

Spring 5-1960

Volume 71 - Issue 8 - May, 1960

Rose Technic Staff

Rose-Hulman Institute of Technology

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Rose Technic

May, 1960



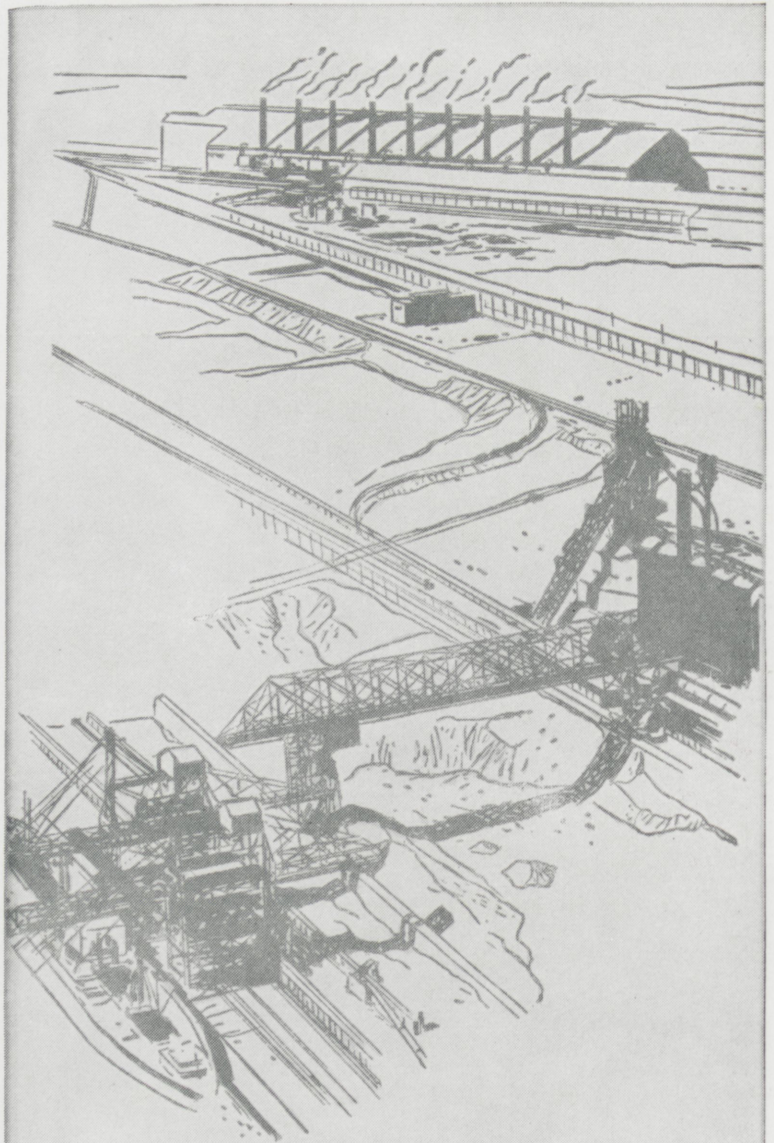
In This Issue

**U.S. ARSENAL APPRAISAL
FARM OUT THE FACULTY
AIR BLAST CIRCUIT BREAKER**

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Rose Technic

VOLUME LXXI, NO. 8

MAY, 1960

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Business Manager

T. C. COPELAND
DALE OEXMANN
Assistant Editors

RON STAGGS
LARRY BERGER
MARSHALL GARINO
Student Advisors

PROF. J. L. BLOXOME, SR.
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Cover Note

