



LIBRARIES

UNIVERSITY OF WISCONSIN-MADISON

The Wisconsin engineer. Volume 48, Number 1 August 1943

Madison, Wisconsin: Wisconsin Engineering Journal Association,
[s.d.]

<https://digital.library.wisc.edu/1711.dl/7P3DBZ6M5SIJV8I>

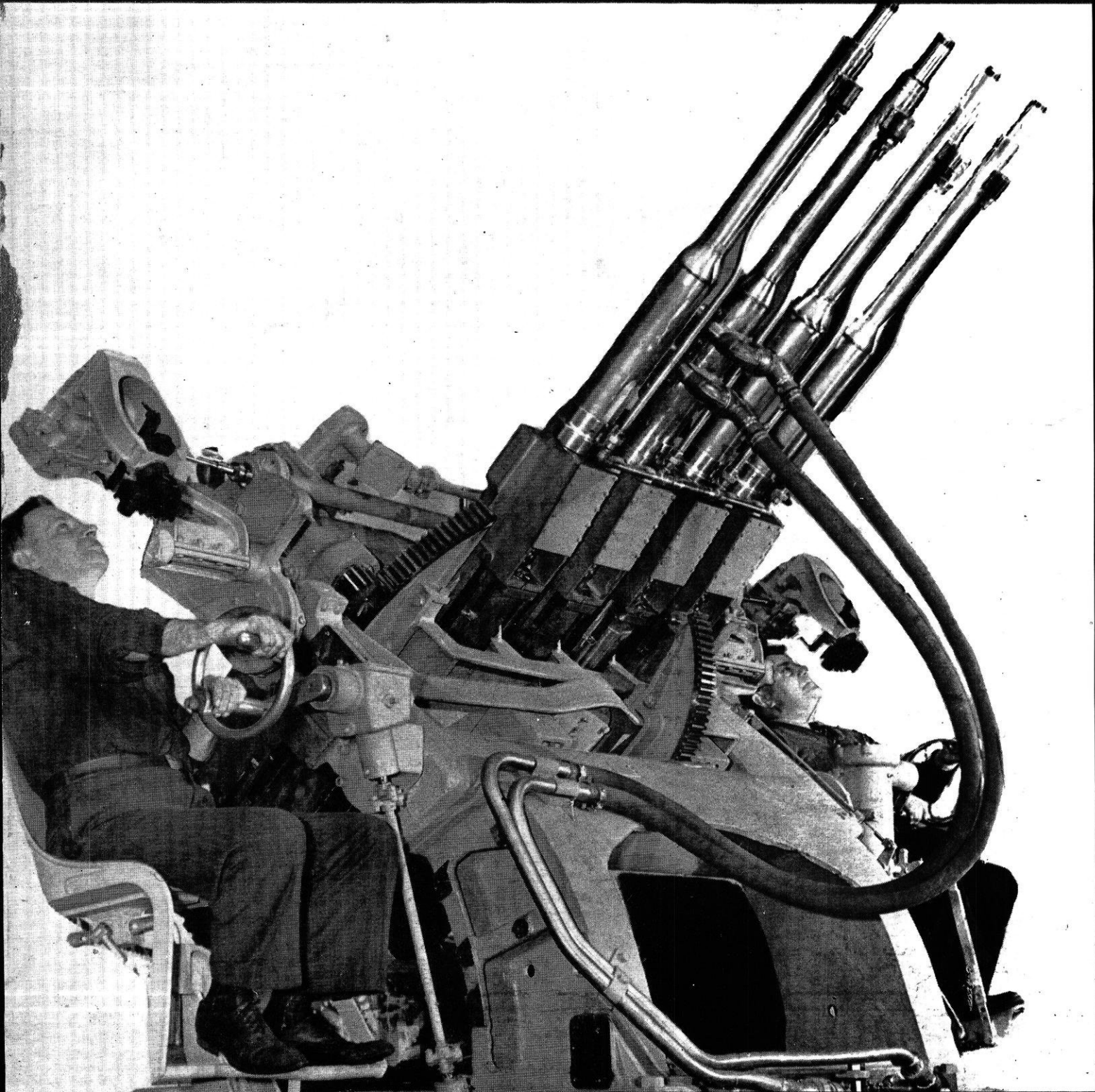
<http://rightsstatements.org/vocab/InC/1.0/>

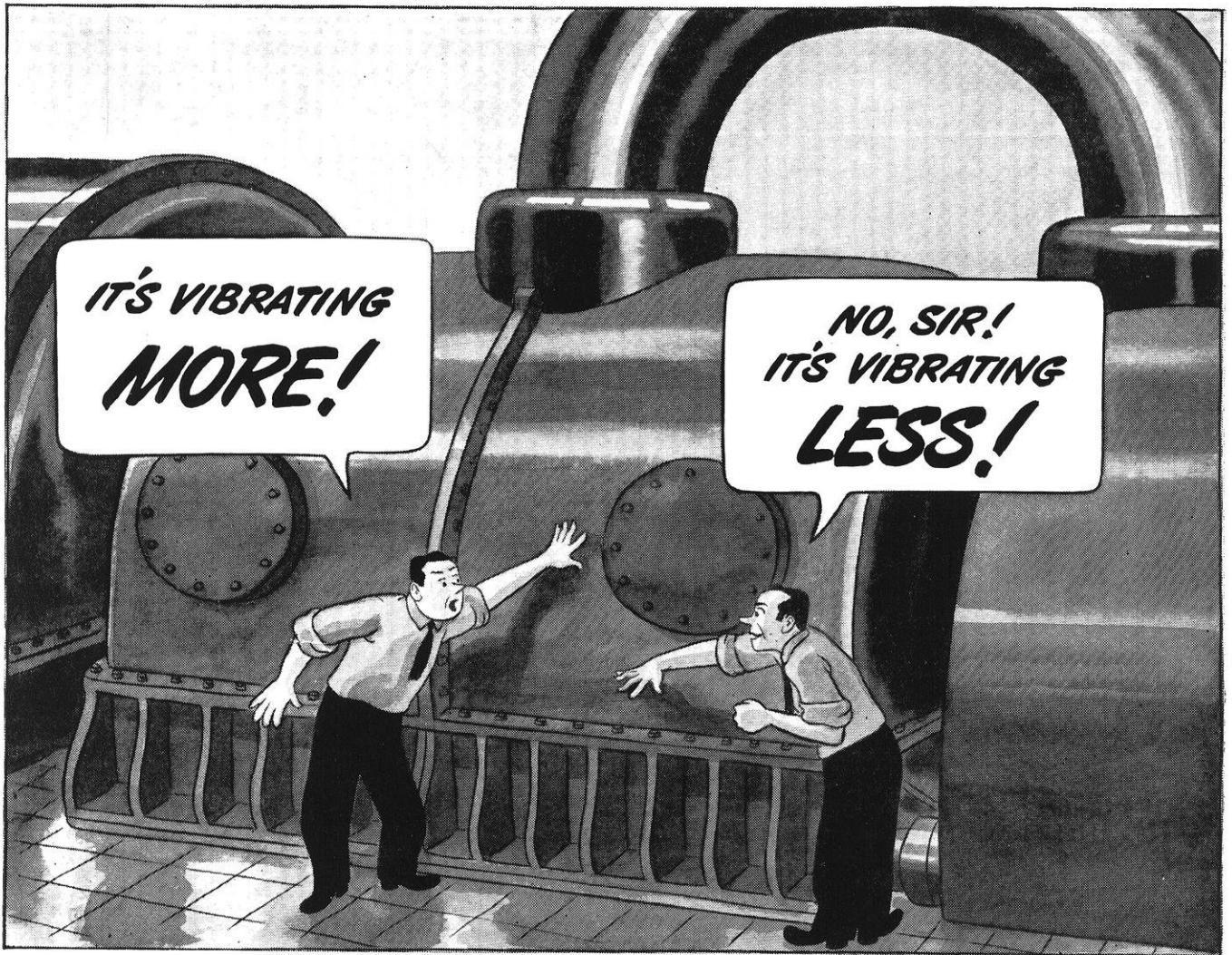
The libraries provide public access to a wide range of material, including online exhibits, digitized collections, archival finding aids, our catalog, online articles, and a growing range of materials in many media.

When possible, we provide rights information in catalog records, finding aids, and other metadata that accompanies collections or items. However, it is always the user's obligation to evaluate copyright and rights issues in light of their own use.

WISCONSIN ENGINEER

August, 1943





NO LONGER is it necessary to rely upon the time-honored "finger tip" method—to determine the *change in the amplitude of turbine vibration*.

Harry C. Werner, vibration doctor in the Westinghouse Research Laboratories, has changed all that. He has found a way to make an *accurate, continuous record* of the pulse of every type of turbo-generator.

Werner does it with a tiny generator that creates electrical energy at the rate of about *1/1,000,000th of a watt!*

His continuous vibration-recorder consists of a small babbitt-tipped rod which rests on the smooth surface of the whirling shaft. A coil, at the top of the rod, is free to move vertically inside a stationary electro-magnet.

The vibration of the shaft bounces the rod up and down. This induces a feeble electric current in the moving coil—which is amplified electronically and actuates a mechanical pen on a moving strip of paper.

Usually, the pen draws a uniform pattern on the paper strip, indicating normal

balance of the turbo-generator spindle. But, under extraordinary conditions, the line may dance up and down like the chart of a chills-and-fever patient.

