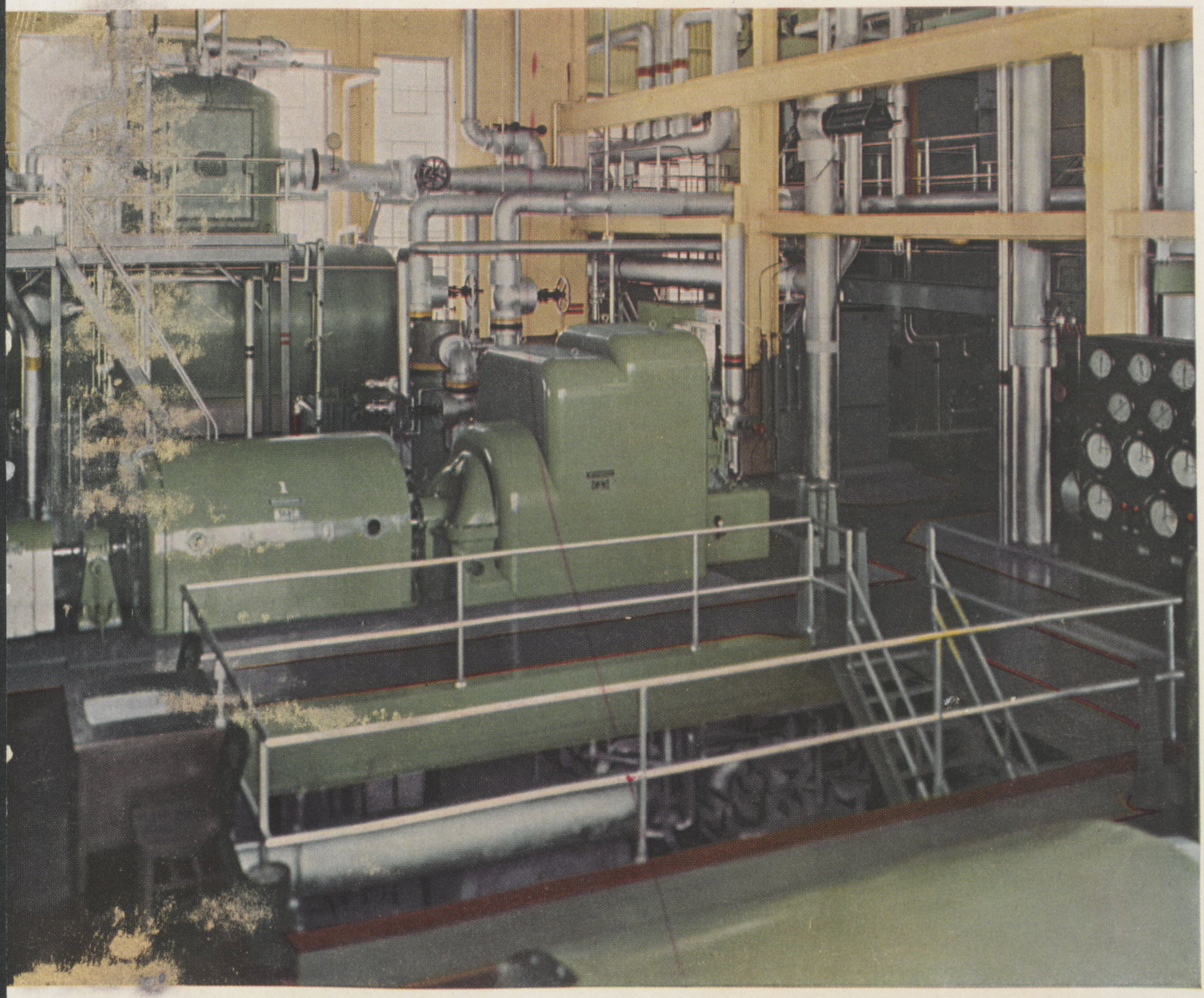
Spring 5-1946

# Volume 56 - Issue 10 - May, 1946

Rose Technic Staff
*Rose-Hulman Institute of Technology*

# ROSE TECHNIC



MAY, 1946

MEMBER ENGINEERING COLLEGE MAGAZINES ASSOCIATED

"GIVE — FOR A GREATER ROSE."

• FIRST PUBLIC APPEAL IN 25 YEARS •

# ROSE POLYTECHNIC INSTITUTE

## EXPANSION FUND

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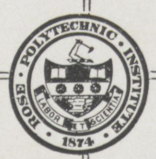





My fellow friends of Rose:

While gifts are sought for many purposes today, few of them have, what I may term, "better investment" characteristics than a gift to the Rose Expansion Fund. The yield is constant and increasing. Every boy who attends Rose adds to your investment, increases your dividends. He adds his strength to the alumni, his energy to some industry, his interest to some community. He is actually a capital asset, whose lifetime earnings will probably range between $150,000 to $200,000 if he lives until sixty.

His brains and energy create the new and usable things that make the world better for all of us. Thus by giving to the Rose building fund we are all turning out a better product--the best human product.

The Board of Managers not only serves the college without pay but contributes to the expansion fund just as you do. We are obligated for your sake, and to Rose, as a community college, to cite the school's needs and to keep it abreast of other schools of its class and type.

We offer the citizens of this community and all Rose alumni the opportunity to share with us the privilege of making this expansion program possible.

We are confident you will help make it a happy reality.

Faithfully yours,

Paul N. Bogart

Paul N. Bogart, President
Board of Managers

AMOUNT NEEDED • • • $600,000

# THE ROSE TECHNIC

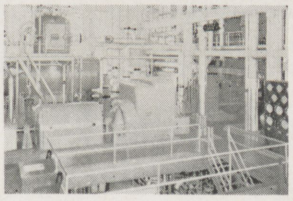
VOLUME LVI, NO. 10 MAY, 1946



## IN THIS ISSUE



### COVER



Main turbine room at the Quonset Point, R. I., Naval Air Station showing the application of "Color Dynamics" in painting the interior.

—Power Plant Engineering

### FRONTISPIECE

Transformers installed in the face of the power house at Boulder Dam.

—General Electric

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## MAIN STREET'S RAINBOW *glows at night*

The glow that brightens night-time Main Street owes its sparkle and brilliance to rare gases that exist in the air we breathe. Neon, argon, krypton and helium used in so-called "neon-tube" signs create a range of colors that pale the rainbow—a brilliance that vies with the sun.

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# Fraternities

IN RECENT months the public has had forced upon them many magazine articles stating the terrible dangers, conditions, and wrongs that are brought about by the fraternity and sorority system in our colleges and universities. The objections have been taken that too many such groups sponsor drunken brawls, foist physical and mental torture upon their pledges, restrict the individuality of members by forcing them to vote certain ways in campus elections, and that the psychological effect on students not invited to join is enough to ruin their entire lives.

Let us study these points separately. *First,* the alcoholic parties and the torture inflicted on pledges. It is true that such conditions have existed in the past, and that they are still carried on by many chapters, but they are dying out. The national headquarters and national conventions of many fraternities have been outlawing these practices in recent years, and much good has been done by the undergraduate chapters themselves in stamping them out. No self-respecting organization should permit such abuses, and within a few years they will probably be done away with entirely.

*Second,* the restraint of individualism. All our lives we are being restrained by society by being made to conform to the will of the majority. When we examine the situation in this light, we see that the check which fraternities and sororities place upon their members is not harmful, but rather, it helps the individual to prepare for life as it actually is.

However, fraternities and sororities have no business attempting to control politics. Such control is not only an unhealthful condition for the school as a whole, but also harms the members of the group in control by giving them a snobbish and "better than the other fellow" attitude. Competition among fraternities should be on a scholastic and athletic basis, and not based on control of politics.

*Third,* the effect on the student who is not invited to join. Everyone has learned since babyhood that everything desired cannot be obtained. The fact that he cannot get into a fraternity (or, in the case of a girl, a sorority) is just another manifestation of this law, and a man or woman of college age should be mature enough to realize this and to make the most of their lives in spite of it. Membership in a fraternity or sorority does not insure success in school or in later life, nor is it a great contributing factor toward success.

It must be admitted that statements which hold true at Rose may not hold true at larger educational institutions, because here at Rose practically anyone who wishes to join a fraternity is able to do so. Also, the local situation is one which does not require a man to become a fraternity member in order to be a popular fellow or to hold responsible positions in student organizations. Naturally, most of these positions will be held by fraternity men because it is the men who are able to assume responsibility that the fraternities rush the hardest.

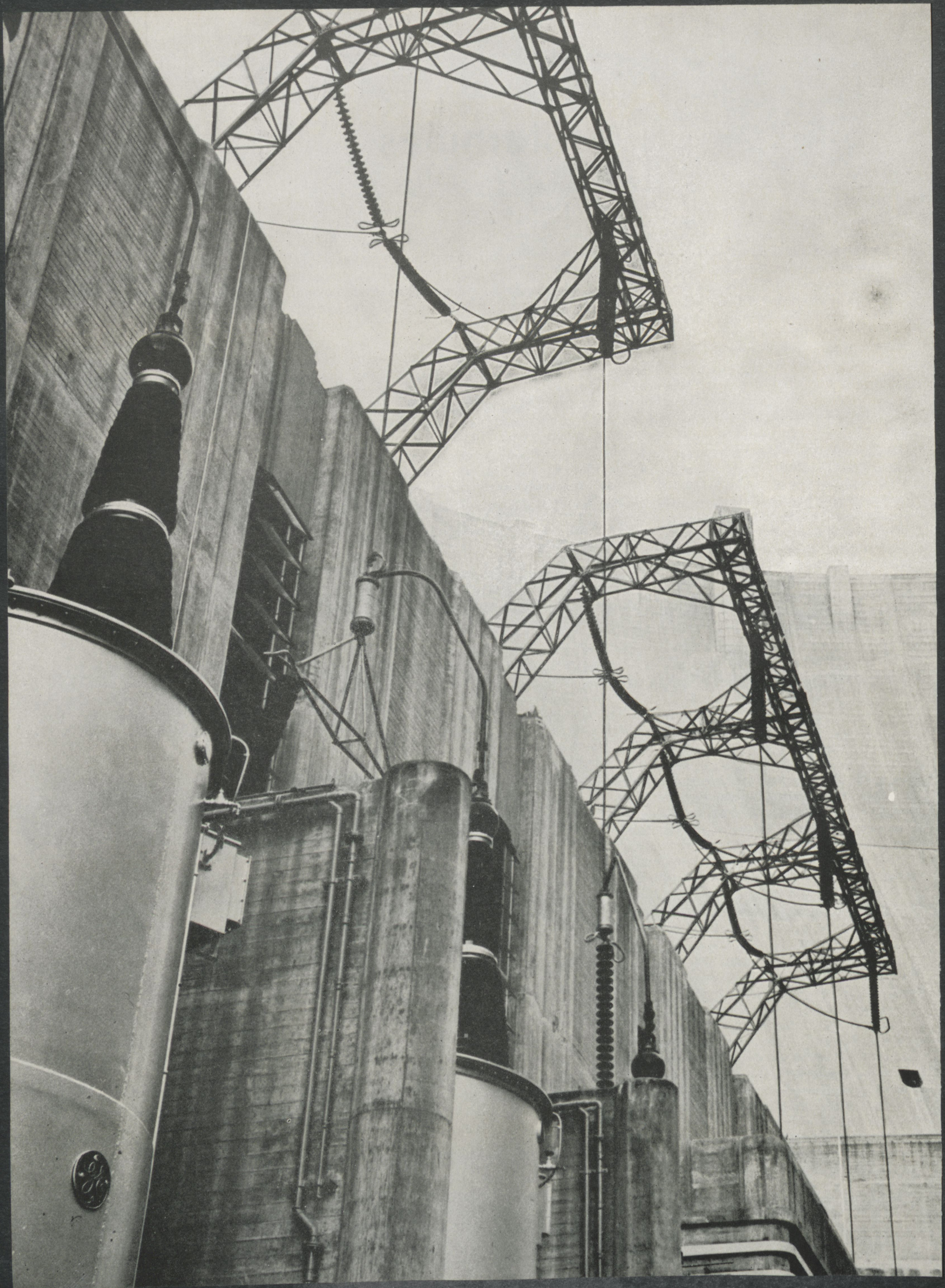
The points favoring the fraternity and sorority system are that these organizations teach their members how to live together on a basis of mutual cooperation and understanding, how to meet together in a group governed by parliamentary procedure and accomplish things in a businesslike manner, how to associate together in social activities such as stag smokers, banquets, dances, etc., and finally they teach their members the value of lasting friendships. Friendship should be the deciding factor in fraternity relationships, even as the word *fraternity* itself signifies friendship. In addition, most fraternities have definite scholastic requirements, and many have instituted study programs for their members and pledges.

Many of these desirable things can be secured through other campus activities, but the fraternity is the only one that seals the ties of *close* friendship and brotherhood. During the war this became very apparent as men left college and went into uniform. All over the world, when fraternity men met, there were new friendships born. It is interesting to note that many of these friendships were of an interfraternity nature.

It is revealing to note that those who are now opposing fraternities are not fulfilling the true functions of critics, for the true critic not only condems a situation but also suggests a solution. The urge of young people to band together, "to belong", is so great that if fraternities and sororities should be banned, they would be replaced by unrecognized clubs, secret societies, and the like, which would be extremely hard for administrative officers to control.

Fraternity membership is not an essential in college life, but generations of students have found it very desirable. When the eccentrics who talk about the wrongs of fraternities have something better to offer, it will then be time to consider their ideas of a change. Thus far, they merely want to abandon a system that has taken more than a hundred years to build up, and in abandoning it they toss out its good points without solving the bad ones.

