American Military Engineers.

Until his retirement a few years ago he had carried on a successful career as the head of engineering and construction companies engaged in work of large scope, with a reputation for outstanding executive ability and forcefulness.

For over fifty years he was a leader in the community, contributing liberally of his time and effort in various civic endeavors and receiving well-merited honors and citations in recognition of his active part in such affairs.

A man of striking and pleasing personality, he had a host of friends locally and throughout the country, who experience keen regret at his passing.

We move that motion be passed by rising vote to record this obituary in the records of the Society, and that a copy be sent to his wife and family conveying the sympathy of the Society.

H. J. LANE, Chairman  
C. G. CAPPEL  
R. E. GOSA

\* \* \*

survived by a sister, Mrs. Charles G. Elliott, of Arkadelphia, Arkansas, and two brothers, Oswald G. Hackett of Meridian, Mississippi, and Harley B. Hackett of Charleston, South Carolian.

CHARLES M. KERR  
CHARLES S. WILLIAMSON, JR.  
ALLAN T. DUSENBURY

**OBITUARY OF ADAM GEORGE MUNDINGER**

The death of Adam George Mundinger, on April 12, 1957, took from this Society one of its best liked and highly valued members. A lifelong resident of the Baton Rouge area, he is survived by his wife, the former Miss Grace Hyde.

Mr. Mundinger finished his formal education at Louisiana State University in 1902, when he was graduated with a BS degree in Mechanical Engineering. During his stay at the University, he was a member of the Jefferson-Lee Literary Society and the German Club. His interest in athletics is shown by his membership on the football team in 1900 and 1901, and as a member of the class Baseball team in 1901. In Military Science activities, he attained the grades of Corporal and Sergeant in 1901, and the rank of Lieutenant in 1902. He was a Life Member of the L.S.U. Alumni Federation.

Although his educational training was in the field of Mechanical Engineering, his professional career was to lie in the field of Civil Engineering. Mr. Mundinger and his brother, Mr. John J. Mundinger, Civil Engineer, were in partnership as Consulting Engineers for a number of years. In later years he headed his own organization in the practice of Civil Engineering until his recent retirement.

Mr. Mundinger was a devoted husband, a consecrated churchman and a leader in Baton Rouge. He was a member of the First Presbyterian Church, and an active officer. He served as a Deacon from 1942 until 1948, and as an Elder from that date to the time he was called to his Heavenly home.

He was a thirty-second degree Mason and a Shriner. "Mr. Addie", as he was affectionately called, was very interested in his fellow man and always concerned with their welfare.

The greatest tribute which may be paid any made is "that the world is a better place because he lived". This has been said, and rightly so, of Mr. Mundinger. The basis of such a tribute was evident not only in the spiritual life of the man, but inevitably permeated all the facets of his life. Therefore, we, of the Society, can say that the Louisiana Engineering Society and the Engineering profession has been greatly enriched by the life of Adam George Mundinger.

Be it therefore resolved that this obituary be read at a meeting of the Louisiana Engineering Society, entered into the minutes, published in the Proceedings of the Society, and that copies be sent to members of the family.

H. L. LEHMANN  
W. W. TENNANT  
F. F. PILLET

**OBITUARY OF CARL JOHAN HELBAK**

The Louisiana Engineering Society and the engineering profession lost a highly regarded member with the demise of Carl Johan Helbak on February 16, 1957 in New Orleans.

A very colorful and interesting life is revealed from the following facts:

Carl was born November 1, 1889 in Greaker, Norway. He received his elementary and high school education in Fredriksstad, Norway. This phase of his education was completed in 1906. In 1908, he received his Mechanical Engineers Degree from Skiensfjorden Mechanical College in Porsgrun, Norway. In 1911, he received his Masters Degree in Mechanical Engineering and Hydraulics from Grand Duchess Fridericiana Technical University, Karlsruhe, Germany.

Shortly after receiving his Masters degree, he began a long and varied professional career:

From 1911-1914 he was Resident Engineer for Matinal Railways of Mexico, from which position a political revolution forced him to leave.

Sometime prior to 1915 Carl emigrated to the United States.

In 1915 he accepted a position as Instrumentman for the New Orleans Lakeshore Land Company, Littlewood, Louisiana.

Also in 1915 through 1916 Carl became Assistant Engineer of Construction and Drainage for the Cuymel Fruit Company in Honduras, Central America.

From 1916 through 1918 he was Enugineer for the Appalachicola Northern Railroad Company and Calhoun Lumber Company, Port St. Joseph, Florida.

From 1918 through 1920 he was Chief Engineer for the Chickasaw Ship Building Company, Mobile, Alabama.

He became a naturalized citizen in 1920, and in this year he was also licensed to practice engineering in Louisiana.

During 1920-1921 he became Resident Engineer for the town of Lake Providence, Louisiana, where his career in Municipal and Government work began.

During 1921-1922 he was Resident Engineer for the Parishes of Bienville and Morehouse, in North Louisiana.

(Continued on next page)

From 1922 through 1933 he was a Resident Engineer for the Louisiana Highway Commission.

During 1933-1934 he was Construction Engineer for C. W. A. and E. R. A. programs.

During 1934-1935 he held the position of Research Engineer for the W.P.A.

In 1935 he became Construction Engineer for the New Orleans Park Commission, a position he held until 1942.

During 1942-1943 he was Construction Engineer for Pan American Airways, Inc., in Cuba and Brazil.

In 1946 he became a Project Engineer for the Louisiana Department of Highways. In 1947 he was promoted to District Construction Engineer, and held this position until he retired in May 1954.

During parts of 1954 and 1955, he took an extensive trip back to Norway and to other parts of Europe. Upon returning to the United States in 1955, he accepted a position as Engineer for the New Orleans Park Commission, which he held until his death.

Carl was one of those individuals who had a glad hand for everyone—was deeply interested in his profession and always willing to give of himself whenever called upon. Among his additional attributes, he was quite a linguist—he spoke six languages fluently. He also was quite a hunter, fisherman and a horseman.

He is survived by his widow, the former Dorothy Quinn, whom he married in 1916, one son, Carl D., and two grandchildren, all residing in Buffalo, New York. Although his family was considerably small, he leaves a host of friends.

Be it, therefore, resolved that this obituary be read at a meeting of the Louisiana Engineering Society, entered into the minutes, published in the Proceedings of the Society, and that copies be sent to members of his family.

H. L. LEHMANN

CARL E. ABRAHAMSON

## ENGINEERING BRIEFS

**Road Crew Hunt Relics.** The Nebraska State Highways Department is going into the relic-hunting business. The Highway Department will furnish the State Historical Society with plans for every proposed road job. The department also has instructed crews to watch for relics, and to avoid destroying historical items such as ruins, sites, artifacts, fossils or objects of antiquity.

—*Engineering News-Record*

\* \* \* \*

**Do-It-Yourself Soda Pop.** A tablet that, dropped in a glass of water, explodes into a flavored carbonated drink will soon be in nationwide production. A package will contain eight individually wrapped tablets. They will be flavored cherry, lime, orange and grape. Children are expected to be enthusiastic about the explosive action of the drop-in pop.

—*Chemical Week*

\* \* \* \*

**New Metals for Cars.** Four major metals may soon take over construction work in the automobile industry. As other metals become scarcer, iron, aluminum, magnesium and titanium, plus silicon, will come to the fore. These may be followed by ceramics and ceramic metal compounds.

—*Product Engineering*

\* \* \* \*

**Lesson in Economics.** In Missouri, a power company learned it was cheaper to build a smokestack 36 years ago than it is rip one down today. The company paid \$8,750 to build the stack in 1921. It cost \$13,470 to have it torn down.

—*Electrical World*

\* \* \* \*

**Even English Complain.** American utilities are not alone in getting customer complaints. An English Electricity Board received the following letter: "I have had this property inspected, tested, checked, connected, and threatened with disconnection by so many inspectors, testors, connectors, and checkers, that it would please me to know how many actually inspected, tested, or connected, including those who arrived to inspect, test, or connect after the inspection, testing, or connecting had already been done. Gov'nur."

—*Electrical World*

**Tank Car Goes Over the Waves.** A tank car loaded in Baton Rouge, La., shipped to New Orleans by rail, and then lifted onto a sea ferry for the trip to Havana, was the first tank-car shipment of antiknock compounds ever to go to a refiner overseas. The cranes that lifted the tank-car were big ones. They had to be—the car weighed about 40 tons, loaded with 6,000 gallons of compound.

—*National Petroleum News*

\* \* \* \*

**Doorless Door.** A bank in New York City has installed a doorless door. The "door" is a stream of air, hot in Winter, cold in Summer, and flows downward from a ceiling vent to a floor grate, keeping bank temperatures unaffected by outside climate that ordinarily seeps past conventional doors opening and closing. The bank has to close rather more substantial doors at night.

—*Industrial Distribution*

\* \* \* \*

**Water Pipes Across the Country.** Something similar to the way oil and gas pipelines crisscross the country, a network of water pipelines will soon follow. Interior Secretary Fred Seaton announced that "within the last year, 1,000 of our cities, towns and villages" have been forced to curtail, in some cases to a drastic degree, the use of water. The pipelines will be needed, Seaton predicts, to carry water from the source of supply to where it is needed.

—*Engineering News-Record*

\* \* \* \*

**Merchandized Inventory.** Use of a portable voice-recording machine makes the inventory of warehouse material a one-man job for a Far West power company. One man can now count the material and record the inventory on the machine and a clean, legible record is transcribed in the office.

—*Electrical World*

\* \* \* \*

**Goodbye Spillage.** A new electronic control device to prevent overfilling of oil storage tanks will soon be tested. The device will work with any product. Hook-up is made to pumps which shut off automatically when the right amount of product is in the storage tank. The device can be utilized for truck loading as well.

—*National Petroleum News*



## **MINUTES OF THE MEETINGS AND BUSINESS OF THE SOCIETY**

### **Minutes of Meeting of the Louisiana Engineering Society Held on Monday, May 13, 1957 at the Engineers' Club, New Orleans**

The meeting was called to order by President Nelson with approximately 175 in attendance. The president welcomed members, guests and JET club members. Dean Lee H. Johnson moved that the reading of minutes of the April meeting be dispensed with, seconded by Mr. F. B. Grevemberg and carried, whereupon the secretary read minutes of a meeting of the Board of Direction held on April 8, 1957.

President Nelson announced that the Baton Rouge Section would be hosts to the society on Saturday, June 1st and urged members to attend.

Dean Johnson announced that a plaque honoring the late Mrs. William B. Gregory, founder of the Woman's Auxiliary to the L.E.S., would be unveiled at the university on Wednesday, May 15 and invited all members to attend.

President Nelson also announced that the Baton Rouge Section had secured "Boss" Kettering as a speaker for one of its fall meetings.

Mr. Joseph R. Mooney, Chairman of the Vocational Guidance Committee, then described the work of the committee, particularly that of the JETS program. President Nelson enumerated the various JET clubs and their L.E.S. coordinators throughout the state. He then asked those present to have their selected JET students come forward to receive their awards, and announced that similar awards would be made in other locations.

Dean Johnson then introduced the principal speaker of the evening, Dr. Joseph C. Morris, Vice-President of Tulane University and Head of its Physics Department, who delivered a very interesting paper on the subject of earth satellites entitled "Around the World in 90 Minutes".

After a brief question period the meeting adjourned with a rising vote of thanks to the speaker.

JOHN P. FERNANDEZ, Secretary-Treasurer

### **Minutes of Meeting of the Board of Direction Held at UCT Camp, Baton Rouge, June 1, 1957**

The meeting was called to order by President Nelson with Messrs. Freeman, L'Heureux, McLellan, Meyer, Sessums, Taylor and Fernandez present. Mr. Freeman moved that minutes of the preceding meeting be accepted as read, seconded by Dr. Taylor and carried.

The secretary read a letter from Mr. Milton R. Johnson, Chairman of the scholarship committee of Louisiana Polytechnic Institute, advising that Arthur M. Stracener, Electrical Engineering student, had been selected to receive the L.E.S. scholarship for 1957-58, and including a statement of Mr. Stracener's qualifications. Mr. Freeman moved that a commendation be recorded in the minutes of the society expressing hearty approval of the committee's selection. Motion seconded by Mr. McLellan and carried.

Mr. L'Heureux announced that the Alexandria Chapter of the Woman's Auxiliary had set up an \$800 scholarship (\$200 per year for a deserving student attending a state college in Louisiana. He also announced that this year's recipient would attend Louisiana Polytechnic Institute.

A letter from Dean zur Burg of Southwestern Louisiana Institute, thanking the society for renewing its scholarship there for the year 1957-58, was read by the secretary.

Also read were notes from the Allen S. Hackett and Paul P. Pareti families, thanking the society for foral tributes sent to these deceased members.

A letter from Mr. Sargent F Jones, representative of the Louisiana Council of Engineers on the Greater N. O. Building Code Committee, advising of the expiration of his term of office on the committee was read. President Nelson reappointed Mr. Jones to serve in this capacity for another year.

The President appointed Messrs. S. E. Huey and A. P. Andrews to head a committee of their own choice to prepare an obituary for the late George H. Davis; he also appointed Messrs. H. L. Lehmann, W. W. Tennant and F. F. Pillet to prepare the obituary of the late A. G. Munding.

Mr. Freeman moved that the resignations of the following members be accepted with regret, seconded by Dr. Taylor and carried: Jahn H. Drake, Monroe; William L. Stevens, Baton Rouge.

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Discussion followed on affiliation with a national organization and Mr. Freeman moved that the society disseminate to the membership at the earliest feasible time a brief, concise ballot containing the following questions:

|                                       | Yes                      | No                       |
|---------------------------------------|--------------------------|--------------------------|
| Should L.E.S. affiliate with N.S.P.E. | <input type="checkbox"/> | <input type="checkbox"/> |
| Should L.E.S. affiliate with E.J.C.   | <input type="checkbox"/> | <input type="checkbox"/> |

This ballot should contain a preamble referring to previous literature and stating that members may vote "yes" in both cases, "no" in both cases, or "yes in one and "no" in another. In other words, any combination may be voted. Mr. Freeman then amended his motion, stating that the ballot should be returned within a reasonably appropriate legal time, but prior to the September meeting. The motion was seconded by Dr. Taylor and carried.

The secretary exhibited a clipping announcing the retirement of Professor R. A. Steinmayer, former president of the society. There being no further business, the meeting adjourned.

JOHN P. FERNANDEZ, Secretary-Treasurer

**Minutes of Meeting of the Board of Direction Held on Monday, July 8, 1957  
at 1200 St. Charles Avenue**

The meeting was called to order by President Nelson with Messrs. Freeman, Mcellan, Scales, Sessums, Taylor and Fernandez present. Mr. McLellan moved that minutes of the preceding meeting be accepted as corrected, seconded by Mr. Scales and carried.

A report of the Committee on Scholarships was read, in which it was recommended to continue the society's presently established scholarships of \$100 each at the four engineering schools of the state, limited to members of the senior class. Mr. Scales moved that the report be accepted and its recommendations followed, seconded by Mr. McLellan and carried unanimously.

The auditor's report for 1956 was presented and Mr. Freeman moved that it be accepted and published in the Louisiana Engineer so that members may be duly informed of the society's financial position. The motion was seconded by Mr. Sessums and carried.

The secretary reported that all applicants for membership named in the June ballot had been elected to their respective grades. 394 ballots were returned, in which four applicants received one negative vote.

A semi-annual financial report was presented by Mr. Freeman, Chairman of the Finance Committee.

The secretary read a note of thanks from Mrs. S. V. Massimini for copies of the Louisiana Engineer containing her late husband's obituary.

Correspondence from Southwestern Louisiana Institute and Louisiana Polytechnic Institute concerning the society's scholarships was read. It was decided that an announcement of award winners would be published in the Louisiana Engineer.

Mr. Freeman moved that the Editor of the Louisiana Engineer be compensated for the two extra issues now published at the same rate per issue. Motion was seconded by Mr. McLellan and carried.

President Nelson reviewed details of the special conference held by members of the Board of Direction with Mr. Paul N. Robbins, Executive Director of the National Society of Professional Engineers, and gave a resume of the progress made toward obtaining specific answers from both N.S.P.E. and E.J.C. headquarters concerning affiliation with them.

Mr. Sessums moved that the following members be dropped from the rolls as requested by them, seconded by Mr. Scales and carried:

John A. Preston (Member) Baton Rouge.

Charles G. Upton (Junior) Monroe.

Although an unusual number of obituaries have been received, it was decided to read all of them at the August meeting, after which the meeting adjourned.

JOHN P. FERNANDEZ, Secretary-Treasurer

**Minutes of the Regular Meeting, The Lake Charles Section, The Louisiana Engineering Society, May 13, 1957**

A regular meeting of The Lake Charles Section of the Louisiana Engineering Society was held on Monday, May 13, 1957, at Sammy's Restaurant with approximately 100 members and guests present.

The meeting was opened by President R. R. L. Ward. On the motion of Mr. Tucker, seconded by Mr. Garrison, reading of the minutes was dispensed with.

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Mr. Tucker, Program Chairman, introduced the speaker of the evening, Mr. K. C. Frazier, who is manager of General Products Sales, in the Industrial Chemicals Division of the Olin Mathieson Chemical Corporation.

Mr. Frazier described the operations of the Company, pointing out that Olin Mathieson is largely a Southern Industry, with eleven out of 12 chemical plants, and well over half of their total domestic plants being located below the Mason-Dixon Line.

Mr. Frazier announced the policy of the Company in regard to the extent of their operations. Their activities are to be devoted to three fields—chemicals, metals, and packaging materials.

The text of Mr. Frazier's speech is attached to a made apart of the original minutes.

The Mathieson Company provided a comprehensive display of various Company products which were viewed during the cocktail hour which preceded the dinner meeting.

FRED R. ADAMS, Secretary-Treasurer

#### Minutes of the Regular Meeting of the Lake Charles Section, June 10, 1957

A regular meeting of the Lake Charles Section of the Louisiana Engineering Society was held on Monday, June 10, 1957 at Sammy's Restaurant, with approximately 40 members and guests present.

The meeting was opened by President R. R. L. Ward. On motion of Mr. Hill, Seconded by Mr. Davis, reading of the minutes of the previous meeting was dispensed with.

Mr. Ward then introduced Mr. John Fernandez, Secretary-Treasurer of the L.E.S., who spoke briefly on the history of the L.E.S. from his close personal knowledge, gained through long experience as Secretary-Treasurer.

Mr. Tucker then introduced Mr. Waldemar S. Nelson, President of the L.E.S. Mr. Nelson spoke of the status of the Professional Engineer today, and of the necessity, and possible ways and means of improving the professional standing of the Engineer.

Following this was a Forum discussion regarding the proposed affiliation with the Engineers Joint Council and the National Society of Professional Engineers. This was most informative and it is felt that all members will have a real knowledge of the issues when the subject is voted upon in the near future.

The meeting was adjourned at about 10:30 p.m.

• FRED R. ADAMS, Secretary-Treasurer

#### Minutes of the Regular Meeting of The Lake Charles Section, July 8, 1957

A regular meeting of The Lake Charles Section of The Louisiana Engineering Society was held in the Science Auditorium of McNeese State College, with approximately 70 members and guests present.

Since both President Ward, and Vice-President Smith had been called out of town, the meeting was opened by Secretary-Treasurer Fred R. Adams. (Mr. Ward was able to return just as the meeting opened.) Mr. Adams called upon Mr. J. P. Tucker to introduce the speaker of the evening Mr. R. B. Richardson, Director of the Louisiana Department of Highways.

Mr. Richardson discussed the Federal proposal of a system of Inter-regional limited access highways, with particular emphasis on the construction proposed for Southwest Louisiana.

Following this Mr. Grady Carlyle, Assistant Director of the Department, conducted a question and answer period regarding the local aspects of this program.

Light refreshments were served following the meeting.

FRED R. ADAMS, Secretary-Treasurer

#### Minutes of the Monroe Section, June 4, 1957

The Monroe Section of the Louisiana Engineering Society held the June meeting at Forsythe Park in Monroe Tuesday, June 4, 1957. This was the annual outdoor meeting and immediately following the barbecue dinner the meeting was called to order by Mr. M. M. Funderburk, Sr., President. After guests of the individual members were introduced the president read a letter from the committee appointed at the March 5 meeting to write an amendment to our constitution relative to the number of meetings each year. After considerable discussion the membership voted approval of the committees

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proposed amendment to the constitution providing for six meetings per annum, the final vote to be by letter ballot.

The Section was honored to have as guest speaker Mr. Waldemar S. Nelson, President of the Louisiana Engineering Society, and at this point in the program he was introduced by President Funderburk. Mr. Nelson gave a very interesting and informative talk relative to our proposed affiliation with The National Society of Professional Engineers and/or The Engineers Joint Council, which was followed by a discussion and question and answer period.

The attendance was 46 members and 12 guests. On proper motion and second, the meeting was adjourned, with most of the members remaining for a period of visitation and fellowship.

T. R. HENRY, Secretary-Treasurer

**Minutes of Meeting, Baton Rouge Section, 2 p.m., June 1, 1957**

The annual joint summer meeting of the Baton Rouge Section with other State Sections and parent society was held at United Commercial Travelers. Officers present: Randall Meyer, president; T. E. Alexander, second vice-president, and H. F. Leiendecker, secretary-treasurer. More than 100 members and guests attending.

After the traditional horseshoe pitching contests, a barbecue dinner was served. Adjournment followed the awarding of nearly 100 attendance and horseshoe pitching prizes.

HAROLD F. LEIENDECKER, Secretary-Treasurer

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**CARLOS J. GRIMADER**  
**Certified Public Accountant**  
**New Orleans, La.**

June 10, 1957

Board of Direction  
Louisiana Engineering Society,  
New Orleans, Louisiana

Dear Sirs:

I have audited the accounts of the Louisiana Engineering Society for the year ended December 31, 1956 and submit the following:

Balance Sheet, December 31, 1956 (Cash receipts and disbursements basis (Exhibit "A"))

Statement of Income and Surplus for the Year Ended December 31, 1956 (Cash receipts and disbursements basis) (Exhibit "B")

The cash on deposit at December 31, 1956 in the regular checking account and in the various homesteads was verified by certification obtained from the depositaries and the U. S. Savings Bonds were inspected by me in the Society's bank box.

My examination was made in accordance with generally accepted auditing standards and included such tests of the accounting records and such other auditing procedures as I considered necessary in the circumstances.

In my opinion, the accompanying balance sheet and statement of income and surplus fairly present, respectively, your financial condition at December 31, 1956, and the results of your operations for the year then ended.

Yours very truly,

CARLOS J. GRIMADER  
Certified Public Accountant

**EXHIBIT "A"**

LOUISIANA ENGINEERING SOCIETY  
BALANCE SHEET, DECEMBER 31, 1956  
(CASH RECEIPTS AND DISBURSEMENTS BASIS)

ASSETS

CASH:

|                                                             |             |
|-------------------------------------------------------------|-------------|
| Checking account—Whitney National Bank of New Orleans ..... | \$ 5,971.87 |
| UNITED STATES SAVINGS BONDS, SERIES F                       |             |
| (Maturity value—\$6,000.00)—redemption value .....          | \$ 5,065.00 |

INVESTMENTS—HOMESTEADS: (At cost)

|                                                 |           |
|-------------------------------------------------|-----------|
| Columbia Homestead Association .....            | \$ 381.58 |
| Commonwealth Homestead Association .....        | 307.34    |
| Greater New Orleans Homestead Association ..... | 2,035.18  |
| Security Building and Loan Association .....    | 500.00    |
| State Savings and Loan Association .....        | 500.00    |
| Union Savings and Loan Association .....        | 500.00    |

Total investments—homesteads .....

---

\$ 4,224.10

PROPERTY:

|                                                              |           |
|--------------------------------------------------------------|-----------|
| Lapel emblems on hand .....                                  | \$ 470.09 |
| Furniture, fixtures, equipment and books—nominal value ..... | 1.00      |

Total property .....

---

\$ 471.09

TOTAL ASSETS .....