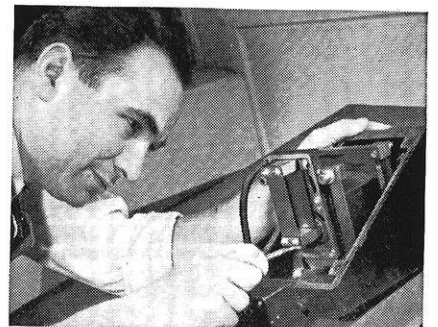
This seldom happens but, when it does, it instantly tells the power plant operator that there's trouble ahead—that the vibration must be reduced to prevent a possible shutdown of a vital power-producing machine!

* * *

We are glad to tell the world about engineers, like Werner, who are constantly adding to the store of Westinghouse "know how" and technical skill.

Because our future depends upon young engineering graduates, we give them *individual training and supervision*—plus the *stability and opportunity* that come through working for one of the oldest and largest companies in its field.

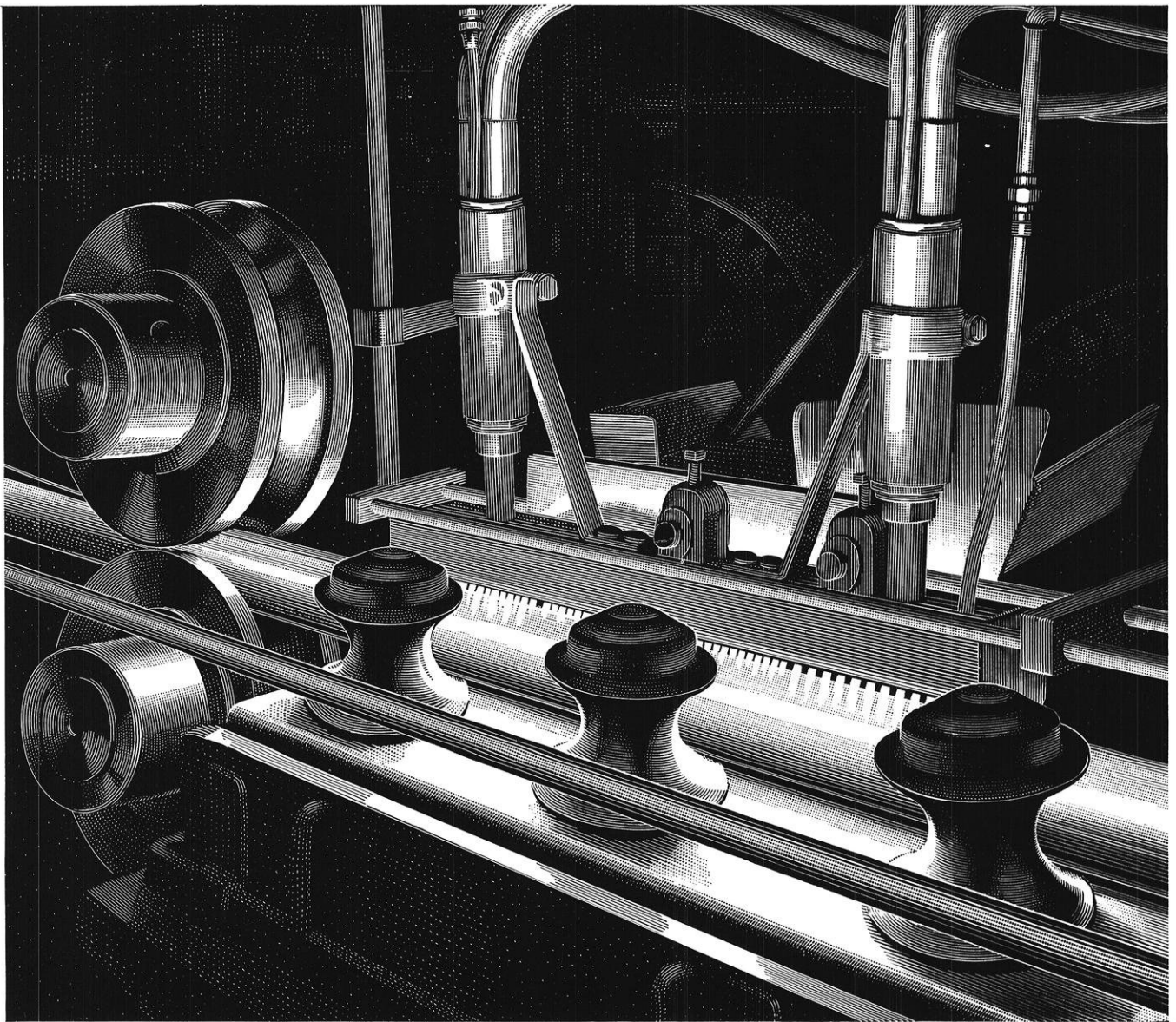
Westinghouse Electric & Manufacturing Company, Pittsburgh, Pennsylvania.



GENERATOR JITTERS are instantly diagnosed by the electromagnetic vibration-detector which writes a continuous "vibration record" on a moving strip of paper. Inventor of device, Harry C. Werner, entered Westinghouse Research Laboratories after receiving his B.S. in Mechanical Engineering from Drexel Institute of Technology.

Westinghouse

PLANTS IN 25 CITIES . . . OFFICES EVERYWHERE



MACHINE-WELDING ARTERIES FOR INDUSTRY

RACING under a shower of white-hot oxyacetylene flames at speeds up to 200 feet per minute, formed metal strip is quickly converted into welded tubing.

Tubing produced by this Airco automatic welding method is characterized by strength, shock-resistance, and uniform wall thickness—and especially by its speedy manufacture and low cost.



Because of these advantages, tubing welded by the Airco automatic method has found a wide range of uses in industry... from drive shafts in trucks and

tanks to its more common role in distributing gas, oil and water in machinery of production and war.

This use of the oxyacetylene flame is another example of how Airco research is extending the benefits of flame and arc processes to many manufacturing operations. By constantly increasing the efficient application of these processes, Airco research has broadened their usefulness to industry.

If you want to keep posted on flame and arc developments, write for a free copy of "Airco in the News." Address Air Reduction, Room 1656, 60 East 42nd Street, New York.



General Offices:

60 EAST 42nd STREET, NEW YORK, N. Y.

In Texas:

Magnolia-Airco Gas Products Co.
General Offices: HOUSTON, TEXAS

IDLE CYLINDERS ARE PRODUCTION SLACKERS: KEEP 'EM ROLLING FOR VICTORY!

WISCONSIN ENGINEER

Founded 1896

Volume 48

AUGUST, 1943

Number 1

DONALD E. NILES
Editor

WILLIAM JACOBSON
Associate Editor

EDITORIAL STAFF

CHUCK TOMLINSON ch'44 <i>Alumni Notes</i>	GLENN JACOBSON ch'45 <i>Campus News Editor</i>	GENE DANIELS c'44 <i>Static</i>
FRED ENGLER c'45	WARREN FRISKE met'44	JERRY BEYER ch'44
MARVIN WOERPEL ch'44		ARNOLD ERICSEN ch'44

JOHN R. CALDWELL
Business Manager

BUSINESS STAFF

DON CALDWELL ch'44 <i>Circulation Manager</i>	KENNETH SMITH ch'44	RAY ELBERT m'44
	REUBEN HACKBARTH m'44	GORDON HADDOCK ch'44

BOARD OF DIRECTORS

J. B. KOMMERS, *Chairman*

W. K. NEILL, *Adv.*
P. H. HYLAND
L. C. LARSON

J. F. OESTERLE
R. A. RAGATZ
L. F. VAN HAGEN

K. F. WENDT
D. E. NILES
J. R. CALDWELL

MEMBER OF ENGINEERING COLLEGE MAGAZINES ASSOCIATED

ROBERT L. TAYLOR, *National Chairman*

Arkansas Engineer	Kansas State Engineer	Oklahoma State Engineer
Cincinnati Co-operative Engineer	Marquette Engineer	Oregon State Technical Record
Colorado Engineer	Michigan Technic	Pennsylvania Triangle
Cornell Engineer	Minnesota Techno-Log	Purdue Engineer
Illinois Technograph	Missouri Shamrock	Rose Technic
Iowa Engineer	Nebraska Blue Print	Tech Engineering News
Iowa Transit	N. Y. U. Quadrangle	Wayne Engineer
Kansas Engineer	Ohio State Engineer	Wisconsin Engineer

National Advertising Representative
LITTELL-MURRAY-BARNHILL, INC.
101 Park Ave., New York

Any article herein may be reprinted provided due credit is given.

Entered as second class matter September 26, 1910, at the Post Office at Madison, Wisconsin, under the Act of March 3, 1879. Acceptance for mailing at a special rate of postage provided for in Section 1103, Act of Oct. 3, 1917, authorized Oct. 21, 1918.

Published monthly from August to May inclusive (except October) by the Wisconsin Engineering Journal Association, 356 Mechanical Engineering Bldg., Madison

Subscription Prices

\$1.25 PER YEAR . SINGLE COPY 15c

In This Issue . . .

ON THE COVER . . .

Two Westinghouse employees testing the mechanism of the "Chicago piano" shown on our March cover. Courtesy Westinghouse

FRONTISPIECE . . .

Giant absorption towers used in the recovery of volatile liquids as used in the modern plastic industry. Courtesy Westinghouse

PAUL BUNYAN 4

by Fred Engler . . . The life of the greatest of all lumberjacks of northern Wisconsin.