TED BLICKWEDEL, sr., ch.e.



# Air Conditioning

By Keith Sutton, sr., m.e.

THE term *air conditioning* has been used to cover so many different concepts that a lack of clarity exists as to what is meant by the term. Complete air conditioning implies the creation and maintenance of conditions of temperature, humidity, purity, and air circulation to produce desired effects upon the occupants or upon the materials that are handled or stored. The control of these factors within required limits to permit the best product yield can be called air conditioning.

The term *summer* air conditioning and *winter* air conditioning have come into use. They imply the cooling and dehumidifying of the air in summer, and heating and humidifying of the air in winter, in either case providing for circulation of the air. Sometimes air cleaning is included. Although these terms are used, it should be understood that air conditioning is independent of season and should function effectively under normal extremes of weather. Unless modified, the term air conditioning should mean complete air conditioning only.

The term air conditioning probably was first employed to describe the process of humidifying the air in textile mills to control static electricity effects and reduce breaking of fibers. In winter, when air was hot and dry, static charges produced by dry moving threads caused the dry threads to become brittle and frequently break. Humidifying or adding moisture to the air reduced or eliminated these difficulties and gave air conditioning its first real attention.

It was thought that if air could be moistened in winter it might be possible to dehumidify the air in summer so as to control absorption of moisture and consequent variation of size and weight of moisture absorbing materials. Weight change is great in certain cases. Cotton, for example, may change in weight as much as twenty-five per cent on account of extreme humidity variation in the atmosphere. When such products are bought or sold, humidity control may mean the difference between profit and loss to a manufacturer.

In 1911, Willis H. Carrier made available to the engineering profession methods for performing air-conditioning computations. The early pioneering of Mr. Carrier and others started a demand for control of moisture conditions in industrial plants.

Moisture can be quite easily introduced into the air by evaporation, but removal of surplus moisture is more difficult. One method is to employ refrigeration to chill the air so that moisture capacity of the air is reduced and surplus water vapor condensed. Water removal by condensation is illustrated by the formation of water on a glass of cold water. This process was used chiefly by refrigeration concerns, ice manufacturers, breweries, and meat-packers.

In meat-packing, and even in home refrigerators, this process is not always desirable. Moisture is drawn from the products and deposited on cooling surfaces. This makes frequent defrosting necessary and lowers the quality of the products.

The creation of conditions for personal comfort started from industrial air conditioning. Concerns which used refrigerating equipment diverted part of their chilling water to the office by drawing air through a spray of the chilled water. Cooling of the air caused moisture to condense and thereby summer cooling and dehumidification were accomplished.

When larger cooling loads, such as in theatres, became common, different refrigerants had to be used. Ammonia, without special precautions, could not be employed safely within buildings. Carbon dioxide could not be used easily because of the high pressures and cool condensing water required. However, about 1920 new refrigerants came into use, among which was methyl chloride.

Water is employed in one way or another in nearly all installations of air conditioning. It is employed not only as a heat conveyor but is sometimes used as a basic refrigerant itself, as in steam-jet refrigeration on railway cars and buildings.

More and more the apparatus for heating and ventilating buildings is employed the year round. This trend is noticeable in the revival of hot-water heating, where, using mechanical circulation of the water, the same equipment can circulate cold water for summer cooling. Air ducts that carry warm air in winter can carry cool air in summer and convectors can be used in winter and summer.

Radiant heating is coming more and more into use, where large areas

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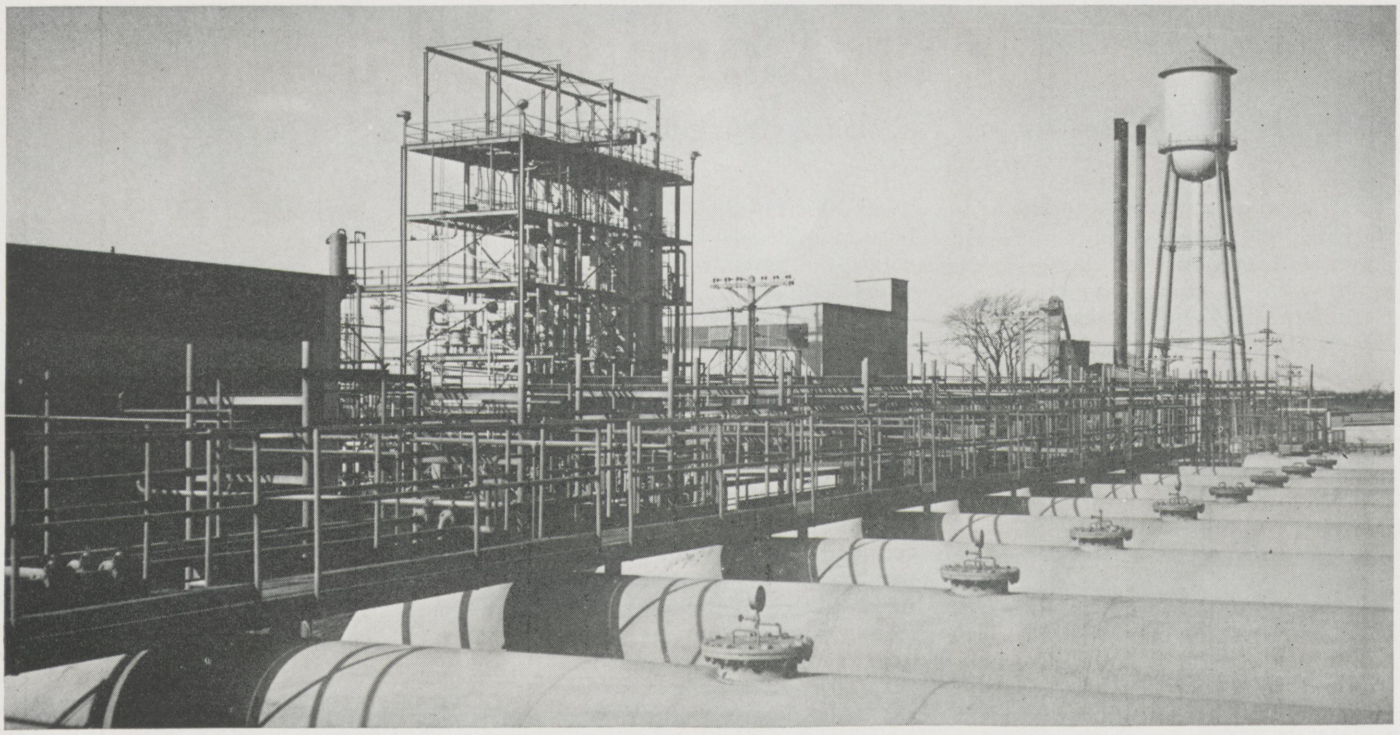
**Paper testing laboratory of the International Business Machines Corporation. Air Conditioning maintains the constant climatic conditions necessary in such work.**

*—Niagara Blower Company*



The Dow Corning silicone factory at Midland, Michigan.

# Silicones

By Robert G. Bannister, sr., ch.e.

Cuts Courtesy Westinghouse

ENGINEERS have long sought for insulating materials which have the ease of application of organic compounds and also possess the insulating qualities and heat resistance of inorganic compounds. Silicon compounds were among the first to be examined for these characteristics, since they compose a large number of common insulating materials, such as glass and asbestos. Although these common materials are hard and brittle, it is a well-known fact that silicon is related to carbon and can form certain compounds highly analogous to organic compounds. Silicon and carbon can also be combined with hydrogen and oxygen in various ways to produce an intermediate class of compounds which have characteristics of both organic and inorganic substances. Within the past few years such organo-silicon products, better known as *silicones*, have undergone a large-scale commercial development. Although originally developed for use in high-temperature insulation, they are now also used for many other purposes, ranging from lubricating agents to rubber substitutes.

**Chemistry of Silicones**

The silicones are prepared commercially by reacting silicon tetrachloride, $SiCl_4$, with a Grignard reagent, RMgCl, where R represents any hydrocarbon radical. The first product is a mixture of hydrocarbon-substituted chlorides:

$$n\ RMgCl + SiCl_4 = RSiCl_3 \text{ or } R_2SiCl_2 \text{ or } R_3SiCl + n\ MgCl_2$$

These silanechlorides are separated by distillation and are then hydrolyzed to silanols as follows:

$$R_2SiCl_2 + 2H_2O = R_2Si(OH)_2 + 2HCl$$

Upon further treatment the silanols polymerize by losing molecules of water, forming chains:

$$n\ R_2Si(OH)_2 = (\text{-}SiR_2O\text{-})_n + n\ H_2O$$

By varying the polymerization conditions and the concentrations of the various silanols, it is possible to vary the molecules of end product from small short-chain molecules to extremely long molecules containing thousands of organo-silicon oxide units, and the degree of cross-linkage between the chains may also be varied greatly. The resultant products may therefore take such different forms as thin fluids, viscous liquids and greases, and resinous or rubber-like solids.

**Production of Silicones**

As prepared by the Dow Corning Corporation at Midland, Michigan, the silicones require four basic raw materials: sand, brine, coal, and petroleum. Silicon tetrachloride is prepared by heating $SiO_2$ (sand) with carbon (coke) and chlorine from the brine:

$$SiO_2 + 2C + 2Cl_2 > SiCl_4 + 2CO$$

The Grignard reagent is made by reacting organic chlorides prepared from petroleum hydrocarbons and chlorine from brine. The remaining chemical reactions are carried out as previously discussed. The final polymerization reaction can be modified in a number of ways to produce the various types of silicones.

The General Electric Company

is now producing silicones by a somewhat different process. In the General Electric process hydrocarbon halides are passed over metallic silicon at 300°C in the presence of copper. The organo-silicon halide thus formed is then hydrolyzed and polymerized as in the Dow Corning process. The General Electric process is more direct and more economical for certain compounds than the Dow Corning process, but it is not as easily varied in the use of different hydrocarbon substituent groups and is less easily controlled in the degree of substitution than the Grignard reaction used by Dow Corning.

**Properties of Silicones**

By varying the degree of polymerization, silicones may be varied from highly mobile liquids to solids, with many possible types of intermediate compounds. In general, however, silicones may be divided into the three interrelated classes of resins, liquids, and rubber.

All silicones share the common characteristics of great stability towards heat and resistance to water. These properties can be explained by a consideration of a typical silicone molecule. The resistance towards heat is due to the great strength of the silicon-to-oxygen bond in the silicone chain, which is about half again as great as the strength of the carbon-to-carbon bond in organic compounds. Silicones therefore remain stable at temperatures at which organic compounds are decomposed. The characteristic of water resistance is due to the ring of hydrocarbon radicals which surround the silicon-oxygen-silicon chain linkage. The silicones present a hydrocarbon surface to water similar to that of the organic paraffins, which are very insoluble in water.

**Silicone Liquids**

Liquid silicones were the first of the silicone family to be put into commercial production. They are straight-chain molecules which vary from extremely fluid short-chain silicones (about as thin as water) to viscous semi-liquids composed of molecules containing thousands of silicon-oxygen-silicon units. These silicones are water-white, odorless, and inert. One of their most useful characteristics is the nearly uniform viscosity of a given silicone liquid over a wide temperature range, usually much less variable than the best grades of hydraulic oil. These liquids tend to have extremely low freezing points and high boiling points. In the case of one liquid of approximately the same viscosity of water, the freezing point is —125°F and the boiling point is 300°F.

Because of these unusual characteristics, silicone liquids will prove useful as lubricating and hydraulic fluids under extreme conditions of heat and cold and where wide fluctuations in temperature may occur under operating conditions. They are also superior to other fluids in that they do not discolor or form sludge under extreme conditions and do not damage plastics, metals and alloys, or natural or synthetic rubber. They are strongly resistant to chemical attack by oxidizing or reducing agents, salts, mineral acids, and alkalies.

Glass and ceramic insulators for electrical equipment are now being treated with silicones to eliminate short circuits caused by films of moisture. Insulators so treated have a highly water-repellent surface which keeps the water in the form of droplets and prevents formation of continuous films even under extreme moisture-condensing conditions. A similar treatment may be applied to articles of glass, paper, cotton, tarpaulin, and other materials to provide resistance to water.

Silicone fluids have been employed as a lubricating agent in injection-molding operations to prevent the adherence of molded parts to the die, thus eliminating breakage in the molded pieces upon opening the die after the molding operation. Silicone fluids are also used as diffusion-pump liquids, as damping fluids in many important precision instruments, as an impregnating material with such materials as asbestos, as an anti-foaming agent for lubricating oil in Diesel engines, and as a polish for windows, eyeglasses, and optical glasses. Many other uses are also being developed for these versatile fluids.

Another silicone family somewhat related to the silicone fluids is the group of silicone greases. These are translucent greases of the consistency of petroleum jelly produced by allowing a greater degree of polymerization than in the silicone fluids. Silicone greases possess the unusual property of retaining approximately the same consistency from —40°F to 400°F, differing widely from organic greases, which usually melt at high temperatures and solidify at low temperatures. These properties have led to the use of silicone greases as a lubricant for stop cocks and pressure - lubricated valves. Other greases now being developed are used for lubricating ball and roller bearings.