---

\$15,732.06

LIABILITIES

|                                 |             |
|---------------------------------|-------------|
| SURPLUS (Per Exhibit "B") ..... | \$15,732.06 |
|---------------------------------|-------------|



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LOUISIANA ENGINEERING SOCIETY  
STATEMENT OF INCOME AND SURPLUS (ON CASH RECEIPTS AND  
DISBURSEMENTS BASIS) FOR THE YEAR ENDED DECEMBER 31, 1956

## INCOME

|                                                       |                    |
|-------------------------------------------------------|--------------------|
| Dues collected (less rebates to Sections, \$3,191.87) | \$10,020.13        |
| Advertising revenue                                   | 862.23             |
| Income from investments and savings accounts          | 265.33             |
| Miscellaneous—profit sale of certificates             | 26.00              |
| Annual meeting—excess of receipts over disbursements  | 103.33             |
| Annual outing—excess of receipts over disbursements   | 120.97             |
| <b>Total income</b>                                   | <b>\$11,397.99</b> |

## EXPENSES

|                                                                                  |                    |
|----------------------------------------------------------------------------------|--------------------|
| Salary—secretary-treasurer                                                       | \$ 3,000.00        |
| Cost of publishing proceedings                                                   | 2,414.61           |
| Refreshments, etc. at meetings (Less pro rata receipts from joint meetings held) | 515.86             |
| Printing, stationery, and supplies                                               | 973.43             |
| Postage                                                                          | 823.75             |
| Cost of Engineer's week                                                          | 314.47             |
| Floral offerings                                                                 | 36.05              |
| Medals, awards and trophies                                                      | 178.78             |
| Social security tax                                                              | 65.00              |
| Auditing                                                                         | 140.00             |
| General expenses                                                                 | 157.83             |
| Presidents traveling expenses, etc.                                              | 106.02             |
| Scholarship tuition                                                              | 700.00             |
| Rent — headquarters                                                              | 180.00             |
| Vocational guidance                                                              | 36.75              |
|                                                                                  | <b>\$ 9,642.55</b> |

|                              |                    |
|------------------------------|--------------------|
| NET INCOME FOR THE YEAR      | \$ 1,755.44        |
| SURPLUS AT JANUARY 1, 1956   | 13,976.62          |
| SURPLUS AT DECEMBER 31, 1956 | <b>\$15,732.06</b> |

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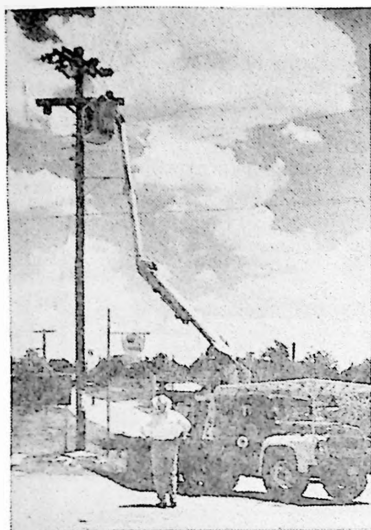
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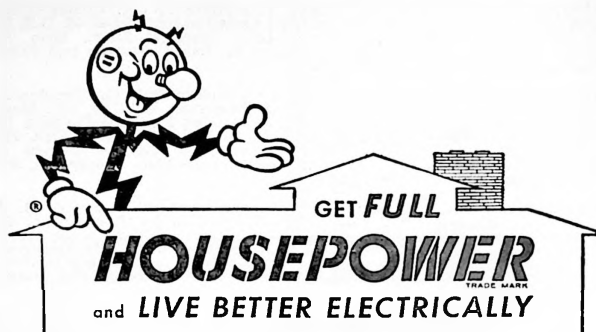
NEW ORLEANS 19, LA.

## NEW MEMBERS

The following have been elected to membership in our Society:

### FOR MEMBER

- PAUL L. ANDRY, JR.**, New Orleans; age 54. Endorsed: M. C. Abrahm, W. Stone Leake, W. S. Nelson. Tulane University, B.S., M&E, 1924. Registered M.E., E.E., La., N.Y. Member Society Tulane Engineers General Electric Co., Test Engr., 1924-25. City of N.O., Test Engr., Bridge Construction, 1925-26 Andry & Feitel, Architects, Mech. & Elec. Engr., 1926-29. Shell Oil Co., Chief Draftsman, Office Engineer, Head Office Gen'l Engr., Special Engr. in charge all utilities in U.S. & Canadian refineries, 1929-57.
- ROBERT H. BOH**, New Orleans; age 26. Endorsed: W. E. Blessey, D. E. Guiza, R. J. Drueding, F. H. Fox, F. W. Macdonald. Tulane University, B.S.C.E. 1951; M.S.C.E. 1953 Registered C.E., La. Society of Tulane Engineers, research, design, testing prestressed concrete, 1952-53. Tulane University, Instructor in C.E., 1952-55. Boh Bros. Construction Co., Engineer, 1955-57.
- THEODORE J. BORGMAN**, Lafayette; age 50. Endorsed: F. R. Adams, O. E. Barron, R. O. Beckham, R. O. Williams. University of Louisville, B.S.E.E. 1928. Member Armed Forces C. & E.A. Registered La. Southern Bell Tel. Co., Kentucky Div., Transmission Testor; Test Boardman, Transmission Engr., 1928-42. U.S. Air Force, Communications & Operations, 1942-46. Southern Bell Tel. Co., Toll Facility Engr., Div. Plant Extension Engr., Div. Staff Engr., District Engineer, 1946-date.
- JAMES R. BRES, JR.**, Lafayette; age 29. Endorsed: R. O. Beckham, A. B. Bell, B. W. Boxx. La. Polytechnic Institute, B.S.E.E., 1950. Southern Bell Tel. Co., Student Engr. Installation Foreman, Jr. Engr., Field Engr., June 1950 to date.
- FREEMAN C. BUCKLEY**, Lake Charles; age 54. Endorsed: F. R. Adams, G. H. Hill, R. R. L. Ward, B. H. Wade. Miss. State College, B.S.E.E. 1928. Registered E.E., La. Southern Bell Tel. Co., Construction Clerk. 1928-32. U.S. Army, Washington, D. C., Commanding Officer, various C.C.C. Camps, 1933-39. Southern Bell Tel. Co., Jr. Engr., 1939-40. U.S. Army, Company & Btn. Commander, 1941-45. Southern Bell Tel. Co., Lake Charles, Engr., 1945 to date.
- LOUIS J. CAPOZZOLI, JR.**, Baton Rouge; age 28. Endorsed: J. J. Coates, L. M. Odom, W. P. Wallace. New York University, B.S.C.E. CUM LAUDE, 1947; Harvard University, M.S.C.E., 1948. Mass. Institute Technology, Ph.C.C.E. June 1950. Jr. Mbr. ASCE, Mbr. Harvard Eng. Society, Mbr. Tau Beta Pi. Registered C.E., N.Y. Mass Institute of Technology, Research Asst, 1949-50. Moran, Proctor, Mueser & Rutledge, N.Y., Foundation Engr., summer 1950 & 1952-55. Spencer, White & Prentis, N.Y., Foundation Engr., 1955-56. Engrs. Testing Lab, Baton Rouge, Nov. 1956-date, Vice-Pres. & Chief Engr., Soil Mechanics and Foundation Dept.
- CARLYLE B. DOUPE**, Shreveport; age 32. Endorsed: R. M. Hood, J. S. Malahy, R. S. Segall. Rensselaer Polytechnic Institute, B.M.E. 1951. Registered M.E., La. Carrier Corp., Syracuse, N. Y., Technical Service Engr., 1951-54, excluding 17 mos. leave for active duty, U.S. Air Force, Armament Systems Officer. Cann Electric Co., Shreveport, Sales Engr., 1954-55. Paul O. Rottman & Assoc., Shreveport, Mechanical Engr., Sept. 1955 to date.
- ALBERT FELDMAN**, Baton Rouge; age 42. Endorsed: J. O. Adams, J. H. Claibagh, J. M. Parish, F. B. Sessums, P. E. Weaver. University of Michigan, B.S.Ch.E. 1941; M.S.Ch.E. 1942 Registered Ch.E., La., N.Y. Socony Vacuum Oil Co., Trenton, Mich., Technical Service Engr, 1942-46. Wyandotte Chemical Co., Process Engr., 1946-51. Nat'l. Anilene Div., Buffalo, N.Y., Project Engr., 1951-52. U.S. Rubber Co., Joliet, Ill., Project Engr., 1952-53. Blockson Chemical Co., Project Engr., 1953-56. Dow Chemical Co., Baton Rouge, Project Engr. for organic facilities, Nov. 1956-date.
- ALBERT T. FURR, JR.**, Baton Rouge; age 35. Endorsed: T. J. Innes, Jr., R. Meyer, P. Wamsley. La. State University, B.S.Ch.E. 1947. Member AICHE, NACE. Esso Standard Oil Co., Baton Rouge, June 1947 to date; Operations Control Engineer, Equipment Inspection Engr., Training Supervisor.
- ASHBY T. GIBBONS, JR.**, New Orleans; age 32. Endorsed: W. E. Blessey, E. H. Pavia, W. P. Wallace. Georgia Inst. of Technology, B.C.E. 1948. Univ. of Illinois, M.S.C.E. 1949 Member NSPE, American Concrete Inst., Jr. Mbr. ASCE. Registered La., Ga., Ala. I. E. Morris & Assoc., Atlanta, design and detailing, 1949. Ga. State Hwy. Dept., Bridge detailer, designer, 1950-52. Ga. Institute of Technology, Instructor, 1949-50. Portland Cement Ass'n, District Structural Engr., July 1952 to date.



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**LOUISIANA**

- DANIEL J. LORIO, JR.**, Baton Rouge; age 27. Endorsed: G. K. Broussard, J. C. Lorio, C. R. Mahaffey. La. State University, B.S. Pet. Eng. Aug. 1950. Sohio Petroleum Co., Lafayette, Production Engr., 1950-52. La. State Dept. Highways, Senior Instrumentman, 1952-53. Naugatuck Chemical Division, U.S. Rubber Co., Baton Rouge, Project Engineer, 1953 to date.
- ALBERT J. MAYERS, JR.**, Baton Rouge; age 32. Endorsed: H. N. Ogden, A. G. Rayner, J. R. Whipple. La. State University, B.S.M.E. 1949. Registered M.E., La Member ASH&VE Ogden, Woodruff & Dyer Inc., Design Engineer & Coordinator, 1949-56. Whipple & Mayers, Consulting Engrs., Partner, April 1956 to date.
- ALBERT G. MCKEE**, Ruston; age 31. Endorsed: H. L. Henry, Jr., T. R. Henry, A. C. Thigpen. La. Polytechnic Institute, B.S.Ch.E., 1947. Cities Service Refining Corp., Lake Charles, Engineer, Pilot Plant, 1947-48. Claiborne Gasoline Company, Lisbon, La., Engineer, 1948-57.
- LEO MARIENFELDT**, Shreveport; age 55. Endorsed: G. C. Henry, E. M. Jolly, Q.W. Hargrove. University of Berlin, Electrical Engineering, 3 yrs. S.M.U., Dallas, Electrical Engr., 3 yrs. Member I.E.S., Associate Member A.I.E.E. S.W. Tel. Co., Dallas, Draftsman & Engineer, 1929-41. Whitaker Pipe Line Co., Houston, Design of pump stations, 1941-42. Brown Shipyard Co., Houston, in charge electrical utilities, 1942-45. Self-employed, 1945-47. Dale S. Cooper & Assoc., Houston, Electrical Engineer, 1947-50. Harold B. Wells & Assoc., Dallas, Electrical Engr. & Associate, 1950-53. Paul O. Rottman, Shreveport, Electrical Engr., 1953-54. Carl M. Hadra & Associates, Shreveport, Electrical Engr., 1954-57. Geo. C. Hengy Co., Shreveport, Electrical Engineer, 1957 to date.
- HAYWOOD B. MILES, JR.**, Monroe; age 32. Endorsed: H. H. Mullins, W. E. McGough, W. S. Ware. Louisiana Polytechnic Institute, B.S.C.E. 1949. Registered C.E., La. L. M. Ray Construction Corp., Monroe, Supt., 1949-51. Ford, Bacon & Davis Const. Corp., Monroe, Project Engineer, 1952-53. The Brown Paper Mill Co., Inc., now Olin Matheison Chem. Corp., general Engineering on maintenance and addition of equipment, 1953-date.
- VIRGIL O. MITCHELL**, Baton Rouge; age 29. Endorsed: W. L. Sutton, E. V. Nahr, R. E. Phillips. La. State University, B.S.E.E. 1949. California Institute of Technology; E.E. course, 1949. General Electric Co., New York, Test Engr., 1950-51; Head of Test, 1951-52. Ethel Corp., Baton Rouge, Asst. Elect. Engr., Elec. Engr., Group Leader, Engr. Design Supervisor 1952 to date.
- LAMON L. MOODY, JR.**, Baton Rouge, age 32. Endorsed: F. G. Hornsby, H. L. Landry, M. A. Steele. Southwestern La. Institute, B.S.C.E. 1951. The Texas Co., NY Trainee Engineer, 1951-52. African Petroleum Terminals, Ltd., Engineer on loan, 1952. Daker Field Headquarters, French West Africa, Field Engineer, 1952-56. Kaiser Aluminum and Chem. Corp., Baton Rouge, Asst. Head C.E. Dept., Sept. 1956-date.
- JAMES H. MOORE, JR.**, Baton Rouge; age 33. Endorsed: R. Meyer, P. Wamsley, T. J. Innes, Jr. Vanderbilt University, B.E. in E.E., 1948. Esso Standard Oil Co., 1948-date; Equipment Inspector, Mtce. and Construction Engr., Equipt. Inspection Group Head.
- VIRGIL ORR**, Ruston; age 34. Endorsed: B. T. Bogard, H. L. Henry, A. C. Thigpen. La. Polytechnic Institute, B.S.Ch.E. 1944. La. State University, 1946-50, Ch.E., M.S., Ph.D., June 1950. Assoc. Member AIChE; Member Nuclear Div. AIChE; Member ASEE. Cities Service Refining Corp., Lake Charles, Shift Analyst, summer 1944. La. State University, Teaching Asst., 1947-50. United Gas Corp., Shreveport, Research Engineer, 1950-52. La. Polytechnic Institute, Prof. Ch.E. and Head Eng. Research, 1952-date.
- ROBERT R. PERCY**, Baton Rouge; age 36. Endorsed: E. V. Nahr, R. E. Phillips, W. P. Wallace. La. State University, B.S.C.E. 1943. Registered C.E., La. U.S. Army Corps of Engrs., active duty (Capt.) 1943-46. Ethyl Corp., Eng. Dept., Draftsman Designer, Engr. Designer, Design Engr., C.E. Design Leader, 1946-date.
- WALTER E. RICHARD**, Lake Charles; age 47. Endorsed: M. D. Garrison, W. J. Lechtenberg, J. P. Tucker. Lafayette College, 1927-31, B.S. Administrative Eng., 1931. Jr. Mbr. ASME, Easton, Pa., 1931. Swann Chemical Co., Birmingham, Ala., Technical Sales, 1934-35. Burroughs Welcome, Teckahoe, N.Y., in charge Tabloid production, 1936. Phosphate Mining Co., N.Y., Engineer, 1936-39. Hercules Powder Co., Wilmington, Del., Development Sales, 1939-48. Olin-Matheison Chemical Corp., Nitric Acid Supt., June 1949 to date.

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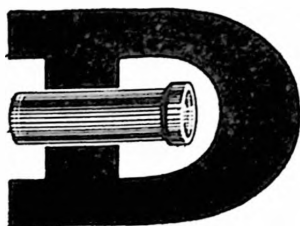


- RICHARD W. RIEDEL**, Baton Rouge; age 29. Endorsed: J. M. Parish, F. B. Sessums, W. P. Wallace. Rice Institute, Houston, Tex., B.S.C.E. 1949. Associate Member ASCE, Houston. Registered Texas, La. Dow Chemical Company, Freeport, Tex., Structural Engineer, Project Mgr., 1949-56; Baton Rouge, Chief Civil Engr., June 1956 to date.
- SPENCER B. ROANE**, Baton Rouge; age 35. Endorsed: J. O. Adams, F. B. Sessums, P. E. Weaver. Georgia School of Technology, B.S.Ch.E., 1933. Registered Ch.E., a. General Gas Corp., Thibodeaux, La., Industrial Salesman, Sub-branch Mgr., 1950-53. Loffland-Porter Drilling Co., Midland, Texas, field Engr. on air drilling operation, Jan-Mar. 1953. United Carbon Co., Charleston, W. Va., Franklin, La., Asst. Plant Engr., Mar.-Dec. 1953. Castagnos Cane Loader Co., Donaldsonville, La., Plant Mgr. 1963-56. Dow Chemical Co., Baton Rouge, Project Engr., design and construction Chlorine Plant, July 1956-date.
- EDWIN O. SCHNEE**, Lake Charles; age 39. Endorsed: E. M. Freeman, G. C. Hengy, W. M. Larkin, F. J. Warren. I.C.S., Scranton, Pa., Electrical Engineering, completed 1st phase of course. Member AIEE, SAME, Nat'l Ass'n Corrosion Engrs. Geo. C. Hengy Co., Shreveport, Resident Engr., field eng. on REA coops in La., Texas and Oklahoma, 1945-49. Stone & Webster Eng. Corp., Beaumont, Tex., Design Draftsman, Location Engineer, 1949-51. Brazos River Trans. Electric Corp., Waco, Design Engr., 1951. Lake Charles AFB, Eng. Section, Electrical Engr. and Head Project Preparation section, 1951-date.
- JAMES B. SHIPP**, Maplewood, La.; age 30. Endorsed: F. E. Charles, G. H. Hill, W. M. Larkin. La. Polytechnic Institute, B.S.E.E. 1951. Member AIEE, NACE. USMC, Electronics Officer (Captain) 1951-53. Davison Chemical Co., Asst. Plant Engineer, 1953 to date.
- WILLIAM J. STORM**, New Orleans; age 32. Endorsed: R. B. Perkins, Wm. Goetz, C. J. Weithman. University of Ill., B.S.M.E. 1947; Univ. of Chicago, M.B.A. Registered M.E., La. Member Nat'l Ass'n Cost Accountants, Society for Adv. of Management. DeVry & Co., Chicago, Draftsman, 1942-43. Alloy Casting Co., Champain, Ill., Draftsman, Jr. Engr., 2 yrs. part-time. Ft. Wayne Corr. Paper Co., Chicago, Trainee, Dept. Supt., 1947-48. Western Electric Co., Chicago, Mech. Engr., 1948-50. Wendnagel & Co., Chicago, Asst. to Vice-Pres., Plant Layout, Time Study, etc., 1950-51. U.S. Corps of Engrs., Chicago, Industrial Engr., 1951-52. Sessions Eng. Co., Chicago, Management Consultant, Mech. Engr., 1952-55. Univ. of Ill., Instructor in Mech. Eng. and Consulting Engr. in Machine Design, Plant Layout, Sanitary Eng., etc., 1955-56. Campbell, Goldstein & Glade, N.O., Management Consultant, July 1956 to date.
- AUGUST J. SZABO**, Lafayette; age 35. Endorsed: Emery Domingue, J. E. Jarman, F. W. zur Burg. La. State University, B.S.C.E. Jan. 1943. Harvard University, M.S. Sanitary Eng. June 1950 Associate Member ASCE, Member AWWA, ASEE Registered C.E., La. La. State Board of Health, Public Health Engr. II, 1946-55. Southwestern La. Institute, Associate Prof. Civil Eng., 1955 to date.
- ERNEST J. TAYLOR**, Baton Rouge; age 43. Endorsed: H. B. Myers, F. B. Sessums, C. T. Watts. Miss. State College, B.S.C.E. 1939. Registered C.E., La. Miss Bureau of Public Roads, Vicksburg, Miss. Rodman, Eng. Aide, summers 1932, 1938, 1939. U.S. Geological Survey, Baton Rouge, Hydraulic Engr., 1939-46; Jonesboro, La., Area Hydraulic Engr., 1946-56. La. Dept. Public Works, Baton Rouge, Hydraulic Engr., Nov. 1956 to date.
- CHESTER W. THOMPSON**, Baton Rouge; age 40. Endorsed: T. E. Alexander, F. G. Hornsby, W. D. Poole. Iowa State College, Ames, Iowa, B.S. Agri. Engr., Dec. 1940. Former member A.S.A.E., S.A.E. Registered Agri. Eng., La. Caterpillar Tractor Co., Peoria, Ill., Eng. Trainee, Field Engr., Research Supervisor, 1940-50. Boyce-Harvey Machinery Inc., Baton Rouge, General Service Mgr., Comptroller, 1950-54. Astilleros Dominicanos Gibbs, C.A., Ciudad Trujillo, Dominican Republic, General Supt. of Construction, 1954-56. Dow Chemical Co., Baton Rouge, Asst. to Chief Estimator, July 1956 to date.
- MOHNS M. THORNTON**, Lake Charles; age 36. Endorsed: G. C. Hengy, D. W. Jessen, W. M. Larkin. Alabama Polytechnic Inst., B.S.Ch.E. 1947. Member Chemical Engrs Club, Lake Charles Matheison Chemical Corp., Chemical Engineer, 1947-49. Air Conduit Co., Sales Engineer, 1949-51. Lake Charles Air Force Base, Mechanical Engineer 1951-52, graduate Carrier School on Air Cond., 240 classroom hrs.; Chief Engineer, 1952-56; Deputy Installations Engineer, 1956-date.



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**HOWARD M. TULL**, New Orleans; age 37. Endorsed: J. A. Hebert, J. R. McKinley, R. O. Williams. Copiah-Lincoln Junior College, Wesson, Miss., 1937-39-Certificate. Southern Bell Tel. Co., New Orleans, Exchange Plant Engineer. Reviewing and processing outside plant authorizations for State of La.; furnishing technical advice to engineers in the field on exchange outside plant design and construction methods; preparing forecasts of material requirements for Louisiana area; Employed May 1939 to date.

**WILLIAM H. WHITE**, New Orleans; age 35. Endorsed: H. E. Crump, J. B. Giddens, Jr., Ole K. Olsen. Columbia University, New York, B.S.C.E. 1950. C.E., La. Tenn. Valley Authority, Civil Engr., 1950-51; Mech. Engr., 1951-53. Board of Commissions, Port of N.O., Structural designer, 1953-55. Ole K. Olsen Co., Sales, promotion( design and detailing of Wilson Steel Joists, 1955-57. U.S. Navy, District Public Works Office, 8th N/D, Structural design, present employment.

### FOR TRANSFER FROM JUNIOR TO MEMBER

**THOMAS H. ARNOLD, JR.**, Baton Rouge; age 27. La. State University, B.S. Ch.E. 1951; M.S. Ch.E., 1954. Registered Ch.E., La. Esso Standard Oil Co., 3 mos. 1950. Ethyl Corp., 1951-52, 53, 54 (18 mos.) Dr. A. G. Keller, 1951-53 (12 mos.). U.S. Army Chemical Corps, 1954-56 (21 mos.). Food Machinery and Chemical Corp., 1955-56 .9 mos.).

### FOR AFFILIATE MEMBER

**NEWTON J. GORSHA**, Alexandria; age 33. Endorsed: W. E. Flowers, W. D. Roland, C. R. Westerchil. Pittsburgh Testing Lab, Alexandria, Resident Inspector-Manager, 1953-55. Central Culvert Corp., Alexandria, Salesman, Concrete Coordinator, 1955-56. Alexandria Concrete Co., Supt., 1956-57. Ralph S. Holt Testing Lab. Inc., Alexandria, Manager, Feb. 1957 to date. Prior to 1953, worked as combination field inspector on soil fills, embankments, soil-cement soil processing, concrete road construction, etc.

**DANIEL B. LEMOINE**, Monroe; age 29. Endorsed: F. R. Adams, H. W. Fris-toe, J. R. McKinley. Employed by Southern Bell Tel. Co. since August 1946. Have held position of Jr. Engineer for past 4 years, designing telephone outside plant facilities and dist. systems involving cable, conduit, aerial wire, pole lines, etc., making economic cost studies and fundamental plans for future use. Direct the work of 1 student engr., 1 jr. engr. and 2 engineering clerks.

**SAMUEL S. McINNIS**, New Orleans; age 34. Endorsed: H. A. Canavier, W. H. Fush, G. P. Peagler. La. State University, Arts & Sciences, 1941-48. I.C.S., Civil Engineering, 1948-53. Ford, Bacon & Davis Const. Co., Monroe, Field Engr., 1948-51. Dye & Mullins Const. Co., Columbia, Miss., Project Engineer, 1951-52. C & S Construction Co., DeQueen, Ark., Project Engineer, 1952-53. Associated Pipe Line Const. Co., Houston, Project Engineer, 1953-56. Ebasco Services Inc., N.O., Field Engineer, survey, design, inspection, general construction of steam generating station, 1956 to date.