ODE TO A DEPARTED STAFF 6

The tragic story of last year's staff.

STATIC 7

By Gene Daniels.

JUNE GRADS 8

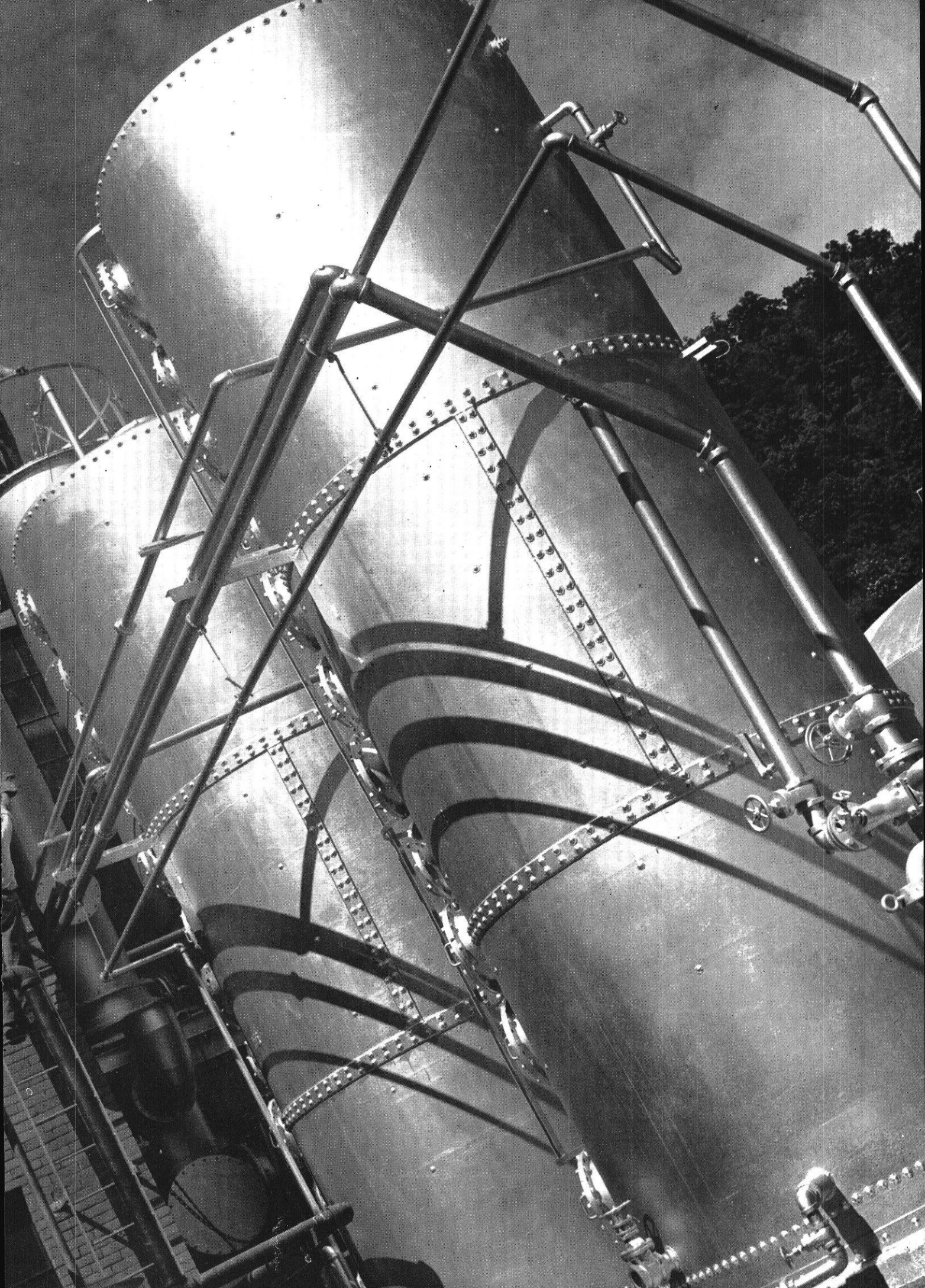
The whereabouts of our recent graduates.

ON THE CAMPUS 12

Edited by Glenn Jacobson . . . Society meetings, formation of new society.

ALUMNI NOTES 14

By Chuck Tomlinson.



The Most Famous Lumberjack of All . . .

Paul Bunyan

OF ALL the many legendary heroes, whose marvelous exploits thrill us, Paul Bunyan's are probably the greatest. Paul Bunyan is perhaps the only American myth.

The birthplace of this great American hero has never been known, although many experts have tendered opinions. Some say Paul came from that part of Canada which bounds the Atlantic Ocean, up there his famous name is spelled "Bunion." Other reliable sources claim Quebec as his birthplace; and some insist it was Prince Edward Island. At any rate, we know he was born somewhere and came to Wisconsin in the prime of early manhood.

Paul probably got his start in the pine filled forests of Maine. From here he started westward until he reached the Middlewest which is now the states of Wisconsin and Minnesota. He decided to make this desirable region his headquarters.

The Size of Paul Bunyan

That he was a giant, is easily proven by the myriad of small lakes scattered throughout northern Wisconsin. Any reliable lumberjack can tell you that these are merely Paul's footprints, which he made in spring when the ground was soft and which the melted snow filled with water. This area is now known as the "Land of The Sky Blue Water," or "Chain of Lakes."

His lung capacity was a thing from which strong men shrank in horror. When he called his men together for meals, he'd yell so loud that the men would ride out of the forest on the echo. It's also a verified fact that he could spit 250 feet in a gale, and when his mighty voice roared with anger, the limbs fell from trees.

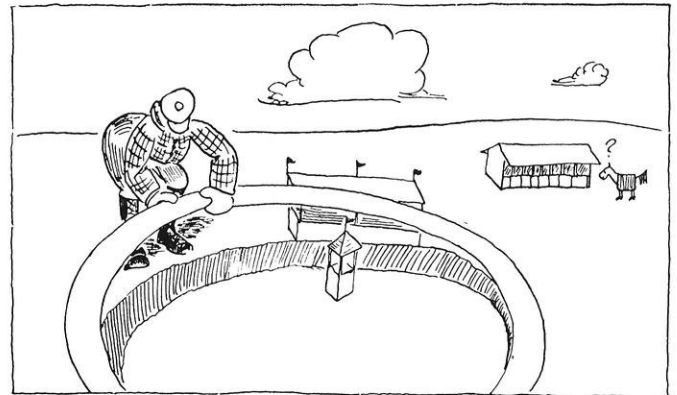
Because Paul was the greatest woodsman the world has known, he had strict dietary requirements for his loggers. The food he fed them was crammed with vitamins to add to their power and endurance. Even the gophers, who ate the little bit of refuse in the garbage pails, got so strong and large that they ate all the wolves in the region. Later, the settlers shot them for tigers.

Paul's incredible swiftness was another of his claims to fame. It was his nightly custom to stand at one end of an 80 foot sleeping shanty, blow out a candle, run the length of the camp, leap into his upper bunk and be fast asleep by the time the candle went out. When he was out logging, he'd spin a log until the bark came off, and then run ashore on the bubbles that had been formed.

The Pea Soup Incident

Any of us who have ever been in the north woods know the size of appetites that are developed. Consider then, the task to be accomplished in feeding a lumber camp run by Paul Bunyan. One winter he had 300 cooks working in three shifts and a swing shift to prepare food for the men. Cooks came and went until Sourdough Sam appeared, for Paul would never bother with a poor cook.

One of the cooks displeased the men so much that Paul had to convoy him back east. This is how it happened. One day, a supply sled loaded with split peas was crossing a frozen lake. The ice broke and the sled and all the peas were lost. Later in spring the men began to get pea soup. For 100 days they got pea soup until one day they noticed that a nearby lake had dried up. Later investigation resulted in the disclosure of facts, and the cook was lucky to escape with his life.



Paul used a race-track for the wheel on his planimeter for use in his surveying.

Some of the loggers, however, developed a genuine liking for pea soup and they developed a system wherewith they could supply themselves with a piping hot bowlful of the broth, even when they were working out in the woods. They used to bore holes in their axe handles and fill the holes with frozen chunks of soup. As they worked, the friction of their buckskin mittens on the axe handles heated the soup and there it was, all ready for their meal. This, of course, is where the first thermos bottles came from. It's too bad Paul doesn't get credit for this invention, but he was always too busy to apply for patents.

The Coming of Babe, the Big Blue Ox

One of the best and most certain modes of transportation for settlers in the northern region, was by oxen. Per-

haps this is why the anonymous authors of Paul Bunyan legends gave him Babe, the "big blue ox." Even staunchest admirers must admit that the mighty Paul might have fallen short in some of his accomplishments if it hadn't been for this faithful friend.

Babe was born during the winter when all the snow was blue, and naturally, kept this color all during his life. His measurements in girth and length were just too tremendous to be gotten accurately, but it is reliably reported that he measured 42 axehandles and a plug of tobacco between the eyes. Naturally, the problem of feed for this enormous animal was one of Paul's biggest headaches. About this time, Paul was standing near the Dakota border. The Dakotas at that time were one large mass of level forestland, and Paul decided to clear the region so Babe would have a nice pasture. He took his blue ox and cleared every tree and stump from the region, clearing 640 acres at a crack. Babe's appetite was so enormous that it required a week for three teams to haul enough hay for a full meal for him. For a snack between meals, he ate 50 bales of hay, wire and all, and seven men with poles equipped with hooks were needed to keep the wire from getting stuck in his teeth.