A special type of silicone greases is being used as an ignition sealing compound in military airplanes. This compound prevents arcing between high-voltage ignition cables at reduced pressures in high altitudes by filling up the space between the cables. Because of its high electrical insulation qualities and its resistance to moisture, it is an excellent protection against arcing. The compound is also being applied to spark-plug wells and other parts of the aviation-engine ignition system, and its use is being extended to radio and radar systems. Due to the wide

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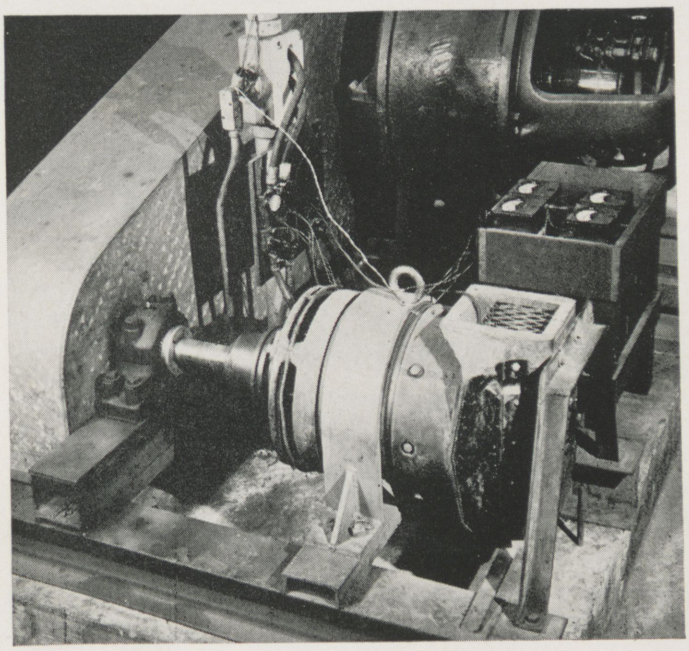


**This traction motor equipped with silicone insulation has withstood the equivalent of over 400 years' operation at normal temperatures.**

# Prefabricated Housing

By John W. Price, soph., m.e.

UNTIL the principles of prefabrication were introduced into the building industry a little more than a decade ago, there had been only very small changes in the method of house construction in over a century. Parts of this method had become even traditional. Houses, though usually sturdy, were not always logically planned. While the prices of other commodities had been lowered as engineering found new and better materials and methods of fabrication, housing costs had not decreased in all these years. In fact, building costs had actually risen.

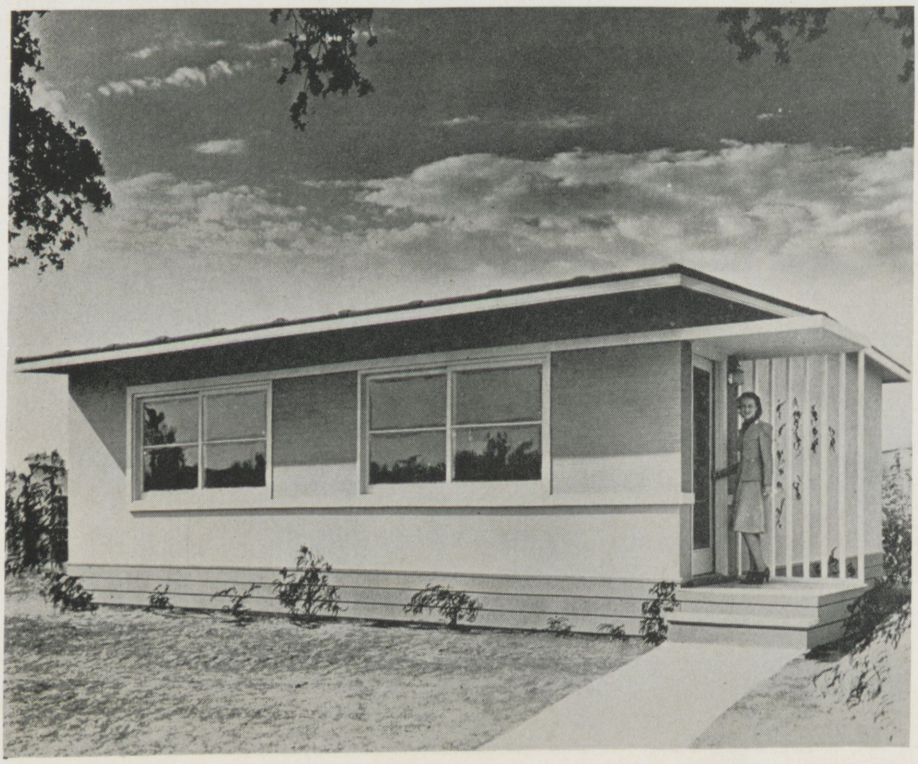
Early prefabricators, seeing what Henry Ford and other manufacturers had done to the automobile industry, believed that mechanization might do the same for the housing industry. It was the idea of low-cost homes that set the first prefabricators to work. From this work has evolved three essentially different methods of prefabricating houses: the pre-cut method, the unit method, and the package method.

In the pre-cut method the manufacturer usually utilizes a mill near the building site. Beams and members are cut to prearranged standard dimensions near the site. This method is often employed where a large project containing many dwellings is under construction. Though respective rooms in each dwelling often have the same dimensions and the foundations may be similar, some variation of design can make the appearances of the houses different. Standardization, economy and variability of design are qualities of this method.

The plan is adaptable to many building codes and usually does not meet too much opposition from local labor groups. Where unexpected circumstances arise, changes in plans can be made on the spot. Many war housing projects were made by this method, using men and materials near at hand. Some of these projects are going to be hard for the prefabrication industry to live down. This is, however, not necessarily due to their pre-cut method of construction.

Two of the leading systems of the unit method of prefabrication are the type used by the TVA for workers' housing and the Yountz System of prefabrication, developed and tested at the University of Michigan. These units are eight feet wide and sixteen to twenty feet long. There is sufficient floor area in each unit to place some entire rooms; larger rooms require two units placed side by side. The utility unit, in which is assembled all heating and plumbing equipment, forms a nucleus of all plans. It includes a complete bathroom, a small laundry, a hot water heater, a kitchen sink and cabinet, a refrigerator, and a compact furnace. The work space for the kitchen is provided in an adjoining unit. Plumbing is beneath the floor, accessible through a panel in the floor of the laundry, where the service connections are made.

Basically, the structural system is one of four corner posts and lintel frame with walls of standardized, inter-changeable, non-load-bearing panels. Roof loads are carried by 2″x12″ girts resting on corner posts. All floor and roof panels, as well as the erected walls, are factory made. The units are placed side by side, end to end, or side to end. They are easily attached together by hidden bolts accessible throughout each unit, which make for a solid, durable structure. A skilled foreman and a small crew of workmen can erect the house in a few hours. Because of the flexibility and adaptability of the system, houses of various sizes and facilities can be constructed by adding units or rearranging the basic units. A couple might start housekeeping with an initial investment of $2,000. Additional units cost $350 to $450. Units can be delivered via the highway without special traveling permits.



**Attractive houses made of plywood are light and easy to ship to the place where they will be assembled.** *—Science Service*

The package method of prefabrication probably approaches nearest to employing asembly-line, mass production methods. In this process a package is made up at the factory which contains windows with frames and fixtures, or doors with frames and fixtures, or a complete staircase, or wall sections of standardized dimensions. The stressed-skin process of construction is often employed, although the package method appears adaptable to a variety of designs constructed in several ways.

The Gunnison Housing Corporation, using a stressed-skin process and actually utilizing a conveyor belt, manufactures several sizes of Cape Code syle houses. Large wall sections of improved, bonded laminated wood are used extensively in Gunnison's plans. The proper number of these wall sections, windows and doors are packaged and shipped along with the correct amount of roofing, insulation, nails and miscellaneous materials. One average size house fills one box car. It is planned that an authorized local dealer will have a trained crew of men to erect each house in a week or ten days. The completed job will include installation of plumbing and heating equipment, landscaping and even a thorough cleaning of the house, making it possible for immediate occupancy.

Mr. Fred Keck employs the package method to build his famed Solar House. Standardized panels are used throughout the structure. A panel containing a door has the same dimensions as a panel containing a window or a wall panel. Panels can be inter-changed easily when a new arrangement of the home is desired by the owner. The house is oriented so that its south side has a row of large picture windows. These windows are arranged so that they are shaded in the summer, yet allow enough sun rays to enter in winter to heat the house comfortably even when the temperature outside is below zero. Radiant heating is also installed in case of a cloudy sky.

**Complete roof panels can be placed on or removed from a prefabricated demountable house.** *—Science Service*

Mr. R. Buckminister Fuller utilizes the package method to dispense the Dymaxion Dwelling Machine. This house will be manufactured on an assembly line in a large aircraft factory at the rate of 200 a day if present plans are followed. It will be shipped in a steel can of 300 cubic feet capacity. It will be packed in reverse order to make erection simple. There are only 50 different types of parts. The complete house and container, except for kitchen equipment, weighs about 8,000 pounds. Eight units fill one box car during shipment. The design of the dwelling shows a complete departure from the past in house planning. The entire weight of the house is suspended from a central mast of stainless steel. With a full snow load and 100 people in the house there is still a safety factor of 5 to 1. The dwelling will withstand a 120-mile-

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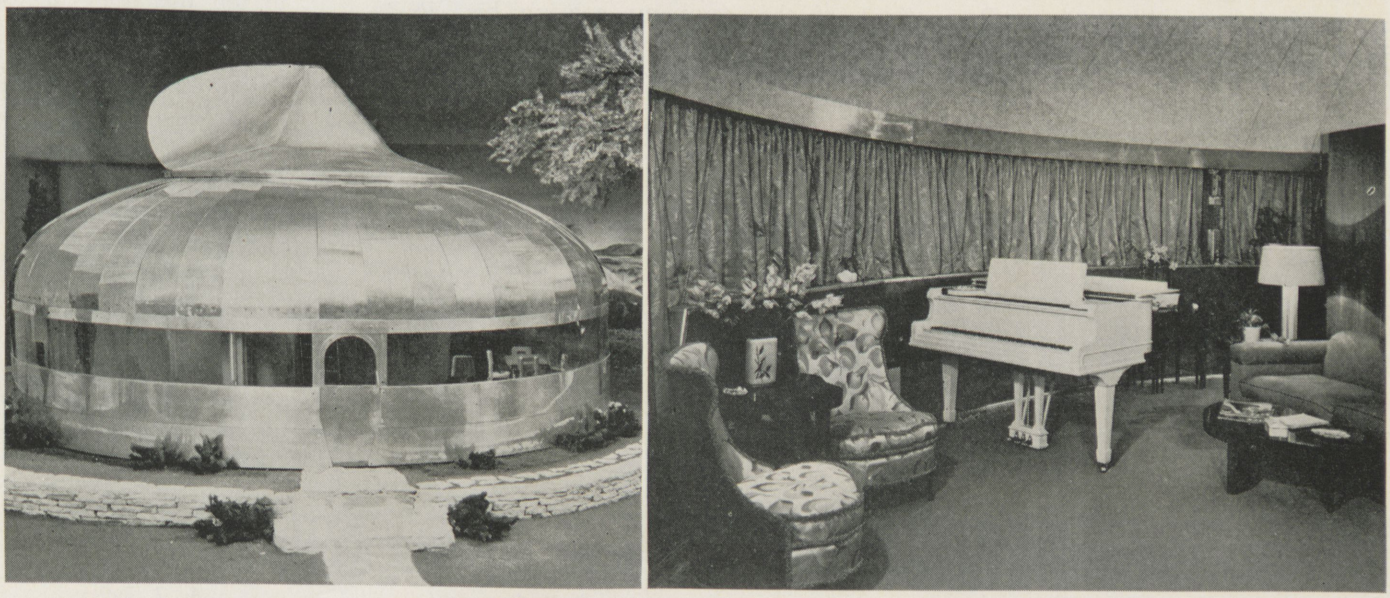


**The Fuller House is unconventional in outside appearance (left), but attractive and practical on the inside (right).** *—Fuller Houses, Inc.*

# Progress In Expansion Program

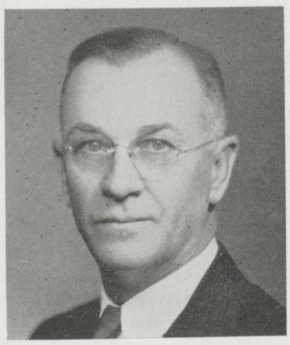
## Leaders Chosen as Campaign Gets Under Way

The community of Terre Haute and the alumni of Rose Poly have joined forces to raise the sum of $600,000 in the next thirty days for the construction of an urgently needed dormitory and a field house with adequate athletic and recreational facilities for the growing student population on the 125-acre campus. According to those in a position to judge, there has rarely been a time in the history of the community when the top leadership in business, industrial, and commercial enterprises have expressed such enthusiasm and determination for a cause as has been evidenced in the New Building Fund campaign for Rose.

"This has been no accident," pointed out Mr. Paul N. Bogart, president of the Board of Managers and head of the Merchants National Bank of Terre Haute. "When official announcement was made that an appeal was to be made among the people of Terre Haute and the alumni, the reaction was 100% favorable and enthusiastic," declared Mr. Bogart. "Heads of businesses came forward with voluntary contributions to the Fund and offers to serve on committees long before the board was ready to go into action. No single leader asked to head important committees refused. On the contrary, each considered it a privilege and a duty to help make this expansion program a reality."

Two of the leaders were announced in mid-April (see *Rose Technic*, April, p. 10). Dr. John White, retired professor of chemical engineering and prominent in all Rose Polytechnic activities over the past forty-three years, readily accepted the general chairmanship of the campaign. John E. Bernhardt, '08, Bridge Engineer for the Chicago and Eastern Illinois Railroad, immediately agreed to become the chairman of the Alumni Division. Sterling H. Pittman, '22, current president of the alumni association, is the chairman of the Public Information committee, taking time from his partnership business, Collins and Pittman, to aid in the campaign until the $600,000 goal is reached.

Anton Hulman, Jr.