**HERMANN W. STUMBORG**, New Orleans; age 36. Endorsed: F. J. Baehr, Jr., A. H. Jensen, R. P. Maddux. U.S Merchant Barine Academy, 1939-42, Engineer, Feb 1942. Tulane University, Ch.E. and M.E. courses, 1954-56. University College, M.E., 1956-date. Merchant Marine Cadet Corps, Cadet, study of operation and mtce. of vessels machinery, 1939-42. Various shipping companies including Watson Navig. Co., Lykes SS Co., Miss. Shipping Co., and others, sailed as Jr. Asst. and Chief Engineer, 1942-48. N. O. Public Service Inc., Watch Stander as water tender, pump tender, etc., also instrument mech. helper, 1948-53; Engineer, equipment tests, summers 1954-55; Test Engineer, check on efficiency calculations, 1956 to date.

**JAMES E. TRACY**, Jennings; age 44. University of Nebraska, Farm Architecture & Drafting, 1930; York College, Math. & Physics, 1931-44; Univ. of South Dakota, 1944-46. A.B. 1946. United Seminary, Dayton, O., History, Administration, 1946-55, B.D. 1955. Univ. of Cincinnati, Math, Statics, 1952-54. Chicago Technical College, Drafting, 1952-53. Baldwin-Lima-Hamilton, O. Detail Draftsman, 1951-52. Clearing Machine Corp., Hamilton, O., Detail Draftsman, 1952-53. Bechtel Constructon Corp Sn Francisco, Piping Design, Office Organization, 1955-56. Carruth-Dishman Construction Corp., Beaumont, Tex., Design Draftsman, Field Engineer, Jan-July 1956. W. E. Bailey & Assoc., ake Charles Piping Design Draftsman, 1956-57. Carruth-Dishman Construction Corp., Beaumont, Tex., present employer.

### FOR JUNIOR MEMBER

**BENJAMIN F. BOUSER**, Baton Rouge; age 25. Endorsed: T. J. Innes, Jr., R. E. Ruckstuhl, O. I. Snapp. University of Missouri, B.S.C.E. June 1956. Jr. Mbr ASCE, Member Chi Epsilon, Tau Beta Pi Esso Standard Oil Co., Baton Rouge, Project Engr., 1956-date.

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- J. E. CLEMENT, JR., Baton Rouge; age 30. Endorsed: E. J. Dantin, R. D. Percy, W. P. Wallace. La. State University, BSCE 1956. Jr. Mbr. ASCE. Registered C.E., La. Present employer, Kaiser Aluminum & Chemical Corp.
- RODERICK E. DILLON, JR., Monroe; age 22. Endorsed: C. H. Edwards, Jr., R. A. McFarland, R. A. Smith. La Polytechnic Institute, B.S.C.E. Jan. 1955. Registered C. E., La. La. Dept. Highways, P.E.I.—survey party, location of interstate highway, Feb. 1957 to date.
- LEONCE F. DUPUY, Baton Rouge; age 29. Endorsed: F. B. Sessums, W. P. Wallace, F. J. Germano. Texas A & M College, General Eng., 1945-46. La. State University, 1954-56, B.S.C.E. Aug. 1956. Jr. Mbr. ASCE. Registered C.E., La. Dow Chemical Co, Baton Rouge, Project Engr, 1956 to date.
- ROBERT D. FENNER, Baton Rouge; age 27. Endorsed: W. T. Firesheets, G. E. Templet, W. P. Wallace, La. Polytechnic Institute, Ruston, B.S.C.E., La. State University, 1955-57, M.S.C.E. June 1957. Registered C.E., La. M. W. Kellogg Construction Co., Engineer-Trainee, summer 1952. Humble Oil Co., Civil Engr., summer 1953. U.S. Army Sept. 1953-June 1955. City of Shreveport, C.E., summer 1955. L.S.U., Graduate Asst., 1955-56. Ogden, Woodruff & Dyer, Structural Design Engr., June 1956-date.
- ROBERT C. HANKS, Baton Rouge; age 26. Endorsed: T. J. Innes, Jr., A. N. Gordon, Enoch Talley. Alabama Polytechnic Institute, B.S.E.E. 1952. Esso Standard Oil Co., June 1952-date, except for military duty 1954-56. Electrical Engineer, engineering studies, specifications and design.
- DENNIS E. MITCHELL, JR., Natchitoches; age 30. Endorsed: Oren Baker, Ben Barnes, C. C. Edwards. Registered C.E., La. Member La. Highway Engrs. Ass'n. La. Dept. of Highways, Rodman, Sr Instrumentman, Party Chief, Jr., Sr. Project Engr., Sept. 1945 to date.
- ROBERT L. RABORN, Baton Rouge; age 23. Endorsed: B. E. Crawford, T. J. Innes, A. S. Jackson, Enoch Talley. La. State University, B.S.E.E. Jan. 1957. Registered E.E., La. Esso Standard Oil Co., Electrical Engineer, Jan. 1957 to date.

#### FOR TRANSFER FROM STUDENT TO JUNIOR MEMBER

- CHARLES BAKER, Graduate in Electrical Engineering at Southwestern Louisiana Institute.
- THOMAS A. BOUDREAUX, Graduate in Electrical Engineering at Southwestern Louisiana Institute.
- MERLIN X. BRAQUET, Graduate in Electrical Engineering at Southwestern Louisiana Institute.
- DAVID W. BREEDLOVE, Graduate in Electrical Engineering at Southwestern Louisiana Institute.
- BOBBY J. CONERLY, Graduate in Electrical Engineering at Southwestern Louisiana Institute.
- PRESLEY J. FREDERICK, Graduate in Civil Engineering at Southwestern Louisiana Institute.
- RALPH FERNANDEZ, Graduate in Electrical Engineering at Southwestern Louisiana Institute.
- FLOYD C. HEBERT, Graduate in Mechanical Engineering at Southwestern Louisiana Institute.
- MARK H. KITE, Graduate in Civil Engineering at Southwestern Louisiana Institute.
- JOHN A. LeBLANC, Graduate in Civil Engineering at Southwestern Louisiana Institute.
- ALBERT C. LEGE, Graduate in Electrical Engineering at Southwestern Louisiana Institute.
- JAMES M. McCLANAGHAN, Graduate in Electrical Engineering at Southwestern Louisiana Institute.
- DOUGLAS S. TALBOT, Graduate in Civil Engineering at Southwestern Louisiana Institute.
- HUBERT J. THIBODEAUX, Graduate in Mechanical Engineering at Southwestern Louisiana Institute.
- ELMER V. TRICHE, Graduate in Electrical Engineering at Southwestern Louisiana Institute.
- PERCY VINET, Graduate in Electrical Engineering at Southwestern Louisiana Institute.
- FRANCIS H. WYBLE, Graduate in Civil Engineering at Southwestern Louisiana Institute.

#### JUNIOR MEMBERSHIP AWARD

- PETER LAKE MULLINS, Graduate in Mechanical Engineering at Tulane University.

# THE LOUISIANA ENGINEER

AUGUST, 1957

*"Patronize Our Advertisers"*

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This Journal reaches the officials with whom rests the responsibility for the bulk of the municipal, state and industrial works in Louisiana and the surrounding territory. Its advertising pages afford you an effective and dignified means of cultivating a wider acquaintance among prospective buyers.



# *THE* LOUISIANA ENGINEER



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AUGUST, 1957

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Boilers

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COVER: *Low Sill Structure of Old River Control Project, progress  
as of August 1957. Courtesy U. S. Army Engineers.*

## REPORT ON BALLOT CONCERNING AFFILIATION WITH NATIONAL ORGANIZATIONS

The committee assigned to count votes in the matter of the Louisiana Engineering Society's affiliation with national organizations met on Thursday, September 6, 1957, 4:45 p.m., at the Engineers' Club, New Orleans. Those present were Messrs. L. J. Cucullu, W. J. Drawe, Jr., R. T. Sessums and J. P. Fernandez; absent, F. G. Hornsby. President W. S. Nelson also was present and assisted the committee.

The secretary reported that 1342 ballots had been mailed to voting members of the society. Ballots returned totaled 597, of which the committee ruled that 19 were spoiled because voters had failed to follow instructions in omitting their signatures from the outside envelope. The results on the remaining 578 votes were as follows:

|                                                                       |       |
|-----------------------------------------------------------------------|-------|
| For affiliation with National Society of Professional Engineers ..... | 426   |
| Against affiliation with N.S.P.E. ....                                | 137   |
| Not voting .....                                                      | 15    |
|                                                                       | <hr/> |
|                                                                       | 578   |
| For affiliation with Engineers' Joint Council .....                   | 436   |
| Against affiliation with E.J.C. ....                                  | 124   |
| Not voting .....                                                      | 18    |
|                                                                       | <hr/> |
|                                                                       | 578   |

Respectfully submitted,

Lionel J. Cucullu  
Wm. J. Drawe, Jr.  
Roy T. Sessums  
John P. Fernandez

# A COMMENT ON ENGINEERING EDUCATION\*

by

DR. DONALD DERICKSON  
*Chairman, Louisiana State Board  
of Registration for Professional  
Engineers and Land Surveyors*

From the 1956-57 Year Book of the National Council of State Boards of Engineering Examiners it is learned that 39 of the 53 member Boards include the adjective, Professional, in their official designation. From another publication it is gathered that only 37 of the constituent Boards require examination thus some 16 Boards register applicants on the basis of graduation from an approved engineering curriculum and who possess the prescribed years of engineering experience, generally four, under the direction and supervision of a registered Professional Engineer. In two instances, namely Louisiana and Virginia, the requirements of internship if it may be called that, of practical experience in connection with engineering engagements is omitted.

If, as we believe, engineering is a learned profession, it may well be asked, "At what point in the educational process of the Engineer is he indoctrinated in the essentials which distinguish a member of a learned profession from other occupations?" It is said that we learn from repetition and from experience. If this be true then with forty years as a member of a State Engineering Registration Board during which period several thousand applications were examined and many personal interviews were held, there is developed in my mind the impression that there is a deficiency in the professional education of the Engineer which is a distinguishing characteristic between the engineering technician and the Professional Engineer, and that deficiency is an understanding of the background of the profession for which he is preparing.

The applicant when asked if he regards engineering as a trade, a craft, a business or a learned profession, will almost without exception reply "Why certainly, a profession", but when further questioned as to the distinguishing characteristic he is vague and sometimes quite uncertain. Some of the questions such as "Is unionization compatible with professional standing? Does the status as employee militate against professional recognition? What are some of the obligations? State some of the ethical principles which

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\* Presented at the May, 1957 Southern Zone Meeting of the National Council of State Boards of Engineering Examiners, Asheville, N. C.

should govern the professional conduct of the engineer," Such questions often elicit unsatisfactory replies. Sometimes the applicant confuses a course in contracts and specifications with professional ethics and conduct.

Engineering has such an extensive and honorable background of accomplishment that the engineer should be informed as to those achievements both ancient and recent which have contributed in such large measure to our civilization.

In discussing this matter with the representatives of the accredited Engineering Schools here in Louisiana a sympathetic consideration was evident. What could be omitted from an overcrowded four year curriculum?

The Student Chapters of our National Engineering Societies have done much to develop the professional attitude, and if our all too meager four year curricula can do no more than further the technical aspect of the institutional education, possibly the Student Chapters might find place for a program of such nature. In any case it is needed. It should be comprehensive and well thought out and given only by those having the educational qualifications and professional experience which will command the respect of the student.

This is not to be construed as a criticism of collegiate engineering education. Excellent results are accomplished and it is remarkable that in four years so much can be done.

It is recognized as good engineering practice to compare estimated progress and costs with actual results as the work progresses; it is with such thought in mind that the foregoing comments are written.

|                                        |          |                                                                                     |                     |
|----------------------------------------|----------|-------------------------------------------------------------------------------------|---------------------|
| Blue<br>Black<br>Brown                 | } Prints |  | Photostat<br>Prints |
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# Giving Free Advice Can Cost You Plenty\*

ALBERT WOODRUFF GRAY

Since he is accepted by the public as a man with special knowledge and skill, the consulting engineer must be extremely careful in giving free advice carelessly. Most persons who are not intimately familiar with the law automatically would assume that they would not be held liable for damages arising from advice freely given, but this is only partially true. If a doctor or a school teacher were to walk by a construction job and give one of the workers some advice as to how a pipe should be installed and then the plumbing system fell apart at that point, damaging the property, the doctor or the school teacher probably would not be liable in any way. They are not experts, and there was no reason for the construction worker to think that he was receiving expert advice from them. On the other hand, if a consulting engineer were walking along the street and stopped at the same construction job, he could well be held liable if it could be shown that he had told the construction worker that he was an engineer and left the impression that he was an expert and knew what should be done.

Every engineer should understand this principle of the law, and his errors and omissions insurance should be written to take care of free advice as well as regular work unless he is proficient at keeping his mouth tightly closed until he is paid to open it.

This principle of law is nothing new. Referring to a rule as old as English law itself, Justice Frankfurter, in a recent decision of the United States Supreme Court, said that one voluntarily assuming any undertaking "must perform his 'Good Samaritan' task in a careful manner."<sup>1</sup>

Several hundred years before this comment was made in this recent Supreme Court decision, suit had been brought in an English court by the owner of several hogsheads of brandy against a man who had undertaken gratuitously to transfer this brandy from one celler to another. In the performance of the task, one of these hogsheads was staved in through carelessness, and the brandy was lost.

In his defense to this suit the man contended that since he had been paid nothing for his effort and had undertaken to move these hogsheads gratuitously he could not be held liable for the loss.

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\*Reprint from "Consulting Engineer".

In its disposition of this defense, the English court referred to another decision that had been made in the days of Henry IV. In that suit a carpenter had promised to build a house but had not done so. The court in its decision held that this man had not undertaken the work and therefore he was not liable in damages. But on the other hand, had he undertaken its performance and had he been negligent in so doing, he would have been liable in damages to the owner even though he had done the work on a voluntary basis.<sup>2</sup>

When later a controversy of this character came before the courts of this country, our court agreed that there was a well settled distinction between claims for damages for a failure to act, and claims that arise in connection with acts that were performed in a negligent manner,

"When one party entrusts the performance of a business to another who, without consideration, undertakes but wholly omits to do it, no action lies notwithstanding the party may have suffered special damages." On the other hand, added the court, "If the party enters upon the execution of the business and does it amiss through the want of due care by which damage ensues to the other party, an action will lie for wrong doing."<sup>3</sup>

More recently, in New Hampshire, a physician volunteered his advice without compensation. His instructions thus carelessly given, were followed by the receiver who, as a consequence, became seriously ill. In its comment on these circumstances, the Supreme Court of that State said that when this physician assured the woman she was in no danger from infection, even though he had done so voluntarily, he assumed certain obligations for which he might be held responsible in damages.

"When he advised her, he assumed the obligation to use due care in doing so. The gratuitous character of the services . . . would not exercise his failure to exercise such care as the circumstances demanded."<sup>4</sup>

Essentially the same situation arose later before the New York courts. There, a manufacturer had voluntarily assumed the task of instructing a farm worker in the operation of a tractor, but he failed to warn the worker of latent dangers, and suit was brought against the manufacturer for his failure to observe this centuries old rule of law.

Here the court held this volunteer answerable for the injuries incurred from negligence, stating in the decision, "Liability for negligence rests on the principle that if a person undertakes to do an act or discharge a duty by which the conduct of another party



may be properly regulated and governed, he is bound to perform it in such a manner that those who are rightfully led to a course of conduct or action on the faith that the act or duty will be duly and properly performed, shall not suffer loss or injury by reason of his negligence."<sup>5</sup>

Public weighers in New York City at one time furnished a purchaser of merchandise, gratuitously and purely as a favor, the weight of merchandise on which his payment should be computed. On one occasion the figures furnished were between eleven and twelve thousand pounds in excess of the actual weight. Suit was later brought for a recovery of the damages incurred.

In their defense these weighers contended that the furnishing of this weight was a gratuitous service on their part for which this buyer had paid nothing and that by virtue of that circumstance their error was no basis for a claim for damages.

In its conclusion holding the misled buyers entitled to a recovery of their damages, the court said, "It is ancient learning that one who assumes to act, even though gratuitously, may thereby become subject to the duty of acting carefully if he acts at all."<sup>6</sup>

Being guided by that long ago decision of the English court awarding damages for the stayed in hogshead of brandy, the New York State Court of Appeals 100 years ago said, "It has been held that when the condition of the party charged is such as to imply peculiar knowledge and skill, the omission to exercise such skill is equivalent to gross negligence." This comment was supplemented with reference to another early English ruling that, "if a man gratuitously undertakes to do a thing to the best of his skill when his situation or profession is such as to imply skill, an omission of that skill is imputable to him as gross negligence."<sup>7</sup>

It is clear then that under the common law an engineer who undertakes to do a service for another without reward is not answerable for omitting to do the service, but he is answerable when he attempts to do it and does it amiss. In other words, he is responsible for a wrong doing but not for a non-doing.

Only a few months ago the United States Court of Appeals said, in holding the Federal Government liable in damages for the failure of the Coast Guard properly to effect a rescue by helicopter, "The law imposes an obligation on everyone who attempts to do anything, even gratuitously, for another, not to injure him by the negligent performance of that which he has undertaken."<sup>8</sup>

In view of all these rulings, the consuling engineer must be extremely careful about his "Good Samaritan" services, and he

must be prepared to accept as much liability for these as if he had been paid a full fee.

#### References

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3. Smedes v. Utica Bank, 20 Johns. (N.Y.) 372, 1823.
4. Edwards v. Lamb, 45 Atl. 480, New Hampshire, July 28, 1899.
5. Miller v. International Harvester Co., 184 N.Y.S. 91, New York, July 6, 1920.
6. Glanzer v. Shepard, 135 N.E. 275, New York, April 18, 1922.
7. Nolton v. Western Railway Corp., 15 N.Y. 444, New York, June, 1857.
8. United States v. Lawler, 219 Fed. 2d 559, Florida, March 2, 1955.

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## Inventions By Louisiana Engineers

The invention of a process and apparatus, under the tradename of "Precon", which may have a revolutionary impact on television advertising by beaming messages to the viewer's subconscious mind, was reported at the Sept. 20th meeting of the American Institute of Electrical Engineers.

The new process flashes a message on a television or movie screen so fast that a person is not aware of seeing it. Yet results of psychological experiments show that the message does influence choices later made by the viewer. They also show that the appeal of a given trade name can be increased by presenting it at a subconscious level along with appealing or entertaining material presented at the level of consciousness or awareness. Presenting the paper was Hal C. Becker, co-inventor and vice-president of Experimental Films, Incorporated. This New Orleans firm's president is R. Brown Moore, attorney, president of Pan Air Corporation, and former New Orleans city councilman. Co-inventors and vice-presidents of the corporation are Hal C. Becker, an electronics engineer, Assistant Professor in Experimental Neurology at the Tulane University School of Medicine, and Dr. Robert E. Corrigan, a psychologist with the Human Factors Analysis Group of Douglas Aircraft Corporation, Long Beach, Calif.

To support the Precon claims, tests were conducted on over 600 people. In one group, subjects were presented with jumbled letters which if rearranged would spell a word. Before being asked to solve the problem, all subjects were asked to view a lighted screen. For some of them the solution to the problem was flashed on the screen so fast that none could report seeing anything; for others, meaningless material was flashed on the screen. Results showed that those who were exposed to the solution of the problem solved it from 15% to 46% faster than those not exposed.

Other experimental tests conducted mostly with students at Loyola University showed that groups of people would respond to information presented at the subconscious level and that information could be presented to the subconscious mind at the same time as the subject was viewing a film.

In one out of several series of tests, there were six groups of 18 people who watched one of two color cartoons and were subconsciously exposed during the course of the film to the name of one of three different gasoline trade names. Following the film they were asked which of the three trade names appealed to them most. On the basis of pure chance it could be expected that an equal number would like each trade name.

The studies showed, however, that those people who said they liked the film were much more likely to say they liked the trade name to which they had been subconsciously exposed than those who were neutral or did not like the film. Among those people who said they liked the film, 17 said the subconsciously presented trade name appealed to them most and 14 said other trade names. On the basis of chance, one would expect the ratio to be 17 to 34, and not 17 to 14.

On the other hand, among those who were neutral to the film, only seven identified the trade name to which they had been subconsciously exposed and 35 gave one of the other two names. If chance alone operated here, the ratio would have been 7 to 14 instead of 7 to 35. In the group who disliked the film, six gave correct responses and 15 incorrect, which is just about what chance would predict.

Among the inventions for which patents have been applied are included attachments to motion picture projectors which can flash such information, a special type of motion picture projector, and apparatus which would make it possible to send flashes of information from a television studio.

The New Orleans group has done much work in correlating the frequency and intensity of the flashes with the frequency of brain waves, which have long been under study.

..... Cushman, Darby and Cushman, patent attorneys in Washington who are representing the New Orleans firm, have reported that application for patents was filed over a year before that of a New York firm which recently reported work along a similar line.

Officials of Experimental Films, Inc., pointed out the Precon process has many applications in other fields such as education, industrial training, personnel selection, and mental rehabilitation. Recently arrangements have been made with Westin Rush Production, Inc. to use this process in a full length movie in order to increase the entertainment value of the picture.

A copy of this paper will appear in a forthcoming issue of the Louisiana Engineer.

## OBITUARY OF CHARLES EMILE CASSAGNE, JR.

The Louisiana Engineering Society lost a member of its Board of Direction through the death on April 3, 1957 of Mr. Charles Emile Cassagne, Jr. Surviving are his wife, the former Julia Sierra, and a daughter, Anne Marie.

He was educated in the public schools of New Orleans and was graduated from Warren Easton Boy's High in 1927. Mr. Cassagne attended the College of Engineering of Tulane University receiving a Bachelor of Engineering in Civil Engineering in 1931,

After his graduation he served as junior Engineer for the Strauss Engineering Corporation on the construction of the Bascule Bridge over the Industrial Canal in New Orleans.

He later served with the U. S. Geological Survey on Second Order Traverses and Level Controls in Louisiana.

On February 1, 1938, Mr. Cassagne was appointed Assistant City Engineer for the City of New Orleans. His assignments consisted of the engineering supervision of the construction of subsurface drainage, street paving and related works from which position he advanced to the position of Bridge Engineer. This latter position consisted of the engineering design and construction and maintenance of City owned and operated bridges.

From this position he advanced to that of Design Engineer, which comprised the design of subsurface drainage, street paving and pertinent work. He was later promoted to the position of Office Engineer.

From 1942 to 1946 he served as a Captain with the U. S. Army Engineers engaged in building air fields overseas.

On February 5, 1949, he was appointed Administrative Engineer for the New Orleans Terminal Board. This position comprised the administrative supervision of the Grade Separation Program for the City of New Orleans.

In addition to his duties with the New Orleans Terminal Board, on May 1, 1954 he was made Chief Engineer of the Mississippi River Bridge Authority, handling the many engineering and contractual agreements between the Authority, the consultants and contractors. Mr. Cassagne was recognized for important leadership in exploring the numerous problems inherent to a project of this magnitude, and in helping to coordinate the plans for the construction of the Bridge and its approaches.

To Charlie's many friends he was quiet and unassuming. He was always cheerful and without complaint, and he shared his specialized knowledge with all those who called on him. He will be greatly missed by the membership of the Louisiana Engineering Society.

## ENGINEERING BRIEFS

**FLIES CLOSE BRIDGE TO TRAFFIC**—Because someone forgot to turn off the lights, swarms of flies descended on a Mississippi River bridge last week near La Crosse, Wis., and caused a temporary closing. Flies landing on the roadway were crushed, causing a slippery condition. One accident resulted involving a semi-trailer truck and three autos. Two truck loads of sand solved the traction problem.  
—*Engineering News-Record*

**A LONG WAY AROUND**—A Catskill, N. Y., farmer with a legitimate gripe has been quietly granted permission by the red-faced State Assembly to sue the state. The farmer's problem: in building the state thruway, engineers overlooked one small matter. The new road separated him from his outhouse and he had to drive four miles and pay a toll to reach it.  
—*Fleet Owner*

**MEXICO QUAKE REPORT**—Examination of many tall buildings in the business and hotel district of Mexico City, revealed that faulty design and construction practices were responsible for much of the earthquake damage.

Many tall buildings turned out to be too flexible, as evidenced by popping windows and severe partition cracking. In some cases, even the structural framing did not escape damage.

One 12-story apartment house appeared to have steel columns that were too light for the height of the building. Several buckled badly in the second story.

Since official investigating committees have not yet completed their reports, it is impossible to estimate the cost of damage to Mexico City's tall buildings.

One lesson is obvious from inspection of the city. The quality of construction and the degree to which use is made of seismic design are more important in determining the ability of a building to survive an earthquake than materials used to build it. Steel and reinforced concrete fared equally well, if the design was good. This is proved by several high buildings that were undamaged, whereas immediately adjoining structures were hard hit.

