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The
**WISCONSIN
ENGINEER**

MEMBER OF ENGINEERING COLLEGE MAGAZINES ASSOCIATED

OCTOBER 1937 to MAY 1938



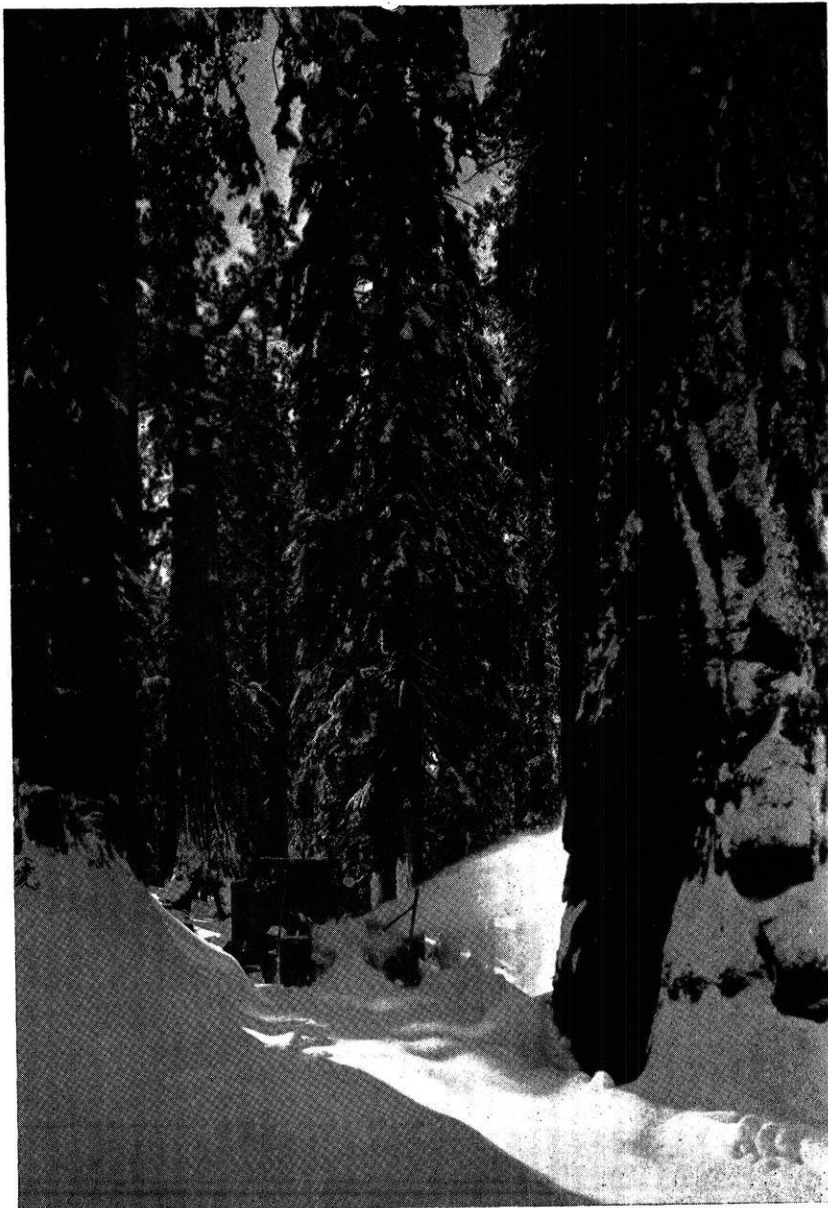
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BY THE

ENGINEERING STUDENTS *of the* **UNIVERSITY OF WISCONSIN**



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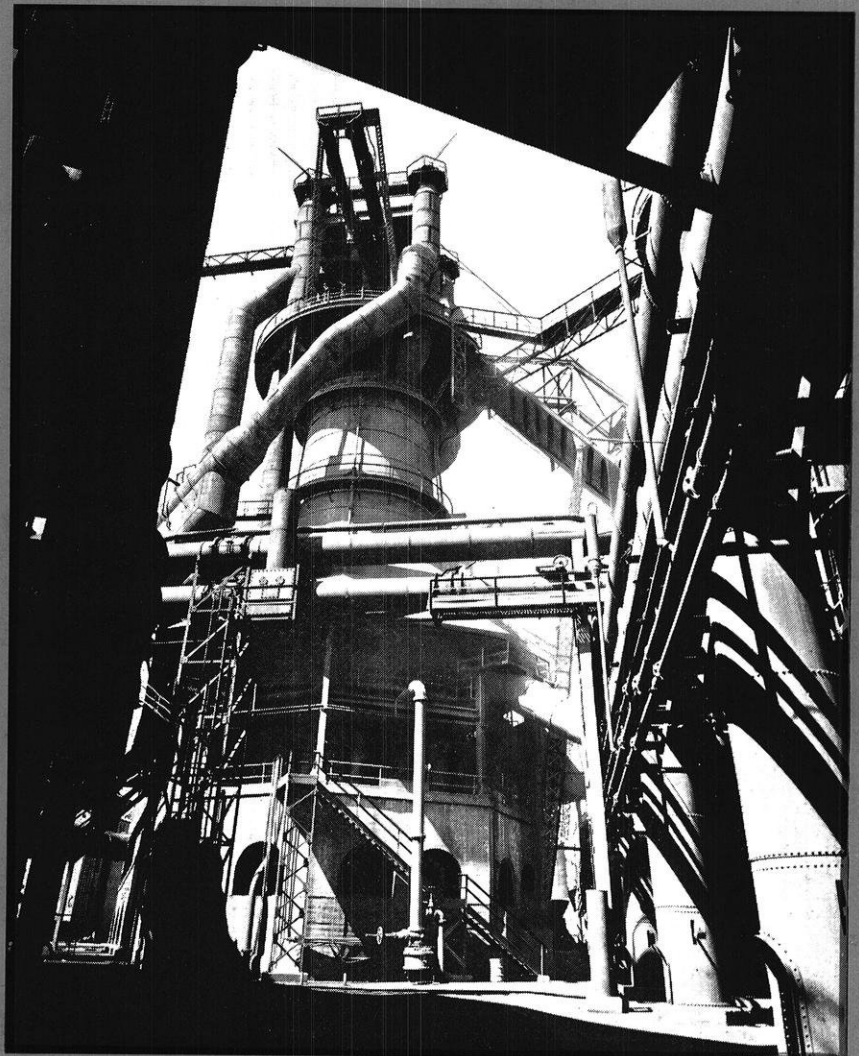
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THE
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ENGINEER

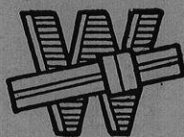
DEAN
TURNEAURE

R. R.
MATERIALS
TESTING

'37
ON THE JOB



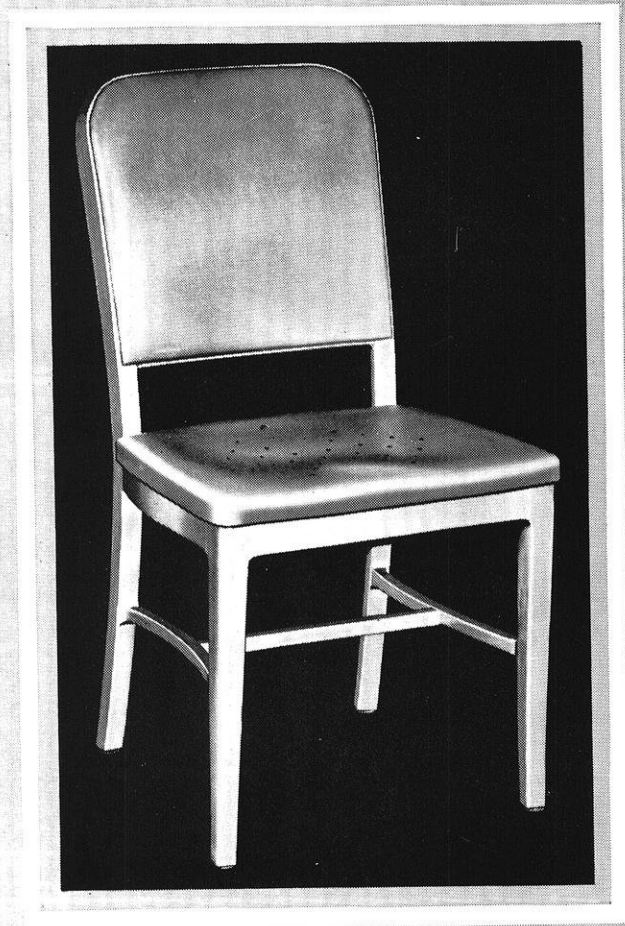
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1937

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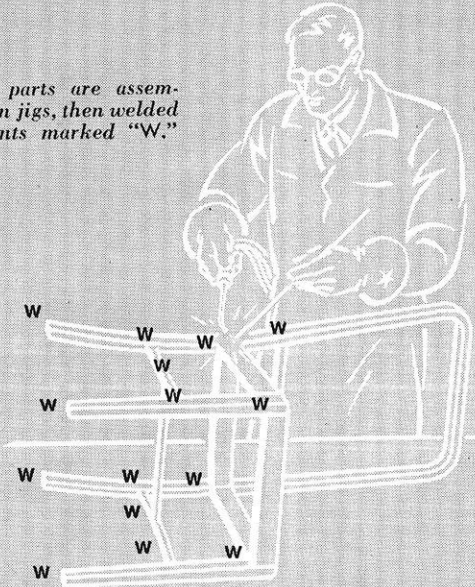
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Volume 42

OCTOBER, 1937

Number 1

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With the Contributors . . .

- Dean Millar has had lots to do in the months he has been acting dean. You owe it to yourself to read his words of welcome on page 3.
- After forty-five years of service, Dean Turneure has retired. You will be interested in his accomplishments as written on pages 4 and 5.
- Maurice Swanson, e'36, has had an intensely interesting time at the Schenectady plant of the American Locomotive Company. Another of his articles appears on page 6.
- The Mining Club, long neglected, breaks into print with a bang, page 12. If some of our other organizations showed the life and willingness to write that these boys do, they might rate some space also.
- Editorials are usually a problem, but not this month. We had so much we were just bursting to say that we couldn't get it all in. But you can get the general idea on page 20.
- For the lowbrows, Static is collected as usual on page 14. Meet the new humor (?) editor, too.
- Most of the June graduates have jobs. The tabulation begins on page 16.

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A WELCOME

by DEAN A. V. MILLAR

IT IS with pleasure that I welcome through the pages of the **Wisconsin Engineer** all members of the College of Engineering. It is a pleasure to see both students and faculty who have been here before, returning to the campus for another school year. There is a comradeship throughout our college which is one of our greatest assets. We have always worked well together and have enjoyed this comradeship. Although Dean Turneure has retired from active service he is still on the campus and is with us in spirit. During the time the college is without a permanent leader, we must carry on with the same high quality of work and the same enthusiasm which has marked it for years. I ask your help and cooperation.