In spite of his huge appetite, Babe would have more than earned his keep by only one of his many abilities. That is, the crooked roads which the settlers had laid out were straightened by harnessing Babe to the end of the road and having him pull the kinks out and straighten it. To prove his gratitude for this helpful trick of Babe's, Paul, who knew that all oxen love to lie in water and bathe, dug the Great Lakes so that Babe might have a nice swimming pool.

There was only one occasion when Babe ran away from camp early in the morning. He ran all over the Northwest country, jumped the Mississippi at Prairie du Chien, continued across northern Iowa, loped over to South Dakota, circled through Minnesota and was back in time for dinner. The only serious consequence was that, later in the year, a settler and his wife and baby in a covered wagon were crossing this territory. They slipped into one of the holes made by Babe's hooves and finally the son succeeded in climbing out—by that time he was 57 years old!

Babe was also one of the greatest problems of Big Ole, Paul's blacksmith. Since there was no room for Babe to lie down in Wisconsin, to be shod, Ole had to travel to the cleared land of North Dakota to work on the ox. Ole reported that once, while carrying one of Babe's horseshoes over a half mile of solid rock, he sank into the rock to his knees at every step. Of course, every time Babe was shod, a new iron mine opened up in Michigan.

Besides straightening roads, Babe was helpful in many ways. For instance, on one occasion, the woods fairly cracked as Paul bellowed in anger. It seems that Chris Crosshall, one of the straw bosses, had sent all of Paul's logs down to New Orleans instead of marketing them on the upper Mississippi. As everyone knows, New Orleans had no lumber mills and bankruptcy threatened Paul un-

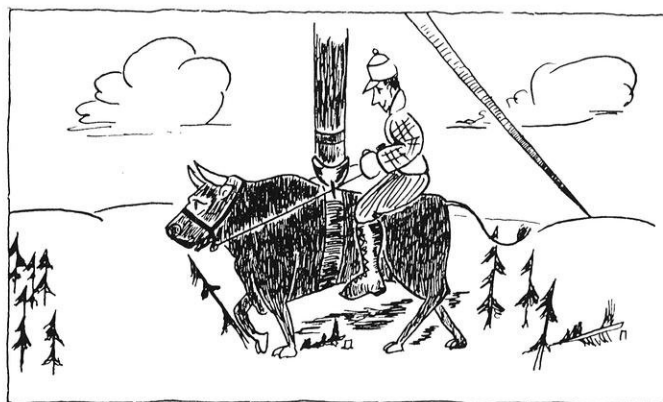
less he could get those logs back upstream. As any fool can plainly see, it was going to be no easy task. However, Paul and Babe rushed to the rescue! Paul took Babe out near St. Paul, fed him seven carloads of salt and then gave him a drink out of the Mississippi. Immediately, the water came back from New Orleans, logs and all.

The "Little Big Blue Ox"

Because the animals proved so useful, Paul got another ox named Benny. He wasn't quite as big as Babe, so he called him the "little big blue ox." Benny was born on a farm down in Maine, and by the time he was a month old, had eaten everything on the place. The owner wrote Paul and asked him to come and get the calf. At the time, Paul was logging near Bismarck, North Dakota, so he left that afternoon for Maine and returned back to camp about midnight. Little Benny grew so much and so quickly, that every time Paul turned to look at him, he'd grown two feet higher. When Paul got home that night, he put Benny in the barn. The next morning, barn and Benny were gone. Paul later found out that Benny had grown so much during the night that he merely waltzed off with the barn.

Benny, however, had one extremely bad habit. One night he sneaked into a lumber camp, just as the cooks had finished the morning's pancakes. Benny loved pancakes. In his greed, he gobbled down all the pancakes and even devoured the still red-hot stove and developed a bad case of indigestion. He died very shortly after from the after-effects, and today his grave is marked as the Bad Hills of North Dakota.

Benny's other chief drawback was his extreme stubbornness, and with his size, that really was a problem. For some unknown reason, he refused to work when there was



Paul and the fabulous blue ox, Babe, clearing the Dakota woodlands.

no snow on the ground, and the only way he could be made to pull a load, was to have the loggers whitewash the logging road. In the winter when both of the mighty oxen, Babe and Benny, were working, seven axemen had to get up 26 hours before daylight to supply enough logs to keep both busy.

Some Famous Bunyan Dogs

Oxen, however, were not the only animals kept in Paul's camp. If you have ever been to a lumber camp, you've
(turn to page 10, please)



Left to right—top to bottom: Arnold Ericksen, Warren Friske, Gordon Erspamer, Doug Bainbridge, Jerry Beyer, Gordon Haddock, Bill Haas, Marvin Woerpel, Ken Smith, James Hill, Glenn Jacobson, Reuben Hackbarth, Harvey Johnston, Bob Daane, Dick Roth, Chuck Tomlinson, Arne Larson, Roger Lescohier, John Caldwell, Don Niles, Bill Jacobson, Don Caldwell, Jerry Baird.

ODE TO A DEPARTED STAFF

I think that I shall never see
 A staff that worked as hard as thee.
 A staff whose curly locks were bent
 Towards progress, and a permanent.
 Whose only thought was for the mag,
 Who once a month would leave your girl
 To work, to get the darn' thing out.
 When told "eight pages" you didn't pout.
 You just said, "OK, it's done, you drip,
 Now give me a coke and a potato chip."
 The business staff who worked like bees
 To pay our bills and C.O.D.'s.
 Who every month would sit and write
 Those wrong addresses through the night.
 Johnny C. would say to me,
 "Cut down those bills, and pronto, see?"

And Donny C. would chime right in,
 "How can I mail that magazin'
 When it won't be ready for a day or more."
 (And 'twas already in the office, behind the door.)
 Our Jerry Baird, who often said,
 "Print that, and you're as good as dead."
 Roth and Daane, who wrote the jokes,
 And jokes and jokes and jokes and jokes.
 The Campus News by Haas, (C.E.)
 His latest initials are now C. B.
 No, I know that I'll never see,
 A staff who'll work as hard as thee.
 Unless it's the new bunch, bless their souls.

Thanx fellas,

—Don Niles

STATIC ♦ ♦ ♦

by Gene Daniels, c'45

The subject of kissing was debated with much earnestness for a half hour between the girl and her young man caller. The fellow insisted that it was always possible for a man to kiss a girl at will, whether she chose to permit it or not. The maiden was firm in maintaining that such was not the case. Finally, it was decided that the only solution of the question must be by a practical demonstration one way or the other. So, they tried it. They clinched and the battle was on. After a lively tussle, they broke away. The girl had been kissed—ardently, for a period of minutes. Her comment showed an undaunted spirit:

"Oh, well, you really didn't win fair. My foot slipped. Let's try again."

o o o

The aged negro clergyman announced solemnly from the pulpit:

"Next Sabbath, dar will be a baptism in dis church, at half-pas ten in de mawnin'. Dis baptism will be of two adults an six adultresses."



The naked hills lie wanton to the breeze,
The fields are nude, the groves unfrocked,
Bare are the shivering limbs of shameless trees,
What wonder is that the corn is shocked?

After five glorious weeks spent basking in the glow of red hot chips smoldering in the oil pan of a Pratt and Whitney Model 64729-Z turret lathe (with reverse gear), we find that it is again time to reluctantly drop our micrometers, in accordance with the piece rate of two broken ones a week, and resume pursuit of thermogoddamicks and hard courses like reenforced concrete.

It has been rumored that Milt Lavrich, assistant in charge of nut 6 at Vega Aircraft, helped relieve the farm labor shortage during June. The first thing he said after he climbed out from the rods of the Milwaukee Road 9:45 Special, dusted off his denims, mopped his brow with a red square of Alabama silk and spat a plug of Plowboy was, "Sorry, I can't stay to talk, fellas, I gotta pick up a girl at the corner of State and Lake at 10:00 a. m." His welcoming committee of five chems demanded, of course, to know who she was. "How should I know who's going to be at the corner of State and Lake at 10:00 a. m.?" quipped Milt.

He is now doing nicely at the infirmary; in about three days he'll be able to receive visitors.

o o o

The young man had offered his heart and hand to the fair damsel.

"Before giving you my decision," she said sweetly, "I wish to ask you a question." Then, as he nodded assent: "Do you drink anything?"

The young man replied without an instant of hesitation and proudly:

"Anything!"

And she fell into his arms.

o o o

Two small negro boys were sitting on the curb. One turned to the other and said, "Ah's five, how old is yo?"

"Ah doan know. Ah guess ah's five, too."

"Does yo dream of wimmen?"

"Nope."

"Yo's only foh."

o o o

The problem of what to do with an eighth of lukewarm beer spurned by non-drinking members of A.S.C.E. at their first meeting was solved by Dale (Stress and Truss) Jennerjohn who had a spot in his heart for his frat, Theta Chi. Four husky civils (they must have been V-12 boys) rolled the keg down to the fraternity's Lake Street manor. Highlight of the ensuing brawl was when a representative of the longarm of the law (cops to youse) demanded that the participants stop burping in harmony for the benefit of the passersby.

(turn to page 13, please)

Here's where they've gone . . .

June Grads

by Glenn Jacobson, ch'45 and Chuck Tomlinson, ch'44

Chemicals

BAIN, WILLIAM A., Ph.D., is with the General Aniline & Film Corporation, Easton, Pennsylvania.

FONG, TZE-CHING, Ph.D., is an instructor in Chemical Engineering at the University of Wisconsin.