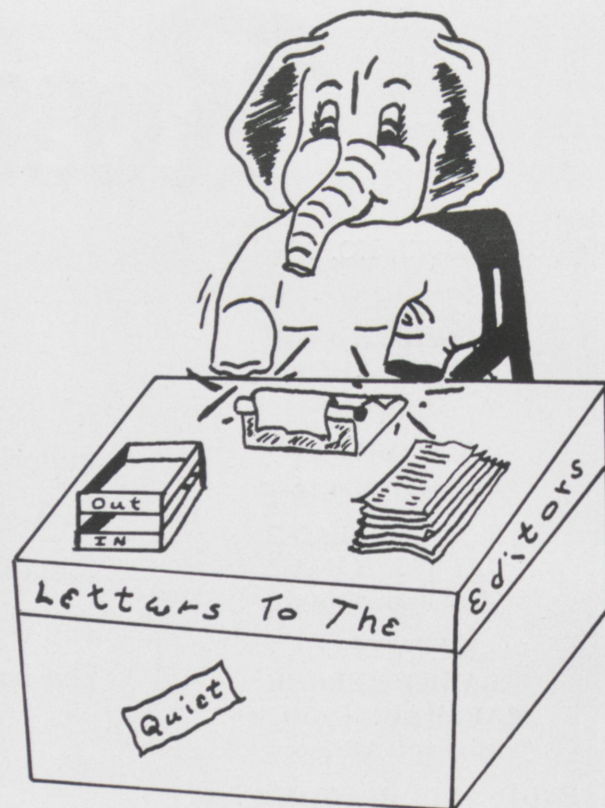
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Letter to the Editor



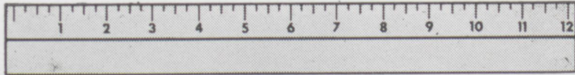
Dear Editor:

In the past few months it has come to the attention of the alumni that a new policy has been proposed by the administration of Rose concerning increasing the percentage of the entering freshman class which will graduate from about 50 to about 80 percent.

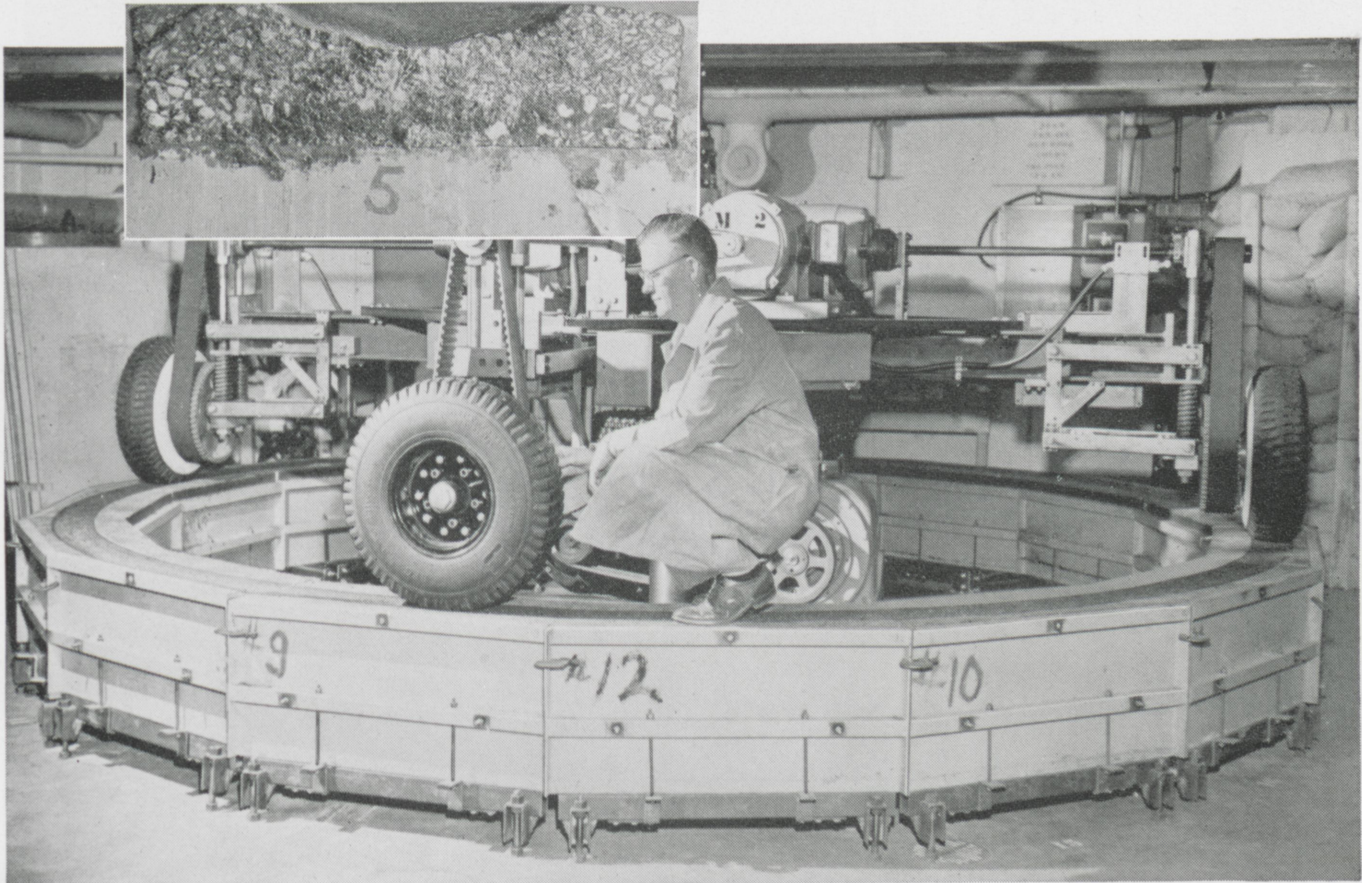
It is my understanding that this new program will be accomplished through increased counseling and orientation of students. If this is done, it should be to create interest and enthusiasm in the student so that he will push himself harder to accomplish his goal. It should not be done in a manner which will coddle the student or force him into a field in which he may later find no interest. Above all, the faculty should not be pressured in their academic grading of students to increase the percentage graduating. The goal which the Institute should continue to adopt is to graduate 100 percent of the students showing the qualities of the top engineers and scientists.