This welcome is extended to the new members of the faculty . . . from new assistant to those of professorial rank. We hope you will enjoy working with us and that you will bring to the college many new ideas and methods of teaching and research. We also extend a greeting to those students who have attended other colleges and who come to us with advanced standing. It is hoped that you will not be disappointed in your change of colleges and that you will remain with us to complete your college courses.

To the freshmen who are entering college for the first time is extended a most cordial welcome to our fellowship. Your numbers are greater than ever before and have taxed both class room and teaching staff to the limit. Colleges could not long exist if it were not for the new

students who come every year. You come with high hopes and the enthusiasm of youth. May your hopes be realized and may you never lose your enthusiasm. I wish you success in your college course and in your professional life after college. The foundation of success is work. Your first duty is to your studies — do well in them — this will give you the greatest satisfaction. But there are other things to do in college beside study. You must take your place in the university community. I want you to be a good citizen of this community. As a good citizen you

must be honest in your university work and in your dealings with other men. You must at all times be a gentleman — leave hard liquor alone — it is certain to interfere with your greatest success. If you can find time for it, take an active part in college activities and make acquaintances and friends with students of other colleges as well as with your classmates.

I wish to urge new students in particular not to be discouraged . . . discouragement is depressing and deadening.

There are dark days ahead of you . . . everyone has them. Some of you will find your lessons difficult . . . your instructors, you think, unreasonable. Others have financial worries — money is scarce — and jobs hard to get. But remember that other students have had like problems and have solved them and have completed their courses in college. To those of you who have difficulties and who find the going hard, I quote this bit of encouragement from Langston Hughes — it has helped me — I hope it will help you:



*“Well, son, I’ll tell you:
Life for me ain’t been no crystal stair.
It’s had tacks on it,
And splinters,
And boards torn up,
And places with no carpets on the floor —
Bare.
But all the time
I’ve been a climbin’ on,
And reachin’ landin’s,*

*And turnin’ corners,
And sometimes goin’ in the dark
Where there ain’t been no light.
So, boy, don’t you turn back.
Don’t you set down on the steps
’Cause you finds it’s kinder hard.
Don’t you fall now —
For I’ve still going’,
I’ve still climbin’,
And life for me ain’t been no crystal stair.”*

TURNEAURE RETIRES

Ends 45 Years of Service

ON JUNE 30, Dean Frederick E. Turneure retired as head of the College of Engineering and terminated a period of service that began in 1892, when he was first appointed to the faculty of the college as professor of Bridge and Hydraulic Engineering. For thirty-five of his forty-five years of service at Wisconsin, he has been the recognized head of the college faculty, and for over thirty-three years he has been dean. His retirement is in conformity with the regents' recently-adopted policy of retiring members of the faculty at the age of seventy.

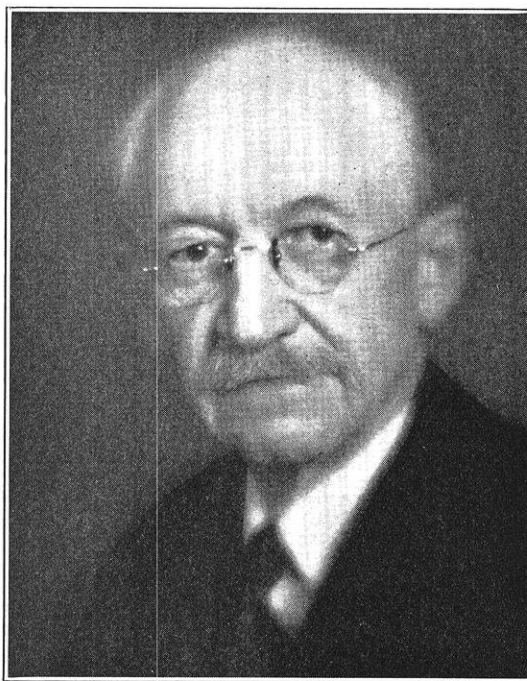
Dean Turneure's period of service is not only remarkable for its length; it is important as the epoch during which this college took form from a feeble beginning and developed into a technical school of the first rank. When the young professor of bridge engineering arrived on the campus, the college was just three years old. It had one hundred and seventy-four students, a faculty of nine, no dean, and no building of its own other than the shops, now occupied by the electrical laboratory and the arts education department. It was not until 1899 that the first dean was appointed, and it was not until 1900 that the Engineering Building was put into service. Only three years after the first dean, J. B. Johnson, had been appointed, he was the victim of a fatal accident, and in June, 1902, Professor Turneure was made acting dean. He took the helm, therefore, while the school was still in the early stages of development; and the College of Engineering, as it stands today, is largely his creation.

In 1902, the physical plant of the college consisted of two buildings: the Engineering Building and the shops. Today, six buildings are devoted to the engineers. The Hydraulic Laboratory was built in 1906; the Engineering Building was increased by the addition of a wing in 1907, and a Mechanical Engineering Building was built in 1931. Chemical Engineering pre-empted the old chemistry building in 1908, and Mining Engineering fell heir to the old Forest Products Laboratory in 1932.

The course in mining and metallurgy, which had been discontinued in 1893, was re-established in 1908. A new department of chemical engineering was created in 1905 under the direction of Charles F. Burgess, who had re-

ceived a bachelors' degree in electrical engineering from the college in 1895 and who later founded the Burgess Battery Company. Daniel W. Mead was induced to move his consulting office from Chicago to Madison, in 1904, and under his guidance, the department of hydraulic and sanitary engineering won national recognition.

Student enrollment and the number of faculty members have both increased greatly during the past thirty-five years. In 1902, there were 585 engineering students and 21 engineering teachers. Today there are 1,409 students and 86 members of the faculty.



FREDERICK E. TURNEAURE

FREDERICK EUGENE TURNEAURE was born on a farm near Freeport, Illinois, on July 30, 1866. He was graduated in civil engineering at Cornell in 1889 and immediately engaged in railway engineering work.

In 1890 he became instructor in civil engineering at Washington University in St. Louis, and in 1892 he was appointed Professor of Bridge and Hydraulic Engineering at the University of Wisconsin, the title becoming

Professor of Bridge and Sanitary Engineering in 1898. In 1902 he was appointed Acting Dean, and in 1904, Dean of the College of Mechanics and Engineering of the University of Wisconsin. The latter position he has held continuously since his appointment.

In addition to his teaching and his administrative activities as Dean of the College of Engineering and Director of the Engineering Experiment Station of the College, Dean Turneure, through his technical papers and texts, has made distinguished contributions to engineering science and practice. He has been responsive of civic and professional obligations, and in a number of important appointments has well served his community, his commonwealth, the university, and the engineering and teaching professions.

Dean Turneure conducted pioneer experimental and analytical investigations on impact and secondary stresses in bridges under moving train loads, and also on the strength of steel columns. His papers dealing with these studies appeared in the Transactions of the American Society of Civil Engineers beginning in 1899 and in the bulletins of the American Railway Engineers Association.

TURNEAURE HONORED

Awarded Lamme Medal

ON JULY 1, Dean Turneaure was presented with the Lamme Medal for achievement in engineering education. The award was made by the Society for the promotion of Engineering Education at its Cambridge meeting. The dean is the tenth medalist and the second member of our engineering faculty to be so honored, Prof. Edward R. Maurer having received the medal in 1934.

In presenting Dean Turneaure for the award, Dr. E. B. Roberts, of the Westinghouse Company and chairman of the Committee on the Lamme Award, said:

"Mr. President, Members of the Society, Ladies and Gentlemen: It is the province of this Committee each year to add the name of a distinguished teacher to a roll of distinguished teachers.

"Your Committee on the 'Lamme Medal' has endeavored faithfully to perform its function. The members of the committee of twelve have been in constant contact throughout the year in our best effort to interpret in the fullest possible way the intent of the donor of the medal.

"We are happy to present the Tenth Lamme Medalist of the Society for the Promotion of Engineering Education, the second to come from the great University of Wisconsin. He is the distinguished Dean of Engineering of that institution.

"In presenting Dean Turneaure for this award, the Committee expresses its feeling that there are those achievements that are non-spectacular and intangible in character. It is the feeling of the Committee that the crowning contribution of Dean Turneaure has been his influence at the University of Wisconsin upon the policies and the people of the College of Engineering. This influence springs from the clarity of his thinking, the fairness of his words and actions, and, above all, from his conception of a University as a cooperative enterprise of scholars and disciples in which the freedom and power to initiate is to be diffused and not centralized. With the facts in any case before him, he goes quickly to the heart of of the matter, reaches sound, common sense conclusions, and makes decisions with which it is difficult to disagree.

His reasoning and his conclusions inspire confidence.

"The effect of these qualities upon the policy of the College has been that the reasonable freedom to experiment and to depart from a standardized uniformity has resulted in continued sound accretions to the work of the College, and has avoided ill-considered large scale ven-

tures along new highly specialized lines. The spirit of steadiness and confidence in the College reflects the steadiness of its Dean.

"An effect of his fine qualities of leadership upon the people of the University has been the harmonious and cooperative relations within the faculty and between the faculty and the students.

"Through his influence upon the advisers who are in direct contact with the students of the College, Dean Turneaure has been singularly successful in maintaining the confidence of the students and of their parents, even in the trying situations which arise when students get into scholastic difficulties. Courtesy, patience, and sympathy are the due of every man in trouble in the opinion of Dean Turneaure, who prefers that the student advisers shall so conduct their dealings with students that he can support their decisions. Few appeals are made to the Dean, but

when they are made, the student gets a ready and sympathetic hearing. As a result of this policy, the relationship between the student body and the faculty is one of confidence and cooperation.

"The influence of Dean Turneaure, however, has not been confined to the campus. His wise policies have won for the College the favor of the state officials and of the public at large. Those of you who were at Madison last year recall the high tribute paid to Dean Turneaure by Governor La Follette expressing the feeling of the people of the State of Wisconsin for a man who has served his commonwealth so long and well.

"Mr. President, it is my great honor and privilege, as Chairman of the Lamme Committee, to present to you and to this distinguished audience Frederick Eugene Turneaure for the Lamme Medal of 1937."