The most encouraging news from earthquake-struck Mexico City, is that the city's one true skyscraper, the 43-story Latino-Americano tower, rode the shock waves undamaged, even to its window glass and partitions.

The height of this building, in combination with the poor foundation soils in the area, made it necessary to design a light but rigid structure.  
—*Engineering News-Record*

## **MINUTES OF THE MEETINGS AND BUSINESS OF THE SOCIETY**

### **Minutes of Meeting of the Board of Direction Held at the Engineers' Club, New Orleans on Monday, August 12, 1957**

The meeting was called to order by President Nelson with Messrs. Bogard, Cambre, Freeman, 'Heureux, McLellan, Sessums, Wallace and Fernandez present. Minutes of the preceding meeting were accepted as read, whereupon the president announced that the regular order of business would be dispensed with in order to carefully consider the material to be mailed to the membership-at-large on affiliation with national organizations.

After some discussion it was decided that, in order to count, ballots must be postmarked on or before September 3, 1957.

A "Message from the President on Affiliation with National Organizations" was read, after which Mr. McLellan moved that the president's message include the following paragraph, seconded by Mr. Sessums and carried:

"After conferring with national officers of both organizations, and considering the favorable reports of the committees appointed to study affiliation, the Board of Direction believes that national affiliation will benefit the society and recommends that the Louisiana Engineering Society affiliate with both the National Society of Professional Engineers and the Engineers' Joint Council."

The questions and answers on affiliation with both organizations were read, after which Mr. Freeman moved that they be forwarded to voting members of the society with the ballot. The motion was seconded by Mr. McLellan and carried.

The ballot to be sent to the membership then was prepared, in which it was indicated that members may vote for both organizations, against both, or for one and against another. Mr. Wallace moved that the ballot be approved and mailed to the members. The motion was seconded by Mr. Freeman and carried.

A copy of the president's message, questions and answers on affiliation, and the ballot are attached to these minutes. (Ed. Note: These appeared in the August Issue and are not reprinted here.)

President Nelson then appointed a committee consisting of Messrs. L. J. Cucullu, Wm. J. Drawe, Jr., Roy T. Sessums, F. G. Hornsby and J. P. Fernandez to count the ballots on Friday, September 6, 4:45 p.m., at the Engineers' Club, New Orleans.

The president announced that the Section Coordination Committee was planning to hold a Second Coordination Conference at Alexandria in the fall and that this matter would be discussed at the next meeting of the board.

The meeting then adjourned in order that the society's regular meeting could begin on time.

JOHN P. FERNANDEZ, Secretary-Treasurer

### **Minutes of Meeting of the Louisiana Engineering Society held jointly with the Louisiana Section, ASCE at the Engineers' Club, New Orleans on Monday, August 12, 1957**

The meeting was called to order by President Nelson with approximately 120 members and guests present. Mr. Knost moved that the reading of minutes of the preceding meeting be dispensed with. The motion was duly seconded and carried, whereupon the secretary read minutes of the July meeting of the Board of Direction.

The president then gave a brief resume of the proposed affiliation of the society with national organizations, after which Mr. Allan T. Dusenbury read an obituary of the late Allen S. Hackett; Mr. Frank W. McDonald read an obituary of the late Charles E. Cassagne, Jr., and Mr. C. Glenn Cappel read a similar memorial honoring the late W. Horace Williams. President Nelson announced that members A. G. Munding, Carl J. Helbak and George H. Davis also had passed away recently and their obituaries would be read at local section meetings. The secretary then moved that all obituaries be included in the minutes of the society, published in the Louisiana Engineer, and copies sent to the surviving families. A moment of silence then was observed in memory of these deceased members.

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Mr. Cappel spoke briefly in opposition to affiliation with the National Society of Professional Engineers, though he did favor affiliation with Engineers' Joint Council. Mr. Freeman then urged members to refrain from making any decision for or against affiliation until they have studied carefully the questions and answers that would be mailed to them with the ballot.

There being no other old or new business, the chair was relinquished to Mr. B. A. Grehan, Chairman, Louisiana Section, ASCE, who called on Mr. F. B. Sessums, Program Chairman, to introduce the principal speaker of the evening, Mr. T. H. Zumwalt of Freeport Sulphur Company. After a most interesting and informative paper on "Hurricanes in the New Orleans Area", the chair was returned to Mr. Nelson, who adjourned the meeting with a rising vote of thanks to the speaker.

JOHN P. FERNANDEZ, Secretary-Treasurer

**Minutes of Meeting of the Board of Direction Held at the Engineers' Club,  
New Orleans, September 9, 1957**

The meeting was called to order by President Nelson with Messrs. Freeman, L'Heureux, Scales, Taylor, Wallace and Fernandez present. Messrs. Z. L. Loflin and Otha E. Barron, Chairman and Vice-Chairman, respectively, of the Section Coordination Committee, also were present by invitation. Mr. Freeman moved that minutes of the preceding board meeting be approved as read, seconded by Mr. Wallace and carried.

The secretary read a report of the committee assigned to count the ballots of the recent vote on affiliation with national organizations, a copy of which is attached to these minutes. Mr. Freeman moved that the board receive the report and that a special committee be appointed to prepare amendments, if any, to the constitution and by-laws of the society to effect any changes necessary to permit affiliation with both the National Society of Professional Engineers and Engineers' Joint Council, said committee to report to the board at its October meeting. The motion was seconded by Mr. Scales and carried, whereupon President Nelson appointed Mr. James S. Janssen, Chairman, and Mrs. H. L. Lehmann and F. W. Macdonald to constitute this committee.

Mr. Freeman, Chairman of a special committee appointed to submit names of possible candidates to fill a vacancy on the Louisiana State Board of Registration for Professional Engineers and Surveyors, was requested to present his report. At this point Messrs. Nelson and Barron were excused from the meeting and Mr. Freeman took over the chair. Mr. Freeman reported that the committee wished to submit the following names in the order of preference shown, recommending, however, that the board's selection be submitted to the governor in alphabetical order.

- |                       |                      |
|-----------------------|----------------------|
| 1. Waldemar S. Nelson | 5. Lionel J. Cucullu |
| 2. Otha E. Barron     | 6. Louis N. Goodman  |
| 3. L. W. Kittrell     | 7. Mario G. Zervigon |
| 4. Horation N. Ogden  | 8. E. E. Taylor      |

Dr. Taylor moved that the report and recommendations of the special committee be accepted, seconded by Mr. L'Heureux and carried. Mr. Scales moved that the list of all eight names be submitted to the governor in alphabetical order, seconded by Dr. Taylor and carried, after which Messrs. Nelson and Barron returned to the meeting and the chair was returned to the president.

A letter from the National Society of Professional Engineers, requesting the Louisiana Engineering Society to cooperate with Louisiana State University in sponsoring a conference on Utilization of Engineers and Scientists, was read. Mr. Scales moved that the L.E.S. be co-sponsor with L.S.U. of the proposed conference, seconded by Mr. Freeman and carried. President Nelson announced that he would appoint a committee at a later date to work with Dean Fred Fenn on this project.

A letter from the president of Engineers Joint Council, requesting the society's participation in a conference on "Engineering and Scientific Education—Foundation of National Strength" to be held in Chicago on October 31-November 1-2, was read. Mr. Freeman moved that the president canvass the society for members who possibly may be in the area at the proper time and be able to represent L.E.S. at this conference. The motion was seconded by Dr. Wallace and carried.

A letter from Dean Johnson of Tulane University, announcing that Mr. William Howard White, Senior in Electrical Engineering, had been selected to receive the society's scholarship for 1957-58, was read.

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Messrs. Loflin and Barron of the Section Coordination Committee announced that they proposed to hold a Section Coordination Conference at Alexandria on November 1-2, which would be primarily of a panel-discussion and workshop type on topics of mutual interest to all sections, such as Vocational Guidance, Engineers' Week, Legislation, etc. Mr. Barron proposed that the Woman's Auxiliary be invited and that the conference end with a dance. He stated that the Alexandria Section would sponsor a cocktail party on Friday evening, and assured the board that if 100 people would attend the banquet on Saturday evening at a charge of \$5.00 per person, the proceeds would cover all expenses of the conference. He further stated that he believed the Alexandria Section would be willing to underwrite the conference. Discussion followed on the question of moderators for the sessions and it was suggested that the chairman of the state-wide committee on the particular topic should be contacted.

Mr. Freeman moved that the proposal be accepted and the board authorize holding the conference provided clearance of the subject matter to be presented at each session be made with the duly authorized chairman of the appropriate state-wide committee. The motion was seconded by Mr. Scales and carried.

President Nelson advised that the Baton Rouge Section, with other technical societies in the area, would hold a joint dinner meeting at which Mr. Charles F. "Boss" Kettering of General Motors Corporation would be the speaker. The meeting will take place on October 17 at the Bellmont Motor Hotel, and tickets will be on sale at the Engineers' Club. He stated that the Baton Rouge Section had requested that double return post-card notices of the meeting be mailed to all members of the society. The secretary advised that this would cost approximately \$100, and that expenditures for mailing matter concerning national society affiliation had far exceeded the budget year, whereupon the Board recommended that the matter of mailing notices of this most important meeting be worked out with the Baton Rouge Section.

President Nelson announced that the Engineering Building at Southwestern Louisiana Institute would be dedicated on October 11 and that the board previously had planned to hold a meeting at Lafayette in conjunction with the dedication. Since this date coincides with that of other activities no hotels will be available at Lafayette; however, Dean zur Burg has informed President Nelson that the Frederic Hotel in New Iberia, 23 miles away, had been reserved and board members could be accommodated there. Therefore it was announced that the next meeting of the Board of Directors would be held at Lafayette on Friday, October 11.

The president reported that the New Orleans City Planning Board had requested endorsement of their project for redevelopment and beautification of the foot of Canal Street as an International Center, whereupon Mr. Freeman moved that the society endorse and tender its assistance to the project.

Dr. Wallace moved that Emanuel Stravolemos be reinstated to the grade of Junior Member, seconded by Dr. Taylor and carried. Mr. Freeman moved that James H. Bradley be reinstated to Junior Member, contingent upon receipt of his reinstatement fee. Motion seconded by Dr. Wallace and carried. The meeting adjourned.

JOHN P. FERNANDEZ, Secretary-Treasurer

**Minutes of Regular Meeting of the Society Held Jointly with the Louisiana Post, Society of American Military Engineers, at the Engineers' Club, New Orleans on September 9, 1957**

The meeting was called to order by President Nelson with approximately 100 members and guests present. The president welcomed members and guests of SAME. Mr. Freeman moved that the reading of minutes of the preceding meeting be dispensed with. The motion was duly seconded and carried, whereupon the secretary read minutes of a meeting of the Board of Direction held on August 12.

The secretary also read a report on the results of the recent ballot concerning affiliation with national societies, a copy of which is attached to the minutes of meeting of the Board of Direction held on September 9.

Mr. Mason Webster gave a brief address in behalf of the United Fund. President Nelson announced that the new Engineering Building at Southwestern Louisiana Institute would be dedicated on October 11 and that members of L.E.S. were invited to attend. He also announced that Charles F. "Boss" Kettering would address a joint meeting of technical societies at Baton Rouge on October 17 and that tickets were on sale at the Engineers' Club and a bus would be available to take members to Baton Rouge. He urged all members to attend this important meeting.

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The chair then was relinquished to Mr. Roy T. Sessums, Chairman, Louisiana Post, Society of American Military Engineers, who called on Colonel William H. Lewis to introduce the principal speaker of the evening, Colonel Donald G. Williams, U. S. Corps of Engineers, who gave a most interesting and informative paper on the Army Nuclear Power Plant Program. Colonel Williams presently is serving as Special Assistant to the Chief of Engineers for Nuclear Power, and as Chief, Army Reactor Branch, Civilian Division of Reactor Development, Atomic Energy Commission.

After a lively question period the chair was returned to President Nelson and the meeting adjourned with a rising vote of thanks to the speaker.

JOHN P. FERNANDEZ, Secretary-Treasurer

#### Minutes of Meeting of the Alexandria Section, Louisiana Engineering Society

The August meeting was held at Herbie K's Restaurant at 7:30 o'clock p.m. on August 22, 1957. There were twenty-two members present.

The meeting was called to order by President Howard L'Heureux.

Mr. Dallas Roberts was elected Secretary-Treasurer to succeed Mr. F. G. Taylor.

Mr. C. C. Edwards, member of the State Honors and Awards Committee, requested the members to submit to him the names of any nominees for the Andrew M. Lockett Award.

Mr. Edwards reminded the members of the expiration on November 16th of the term of Mr. E. E. Taylor of Ferriday, La., as a member of the State Board of Registration. Mr. J. B. Smith then offered the following resolution, seconded by Mr. Edwards:

"WHEREAS, The Louisiana State Board of Registration for Professional Engineers and Land Surveyors is the constituted authority for the administration and enforcement of the laws of the State pertaining to and governing the registration and licensing of Professional Engineers and Land Surveyors, and

WHEREAS, the term of office of Mr. E. E. Taylor, of Ferriday, La., as a member of said Board will expire on the 16th day of November, 1957, and

WHEREAS, it is the duty of the President of the Louisiana Engineering Society, duly authorized and acting on behalf of the said Society, to submit to the Honorable Governor, for appointment by him, a list of five or more nominees recommended by the Louisiana Engineering Society, and

WHEREAS, the said Mr. E. E. Taylor has served well and faithfully, and has been of inestimable value as a member of said Board in the safeguarding of the public welfare and the advancement of the engineering profession in the State,

NOW THEREFORE, BE IT RESOLVED that the President of the Society be petitioned, and he is hereby petitioned, to submit the name of Mr. Taylor as one of the nominees for reappointment to the Board."

The resolution was voted upon and approved.

Mr. O. E. Barron, Vice-Chairman of the State Section Coordination Committee, gave a report on the joint meeting of the Sections to be held in Alexandria November 1st and 2nd. There followed a lively discussion of the plans being prepared for the forthcoming meeting. Mr. Barron reported having contacted many of the officers and members of the Society throughout the State, and having received widespread approval and interest in the meeting.

The meeting then adjourned.

DALAS C. ROBERTS, Secretary-Treasurer

#### Minutes of Meeting, Baton Rouge Section, Louisiana Engineering Society

Date: September 19, 1957; Time: 7:30 p.m.; Place: Louisiana State University, Agricultural Engineering Auditorium; Officers present: Randall Meyer, President; W. J. Sutton, First Vice-President; T. E. Alexander, Second Vice-President; H. F. Leiendecker, Secretary-Treasurer.

Mr. W. I. Haring, Manager of the Baton Rouge Office of the Lumas Company, discussed "Development of a Petrochemical Project." He traced the work of an engineering contracting organization on such a project from customer inquiry through final acceptance.

Total attendance was 37 members and guests. Refreshments were served following adjournment.

HAROLD F. LEIENDECKER, Secretary-Treasurer

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**Minutes of the Regular Meeting of the Lake Charles Section of the  
Louisiana Engineering Society, September 9, 1957**

A regular meeting of the Lake Charles Section of the Louisiana Engineering Society was held on Monday, September 9, 1957 at Sammy's Restaurant, with 35 members and guests present.

The meeting was opened by President R. R. L. Ward. Minutes of the August meeting were read and approved. Mr. Ward then announced the results of the state wide balloting on affiliation with the National Society of Professional Engineers and The Engineers Joint Council. Affiliation with both were approved by a margin of approximately three to one.

Mr. J. P. Tucker, Program Chairman, introduced the speaker of the evening—Mr. John J. Hagan, of the Patent Department of the Cities Service Research and Development Company.

Mr. Hagan gave an interesting discussion on Patent Law and the Inventor. This involved general definitions of patentable devices and processes, and the rights of the patent holder to prevent encroachment on the field covered by his patent.

An interesting question and answer period followed his talk.

The meeting was adjourned at approximately 10:00 p.m.

**FRED R. ADAMS, Secretary-Treasurer**

**Minutes of the Monroe Section of the Louisiana Engineering Society,  
September 3, 1957**

The Monroe Section of the Louisiana Engineering Society held their September meeting in the Cameo Room of the Virginia Hotel on Tuesday, September 3, 1957. The meeting was called to order at 7:00 p.m. by Mr. M. M. Funderburk, Sr., President, presiding, with an opening prayer. The minutes of the previous, June 4, 1957, were read and approved.

A brief review of the "Junior Engineers' Training" plan, was given by M. M. Funderburk.

Mr. J. Q. Meloncon of the Alexandria Section was a featured speaker on the conference of the Louisiana Engineering Society to be held November 1 and 2, 1957 in Alexandria, Louisiana. All members and wives were requested to attend.

Individual guests were introduced and the program was then turned over to Mr. C. C. Boyd, Chairman, Entertainment and Program Committee.

The method of construction of the world's longest highway bridges, composed of pre-stress concrete, was detailed in the color and sound movie, shown by Mr. A. T. Gibbons, Portland Cement Company of New Orleans, Louisiana. The films title was "Construction of Lake Pontchartrain Causeway".

The door prize, consisting of a desk pin set, was won by Mr. John D. Calhoun of Louisiana Polytechnic Institute, Ruston, La. The door prize was donated by The Portland Cement Company.

The attendance was twenty-eight members and eleven guests. On proper motion and second, the meeting was adjourned, with refreshments and a period of visitation and fellowship.

**T. R. HENRY, Secretary-Treasurer**

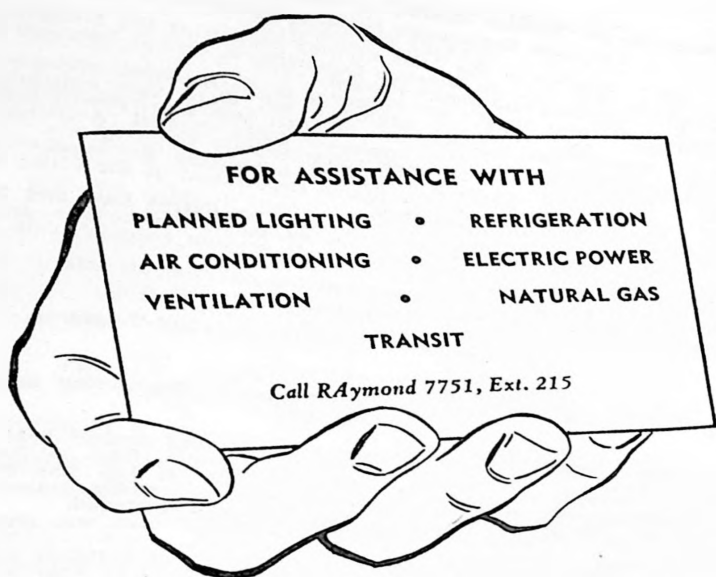
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## NEW MEMBERS

### FOR MEMBER

**JOHN M. BARKSDALE**, Baton Rouge; age 35. Endorsed: B. M. Bryant, W. Gulick, P. S. Mentz. North Carolina State College, BS.I.E. 12-49; University of Alabama, M.S.E. 1-28-57 Registered Ala., Tenn. Member ASME, AIME, NSPE. Combustion Engineering Co., Asst. Div. Welding Engr., General Foreman, Chatanooga, Tenn., 1950-55. Ethyl Corp., Baton Rouge, Time & Methods Study, Jan.-Sept. 1955 and Feb. 1957-date. Shell Plant Div., Central Foundry Co., Tuscaloosa, Ala., in charge shift production, planning, scheduling; worked with Eng. Dept. on die design, tool design, heat-treating equipment and processes, 1956-57.

**JAMES V. BARNETT**, Shreveport; age 29. Endorsed: V. A. Barnett, R. A. McFarland, R. A. Smith, J. J. Thigpen La. Polytechnic Institute, B.S.C.E. 1956. Registered CE., La. U.S. Army Corps of Engrs., Philippine Islands, Chief Party, 1949-50. Van A. Barnett, C.E., Prepared plans and specifications for streets, ditches, paving, etc., 1950-51. U.S. Army Corps of Engineers, Construction Inspector, 1950-51-52. Van A. Barnett, summer employment 1952-56, essentially same as above. Self-employed since graduation, supervise and engage in general land surveying, construction surveying, plans, specifications, etc.

**WALLACE C. BUJOL**, Lake Charles; age 32. Endorsed: G. D. Garber, G. C. Hengy, M. M. Thornton La. State University, B.S. Eng. Jan. 1950. Member AIMME, Nat. Ass'n Corrosion Engrs, SAME. Registered Petroleum Engr., La. Corps of Engrs., New Orleans, General Engineer, design of piping systems, pressure vessels, minor electrical systems, 1951-52. U.S. Navy, San Francisco Shipyards, Eng. Officer with Bureau of Ships, repair alteration, design of destroyers, supply ships, LST's, 1952-53. U.S. Navy, Industrial Manager, Orange, Tex., Inspection Officer responsible for contract work on Navy ships in this area, 1953-55. U.S. Air Force, installation Engineer Lake Charles AFB, Chief Engineer, responsible for all engineering on the base, 1955-date.

**DAVID J. BURNETT**, New Orleans; age 44. Endorsed: Randall Meyer, W. S. Nelson, B. F. Norman, Jr. University of Michigan, B.S.M.E. 1934. Member ASME. Ingersoll-Rand Co., 1934 to date: Student Engineer, Application Engr., N.Y. and Los Angeles, Sales Engr., Cameron Pump Div., St. Louis, Sales Engr., N.Y., Branch Manager, N.O. Presently supervise sales and service work of 7 engineers and necessary office staff.

**HORACE J. GUILLORY**, Bunkie; age 42. Endorsed: M. G. Arnett, W. R. Hollier, A. M. Moore. Member ASME. Central La. Electric Co., Shift Operator, 1938-39; Asst. Chief Engr., 1939-42, 1945-48; Plant Supt. of new steam-electric generating station, St. Landry, La., 1948-51; Production Supt., May 1951 to date. Position includes supervision of 6 old internal combustion engine power plants and 2 modern steam-electric plants. U.S. Army Air Force, 1942-45. Studied aerodynamics, navigation, meteorology, physics, other aviation subjects. Commissioned Flight Officer 1944.

**ROLAND D. HILL**, New Orleans; age 38. Endorsed: A. L. Mabry, M. J. Marchese, J. P. Fernandez. La. Polytechnic Institute, B.S.C.E. 1943. Member SAME. Registered C.E., La. U.S. Navy, Civil Engineering Corps Officer, 1943 to date. Present assignment, Resident Officer in Charge Construction, U.S. Naval Air Station, Alvin Callender Field, New Orleans. Responsible for administering Noy lump sum contracts for the construction of a complete jet air base.

**DAVIDSON D. HINCKLEY**, New Orleans; age 32. Endorsed: D. W. Godat, I. B. Rau, G. S. Schrenk. La. State University, B.S.C.E. Jan. 1949, Registered CE, La., Tenn. David W. Godat & Associates, Jr. Engr., 1949-51. US Marine Corps., 1951-53. R. P. Farnsworth Co, Inc., Memphis, Engineer, Estimator 1953-55. Tri-State Construction Co., Memphis, Engineer, Estimator, 1955-57. David W. Godat & Associates, Associate, Chief Engr. in charge design and preparation of plans, primary highway and grade separation work, 1957 to date.

**STANTON E. HUEY, JR.**, Monroe; age 26. Endorsed: A. P. Andrews, C. M. Dunlap, E. M. Freeman, L. J. Strole. University of the South, Liberal Arts, 1948-50. Washington University, 1950-53, B.S.C.E. Mosher Steel Co., Houston, Steel Detailer, 1953-54. S. E. Huey & Co., Monroe, Party Chief, Jan.-Aug. 1954; General Civil Eng. work, July 1955 to date. Registered C.E., La. Jr. Member ASCE, Am. Society Photogrammetry.