I think that all alumni should have a definite interest in the academic standards of Rose and they should insure that they are maintained at the highest possible level. I also believe that they should state their views which they feel will be useful to the administration in carrying out their programs.

ROBERT E. BURTNER
Class of 1957



ONLY 12 INCHES WIDE...



Tom Speer, Senior Engineering Research Supervisor at Standard Oil, inspects one of the 12 sections in a new miniature road tester. Under simulated weather conditions, four wheels

whirl around to reveal wear patterns and other vital information. (INSET) Ruler shows wear pattern after strip has taken pounding from tires during rain, freeze, thaw and heat.

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from desert dry to cloudburst drenched. "Road conditions", too, can be changed from freezing to thawing.

Within weeks, the new test-tube roadway can determine what happens to roads during years of use in all kinds of weather. It can pre-test paving formulas and techniques, and may show how to eliminate washboard pavement and chuck holes. Savings in highway research alone may run into millions of dollars. Even larger savings in auto and road repairs and possibly in gasoline taxes are in sight.

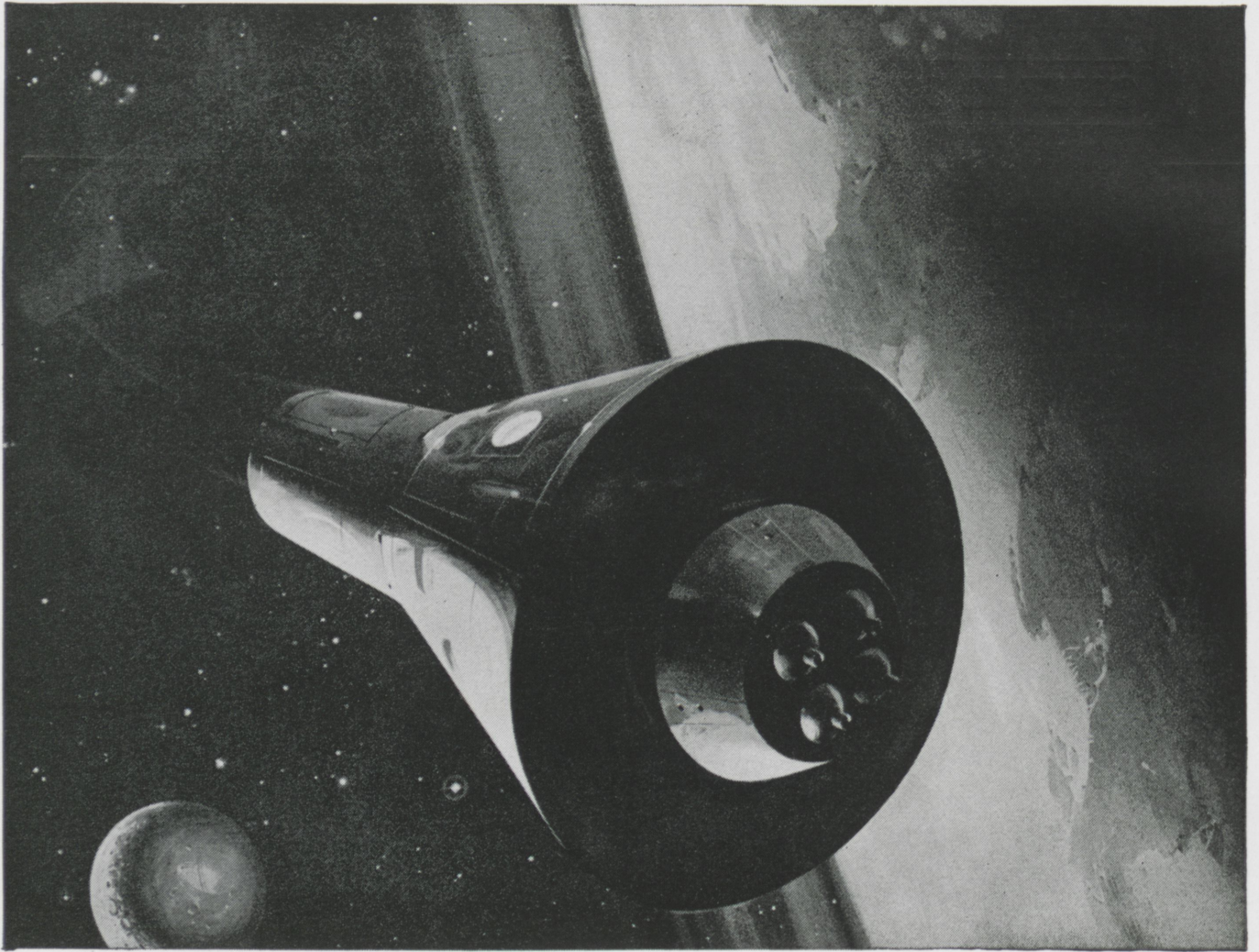
This test-tube roadway is just one of the many exciting developments at Standard. Everyday, scientific research, pure and applied, points the way to new or improved products. This work holds great challenge and satisfaction for young men who are interested in scientific and technical careers.