GAMSON, BERNARD W., Ph.D., is with the Great Lakes Carbon Co., Chicago, Illinois.

HANSON, DONALD N., Ph.D., is an instructor in Chemical Engineering at the University of Wisconsin.

NEILL, WAYNE K., Ph.D., is an instructor in Chemical Engineering at the University of Wisconsin.

THODOS, GEORGE, Ph.D., is with the Phillips Petroleum Co., Bartlesville, Oklahoma.

BECKBERGER, LAVERN H., M.S., is a research associate at the University of Wisconsin.

JOHANSON, LENNART N., M.S., is a research associate at the University of Wisconsin.

SHILLING, DAVID G., M.S., is an instructor in Chemical Engineering at the University of Wisconsin.

UYEHARA, OTTO A., M.S., is a research assistant in the Chemical Engineering department at the University of Wisconsin.

ANDERSON, DONALD J., is with the Hooker Electrochemical Co., Niagara Falls, N. Y.

BOELTER, WILLIAM F., is in the U. S. Army.

I SHALL NOW READ
MY LATEST POME



BORNSTEIN, SIDNEY, is a research assistant in the Chemical Engineering department at the University of Wisconsin.

BUCKLEY, ROBERT A., is with the E. I. duPont de Nemours & Co.

COX, FRANCIS A., is with the Lockheed Aviation Corporation.

CUTLER, JOHN M., is with the Aluminum Co. of America, Alcoa, Tennessee.

DALE, ROBERT F., is with the U. S. Rubber Company.

ECKES, LEROY J., is in the U. S. Army.

EDNIE, NORMAN A., is a research assistant in the Chemical Engineering department at the University of Wisconsin.

FALKENAU, VERNON A., is with the U. S. Rubber Co.

FALLON, JEROME F., is in the armed forces.

FECZCO, CHESTER T., is with the Shell Oil Co.

FOWLER, ALLAN W., no report.

HICKS, JOHN G., is in the armed forces.

HIGGINS, HOWARD L., is with the National Tube Co., Lorain, Ohio.

HOBSON, MARK, is with the Standard Oil Co. of Louisiana, Baton Rouge, Louisiana.

HOEKSTRA, IRENUS A., is with the Madison Board of Health, Madison, Wisconsin.

HOLDEN, ABE N., is in the Marine Corps.

KNIGHT, JOHN S., JR., is with the Carbide & Carbon Chemicals Corporation.

LANGE, MILTON R., is in the U. S. Civil Service.

LARSON, KENNETH R., is in the U. S. Army.

LESCHIER, ROGER P., is with the Standard Oil Co. of California, San Francisco, California.

LEVANDOSKI, EUGENE J., is in the U. S. Navy.

LOEHNING, GERALD, is in the U. S. Navy.

MARTIN, PATRICK, is in the armed forces.

MORBECK, ROBERT C., is with the Standard Oil Co. of New Jersey.

OLSON, HARVEY N., is with the Standard Oil Co. of California, San Francisco, California.

OLSON, ROY C., is in the U. S. Civil Service Commission.

OPITZ, PAUL F., is with the Sinclair Refining Co.

REHM, FREDERICK R., is with the Harnischfeger Corporation, Milwaukee, Wisconsin.

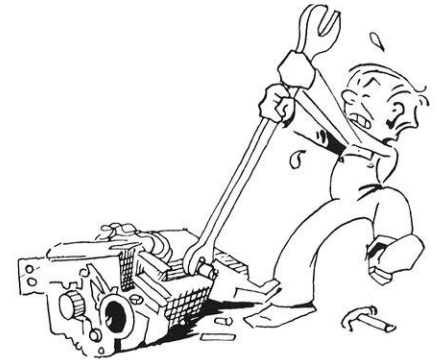
SANNA, ANTHONY Q., is employed by the Wisconsin Research Foundation, Madison, Wisconsin.

SCHULTZ, JOSEPH F., is with the

Carbide & Carbon Chemicals Corporation.

SPIEGEL, WALTER H., is with the Lockheed Aviation Corporation.

STIEG, WILLIAM D., is with the Lockheed Aviation Corporation.



TIMM, GEORGE J., is with the Carbide & Carbon Chemicals Corporation.

VAHLDIECK, NATHAN P., is in the U. S. Army Air Corps.

WEICHMAN, SIDNEY L., is with the Minnesota Mining and Manufacturing Co., St. Paul, Minnesota.

WILSON, ROBERT W., is with the B. F. Goodrich Rubber Co., Akron, Ohio.

Civils

ASHTON, CLAY GIBBS, is in the USNR, in training at Ft. Schuyler, the Bronx, N. Y.

BUNTROCK, HARVEY A., is No. 22074, Navy Training School, Ft. Schuyler, New York (61), N. Y.

DENT, ARLIE R., is with the Dravo Company of Pittsburgh. His address is 63 Danvers Ave., Ingram, Pittsburgh.

GRIBBLE, RALPH, is a reserve officer in the U. S. Army.

KITZE, FREDERICK F., is a private in the U. S. Army on duty at the University of Wisconsin.

LIPPERT, JAMES H., is with the Dravo Company. His address is 300 Ohio River Blvd., Sewickley, Pa.

MAAS, EARL R., was appointed an instructor in surveying at the University of Wisconsin, but is trying to get into service.

MATTEFS, EARL E., is with the Curtis-Wright Aircraft Company at Columbus, Ohio.

MUNSON, ROBERT L., is in training at the midshipman's school, University of Notre Dame, South Bend, Indiana. He expects to be assigned to the Civil Engineer Corps, Bureau of Yards and Docks.

O'BRIEN, WILLIAM W., is awaiting orders to report to the army.

READ, ROBERT B., is an ensign in ordnance. He completed the training at Ft. Schuyler and is continuing in Washington, D. C.

REISINGER, ROBERT L., who is a reservist in the Army Air Corps, is at present with the Sanitary Engineering Bureau of the Wisconsin Board of Health, working out of the Beaver Dam office.

SAEMANN, JESSE C., is in training for the navy at the University of Arizona, Tucson, Ariz.

SIVLEY, WALTER S., is with the Dravo Company at Pittsburgh, Pa.

STREHLOW, ROBERT W., is with the Curtis-Wright Aircraft Corp.

VIK, HAROLD O., no report.

VOGEL, MERTEN M., is with the Curtis-Wright Company at St. Louis, Mo. His address is 5221 Washington Blvd.

WILLIAMS, GEORGE A., is awaiting orders from the army.

Electricals

ARNESON, D. A., no report.

BAGUHN, A. H., is with the Allis-Chalmers Co., Milwaukee, Wis.

BELARD, M., is with the Allis-Chalmers Co., Milwaukee, Wis.

CHRISTENSON, D. L., is with RCA, Camden, N. J.

COCKRELL, J. L., is with RCA, Lancaster, Pa.

DEPEW, W. M., is in the Signal Corps in the U. S. Army.

DIEHL, R. T., is in the Signal Corps in the U. S. Army.

GAUPER, H. A., is employed by General Electric.

HEISIG, G. J., is in the radiation lab at the Massachusetts Institute of Technology.

GOLD, D., is with the Lockheed Aircraft Corp., Burbank, California.

GOODMAN, L. A., is with the Western Electric Co.

HAGESICK, C. G., is with the Westinghouse E. & M. Co.

KELAR, J., is employed by RCA, Harrison, N. J.

KNOPOW, H., is with the General Electric Co., Fort Wayne, Ind.

KOCH, D. G., is with RCA at Harrison, N. J.

KOVACS, F. M., is employed by the General Electric Co.

LAUWASSER, A. B., is with the Western Electric Co.

LOWER, J. W., is with the Zenith Radio Co., Chicago, Ill.

LYTLE, A. C., is with the General Electric Co.

MALONEY, J. E., is with Scanlan-Morris at Madison, Wisconsin.

McINTYRE, R. J., is with the General Electric Co.

McSTAY, F. W., is in the Signal Corps of the U. S. Army.

MELLMAN, E. A., no report.

MILLER, H. H., is with the General Electric Co.

MILLER, N. E., is with Allis-Chalmers at Milwaukee, Wis.

OLSON, V. A., is in the radiation lab at the Massachusetts Institute of Technology.

REEK, D. C., is with the General Electric Co. at Schenectady, N. Y.

SAMZ, C. L., is in the Signal Corps in the U. S. Army.

SCHULTZ, A. J., is with the Sylvania Corporation, Salem, Mass.

SEIDEL, A. H., is an ensign, E.V.P., in the U. S. Navy.

STRATE, D. J., is with the Manitowoc Ship Building Co., Manitowoc, Wisconsin.

THORESON, T. E., is with the General Electric Co.

TRENKAMP, A., is in the Signal Corps in the U. S. Army.

WALL, J. J., is employed by the General Electric Co.

Mechanicals

ARNDT, ROBERT E., is with the Chrysler Corporation, Chicago, Ill.

BAUER, JEROME J., is an Army Air Corps engineer.

BENNETT, HOWARD D., is with the General Motors Fisher Cleveland Aircraft.

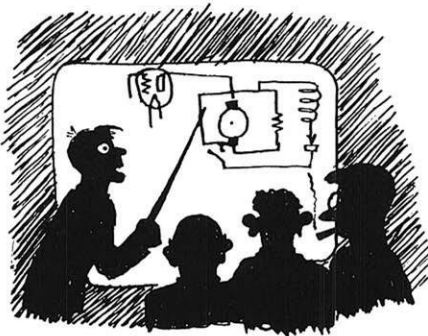
BLAKE, JOHN W., is with the General Electric Co.