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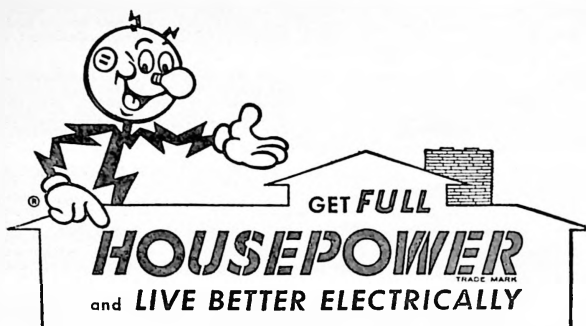
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- RODNEY J. RENTROP**, Lake Charles; age 31. Endorsed: W. M. Davis, G. L. Smith, E. E. Toney. La. Polytechnic Institute, BSME 1949. M. W. Kellogg Co., Lake Charles, Rodman. Eng. Field Party, 1943. Cities Service Refining Corp, Rodman, Jr. Planning Engr., Mechanical Draftsman, Contract Field Engr., Design Engr., 1949 to date.
- WARREN C. SHANKLE**, Baton Rouge; age 35. Endorsed: J. O. Adams, J. H. Clabaugh, J. M. Parish. La. State University, BSME 1943. Registered M.E., La. Military Service, 1943-46. Non-professional employment, 1946-49. La. Dept. of Highways, Instrumentman, acting Party Chief, 1949-51. Western Electric Co., Harlingen, N.C., Project Engr., 1951-56. Dow Chemical Co., Baton Rouge, Mechanical Engineer, Aug. 1956 to date.
- CHARLES H. SHIPMAN**, Lake Charles; age 60. Endorsed: G. C. Hengy, E. O. Schnee, M. M. Thornton. Attended Ruskin College, Ruskin Cove, Tenn., 1916-19. Attended Memphis Tech, Memphis, Tenn., 1 year. Shipman Lumber and Construction Co., Memphis, Tenn., Design and Construction Engr., 1919-27. Corona Products Inc. (Mining), Rogers, Ark., General Engineer, Material Research, Architectural and Structural Design of concrete structures, 1928-40. US Govt., Lake Charles, Civil, Architectural and Structural Engineer, Research and design of buildings and structures, 1941 to date
- ELVIN M. SIMMONS**, Lake Charles; age 35. Endorsed: C. W. Stokes, E. E. Toney, G. B. Walther, Jr. University of Texas, BSME 1949. Cities Service Refining Corp., Lake Charles, 1949 to date: Rodman, Draftsman, Jr. Inspector, Contract Engineer, Design Engineer, estimating and design on equipment, structures and piping.
- TRUMAN C. STAGG**, Lake Charles; age 42. Endorsed: G. H. Hill, C. W. Stokes, G. B. Walther, Jr. La. State University, BSEE 1936. Formerly licensed in Electrical and Mechanical (now lapsed). City of Rayne, La., Water and Light Plant, operated diesel electric generating facilities, 1936-38; Asst. Supt., supervised plant operations, 1938-41. US Army, Signal Communications Officer, 1941-46. Cities Service Refining Corp., Lake Charles, Cost control in General Eng. Dept., 1946-47; Design Engineer, 1947-48; Test and Results Engineer at Power Plant, 1949; Design Engineer, 1950-date.
- HENRY H. ST. PAUL, JR.**, New Orleans. Age 31. Endorsed: T. B. Lockett, E. A. McLellan, S. K. Manson, D B Schell Tulane University, B.E. in M.E., Feb. 1946; MBA. Jan. 1955. Registered M.E., La. C. T. Patterson Co., Inc., organized Machinery Dept., served as Asst. Sales Mgr., 1946-55. Service Supply and Engineering Co., Partner, March 1955-date.
- JACK A. TERRILL**, Shreveport; age 38. Endorsed: W. E. Fitzgerald, Q. W. Hargrove, W. C. Sorensen. La. Polytechnic Institute, BSCE 1941. Registered C. E., La. US Engineer Corps, N.O. District, Jr. Engr., 1941-42. US Air Force, 1942-46. Builders Supply Co., Shreveport, Sales Engineer, 1946-47. Southern Builders Inc., Shreveport, Estimator, 1948. Builders Supply Co., Shreveport, Chief Engineers, Jan.-Aug. 1949. Southern Builders Inc., Shreveport, Chief Engineer, Sept. 1949 to date.
- BURTON L. THOMAS**, New Orleans; age 33. Endorsed: W. S. Nelson, P. S. Noble, S. G. Smith. University of Texas, BsChE, Jan 1948. University of Oklahoma, Civil Engineering, 1942-43. Kansas State College, Civil Engineering, 1943. Member Tau Beta Pi, Omega Chi Epsilon. AIChE. Registered Ch.E., La. Phillips Petroleum Co., Odessa, Tex., Process Engr., 1948-49. Eastern States Petroleum Co., Houson, Process Engr., 1950-55. The Bechtel Corp., San Francisco, Job Engineer, coordinated activities in revamp of cat cracking unit, 1955-56. Bedell & Nelson Engineers Inc., Process Engineer, April 1956 to date.
- CLAUDE A. VINCENT JR.**, Lake Charles; age 33. Endorsed: G. L. Smith, C. W. Stokes, E. E. Toney, G B Walther Jr La. State University, BSME, 1948. International Correspondence Schools, 1954-56, Architectural Certificate, 2-19-56. Registered M.E., La. M. W. Kellogg Co., Lake Charles, Rodman, Engineering field party, 1943. Cities Service Refining Corp., Mechanical Draftsman, Eng Inspector, Contract Field Engr., 1948-date.
- STANLEY A. WALSH**, New Orleans; age 36. Endorsed: J. E. Monroe Jr., J. T. Montgomery, K. T. Price University of Rochester, N Y., BSChE, Dec. 1942. Member American Chemical Society. Freeport Sulphur Co., New Orleans, employed continuously since Jan. 1943 except for tour of duty with US Marine Corps 1944-45. Worked in production research at Port Sulphur, 1943-55; transferred to Cuban-American Nickel Co. Pilot Plant at Braithwaite as Supervisor of Steam and Hydrogren Generation, 1955 to date.



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**GEORGE W. WEBB**, New Orleans; age 34. Endorsed: L. H. Johnson, F. M. Taylor, D. H. Vliet. University of Alabama, BSEE, Dec 1943. Columbia University, MSEE, June 1947. Member AIEE. Registered E.E., La. University of Alabama, Dept. of E.E., Instructor. Asst. Professor of Electrical Engineering, 1947-51. Eng. Research and Development Labs. Ft. Belvoir, Va., Chief of Electrical Power Lab Section, 1951-53. General Electric Co., Pittsfield, Mass., Design Engr., 1953-55. Tulane University, Asst. Professor of Electrical Engineering, 1956-date.

**GORDON L. WEDEMEYER**, Lake Charles; age 33. Endorsed: E. O. Schnee, M. M. Thornton, F. J. Warren Jr. La. State University, BSME, 1951. Columbia Southern Chemical Corp., Field Engr., 1951-54. M. W. Kellog Co., Area Engineer, 1954-55. Hydrocarbon Construction Co. of Houston, Field Engr., Gillis, La., 1955-56. Lake Charles AFB, General Engineer, responsible for civil and mechanical projects, Aug. 1956-date.

**BILLY JACK WHITE**, Baton Rouge; age 32. Endorsed: J. O. Adams, J. M. Parish, F. B. Sessums. La. State University, BSCE Aug 1953. Registered C.E., La. Powell & Powell Eng. Co., Dallas, Instrumentman on Survey Crew, 1946 G. F. Ballard c/o Sohio Pet. Co., Lafayette, Party Chief of Survey Crew, 1946-49. Shaw & Estes Contractors, Dallas, Field Engr., site grading and road layout, 1950. O. R. McElyea Engrs., Dallas, Party Chief in charge complete subdivision layout, 1950. U.S.M.C.R., Regimental Survey Officer for 11th Marines in Korea, 1951. Barksdale & LeBlanc Contractors, Baton Rouge, Field Engr., Construction Supt., Estimator, 1953-57. Dow Chemical Co., Civil Engr., 1957 to date.

**WAYE E. WILLIAMS**, New Orleans; age 30. Endorsed: A. W. Betz, Wm. H. Johnston, E. L. Murphy. La. State University, BSME, 1949. Associate Member AIEE. Registered M.E., La. Tennessee Coal, Iron & RR Co., Birmingham, Industrial Engineer, time studies, equipment inventory, general log on progress of coal mine, 1949-50. Electron Engineering Co., New Orleans, Sales Engineer, 1950-53. Betz Engineering Sales Co., New Orleans. Sales Engineer, 1953-date.

#### FOR TRANSFER FROM AFFILIATE TO MEMBER

**LOLAN J. MELANCON**, Pineville; age 53. Registered E.E., La. Southern Bell Tel. & Tel. Co. Co., engineering design and construction of communication systems in Central and Southwest Louisiana since 1941. Design and engineering of systems in north and south Camp Polk, Alexandria AFB, Lake Charles AFB, Camps Beauregard, Livingston and Claiborne were my responsibility from 1941-45. Since then have engineered expansion and additions to systems of Lake Charles, Jennings, Sulphur, DeRidder, Alexandria and Marksville. Special assignments have been layout and design of cables for communications requirements of Cities Service Refinery, Rose Bluff, Cit-Con Refinery, and Continental Oil Refinery at Lake Charles. Technical training consisted of specialized courses provided by employer to supplement knowledge gained by experience.

#### FOR TRANSFER FROM JUNIOR TO MEMBER

**JAMES E. ALLEN**, Shreveport; age 33. La. State University, BSCE, 1948. Registered C.E., La. E. M. Freeman & Associates, Engineer, 1948-50. The Allen Construction Co., General Contractor, 1950 to date.

**W. RAY BOOTH**, Monroe; age 34. La. Polytechnical Institute, BSChE, 1948. Registered Ch.E. La. Olin Gas Transmission Corp., 1948-57. Present title, Asst. to Division Supt. Experience and responsibilities include design, construction and operation of natural gas facilities.

**PATRICK P. DONAHUE**, New Orleans; age 31. La. State University, BSME, 1951. Registered, La. Chrysler Corp. Tank Engine Div., 1951-52. City of New Orleans, Dept. of Streets, Public Utilities, 1952-57.

**RUSSELL A. HALL**, Metairie; age 31. Tulane University, BSCE, 1951. Registered, La. T. Edward Ernst Consulting Engineer, principal engineer since January 1951. Office and field engineering on overpass construction, sewerage and water distribution systems, water treatment plants.

**WILLIE RAY HARRIS**, Beaumont, Tex.; age 35. Southwestern La. Institute, BSEE, 1951. Gulf States Utilities Company, 1951 to date. Jr. Engineer, Planning Engineer; present position, Engineer, System Eng. Dept.

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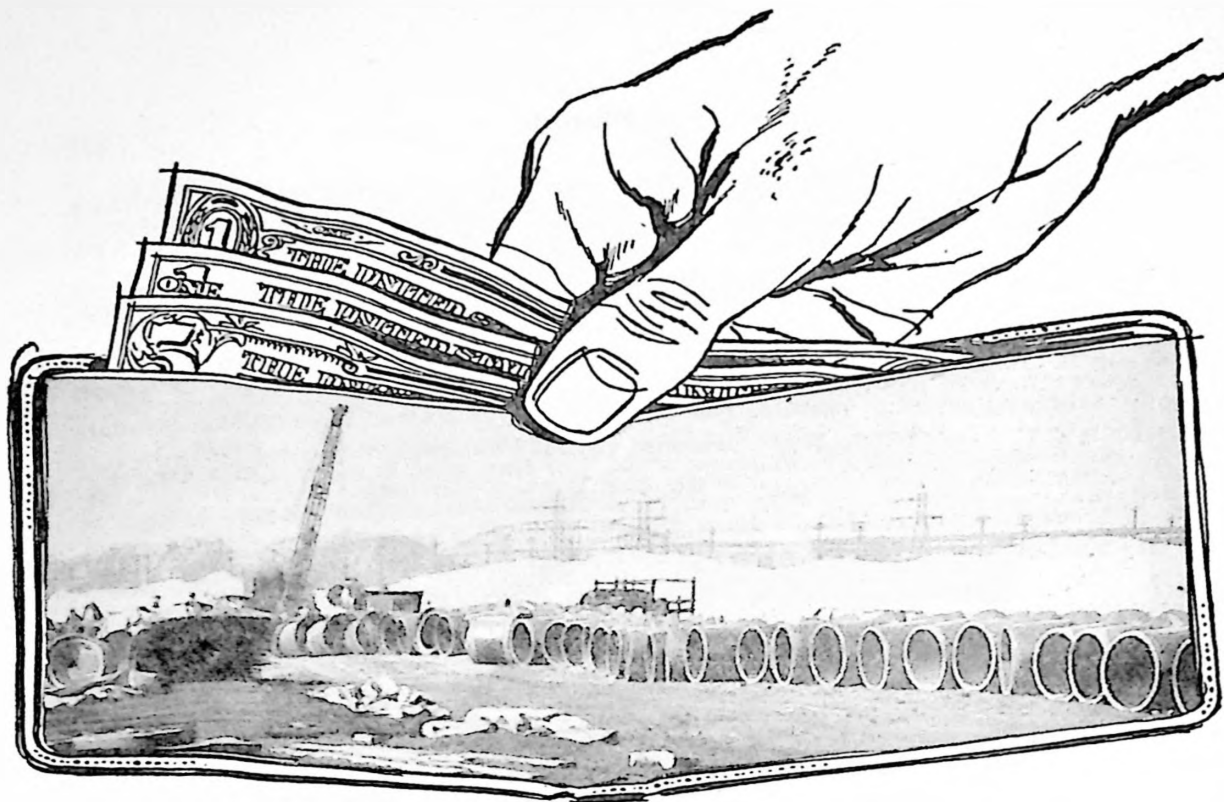
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- MALCOLM P. HEBERT**, Alexandria; age 30. Southwestern La. Institute, BSME, 1951. Charles T. Roberts, Architect, Mech. Engineer and Draftsman, 1951-52. Roland Construction Co., Engineer-Estimator, 1952-date. Construction of pumping plants, water distribution systems, buildings.
- JOHN P. JONES**, Baton Rouge; age 30. La. State University, BSME, 1949. Registered M.E., La. Ogden, Woodruff & Dyer, Inc., Mechanical Engineer, 1950 to date.
- JOSEPH E. KELLY**, Shreveport; age 35. La. Polytechnic Institute, BSME, 1950. Registered M.E., La. J. B. Beaird Co., Inc., Engineering design, Erection Supervisor, Chief Service & Office Engineer, Sales Engineer, in unfired pressure vessels, gas compressors and steel fabrication, 1950-date.
- HENRY F. LeMIEUX**, New Orleans; age 31. Tulane University, B. E. in E.E., 1946; BSCE, 1949. Registered C.E., La. Raymond Concrete Pile Co., N.Y., Engineer, Field Supt., 1949-51. Boh Bros. Construction Co., Engineer, 1951. Raymond Concrete Pile Co., New Orleans, District Manager, Asst. Vice-President, June 1951 to date.
- RAYMOND P. MADDUX**, New Orleans; age 29. Tulane University, BSME, 1953. Combustion Engineering Inc., New York, Service Engineer, 1952-56. N.O. Public Service Inc., Asst. Mech. Engr., 1956-date.
- LAWRENCE MANN JR.**, Baton Rouge; age 31. La. State University, BSME, 1949. Purdue University, MSIE, 1950. Registered M.E., La. Esso Standard Oil Co., 6 years. The Lummus Co., 6 mos.
- RAYMOND J MEYER**, Gretna; age 31. La. State University, BSME, 1947. Registered M.E., E.E., La. Lone Star Cement Co., Draftsman, June-Sept. 1947. La. Power & Light Co., Field Engr, Transmission & Distribution Engr., Division Engr., 1947-date.
- JOSEPH R. PEZOLD**, Metairie; age 31. La. State University, BSCE. 1950. Registered C.E., La. Dept. of Highways, Engineer I, 1950-51. Fromherz Engineers, Design Engineer, 1951 to date.
- LOUIS F. PRIMOS**, Shreveport; age 28. International Correspondence School, Surveying and Mapping Diploma; Civil Engr. Div. I Certificate. Chief Office Engineer, Dept. of Water & Sewerage, City of Shreveport, 1945 to date. Supervise drafting office, handling records of w & s mains. Make designs and plans for w & s lines up to 24" diameter. Assist in design and planning of sewage lift stations. Make cost estimates, field surveys for construction projects.
- RALPH S. SEGALL**, Shreveport; age 31. Texas A & M College, BSME, 1949. Registered La. B. Segall & Co., 1949 to date, present position, Chief Engineer. Also served in Air Force Reserve as Air Installations Officer, 18 mos. 1950-51).
- JOSEPH T. SIMMS JR.**, St. Landry; age 31. La. State University, BSEE, 1949; BSME, 1950. Registered M.E., E.E., La. US Army Corps of Engineers, active duty, 1st Lt., 1951-53. Central La. Electric Co., Cadet Engineer, Asst. Elect. Engineer, Asst. Project Engineer, 1953 to date.
- JAMES M. STEWART JR.**, Lake Charles; age 33. La. State University, BSME, 1944. Registered M.E., La. Eleven years refinery engineering and maintenance work. Present position, Chief Plant Engineer supervising all general engineering and work of maintenance mechanical dept. for all plants of Petroleum Chemicals, Inc.
- SAMUEL R. WARRINER, JR.**, Jackson, Miss.; age 39. Virginia Polytechnic Institute, BSME, 1950. Registered M.E., La. Copes-Vulcan Div., Erie, Pa., Research and Development, 1950. Warriner Equipment Co., New Orleans, Manufacturer's Representative, 1951-55. Walter Cooke, New Orleans, Sales & Estimating, 1955-56. Walter Cooke, Jackson, Miss., Branch Mgr., 1956-date.
- MARION E. YOUNG**, New Orleans; age 32. University of Houston, BSME, 1951. Byron Jackson Pumps, Inc., Houston, District Sales Engineer, application and sale of centrifugal pumps, 1951 to date.

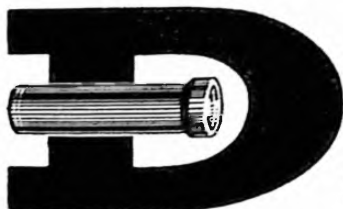
### FOR AFFILIATE MEMBER

- SAM J. BROCATO**, Bunkie; age 33. Endorsed: C. C. Ford, R. E. Chappuis, A. M. Moore, O. L. Hyde. Shreveport Trades School, Electronics, 9-1-42 to 3-1-43. La. Polytechnic Institute, Electronics, Mar.-June 1943. Philco Training School, Philadelphia, Electronics, June-Aug. 1943. US Air



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Corps, Central Fire Control and Computer, 1944. I.C.S. Correspondence, Power Utility and Electrical Control, Dec. 1947-Dec. 1949. Central La. Electric Co., employed 1946 as Power Plant Clerk. Installed and maintained 2-way radio system. Transferred to Meter Dept. as Radio Mtce. and Meterman, 1947. Performed all Cleco's radio and carrier and metering work until 1952, when made Radio Technician in charge communications and carrier with 2 men under supervision. Perform all engineering and planning for communications and carrier facilities. Member Utilities Radio Coordinating Ass'n of Texas & La., Southwest Region Carrier Communication Committee.

**HOMER L. CHAMBERS**, Alexandria; age 34. Endorsed: B. Brezner, J. K. Aymond, L. J. Melancon. Officer School, Ft. Monmouth, N. J. Electrical course, 1943. Engineer School, Ft. Belvoir, Va., General Engineering course, 1943 International Correspondence Schools, Electrical Engineering, 1950-52. Air University, Montgomery, Ala., General Engineering course in progress, 1956 to date. Military Engineer Member SAME. US Army, Bn. Electrical Engineer, Engineer Construction Bn. research, design and development of eng. projects, 1943-46. Hair Electric Service, Baton Rouge, General Foreman, supervision commercial and industrial electrical installations, 1947-51. USAF, Barksdale, La., Installation Eng. Office, Research, design and development of Eng. projects, supervision of contracts, 1951-52. USAF, Thule, Greenland, Installation Eng. Office, Electrical Engineer, direct charge of base electrical power and steam generating plants, 1952-53. USAF, Langley AFB, Va., Installation Eng. Office, Electrical Engr., Research, design and development of eng. projects, supervision of contracts, 1954-55. USAF, England AFB, La., Research, design and development of eng. projects and supervision of contracts, 1955-date.

**JOSEPH JACOBS**, Monroe; age 26. Endorsed: F. W. Adams, J. H. Hoffman, L. J. Strole. Northeast Louisiana State College, B.S. Geology 1954. Member Northeast La. Geolorgical Society, Monroe. Continental Laboratories, Monroe, fluid cutting and core analysis, 1954-55. United Gas Corp., Monroe, Jr. Draftsman, gas line design, air conditioning load calculations and duct design, 1955-date.

**JERRY T. SHOEMAKER**, Monroe; age 31. Endorsed: C. D. Brooks, C. L. Denson, M. M. Funderburk. LeTourneau Technical Institute, Longview, Texas, BSME, June 1950. Louisiana Power & Light Co., Sterlington, La., Technician, install and maintain controls and instruments, 1950 to date.

### FOR JUNIOR MEMBER

**DAVID L. BRACEWELL**, Baton Rouge; age 22. Endorsed: B. M. Bryant, W. Gulick, P. S. Mentz. University of Florida, BSCE, 1956. Jr. Member ASCE. Registered C.E., La., Engineer-in-Training, Florida Ethyl Corp., Baton Rouge, Time Study Engineer, July 1956 to date.

**JOSEPH S. DURRETT**, Baton Rouge; age 22. Endorsed: J. B. Arbour, G. C. Gallagher, J. E. Langley. University of Kentucky, BSME, 1956 Student Member ASCE, 1954-56. Registered Engineer-in-Training, Ky. Esso Standard Oil Co., Baton Rouge, Eqpt. Inspection Dept., Engineer, June 1956-date.

**JAMES W. ELDRED**, Baton Rouge; age 30. Endorsed: W. W. Alsup, Lawrence Mann, E. S. McRoberts. La. Polytechnic Institute, 1948. NATTC, Norman, Okla., Technical course, 6 mos. 1944. TMPS, Camp Gordon, Augusta, Ga., Technical course, 3 mos. 1949. The Engr. School, Ft. Belvoir, Va., Technical course, 6 mos. 1950. I.C.S., Scranton, Pa., now studying. US Army Corps of Engrs., 76th Eng. Const Bn., Sgt. 1st class, Chief Draftsman in charge bridge, road and bldg. design and detail, supervised 8 draftsmen and survey party, 1949-52. J. B. Beaird Co., Shreveport, Packaged Compressor Dept., design and detail packaged compressors for natural gas service, piping and structural design for gasoline plants, compressor stations and pipe lines, position held as Senior Draftsman, 1954-55. Braden Steel Corp., Shreveport, design of prefabricated steel buildings, 1955-56. Wyatt C. Hendrick Eng. Corp., Houston, Structural Designer, 1956-57. Lummus Co., Baton Rouge, Senior Design Engr., supervise 3 squads draftsmen and 3 design engineers, Jan. 1957-date.

**FRANK P. FISCHER JR.**, New Orleans; age 24. Endorsed: F. P. Fischer, L. K. Nelson, R. M. Seago. Tulane University, BSME, 1956 Registered M.E., La. Frank P. Fischer Engineering Co., Inc., summers 1948-49, office boy; summers 1950-51-52, office work and bookkeeping; summer 1953, office assistant; summers 1954-55, Sales Engineer. Permanent employment as Sales Engineer, June 1956 to date; sales work with industrial and commercial cooling and heating equipment.

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MARCUS M. HIRSCH, Baton Rouge; age 24. Endorsed: J. S. Burk, D. J. Carville, A. W. Durning, P. W. Wang La State University, BSME, June 1954. J. B. Beard Co., Shreveport, Mechanical Engineer, design of pressure vessels and liquid petroleum gas equipment, June-Dec. 1954. US Air Force, Aircraft Maintenance Officer, Dec. 1954-Sept. 1955. Barnard & Burk, Baton Rouge, Mechanical Engineer, piping engineering, Dec. 1956-date.

WILLIAM C. JONES, Lafayette; age 30. Endorsed: A. B. Bell, R. O. Beckham, R. M. Hetherwick. University of California, Math & Physics courses, 1946. International Correspondence Schools, Math, Physics, A.C. & D.C. Theory, 1953-55. Southern Bell Tel. Co., March 1948 to date: Lineman and cable splicer, Rural Development Representative, Junior Engineer, Engineer. Responsible for preparation of long range outside plant plans, study plans for proposed new exchanges, transmission calculations for proposed facilities, numerous other duties.

JOHN M. OERTLING, Baton Rouge; age 24. Endorsed: A. N. Gordon, T. J. Innes Jr., W. B. Root, Jr La. State University, BSME, 1956. Esso Standard Oil Co., Baton Rouge, Project Engineer, M.E. Dept., Feb. 1956 to date.

ASHLEY C. SPEIR JR., Baton Rouge; age 28. Endorsed: J. B. Arbour, G. C. Gallagher, R. Meyer. The Citadel, Charleston, SC., C.E. course, 1947-48. US Military Academy, West Point, 1948-52, B.S. General Eng. 1952. University of North Carolina, Chapel Hill, N.C., 1955-57, BMA, Jan. 1957. Esso Standard Oil Co., Engineer, Mechanical Technical Services Dept., Feb. 1957 to date.