● The Lamme Award, which has been made each year since 1928 to a distinguished educator in the field of engineering, was established by the late Benjamin Garver Lamme, an alumnus of Ohio State University and for many years chief engineer of the Westinghouse Company. The administration of the award rests with the Society for the Promotion of Engineering Education. The recipients of the Awards have been as follows:

- 1928 GEORGE FILLMORE SWAIN, Harvard University
- 1929 IRVING PORTER CHURCH, Cornell University
- 1930 CHARLES FELTON SCOTT, Yale University
- 1931 DUGALD CALEB JACKSON, Massachusetts Institute of Technology
- 1932 ARTHUR NEWELL TALBOT, University of Illinois
- 1933 DEXTER SIMPSON KIMBALL, Cornell University
- 1934 EDWARD ROSE MAURER, University of Wisconsin
- 1935 WILLIAM ELGIN WICKENDEN, Case School
- 1936 HERMAN SCHNEIDER, University of Cincinnati
- 1937 FREDERICK EUGENE TURNEAURE, University of Wisconsin

The Test Department of a Locomotive Works

by MAURICE E. SWANSON, e'36

ONLY WHEN one considers the tremendous power and speed which the modern locomotive is capable of developing is it possible to appreciate the stresses produced and the importance of rigid supervision of the testing and inspection of materials involved. The Testing Department insures the acceptance and use only of materials which meet the physical specifications used as a basis in the design of the locomotive.

In order that the materials used in locomotive construction may be properly standardized, more than fifty specifications have been prepared by the Company alone. In addition to these, the Association of American Railways, the American Society of Testing Materials, and the separate railroad companies have prepared specifications of their own which state the following:

- (1) The minimum physical requirements as to tensile, compressive, bending, torsional, or impact strength, and hardness.
- (2) The specific melting process to be used.
- (3) Metallography.
- (4) Type of hot-working.
- (5) Method of chemical analysis.

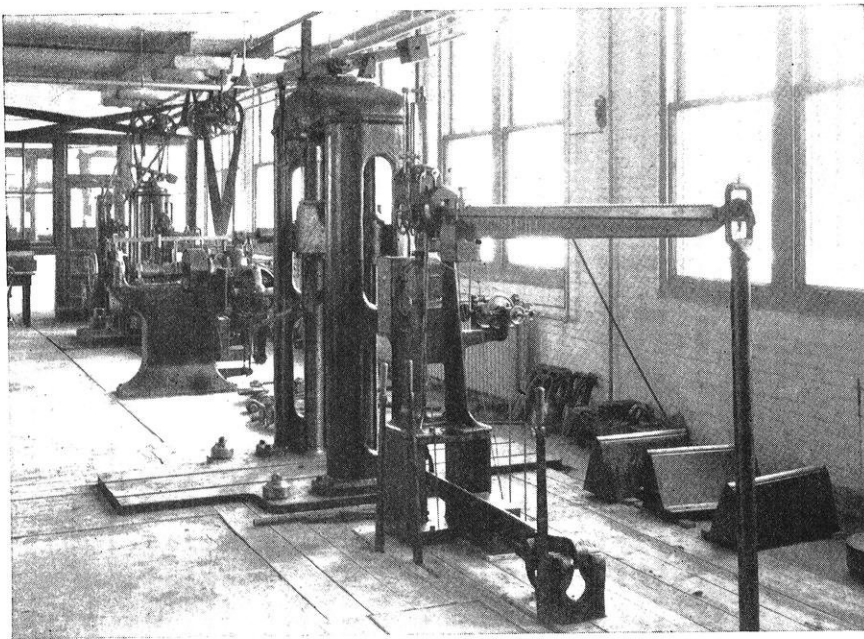
With the adoption of the specifications, it is necessary that they be accurately enforced. The Company has stationed a corps of inspectors in the leading iron and steel plants. Their first duty is to see that the material is the product of the specified process: extraction by the Bessemer or Open Hearth process, and refinement by the Cupola, Puddling, or Crucible method. If the refinement

is further carried out in an Electric Furnace, the use of basic or acidic slag is also specified.

The mill inspector's second duty is to make sure that the ingot of steel is hot-worked and reduced in cross-section by the proper process or combination of processes, be they rolling, hammering, or pressing. Rolling, however, is the usual method of reduction at the mill, which process consists of drawing the section between rolls until it has been reduced to the proper cross-section. After the billet has been examined for surface defects, a test specimen is taken and subjected to the physical tests at the mill, the broken test specimens and drillings being sent to the Laboratory at Schenectady.

When the billet has been delivered to the Locomotive Company, it is first preheated before being subjected to the forging operations. In working the section by hammering, the reduction is effected by the absorption of the hammer blows causing the outer metal to flow, but having little effect on the inner metal. The press, on the other hand, being slow-acting and transmitting its force to the center, is metallurgically the ideal method of reduction. Thus the billet is heated, hammered, or pressed into an axle, rod, or crank pin and heat-treated to relieve the internal strains and refine the grain structure. A test specimen is again taken, this time from the forging, and sent to the Laboratory for test before being released to the Machine Shops for finishing.

The Locomotive Company also operates a large iron foundry, which is equipped with a number of cupolas and a large three-phase, electrode-type electric furnace. By properly proportioning the different types of pig iron and inserting definite amounts of the various alloying metals, such as nickel, molybdenum, and chromium, the Test Department is able to bring about a close physical and chemical control of the resulting product, the iron casting. A great variety of castings are produced. Locomotive nickel iron cylinders, steam pipes, Diesel-engine bed and frame castings, cylinder heads, liners, and other miscellaneous parts of gray iron are all represented in the day's output. The foundry also maintains a Sand Control Laboratory in which research and the testing of core and molding sand is carried out continuously. The sand is sub-



A Portion of the Test Laboratory

mitted to tension, compression, and impact tests, as well as investigation made of its moisture content, porosity, and thermal conductivity.

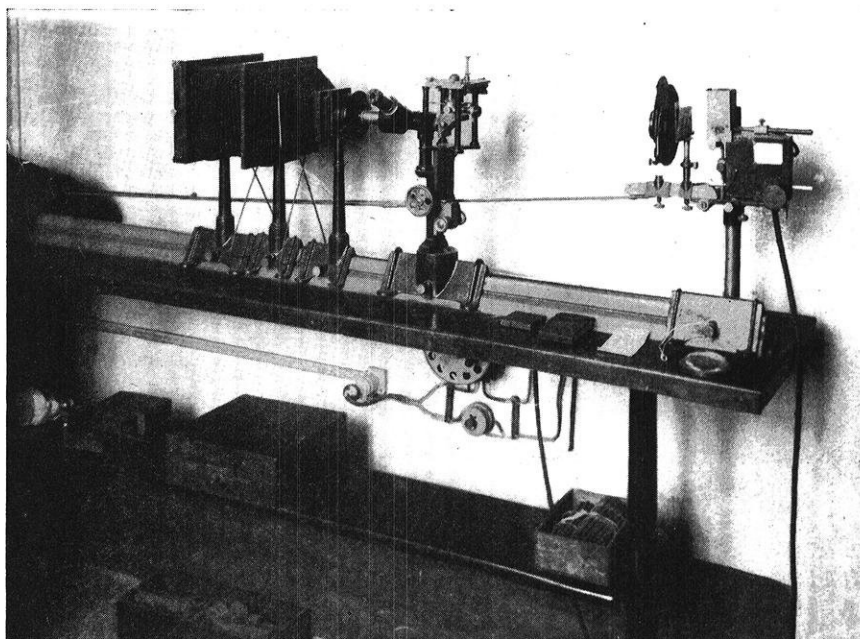
In order to be certain that the material passed by the inspectors at the mills reaches its proper destination, each ingot and billet is not only marked with the order number but also the heat number, which identifies that particular "melt". A complete record of all heat numbers, ingots, and billets is kept by the Test Department, making it possible at any time to ascertain the exact test results of every specimen. These records follow the billets from the steel mill to the Locomotive Company storage yard, and the forgings from the Hammer Shop, through the Heat Treatment, to the various Machine Shops, and then locates each part on the locomotive. Thus, should any part upon the locomotive fail in service, by referring to the records, the test results can always be ascertained.

The Physical Laboratory includes a variety of testing machines. The Tension Test is carried out on a Baldwin Southwark machine of 100,000 lbs. capacity with an Emery device for loading at a variable rate of pounds per minute, a Riehle Testing machine of 400,000 lbs. capacity, and a Tinius Olson machine of 100,000 lbs. capacity. Bend Tests are carried out on a Riehle machine of 100,000 lbs. capacity. Torsion Tests are carried out on a Tinius Olson Torsion machine of 4,000 lbs. capacity. The Impact Test is carried out on a Tinius Olson Machine set for the Izod and Sharpy Impact Test. Hardness is measured on a Tinius Olson Brinell, a Rockwell, and a Shore Schleroscope Tester.

The test specimens, having met the physical requirements of the specifications, are further subjected to the Photomicrographic tests to determine the grain structure and the micro-constituents of the steel. In carrying out this qualitative test, a small piece is taken from the end of the test specimen and a face filed or ground as flat and smooth as possible by rubbing it on a series of increasingly fine pieces of Emery cloth. That the small flat surface may be rendered as free from microscopic scratches as possible, the specimen is further polished by fine magnesium oxide powder mixed with water on a polishing wheel, upon which is mounted a woolen cloth soaked with magnesium oxide powder.

The granular structure of the specimen is made apparent under the microscope by etching the polished surface with a 4 per cent solution of nitric acid in alcohol which dissolves the different constituents with varying intensities and varying depths. If the specimen has been hot-worked and heat-treated properly, the grain structure will be quite fine and uniform in size. Inclusions of non-metals, slag, and manganese oxide stringers can be recognized.

Carbon has a strong chemical affinity for iron by alloying with it, and is allotropic in nature; its allotropic forms of concern are amorphous and graphitic carbon. Not only may carbon exist in different allotropic forms in iron, but the solubility may also vary with temperature and per cent carbon content, which phenomena is the basis of the Iron-Carbon Diagram. By inspection of the specimen through the microscope or the photomicrograph—a greatly magnified photograph—the exact type of structure and position on the Carbon Diagram can be recognized. By knowing the physical properties of the various types of structure,



Apparatus for Taking Photomicrographs

the final suitability of the metal can be decided.

The specimen is lastly subjected to chemical analysis to determine the relative percentages of carbon, chromium, vanadium, molybdeum, manganese, silican, sulphur, and phosphorous present. Chromium has the quality of hardening steel; vanadium possesses the quality of producing resistance to fatigue stress; molybdeum produces machinability; manganese brings about de-oxidation and de-sulphurization; silicon reduces the solubility of carbon in iron; sulphur makes the steel brittle when hot, and phosphorous brittle when cold. The maximum or minimum amounts of the aforementioned elements permitted or desired are stated in the specifications.