BLANKENBURG, ALAN R., is in the War Department.

BORCHARDT, ROBERT E., is an instructor in the mechanics department at the University of Wisconsin.

BORKENHAGEN, WALLACE H., is with Lockheed Aircraft at Burbank, California.

BREHM, LYLE W., is with the General Electric Co.



BRENNER, HAROLD, is with the General Electric Co.

COLIZ, JAMES T., is with the Federal Telephone and Radio Corporation.

DAANE, ROBERT A., is employed by the Chrysler Corp., of Detroit, Mich.

DEVOS, DOUGLAS L., is in the U. S. Navy.

DIECKMANN, J. ROBERT, is in the U. S. Navy.

DOLNICK, SEYMOUR, is in the U. S. Army Air Corps.

DUFF, PHILIP, is employed by the North American Aviation Co.

EWALD, HOWARD H., is with the Douglas Aircraft Corp.

FRICK, HOWARD H., no report.

GEHL, RENE J., is with Lockheed Aircraft at Burbank, Calif.

GUTHRIE, ROBERT H., is with the Falk Corp. in Milwaukee, Wis.

HANSEN, FRANK A., is in the U. S. Navy.

HART, RICHARD K., is with the Pan American Airways.

HOLLOWAY, DON C., is with the Fairbanks Morse Company.

KENNEDY, DONALD S., is with the Goodyear Rubber Co.

KLEIN, JOSEPH H., is with the Chrysler Corp., of Detroit, Mich.

KORADE, RUDOLF J., is with Allis-Chalmers, Milwaukee, Wis.

KRUEGER, JAMES P., is with the Goodyear Rubber Co.

LADEWIG, FRED K., is with Allis-Chalmers in Milwaukee, Wis.

LARSON, ARNE V., is employed by the General Electric Co.

LIVERMORE, DONALD F., is with the General Electric Co.

MARTIN, PHILIP H., is in the U. S. Navy.

McGINLEY, MAINRAD, is with the General Electric Co.

MEIGS, JOHN B., is in the N.A.C.A. in Cleveland, Ohio.

MILLER, ALBERT J., is with the Pan American Airways.

NELSON, ROBERT P., is with the Pan American Airways.

PENNAU, KARL L., is with the Kimberly-Clark Co.

PETERSON, GARFIELD E., is in the U. S. Army.

PITZEN, ROMAN JOHN N., is in the U. S. Army.

REA, GEORGE A., is employed by the Douglas Aircraft Corp.

RENDALL, DAVID W., is with Allis-Chalmers in Milwaukee, Wis.

SMITZ, WILLARD B., is with Pratt & Whitney Aircraft Engines.

SPILLER, REX S., is with Lockheed Aircraft at Burbank, Calif.

TROWBRIDGE, RICHARD, is with the AC Spark Plug Co. in Flint, Mich.

UECKER, ELROY C., is with Allis-Chalmers in Milwaukee, Wis.

VIVIAN, FRANCIS J., is with the Fairbanks-Morse Co.

WILSON, JOHN P., is in the U. S. Army.

ZURN, KENNETH L., is with the Aluminum Company of America, Cleveland, Ohio.

Miners and Metallurgists

BAINBRIDGE, DOUGLAS, went with General Electric in Lynn, Mass.

BAIRD, JEROME, is with Alcoa in Mesenna, N. Y.

FRIEDMAN, RAYMOND, M.S., is in the Westinghouse Research Laboratory at Pittsburgh, Pa.

GAULKE, TOM, is employed by the Chrysler Corp. at Chicago, Ill.

PAQUETTE, DONALD, is with Pratt-Whitney in East Hartford, Conn.

RYBARCHYK, RALPH, is with the Aluminum Co. of America at New Kensington, Pa.

SLAVNEY, GERALD, is employed by Caterpillar in Peoria, Ill.

Paul Bunyan . . .

(continued from page 5)

probably noticed the large number of dogs that abound in the vicinity. Lumbermen love dogs and Paul was no exception. One night when he was out in the barn with several pups, he mistook one of them for a rat and split it in two with his short-handled axe. Paul was horror-stricken for the dog was Sport—half wolf and half elephant hound, and a pup that Paul had been raising himself on bear's milk. When he realized his terrible mistake, he swiftly pushed the two ends of the dog together and wrapped him in a gunny sack. In his haste, however, he made another bad mistake, for, when Sport was unwrapped, they found that his hind feet had been placed upside down. A mere matter of this sort was no disadvantage to a dog of Paul Bunyan, however, for Sport turned out to be the best dog Paul had ever owned. His energy was endless, for he'd run until his front legs got tired, and then turn around and run on his hind legs. Thus Paul created the famous Sport, the reversible dog. Unhappily, Sport didn't live to enjoy his full fame, for one day, while he was still a pup, he went for a walk and broke through six feet of ice on Lake Michigan and drowned right then and there.

Another famous dog of Paul Bunyan's, was Elmer, the moose hound. As it turned out, he was very appropriately named, for he had a mammoth ability to bring down mooses, or meese, as you prefer. All the cook needed to do, when the meat supply ran low, was call "Elmer, bring a moose." Immediately Elmer would disappear and just as immediately he would reappear with a dead moose. This he kept up until given the order to stop. One day, however, the cook forgot to give the "cease firing" order and as a result, Elmer overstrained himself. From that day forward, he suffered from heart trouble and finally died of a heart attack.

Difficulties of the Cooks

Up in the northern country, the demand for pancakes reaches its highest peak. To accommodate such a large demand, Paul built a mammoth griddle. It was so large that 20 colored boys, who were better able to stand the heat, skated over the griddle with bacon tied to their feet in order to grease it. The demand for pancakes was efficiently handled in this way.

The lumber camps cooks were among the most noteworthy and also the most ignored historically of the lumber camp members. Their difficulties were by no means limited to finding large enough pancake griddles, not at all! One poor fellow, for instance, worked in a kitchen so large that he got lost while going from the flour barrel to the stove. By the time they found him, just a week later, he'd nearly starved to death, for flour doesn't provide the most balanced diet.

Another cook came to his down fall the first time he tried to bake bread in the huge ovens. He'd put the loaf of bread in one side of the oven and hurry around to the

other side to remove it. Each time, it was the same—by the time the poor man got there, the loaf was burned black. It's easy enough to imagine what several occurrences of this sort can do to a man's morale.

The Mosquito Menace

Not the least of the troubles of Paul and his men were the mosquitos. These were not the degenerate half-pint size we're acquainted with today, but weighed as much as 12 to 15 pounds and usually measured 20 inches from tip to tip. A swarm of these monsters attacked Paul's camp about sundown one night, and, luckily, under the cover of darkness, the men were able to escape into the forest. Next morning, however, the mosquitos had to be driven off with cant hooks, peavies, pick poles and double-bitted axes. Noise of the terrible battle resounded for 60 or 70 miles.

Finally, the horde was driven off, and then Paul had to plan to avoid another such catastrophe. Sourdough Sam, the trusted cook, was sent down South to capture several teams of large and ferocious bumblebees with which to combat the mosquitos. Sam required all the bees to check their stingers with him, tied down their wings and brought them back on foot. He finally arrived home with his cargo intact and the bees were loosed against the mosquitos. To everyone's horrified amazement, the two kinds of insects immediately became friends, intermarried, and became doubly deadly because they now had stingers on both ends, fore and aft, and could get their victims coming and going.

This menace was overcome only when Paul sent out 100 trusted men to tap the sugar maple trees in the area. In the hybrids, the bee instinct triumphed and they hurried to attack the trees to get the syrup. The trees writhed in pain and tightened their hold on the stingers; the bees struggled to get loose and the trees again tightened their grip. With the bee-mosquitoes held fast at both ends, it was easy for Paul's men to finish them. This, incidentally, is claimed by some to be the beginning of bird's-eye maple.

History of the Legends

The beginning of the Paul Bunyan tales is shrouded in legend. A convincing argument is that they started in the lumber camps of Quebec, went down to Maine, came across the Great Lakes to the pineries of northern Wisconsin and from there went to the Pacific coast. Today Bunyan legends are plentiful here, but unfortunately some of the scenes have been transferred to the western states. To our stories, new ones have been added until we seem to believe them and accept them as part of the development of our country.

The stories have grown up as thousands of nameless lumberjacks have tried to outdo each other with the stories of the greatness of Paul Bunyan and Babe, the blue ox. And, as they told these stories over and over again, they were unconsciously building from their dexterity and ingenuity, love of romance and imagination, and greatness of the now nearly depleted American forests, an enduring tribute and memorial to the greatest lumberjack of them all—Paul Bunyan.



Symbol of Service

. . . in peace and war

This emblem is familiar throughout the nation as the symbol of a well-trained team, integrated for service in peace or war—The Bell Telephone System.

- 1.** American Telephone & Telegraph Co. coordinates all Bell System activities.
- 2.** Twenty-one Associated Companies provide telephone service in their own territories.
- 3.** The Long Lines Department of A. T. & T. handles long distance and overseas calls.
- 4.** Bell Telephone Laboratories carries on scientific research and development.
- 5.** Western Electric Co. is the manufacturing, purchasing and distributing unit.

The benefits of the nation-wide service provided by these companies are never so clear as in time of war.



