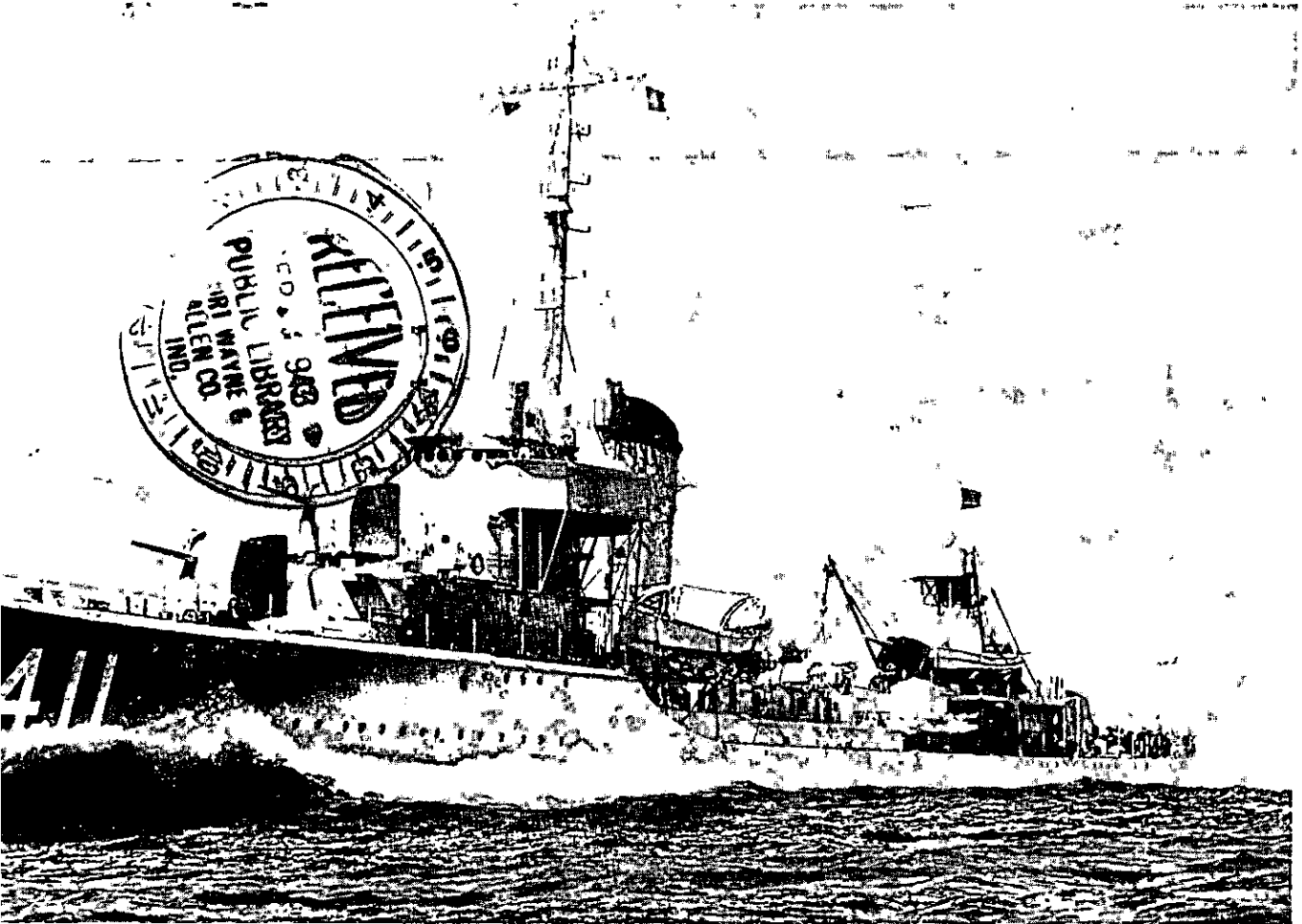


# Engineers NEWS

A DIGEST OF ENGINEERING DEVELOPMENTS

CAF



THE G. E. AMPLIDYNE FIGHTS WITH THE NAVY (Official U. S. Navy Photograph)

★ ★  
**Wiley, Purdue, to speak Thurs., Sept. 16th**

DINNER, 6:30 — MEETING, 8:30 — AT CHAMBER OF COMMERCE

“SHORT CIRCUIT GOES TO WAR” (G. E. Amplidyne)

★ ★  
**F. W. E. C. GOLF TOURNAMENT, ORCHARD RIDGE, SEPTEMBER 19th**

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# Engineers News

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Present day applications of engineering to our every day lives, the wonderfully complicated machines of war which leave our factories every day and developments already under way in research laboratories, point to the dawn of a new and brighter day when the debris of war is swept away and the world again is at peace. These things point to a world in which the engineer must take the lead—the lead which he has so long left to others less well qualified to take it. The engineer must forget his traditional aloofness and attack the new frontiers which beckon from outside the narrow confines of his profession.