JACK E. STOVER, Bogalusa; age 23. Endorsed: F. W. Bennett, M. R. Guell, C. H. Hundemer. La. State University, BSME, 1956 Gaylord Container Corp., Engineer, June 1956 to date.

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# THE LOUISIANA ENGINEER

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Vol. 43

DECEMBER, 1957

No. 6

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Cover photograph by the Times-Picayune

## ENGINEERING BRIEFS

**Square Manholes**—A new square manhole boasts two features which give it some advantage over the circular type. The lid is supported only on corner lugs, and no rocking can occur when it comes in contact with vehicle tires. When the time comes for surfacing the street, shims are provided to raise the lid so that it keeps level for the new surface. This procedure can be repeated any number of times. —*Engineering News-Record*

**Water Douses Oil Fire**—Water, long thought to be a spreader of fuel fires, has been successfully used to extinguish oil fires. In a test, a lubricating-oil fire, ignited by a leak to hot steam pipes, was put out by a continuous water spray. At the same time, a steady flow of water was used to cool the pipes below the re-ignition temperature of the oil. —*Electrical World*

**Slide Rule Tie Clasp**—A miniature slide rule only two inches long, and attached to a tie clasp is now on the market. Perfect in every detail, the slide rule clips neatly to the tie when not in use. —*Product Engineering*

**Food Makes the Difference**—What a Frenchman eats for breakfast, or what time an Englishman leave for work in the morning, have contributed to the economic feasibility of the long discussed link between the electric systems of Britain and France. The two countries decided to go ahead with the \$11.2 million project, when it was decided that the electrical peaks in each country occurred at different times. —*Electrical World*

**Clean Cars in Moscow**—It is against the law to drive a dirty car in Moscow. To preserve the law, Russians have their version of the "minute wash." The car being washed is hoisted up, so that its underside can be cleaned, as well as the surface. An automatic overhead spray or hose-mounted scrub brushes—or both—are used to tackle the Moscow grime, depending on how dirty the car is. —*Petroleum Week*

**All Electronic Telephone Exchange**—An internal private-branch telephone system is going into operation in England, that is noiseless, has no moving parts to go wrong, and will last up to 50 years. The complete unit is contained in a box only 20½ inches long, 19 inches high and 12 inches deep. But into this box are crammed more than 1,000 components, including 74 electronic tubes of a revolutionary type, that eliminate moving switches, and a memory that holds incoming calls until its line is free, then puts them through. —*Product Engineering*



# DISASTER PLANS

Chester A. Peyronnin, Jr.

When a disaster strikes a plant there are always two types of losses that immediately occur. The first is the direct loss of materials, products, equipment, and buildings. The second type consists of hidden losses which result from down time in production such as loss of business customers, loss of skilled labor, and loss of contact with sources of supply.

The direct loss prevention has been well studied. The modern plant has engineered fire fighting equipment and a planned program of fire and explosion prevention. Unfortunately not many plants have the foresight to plan a program that will aid them in the restoration period after a disaster strikes. Such a plan is commonly called a "Disaster Plan".

The planning of the control and restoration during and after an emergency has the advantage of allowing the engineers and managers to think in an orderly process instead of rushing haphazardly into a panic program after the disaster strikes. Many plants have been faced with the problem of reconstruction with all of their plans and blueprints destroyed. Delays while additional copies are secured from the builders are costly. A little forethought and a safely stored duplicate set would allow them to begin immediately. This and other examples give rise to the necessity for this type of plan.

The plan should be divided into four basic phases. The first phase is the planning phase and covers that period when a plant is getting ready or the "before the fact" phase. The second phase covers the actual control of the situation, this is usually already planned but often important facts are overlooked. The third phase is the immediate restoration of utilities and such production as is possible. The last phase is the overall top management look at the situation.

The outline at the end of this article lists several considerations in each of these phases. Naturally in any such generalization the items cannot apply to all plants but should provide sufficient introduction to allow the proper evaluation of each plant situation. When personnel are mentioned the names given are general and in different plants will vary, particularly in the smaller plants where several functions are performed by one man.

The first phase has to do with the preparation to meet an emergency. All of the basic ideas of fire prevention and storm protection should be applied. The personnel should be trained and drilled in the proper procedures to follow during and after an emergency. It is at this time that duplicate copies of all vital records, blueprints, process procedures, and production specifications should be made. These should be stored in a safe place, either away from the plant or away from any area which might be involved in a disaster. Since space for storage is usually an important factor the use of micro-film is advised. Since most troubles occur at times when the key persons are not in a plant the operator or watchman on duty should know exactly whom to notify and in what order.

When considering fire and emergency drills it is well to bear in mind that actual practice is the best practice. Often it is not feasible to have such drills on emergency plans on a plant-wide scale because of the interference with production. When necessary a well planned departmental "question" type drill can be utilized. If the proper answers to "what would you do?" are drilled into people then you have the next best substitute to actual practice.

The second phase should deal with the actual control of the situation. This is where the plant brigade will perform. There are suitable references for the proper training of the brigade so this paper will not mention them. The most overlooked fact is that the brigade cannot function for any length of time without help. When an emergency lasts longer than three hours it becomes necessary to provide water, food, and perhaps relief for the men. If it cannot be controlled within a reasonable time it may even be necessary to bring outside relief to the men. This falls to the staff. They should provide the support to the brigade in obtaining such things as are necessary. It is also frequently necessary to secure additional equipment to meet an emergency such as bulldozers, cranes, or draglines. These can be secured by the staff without distracting the brigade members from their jobs and men should be provided to attend to these administrative duties.

Another important fact in controlling an emergency is that all key personnel should not be allowed to become involved. While it may seem that they are being treated better than other employees who are expected to work in the risky fire fighting it is better not to lose personnel who will be needed in the restoration process. The loss of a chief engineer is more costly

to a plant than the injury of ten workmen, heartless though it may seem.

The third phase is the immediate restoration of utilities. Work cannot be begun until electricity, water, and air lines are back in operation, at least on an emergency basis. Some items require first priority for instance if there are tall stacks warning lights must be restored immediately. As soon as these services are provided an attempt should be made to salvage all possible material and tools. Any production departments which can be put into operation should be started as soon as possible.

It is in this phase that the planning will pay the highest rewards. The most important single item is to obtain a complete picture of the actual damage. If men, who have been trained, can make inspections with a minimum of supervision a great deal of time will be saved. Few engineers have the opportunity to obtain experience in salvage operations so that any training along these lines will help them to evaluate the damage and time of repair. Since all process lines involved in a severe fire must be tested to see if they have been damaged by the heat it is usually a time saving idea to have an outside testing laboratory perform this work. The average plant is not equipped to perform such testing so the personnel from the plant can best be used in other portions of the restoration.

If there are several plants of one company it is a good idea to bring in the maintenance personnel from the other plants to help. The familiarity that these men have with the machinery will offset the transportation and lodging cost with decreased down time in the repair work. Outside contractors can be utilized for the building repair while the plants own men repair the actual production lines or process equipment.

In the majority of instances the work done in the third phase will restore the plant to normal. If there is to be a lengthy delay then top management should meet for the fourth phase planning. This may necessitate the construction of completely new facilities or the abandonment of the plant completely. In any case top management should be consulted in any major repair because after an emergency of a large nature it may be desirable to make major changes in the plant set-up.

While the ideas in this paper have been very general it is hoped that this paper has served to stimulate thinking among plant consultants to the end that plans can be sold to the customers for preparation for disasters.

### Suggested Outline

#### **Phase I — Before the Emergency**

1. Duplication of all important blueprints, piping layouts, process sheets, records, etc.
2. Lists of spare parts for machinery should be prepared and stored with above.
3. Lists of key personnel should be prepared. This includes both company personnel and outside sources of help such as inspectors, contractors, etc.
4. Lists of incoming shippers should be prepared so that material can be stopped or held.
5. Repair and salvage crews should be trained. Engineers can be trained in damage evaluation.
6. All standard fire and explosion preventative measures should be taken.
7. Plant personnel should be trained and drill in emergency procedures.
8. Plans for interim engineering and business offices should be made. These can be spotted in undamaged portions of the plant or adjacent areas.

#### **Phase II — Immediate Control**

This should be under direct control of the brigade chief or the station operating chief. The following duties should also be performed:

1. Fire fighting—under direction of the brigade chief.
2. Plant operations—controlled or suspended on orders from brigade chief, Operating head, or department head.
3. Utilities—engineer in charge should take personal supervision of boilers, fire pumps, etc.
4. Evacuation—individual department heads.
5. First-Aid—medical staff.
6. Liason with local authorities—some member of the staff.
7. Liason with top management—some executive officer.
8. Operations support (food, water, relief, extra equipment)—member of business staff.
9. It is usually wise to exclude the following from any hazardous work.
  - a. chief engineer
  - b. department chiefs of operational departments
  - c. Senior parts clerks of repair parts
  - d. Key records clerks
  - f. Foremen of instrument department, electrical department, millwright group, and machinist department.
  - g. Executive officers

### Phase III — Restoration

1. Executives should stand by for major decisions.
2. Inspections should be made by engineers to determine extent of damage. They can be assisted by the electricians, instrument men, etc.
3. Preliminary reports of damage should be made to chief engineer immediately after a disaster is controlled. He can then lay plans for more comprehensive inspection.
4. As soon as extent of damage is ascertained spare parts can be ordered.
5. Operating personnel will meet with the operations chief and decide what can be made operations or to what task the men will be assigned.\*
6. Production inspectors can make checks to see what production can be salvaged.
7. Workmen should immediately begin to restore utilities.
8. Bookkeepers should be assigned to work directly in the field to keep account of supplies used in restoration. Paperwork should be kept to a minimum.
9. Business staff will secure additional help and see to the housing for workers who must be brought in from other plants or manufacturer's representatives who have been called in to help.
10. Final engineering orders will be issued by the chief engineer as each item is analyzed.

### Phase IV — Long Range Planning

This is an executive function. Chief engineer, chief of operations, executives, and members of the board should meet and decide on any overall changes in the plant required as the result of a possible long shut-down. The work here is too specialized to generalize on.

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\* Usually unions and management find a common ground after an emergency since it is to the common interest of both to return to production and there is usually very little difficulty is assigned operating personnel to repair work for short periods.

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## SECTION COORDINATION CONFERENCE

OTHA E. BARRON, Arrangements Chairman

It is felt that the problems of arranging suitable programs for meetings, encouraging attendance at meetings, the failure of qualified engineers to associate themselves with the society, the lag of committees in processing projects of both statewide and local interest, the complacency of members in general, are issues that are not peculiar to one section but are faced generally by all of the sections.

We know that by sitting down together and having a meeting of minds, many of these problems can be resolved. Because Alexandria is centrally located and is within close driving distance of other sections it is the logical location for such a meeting. With this in mind, a conference was held in Alexandria November first and second, 1957 and all officers, committee members and members-at-large interested in the advancement of all phases of the society's activities were invited and urged to attend.

A program of activities for the ladies were arranged by the Woman's Auxiliary.

Headquarters were located in Hotel Bentley. Registration for the conference began at 1:00 p. m. November 1. The program was as follows:

### CONFERENCE SESSIONS

#### Friday, November 1, 1957

|               |                                          |
|---------------|------------------------------------------|
| 3:00 P. M.    | Separate discussion groups guided by the |
| to 4:30 P. M. | Chairmen of the following Committees:    |
|               | Legislative      Engineers' Week         |
|               | Membership      Vocational Guidance      |
|               | Section Coordination                     |

#### Saturday, November 2, 1957

|            |                          |                                                                |
|------------|--------------------------|----------------------------------------------------------------|
| 9:30 A.M.  | Welcome                  | Howard B. L'Heureux,<br>Pres., Alexandria<br>Section, L. E. S. |
| 9:45 A.M.  | Purpose and Scope        | Waldemar S. Nelson,<br>Pres., Louisiana<br>Engineering Society |
| 10:00 A.M. | State Laws for Engineers | Louis Duclos, Chrm.<br>Legislative<br>Committee                |
| 10:45 A.M. | Engineers' Week          | John F. Vogt, Jr.,<br>Chrm. Engineers'<br>Week Committee       |

|            |                               |                                                                |
|------------|-------------------------------|----------------------------------------------------------------|
| 11:15 A.M. | Membership .....              | T. A. Bonnet,<br>Membership<br>Committee Member                |
| 1:30 P.M.  | Vocational Guidance .....     | Joseph R. Mooney,<br>Chrm., Vocational<br>Guidance Committee   |
| 2:00 P.M.  | Annual Meeting .....          | Edward A. McLellan,<br>General Chrm.<br>1958 Annual Meet       |
| 2:15 P.M.  | Honors and Awards .....       | Michael C. Abraham,<br>Chrm., Honors &<br>Awards Committee     |
| 2:45 P.M.  | Section Coordination .....    | Z. L. Loflin, Chrm.<br>Section Coordination<br>Committee       |
| 4:15 P.M.  | Miscellaneous and Close ..... | Waldemar S. Nelson,<br>Pres., Louisiana<br>Engineering Society |

### SUMMARY REPORTS

#### Sections Co-Ordinating Committee; Z. L. Loflin, Chairman

Friday: The discussion centered upon the topic of Section meetings and ways to make them interesting and helpful. Some of the suggestions that were offered were as follows:

1. Obtain good programs
2. Ask some of the larger companies to send some of their top officers as speakers
3. Hold meetings with other engineering societies, such as A. S. M. E., A. I. E. E., etc.
4. Hold dinner meetings when possible.
5. Invite non-member engineers as guests to arouse their interest in L. E. S.
6. Provide for one or two outstanding speakers to tour the state giving a talk at each section. This will require co-ordination of meeting dates of the sections. The discussion indicated that an effort at co-ordination is a worthwhile endeavor.
7. Plan programs for types, such as: (a) general interest, (b) professional, (c) Technical, and (d) know your neighbor.
8. The idea of holding a "State planning Conference" each each was approved by those present.
9. Exchange visits of members with nearby Sections.

Saturday: The keynote of this session was a paper by Mr. J. P. Tucker of Lake Charles section in which he urged closer

co-ordination between the Sections, and united Professional enthusiasm and leadership for engineering by the L. E. S. He discussed the following items:

1. Better Programs for Section Meetings
2. Lack of apparent Interest in Society Affairs by members
3. Poor attendance at meetings .
4. Ineffective Committee Work
5. Lack of Publicity
6. Lack of program assistance from the state level
7. Lack of co-ordination between sections
8. Lack of public relations program
9. Lack of interest in civic affairs
10. Being content to have "just a speaker" at regular meetings
11. Lack of co-ordination in political affairs
12. Failure to realize that our group represents the men who actually plan the community's future and control the expenditures

Mr. Tucker discussed these in detail and offered suggestions for an enthusiastic program of activities for the L. E. S. He said, "The main thing is to keep in mind that our goal is to raise the engineering profession to the high plane it belongs. Let everything we do be toward that end."

Mr. Ward of Lake Charles added some inspiring comments. He said we should hold as our goal "Recognition as a Profession" and unite to attain this goal. We should make L. E. S. attractive to all engineers and enlist their efforts with ours in an enthusiastic professional spirit.

Mr. Barron of Alexandria discussed item 7 of Mr. Tucker's suggestions and urged co-ordination and unity of efforts.

The suggestion of obtaining two statewide programs for next year was discussed and it was the consensus of those present that four programs be worked out for March and October in 1958, and that the various sections be urged to co-operate in this undertaking.

It was discussed and approved by those present that another state meeting of this type be held in March of 1958 and that it be named State Planning Conference.

#### **Membership: T. A. Bonnet, Chairman**

The ideas presented for increasing society membership are as follows:

1. Since all engineers registered in the state are eligible for membership, it was suggested that the president of the



Society address a letter, with membership application enclosed, to each and write him (or her) to become members of LES.

(In discussion from the floor it was stated that perhaps the list of registered engineers should be studied carefully—that perhaps there were some who should not be approached for membership. It was mentioned also that women engineers are eligible, however, there was no discussion as to whether they should be approached for membership.)

2. Potentially, there are numerous prospects to be reached in our college engineering faculties and it was further suggested that the members in the engineering teaching profession be alerted to suggest membership to all engineering graduates as soon after graduation as possible.

(Mr. Loflin commented on this point that over 80% of S. L. I. engineering faculty are now members of LES.)

3. It was suggested that we "advertise" or publicize our actions more. Perhaps a placard, well-planned and/or prepared, to be placed in civic building, banks, etc., advertising the nights of meetings or just a request to eligible engineers to join up or attend the meetings if they happen to be in town the day or night of an LES activity.

(There was no mention of this approach being unethical however, it was suggested from the floor that we should furnish papers with a more complete story on our actions with the thought that the paper would better understand or interpret our terminology and be able to better prepare the publication.)

4. It was agreed that attendance is just about as important as membership and all members should be kept alert to try to improve this situation. You can't have one without the other!

(It was pointed out from the floor that programs were the deciding factor in attendance, that a well-planned program or a popular speaker on a timely subject will automatically improve attendance.)

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**Honors and Awards Given  
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Louisiana Engineering Society\***

**Michael C. Abraham**

Publicity is needed to make the awards offered by our Society as coveted as, for example, the Times-Picayune Loving Cup Award, given annually to a civic leader in the City of New Orleans. Several years ago we looked into the matter of employing a good publicity agent, but found that the cost would be too much.

It is doubtful that the value of the awards are fully appreciated by our own members. These awards are given only after most careful screening by your Honors and Awards Committee, and it should be noted here that a recipient need not be a member of LES, but that any professional engineer in the State of Louisiana is eligible to receive the Civic Activities or the Technological Medal.

Usually, there are several names proposed each year for the LES Civic Activities Medal (Andrew M. Lockett Award). There are a number of prominent engineers in each section of the State who qualify for consideration. A candidate's activities should be at least community-wide in scope, a part of which may be his church activities. Here are names of past recipients of the Civic Activities Medal:

Lester Alexander, of New Orleans, for his work on the proposed Seaway in New Orleans and many other activities.

A. B. Paterson, of New Orleans (awarded post-humously), Hal Leonard, Baton Rouge, and Hugh Coughlin, Alexandria for their great amount of work for the good of their respective city and community.

The Technological Medal given by the Society for outstanding technological work has presented a more difficult situation, but if each section of the State would investigate thoroughly individuals who have done so much, for example, in the petroleum, lumber, paper, utility, sulphur, salt and sugar industries, or who have done much in laboratory work or teaching fields, a number of deserving engineers could be considered. Awards have been given to A. B. Woods (now deceased) for his work in development of drainage pumps; Wiley Poole, of Baton Rouge, agricultural machinery; Marcel Voorhies, Esso Std. Oil Laboratories; and Irving Hansen (post-humously) of Freeport Sulphur Co. for mining developments in the sulphur industry.

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\* *An excerpt from a talk given at Alexandria, La., Nov. 2, 1957.*

Honorary Memberships in the Society are for members of LES who have done outstanding work for the Society and Community. Candidates are considered most carefully for these awards. This type gives the Society a chance to show its recognition of a hard-working, unselfish devotee to the cause of engineering.

To make these awards stand out, first before our members, and secondly, before the public, it is proposed (1) that a display be made up, showing these medals and certificates, with lists of recipients, and that this display be sent around the State for a regular meeting in each location and for the annual meeting, (2) LES employ a commercial writer for our next group of awards to prepare interesting articles for publication in newspapers in the State. Also, a suggestion was made and which should be seriously considered to make these awards during Engineers Week instead of at the Annual Meeting,—publicity is excellent during Engineering Week.

Each Section should advise annually their selection of a member for a Certificate of Appreciation for work in thier particular Section. This is a highly prized award.

Let's make the best use of these awards for the individuals of the Society and for the Society itself.

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## LOUISIANA ENGINEERING SOCIETY

J. P. Tucker

The Louisiana Engineering Society is composed of six sections. Sections are located in Lake Charles, Lafayette, Alexandria, Shreveport, Baton Rouge and Monroe, with State Headquarters in New Orleans.

Basic by-laws are provided to each section by the State Headquarters. These by-laws are then modified by each section to best meet their particular need.

The result of this is that each section operates independent of the other and makes only routine reports to the state office.

Why do we have an Engineering Society? Is it simply to have a place where a group of engineers can get together for a social hour? If this is all it is to be we can not expect too much from it.

Doctors and surgeons have their professional society, so have attorneys and lawyers. They do not meet just for a social gathering. A few years ago they were in the same condition we are today. Why then can't we as professional engineers create an "American Engineering Society". It might as well be born right here. If we start it working for the benefit of industry and builders and the profession in our state, others will follow until it is national.

The engineering profession should work toward a goal of better engineers instead of more engineers. This can be done, I think, by creating a "State Examining Board" and requiring each graduating student and each new applicant to appear before and pass an examination before being allowed to practice engineering. The doctors and lawyers do this with complete success.

At the same time that the "State Examining Board" is created there should be put into effect a system of public education until everyone understands that all they have to do to obtain engineering advice for any type service is just to call in a registered professional engineer, just as if they were sick they would call in a registered doctor. Then the owner would not have any other worry with his problem, if specialist were required on the project, that would be the responsibility of the engineer first engaged by the owner. A rigid code of ethics should be adopted and enforced by the State Board.

The State Board and local sections could maintain catalogs of Registered Engineers. These could be distributed to architects,

contractors, Associations of Commerce and industries. Another way to make this list available to the public would be to have the list separated into areas and printed in the leading telephone directories of that area. A permanent address and telephone number for each section is important, that will permit the public to locate registered engineers without first hiring a detective.

College training of boys for the profession should be encouraged but the colleges should tighten up on their entrance and scholastic requirements so that only those who are really dedicated to engineering are graduated and recommended to the "State Examining Board" for professional status. There should be a "Junior Professional" grade for the young graduates. They would be required to associate with "Senior Professional" engineers for 5 years, after which they would appear before the "Board" and passed on to "Senior" grade or separated from the professional society.

A lot of this may seen outside the scope of this conference. However, we as engineers must work for the high plane to which our profession should be elevated. This brings this conference right into this problem.

In order to coordinate the sections activities we should first have a coordinated state program. However, lets not wait for all of these desirable things to be accomplished but push ahead with what we have. Some of the problems facing each section are:

1. Programs for Regular Meetings.
2. Lack of Interest in Society Affairs by Members.
3. Poor attendance at Meetings.
4. Ineffective Committee Work.
5. Lack of Publicity Ability.
6. Lack of Program Assistance from State Level.
7. Lack of Coordination of Section Affairs with Other Sections.
8. Lack of Public Relations Programs.
9. Lack of Interest in Civic Affairs.
10. Lack of Coordination in Political Affairs.
11. Being content to have "just a Speaker" for Regular Meetings.
12. Failing to Realize that their Group Represents the Men Who Actually Plan the Community's Future and Control the Expenditure.

There are many items common to all sections which when solved would result in bettermen of our Society, we can not solve them all here at this conference, we can however, try to arrive at a means of correcting those items of greatest immediate concern.

Analyzing the twelve items listed, they shape up about like this:

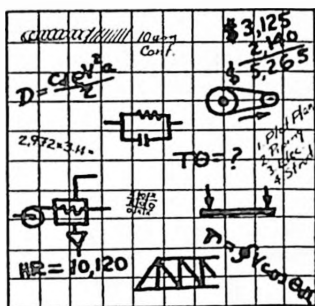
**Item 1. Programs for Regular Meetings.** In my opinion, this is the most important function of a local section. Therefore, the program committee should be selected with care and composed of hard working people. It must always be remembered that our is a diversified group of engineers that are not all interested in a common subject. The programs should be designed with this in mind. The regular meetings are where you are going to interest new members; you must make them want to come back. In planning programs do not be satisfied with just any speaker, movie films or slides, you have something to offer in exchange for the best. Seek and accept only top notch speakers on general interest subjects. Ask for speakers from top management, give them several months time to prepraie their program. Explain to them the kind of engineers to whom they will be talking. In our own local section during this year, we have not had a single local speaker, nor have we had a "District Representative". All of our speaker engagements have been filled by "home office — top level" talent.

**Item 2. Lack of Interest in Society Affairs by Members.** I do not believe this is the true condition. Perhaps a more exact condition is an "apparent" lack of interest. A member's interest is shown by the fact that he is a member, and that he does or will, attend meetings. To correct this condition we must create a desire to participate in committee work. Seek out the members who do not attend regularly and assign duties to them and request them to bring a written or verbal report to the next meeting. Follow up on these requests.