ON THE CAMPUS

by Glenn Jacobson, ch'45

RESEARCH APPRENTICESHIPS

This year the Chemicals have four apprenticeships, while the Civils and the Mining and Metallurgists have one each. In the Chem Engineering Department, John W. Andersen and Bill Jacobson are working under Professor Hougen on "Advanced Chemical Engineering Thermodynamics," Jerry Beyer is working on the "Thermodynamic Properties of the Ammonia-Water System," with Professor Watson; and Al Oman is doing research on "Pressure Drops Through Granular Beds," also under Professor Watson. In the Civil Engineering Department, Gordon Jaehnig is doing research on "The Effect of Overstress in Fatigue on the Endurance Life of Steel at a Subsequent Higher Stress," under Professor Komers. Walter Wollering of the M. & M. E. is working under Professor Barker on "The Effect of Electrolytic Deposition, When Addition Agents Are Added to Electrolytes."

V-12

Prominent around the campus these days are the boys in the bell-bottom trousers — the Engineering students in V-12. They attend classes along with civilians, and on the most part take the same courses. The fellows are stationed in the new Men's Dorms, which are now referred to as Barracks. About half of the Sailors were in school here before they received their calls from the Navy. The rest of them are from all parts of the country. Those who are now freshmen are taking a special program that takes about two and two-thirds years to com-

plete. Upperclassmen will be finished in a proportionately shorter time. Upon completion of their work they will be eligible for commission in the Navy.

Besides their regular class schedule, they have calisthenics, drill and courses in naval indoctrination. In addition to all this they are encouraged to participate in extracurricular activities on the campus, providing that they do not interfere with their studies. It is evident that these engineers, who comprise about forty per cent of the school, are really working to help their country and get an education.

POLYGON SMOKER

The annual Polygon Smoker was held at the Memorial Union on Wednesday, July 14th. Representatives of the various engineering societies explained the functions of their groups, and solicited memberships. The address of the evening was given by Coach Harry Stuhldreher, athletic director at the University. He recounted some of his experiences as a member of the famous Four Horsemen of Notre Dame. After the meeting refreshments were served in the Rathskellar.

A.S.C.E.

The first meeting of the society was held on July 7th. This was a general get-together with the object of acquainting new men with the functions of the society and obtaining memberships. A motion picture was shown on the fabrication of aluminum. Refreshments were served.

The second meeting was held on the 21st. The business of the evening consisted of discussing the possibility of having a picnic in the near future. Ensign Katherine Sullivan, Public Relations Officer for the WAVES, spoke on "A Day in the Life of a Typical WAVE."

This summer the A.S.C.E. will hold two meetings a month, and in addition there is a possibility that these will be supplemented with picnics.

—Ed Kloman

FRESHMAN HONORS

These are the final averages obtained by the freshmen for the year, 1942-43.

HIGH HONOR RATE

Harris, E. A.	3.00
Johnson, D. L.	3.00
*Koetting, J. L.	3.00
Stewart, W. E.	3.00
Daub, E. E.	2.83
Blumenfeld, J. E.	2.79

HONOR RATE

Kluberton, J. R.	2.74
Brusberg, J. L.	2.72
*Ranscht, W. G.	2.71
*Day, R. E.	2.67
*Witte, R. M.	2.67
Emch, H. H.	2.62
Strohm, J. A.	2.58
*Bunn, G. B.	2.56
Garber, R. L.	2.53
Brzezinski, J. P.	2.50
Jacobson, G. H.	2.50
Rose, P. J.	2.50
Sell, R. F.	2.50
Zamzow, W. H.	2.42
Lemcke, R. H.	2.41
Donalds, J. E.	2.38
Anderle, M. M.	2.38
Hollinger, R. L.	2.38
Holmes, V. V.	2.34
*Jordan, H. E.	2.33
Dunwiddie, F. W.	2.32
Hlinak, J. C.	2.32
Kulakow, S. E.	2.32
*LeTellier, R. B.	2.31
Miller, R. F.	2.27
Peck, E. C.	2.27
Goldsand, K. E.	2.26

*Second semester only.

Boners

Gravity was discovered by Isaac Walton. It is chiefly noticeable in the autumn, when the apples are falling off the trees.

A litre is a nest of young puppies.

Sodium is not found in Ireland because it is not found in a free state.

When oxygen combines with anything heat is given off and other things. This is known as constipation.

Geese is a low heavy bird which is most meat and feathers. Geese can't sing much on account of the dampness of the water. He ain't got no between-his-toes and he's got a little balloon in his stomach to keep him from sinking. Some geese when they are big has curls on their tails and is called ganders. Ganders don't have to sit and hatch, but just eat and loaf around and go swimming. If I was a goose, I'd rather be a gander.

Explain the effect of heat and cold and give an illustration. Heat expands: in summer the days are long. Cold contracts: in winter the days are short.

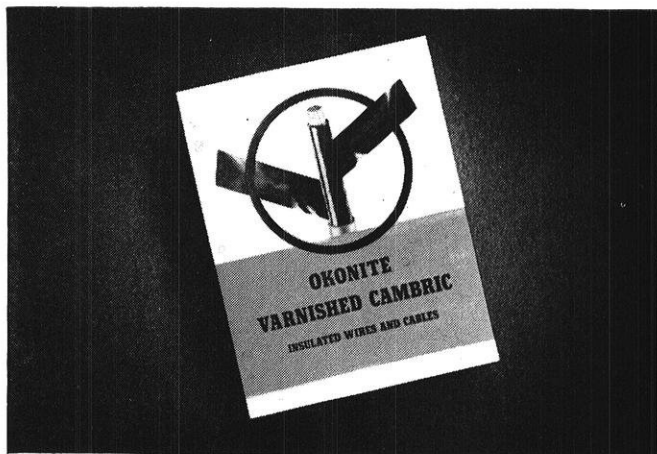
Some vitamins prevent beri-beri; some prevent scurry-scurry.

Natural immunity is being able to catch a disease without the aid of a physician.

The moon is a planet like the earth only deader.

A calf is a calf until it has a calf and then it's a cow.

It's all a matter of taste, as the old lady said when she kissed the cow.



Engineering students should know about Varnished Cambric insulated wires and cables

And here is their opportunity to get this information FREE! » Our Bulletin OK-1013, just off the press, is a complete book on varnished cambric insulated wires and cables. It contains information on savings of critical materials; a selector chart; application range; test data; protective coverings; conductor designs; current-carrying capacities; correction factors; voltage drop tables; conduit capacities; special considerations for wartime conditions and other valuable data. » We will be glad to send FREE a copy of this valuable Bulletin to any engineering student. Write for your copy to:

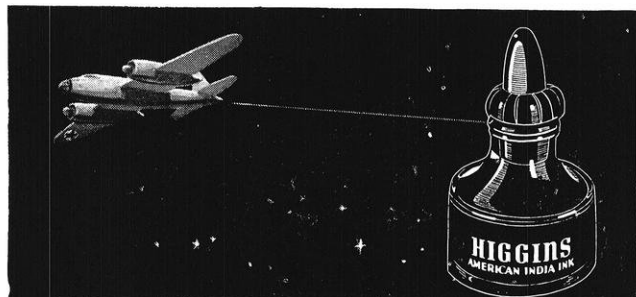
THE OKONITE COMPANY



INSULATED WIRES AND CABLES

3304

EXECUTIVE OFFICES: PASSAIC, N. J. • OFFICES IN PRINCIPAL CITIES



HIGGINS AMERICAN DRAWING INKS
Precision Inks for Precise Performance

It is not fantasy when we say this night fighter including engine, propeller and instruments was built from plans drawn with Higgins American Drawing Inks. It may have been assembled from isometric drawings made with Higgins Ink in a building erected from plans drawn with Higgins Ink and its parts were made with machine tools built from Higgins Ink designs. It takes off from an air field plotted and mapped with Higgins Ink. It lands by a radio beam from a sending apparatus the parts of which were planned with Higgins Ink and so on endlessly. • When so much depends on quality, we are proud to state that millions of users agree "Higgins" is the undisputed champion of precise performance.

HIGGINS INK CO., INC.

271 NINTH STREET • BROOKLYN, N. Y.

Greater Production from No. 12 Plain Milling Machines

Use a fixture at each end of table

Climb mill in one fixture and conventional mill in the other—one machine and one set of cutters often can do the work of two.

IBS

BROWN & SHARPE MFG. CO.
Providence, R. I.

BROWN & SHARPE

ALUMNI NOTES

by Charles Tomlinson ch'44

Mechanicals

ARENS, HERBERT C., '40, visited the campus June 25. Mr. Arens is now a senior stress analyst for the Lockheed Aircraft Corp. at Glendale, California.

BROWN, ROBERT V., '29, now of the Case School of Applied Science in Cleveland, Ohio, is the author of an article entitled, "Electronics Applied to Heat Transfer Tests," appearing in the June issue of "Electronics."

HEFFERNON, CULVER A., '42, visited some of his college friends April 8 during a week's vacation. Mr. Heffernon is a development engineer for the Linde Air Products Co. in Elizabeth, N. J. With him on his trip to Madison was his wife, the former Frances Mosley of Shorewood Hills.

KLEIN, JOSEPH H., June, '43, recently became engaged to marry Miss Lois Meng, daughter of Dr. and Mrs. Meng of Madison.

STONE, SWEN H., Feb., '43, who has been with the John S. Barnes Corp. of Rockford, Ill., since his graduation, became engaged to Miss Ruth Tomlinson, a U. W. graduate, on May 29.