## THE PRESIDENT SAYS —

At a council meeting of the club held recently, one of the council members asked whether the club was degenerating into a service club type of organization, in which it existed wholly for the purpose of promoting good fellowship and friendship between members and listening to speeches presented at the meetings, or if we still have a constructive place to fill in the affairs of the city. It was pointed out that our motto is civic cooperation, and this council member suggested that we either function under that motto or relinquish it.

The consensus of opinion of the council members and, I am sure, of the general membership of the club, is that we should become as active as possible in civic affairs. Announcement of a committee and a project in cooperation with the Indiana State Highway Commission will be forthcoming as soon as details are further along. You will remember our success with Traffic Regulations in Fort Wayne and our prominence in the Smoke Abatement Campaign of a couple of years ago.

We should like to have suggestions from the membership on projects of similar scope for further efforts. One at least will be selected for the current club year. Any members willing to serve on such committees (*and work on them*) should let officers know, as we will need all the help you can give.

—Lew Z. Gossman.

## PROF. WILEY TO SPEAK

Professor R. B. Wiley, head of the School of Civil Engineering at Purdue University, will speak on "Humanization of Engineering," at the September 16th meeting of F.W.E.C., to be held at the Chamber of Commerce.

Professor Wiley is Director of the Material Testing Laboratory at Purdue and of the Joint Highway Research Project. Ever active in engineering circles, he is also a director of the A. S. C. E.

For sixteen years he has been consulting Sanitary Engineer for the City of Detroit during Summer vacations.

He came to Purdue in September, 1908. He is well known in Indiana engineering circles and in Fort Wayne particularly.

Professor Wiley will speak on Thursday, September 16, at 8:30 P.M. A dinner at the Chamber of Commerce, with Professor Wiley as guest of honor, will begin at 6:30 P.M.

—V—

## INDIANA ENGINEERING COUNCIL

The Indiana Engineering Council is composed of seven affiliated organizations: Indiana Section of the American Society of Civil Engineers, Central Indiana Section of the American Institute of Electrical Engineers, Central Indiana Section of the American Society of Mechanical Engineers, Indiana Society of Professional Engineers, Fort Wayne Engineers Club, Fort Wayne Section of the American Institute of Electrical Engineers and Fort Wayne Section of the American Society of Mechanical Engineers.

Since the Engineers Club is an affiliated organization, each of its members is a member of the Indiana Engineering Council. Your president is a member of its Executive Board, and your president, vice-president, secretary and treasurer are members of its Administrative Council.

Purposes of the Indiana Engineering Council are the promotion of closer cooperation between the affiliated groups, promotion and furthering of legislation to the best interests of the engineering profession in the State of Indiana, encouragement of broader friendship between engineers all parts of the state, and general advancement of the Engineering profession in the eyes of the public.

Each year the council holds an annual convention or meeting. You will recall that this year's meeting was held in Fort Wayne. This year, due to the exigencies of the times, the meeting will be an afternoon and evening affair held at Indianapolis, on some Saturday in November or early December. Further details will appear in later copies of the *News*. It would be desirable if some members of the Club, who cannot work on Saturdays, would attend this meeting. You can be assured of a warm welcome from the Indianapolis groups.

## SHORT CIRCUIT GOES TO WAR

The short circuit which "blows" fuses at home and trips the breakers at the power plant, has ceased to be a trouble maker and has gone to war. It rides with the huge bomber and the speedy fighter; with the rumbling tank and the sleek destroyer. It is lending its helping hand every day, in a dozen ways, to our fighting men.

This fighting short circuit is an essential part of every amplidyne and largely responsible for the application of these machines to steam shovels and arc-furnaces, to searchlights and bombers.

An amplidyne is simply a D. C. generator or motor. Through the use of a pair of short circuited brushes and a compensating field, this single machine is transformed into a mechanical-electrical amplifier of such sensitivity that the smallest of signals literally releases kilowatts of power.