Besides all of this more or less routine testing, a certain amount of research is carried out. In the event of the failure of any one of the Company's products, be it a locomotive axle, rod, crank pin, or any part of a locomotive Diesel engine, a thorough investigation is made. The failing part is entirely cut up, sample pieces given physical tests, photomicrographs taken, and a chemical analysis made of the specimen and any surrounding residue or scale. With the result of all of the tests and the history of the specimen in the laboratory files, the cause of the failure is readily explained.

ON THE CAMPUS

REGISTRATION HITS PEAK

Total registration in the engineering school for the year 1937-38 is the largest in the history of the school. The largest freshman class in history has helped to swell the number of engineers on the campus to 1,375. This means an increase of 212 students since last year. The civils were the only department to suffer a falling off of enrollment; their number shrinking from 240 to 239. The mechanicals led the parade with an increase of 89, and the electricals took second honors with 63 more students.



	1937-38					
	C.E.	M.E.	E.E.	ChE.	M.E.	Tl.
Freshmen	71	173	84	88	21	437
Non-Prom.						
Freshmen	16	34	18	12	6	86
Sophomores	63	98	79	88	29	357
Juniors	50	98	74	51	11	284
Seniors	39	67	56	35	14	211
	239	470	311	274	81	1375
Graduates	8	3	6	8	9	34
	Total Registration					
1917	510	1927				962
18	856	28				962
19	1084	29				1039
20	1166	30				1086
21	1240	31				1084
22	1163	32				922
23	1100	33				833
24	1032	34				915
25	953	35				1020
26	926	36				1163
		37				1375

Smallest freshman registration 181 in 1932; largest 523 in 1937.

FACULTY NEWCOMERS

A total of nine new men have been added to the faculty and nine present members of the faculty have received promotions this fall. Among the more prominent of the newcomers are J. G. Woodburn, professor of hydraulics lab, and R. J. Altpeter, assistant professor in chemical engineering. Prof. O. A.

Hougen is back again after a year's absence and has been promoted to the rank of full professor in chemical engineering.

The new instructors are W. Bain and H. E. Hoerig in chemical engineering; G. J. Strewler in drawing; D. McFarlane in engineering economics; E. R. Dodge in hydraulics; L. C. Haddox and G. J. Tauxe in mechanics; R. C. Rosenthal in mining and metallurgy.

SOPHOMORES COME THROUGH WITH HONORS

Seventeen members of the class of '39 have earned high honors for their first two years in the engineering school. Topping the list with a grade-point average of 2.945 is Leo Fuchs, a chemical.

Following in his wake with averages of 2.926 and 2.915 respectively are Alan Jankus, civil, and Conrad Hoepfner, electrical.



Thirty-four others won honors; the electricals being far in the lead with thirteen of their group on the list.

A more detailed report is as follows:

SOPHOMORE HIGH HONORS

	Cr.	G.P. Ave.
Civil Engineering		
Huppler, John Jacob	68	2.867
Jankus, Anniset Allan	68	2.926
Plumb, Mahlon John	68	2.720
Thompson, Glen Alan	74	2.743
Mechanical Engineering		
Bondehagen, Melvin	70	2.800
Ring, Robert Carl	68	2.852
Wright, Hugh William	70	2.828
Electrical Engineering		
Brodzeller, Leo Edward	72	2.694
Hoepfner, Conrad	71	2.915
McConnell, Malcolm E.	66	2.696
Parent, Robert John	74	2.689
Schuette, Roger Edward	74	2.837
Chemical Engineering		
Faust, Wayne John	61	2.803
Fuchs, Leo Joseph	74	2.945
Rezba, John Stanley	74	2.810
Sanford, Herbert Broods	70	2.857
Stellmacher, Edwin R.	60	2.766

SOPHOMORE HONORS

Civil Engineering		
Bartz, Ellwood Lewis	65	2.354
Voss, Arnold William	68	2.500
Mechanical Engineering		
Bauer, Edward Ewing	70	2.271
Halvorson, Kenneth M.	72	2.263
Hamachek, Richard Lee	67	2.507
Hood, William Edward	72	2.486
Kommers, William Jesse	70	2.614
Kutchera, Harvey Walter	74	2.500
Metter, Richard William	70	2.400
Thorkelson, William L.	74	2.418
Vander Wall, Clifford C.	65	2.353
Electrical Engineering		
Blodgett, Donald Goodwin	71	2.492
Davies, Everett Humphrey	68	2.632
Dietrich, Harold Arthur	70	2.514
Hafstrom, William Francis	74	2.283
Henkel, Harrison William	73	2.301
Kurth, Harold Herman	63	2.539
Ludvigsen, Carl William	74	2.486
Moore, Raymond W.	66	2.303
O'Leary, James Gregory	60	2.333
Schubert, Raymond Paul	73	2.287
Sell, Thomas Gustav	74	2.135
Wadell, Stanley Frederick	73	2.534
Weseloh, John William	74	2.540
Chemical Engineering		
Albrecht, Edmund Herbert	61	2.393
Christianson, Thomas K.	70	2.371
Crosland, Howard C.	64	2.234
Eickner, Herbert Wayne	70	2.285
Hartwig, Karl Theodore	70	2.500
Koehler, John Walter	74	2.500
Lloyd, Roger Albert	69	2.275
Neipert, Marshall Palmer	70	2.300
Newman, Robert James	70	2.414
Webb, Robert George	74	2.243
Mining Engineering		
Beck, Joseph John	72	2.375
Christenson, James Oliver	76	2.394

E. P. G. FORECASTS ACTIVE SEASON

The Engineering Personnel Group, which came into being in our College of Engineering late last semester, is getting under way an outstanding program for the coming year. Mr. Melvin J. Evans, management engineer and chairman of the board of directors of Evans Associates, Inc., of Chicago, and one of the original sponsors of this group, has arranged to make monthly visits to Madison to speak before and lay plans with our organization. Mr. Evans will make his initial talk November 3rd at a joint meeting of the campus of the Milwaukee and Madison sections of the American Institute of Electrical Engineers.

The Rover Boys at Camp

or

Gold-brickers of 1937



In Conference

THERE'S SOMETHING about a soldier—but that's not the half of it. When June turned 59 school-weary Wisconsin R.O.T.C. men loose upon a quaking civilization, something had to be done. As in most emergencies, Uncle Sam stepped into the breach, herding them all off to Camp Custer, Michigan, for six weeks of character-building or something. Now, having paid their debt to society, they are all back with us again, with many a tall tale to tell. They like to relive the warm summer nights, with a gentle wind wafting in from the cavalry stables, when they sprawled about, full of the delicacies of Sergeant Murphy's incomparable (!) cuisine, feebly slapping at Michigan mosquitoes and chattering about the Battle Creek frails. And bed-check, what a word. Experiments were occasionally performed with dummies in bed under the mosquito bars, but in general these fooled neither the C.Q. nor the mosquitoes. Of course, other things besides dummies were discovered in beds, as Bates can testify.

Nor were the days in any way dull. A glance at the records shows Wisconsin's Signal Corps, paced by "Buffalo Jim" Vaughan, winning the Co. E beer competition for pistol marksmanship, while their Engineer rivals helped Co. C gain their rather unstable possession of the totem pole signifying all around range supremacy. It was interesting to watch some of the light-weights in the firing line—these boys with a low moment of inertia, who would brace themselves, aim, fire, then crawl back up again to the line from which the recoil had knocked them. Some, like O'Connor, who forgot on the range that old saw about action and reaction being equal and opposite, turned up with glorious shiners.

While the Engineers dug trenches and filled 'em up, laid barb wire and rolled it up, built bridges and blew them up (strange people), the Signal Corps conducted a very private war, stringing miles of telephone line over hill and dale, turning the air blue with short-wave double-talk, attacking, retreating . . . fun, no end. It was at the end

of a retreat that "Sparks" Lingard, radio operator, was reported missing in action. The C. O., reconnoitering deep in (supposedly) enemy territory, found him an hour later—found him hitting off some "bunk fatigue" in a thicket, while the frantic "beepings" of the receiver at his side mingled with his peaceful snores.

Johnnie "Slots" Neighbors, Engineer, was the victim of a near tragedy when tossed to a watery grave in Eagle Lake by his comrades on pontoon detail. As he gurgled, yelled, and thrashed about to keep his head above water, someone on the bank reminded him that the water there was only four feet deep—which made him feel twice as bad.

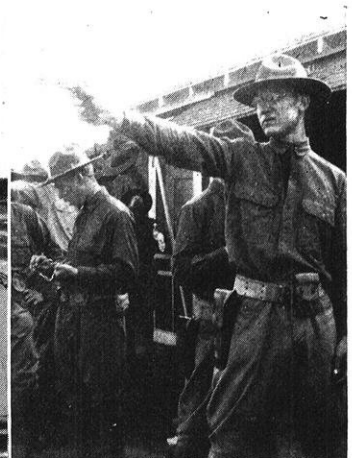
All those Engineers, incidently, seemed obsessed by the illusion that every day was St. Pat's Day and brawled from morn till nite. If they weren't fighting with the Infantry on one side or the Signal gang on the other, they were out pasting each other. For the "Number, please" boys of Company E, life was less strenuous but lively. What with B. B. Westerman maintaining an active and dangerous correspondence with two different B. C. babes, Red Rucks always volunteering to carry the beer across the border, Miller, Pritchard, and "Guides post" Wright busy corralling all the choice literature in camp, time never dragged. Some day we'll set down the legend of what the Colonel, one fine day, said when he came upon our Aldro relaxed (though supposedly on guard duty) on the fender of a car with his famous box camera in hand. But for the present, we'll let you guess.



"G. I. Full Dress"

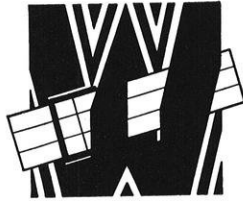


Pritchard Shows 'Em



"And Another Indian—"

ALUMNI



NOTES

Mechanicals

ANDERSON, STEWART, '33, has left the employ of the Barber Colman Company of Rockford and is now the assistant industrial power sales engineer of Rockford Gas and Electric Company.

AZPELL, EDWARD W., '29, M.S. '30, is now an instructor in the drawing and machine design department of Purdue University.

BROWN, ROBERT, '29, M.S.'30, formerly with the Malleable Range Company of Beaver Dam as maintenance engineer, has secured a position as instructor of steam and gas engineering with Case School of Applied Science.

BURKHARDT, GEORGE J., '34, who has been in the employ of the Agricultural Experimental Station at Mayheuez, Puerto Rico, has accepted a position as agricultural research engineer at the University of Maryland.

CADWELL, JAMES J., '36, recently left the Bailey Blower Company of Milwaukee to go, as a design engineer, with the Pines Winterfront Company of Chicago.

COWIE, ALEXANDER, '31, formerly at the University of Minnesota where he was an instructor in Machine Shop Practice, is now associated with the Minneapolis Honeywell Regulator Company.