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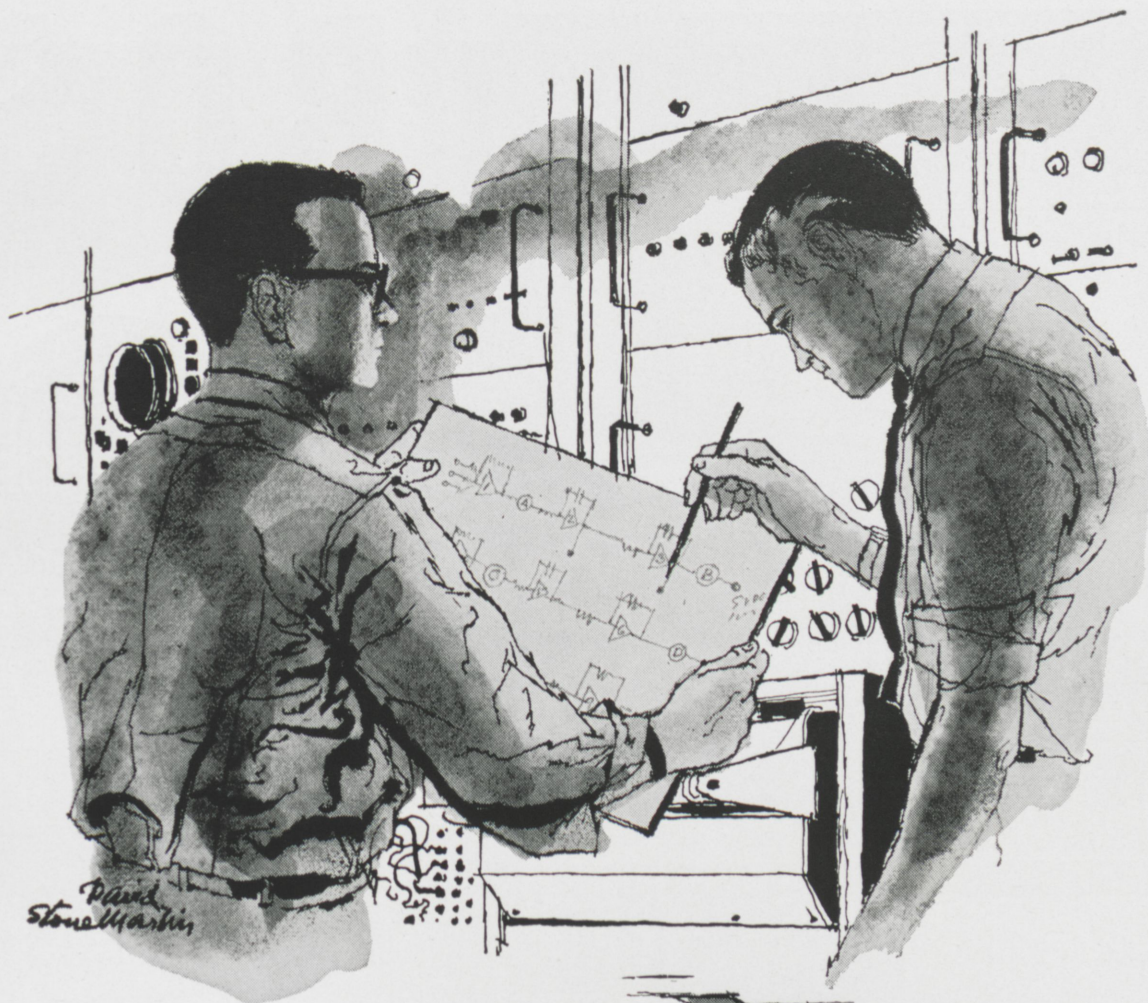
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Major degree _____ Minor _____

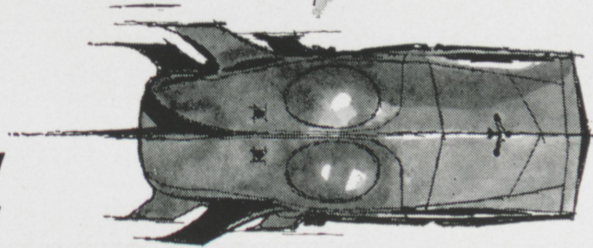
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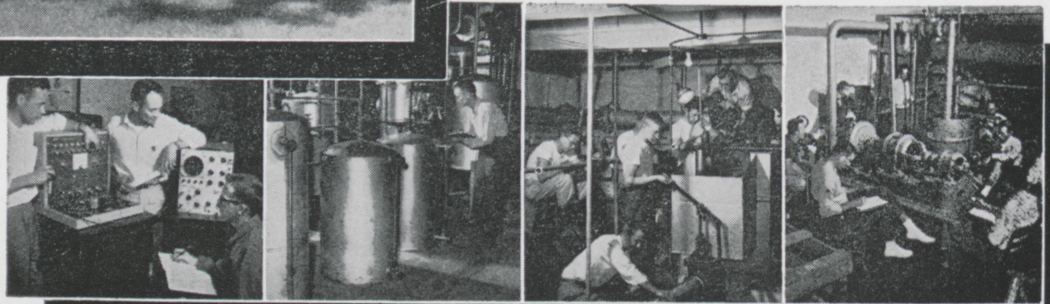
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The Golden Triumverate