Charles C. Newlin

Charles C. Newlin, prominent realtor of Terre Haute and father of two Rose Polytechnic students, heads the general divisions of the campaign which will carry out the solicitation of commercial and professional establishments in the community. Anton Hulman, Jr., president of the company bearing his name and widely active in industrial activities throughout Terre Haute, is the leader of 80 top executives of the community constituting the Advance Gifts Committee. This latter committee has been responsible for the large gifts from local corporations and individuals. It was the beneficence of Mr. Hulman's father and uncle which made possible almost thirty years ago the gift of the magnificent 125 acres of rolling countryside that is now the Rose campus. In traditional manner "Tony" Hulman, as he is known about the campus, is taking a deep and personal interest in the success of the campaign.

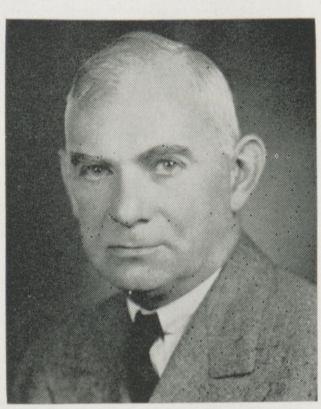
Meanwhile, the efforts of the alumni of Rose are developing strong support among old grads to help make the expansion program a reality. In fifteen cities where Rose Tech Clubs are organized a chairman has been appointed, and, together with working committees, meetings are being held to tell the story of the urgent need for generous giving from alumni.

"Carrying their full share" has

W. S. Hanley
Tyler, Texas

Wm. H. Junker
Cincinnati, Ohio

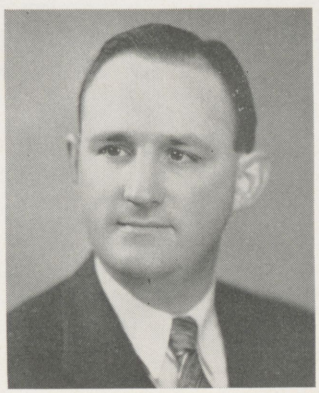
J. H. Overpeck
Pittsburgh, Pa.



A. G. Butler
Pittsburgh, Pa.

C. L. Davison
Philadelphia, Pa.

Edwin S. Booth
Chicago, Ill.



C. P. Watson
Louisville, Ky.

Sterling H. Pittman
Terre Haute, Indiana

become the byword of the alumni, who are seeking a subscription from every Rose alumnus. Pointing out the possibilities of large gifts from the alumni, Chairman "Doc" White revealed the "deferred payment" plan approved by the Board of Managers. Subscriptions to the New Building Fund may be spread over 25 months, allowing partial payment during three tax years, according to the plan. This allows contributors to pay out of income and at the same time permits income tax deductions in each of the three years during which payments to the Fund are made.

Rose is a privately-endowed engineering college and draws no grants or subsidies from the community or State of Indiana. It is a non-profit institution and has no surplus funds from which to draw for building purposes. It must depend on the generous and friendly interest of its alumni and friends in the community and among corporations for the needed amount to realize this expansion program.

Memorial units have been developed in both the proposed new dormitory and the field house whereby donors may establish the name of some person in perpetual memorial by providing for the cost of any individual unit. These units range from $1,500 for a dormitory room to $50,000 for the gymnasium in the field house. Details of these Memorial units are described in the booklets mailed to all alumni and interested friends of the college.

Following are the names of the chairmen of committees in Tech Club cities whose names were available at the time of writing:
Edwin S. Booth, '27, Chicago
William H. Junker, '21, Cincinnati
Walton W. Woody, '14, Cleveland
Chesleigh Gray, '13, Indianapolis
Clay P. Watson, '24, Louisville
John W. Moorhead, '25, New York
Robert T. Mees, '31, Peoria
Clarence L. Davison, '16, Phila.
Arthur G. Butler, '10, and
Jay H. Overpeck, '16, Pittsburgh
Claude M. Gray, '21, St. Louis
Raymond P. Harris, '29, Terre Haute

In other areas, the following alumni will head local efforts within statewide districts:
William E. Baker, '11, Evansville
Clarence F. Carlisle, '16,Kansas City
Guy V. Woody, '09, Milwaukee
Sam P. Stone, '16, New Orleans
T. L. Lee, '09, Rochester
Max L. Mitchell, '40, North-South Carolina
W. S. Hanley, '05, Texas
Howard C. Taylor, '07, Buffalo

Together with working committees, the above men will represent the Alumni Division totalling 300 Rose men who will call on other alumni to secure their contributions to the campaign.

"Rose men in service are being advised of the progress of the campaign," Bernhardt stated. "But we hardly have a right to expect sizable gifts out of servicemen's pay. But the gifts from many men still in the army and navy already indicate the attitude of these men who received their engineering training at Rose."

Those interested in the campaign should contact any of the volunteers previously mentioned or write directly to Campaign Headquarters, *Rose Polytechnic New Building Fund,* Deming Hotel, Terre Haute, Indiana.

Raymond P. Harris
Terre Haute, Indiana

R. T. Mees
Peoria, Ill.

W. E. Baker
Evansville, Ind.

Claude M. Gray
St. Louis, Mo.

# Radio Commercials

By E. James Hegarty, '45

Reprinted from ROSE TECHNIC, Feb., '44

**E. James Hegarty, a staunch pillar at Rose Polytechnic Institute for many years, has written numerous witty paragraphs, but the following satire condemning Commercial Advertising is Hegarty at his best.**

**Although read only by a limited audience, Hegarty's writings can be compared with those of such notables as Artemus Ward, Ring Lardner, and Mark Twain. His compositions full of sardonic wit offer a few moments of pleasant deviation from the dull road of routine reading.**

**At the present Mr. Hegarty is serving in the U. S. Army Corps of Engineers, but even in this capacity an embryo for future writings may be developing in his fertile brain. Until that time we can offer you only a few reprints of his past work.**

NOTE: *The editor challenges any would-be humorist to match the following satire. Any composition accepted will be printed in the Technic and full credit given the author. The article should be original in presentation, and one which stretches the imagination to the utmost. America needs more of this type of writing, for as William Mathews said, . . . "Laughter stirs up the blood, expands the chest, electrifies the nerves, clears away the cobwebs from the brain . . ."*

All of us have heard a commercial come forth from the radio. Many of us have changed our brand of toothpaste because a certain manufacturer offered us a smile like some great Hollywood personage plus a free toothbrush. Others have saved over 4,000 valuable coupons that came with some useless product in order that we could garner an additional unit of the same useless product free. Why do we do these things? All because of radio commercials, of course. The purpose of this article is: to let you read a handful of radio commercials you have never heard and probably never will hear over the radio. After reading these commercials you won't want to buy any of the products mentioned, but it may cause you to run to your neighborhood drugstore in search of something.

For the proper atmosphere to read this epistle, just seat yourself in front of the radio and read aloud.

---

The other day a friend of mine pointed to a likeable looking chap and said, "He's a swell fellow only he smells so bad." It could have been you. When you are guilty of offensive body odor even your best friends won't smell you. Do people continually avoid you? Won't anyone sit next to you in a crowded theater? Do strangers call you "Stinky?" If so you must stink! You need not worry. Just buy a bar of Delilah's Dapper Soap. Delilah's Dapper Soap claims more ex-wallflowers and bygone social outcasts among its steady users than any other of the 205 leading soaps. Delilah's Dapper is the happy medium soap. It doesn't float, it doesn't sink. It treads water half way between the top and bottom. Buy a bar of Delilah's Dapper Soap in the immediate future. Just keep in mind that Delilah took away Sampson's strength and so Delilah's Dapper Soap will take your strength away.

---

Attention women of all ages! Do you aspire to be beautiful and glamorous? Why of course you do. No one wants to look like their own ugly selves, especially women. You can landscape yourself to the greatest advantage with Cleopatra Crockitt's cosmetics. When you use Cleopatra Crockitt's cosmetics men will always look twice. The first time just like they always do and the second time to see if its real. Now is your first big chance to stock up on Cleopatra Crockitt cosmetics, since during the war our immense production was devoted to an army camouflage contract. "I owe my success to Cleopatra Crockitt cosmetics," says Leona Lutz, famous screen actress. Leona has played opposite such great leading men as Boris Karloff, Lon Chaney (Sr. and Jr.), Bella Lugosi, and the pint sized Charles Boyer, Peter Lorre. Just remember that when you see a friend who has not been looking herself lately she's probably using Cleopatra Crockitt's cosmetics. Try them now!

---

Try Glum's Spicy Gum, the new chew especially for you. This gum contains the O.P.A.'s quota of Marfaggbe. Marfaggbe is the new dentifrice which not only cleanses the teeth and massages the gums but adds four new keys to one's whistling repertoire. We ask you to try this sample taste test, to prove to yourself that Glum's Spicy Gum is best. The next time you are seated in a booth at a drugstore slide your hand under the table and pick from the bottom side of the table a discarded wad of gum. Now chew this piece of gum for approximately

(*Continued on Page* 26)

# Research and Development

By Orville Stone, fresh.
and
Dale Jeffers, soph., m.e.

**Research on Radioactive Tracer Elements**

WHENEVER the atom is mentioned the atomic bomb is immediately associated with it, but the production of radioactive elements by a phase of atomic experimentation known as transmutation may have a more direct effect upon the lives of people now living than the atomic bomb, at least in a constructive manner. Radioactive elements, called tracer isotopes, are making possible new experiments in chemical reactions, the study and treatment of cancer, the study of bacterial diseases, photosynthesis in plants, and very interesting observations concerning what happens to elements taken into the human body and other living organisms.

Two radioactive isotopes of carbon have been produced, C-11 and C-14. (The normal isotope of carbon has an atomic weight of 12; another stable isotope of atomic weight 13 is also known). Made by transmutation of nitrogen 14 bombarded by neutrons, C-14 is probably the most important isotope produced from the standpoint of organic chemistry, biochemistry, and physiology. By tagging compounds with C-14 it is possible to follow the course of the atoms through certain complicated chemical reactions, such as the cracking of petroleum to make gasoline and thus gain information that was heretofore uncertain about the reactions. Although C-11 has a much shorter life than C-14, it has been used in carbon dioxide to study the mysteries of photosynthesis. In experiments by Dr. Martin D. Kamen and the late Dr. Samuel Ruben of the University of California, and Professor William Z. Hassid, formerly of the University of California and now in Washington University, St. Louis, the radioactive carbon dioxide was fed to plants both in the light and in the dark, and the radioactive carbon atoms were followed in an attempt to identify the compounds into which they were built during the process of photosynthesis. However, it has thus far not been possible to identify the radioactive substances because of the fact that the molecules of these substances are believed to have an average weight of 1000, and, therefore, have not been identified with the small molecules of any known substances.

The use of C-14 with food taken into the human body may enable scientists to determine how the chemical energy of food is changed into mechanical movement of the body. Compounds, such as synthetic fats, containing tracer atoms have been fed to animals and their course in the animals followed.

It may even be possible to tag bacteria with C-14 and thus make advances in the study of diseases. Professor Israel Chaikoff and Dr. Alexander Kaplan of the University of California have already tagged tuberculosis bacteria in experiments which are not yet completed.

Radioactive isotopes of other elements are also being used in biological studies. Radiophosphorus has been used in extensive studies of the distribution of phosphorus in human and animal systems. Disodium phosphate tagged with radioactive phosphorus has been found to accumulate in the greatest amounts in the bones, and in decreasing amounts in muscle tissue, in the liver, stomach and small intestines, blood, kidneys, heart, and least of all in the brain. Some very interesting and perhaps significant experiments with phosphorus revealed, however, that in cases of lukemia the abnormal tissues accumulated unusual amounts of radiophosphorus. The significance of this revelation is the possibility that cancer may be treated by radioactive elements which accumulate and give out their beneficial rays in the very tissues which they are supposed to treat.

Radioactive iodine may be used

(*Continued on Page* 28)

**Radioactive tracer elements may help to determine the nature of photosynthesis, the process by which plants store the energy of the sun. Above is shown the leaf of the castor bean.**
*—Science Service*

# Campus Survey

By George Staub, jr., e.e.

### Faculty

One new face seen about Rose lately, particularly at the northern end of the building, belongs to Dr. Oran Knudsen, who was recently appointed assistant professor of chemistry. Dr. Knudsen is now bending his efforts towards furthering the education of students taking quant. and qual. and, at least in some cases, seems to be succeeding.

A graduate of the University of Wisconsin, Dr. Knudsen received his Ph.D. at New York University in 1938. Previous to his arrival at Rose he taught at Alfred (N. Y.) University and at Michigan State. After some difficulty with the local housing shortage, Dr. Knudsen and his family have settled at Riley.

Another recent addition to the staff is Mr. Darrell E. Criss (Rose '43), who is now teaching in the E. E. Dept. Mr. Criss served as a captain with the U. S. Armed Forces in China during the war.

Dr. Oran Knudson

### Spring

As this column goes to press things at Rose are settling down to a steady whirl—Not much friction between Classes—No immediate social activities (the Professors are probably getting more work from the students??)—It seems just like the quiet before the storm. Of course the various student organizations are functioning properly. The Radio Club received new impetus with the return of Professor H. A. Moench and will soon be the Radio Club known by the prewar students, broadcasting, recording, and all. The Camera Club is active, planning contests, hearing lectures, and so forth. The Debate Club finished a successful season with a final debating program at DePauw and its annual banquet, on April 24, at Berry's. The A.I.E.E. held its first organized post-war meeting on April 19, at which a tentative program was planned for the balance of the year. Twenty-six student members of the A.I.Ch.E. traveled over to Robinson, Illinois on Friday, April 26, to inspect the Refinery of the Ohio Oil Company. The student members of the A.S.M.E. attended the Midwestern sectional meeting of their organization at Notre Dame University on April 29 and 30. For a detailed account of the activities of these organizations, see page 34.