GRIFFITH, LeROY W., '37, has accepted a position with the Shell Petroleum Company, of St. Louis. Griffith, since graduation, had been in the employ of the Ex-Cello-O Corporation, Detroit.

THOMAS, JOHN P., '36, recently connected with the Elmendorf Corporation of Chicago, is also in St. Louis with the Shell Petroleum Corporation as a lubricating engineer.

ROBERTSON, ALEXANDER, '36, has returned to the University from the Fairbanks-Morse Company to continue graduate research in Diesel engineering.

Electricals

BENNETT, ROBERT M., '35, was married to Miss Jane Priestley, of Madison, August 24. The couple will reside in Schenectady, New York, where Bennett is employed by the General Electric Company.

SEITZ, F. W., '35, has the position of Boiler Setting Foreman with the Plibrico Jointless Firebrick Company, Chicago, Illinois.

TYPLER, E. M., is located with the Wired Radio Company, Ampere, New Jersey.

Chemicals

BENNETT, GEORGE V., '23, is manager of the South Bend plant of the Northern Indiana Public Service Company.

BOZARTH, R. A., '22, is located in Hammond in the Gas Engineering Department of the Northern Indiana Public Service Company.

McCAULEY, HARRY, '35, spent one year with the Kimberly Clark Company, and then transferred to the Chemical Warfare Service, with headquarters at Edgewood Arsenal, where his work dealt with the manufacture of war gases and with problems involved in filling shells with explosives. This fall, he returned to the University as Research Assistant to Professor Hougen.

MOSS F. D., B.S. Oregon State College, '36, M.S. University of Wisconsin, '37, is working for the Shell Petroleum Corporation, in their Research and Development Department, and is located in the San Francisco district. On July 22, he was married to Miss Edith Somppi of Pendleton, Oregon.

CROSSETT, JOHN '36, after spending a year in the heat-treating department of Gisholt Machine Co., Madison, obtained a job as assistant metallurgist for the Chicago, Milwaukee, St. Paul & Pacific Railroad, Milwaukee, analyzing failures in machine parts.

DICKSON, L. R., '25, is chief chemist at the South Bend plant of the Northern Indiana Public Service Company, and is also responsible for the maintenance of instruments used in plant control.

DEDRICK, J. H., '35, spent a year in the rubber industry, then went to Penn State College for graduate work. Last June he accepted a position with the Aluminum Company of America. He is located at Edgewater, N. J., in a fabricating plant for aluminum alloy structural shapes.

KEHL, G. L., '34, has been appointed Instructor in Metallurgy at Lehigh University, Easton, Pa. He recently published a paper on the "Fatigue Resistance of Steel as Affected by Some Cleaning Methods."

PETERSEN, E. S., '25, is plant superintendent of the Tile Roofing Company of Stafford, Conn. This summer, while on vacation, he stopped at Madison to secure the services of a recent graduate. C. J. Halamka, M.S.'37, was the man selected.

Civils

DODGE, ELDON R., '32, who received his MS degree here in 1936 and taught at Case School during the past year, is instructor in hydraulic engineering at Wisconsin.

WESTON, ROY F., '33, has a fellowship at New York University this year.

CRANDALL, LEE W., '36, is instructor at the University of Colorado at Boulder.

HAMEL, VERNON S., '32, has formed a partnership with H. V. Tennant to conduct a contracting business with headquarters at Portage.

GRADT, EUGENE W., '35, is with Mead, Ward & Hunt at Madison.

ROHLICH, GERARD A., '36, MS'37, is instructor in civil engineering at Carnegie Institute of Technology at Pittsburgh.

LIEBMANN, JOACHIM E., '36, MS '37, is with the Chicago Bridge and Iron Co., at Chicago.

DYSLAND, LLOYD S., '34, MS'36, is with Consoer, Townsend & Quinlan, of Chicago. He is to be married in October.

KNECHTGES, OSWALD J., '29, MS '31, is with Mead, Ward & Hunt of Madison.

TUHUS, KENNETH, '33, until August 1, state hydraulic engineer for South Dakota, is taking graduate work at Wisconsin this semester.

VAN HAGAN, ROBERT L., '32, who is with TVA, has been transferred from design work to construction. His new address is Hiwassee Dam, North Carolina.

BEAN, GEORGE E., E'24, is city manager at Escanaba, Michigan.

MILLER, FRANK A., '35, is with the Lamdoff-Bicknell Construction Co., of Cleveland, since February, working out of the Chicago office. He has been on the courthouse job at Oshkosh and on the post-office at Peoria. Frank was married on March 20, 1937, to Rose Chrysler of Madison.

LYNEIS, CLAUDE A., '33, left the Soil Conservation Service on May 24 to take a position with the Hutter Construction Co., of Fond du Lac, as designer and estimator.

ELSINGER, ARNOLD M., '36, began a training course with the Vilter Mfg. Co., of Milwaukee May 1.

Nation-wide in service



ABC in set-up

THOUGH the Bell System is made up of 315,000 men and women serving every corner of the country, its structure is simple.

- A** The American Telephone and Telegraph Company coordinates all system activities. It advises on all phases of telephone operation and searches constantly for improved methods.
- B** The 25 associated operating companies, each attuned to the area it serves, provide local and toll service.
- C** Bell Telephone Laboratories carries

on scientific research and development.

- D** Western Electric is the Bell System's manufacturing, purchasing and distributing unit.
- E** The Long Lines Department of American Telephone and Telegraph interconnects through its country-wide network of wires the 25 operating companies and handles overseas service.

Thanks to the teamwork of these Bell System units, you can talk to almost anyone, anywhere, anytime—at low cost!

ORE FROM THE DRIFT

Our Mining Club

MINERS' and metallurgists' opportunities for getting summer work are improving.

With the present tendency of the larger companies in the entire field of the mineral industry toward filling vacancies in technical and operative positions with college trained men, many of the large mining, smelting, and fabricating companies are beginning to employ undergraduate mining and metallurgy students during the summer with the object of selecting men who show promise for future positions.

This idea, we must admit, offers some real opportunities for our students. The money earned during the summer is, of course, important. But seeing and taking part in actual engineering practice replaces diagrams and charts with the reality of operations. This kind of experience certainly gives a better background for subsequent courses as well as shortens the period of apprenticeship after graduation. There are such jobs for our boys. We call the roll of the ones who got them last summer.

Howard Grange (metallurgy 4), steel research at the General Motors Research Laboratories, Detroit, Mich.

John Yarne (metallurgy 4), research and testing at the Smith Steel Foundry, Milwaukee, Wis.

Curtis Burr (metallurgy 4), metallurgy laboratory at the American Brass Co., Kenosha, Wis.

William Wright (mining 4), underground mine work at the National Tunnel and Mines Co., (International Smelting Corp.) Bingham Canyon, Utah.

John Marston (mining 4), underground mine work at the National Tunnel and Mines Co., (International Smelting Co.) Bingham Canyon, Utah.

Theron Place (mining 4), timber

helper and nipper at the Walker Mining Co., (International Smelting Co.) Plumas County, Calif.

Edward Koltun (mining 4), engineering department of the Oliver Iron Mining Co., Hibbing, Minn.

Fred Krenske and Andrew Grignon (mining 4), are working at the Mountain City Copper Co., (International Smelting Corp.) Mountain City, Utah. They both will be back at school next fall.

George Billings (metallurgy 3), wire rope sling research at the Mac Whyte Rope Co., Kenosha, Wis.

Anthony Ozanick (metallurgy 3), blast furnace cast-house, Carnegie Illinois Steel Corp., Chicago, Ill.

Richard Mieritz (mining 3), worked in the engineering departments of both the Plymouth Mine and the Anvil-Palms Mines, Pickands Mather Co., Wakefield, Mich.

John Lyons (mining 3), engineering department of the Oliver Mining Co., Hibbing, Minn.

Sydney Strasburg (mining 3), timber helper at the Walker Mining Co., (International Smelting Corp.) Plumas County, Calif.

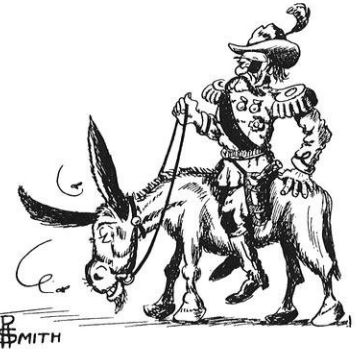
John Kildsig (mining 3), floatation mill, Eagle Picber Mining and Smelting Co., (Montana Mines Operation) Ruby, Ariz.

Carl Stone (metallurgy 2), blast furnace gas pressure operator, Carnegie Illinois Steel Corp., Chicago, Ill.

Most of these boys have been invited to return to their organizations upon completion of their work here at the University.

Milwaukee Course

A course in General Metallurgy is being given by the Extension Division at the Milwaukee Center. Active support of the local chapter of the American Foundrymen's Association has made this course a success. The lectures are being given by Professor Oesterle.



General Herb (Call me Gunner) Geittmann has returned from Camp Custer as a compound of Victor McLaglen and Tom Mix. The boys at Custer were taught to ride a horse and at a time later, when they had mastered the art of bouncing all over the horse without falling off, they were given a pistol and told to ride and shoot the gun at the same time. Herb proved himself a fine marksman by hitting everything but the horse except on one occasion. Yes, he did hit the horse and the horse died. He received a reprimand from the high command and a new assignment. Herb didn't mind being valet to a few horses, but he did object to the diet of horse meat that followed poor Dobbin's demise.

The Boys Who Have Been Taken In

Irv Rubow, our athletic graduate, who is with the Oliver Mining Co., of Hibbing, Minn., was married July 31st.

Lloyd Severson, of Llallgua, Bolivia, was also married this summer.

Severson's girl travelled all way from the States to Lima, Peru, where they were married last July. Frank Bemis had a girl go from Madison to Tucson, Ariz., just to get away from him.

They falling fast! Keep your eye on Larry Simon.



Dinner Meeting October 13th

The freshman miners and metallurgists are to be guests of the Mining Club at the October 13th meeting. Each freshman will be assigned to an upperclassman who will acquaint the new man with the faculty, the club's activities, the laboratory, and the fellows of the club.

A 6:30 dinner will start the meeting and the year in the novel manner of the club. John Yarne returned from the summer work with some new styles in heat treating. He will test his findings on the boys by giving them "tempered steaks" and "normalized" potatoes. Someone said



Johnnie has some theory he gained from sand testing on the elimination of sand from spinach.