**Item 3. Poor Attendance at Meetings.** This condition will prevail just as long as conditions remain unchanged. However, by correcting items #1 and #2 attendance will show a remarkable increase.

**Item 4. Ineffective Committee Work.** This is a real problem. To many people the appointment to a committee means nothing at all. Their names just appear on the roster. The selection of committee personnel should be done with utmost care. The real

*Continued on page 345*



## The Problem Pad

Are you using the latest techniques?

### PHOTOELASTICITY IN INDUSTRY

Edward H. Harris\*

Many stress analysis problems in complicated machine parts where the complexity of shape prevents reasonably simple design analysis may be solved by the use of the photoelastic process of experimental analysis. Pieces which have reentrant cuts, sharp radius corners, several holes, odd general shapes and the like are particularly susceptible to analysis by the technique, and in general these are quite difficult to handle by purely analytical means. Several examples of such problems are shown in Fig. 1. A description of the process might indicate to the reader how this process can be of service in his particular problems.

The first step in the work consists of construction of a two-dimensional model, with due regard to scale similitude, of a transparent plastic with good photoelastic properties. One popular material is an especially formulated waterclear bakelite, available in large sheets at reasonable cost. The cutting of the model must be done by methods proven by practice not to produce stresses which would interfere with the reading of the stresses due to the loads applied in the tests.

Upon completion of the model it is placed in the loading frame of a photoelasticity machine, Fig. 2, and loaded to simulate the conditions under which the prototype piece is to serve. The loading frame element of the testing machine should be such that loads can be read quite precisely and the part of the apparatus which delivers the load to the model must do so with good accuracy.

The end point of the process is the reading or recording of the stress patterns caused by loading the stress-optically sensi-

\* Associate Professor of Mechanical Engineer, Tulane University; Registered Civil Engineer.

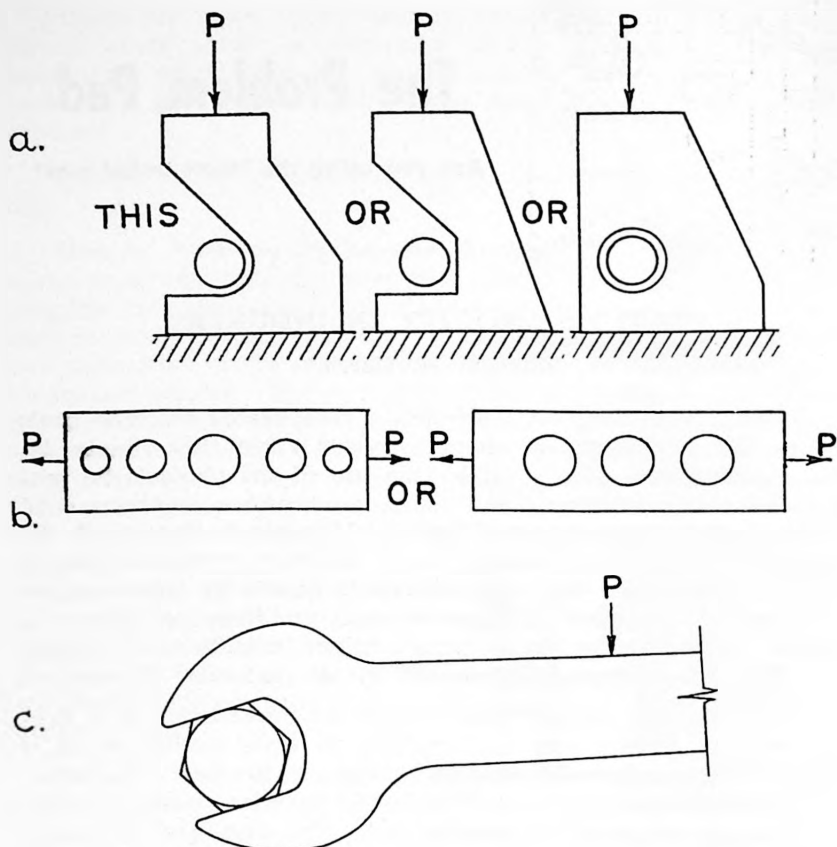


Fig. 1. a) In which bracket providing clearance for the rod is the stress least?

b) In weight reduction holes which tie bar is better?

c) Is this the best wrench design?

tive model. The essential elements of the photoelasticity machine are a mercury vapor light source, a suitable filter to produce white light, polarizing and analysing plates, condenser and focusing lens as required and a camera or screen on which to photograph or observe the pattern of stress lines. The machine, Fig. 3, is fairly expensive and unless the industry plans to go into an extensive program of experimental stress analysis or research, it would likely be more economical to have the experimental work done at a laboratory where the instrumentation is complete and ready to be used.

Observation of the stressed model will give a pattern of fringe lines from which the value of stress at the boundaries of



the piece may be read. Further, the intensity of stress concentration at critical points may be observed since at these points there will be many lines, closely spaced. These two readings, both available at once and with no formal analysis, will frequently be enough to satisfy the needs of the design engineer. That is, they may be enough to indicate maximum stresses, suitability of radii in corners, suggested general redesigns of shape, etc.

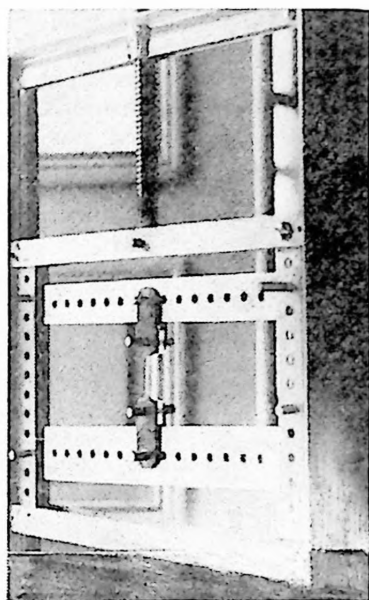


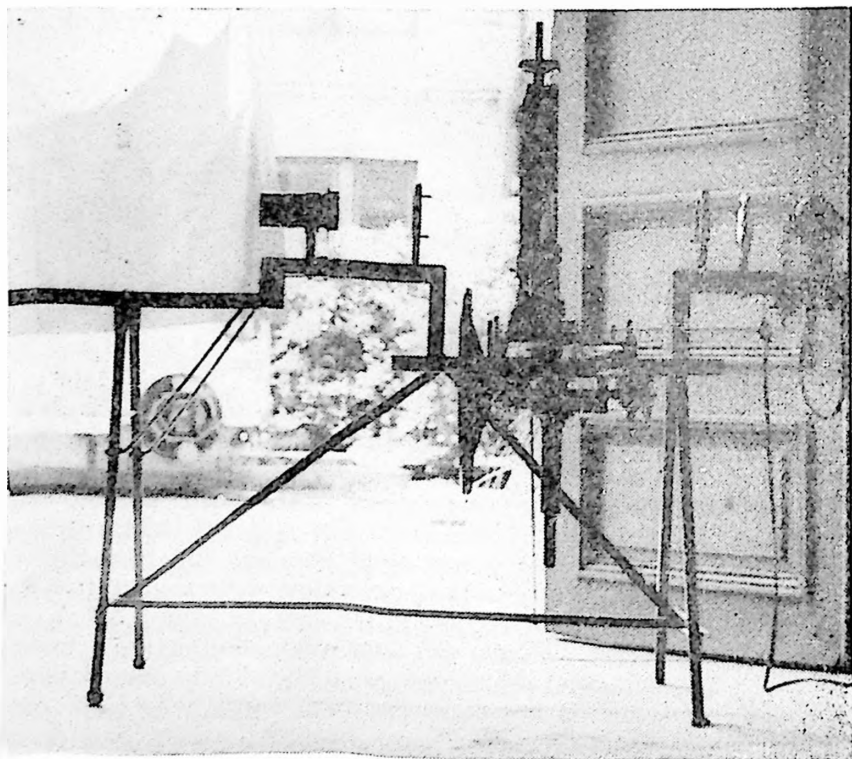
Fig. 2. Loading Frame, holding model.

On the other hand, it may be the case that the complete stress conditions throughout the prototype are required. In this situation it is possible to determine such stresses by the use of relaxation methods. The complete stress pattern usually requires a full set of photographs of fringe patterns (which are a measure of the difference of principle stresses) and of isoclinic lines (which are lines of constant inclination of principal stress). Then it is required that a relaxation network be solved based on the readings at the boundaries. The complete analysis takes considerable longer time to carryout than the simple observations first mentioned and is consequently more costly, but it is not complicated in the least.

In the case where a two dimensional model (a model of constant thickness) will not suffice, there exists a three-dimensional technique in which photoelastic stress patterns are frozen into

the model, the model is then sliced and the slices are observed, each as a two-dimensional model. This is a somewhat more complicated process and most laboratories are not set up to handle this technique.

In summary, the photoelasticity technique has been developed to the point where it is a reasonably simple method to obtain stress patterns in complicated shapes, being considerably more simple in many cases than analytical methods, and in some cases making solutions available to problems not readily solveable by pure analytical methods. Where general stress conditions are required the process is highly recommended. The technique is straightforward, the model construction not laborious, the time element is not prohibitive, and the cost when done in existing labs is quite in line.



**Fig. 3. Photoelastic Apparatus at Tulane.**

## LOUISIANA ENGINEERING SOCIETY (Continued)

life and effectiveness of this society depends on the work of committees. Another point in this regard is that committees are not called upon often enough at regular meetings to make reports. Call upon them for reports and ask for progress reports at regular or alternate regular meetings.

**Item 5. Lack of Publicity Ability.** This is perhaps the prime cause for retarded progress of the engineering profession. Not only locally but state and national also. Remember that the doctors and lawyers were faced with this same problem. They made no material gains until they found a solution. They did this by hiring good publicity personnel. You must have a real news item, properly prepared, before it will be willingly accepted by newspaper editors. When you prepare the announcement for your meetings and hand it to the press, it often is so dry and factual and badly composed that an editor would have to spend considerable time studying and rewriting before he could make it look like news instead of an advertisement. To make these items acceptable they must be composed as news, read for publication, even then the editor has plenty to do in order to make it fit into the space he has available. Select your publicity personnel for ability to compose items and satisfy the press.

**Item 6. Lack of Program Assistance from State Level.** There seems to be very little program coordination between the state and local level. This is not a healthy situation. There needs to be a means whereby the state office would provide the local sections with important state and national items of interest to the professional which could be used for announcements at regular section meetings.

**Item 7. Lack of Coordination of Sections Affairs with Other Sections.** Each section now functions with little regard to other sections. If each section would notify each of the other sections, and the State Office, of its planned programs, it is very likely that some of the programs would be sought by other sections, thus providing a type of "tour" opportunity for sponsors who have a particularly good program to offer.

**Item 8. Lack of Public Relations.** There is no better way to build up the engineering profession than to have the support of the local public. To obtain this you must always take part in public affairs, indorse civic projects, indorse college, school and church programs. Do all of this in the name of the Society and do it often enough that the public will learn to look for these indorsements and depend upon them. The state level (item 6) could be of great assistance in this effort. All sections must do this if the engineering profession is to receive its greatest benefit.

*Continued on page 347*

## OBITUARY OF JOHN DETZEL HAVERKAMP

John Detzel Haverkamp was born in New Orleans, Louisiana on June 27, 1906. He was 51 years old when he died at his home on August 21, 1957.

He attended Warren Easton High School and Tulane University School of Engineering, receiving the degree of B. E. in Mechanical and Electrical Engineering in 1927.

After sixteen months with the General Electric Company in Schnectady, N. Y. as student engineer, he returned to New Orleans and was employed as a lighting engineer by New Orleans Public Service Inc. in the Industrial and Commercial Service Department. He left shortly afterward to accept a position in San Francisco, and it was there he met the former Ivy Hollings whom he married.

In 1933 Mr. Haverkamp returned to New Orleans with his wife and he again joined the Industrial and Commercial Service Department of New Orleans Public Service Inc. He served as a Senior Commercial Salesman from 1935 to 1940, when he was promoted to an Industrial Representative.

In 1943 he entered the military service as a Lieutenant in the US Army, Corps of Engineers. His engineering knowledge and experience were much benefit in his assignment as Post Engineer in a port on the Persian Gulf. He was released from active duty at the end of World War II with the rank of Captain.

He resumed his duties with New Orleans Public Service Inc. as an Industrial Engineer for another year when he was made a Commercial Supervisor in June 1946. He held that position until the time of his death.

Mr. Haverkamp continued active in the Organized Reserves of the US Army and held the rank of Lt. Colonel.

He wrote various articles on lighting and other activities for various trade publications. He was active in the American Gas Association on various committees and received the "Hall of Flame" Certificate from A. G. A. for outstanding service to the gas industry. He was chairman of the Program and Papers Committee of the Industrial and Commercial Gas Section at the time of his illness.

In addition to his membership in the Louisiana Engineering Society, he was a member of the Illuminating Engineering Society, the Electrical Association of N. O., the Chamber of Commerce of the N. O. Area, and the American Gas Association.

He was active in civic affairs, as well as an enthusiastic gardener and philatelist.

He is survived by his widow, Mrs. Ivy Hollings Haverkamp, two sons, John H. and Paul, and one sister, Mrs. Mamie Reggio.

Be it resolved that this obituary be read at a meeting of the Louisiana Engineering Society, entered into the minutes, published in the Proceedings of the Society, and that copies be sent to members of the family.

JAMES L. CAMPBELL, *Chairman*  
MICHAEL C. ABRAHM  
ARTHUR J. NAQUIN

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#### LOUISIANA ENGINEERING SOCIETY (Continued)

**Item 9. Lack of Interest in Civic Affairs.** Because of the failure of the local sections to cooperate as a group of engineers, either for or against certain civic affairs, has resulted in the public's total disregard of the Society as such. This leaves the group's action up to the individual, thus one voice only is heard and that of an individual.

**Item 10. Lack of Coordination in Political Affairs.** This subject must be handled carefully. The Society can not choose sides in political campaigns or in personnel. It can evaluate situations and political promises and advise the public through statements or other communications.

**Item 11. Being Content to have just any Speaker for Regular Meetings.** This is a common thing; it is done more often than you think. The Program Committee is charged with providing speakers. Little assistance is received from anyone and its members must carry on their regular work. However, they have some thing to offer: The attention of the leading engineers of the area in a group. There is no other place where this can be done, so seek only the best speakers or programs, request only top level or top management quality speakers.

**Item 12. Failure to Realize that their Group Represents the Men Who Actually Plan the Community's Future and Control The Expenditure.** With the full realization of this, it is easy to see the value of the engineering professions opinions as expressed through the Society.

There is no simple or quick cure for all of these ills. Getting started on a coordinated plan is the most important thing. Perhaps the local sections planning board should meet between regular meetings to discuss important issues. Perhaps the state office should request a meeting each quarter with delegates from

*Continued on page 365*

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## MINUTES OF THE MEETINGS AND BUSINESS OF THE SOCIETY

Minutes of Meeting of the Board of Direction, Held at Poor Boy's Riverside Inn, Lafayette, Friday, October 11, 1957

The meeting was called to order by President Nelson with Messrs. Bogard, Cambre, Freeman, L'Heureux, Sessums, Scales, Taylor, Wallace and Fernandez present. Messrs. Dyson, Germano, Loflin, Parker, Sonnier and Szabo also were present by invitation. Reading of minutes of the preceding meeting was dispensed with.

The secretary read a report of the Committee on Honors & Awards, a copy of which is attached to these minutes. Mr. Sessums moved that the report be accepted as presented, seconded by Mr. Freeman and carried.

A progress report submitted by the special committee on constitutional revisions was read, after which discussion took place on the question of whether New Orleans should become a section. Mr. Bogard moved that the president appoint a committee to study the advisability of such action, seconded by Dr. Wallace and carried.

The secretary read a report from the President of the Baton Rouge Section advising that several industries had sent an engineer and a school advisor to the Jet Leadership Conference held at Michigan State University on October 5.

The secretary reported that 532 ballots had been cast in the September membership election and that only one had contained negative votes, therefore all applicants named in the ballot were elected to their respective grades. A copy of the ballot is attached to these minutes.

The secretary advised that correspondence had been received from Deans Bogard and Fenn advising that no faculty members would be able to attend the Engineers' Joint Council Conference on Engineering & Scientific Education to be held in Chicago October 31 thru November 2.

Correspondence between Mr. Harold A. Levey and Dean Lee H. Johnson concerning an article on unionization of engineers which appeared in a periodical entitled "Chemical Processing" was read, after which President Nelson requested that it be referred to the committee on Professional, Civic and Industrial Affairs.

The secretary distributed programs for the Section Coordination Conference to be held at Alexandria November 1-2, after which Mr. Loflin, Chairman of the Section Coordination Committee, gave an outline of the objectives and benefits of the conference and stated that the wives of members were not only invited but urged to attend. President Nelson announced that on October 17 the Baton Rouge Section and other technical societies would sponsor a dinner meeting at which Charles F. "Boss" Kettering would be the speaker, and that the affair appeared to be a sell-out.

Mr. Freeman moved that an appropriate motion be prepared commending Dean Frederick W. zur Burg for his part in consummating the magnificent new Engineering Building at Southwestern Louisiana Institute which was dedicated prior to the board meeting. Motion was seconded by Mr. Sessums, whereupon the president appointed Messrs. Freeman, Chairman and Sessums to prepare the resolution.

With reference to the matter of redevelopment of the foot of Canal Street as an International Center, President Nelson reported that at a meeting held on September 11 it was agreed that the L. E. S. and the American Institute of Architects would coordinate preliminary planning of the center and work closely with the City Planning and Zoning Commission.

The president stated that a meeting of the Publications Committee had been held recently and he wished to announce that the editor of THE LOUISIANA ENGINEER has not been receiving the volume of technical papers he hoped to obtain for publication, and that the sections were again urged to send in papers and other suitable material.

Dr. Taylor moved that Carleton C. Salley be reinstated to the grade of member, and that Irwin M. Lais be reinstated to junior member, seconded by Dr. Wallace and carried. Mr. Freeman moved that the resignations of Vivian E. Sicks, Douglas A. Donald and Fred J. Baehr Jr. be accepted with regret, seconded by Mr. Scales and carried. Mr. Sessums moved that Nathan L. Anderson be dropped from the rolls according to his request, seconded by Mr. L'Heureux and carried.

President Nelson announced that a committee to prepare the obituary of the late John D. Haverkamp would be appointed at a later date.

The meeting then adjourned.

JOHN P. FERNANDEZ, Secretary-Treasurer

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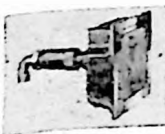
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**Minutes of Meeting of the Louisiana Engineering Society held jointly with  
the New Orleans Section, A. I. E. E., at Engineers' Club'  
New Orleans, October 14, 1957**

The meeting was called to order by President Nelson with approximately 125 members and guests present. The president welcomed members and guests of AIEE, after which Mr. Knost moved that the reading of minutes of the preceding meeting be dispensed with. The motion was seconded by Mr. Pavia and carried, and the secretary then read minutes of a meeting of the Board of Direction held in September.

The secretary read an obituary of the late John G. Bedell, after which a moment of silence was observed in memory of the deceased.

President Nelson announced that the Baton Rouge meeting featuring Charles F. "Boss" Kettering would be held on Thursday, October 17 and that reservations were completely sold out.

The chair was relinquished to Mr. A. J. Lemann, Chairman, New Orleans Section, AIEE, and after a few announcements their Program Chairman, Mr. F. E. Johnson Jr., introduced the principal speaker of the evening, Mr. Joseph L. Nanner, Head, Mechanical Engineering Department, Esso Standard Oil Company, Baton Rouge, who gave a most interesting lecture on "UNDERGROUND STORAGE OF LIGHT HYDROCARBON".

A lively question period followed, after which a rising vote of thanks was accorded the speaker.

The chair then was returned to President Nelson, who recognized Mr. Dewitt L. Morris, Technical Paper Chairman of L. E. S. Mr. Morris announced the program for the society's November meeting and urged everyone to attend.

The meeting then adjourned for the usual collation.

JOHN P. FERNANDEZ, Secretary-Treasurer

**Minutes of Meeting of the Board of Direction, Monday, November 11, 1957  
Engineers' Club, New Orleans**

The meeting was called to order by President Nelson with Messrs. Freeman, L'Heureux, McLellan, Taylor, Wallace and Fernandez present. Dr. Wallace moved that minutes of the preceding meeting be accepted as read, seconded by Dr. Taylor and carried. President Nelson then gave a brief report on the Section Coordination Conference held at Alexandria November 1-2.

The secretary read a financial report for the third quarter of 1957, which was accepted upon motion by Mr. McLellan, seconded by Mr. Freeman and carried. A list of amendments to the society's constitution, prepared by a special committee appointed for the purpose, was read by the president. Mr. Freeman moved that the report be accepted and approved, seconded by Mr. McLellan and carried. The secretary read a proposed amendment suggested by the Membership Qualifications Committee and Dr. Wallace moved that it be incorporated with the other amendments. The motion was seconded by Dr. Taylor and carried. Mr. McLellan moved that the membership-at-large be informed of the Board's unanimous approval of the proposed amendments at the time they are submitted for vote, seconded by Mr. Freeman and carried.

President Nelson, Chairman of the Honorary Membership Committee, announced that over 80% of his committee had voted favorably to award honorary membership to Herman L. Lehmann for his outstanding leadership in organizing the society's state sections, and to John H. O'Neill for his contribution in the field of Public Health Engineering. Dr. Taylor moved that honorary membership be conferred upon these two members, seconded by Dr. Wallace and carried unanimously.

The secretary read letters of thanks received from W. Horace Williams Jr. and Mrs. A. A. Woods for copies of the LOUISIANA ENGINEER containing obituaries of deceased members.

The secretary reported receipt of a letter informing the society of the second annual Mayor's Traffic Safety Conference to be held November 26-27 and requesting confirmation of the society's representatives. In accordance with appointments made earlier in the year, the General Chairman of the conference was advised that Messrs. B. A. Grehan, F. B. Grevemberg and A. J. Naquin would represent the society.

A letter from Mr. James McLemore, State Custodian of Voting Machines, was read in which he offered the use of state voting machines for the society's elections. The secretary was instructed to thank him but decline the offer since L. E. S. elections are conducted by letter-ballot.

A letter from Colonel William H. Lewis, District Engineer, Corps of

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Engineers at New Orleans, relating to the Permanent International Association of Navigation Congresses which plans to meet in the United States in 1961, was read. Colonel Lewis advised that New Orleans might be considered as a possible host city, and suggested that the L. E. S. contact the Director, Port of New Orleans, if it was interested in having the congress meet here. Dr. Wallace moved that the society contact the port director and offer its assistance in this connection, seconded by Mr. L'Heureux and carried.

A partial report from Mr. Allen Betz, Chairman, Publications Committee, containing quotations from a publishing firm for handling the LOUISIANA ENGINEER, was read. The cost appeared to be prohibitive, however it was indicated that present advertising rates were below average and could be increased. It was decided that no action would be taken until a complete report was received from the committee.

President Nelson announced that he had appointed Messrs. James J. Campbell, Chairman, Arthur J. Naquin and Michael C. Abraham to prepare the obituary of the late John D. Haverkamp. The secretary reported that Lyman C. Reed, a member of 50 years' standing, had passed away during the preceding week, whereupon the President stated he would appoint an obituary committee for Mr. Reed in the near future.

The president stated that new appointments should be made in 1958 to the New Orleans Building Code Committee and the Mayor's Coordination Committee, since the society's present representatives have requested to be relieved of their duties.

Dr. Wallace moved that Mr. E. H. Goodloe be dropped from the rolls in accordance with his own request, seconded by Mr. Freeman and carried.

Mr. L'Heureux moved that the society's Certificate of Appreciation for 1958 be awarded to Mr. Otha E. Barron for his work in organizing the Section Coordination Conference, seconded by Dr. Taylor and carried.

Dr. Wallace moved that Mr. Freeman be designated as Master of Ceremonies for the "President's Night" meeting to be held December 9.

The secretary announced that the Nominating Committee for 1958 consisted of Messrs. Wayne P. Wallace, Chairman, Michael C. Abraham and W. Stone Leake, and that board members were expected to submit names of possible candidates to the committee.

Discussion followed on affiliation with national organizations. Correspondence between Mr. Paul U. Robbins, Executive Secretary of N.S.P.E., and President Nelson was read. It was the consensus of opinion among those present that official request to affiliate with E.J.C. and N.S.P.E. would be made as soon as amendments to the constitution were adopted.

There being no further business, the meeting adjourned.