Scene from a recent Army inspection of Rose ROTC units.

### Student Administration

At the last meeting of the Student Council the budget of the student funds for the next twelve months was adjusted as follows:

| | |
|---|---|
| Athletics and Sweater Fund | 60. % |
| Technic | 17. % |
| Modulus | 5.5% |
| Radio Club | 5. % |
| General Fund (for Dances Honor keys, etc.) | 5. % |
| Student Handbook | 3. % |
| Camera Club | 2. % |
| Debate Club | 1.5% |
| Rifle Club | 0.5% |
| Glee Club | 0.5% |
| | 100.0% |

These figures were based on the needs of the various organizations as ascertained from statements submitted by the representatives of the organizations.

The members also proclaimed May 27 Liberation Day for the freshmen.

### Athletics

The future of Athletics at Rose looks *rosey* indeed. Lost Creek Stadium again resounded to the cheers for the home team as the Engineers proudly charged on to glorious defeat at the hands of Butler, Wabash,

and—oh yes! I.S.T.C., on April 20. Again on April 27, we were taken by Earlham College (90 to 41). One of our undercover men mentioned that Johnny Beasley of the Quaker squad showed marked improvement over his performance of the previous season—he managed to clear the hurdles this time. In case you're in a fog about now, Track is the subject.

Don't worry about the scores, men, it's the spirit that counts, and after that dramatic assembly in which "Coach" literally plunged into the hearts of his audience and came up with a squad increase of 800%, the school has plenty of spirit. Of course it will take a while to reform the habits of a bunch of beer-drinking cigarette-smoking engineers, but with the enthusiasm our coach displays it won't take long and by the time the Football season arrives we'll be able to hold back the best of them (we hope).

The 120-yd. high hurdles.

### Flash!!

As the magazine goes to press, the track team has finished its season in a blaze of glory by defeating Central Normal 88 to 43.

### Modulus

Professor H. V. Fairbanks, faculty adviser, has announced the following staff for the December, 1946, Modulus:

Charles G. Weibel, Editor.
Richard G. Olson, Business Mgr.
James A. Milner, Associate Ed.
Fred Mueller, Assistant Ed.
Robert R. LaFollette, Photo Ed.
David M. Mullen, Campus Ed.
Ted Blickwedel, Layout Ed.
George M. McNeill, Athletic Ed.

### Vacation

Although the school is on a year-round program, my boss, the editor, informs me that I have a two months vacation coming up, so you poor unfortunate people will have to fall back on your "Super Man Comics", etc., for extracurricular reading until August. Be on the look out for many pleasing changes in the August edition. Who knows, the editor might even eliminate this column. Well, so long—and remember:

" . . . Few undergraduates are truly happy. They are going through a period of storm and stress; . . . A boy's college years are the years when he finds out that life isn't what he thought it, and finding out is a painful experience. . . . As we grow older, we forget the hours of storm and stress, the class-room humiliations, the terror of examinations, the awful periods of doubt . . . we forget everything but athletic victories, long discussions with friends, campus signs, fraternity life, moonlight on the campus, and everything that is romantic. The sting dies, and the beauty remains."

(from Percy Marks', **"The Plastic Age,"** The Century Co., NY, 1924)

Left: 100-yd. dash. Right: The half mile.

# LET'S X-RAY A CITY...WHA

*You see* . . . people flipping switches to light their homes and offices.

*You see* them setting dials to control air temperatures.

*You see* them turning faucets to get fresh, pure water.

*You see* . . . a fabulous, hidden world of machinery—power plants, heating systems, pumping stations—producing the magic that makes great cities possible . . .

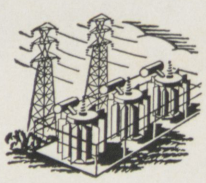
*You see* . . . Allis-Chalmers engineering aiding all industry to further good living for everyone!

* * *

There is hardly a manufactured thing employed or enjoyed in modern good living—to which Allis-Chalmers engineering "know-how" does not contribu

The steel and concrete that fo the city's skeleton . . . the elect power that brings it to life . . . the wa supply and sewerage facilities . . . t turning wheels of its industries . . . t very bread on its breakfast tables— these and more, Allis-Chalmers m chinery helps bring to *your* good livi

But it is not bigness alone th



For the producer, distributor, or user of commercial electric power, Allis-Chalmers provides new and improved power generating units, transformers, unit substations, switchgear, control, circuit-breakers, switchboards, rectifiers, converters, regulators, motors, and scores of other electrical products. In electrical equipment, Allis-Chalmers is a good name to know.

# ALLIS-CH

## ← One of the Big 3 in Electri

## Biggest of all in R

# O YOU SEE?

made Allis-Chalmers one of the
d's greatest industrial names. It is
soundness of Allis-Chalmers engi-
ing—the integrity of workmanship
makes every product stamped
C" great.

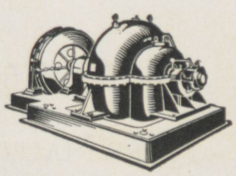
Allis-Chalmers is a good name to
w!

*s-Chalmers Manufacturing Company*
*Milwaukee 1, Wisconsin*

TUNE IN THE BOSTON SYMPHONY over the American Broadcasting Company, Saturdays, 9:30 P. M. EST

# ALMERS

## ower Equipment—
## ge of Industrial Products



Pumps to handle a city's water are among the 1600 products of Allis-Chalmers engineering. To every basic industry—food, iron and steel, mining, petroleum, paper, wood, metal working, chemical, construction, transportation, textile—Allis-Chalmers supplies essential machinery. Whatever your equipment need, call the Allis-Chalmers office in your city.

# Fraternity Notes

**Sigma Nu**

Initiation services were held April 15, for Jerry Lentz '47. The chapter extends its heartiest welcome to Brother Lentz.

The chapter has experienced some changes in personnel since last term. Brothers Schwier and Richmond left school to join the Armed Forces. Brothers Martin and Powell dropped out of school for a term. Perry Ray became active again after three years in the navy.

At the meeting April 8, Brother Wible was appointed chaplain in place of Jim Richmond. Plans were discussed for a picnic. A committee consisting of Tony Tucciarone, chairman, Fred Mueller, and Martin Babich decided to have a picnic at Turkey Run State Park April 28. A committee consisting of Perry Ray, chairman, George Staub, and Emil Oprisu was elected to make out the program for the coming year.

The rush party was held at the Milwaukee Women's Club room for twenty-three rushees. A banquet was served by the Sigma Nu Mothers' Club. Later in the evening the rushees and actives were serenaded by the Alpha sorority.

Monday, May 6, six rushees were pledged. They were Carl Johnson, Chicago, Illinois; Felix Beltrame, Shirkieville, Indiana; George Cooper, Tarentum, Pennsylvania; Ignac Matus, New York City, New York; James Thompson, Terre Haute; and Hollis Mellon, Sellersburg, Indiana. To these men the chapter extends its heartiest congratulations.

**Lambda Chi**

Brothers who have returned to school this term are George Kyle, Bob Vance, and Frank Jones. Frank Jones was president of the chapter before he left for the army. The chapter was visited by Brother Harmon Shaw who will return to school in July.

The chapter held a dance at the Edgewood Cabin to celebrate the fraternity's Founder's Day. Special guests were Mr. and Mrs. Charles Bresett, Mr. and Mrs. Paul D. Bennett, and Mr. and Mrs. Benjamin Smith.

The Founder's Day State Dance which was open to all the Lambda Chi chapters in Indiana was held at the Columbia Club in Indianapolis. Those who attended the dance from Rose were Donald Spencer, Bill Sharpe, and Ted Blickwedel. They were however, unable to attend the banquet which was held before the dance.

A delegate, Donald Spencer, and alternate, Bill K. Sharpe, have been elected to represent the Theta Kappa Chapter at the Lambda Chi Alpha General Assembly. The Assembly is to be held from Aug. 19 to Aug. 22 at the Royal York Hotel in Toronto, Canada. The delegate has all expenses paid by the national office.

**Alpha Tau Omega**

At a special meeting Thursday night, April 4, new officers for this term were elected. On the following Monday night, retiring Worthy Master Philip Loring installed the following men in offices: Charles Weibel, Worthy Master; Willis Hudson, Worthy Chaplain; Robert LaFollette, Worthy Keeper of the Exchequer; Jack Sills, Worthy Scribe; Allen Smith, Worthy Keeper of the Annals; William Jarrett, Worthy Usher; Joe Neill, Worthy Sentinel; and Keith Sutton, Palm Reporter.

During the week of April 8-14, four men went through the hardships of "Hell Week". They were Charles Maudlin, Lebanon; David Mullen, Jeffersonville; Bill Kirchner and James Snider, both of Terre Haute.

On Sunday morning, April 14, the chapter attended 9 o'clock Mass at St. Patrick's Church as a group. That same afternoon the four abovementioned men went through the impressive formal initiation ceremony and became full-fledged actives.

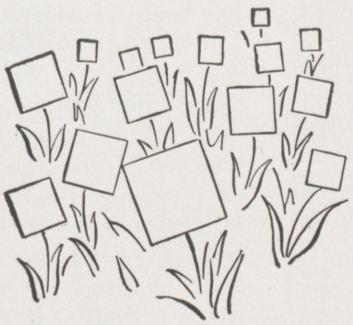
A noon luncheon was held on Saturday, April 13, for the actives, pledges, and their guests. That same afternoon the whole group retired to the softball diamond at Woodrow Wilson Junior High School where a bang-up game of softball took place. Brother John White's took it on the chin from Brother Allen Smith's team to the tune of 18-5, after blowing an early 5-1 lead.

On Monday night, April 15, ten men took the Alpha Tau Omega pledge. They were Robert Mikels, Clinton; Francis Heinz, New Castle; Tom Duwelius, Elkhart; Joe Wells, West Union, Illinois; Frank Eberhardt, Indianapolis; Earl Howlett, David Diehl, Forrest Albertson, Richard Olson, and William Maddock, all of Terre Haute.

(*Continued on Page* 22)

NUMBER 3 OF A SERIES

# Newsworthy Notes for Engineers



## Victory Garden of Crystals

Most synthetic crystals contain water. Under sustained operation, heat drives off the water, destroys the crystal. To lick this trouble—which put vital Navy electronic apparatus out of action, new equipment using a water-free synthetic crystal was developed by Bell Telephone Laboratories.

It was the job of engineers at Western Electric to set up equipment for *growing* synthetic crystals on a mass production basis.

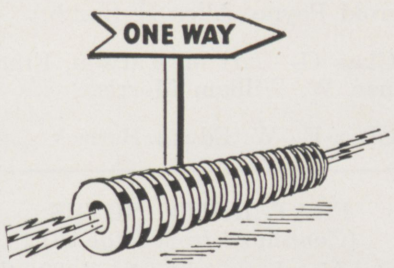
For "seeds" they use tiny pieces of crystal, "planted" in metal pans. Temperature is raised to 110° F, ammonia salt solution is added, the pans are rocked gently by mechanical means. Lowering the temperature starts crystallization. After several days, the salt solution is drained. Then the process is repeated for from 45 to 60 days.

Result: synthetic crystal bars six inches to a foot in length from which the electronic crystals—better than nature's own—are cut.

## Electrical One-Way Streets

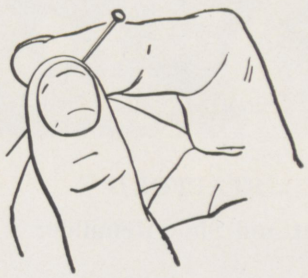
To one group of Western Electric engineers, every day is baking day. The objects of their culinary skill are copper washers and discs—from 1-16th to 1½ inches in diameter—done to a turn in a red hot oven, and with a crust of copper oxide on one side.

Piled in matched sets, these copper oxide discs are called *varistors* (variable resistors). They are high resistance in one direction, low resistance in the other, and so, in effect, allow electrical current only a one-way passage.




As radio moved into very high frequencies, specifications for precision, stability and smaller size of these rectifiers went far beyond anything previously attempted outside the laboratory.

Western Electric's manufacturing engineers set up shop for quantity production of these interesting little devices. The techniques they have developed have great significance for post-war communications.



## Smaller than a Pinhead

*Thermistor*—thermal resistor—is the name of a class of solid variable resistors used as circuit control elements. These tiny units must be sturdy and dependable, yet extremely sensitive in response to temperature variations.

Most thermistors begin life as a metallic oxide paste. This is processed; "fired" under carefully controlled atmosphere and temperature conditions; then formed into beads on fine wires, pressed into discs or extruded as rods.

One interesting manufacturing problem arises from their size, which may be smaller than a pinhead. To manufacture these tiny devices, some of the operations must be performed under microscopes.

Developing and setting up techniques for quantity production of these precise units is another accomplishment of Western Electric engineers.

*Manufacturing telephone and radio apparatus for the Bell System is Western Electric's primary job. It calls for engineers of many kinds—radio, electrical, mechanical, chemical, metallurgical. Many of the things they do —whether seemingly little or big—contribute greatly to the art of manufacture of communications equipment.*

**Western Electric**

**SOURCE OF SUPPLY FOR THE BELL SYSTEM**

# Alumni News

By William Blount, fresh.

As we did last term, we are listing below the names of former Rose men now re-entering school to complete their courses. Nearly all these men, of course, are former service men.

Class M—William P. Nichols, John A. Sills, Russell E. Tiefel.

Class L—John H. DeReamer, Glen R. Follis, Thomas H. Keogh.