Mr. Howard Grange, our Grand Wizer of this year's Mining Club edition, spent his summer working for G. Motors and ducking labor organizers. Howie says Detroit is really a wide awake little town and may really give Madison or Rolling Prairie some real competition in years to come. Howie says the Metallurgy we get out in the Mining Department really equips us to gird

our loins for the fray and is not the collection of miscellaneous data some people think. Howie worked in the Metallurgical Research Department. Grandpa Grange took up the ancient and honorable pastime of golf. Several of our seniors who spent a delightful vacation at Custer heard rumblings and saw rain over Detroit and later found out Howie plays his golf the hard way, that is from trap to trap and worse.

Chicago Chapter Accepts Our Invitation

At a meeting last spring the club voted to invite the Chicago Chapter of the American Institute of Mining and Metallurgical Engineers, of which the club is an affiliate, to a dinner meeting this year. The Chicago Chapter has accepted and has placed May 14th on its calendar as the date of the Madison meeting. Plans are now being drawn up to make this meeting the highlight of the year.

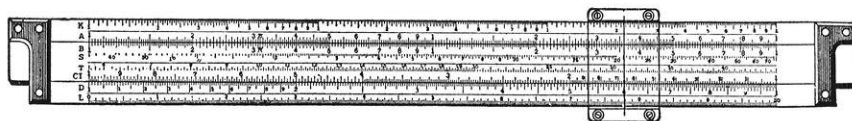
Mr. John L. Wegner, of the Interstate Drop Forge Co., lectured to the members of the American Society for Metals Wednesday, September 22nd. The subject was "Surface Decarburization of Steel." John Yarne, Gilbert Olson, Henry Eickelberg, Herbert Geittmann, and Howard Grange were guests of Dr.

J. F. Oesterle, who is a director of the Milwaukee Chapter. The boys find these lectures increase interest and understanding in their regular metallurgical studies.



Nick Friesen, our "Red Menace," who is also "chief mucker" of the Mining Club, thought it better that he spend his summer learning to cook than to further his metallurgical experience. He acquired the esthetic values of the culinary art in several of the better chop houses in Chicago. The sacrifice of his metallurgical experience to improve the meals of the Mining Club is much appreciated by the members.

Chuck (Bow Tie) Schmidt, that sensational "twerpsichorean" of the (free) Union matinee dances, amazed spectators at the premiere of the 770 Club with his new fantastic unorthodox steps. "Simple," says he, "I learned to truck this summer at Case's."



Slide Rules for Engineers

FIVE DIFFERENT LOG-LOG MODELS CARRIED IN STOCK

Let us help you select the proper rule for your work

THE UNIVERSITY CO-OP

"For the benefit of students . . . not for profit"

Don't forget the

Polygon Smoker

Thursday,
October 28
7:30 p. m.

GREAT HALL

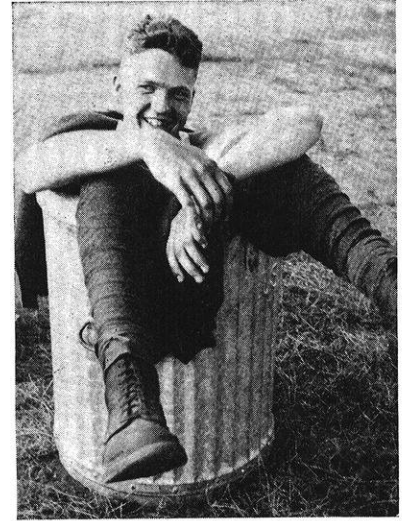
Speaker: Dr. Mathews
"The Detection of Deception"

Entertainment: Sardoni,
The Magician

BEER, PRETZELS
and SMOKES

"STATIC" by ENGIN EARS

Well, well. Another fall, another term, and another batch of suck—er—freshmen have signed up with us. This issue likewise heralds a new era of funniness. Ol' Engin Ears, who gave the best years of his life to this column, has been shifted to (of all things) the editorials . . . Which shows how foul his brand of whimsy must have seemed. His successor is a poor, gullible gent yclept Lingard. Yep, that's our boy Aldo you see immersed in the G. I. can, placed there forcibly by some playful companions. He actually seems to be enjoying it; but then there's no accounting for some people's tastes. To him we donate our dog-eared joke books, the ever-empty contribution box, the deadline jitters, bid him adieu, and scam before someone changes their mind.



"Lipstick" Lingard

» » « «

Mechanics 1000

Experiment 102 — The Social Whirl.

Object — to measure and check by computation the moment of inertia of the social whirl.



Apparatus:

- 1 dancing couple.
- 1 platform scale.
- 1 A. S. M. E. centroid locator.
- 1 pair of 2-foot dividers.
- 1 electric revolution counter
- 1 Log log log log slide rule.

Whatever else is available.

General discussion:

Because there is very little else in the social whirl that rotates, the error introduced will be small if the moment of inertia of a dancing couple is measured and considered as the moment of inertia of the whole social whirl. This is done by applying to the couple a known torque (social conversation is too small torque) and measuring the time necessary to bring them to a certain angular velocity. It should be mentioned that only the very thinnest and boniest of partners may be used in this test, because there's nothing angular about fat people and so naturally their

velocity cannot very well be angular either.

Method:

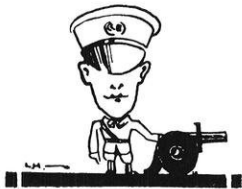
The couple were first weighed and their centers of gravity located by the newly developed A. S. M. E. centroid locator, operating on the principle that whenever two bodies have their centers of gravity far apart in proportion to their dimensions they ought to be brought together. A Big Moment was then applied to the couple to start them spinning, and the time required to reach a speed of 1,000 revolutions per minute was measured with a stop-watch. Since they never did get going that fast the term infinity was substituted in the equation.

Results:

The answer came out zero, indicating that the social whirl is of no moment.

Errors:

The biggest error was in starting this business in the first place, and the next most serious error was in going through with it. Other than that, due to the use of the newly developed log log log log slide rule, the results are probably accurate to within 1,000 per cent, which is closer than most mechanics experiments.



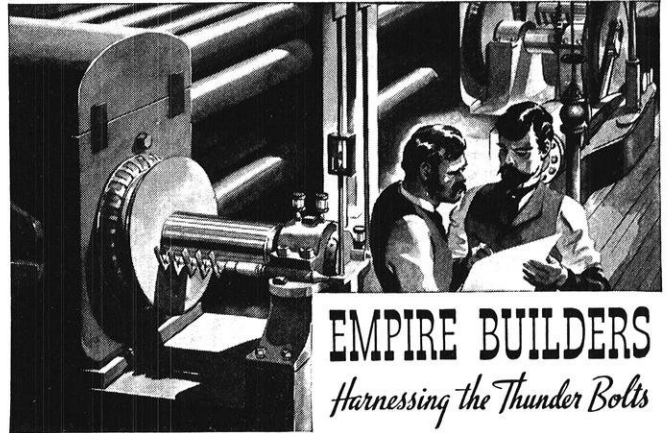
» » « «
According to an Italian diplomat, there are four kinds of pacifists: those who want to fight Japan, those who want to fight Germany, those who want to fight Italy, and those who want to fight all three at once.—Kansas City Engineer

» » « «
Physicists say that absolute zero can never be reached, but Carl Walter, who ought to know, says that Professor Watson can come damn close in marking EE 3 quiz papers.

» » « «
Professor Koehler has a unique term for students whom he shifts from his week-day labs to Saturday labs. He calls them "volunteers."

» » « «
From an EE 112 report:
"An ion is an electron that has lost one more of its ions."

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'37 ON THE JOB

• Most of the men so bluntly listed below as "Unreported" undoubtedly have employment, but as yet we have been able to obtain no information as to their whereabouts or work. Any and all information of this nature will be gratefully received both by us and by those who look to this source regularly for contact with old friends and associates.

Chemical Engineering

ANDERSON, EDWARD D., is a junior analytical chemist with the Shell Petroleum Corporation, Wood River, Illinois.
CHRISTL, ROBERT J., is a chemical engineer in the ammonia division of E. I. du Pont de Nemours & Company, Belle, West Virginia.
DAHLKE, EDWARD J., is in the research laboratory of the Standard Oil Company.
DICKINSON, WALTER F., is working with the city chemist at Madison, Wisconsin.
KERSCHER, JOSEPH F., is with the flying squad of the Goodyear Tire and Rubber Company, Akron, Ohio.
LACHER, RICHARD W., is in the chemical control division (rayon) of the E. I. du Pont de Nemours & Company, Old Hickory, Tennessee.
MAYLAND, HARRISON C., is a graduate student in the chemistry department, working under Prof. J. W. Williams.
MERRIAM, JOHN B., is with the Johnson Service Company, 507 E. Michigan Street, Milwaukee, Wisconsin.
OLSON, NEAL D., is an industrial engineer with E. I. du Pont de Nemours & Company, Wilmington, Delaware.
PARROTT, F. W., is a production engineer with E. I. du Pont de Nemours & Company, Wilmington, Delaware.
RISSER, GERALD G., is an industrial engineer with E. I. du Pont de Nemours & Company and is now located at Niagara Falls, New York with the R. & H. Chemicals Division of the company. His address is Y.M.C.A., Niagara Falls, New York.
RUDOLF, CHESTER D., is with the New Jersey Zinc Company, Palmerton, Pennsylvania.
SARGENT, EARL E., is with the U. S. Gypsum Company, Jersey City, New Jersey.

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SCHOBER, NORMAN G., is treasurer and assistant general manager of the Western Novelty Company, 1935 W. North Avenue, Milwaukee, Wisconsin.

STAADT, CHARLES C., is with the Johnson Service Company, 507 E. Michigan Street, Milwaukee, Wisconsin.

VINGER, MALCOLM T., is with the paper makers division of the Hercules Powder Company, Kalamazoo, Michigan.

WORNER, JOHN JAMES, is an aviation cadet with the U. S. Naval Reserve Aviation Corps, Pensacola, Florida.



Civil Engineering

BACHMAN, CARL J., in the Lands Section of the U. S. Engineers, Rock Island District.
BAUM, JOHN W., with the Wisconsin Highway Commission at Madison.
BESSERT, JOHN E., assistant sanitary engineer with the Chicago Pump Company.
BRUNNER, FRED H., No report.
BRUNS, EDWARD G., No report.
BUCK, ROBERT O., engineer with the Oliver Mining Company, at Virginia, Minnesota.
CANNON, HAROLD E., No report.
CARLSON, LAWRENCE W., with the Layne-Bowler Well Company on the construction of a well at Rhinelander, Wisconsin.
CULBERTSON, RALPH D., with the Wisconsin Highway Commission at Green Bay.
DAVY, PHILIP S., is doing graduate work in the hydraulic department.
DENO, LESLIE J., with the Wisconsin Highway Commission at Green Bay.
DORFF, SOL E., No report.
DUSZYNSKI, EDWIN J., designer with the Hausman Steel Company of Toledo.
EPPLER, JOHN F., in training with the Crane Company of Chicago.
FUGE, KARL W., with the Ellsworth Pipe and Supply Company, Milwaukee.
GROSS, ROBERT P., engineer with a steel gang on the Rock Island railroad, working in Iowa and Missouri.