Miners and Metallurgists

HARBAUGH, M. D., '23, visited the engineering college on June 10. He is now vice president and secretary of the Lake Superior Iron Ore Association in Cleveland, Ohio, and, according to himself, is doing everything other than engineering. Mr. Harbaugh is married, has three boys and two girls, and he says, "That's all!" with a very determined note in his voice.

KOLTEEN, WILLIAM, Feb., '43, who was on a U. S. Geological Survey since graduation, was recently employed by the M. A. Hanna Co. in DeGrasse, N. J.

Chemicals

BROKER, HARVEY R., '21, died recently. He was the superintendent of Wisconsin Gas and Electric Co. at Racine, Wis.

ECKMANN, KENNETH C., '42, married Muriel Griffith, a U. W. graduate, on May 29. He is employed at the Re-pauno plant of the high explosives division of the E. I. duPont DeNemours & Co. at Gibbstown, N. J.

HULTEEN, JOHN, '41, who was with Carbide & Carbon Chemicals Corp., entered the U. S. Navy as an ensign. He is stationed at Harvard in the Deck Officers School.

LONERGAN, G. P., '25, is now the manager of the Sales Promotion Department for the Bristol Co., which makes recording, indicating, and controlling instruments.

MAX, A. M., Ph.D., '37, since graduation, has been successively employed by the General Motors Corp. in Detroit, Mich., the Helene Curtis Industries in Chicago, Ill., and is now an assistant professor of chemical engineering at the University of North Dakota.

MERRY, DON, '41, is with the Carbide & Carbon Chemical Corp. working on the allocation of organic chemicals to various industries.

VASAK, OTTO R., '39, has been in the U. S. Army since July, 1941, and is now a Capt. Sq. Eng. Officer in the 508 Bomb Sq., 351st Bomb Gp.

WATSON, CHARLES, '32, Evanston, Ill., is looking forward to going into the field to help start up and operate some of the many plants U.O.P. has been designing during the past year.

WATSON, JIM, '32, is still with the Wisconsin Wire Works at Appleton, Wis., but whenever he's got a few minutes free you'll find him at his favorite lake, baiting his hook a little more carefully this year, for fishing is no longer just a sport.



WILLIAMS, GORDON, '32, secretary for a newly established section of Phi Kappa Phi at the University of Louisville, Louisville, Kentucky, reports that he is very busy with regular classes and teaching inspectors in an ESMWT course at the Curtis Wright Commando plane plant.

WISNIEWSKI, TED, '32, State Board of Health, Madison, Wis., spends most of his spare time on his victory garden. Since Mrs. Wisniewski is a local victory garden chairman, Ted has an example of perfection to achieve in his own garden for the benefit of the neighbors.

Civils

ANDRAEM, RICHARD W., and **CHRISTESEN, RUSSELL J.**, who would have graduated in June, '43, had they not been called to the armed services, are aviation cadets in training at San Antonio, Texas.

BACHMAN, CARL J., '37, is with the Arizona Division of the Goodyear Aircraft Corp. at Lichfield Park, Ariz.

BERTLE, FRED A., '42, is a draftsman with the U. S. Engineers at Camp Claibourn, La.

BREM, GEORGE F., '41, is reported to be an ensign in training at Camp Peary, Va.

DRESSER, J. GILBERT, '36, is an engineer with the Bedaux Co., Tribune Tower, Chicago, Ill.

FINNER, GLEN, '41, and **MAN-THY, JOHN F.**, '41, visited the campus on June 25. They were both recently employed by the Clinton Engineering Works located near Knoxville, Tenn.

POST, CAPT. ARTHUR L., a pilot in the U. S. Army, has been reported missing in action in the Aleutian area. He was called to the army before graduation.

ROHLICH, DR. GERARD A., '36, has been reported senior civil sanitary engineer in the water and sewer unit of the Repairs and Utilities branch office of the Chief of Engineers, Washington, D. C.

VON GUNTEN, GLENN H., '38, visited the campus on June 17. At present he is in charge of the plan and design of the Pan American Highway in Costa Rica and Panama.

VON GUNTEN, JOHN L., '33, older brother of Glenn, is a construction and maintenance engineer for the Chicago Bridge and Iron Co.

VOSS, EDWIN J., '37, is with Peter Kiewitt & Sons, contractors of Omaha. He is in Canada on a contract to transport materials and equipment down the McKenzie River.

Electricals

LINGARD, MAJOR ALDRO, '38, visited the engineering college June 4 when he was home on leave. He is in the U. S. Army Air Force and is flying in the Caribbean area.

ROSS, ALAN K., '38, who is working for Western Union at Boise, Idaho, was married in January.

M.E.S.W.

The first meeting of the Mechanical Engineers' Society of Wisconsin was held in the Memorial Union on July 20th. The meeting was called together by President Fred Graper, who explained that by consolidation of the two Mechanical Engineering Societies, it would be easier to handle activities of the Mechanicals and less difficult to obtain speakers and entertainment for the two Societies. A picnic was scheduled for August 14th. After the business meeting the film, "Target for Tonight," was shown. This is a documentary picture of the RAF. Following this refreshments were served in the Rathskellar.

POLYGON PICNIC

Polygon Board will hold a stag picnic on Saturday afternoon, August 28, for all civilian and V-12 engineers. The affair will be held at the Tent Colony, and recreation and refreshment will be baseball, swimming, and the "customary" refreshments.

The Shorewood bus line runs within ten minutes' walk from the colony, and other forms of transportation are being arranged.

The picnic will be financed by the sale of attendance tags. Look for announcements around the campus and in the engineering buildings. Let the representative from your society provide you with a passport for an afternoon of fun with your fellow engineers.

BILL HAAS, CB

Wilbur Haas, CE'45, last year's very able Campus Notes editor, is now with the Seabees with a CM2C rating. In a card to the staff he writes of rain, work, drilling and mud—and he likes it! For those of you who want to write, his address is Wilbur Haas, CM2C, Plat 5024, Area D-5, Camp Peary, Williamsburg, Virginia.

INVITATION TO THE STAFF

Most everyone on the campus is neers, the V-12 boys. Those of you fellows who have been at Wisconsin before, are no doubt familiar with

our frequent call for volunteers. Our personnel has been sadly depleted, and we now offer an honest invitation to any of you Navy fellows who have the time, to come by this time well aware of the presence of the newest group of engineers and work on the WISCONSIN ENGINEER. There are openings on both the editorial and business staffs; in fact, there's a good possibility of your getting almost any job you want.

The ENGINEER has make-up

once a month, and the staff also indulges in picnics and other not-too-scholarly pursuits.

CONTEST WINNERS

Winners of the recent "Best Articles" contest of the ENGINEER have been announced. Awards were as follows: Wilbur Haas, \$10, "The Arboretum"; and prizes of \$5 each will go to Marvin Woerpel, for "The Mad Engineer"; John Sell, "Microwaves"; and Arne Larson, "Concocting Knives."

CASE A443
Worm gear application in turret lathe.
Spindle speed 600 R.P.M.
Worm gear for power feed failed every two weeks—12 replacements in 24 weeks.
Ampco Metal Grade 18 installed. After one year, no sign of wear.

Worm Gears of AMPCO METAL Lasted 26 times longer

Resistance to the Wear of Mating Metals

The ability of Ampco Metal to outperform other gear bronzes is demonstrated in the worm gear used for the power-feed drive of a large shell-turning lathe. Alloys previously used failed after two weeks' service, but Ampco Metal, Grade 18, showed no signs of wear after a year in operation. Here Ampco Metal lasted 26 times as long as other materials—and still had plenty of service in reserve. Accordingly, the manufacturer has standardized on Ampco Metal for this application—an incident often repeated.

Ampco Metal is particularly well adapted for gear service. Its resistance to deformation under static or dynamic loading insures maintenance of original tooth contours. Freedom from scoring and galling insures the true bearing action of the worm against the worm wheel, and the resulting longer life.

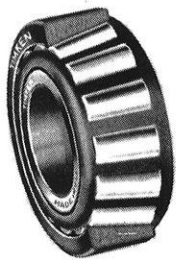
If your gear service calls for higher loading, more compact design, test Ampco Metal under actual working conditions. Find out for yourself its many service advantages. Ask for bulletin "Ampco Metal in Gears." Write today.

AMPCO METAL, INC.
DEPARTMENT WE-8 MILWAUKEE, WISCONSIN

AMPCO METAL

THE METAL WITHOUT AN EQUAL

Know your Bearings- **IMPROVE YOUR FUTURE**



The time and effort you invest now in studying Timken Tapered Roller Bearings — their design, construction and application — will pay dividends after Victory.

At present all the Timken Bearings we can make are going into war equipment of all kinds; into tanks, trucks, guns, airplanes and warships; and into the many diversified types of machines that help to make them.

When the war ends and the reconstruction period begins, Timken Bearings again will be requisitioned for peace-time transportation and industrial equipment; thus the knowledge you gain now will enable you to meet any and every bearing condition you may encounter in the future; for Timken Bearings have everything it takes to do a complete bearing job — ability to eliminate friction; to carry radial loads, thrust loads or both together in any combination; and to hold moving parts in correct and constant alignment.

Learn to know your bearings; you'll find this one of your most valuable assets no matter what kind of mechanical equipment you may be designing. The Timken Roller Bearing Company, Canton, Ohio.

TIMKEN
TRADE-MARK REG. U. S. PAT. OFF.
TAPERED ROLLER BEARINGS