Class K—Joseph Bisch, Malcolm Brown, Russell C. Cox, William T. Crowley, Willis I. Hudson, John J. Kosco, George Kyle, Francis McDonald, William L. Marietta, Norman J. Pera, Perry F. Ray, Wallace L. Steuerwald, Allen S. Stewart, James F. Stieff, Robert C. Somers, Bertram S. Weinstein, George T. Wolf.

Class H—Frank M. Beeler, Jean Boatman, Ralph R. Dinkel, Julian Furness, Millard A. Ferguson, Lloyd Goble, John E. Lichtenwalter, Edwin A. Martin, Robert L. Mikels, James A. Milner, Richard Olson, Harold Payne, Allen P. Smith.

Class G—Carl M. Carlson, Frank Jones, W. William Morris.

Class E—W. Edwin Barrick.

### The Grads Advance

'34 H. Loren Thompson, c.e., with honors, has been taken into partnership with the Stevens and Koon, consulting engineers, Portland, Oregon. Mr. Thompson had been assistant professor of civil engineering at Northwestern University.

'39 Wayne E. Alexander, ch.e., has been transferred to St. Louis by the Monsanto Chemical Corp.

'40 Walter T. Zehnder, ch.e., who was recently discharged from the Navy, has taken a position with the Seeger-Sunbeam Corp., Evansville, Ind.

'41 Albert L. Klatte, c.e., is now working for the Indiana State Board of Health as a sanitation engineer. Mr. Klatte has just been discharged from the Navy with the rank of Lieutenant.

### Deaths

Virginia Hollinger McCloud, wife of Willys W. McCloud, e.e., '42, died March 17. A native of Dayton, Ohio, Mrs. McCloud was indoor tennis champion. Mr. McCloud is stationed at Wright Field, Dayton.

## FRATERNITY NOTES

(*Continued from Page* 20)

On Monday night, April 22, the chapter initiated Anton Hulman, Jr., a member of the board of managers of Rose Polytechnic Institute. Mr. Hulman was one of the guest speakers at the recent Alpha Tau Omega Province XVII "State Dinner".

During the week-end of April 27-28, several members of the chapter attended a province conclave at Illinois Gamma Zeta Chapter at the University of Illinois.

### Theta Xi

The Kappa Chapter of Theta Xi increased their active membership at the start of the new term with the return of four veterans who were previously enrolled in Rose in 1941 and 1942. These men, Robert Sommers, William Morris, James Stieff, Tom Keogh, and Jim Milner all saw active service in the European Theatre of Operations.

Tuesday, April 23, William Hunter and Earnest Brumitt were initiated into the fraternity after an informal initiation Saturday night. This brings the active chapter to twenty-three men, but with the prospect of quite a few past members entering next term the membership will soon be up to its past standards before the war.

New officers were elected for the next two terms Monday, April 8. They are as follows: Bud Eberly, president; Bob Sommers, vice president; Jim Stieff, treasurer; Merrill Strong, house manager; William Blount, assistant house manager; and Jim Milner, corresponding secretary.

The social activities of the chapter have included Sunday picnics, bowling, house parties, and baseball games among the chapter members. In the future house parties and dances are planned for an intense increase in chapter functions.


*RCA airborne television will bring you thrilling news events that could not otherwise be "covered"—while they are happening.*

## You'll see news in the making—through Television

Imagine! A helicopter is "covering" the story of a man marooned on a burning building. Sitting at your home television receiver, you will get the same eye-witness view as though you were riding along in the nose of the plane!

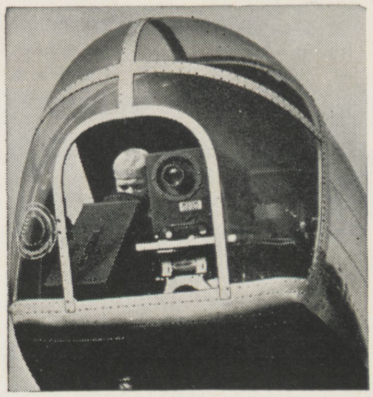
To develop equipment compact enough to fit into a plane was a major problem. But RCA-NBC scientists and engineers in co-operation with the U. S. Navy did it—and airborne television became a wartime reality.

This portable equipment has many peacetime uses—and may lead to development of a "walkie-lookie" with which a radio or news reporter might cover a story by television as readily as a news photographer does now with a camera.

Such progress-making research goes into each and every RCA product—and is your assurance that anything bearing the RCA or RCA Victor emblem is one of the finest instruments of its kind that science has achieved.

• • •

*Radio Corporation of America, RCA Building, Radio City, New York 20...Listen to The RCA Victor Show, Sundays, 4:30 P.M., Eastern Standard Time, over the NBC Network.*



**A television "eye"** in the nose of a plane! Besides covering news events by plane, automobile or boat, such revolutionary equipment developed by RCA and NBC, can make accurate geographical surveys from planes flown by remote control. Moreover, similar television equipment can observe hazardous manufacturing processes from a safe distance.

RCA **RADIO CORPORATION of AMERICA**

## AIR CONDITIONING

(*Continued from Page 7*)

of walls, ceilings, or floors are heated by water or air ducts to temperatures slightly above body temperature. In this way the body loses very little heat by radiation and as a result one can feel more comfortable at lower temperatures than are usually maintained. The same thing can be done in summer by passing cold air or cold water through pipes or ducts. However, one disadvantage to this method is the fact that water sometimes condenses on the cooling surfaces on warm, humid days.

The air conditions which affect personal comfort and health are in the order of importance as follows: (1) temperature of air (2) moisture content of the air (3) motion of the air (4) dust content of the air (5) freedom of the air from odors (6) freedom of air from vapors, gases, bacteria, and other harmful substances. Temperature, moisture content, and motion of the air determine personal feeling of warmth; or, in other words, these three qualities of air determine the rate heat is given off from the body under any given condition of clothing and activity.

We all are acquainted with the effect of temperature of the air itself, that is, the temperature of the air as given by an ordinary thermometer. We know that when the air is somewhere around 70° F. we are comfortable. We also know that as the temperature falls we feel increasing coolness, whereas if the temperature rises we feel increasing warmth. We are aware most of this in the heat of summer when moisture in the air affects our warmth also. We all are accustomed to the expression "it is not the temperature, but the humidity which makes us uncomfortable."

Humidification is the addition to the air of water vapor (not liquid) in quantities sufficient to approximate natural, healthful, outdoor conditions of a moderate day. During winter, humidification is essential. In many of our homes the average relative humidity varies between 10 and 15%, which is even less than the Sahara Desert (23%). Hot, dry air is detrimental to our health as well as to our rugs, books, furniture, musical instruments, and other furnishings. Germs, carried easily in hot, dry air, lodge themselves in dry, cracking membranes of the nose and throat, leading to colds or more serious ills.

Most of us have a conception of the effect of air movement on one's warmth, or in other words, of the cooling effect of wind or air movement. We are less aware, however, of the cooling effect of lower velocity air movements, such as pertain in any well-ventilated room. The movements constitute the small eddy currents which cause the rapid dispersion of a puff of smoke.

An average man under normal conditions requires a production of about 400 British Thermal Units per hour. This heat must be dissipated from the respiratory tract or as perspiration from the body surface. The rate of heat loss must exactly equal the heat production. In cold weather the greater loss is made up for by larger production.

For higher temperatures heat loss become less through radiation and convection; therefore the rate of loss through evaporation must become greater. The body makes available more moisture in the form of perspiration. As temperature and relative humidity rise above 80° F. and 20 per cent, respectively, the body makes perspiration available in quantities which are comfortable.

The foregoing makes apparent the need in air conditioning of maintaining proper balance between temperature of the air and its moisture content. It becomes obvious that control of temperature of air alone is not sufficient. Research has resulted in knowledge concerning proper relation between temperature and moisture content of air for comfort, and there has been established an "effective temperature scale," taking these two factors, as well as air motion, into account. This scale must be used in air conditioning for human comfort. As an example, for winter heating a 66 degree "effective temperature" with a tolerance of about two degrees, has been found to be comfortable. This standard may be had with 66° temperature and 100% humidity, 70° and 50%, or 74° and 10%.

Of slightly lesser importance in air conditioning for personal comfort is the cleanliness of the air as regards dust, odors, and other harmful substances. The atmosphere in our cities is heavily laden with dust, which is not only damaging to our homes, but also to our respiratory tract. At least the presence of dust in the air is unpleasant. Dust may be removed by washing the air with a spray of water in an air washer, or by filtering out the dust from the air with any commercial air filter. Air cleaning always is an essential part of air conditioning.

Kodak

# Because photography is dramatic

YOU KNOW what can be done with photography to dramatize beauty. But do you know what can be done with it to dramatize ideas . . . products . . . processes . . . technics?

With eye-arresting photographic illustrations in your advertising . . . with motion pictures . . . you can add color, spark, interest to the presentation of any idea or product. Get quicker and greater acceptance through your showmanship!

With movies and slide films, you can dramatically explain the whys and wherefores of basic processes and technics . . . make training programs more understandable, more interesting, and, therefore, more productive.

Beyond these, there are many other uses to which business and industry can put photography. For a brief description of some of these uses, write for our new, free booklet—"Functional Photography."

**EASTMAN KODAK COMPANY**
**Rochester 4, New York**

## Functional Photography

**Advancing business and industrial technics**

### RADIO COMMERCIALS

(*Continued from Page* 14)

three minutes. Then repeat this same procedure on several other used wads. After disposing of the last piece of used gum take a fresh stick of Glum's Spicy gum from your pocket. Chew on it for three minutes. Every gum chewing expert who has undergone this experiment vows that Glum's Spicy gum is best by taste test, and so will you.

---

Ladies and Gentlemen, have you tried the new food find, Egabrag. Egabrag is ready prepared food which may be eaten hot or cold without impairing its delightful new flavor. Egabrag reacts violently with tin but by packing Egabrag in attractively colored sacks we are able to get our nutritious product to you. We guarantee that Egabrag loses none of its flavor by being sacked. Believe me! The next time you are at the grocers be sure to ask for a sack of Egabrag. If you have a hard time remembering the name Egabrag, just recall that Egabrag spelled backwards spells GARBAGE—and you can't go wrong.

---

Are you a king size lady? Do you have 250 pounds extra on your torso or even more so? If so use Lydia Blueporks Reducing Pills. Best by waist test! We guarantee to cut the bulk from your hulk in less than two weeks. As Mrs. Throckmorton Q. Overwaite of nearby Bottomland testifies, "Before using Lydia Blueporks Reducing Pills I weighed 476 pounds. After using these pills for nearly two weeks I weighed a mere 88 pounds, casket and all."


---

Have you smoked the new club size Slagfag cigarette? Slagfags are blended from the world's finest pedigree weeds which produce a smoke you never smelled the like of before. Slagfags have a nicotine content of slightly more than one pound per pack. No other cigarette manufacturer can match or even approach this astounding figure. Each Slagfag is wrapped in a new asbestos paper to insure slower burning. Slagfags do not cause severely irritated throats that a few years in Arizona won't cure. The next time you are buying cigarettes remember Slagfags —"The butt that millions have tread upon."

---

Have you tried Mother Murphy's Meatballs lately? Do you stay awake nights? Do you roll and toss in bed? If so, eat Mother Murphy's Meatballs! You will not roll and toss—you will bounce.

---

Are you tired? Well, so am I. Goodnight now!

# "But where are the Burton Stills?"

The Oldtimer was one of the group of visitors at the Whiting refinery, looking down from the roof of the ten-story power plant while our guide pointed out the new refinery units.

"But where are the Burton stills?" the Oldtimer asked. "Don't tell me there aren't any left in this refinery—the refinery where cracking was born!"

Invented in 1911 by Dr. William H. Burton, one of Standard of Indiana's early scientists, oil cracking increased the gasoline yield from crude and ensured an adequate petroleum supply for many years to come.

"The Burton stills produced millions of barrels of gasoline, and made a lot of money," said the guide. "They were the best in the world for a long time. But newer equipment has taken their place."

He pointed out over the refinery.

"Each of those big combination cracking units turns 20,000 barrels of crude oil a day into finished products—more than two or three small refineries. Over there you see the hydroformer. It produced during the war more toluene for TNT than the whole country produced during World War I. It also helped in the aviation gasoline program. Now it's being operated for high octane motor gasoline and solvents for the paint industry."

The guide showed us three or four more war units, and then a still more enthusiastic light came into his eyes.

"But even the war program was small," he said, "compared with the program under way now. That steel structure twenty stories high is the last word in fluid catalytic cracking. It will process 25,000 barrels of gas oil a day. Every three minutes a carload of catalyst will move through its transfer lines. The other new cat crackers will be just as big. And a new motor oil plant is being built right over there."

Later he showed us the site where steel girders were rising into place for the huge new research laboratories. These laboratories, he explained, will more than double the present large research staff. They will provide facilities where 1200 scientists and technicians will work with beakers and flasks and superfractionation columns—and slide rules and enthalpy tables and electronic analyzing devices.

As we finished our refinery tour, the Oldtimer's glance strayed again to the place where the Burton stills had been.

"I'm glad to hear you say the Burton stills were the best in the world in their day," he said. "We were always proud of the Whiting refinery. And I'm glad we can be even prouder of it now."

**STANDARD OIL COMPANY (INDIANA), 910 South Michigan Avenue, Chicago 80, Illinois**

## RESEARCH & DEVELOPMENT

(*Continued from Page* 15)

in gaining information about the metabolism rate in various cases of thyroid gland activity. After the patient has taken a compound containing radioactive iodine, a Geiger-Muller counter is placed near his throat and the arrival of the iodine atoms in the thyroid gland is detected by the instrument.

There are many other instances in which radioactive isotopes may be utilized in discovering the answers to questions which have heretofore been unanswered or only partially clarified. In fact, the future possibilities for the use of tracer-tagged elements are considered to be unlimited. By enabling scientists to solve such problems, radioactive elements will contribute immensely to human welfare.