GUNDERSON, LYNN H., in training with the Portland Cement Association at Chicago. Expects to be transferred to Milwaukee next January.

HIPPERT, ROLAND N., with the Wisconsin Highway Commission at LaCrosse.

HOFFMAN, THEODORE F., engineer for a contractor working near Milwaukee.

HOGANSON, LESTER O., No report.

HUNT, PAUL J., with the Milwaukee Road at Milwaukee. Paul was married on May 29 to Julia Greiber of Lodi.

JENSEN, HOWARD R., with U. S. Engineers, Rock Island District.

JOHNSON, WAYNE W., with the Wisconsin Highway Commission in the Materials Laboratory at Madison.

KUHTA, JOHN C., with the U. S. Engineers as dredging inspector, Milwaukee District.

KUTCHERA, DON H., inspector on the Middle Loup Public Power & Irrigation District, Nebraska. His address is Box 571, Loup City, Nebraska.

LANGTEAU, RICHARD R., engineer with the Burch Construction Co., of Madison on a grading job at Clear Lake, Iowa.

LITTLETON, WILLIAM E., in training course, Allis Chalmers Company, Milwaukee.

LUECKER, ARTHUR R., spent the summer with the Wisconsin Highway Commission at the Rhinelander office, working on Highway 77. Will be research assistant and graduate student at the University of Iowa during the current school year.

McKINNON, PAUL F., with the Wisconsin Highway Commission at Eau Claire.

MILLER, CHARLES L., with Cities Service Oil Co., at Denver.

NEWBURY, RUSSELL H., sales engineer with the American Creosoting Company at Chicago.

NORRIS, SPAULDING A., in the hydraulic engineering department of the Fairbanks Morse Company at Beloit.

POLK, WILLIAM H., in training with the Rierison Steel Company, at Chicago.

POYNOY, RUSSELL R., instructor in Agricultural Engineering, Utah State Agricultural College, Logan, Utah.

QUALMAN, KENNETH J., Rierison Steel Co., at Milwaukee.

SIETTMANN, CORNELIUS C., assistant in the Milwaukee Public Library.

STONE, FRANK H., No report.

VOELKER, RAY F., in training with Harnischfeger Corporation, Milwaukee.

VOSS, EDWIN J., with the Carnegie-Illinois Steel Company, at Chicago.

WAGNER, ELDON C., instructor in Topographic Engineering, University of Wisconsin.

WENDT, MARTIN B., returned to the university.

WILSON, FRANCIS C., entered two-year course in the Harvard Graduate School of Business Administration.

Electrical Engineering

BAIRD, L. L., with the General Electric Company, Schenectady, New York.

BERG, LOUIS D., with the General Electric Company, Schenectady, New York.

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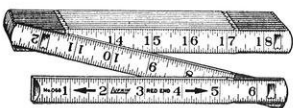
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BIGGS, JOHN A., with the R. C. A. Manufacturing Company, Camden, New Jersey. His home address is 546 Haddon Avenue, Collingswood, New Jersey.

BOENING, E., is at the Oshkosh Steam Plant of the Wisconsin Public Service Corporation at Oshkosh, Wisconsin.

CLAUSEN, C. E., with the Snapp Electric Company, Wausau, Wisconsin.

DIETERLE, REX C., is with the Wisconsin Public Service Corporation at Green Bay, Wisconsin, doing meter testing and repairing and appliance installation.

HAFSTROM, J. R., with the General Electric Company, Schenectady, New York.

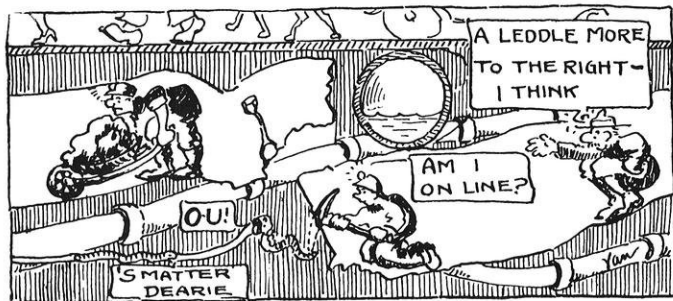
HARDAKER, E. H., is an engineer with the Milwaukee Electric Railway and Light Company, Milwaukee, Wisconsin.

HEINRICHSMEYER, E. F., is an engineer with the Cutler-Hammer Company, Milwaukee, Wisconsin.

HOLMAN, B. M., No report.

KERN, P. H., with the Western Electric Company, Chicago, Ill.

MURTO, W. E., is a student sales engineer with the Harnischfeger Corporation, Milwaukee, Wisconsin.



OTIS, S. J., No report.

RIGGERT, M. C., with the General Electric Company, Schenectady, New York.

SCHAEFER, A., is doing sales work with the Harnischfeger Corporation, Milwaukee, Wisconsin.

SEIFERT, J. W., No report.

SELLERY, H. G., No report.

SPLEES, W. G., with the Wisconsin Telephone Company, Milwaukee, Wisconsin.

STORCK, N. C., with the Milwaukee Electric Railway and Light Company, Milwaukee, Wisconsin.

TJEPKEMA, S., with the Beloit Iron Works, Beloit, Wisconsin.

UTTER, FREDERIC D., is a laboratory assistant with the Barber-Colman Company, Rockford, Illinois.

VATER, GERALD A., with the Westinghouse Electric and Manufacturing Company, East Pittsburgh, Pennsylvania.

WRENSCH, B. E., with the Sterns Magnetic Clutch Company, Milwaukee, Wisconsin.

Mechanical Engineering

ADAMS, CHESTER W., with the Joa Company, Sheboygan Wisconsin.

ANDERSON, GORDON R., with the Johnson Service Company, Milwaukee, Wisconsin.

ANDREE, PAUL F., Jr., with the Paper Institute, Appleton, Wisconsin.

AUSTIN, STANLEY M., with the Allis Chalmers Company, Milwaukee, Wisconsin.

BARLOW, FRANK J., with the Buffalo Forge Company, Buffalo, New York.

BAUM, RUSSELL H., with the Linde Air Products Company, Boston, Massachusetts.

BEHRENS, CHARLES A., with the National Hardware Company, Sterling, Illinois.

BENNETT, HERBERT L., with the General Electric Company, Schenectady, New York.

BERRY, EDWARD J., with the Yates American Company, Beloit, Wisconsin.

BURGERT, ANTHONY J., with the Sinclair Refining Company, East Chicago, Indiana.

CANNON, JOSEPH G., with the Earll Company, York, Pennsylvania.

DE NOYER, DONALD B., with the Kalamazoo Vegetable Parchment Company, Kalamazoo, Michigan.

GOETZ, G. F. MARTIN, with the Gisholt Machine Company, Madison, Wisconsin.

GOTHER, WILLIAM F., with the General Electric Company, Schenectady, New York.

GRIFFITH, LEROY W., with the Shell Petroleum Company, Wood River, Illinois.

HEIN, ALLYN J., with the Atlas Conveyer Company, Clintonville, Wisconsin.

HORNECK, CARL E., with the Dunham Manufacturing Company, Michigan City, Indiana.

IBISCH, FRANK O., with the General Motors Company, Detroit, Michigan.

JANKE, ARTHUR T., with the Waterman Waterbury Company, Minneapolis, Minnesota.

KIRTLAND, EUGENE M., with the Perfex Radiator Company, Milwaukee, Wisconsin.

LANGLEY, GEORGE F., with the Chain Belt Company, Milwaukee, Wisconsin.

LAWRIE, JAMES W., Jr., has been awarded a scholarship at Yale University, New Haven, Connecticut.

LIPPERT, RALPH J., with the Nash Company, Milwaukee, Wisconsin.

LOFGREN, GLEN K., with the Milwaukee Gas Specialty Company, Milwaukee, Wisconsin.

LOSSE, ROBERT O., with the Harnischfeger Corporation, Milwaukee, Wisconsin.

MALTPRESS, CEDRIC C., with the Young Radiator Company, Racine, Wisconsin.

MILUNOVICH, DAN, with the Perfex Radiator Company, Milwaukee, Wisconsin.

MUELLER, OTTO, with the Chicago Pump Company, Chicago, Illinois.

MUNRO, HAROLD L., with the Arcwelded Steel Products Company, Milwaukee, Wis.

MEYERS, JOHN R., with the United Construction Company, Philadelphia, Pennsylvania.

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PFEFFER, DONALD P., with the Norberg Manufacturing Company, Milwaukee, Wisconsin.
 PRINZ, FAUSTIN, with the General Electric Company, Schenectady, New York.
 RICHARDSON, WILLIAM S., with the Falk Corporation, Milwaukee, Wisconsin.
 RIESCHL, HAROLD W., with the Massey Harris Company, Racine, Wisconsin.
 ROSECKY, EDWARD J., with the Allis Chalmers Company, Milwaukee, Wisconsin.
 RYDEN, LEWELLYN A., with the Goodman Manufacturing Company, Chicago, Illinois.
 SANDERSON, THOMAS J., enrolled in the six year engineering-law course at the University of Wisconsin.
 SEVERSON, PALMER T., with the Cutler-Hammer Company, Milwaukee, Wisconsin.
 SOHNS, CARL B., with the General Electric Company, Schenectady, New York.
 SPENCE, THOMAS E. S., with the United Engineering Construction Company, Philadelphia, Pennsylvania.
 SWIFKA, EDWIN J., with the Young Radiator Company, Racine, Wisconsin.
 WAHLER, PAUL W., with the Twin Disc Clutch Company, Racine, Wisconsin.
 WEFEL, ELLISON L., with the Oil Gear Company, Milwaukee, Wisconsin.
 WEFEL, WALTER G., with the Automatic Electric Company, Chicago, Illinois.
 WENMAN, WILLIAM A., with Fairbanks, Morse & Company, Beloit, Wisconsin.
 WILSON, HERBERT W., with the Ideal Commutator Dresser Company, Sycamore, Illinois.

Metallurgical Engineering

FELBER, WALTER JOHN, is taking the six year engineering-law course at the University of Wisconsin.
 GAFKE, HARRY, is a metallurgist with the Carnegie-Illinois Steel Company, South Chicago, Indiana.
 MELCHER, NORWOOD B., is a metallurgist in the blast furnace department of the Columbia Steel Company, Provo, Utah.
 MULLIN, EUGENE, is a plant metallurgist with the American Smelting and Refining Company, Perth Amboy, New Jersey.
 EDENS, WALTER W., M.S. '37, is a metallurgist for Ampco Metal, Inc., Milwaukee, Wisconsin.
 SIMON, LAWRENCE E., is a metallurgist in the research department of the General Motors Corporation, Detroit, Michigan.
 HOLM, HOWARD G., M.S. '37, is a metallurgist with the American Rolling Mills Company, Middletown, Ohio.