JOHN P. FERNANDEZ, Secretary-Treasurer

#### Minutes of Meeting of the Alexandria Section, Louisiana Engineering Society

The October meeting was held at Herbie K's Restaurant at 7:00 P. M. on October 24, 1957.

The meeting was called to order by President Howard L'Heureux.

The president urged the Nominating Committee to begin considering people for new offices for coming year. The By Laws were read concerning the selection of new officers.

Mr. Edwards reported that Mr. Edward Summers was awarded the Scholarship Award sponsored by the Ladies Auxiliary.

Mr. Flowers made a motion that the secretary be authorized to write Mr. Summers a letter of congratulation of his achievement and extend to him an invitation to the joint section meeting.

Mr. Barron made a report on the Sectional Coordination meeting and urged those present to assist in getting the membership present at this meeting.

There being no further business the meeting was adjourned.

D. C. ROBERTS, Secretary-Treasurer

#### Minutes of Meeting, Baton Rouge Section, Louisiana Engineering Society

Date: October 17, 1957; Time: 7:00 P. M.; Place: Caribbean Room, Bellemont Motor Hotel.

A joint dinner meeting of eight Baton Rouge technical societies, sponsored by the Louisiana Engineering Society, was held. Participating organizations were: Louisiana Engineering Society, American Society of Mechanical Engineers, American Institute of Chemical Engineers, American Chemical Society, American Institute of Industrial Engineers, American Institute of Electrical Engineers, American Society of Heating and Air Conditioning Engineers, and Louisiana Agricultural Engineers Association.

Mr. Charles F. Kettering, noted inventor and corporation executive, was the guest speaker. His keen observations were a source of inspiration to all those attending.



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The outstanding success of this meeting has led to plans for annual joint meetings. Approximately 550 persons attended.

HAROLD F. LEIENDECKER, Secretary-Treasurer

**Minutes of Meeting, Baton Rouge Section, Louisiana Engineering Society**

Date: November 14, 1957; Time: 7:30 P. M.; Place: Agricultural Engineering Auditorium, Louisiana State University; Officers Present: Randall Meyer, President; W. L. Sutton, 1st Vice President; and T. E. Alexander, 2nd Vice President.

Mr. J. M. Parish, Chief Engineer for the Dow Chemical Company, Louisiana Division, spoke on "Design and Construction of Dow's Louisiana Plant."

Total attendance was 70 members and guests. Refreshments were served following adjournment.

HAROLD F. LEIENDECKER, Secretary-Treasurer

**Minutes of the Monroe Section of the Louisiana Engineering Society  
December 3, 1957**

The Monroe Section of the Louisiana Engineering Society met at the Rendezvous, Monroe, Louisiana on December 3, 1957. The meeting was called to order at 7:30 p. m. by the President, Mrs. M. M. Funderburk, Sr., with a prayer.

The reading of the previous meeting, old and new business was dispensed with due to the formality of the meeting with the attendance of the ladies.

Mr. Funderburk summarized the activities of the Monroe Section of the Louisiana Engineering Society with reports of the Committees.

The Nominating Committee report recommended the following officers to serve the Monroe Section for the calendar year 1958: President, Mr. Farrell W. Adams; First Vice President, Mrs. James R. McKinley; Second Vice President, Mr. Arthur C. Thigpen; Secretary-Treasurer, Mr. Dan D. McDuff.

Upon motion by Mr. Herbert Dickard, duly seconded, the section voted that nominations for officers be closed and that the above named be elected by acclamation. This motion was approved unanimously by the section.

Following the election of officers, a drawing for the door prize for the ladies was held. The prize, flowers, purchased by the Monroe Section of the Louisiana Engineering Society was won by Mrs. R. G. Hart.

A total of 48 were present including 12 ladies and 4 guests. An assessment of \$1.50 each was collected from all with the exception of the 4 guests.

Mr. M. M. Funderburk, Sr. announced the return on voting on the proposed amendment to our constitution regarding the number of meetings per year.

Article V, Section I: Read that we should meet four times per year.

The amendment was approved by 43 for with only 5 against as follows:

"There shall be a minimum of six regular meetings per year. These meetings shall be held on the first Tuesday of April, June, August, October, December and on Tuesday of the week containing February 22, which has been designated Engineers Week. The December meeting is designated as the annual meeting."

On proper motion and second, the meeting was adjourned.

T. R. HENRY, Secretary-Treasurer

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## NEW MEMBERS

- NELSON K. BROWN**, Baton Rouge; age 48. Endorsed: L. J. Daigre, E. M. Freeman, E. M. Jolly, H. B. L'Heureux, G. F. Williamson. U. S. Naval Academy, B.S. June 1931. Army Engineer School, Ft. Belvoir, Military Engineering, 1936-37, graduate June 1937. Registered C.E., La. Member SAME. U. S. Marine Corps, Engineer Officer, 1937-55. State Building Authority, supervised construction of public buildings, 1955-57. Bodman, Murrell & Smith, Architects, Project Supervisor for 30-unit housing project, England AFB, Alexandria, Feb. 1957 to date.
- JOHN E. CAGLE, JR.**, Shreveport; age 35. Endorsed: E. M. Freeman, E. M. Jolly, V. A. Lyons, R. S. Parker, L. H. Roeger. University of Arkansas, B.S.C.E. 1949. Registered C.E., La. Missouri Pacific RR, track layout and design, field surveys, culvert design, 1949-52. E. M. Freeman & Associates, Engineering Draftsman, April 1952 to date.
- LELAND H. CARTER**, Shreveport; age 29. Endorsed: E. M. Freeman, E. M. Jolly, R. S. Parker, L. H. Roeger. Purdue University, B.S.C.E. 1951. Registered C.E., La. McKinney Drilling Co., Nacogdoches, Tex., Field Supt. and Office Manager, 1951-54. U. S. Army, 1954-55. E. M. Freeman & Associates, Civil Engineer, Oct. 1955-date.
- LEWIS B. DAVIS**, New Orleans; age 37. Endorsed: B. P. Babin, G. W. Hill, P. P. Krutak. N. C. State College, B.S.E.E. 1942. Associate Member AIEE. Member Eta Kappa Nu (Raleigh, N. C.), 1940. Westinghouse Electric Corp., Pittsburgh, Electrical Tester, 1942-44. U. S. Navy, Radar Officer, 1944-47. Westinghouse Electric Corp., Boston, Consulting & Application Engineer, 1947-53; New Orleans, Engineering & Service Supervisor, 1956-date.
- WILLIAM T. GAMBLIN III**, Shreveport; age 33. Endorsed: E. M. Freeman, E. M. Jolly, R. S. Parker, L. H. Roeger. La. Polytechnic Institute, B.S. Forestry, June 1953. Jr. Mbr. Society American Forestry, 1953. Dept. Public Works, Shreveport, Rodman, Eng. Dept., 1946-49 and June-Sept. 1950. Brown & Root, Inc., Morgan City, Rodman June-Sept. 1951, Party Chief, 1953-54. Demopoulos & Ferguson, Shreveport, Instrumentman, 1954-55. E. M. Freeman & Associates, Instrumentman, Feb.-April 1955. Palmer & Baker Inc., Mobile, Instrumentman, April-June 1955. Austin Bridge Co., Shreveport, Layout Man, July-Oct. 1955. E. M. Freeman & Associates, Instrumentman, Party Chief, Draftsman, Oct. 1955 to date.
- ROBERT L. HORTON**, Shreveport; age 53. Endorsed: E. M. Freeman, H. L. Mitchell, R. S. Parker, L. H. Roeger. Centenary College, Shreveport, Engineering course, 1940-43. I.C.S., Engineering, 1945-46. Registered C.E., La. J. M. Fourmy, Consulting Engineer, Instrumentman, 1930-34. Corps of Engineers, Jr. C.E., 1934-36. J. M. Fourmy, Inspector, 1936-37. La. Dept. Highways, Instrumentman, 1937-38. City of Shreveport, Asst. City Engineer, 1938-50; City Engineer, 1950-date.
- WILLIAM A. LANE**, Baton Rouge; age 39. Endorsed: E. R. Felton, C. H. Filgo, J. L. Nanney. University of Texas, B.S.M.E. 1939. Boeing Aircraft Co., Seattle, Acting Group Head, 1940-43. Esso Standard Oil Co., Baton Rouge, Division Planning Supervisor, 1944 to date.
- ODIE E. LOYD**, Shreveport; age 36. Endorsed: R. S. Parker, L. H. Roeger, E. M. Freeman, E. M. Jolly. Louisiana Polytechnic Institute, Business Admin., 1938-40. Geotechnical Corp. of Delaware, Dallas, Tex., Party Chief; managed exploration party, made seismograph recordings and contour maps, 1947-55. E. M. Freeman & Associates, Shreveport, Party Chief, land surveys, building, street, water and sewer layout and inspection, 1955 to date.
- HARROD H. McCLELLAND**, Shreveport; age 34. Endorsed: E. M. Freeman, E. M. Jolly, R. S. Parker, L. H. Roeger. Southern Methodist University, B.S.C.E. 1947. Registered C.E., La., Tex. Gulf Oil Corp., Houston and Beaumont. Construction Engineer, 1947-51. E. M. Freeman & Associates, Civil engineering work, earthwork, highways and airfield paving, Nov. 1951 to date.
- CARL E. NEWMAN**, Baton Rouge; age 38. Endorsed: F. R. Adams, O. E. Barron, R. M. Harrison. Furman University, B.S. Math. and Physics, June 1940. Southern Bell Tel. & Tel. Co., June 1940 to date. Present position, District Engineer, Baton Rouge.

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**BERNARD H. NOLAN**, Shreveport; age 44. Endorsed: O. E. Barron, W. H. McElroy, L. J. Melancon. Tulane University, B.S., E.E. and Physics, 1937. Affiliate Member AIEE, Shreveport. Registered Electrical Communications, La. No. 5729. American Tel. & Tel. Co., La., Ga., and Fla., Test Boardman, Outside Plant Engineering, Coaxial Cable Engineering, 1936-48. Southern Bell Tel. & Tel. Co., New Orleans and Shreveport, 1949 to date, present position Shreveport District Engineer.

**EDWARD S. PARRISH**, Monroe; age 38. Endorsed: A. P. Andrews, G. T. Johns, G. P. Forman. Northeast Center, L.S.U., Monroe, Business Admin., 1936-38. La. State Normal College, Education, 1940-41. Northeast Junior College, Civil Eng., 1946. Registered C.E., La. (Public Employee). Registered Land Surveyor, La. La. Dept. of Public Works, Monroe, 1946 to date: Instrumentman, Office Engineer, Party Chief, Engineer in charge of rights-of-way and general office engineering.

**TRUMAN E. POUNDS**, Baton Rouge; age 38. Endorsed: F. G. Hornsby, H. L. Landry, W. L. Sutton. Southern Methodist University, B.S.M.E. Aug. 1948. University of Texas, M.S.M.E. course, 1949-50. Member ASME, NSPE, Kappa Nu Epsilon. Registered M.E., La.-Tex. Murray Co. of Texas, Mechanical Engineer, 1948-49. University of Texas, Teaching Fellow, 1949-50. Dow Chemical Co., Research and Development, Asst. Supt., Supt. of steam electric station, General Supt. of Power and Utilities for La. Division's facilities. 1950 to date.

**HERBERT RASBERRY**, Shreveport; age 45. Endorsed: E. M. Jolly, R. S. Parker, L. H. Roeger, E. M. Freeman. La. Polytechnic Institute, Engineering course, 1929-30. La. Dept. of Highways, Shreveport, layout supervision of highways and bridges, field and office engineering, 5 years. E. M. Freeman & Associates, Party Chief, Sept. 1951 to date.

**ANTOINE D. RICHARD**, Baton Rouge; age 45. Endorsed: F. R. Adams, F. C. Buckley, R. M. Harrison. La. State University, Arts & Sciences, 1931-34. Registered E.E., La. Employed by Southern Bell Tel. & Tel., Baton Rouge, 1941 to date, Fieldman Engineer, Jr. Engineer, Engineer. Since 1945, actively engaged in engineering design and supervision of installation of telephone facilities.

**ALFRED F. ROACH**, Baton Rouge; age 36. T. J. Innes, Jr., Randall Meyer, F. D. Richards. University of Wisconsin, B.S.Ch.E. 1946. Esso Standard Oil Co., Baton Rouge, July 1946 to date. Present position, Division Supervisor, Mechanical Div., Field Coordination.

**JAMES W. SPENCE**, New Orleans; age 65. Endorsed: J. B. Eustis, W. B. Moses, L. S. Weil. International Correspondence Schools, Civil Engineering; Wilson Engineering School, Structural Engineering. La. Highway Dept., Locating Engineer. Miss. Highway Dept., Resident Engineer, Roads and Bridges. Ford, Bacon & Davis, Resident Engineer. Porter, Barry & Associates, Resident Engineer. Foundation Co. of Miss., Engineer. Presently with Donnelly Construction Co. as Construction Engineer.

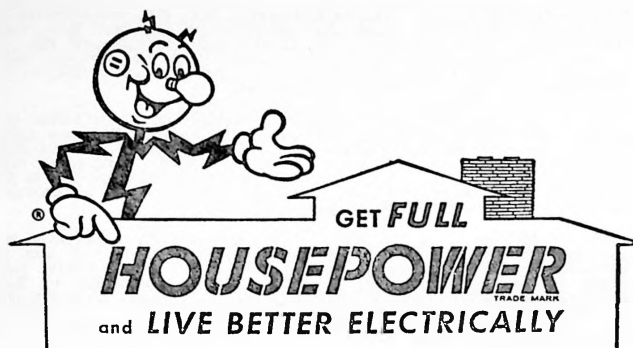
## FOR TRANSFER FROM JUNIOR TO MEMBER

**JULIUS B. ARBOUR**, Baton Rouge; age 35. Louisiana State University, B.S.M.E. 1943. Naval Air Corps Engineering Officer, 3 years. Esso Standard Oil Co., 11 years. Present position, Head, Mechanical Technical Dept.

**JAMES H. BRADLEY**, Shreveport; age 31. Louisiana Polytechnic Institute, B.S.C.E. 1949. Registered C.E., La. Neild-Somdal-Associates, Structural and Architectural Engineer, 1949-51. S. E. Huey & Co., Monroe, Structural Engr., 1951-52. Ebasco Services Inc., Tex., Construction Engineer, 1952-53. S. G. Weiner & Associates, Structural Eng. and Field Supervision, 1954-57. E. M. Freeman & Associates, Civil Engineer, July 1957 to date.

**BYRON E. CRAWFORD**, Baton Rouge; age 30. University of Arkansas, B.S.E.E. 1951. Esso Standard Oil Co., Baton Rouge, Engineer, 5 years; Group Head of Electrical Engineering, 1 year.

**ALBERT J. DUNN, JR.**, Leesville; age 31. Louisiana Polytechnic Institute, B.S.C.E. 1952. Registered C.E., La. J. Ray McDermott Co., Field Engineer, 1952-54. La. Dept. of Highways, Professional Engr. III, Sept. 1954 to date. Responsible charge of projects in construction, inspection and preparation of cost estimates.



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- ELMER P. HALL, Lafayette; age 30. Southwestern Louisiana Institute, B.S.C.E. 1951. Registered C.E. and Land Surveyor, La. The Texas Co., Producing Dept., New Iberia and New Orleans, Civil Engineer, 1951-57. Partner Caffery & Hall, Civil Engineers and Land Surveyors, Lafayette, La., July 1957 to date.
- JOHN W. HAMILTON, Monroe; age 34. Louisiana Polytechnic Institute, B.S.M.E. 1950. Registered M.E., La. Columbian Carbon Company, Design Engineer, Packaging Engineer, 1952 to date.
- GEORGE T. JOHNS, Tallulah; age 30. La. State University, B.S.C.E. 1952. Registered C.E., La. La. Dept. of Public Works as Resident Engineer and Area Engineer, December 1952 to date.
- IRWIN M. LAIS, New Orleans; age 38. Tulane University, B.E. in M.E. 1940. Registered M.E., La. State of Louisiana, Engineer in charge of construction of Air National Guard facilities at N O. Airport, 1940-41. U. S. Air Force, 1941-46. State of La., Military Dept., Engineer in charge of construction and maintenance National Guard facilities throughout State of La., Feb. 1946 to date.
- WENDEL J. LECHTENBERG, Lake Charles; age 34. I.C.S. course in Electrical Engineering. Olin Matheison Chemical Gas Corp., Engineering Draftsman, Assistant to Electrical Supt., 1943 to date.
- CHARLES L. MELANCON, JR., Port Allen; age 31. Southwestern Louisiana Institute, B.S.M.E., 1951. Dow Chemical Co., Research and Development Engineer, Texas Div., 1951-57; Mechanical Div. Engineer, Plaquemine, La., 1957 to date.
- EDGAR H. PAVIA, New Orleans; age 32. Louisiana Polytechnic Institute, B.S.M.E. 1950. Registered M.E., La., P.E., Miss. Equitable Equipment Co., Jr. Engineer, Air Conditioning and Refrigeration Div., 1950-51. U. S. Marine Corps Base Camp Joseph H. Pendleton, Oceanside, Calif., Design Engineer, Public Works Section, 1951-52. Bedell & Nelson, Engineer, 1952-55. G. A. Heft & Co., Sr. Mechanical and Electrical Engineer, 1955-56; Associate, June 1956 to date. Associate Member, ASME, AIEE.
- CHESTER A. PEYRONNIN, JR., New Orleans; age 32. Tulane University, B.S.M.E. 1947. Illinois Institute of Technology, M.S.M.E. Registered M.E., La. Tulane University. Associate Professor of M.E., 1948-49 and 1950-date. U. S. Corps of Engineers. Hydraulic Engineer, 1956 to date (part-time).
- ROBERT L. PONS, Ft. Worth, Tex.; age 27. Tulane University, B.S.M.E. California Institute of Technology, M.S.M.E. 2 years pre-doctoral study, Johns Hopkins Univ. General Dynamics Corp., Convair Div., Ft. Worth. Proj. Propulsion Engineer, 4 years. U. S. Army Ballistic Missile Agency, Huntsville, Ala., Mechanical Engineer, 2 years (active military service). Teaching experience: University of Alabama, Huntsville Extension Center, M.E. Dept. (evening college) 1 yr. Texas Christian University, Ft. Worth, Physics Dept., 2 yrs. (evening). Tulane University, M.E. Dept., 2 semesters, summer sessions. Johns-Hopkins Univ., M.E. Dept., 1 year.
- LARRY F. REYNAUD, Sharon, Pa.; age 32. Southwestern Louisiana Institute, B.S.M.E. 1950. Penna. State University Extension Center, presently enrolled in Business Management Course. Thornton Grab & Derrick Works, Jeanerette, La., Jr. Engineer, 1950-51. Westinghouse Electric Corp., Pitts-burgh, Graduate Student Training Program, 1951-52; Transformer Div., Sharon, Pa., Factory Engineer, Supervisor, Tool Engineering, 1952 to date.
- WESLEY B. ROOT, JR., Baton Rouge; age 32. Tulane University, B.E. in M.E. Louisiana State University, M.S.M.E. Registered M.E., La. Esso Standard Oil Co., Baton Rouge Refinery, Mechanical Engineer, Feb. 1948 to date.
- EMANUEL STRAVOLEMOS, Shreveport; age 30. Texas A. & M. College, B.S.M.E. 1948. J. B. Beaird Co., Junior Engineer, Design Engineer, Assistant to Vice President—Engineering, June 1948 to date.

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ERNEST D. JOHNSON, Baton Rouge; age 32. Endorsed: S. V. Distefano, W. C. Randall, W. M. Robbins, M. A. Steele. Delgado Trade School, New Orleans, Blueprint Reading Course, 1946. International Correspondence Schools: Mathematics and Mechanical Drafting, 1948-49; Accounting, 1950-51; Construction Engineering, 1951-54. Received certificates in each of these courses. Now enrolled in Chemical Engineering course. United Gas Pipe Line Co., Engineering Stenographer and Draftsman, 1947-51. The California Company, Draftsman, 1952-53. The Aurora Development Co., Draftsman, architectural design and detail drawings for custom-built housing and school, contour mapping and layout of lots, Feb.-Nov. 1953 (night work). J. F. Pritchard & Company, Piping Draftsman, May-Nov. 1953. Kaiser Aluminum & Chemical Corp., Baton Rouge, Special Design Draftsman, Lead structural draftsman, Dec. 1953 to date.

RICHMOND S. MERRILL, Shreveport; age 36. Endorsed: E. M. Freeman, E. M. Jolly, R. S. Parker, L. H. Roeger. University of Texas, Architecture, 6-46 to 9-47 and 9-48 to 2-49. Fred H. Halsey, Texarkana, Tex., Architectural Draftsman, 1947-48. George H. Dahl, Texarkana, Tex., Architectural Draftsman, 1948. Avery Stanford Co., Midland, Tex., Architectural Draftsman, 1949-50. R. R. Arsenal Shops, Texarkana, Tex., Chief Draftsman, 1950. Reinheimer Co., Texarkana, Tex., Architectural Draftsman, May-Nov. 1951. E. M. Freeman & Associates, Civil Engineering Draftsman, Cost Estimator, Dec. 1951 to date.

RAYMOND L. MCGEE, Lake Charles; age 54. Endorsed: F. R. Adams, E. O. Schnee, M. M. Thornton, R. M. Vincent. International Correspondence Schools, Basic Mathematics. Southern Methodist University, Fundamentals of Sanitary Engineering. (Special courses taken over a period of 30 years). Member SAME, National Geographic Society. Experience in engineering and construction covers a period from 1924 to present. Employers since 1941 are as follows: U. S. Government, War Dept.: District Engineers, Sr. Eng. Aide, 1941-43; Post Engr., San Antonio Depot, Asst. Civil Engr., 1943; Ft. Sam Houston, Asst. Civil Engr., 1943-47. Self-employed C.E. and Independent Bldg. Contractor, Harlingen, Texas, 1947-48. U. S. Air Force, Air Installations, Randolph Field, Tex., Associate C.E., 1948. Various companies, San Antonio, Tex., Field Engr., Construction Supt., 1948-50. The Austin Co., Houston, Field Engr., 1950-54. Miss. State Highway Dept., Jackson, Miss., Civil Engr., 1954-55. Lake Charles AFB, Civil Engr., April 1955 to date.

## FOR JUNIOR MEMBER

VERDI ADAM, Baton Rouge; age 27. Endorsed: Earl Cryar, H. L. Lehmann, A. M. Rosenthal, Jr., Robert College, Istanbul, Turkey, B.S.C.E. 1952. La. State University, M.S.C.E. 1954. Associate Member, A.S.T.M. Member La. Highway Engrs. Ass'n. Registered C.E., La. Louisiana Dept. of Highways, Testing and Research Section, Asst. Research Engr., June 1953 to date.

RODNEY J. GRANDY, JR., Baton Rouge; age 25. Endorsed: G. C. Gallagher, F. J. Prehoda, J. L. Price. Alabama Polytechnic Institute, B.C.E. March 1953. Esso Standard Oil Co., Engineer, Mechanical Technical Service Dept., March 1955 to date.

EDWIN F. HARDY, Baton Rouge; age 28. Endorsed: E. F. Hinds, H. Leien-decker, C. R. Neff. University of Virginia, B.C.E. June 1957. Jr. Member ASCE, Richmond, Va. C. H. Overman & Associates, Pensacola, Fla., Draftsman, 1953-55. O. R. Randolph, Charlottesville, Va., Surveying Instrumentman and Drafting, April-Sept. 1955. Esso Standard Oil Co., Baton Rouge Refinery, Project Engineer, June 1957 to date.

PAUL E. HIME, Baton Rouge; age 29. Endorsed: B. T. Bogard, J. H. Clabaugh, W. C. Shankle. Louisiana Polytechnic Institute, B.S.M.E. 1955. Member ASME. Registered M.E., La. Lion Oil Co., El Dorado, Ark., Junior Engineer, 1955-57. Dow Chemical Co., Baton Rouge, Mechanical Design Engineer, March 1957 to date.

JAMES E. KESSEL, Lafayette; age 26. Endorsed: A. B. Bell, W. C. Jones, Z. L. Loflin. Southwestern Louisiana Institute, B. S. Physics, Jan. 1956. L.S.U. Graduate School, Physics, 1956-57. Member American Physical Society, American Institute of Physics, Kappa Mu Epsilon. Schlumberger Well Surveying Corp., Junior Engr., Aug. 1955-Sept. 1956. Army Ballistic Missile Agency Physicist, Feb-May 1957. Southern Bell Tel. & Tel. Co., Student Engineer, May 1957 to date.

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