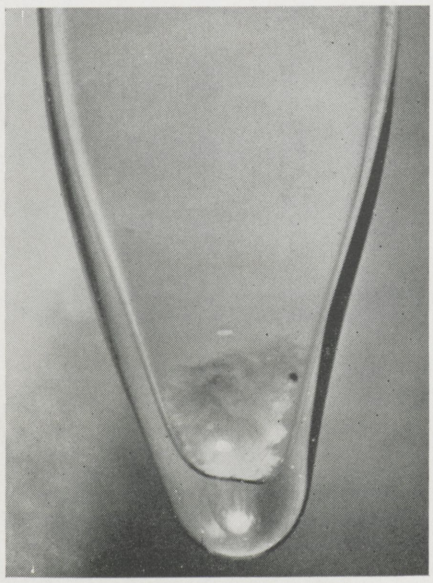
### Research on Waves

SCIENTISTS have studied and know quite a lot about sound waves, radio waves, and light waves, but they know little about the very common water wave. A fundamental knowledge of water waves would help boatbuilders plan more efficient designs for the various ocean conditions the boats will encounter.

Approaching typhoons and hurricanes can be predicted by paying attention to the waves. The waves generated by storms run ahead of the storm, announcing their approach.

During the war the navy made much use of their knowledge of waves. By observing the waves off a shore they could predict the appearance of the ocean floor near the beach. And by observing the herring-bone pattern of waves generated by a moving ship, they could estimate the speed of the ship.

10 micrograms of Neptunium Dioxide. For relative size compare tube with the dime at left. —*Science Service*



One of first pure Plutonium compounds in a micro test tube about the size of a human hair. —*Science Service*

Oceanographic studies have started to obtain greater knowledge of how waves are generated, how fast they travel, and what factors of weather and ocean bottom influence them.

The reason by which a wave travels faster than the storm which generates it is simple. The wave is started by the storm and travels in the same direction as the storm. As the waves get larger the wind from the storm speeds them up and they reach the coast long before the storm does. Low, fast swells, not visible to the eye, are picked up by instruments and give valuable information on coming storms.

By knowing accurately the ocean floor off a shore and by observing the waves passing over this section, waves for other known sections can be predicted. Photographs from an airplane taken at very short intervals are used to gain a description of the ocean floor off beaches. By drawing graphs of the known factors the waves can be predicted within an error of 15%.

The Navy will carry on their oceanographic research and will probably establish recording stations at points where typhoons and hurricanes generate waves that travel to the United States. Some day the information garnered by the Navy in wave research will aid in the drilling of oil that lies in the water off many South American countries and also to better protect our harbors and beach installations.

# "Hold on thar stranger...!"

Millions of American youngsters enjoy the delicious thrill of adventure every day with their favorite heroes of the airwaves.

And every one of them would be bitterly disappointed if anything were to interrupt the flow of electric power which makes these exciting radio dramas possible.

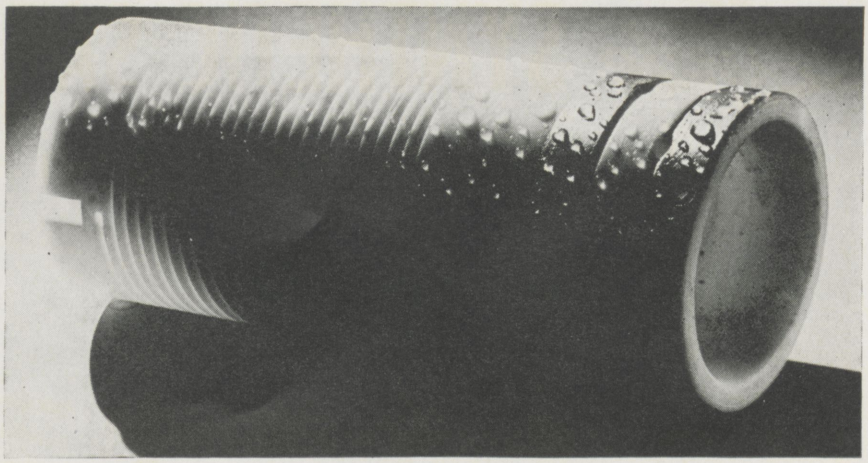
A minor tragedy? Of course. But an indication, nevertheless, of how much we have come to depend upon a constant, uninterrupted flow of electricity for our pleasures, our work, our health, our daily living.

Bartlett-Hayward Division of Koppers manufactures a unit which helps to assure that steady, uninterrupted flow of electric power. It's called Fast's Self-Aligning Coupling. This coupling is used to join engines to generators, generators to motors, motors to blowers and pumps and other rotating power equipment. And the coupling adjusts itself automatically to misalignments of the connected machines, so that the motors keep running smoothly and the power keeps flowing.

This coupling has done its share to make Koppers "the industry that serves all industry". Just as the designing and building of coke ovens, the production of chemicals from coal, the treating of timber, the making of roofing, paving, piston rings and many other products have played their part in helping Koppers to serve American industry and, in turn, the American public. Koppers Company, Inc., Pittsburgh 19, Pa.

**The industry that serves all industry**

**KOPPERS**



**Water refuses to spread in an even covering film on a surface that has been treated with a silicone liquid.**

## SILICONES

(*Continued from Page 8*)

military uses of this silicone grease during the war, it was produced in greater quantity than all other silicones combined.

### Silicone Rubbers

By increasing the degree of polymerization, silicones can be treated to produce rubber-like substances. In addition to having the softness and resiliency of natural rubber, these polymers are unaffected by the low temperatures which harden rubber and retain their elasticity at temperatures high enough to decompose natural rubber. Certain of the silicone rubbers have operated in actual service above 500°F without losing resiliency.

In addition to their unusual temperature stability, silicone rubbers also share the chemical inertness of other silicones. In contrast to natural rubber, silicone rubbers do not swell in oil, gasoline, and other hydrocarbons, and are therefore superior for use in printing-press inking rolls, gasoline tank linings, and for certain other uses. Silicone rubbers may be shaped by extrusion into tubes or ribbons to make such products as flexible connecting leads for high - temperature electrical equipment. These rubbers are also used as a protective coating for glass cloth, glass, enameled objects, ceramics, iron, steel, and aluminum.

Since silicone rubbers are deficient in tension, abrasion, and shear properties, they cannot be used as a general substitute for natural rubber or other synthetic rubbers. However, they do offer superior qualities in temperature stability and in moisture and oil resistance.

### Silicone Resins

An increase in the degree of cross-linking polymerization among the silicone chains produces a thermosetting resinous material. The silicone resins are varnish-like liquids as originally produced, but they polymerize to a solid when heated and cured at temperatures ranging up to 500°F. These solids may be either brittle or flexible, depending on the degree of cross-polymerization. Silicone resins share the general silicone characteristics of heat and water resistance.

One of the most important uses of silicone resins is in electrical insulation. They are usually applied in conjunction with fiber glass or asbestos. The silicone resins fill the interstices of the fiber glass or asbestos, whereupon they are polymerized with heat to form a highly efficient insulating material. Because of their heat, moisture, and electrical resistance, they are superior to all organic insulating materials.

Silicone resins are also being used as laminating agents, as enamels, and as paint. Silicone enamels and paints are in general superior to organic products in resistance to heat, abrasion, and weathering, but they are inferior to porcelain enamels. Suitable coloring pigments for silicone paints and enamels are also difficult to find, particularly in some colors.

### Economic Considerations

At present, silicones must be classified as costly materials ($3-$7 per pound) which are useful for a variety of special jobs requiring properties not satisfied by other materials now on the market. Lower prices can be expected as production steps up, but the very nature of their synthesis precludes competition with cheap materials for most industrial uses.

# *Linde* SYNTHETIC SAPPHIRE

## *has proved its Worth*

### In Such Uses As . . .

**BEARINGS** which ensure accuracy of precision instruments.

**THREAD GUIDES** which resist the abrasive action of synthetic and natural fibers.

**PRECISION GAGES** which maintain dimensional fidelity and outwear steel gages over 100 times.

**OIL BURNER NOZZLES** which retain constant orifice size and resist the deposition of carbon on their highly polished surfaces.

**BURNISHING WHEELS** which produce high polish on non-ferrous metals.

**PHONOGRAPH NEEDLES** which reproduce faithfully over long periods of time without dulling their fine highly polished points.

**WIRE GUIDE DIES** which maintain size and shape of opening against constant friction.

**GAGE POINTS** which remain smooth and dirt-free for accurate gagings.

### *LINDE Synthetic Sapphire Has These Features . . .*

1. Hardness = 9 Mohs' scale
2. Tensile strength = 65,000 psi
3. Resistance to commercial chemicals
4. Dielectric constant = 7.5-10
5. Melting point = 2,030 deg. C.
6. Thermal conductivity = 0.007 deg. C/cm²/cm
7. Can be bonded to metals
8. Economical flame-fabrication in rod form


*Choose From These Two Forms*



**THE LINDE AIR PRODUCTS COMPANY**

*Unit of Union Carbide and Carbon Corporation*

UCC

**30 East 42nd Street, New York 17, N. Y.**

## PREFABRICATED HOUSING

(*Continued from Page* 11)

per-hour wind from any direction.

All partitions in the house are hollow and utilized to provide closet and shelf space designed to save the owner from buying chests and bureaus, and allow more space in bedrooms. There are two bedrooms and baths. The kitchen is furnished with electric refrigerator, range, washing machine, clothes dryer, sink, laundry bin, ironer, automatic dish washer and waste disposal unit. The house will be equipped with heating and air conditioning units designed to operate on gas, oil or electricity. A minimum amount of labor is needed to keep the house clean. The manufacturers hope that consumers will accept the unconventional appearance of the dwelling in order to have a home designed for modern living at a moderate cost.

Most prefabricators eagerly accept the many new types of building materials, giving the buyer the advantages of the latest scientific improvements. Such developments as Mr. Hal Hayes' "Plastic Air" concrete may revolutionize the prefabrication industry. With this super-light concrete, an attractive California bungalow, costing approximately $2500 complete with utilities, was erected in twenty-four minutes once the foundation and service lines were laid.

All three fundamental ways of house prefabrication require a foundation to be made in the conventional manner before actual erection begins. Another consideration to be made in the cases of the package and unit methods is the distance between factory and site, as costs rise proportionately.

The prefabrication industry is new and much like the automobile industry in the early part of the century, when wagon builders and bicycle makers rushed into the new business and each year brought new plants and saw the disappearance of others. By the time building materials start to flow on the market again, new patterns of production will be worked out and a number of seasoned organizations should be ready to serve the post-war period. It is believed by authorities that at the right prices and terms and in the right places the country could absorb anywhere from 900,000 to 1,200,000 new dwellings per year for a decade. A program as large as this is well beyond the production of any previous decade. It is hard to believe that the building industry could meet demand without the aid of prefabrication. It never has had a capacity for production which compares with this demand. There is so much common sense in taking advantage of the processes of industrialization, mechanization, and standardization for house construction that it can not be disregarded.

Two major impediments to the prefabrication industry are the building codes prevalent in most cities and the policies of many local labor groups. Many architects agree that these building codes are antiquated and need revision or rewriting. As long as the house prefabrication industry remains small and unimportant, these building codes will remain; as soon as the new methods are a concern of big business, they will go.

The belief that there is only a limited amount of work to be done prevails throughout the building industry. It serves both to raise the costs of building and to restrict productivity. These excessive prices, although they do not yield a necessarily large return, at least in the case of labor, restrict demand, reduce employment and encourage further efforts toward wage and price increases. The building industry has not looked upon the mass market for housing, and whatever technical advances it has made have been in the field or ornamentation rather than in cost reduction. This situation is bad for the building industry and its labor, bad for society, and most immediately and painfully bad for the mass market, where the need is most acute and where incomes are small. If these labor groups and the building industry can be shown that the need is so urgent and the demand so great that it cannot be met without prefabrication, then a solution to this problem is probable.

If the house building industry is to become industrialized and mechanized to a degree similar to the automobile industry, it must offer consumers what they want in the price range where the demand exists. It must find an economical and convenient way of marketing its product, which must be of a high standard of quality and liveability. The public has been led to believe that low-cost housing is its inheritance, and public demand must bring about the removal of obstacles that stand in the way.

# The picture that sold a lot of dresses . . .

THIS isn't a fashion picture today, nor was it in 1896 when it appeared in newspapers all over the world. But this picture prompted a London department store to take advantage of the occasion by advertising and selling "x-ray proof dresses."

It was also reported that x-rays would be used by medical colleges to implant anatomic diagrams directly into the brains of future doctors. And some people suggested the whole business be forgotten before the new rays brought about the total destruction of mankind.

Such was the popular reception accorded Roentgen's discovery of the x-ray 50 years ago. Few people, even scientists, could foresee that within a half century this discovery would become a major weapon against disease, and an industrial tool that would help win World War II.

Corning first appeared in the "x-ray picture" some 30 years ago, when the development of this science seemed to be reaching its limit unless tubes could be produced of a glass capable of high transmission of x-rays and capable of withstanding extreme heat and high voltages for long periods of service. Here is where Corning skill was instrumental in furnishing bulbs to x-ray tube manufacturers, just as it has furnished glass with special properties for countless other fields . . . all the way from elaborate laboratory apparatus to glass cooking utensils, from giant airway beacon lenses to an all-glass pump for handling corrosive acids. Corning, with its years of experience, is anxious to help you learn all about glass today. For tomorrow, that knowledge will come in handy on your new job. Why not write us? Corning Glass Works, Corning, N. Y.