Mining Engineering

BROOKS, CLIFFORD A., is a mining engineer with the Miami Copper Company, Miami, Arizona.
 CHRISTIANSON, EDWARD G., is assistant superintendent of the U. S. Gypsum Company's mines at Alabaster, Michigan.
 HUNZICKER, WAYNE T., is a mining engineer with the Miami Copper Company, Miami, Arizona.
 RUBOW, IRVIN H., is a mining engineer with the Oliver Iron Mining Company, Hibbing, Minnesota.

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EDITORIALS

THE SCHOOL FOR WORKERS COMES TO TOWN

The new School for Workers in Industry is being organized in compliance with legislation recently passed. Ernest Schwartztrauber, a new man, will be director of the school, which will be under the supervision of a faculty committee consisting of Professors Perlman, Roe, and Otto. The new school will probably swing into action in October. Its objective, as indicated by debate upon the bill in the legislature, is to produce labor leaders.

If the new school really sets itself to the production of labor leaders, as that term is commonly understood, it will introduce a decidedly new note into the educational melody; the note of class distinction. Its graduates, if they go forth, not to serve society as a whole but to serve a particular class of society will be a new kind of graduate for a state institution to produce. Up to this time, the effort of the university has been to produce citizens whose interests and sympathies were as broad as society itself. The engineers, lawyers, physicians, teachers, and scientists sally forth ready to serve all ranks of society; the bridge of the engineer carries the jalopy of the carpenter's helper as cheerfully as it does the V-16 of the plutocrat; the surgeon removes the appendix of the steel worker or the bank president with equal nonchalance. Will the graduates of the new school be equally catholic in their sympathies and equally ready to serve wherever the opportunity occurs?

If the new school is to be narrow in its purposes and operate largely as a vehicle for labor propaganda, it will be looked upon with especial interest by the engineers, who are themselves at this moment being accused of narrowness of outlook and lack of social consciousness and are being urged to fit themselves to participate more largely in the direction of human affairs. If the trend of public education is to be toward narrowness, the engineers may well ask if the criticisms of present engineering courses are sincere; whether engineers should go forward toward a more altruistic ideal while other students are being trained for more realistic objectives.

The personnel of the supervisory committee should be a guarantee that the objectives of the new school will be in line with the traditional objectives of university training; but the committee, however constituted, is going to be under tremendous pressure from the outside. The effect of that pressure is difficult to foretell. The experiment, one

"Those who have finished, by making all others think with them, have usually been those who began by daring to think for themselves."

—COLTON

of the most interesting that the university has attempted, will be watched with some curiosity.

THE POLYGON PLAN

The time has come again for us to put in our word for Polygon. Polygon, for the benefit of you newcomers (and those oldsters who are prone to forget), is the little publicized, hard working nucleus at the center of all engineering activities. It is the hub about which revolve all the social, athletic, and political events of the Engineering College. It provides the financial backbone which makes these projects successful.

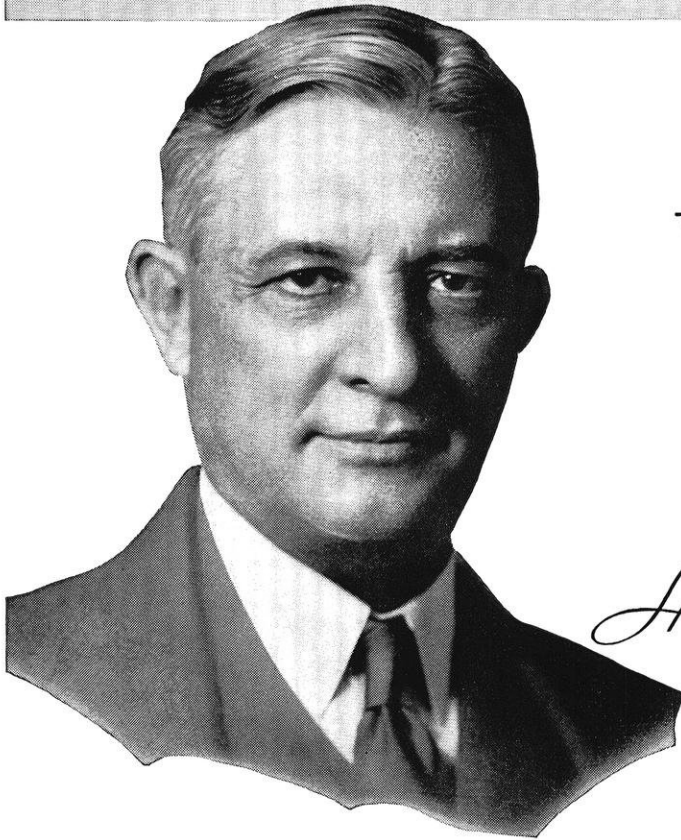
In the "good old days," the engineer was greeted each year with dozens of outstretched palms—each awaiting his contributions. There were assessments for this, dues for that, and contributions galore. Nor did these treasury raids cease after a week; they kept arising all year. By mid term, the student became hardened to it all, and all engineering activities for the rest of the year expired of financial starvation.

Today the student pays a small lump sum in September, then settles back, a member in good standing of the student branch of his professional society, to await an orderly and comprehensive lecture program, to regularly receive his copy of the Wisconsin Engineer, to plan his dates for the two Polygon Dances, and to whittle himself a shillelagh in anticipation of a rip-roaring St. Patrick's parade. This is what the Polygon Plan promised . . . and made good.

Specifically, it has reduced the cost to each man of each function some 60 per cent by elimination of waste effort, overlapping functions, and by its ability to construct an accurate budget covering all functions for a year in advance.

Now that the initial public Polygon drive is over, the five student professional societies have begun individual canvasses of those in their branches who have not as yet enrolled in Polygon. Those of you who were unable or unwilling to pay at the outset can still do so to these society representatives, though you need not wait for them to contact you. As in former years, Professor Volk, of the Engineering library, and Miss Lindergren, of Prof. G. L. Larson's office in the Mechanical Engineering building, can assure you your membership. If you intend to be with us this year, be one of us.

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Years passed—years devoted to experimentation, to designing new equipment, and developing new methods of installation. Then, in 1911 Mr. Carrier disclosed his now-famous Rational Psychrometric Formulae to the American Society of Mechanical Engineers—and true air conditioning was born.

Overnight, a new industry came into being—an industry

spreading health and prosperity throughout the world—and opening new and unlimited opportunities for engineers. And these opportunities have steadily increased—just as the demand for air conditioning itself has steadily increased. New men, young men are needed—men with the vision, the determination, and the ability to study and carry on the principles established by Willis H. Carrier and his pioneering associates.



To such men Carrier offers a wide va-

riety of careers—ranging from laboratory research, machine design, sales and installation, to work in the far corners of the earth—the 99 countries of the world which today know the benefits of Carrier Air Conditioning. Youth is welcomed at Carrier, its capabilities fostered—the young engineer gains recognition in keeping with his accomplishments—not with age alone—for Carrier realizes that its future development, its future expansion depends upon its engineers.



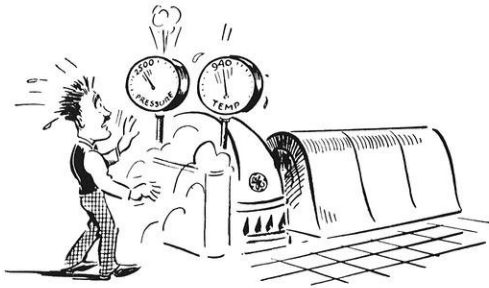
During this year, Carrier has trained 300 recent graduates from leading engineering schools in every section of the country. Carrier needs more men. If you had a good school record, and are interested in the world's most fascinating, fastest-growing industry, write us.



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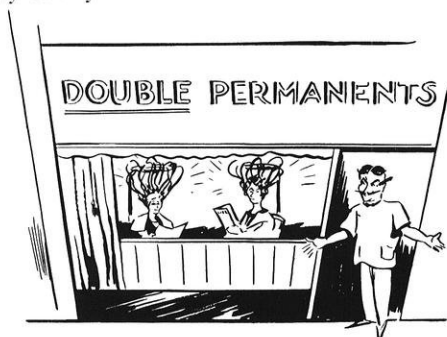


IT'S THE "TOPS"

A turbine-generator set now being built at the Schenectady Works of the General Electric Company will operate at a pressure of 2500 pounds and at a temperature of 940 F. This pressure is nearly 1000 pounds more than that used for any other commercial unit now in service, and the temperature is higher.)

It represents the work of many men. Experts in mechanical design have solved unique problems—for the shell of the turbine will have to withstand pressures equal to those more than half a mile below the surface of the sea. When the unit is completed, electrical and chemical engineers, metallurgists, and research workers will have contributed knowledge and experience to it.

The design and construction of turbine-generators such as this is largely the work of college graduates—many of whom entered G-E Test only a few years ago. Thousands of other Test men are engaged in the design, manufacture, and sale of these and hundreds of other electric products that are used in industry today.



TWO PERMANENT WAVES AT ONCE

Co-eds preparing for a dance are not the only subjects for permanent waving—there is the tungsten wire used in General Electric lamps.

This wire, 19/10,000 inch in diameter, is first tightly wound, 335 turns to the inch, with the coils 1/1000 inch apart. After the wire receives this first "permanent wave," it is coiled once more, 70 turns to the inch, with 7/1000 inch between the turns. This reduces the original 20 inches of wire to a coil 5/8 inch long and having an outside diameter of 310/10,000 inch.

These permanent waves pay real dividends in increased efficiency because tungsten wire becomes more brilliant as it is more closely compacted. This new process is only one of many developments made by G-E engineers in the field of illumination—a field which offers many opportunities for technically trained men.



WELDING IN THE ARCTIC

A broken gear wheel recently threatened to shorten the 100-day working season of a group of miners on the Alaskan tundra, above the Arctic Circle. No time could be lost, for in early September the ground would be frozen solid.

There was but one chance to save the season's work. The gear wheel was loaded in an *umiak*—a native boat made of skins—and for five days an Eskimo crew paddled to the settlement of Candle, where the Arctic Circle Exploration Company had a General Electric gasoline-driven arc-welding set. Three hours after their arrival, the Eskimos were ready to return with the repaired wheel. Instead of the ruinous loss of a season's work, the interruption lasted only two weeks.

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