In a conventional D. C. generator under load, the current in the armature windings creates an armature flux. This flux, which is sometimes called armature reaction, does no useful work and is about the same magnitude as the excitation flux.

In an amplidyne the two normal generator brushes are short circuited and the armature flux in this short circuited axis is used as excitation for the machine. The load brushes are placed in quadrature with the short circuited brushes. Since it is necessary to generate, in the short circuited axis, only enough voltage to overcome the low resistance of the armature and short circuited brushes, it is obvious that a large amount of exciting current may be caused to flow by the application of a very small field current.

The armature reaction in the load axis, which would otherwise increase the required field current, is "bucked out" by what is called a compensating field. This field, in series with the load, balances the effect of the load axis armature reaction.

A small control field current, usually only a few thousandths of an ampere, can be made, therefore, to control the output of the amplidyne. This weak signal to the amplidyne field may be multiplied 10,000 times in the output of the machine. With this great amplification, moreover, the amplidyne reaches its great output in less than one tenth of a second.

One of the great contributions of the amplidyne to the war effort is the controlling of machine gun turrets on aircraft. At the tremendous speeds common to aircraft, it is difficult to maintain accurate control of machine guns manually. The amplidyne takes over this task with a smoothness and accuracy which is being proved again and again in every raid on Nazi Europe.

The battle uses of the amplidyne do not end with aircraft. It is fighting on every one of our air-flung battle fronts. On our battleships, our tanks, our bombers and our fighter planes, the amplidyne is doing yeoman duty in proving American skill and ingenuity.

More than a "war baby," this husky infant bids fair to grow into a peace-time giant to be applied wherever speed is to be controlled, loads limited, tensions held or currents regulated. It lends itself to the positioning of arc-furnace electrodes and speeds up the acceleration and deceleration of high-inertia machines.

The future of this modern miracle is limited only by the ingenuity of the men who apply it. The flexibility and simplicity of the amplidyne assure it a place in the world of peace and plenty which is coming.

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## GENERAL ELECTRIC COMPANY

An April 15, 1892, two vigorous rivals in the infant Electrical Industry, The Thomson-Houston Company and Edison General Electric Company, combined their resources, their talents and their traditions to form General Electric Company. Charles A. Coffin was its first president.

The Fort Wayne "Jenney" Electric Light Company was established in 1881, and in 1899 was re-organized by General Electric Company. It was not until 1911, however, that this Fort Wayne concern was merged with the main organization as Fort Wayne Works of General Electric Company.

In the procession of General Electric Company's history march giants in the Engineering Profession. In swift succession come Edison, Steinmetz, Whitney, Coolidge, Langmuir and Alexanderson. With them worked a host of lesser lights — men who contributed much to the growth of General Electric Company and to the benefit of mankind.

The incandescent lamp, the X-ray tube, the high frequency alternator—only a few of the General Electric Company developments, but the causes of a veritable revolution in the health, the happiness and prosperity of America.

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## BUSH-BEATING COMMITTEE

E. W. E. Kamm, of S. F. Bowser Company, has selected his assistants from various industries to aid him in the double duties of the Membership Committee. Not only will this group see that the worthy and well qualified engineers of the city be given the opportunity of joining FWEC, but also, it will, through a perfected technique, prod and poke about the various hiding places to get the members to all scheduled luncheons, parties and meetings. Ed's crew is:

Otto Gumpper, City Engineer's Office; W. Kehoe, City Utilities; A. T. Keene, Indiana Technical College; T. J. Kelly, N. I. P. S. Co.; E. L. Erb, Jr., To'reim; W. W. Walb, American Steel Dredge Co.; and H. S. McKean, Indiana Service Corp.

J. H. Jones, Jones Engineering and Products Co.; E. W. Aumann, G. E. Co.; D. C. Rinehart, G. E. Co.; Sherwood Hinds, Wayne Pump Co.; LeRoy Keyser, Spaulding Fiber Co.; Glen Lehman, I. H. C.; and G. E. Hicks, G. E. Co.

**DR. WARREN DISCUSSES LINCOLN**

A discourse of the oratorical competence of Abraham Lincoln was given by Dr. Louis A. Warren at the August Luncheon meeting held at the Fairfield Manor.