CORNING
*means*
Research in Glass

# ENGINEERING SOCIETIES

### A. I. Ch. E.

The Rose Student Chapter of the A. I. Ch. E. has, following a period of relative wartime inactivity, found enrollment increases at Rose very helpful in its return to prewar activity.

The election of officers held recently resulted as follows: Warren F. Haverkamp, Chairman; Robert Tiefel, Vice-Chairman; Robert R. LaFollette, Secretary - Treasurer; Sergeant-at-Arms, Emil A. Oprisu. At the April meeting Mr. Haverkamp, the newly elected Chairman was speaker. His topic "Synthetic Rubber and Its Economic Influence" was covered in a most interesting and informative manner, supplemented by well prepared graphs and charts.

On April 26 the chapter journeyed to Robinson, Ill., where, as guests of the Ohio Oil Co., they inspected an oil refinery. Divided into two groups they were escorted throughout the plant and told of the many processes involved between receiving crude oil and packaging and shipping the many products of cracking. Following the plant tour, the group adjourned to a Robinson hotel for a delightful dinner and an unusually interesting series of talks by men from the plant on various phases of chemical engineering and its application to the petroleum industry.

### A. S. C. E.

The student chapter of the American Society of Civil Engineers has been inactive here at Rose during the war. However, since the return to normal enrollment, it is felt by the faculty adviser, Professor Hutchins, and some of the upper classmen of the Civil Engineering Department that the student chapter should be reactivated. In preparation for this, Professor Hutchins, Professor McLean, William Morris, and Chas. Weibel attended a meeting of the Indiana Section of the ASCE in Lafayette in April.

A meeting of the inactive chapter was held the evening of May 3, 1946. The speaker was Mr. John O'Marra (Rose '28) who is with the Purdue Experimental Station at Lafayette, Indiana. Mr. O'Marra presented an interesting talk, with slides and photographs, on "How to Determine the Nature of Soils from Aerial Photographs."

### A. S. M. E.

The student chapter of the American Society of Mechanical Engineers at Notre Dame University played host to the annual regional meeting of the student chapters on April 29 and 30. The chapter at Rose was very well represented by a group of fifteen students and two faculty members, Mr. Eckerman and Mr. Hooper.

The purpose of the meeting was the presentation of papers on various engineering subjects. All twelve of the visiting schools participated and prizes were awarded for the best papers. Rose was capably represented by Keith Sutton who delivered a paper on "Carbon Dioxide Determination by Gas Densities".

At a banquet on Monday evening April 29 the speaker was Mr. John C. Straub, research engineer of the American Foundry Equipment Company of Mishawaka, who spoke about "Shot Peening" and its effect on the fatigue strength of metals.

### A. I. E. E.

The American Institute of Electrical Engineers, the national organization for electrical engineering, was founded in 1884 and has as its objects the advancement of the theory and practice of electrical engineering and of the allied arts and sciences, the maintenance of high professional standards among its members, and the development of the individual engineer. The institute has contributed greatly toward the remarkable progress in the electrical field, and has been an important factor in advancing the interest of its individual members and of the entire engineering profession.

During the war the enrollment in the Student Branch of the A.I.E.E. at Rose became very small, and the chapter was forced to become inactive. In the latter part of January, Professor C. C. Knipmeyer called on the students to reactivate the Branch. Under the guidance of Professor Knipmeyer the membership has now risen to 21, and meetings are being held every two weeks.

The officers of the Rose Branch of the A.I.E.E. are Professor C. C. Knipmeyer, Councilor; Jack Doerffler, Chairman; Brice Rumble, Secretary. The program committee consists of George Staub (chairman), Don Kersten, and Don Spencer.

# SLY DROOLINGS

You sit and sing a little song,
You have a little chat,
You make a little candy fudge
And then you take your hat,
You hold her hand and say good-night,
As sweetly as you can,
Now ain't that a helluva evening,
For a great big healthy man!

* * * *

**There was a young lady of Lynn,
Who was so exceedingly thin.
That when she essayed
To drink lemonade,
She slipped through the straw and fell in.**

* * * *

Mother: "If you marry him in haste you will repent at leisure."

Jitterbug Jane: "Well, I can't bear to think of another girl repenting at leisure with him!"

* * * *

**Dear Me!**

**An old lady who was about to die told her niece to bury her in her old black silk dress, but to cut the back out and make herself a dress.**

**"Oh, Aunt Mary," said the niece, "I don't want to do that. When you and Uncle Charlie walk up the golden stairs, I don't want people to see you without a back in your dress."**

**To which the old lady replied: "They won't be looking at me. I buried your Unce Charlie without his pants."**

* * * *

**Environment Counts**

A minister making a call was sitting in the garden with his hostess, when her little boy rushed toward them holding a rat above his head. "Don't be afraid, mother, it's dead. We beat him and bashed him until"—and then catching sight of the clergyman, he added in a lowered tone—"until God called him home."

* * * *

**A dear old lady was passing a rural stream where a company of soldiers were enjoying a cool swim. The lack of bathing trunks was obvious. "Oh, dear," uttered the astonished woman, "those must be our shock troops."**

* * * *

**Over-Exposure**

"When are you going to wear that lively lingerie you got for Christmas?"

"Oh, I'm saving that for a windy day!"

**Even Steven!**

**He: "I had a swell time seeing that blonde last night."**

**She: "G'wan! She doesn't know you from Adam!"**

**He: "So what. Her shade was up and I couldn't tell her from Eve."**

* * * *

**Low Cost**

Groom: "Did you know that tunnel we just came through cost $15,000,000?"

Bride: "It did. Well, it was worth it."

* * * *

**Vital Statistics**

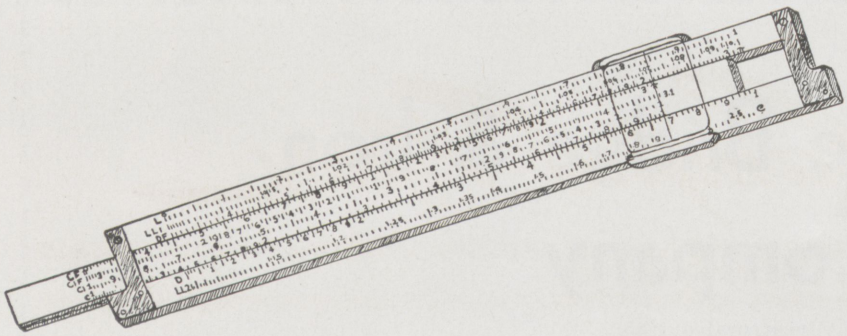
**The reporter was interviewing the castaway soldier who finally had gotten back in the States after many years: "And you and this lovely South Sea maiden lived on the island for seven years alone?"**

**"Well," answered the soldier, "we did for the first year."**

* * * *

Missionary: "Do you know anything about religion, Chief?"

Cannibal: "Well, we got a little taste of it when the last missionary was here."



# Sly Droolings

by Derald Heady, fresh.

**Press your cheek against that of a young gal. If she flinches, you need a shave. If she doesn't you need a guardian.**

* * * *

Girl telling sailor: "I'm really an old-fashioned girl, I don't drink, smoke or swear." After groping through her pocketbook for ten minutes, and getting madder every second: "Oh, damn it to hell, I left my cigarettes at that last saloon."

* * * *

**Skunk—"A stream-lined pussy-cat with fluid drive."**

* * * *

Old Mother Hubbard
Went to the cupboard
To get her poor daughter a dress.
When she got there
The cupboard was bare
And so was her daughter, I guess.

* * * *

**A man came to a booking agent, and told him "I have a wonderful act. I have a parrot that sings, 'God Bless America' and a dog that plays the piano." The agent was so impressed that he arranged for a tryout. The parrot sang and the dog played. The agent couldn't believe his eyes and said, "This can't be possible." "Well," said the man, "The parrot really doesn't sing. The dog's a ventriloquist."**

* * * *

### Epitaph

"Ma loved pa,
Pa loved wimmin;
Ma caught pa
With two in swimmin';
Here lies pa."

### Some Difference

**Pat: "Mike, what's the difference between Southern girls and South Sea Island girls?"**

**Mike: "Well, Southern girls just chew gum but the South Sea Island girls are Wrigley all over."**

* * * *

"Not drink it, Pop—Spin it!"

The ex-war plant worker went to see her doctor about "hard lumps" in her arms.

The medico examined the patient's complaint and then sat back and grinned broadly as he said, "Why madam, those are just muscles."

* * * *

### Getting Better Acquainted

**He watched his bride remove her false hair, her false teeth and her complicated make-up. "I'm so tired," sighed she, "I have not been able to get off my feet all day."**

**"My soul, my soul!" he cried. "Do they come off too?"**

An Irishman named Pat Maloney
Never once had tasted baloney.
When some he did see
Said, "that's a new one on me
Tis a sausage inside a kimoney."

* * * *

### Oral Cavity

**Then there was the case of the old farmer some years back who was driving home in the buggy late one Saturday night, accompanied only by his daughter. They were stopped by a highwayman who took the farmer's watch, wallet, and the horse and buggy. After he left the daughter said, "Well, paw, anyway I saved my diamond rings."**

**"How'd you do it, daughter?"**

**"Took 'em off and put 'em in my mouth."**

**"Too bad you're mother wasn't along," said the old farmer, "we'd have saved the team."**

* * * *

### "Go to Father!"

"Go to father," she said,
When I asked her to wed.
And she knew that I knew
That her father was dead.
And she knew that I knew
What a life he had led.
And she knew that I knew
What she meant when she said,
"Go to father!"

* * * *

**A doctor who was superintendent of the Sunday School asked one of the boys this question:**

**"Willie, will you tell me what we must do in order to get to heaven?"**

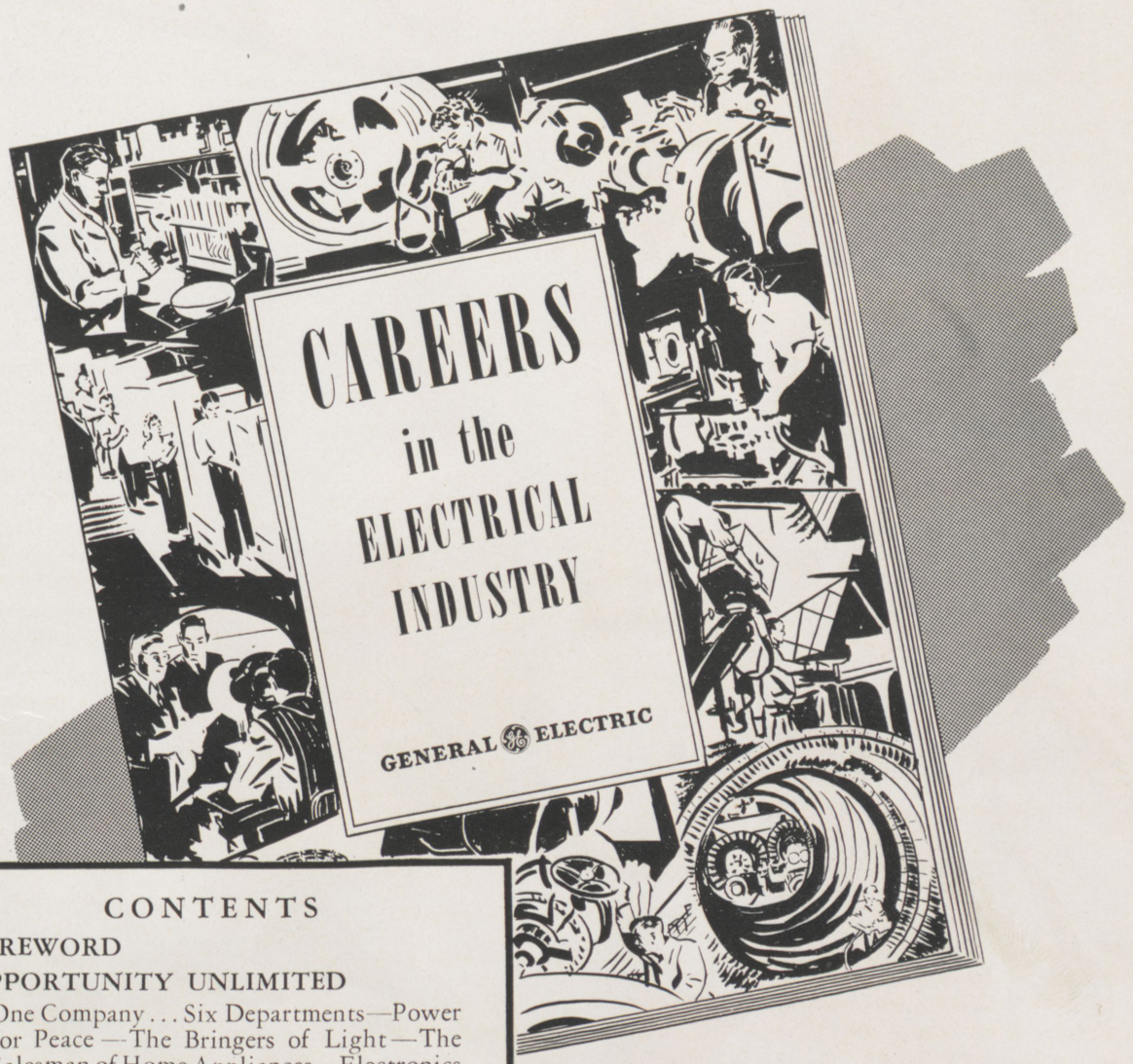
**"We must die," said Willie.**

**"Very true," replied the doctor, "but tell me what we must do before we die?"**

**"We must get sick," said Willie, "and send for you."**

# GE Campus News

RESEARCH AND ENGINEERING KEEP GENERAL ELECTRIC YEARS AHEAD

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