Dr. Warren indicated the importance of Lincoln's early education, most of which is accredited to his mother, by citing numerous instances where these early teachings were reflected in his speeches. It is commonly agreed, Dr. Warren stated, that the two greatest American speeches were both by Lincoln—his Gettysburg Address and his Second Inaugural Address. Dr. Warren pointed out that Lincoln's speeches, as well as those by Washington, Jefferson and other great Americans, serve as sources of inspiration today because they define the things for which we are fighting.

The belief that the Gettysburg Address was written on the back of an envelope by Lincoln en route to the cemetery at Gettysburg, was dispelled by Dr. Warren. The speech was painstakingly prepared. There is evidence that Lincoln showed it to some of his friends a week before it was delivered.

Dr. Warren is director of the Lincoln National Life Foundation and historian of the Lincoln National Life Insurance Company.

**NAVY BOARD HERE SEPT. 15, 16, 17, 18.**

In its quest for technical personnel, the Traveling Board will be in Fort Wayne to interview and examine candidates for Commissions in the Navy.

Engineers of all types are urgently needed, according to H. W. Stenson, Lieutenant (jg), USNR, who will be in the city. In addition, the Navy needs physicists, mathematicians, supply officers, business administrators, purchasing agents, stock control men (perpetual inventory), and television men.

"We are not desirous of taking any engineers who are in war work," writes Lt. Stenson, "but the Navy offers opportunities for engineers who are on Replacement Schedules, are leaving to be drafted, or for some reason or other are leaving their present jobs."

**FINANCE COMMITTEE**

That the cold, discerning eye might be on the till this year, Pres. Gossman has appointed V. R. Ellison and R. G. Kiracofe for that purpose. "Vic" as treasurer last year, had a quiet, effective persistence in matters monetary.

**PUBLICITY AND PUBLICATIONS**

Propaganda for FWEC will be transmitted through two channels this year. C. S. Allen will be in charge of publicity to the press, while *The Engineers News*, with G. L. Roark as editor, will be the official publication for the club as usual. Since we'll have our names in every month, we'll not bore you with them here—see the mast head.

**GOLF TOURNAMENT**

Walter Sunier has announced that the F. W. E. C. open golf tournament will be played Sunday, September 19, on the Orchard Ridge Country Club course.

Since this has been designated as an "open" tournament, eligibility is not limited to amateurs. Any F. W. E. C. members who are golf professionals, will be allowed to play.

Play will begin at 9:00 A. M., and eighteen holes will be played, with a blind bogey draw determining the winner. The blind bogey method of drawing winners gives the poor golfers as good a chance to win first prize as the professionals. For those who desire it, a side cash blind bogey will be held.

The greens fee will be \$1.00 for all day play, and crutches will be provided for Scotchmen playing more than seventy-two holes.

All play will be made in foursomes. Loud heckling will not be allowed, but otherwise the rules printed on the score card will apply. The high scorer of each foursome on the first hole will be awarded the honor of acting as official scorer for his group.

**OF THINGS TO COME**

William Cupp, General Heating and Ventilating Company, grand marshal of the Program Committee, announces his staff of field generals who will regale us month by month during the coming campaign of engineering activities.

With his chest covered by good luck amulets instead of campaign ribbons, Comm. Cupp appeared at his press conference to announce his plans and warn that any thing may happen. (Remember last year's cancellations, substitutions, and alterations? We may find ourselves playing bridge.)

And thus, sagging under the weight of four-leaf clovers, little "gwey wabbit feet" and plastic horseshoes, Bill presents his aides and the date of the respective meeting each will arrange:

Sept. 16—W. W. Walb, American Steel Dredge Co.  
 Sept. 19—W. H. Sunier, G. E. Co., Golf Tourn.  
 Oct. 21—J. H. Jones, Jones Eng. & Products Co.  
 Nov. 18—G. C. Harvey, G. E. Co.  
 Dec. 16—Ed. L. Misegades, G. E. Co., Christmas Party.

Jan. 20—S. W. Winje, N. I. P. S. Co.  
 Feb. 18—H. D. Kelsey, G. E. Co.  
 Mar. 16—J. C. Ferguson, Farnsworth Tele. Co.  
 April 20—T. J. Kelly, N. I. P. S. Co.  
 May 18—F. Feustel, City Utilities, Election and Social—M. N. Baird, G. E. Co., in charge of arrangements.

Ed Carlson, Treasurer, has all member-hip cards ready for issue. In case you have forgotten, the amount is only \$3.00 (non-resident members, \$1.00).