Since its establishment in 1874, Rose has provided the opportunity for its students to develop in two principal areas. The primary function of the school, of course, is to give the student a solid technical background which will serve him in the economic utilization of the forces and resources of nature for the benefit of mankind. There can be little doubt that Rose is satisfactorily fulfilling its primary function.

The second function of the school which the students themselves have in the past deemed necessary for their development is the fostering of a sense of responsibility in the student through participation in extra-curricular activities. Every student organization on campus today was begun and has been kept alive by students willing to learn to shoulder responsibility for a purpose, with generally only appropriate passive participation and counsel from the faculty. By permitting a diversity of student-bossed extra-curricular activities, Rose is fulfilling its secondary student-inspired function.

Today, a critical period in the history of Rose, an ever-increasing number of issue-appraising students feel that the school should serve a third function in the development of engineers and scientists. They feel that the individual student would benefit if the atmosphere of the school were conducive to the development of elevated moral standards. In short, they believe in a student-interpreted, student-administered, canon of professional ethics to be observed by all students. The canon, although worded unlike the canon of ethics for engineers, is based upon the same principles of professional conduct: honesty, justice, and courtesy. The proposed canon is known as the Honor System.

Before the end of the semester, you will be contacted individually by a member of Blue Key or of the Student Council. He will present to you the Honor System constitution proposed by the Blue Key Honor System Committee. He will discuss with you the advantages and disadvantages of the System. After the discussion, he will ask you to sign a petition either for or against the proposed Honor System.

It is quite probable that you will not agree with some of the mechanics of the proposed system. If this is your case but you still believe in the over-all principle that students should be given the opportunity to develop the principle of professional conduct, then you would be serving your ideals well by signing the petition in favor of the proposed Honor System. Bear in mind that in drafting the mechanics of the Honor System, the Honor Committee cannot completely satisfy the diverging views of 400 people. Also remember that the petition seeks to place the Honor System in effect only on a trial basis for the first semester of next year. If mechanical difficulties are encountered during the trial semester, the constitution will be changed accordingly before it is brought up for vote for permanent adoption.

The most serious objection that some people raise against the Honor System is that they feel that they would be unwilling to file a complaint against a man whom they saw violating a principle of the ethical code. The usual instance cited is the case of seeing a man cheat, so let's use this as an example, with the understanding that cheating is not the only manner in which a person can violate the code, although it will probably be the most popular.

If you would happen to see a man cheating on a test, you would not file a complaint by yourself immediately. Your word alone would be pretty shaky grounds for a conviction. Instead, you would alert men who also sit around the suspect that you are reasonably sure that you saw the suspect cheating. They in turn would keep an eye on him, and if he cheated again, the group of you would file a complaint against him. With an Honor System in effect, you will stand alone only when you are caught cheating.

If you would even have qualms about getting a group together to file a complaint against a man, just remember that you would be doing the guilty party a favor by exposing him, and you would be serving the cause of justice for your fellow students.

A final word. There are some men who are sincerely against giving the Honor System a semester trial. Although I personally hope that these men are in the minority, those of us who feel that the Honor System has much to offer the individual student must be very careful to respect the opinions of those who disagree with us. A ping-pong game of name-calling does not constitute a serious discussion.

J.W.F.



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From the

PRESIDENT'S DESK

This message is aimed primarily at this year's graduating class. About twenty-five percent of you will continue your formal education either at Rose or elsewhere, the other seventy-five percent will start full time jobs in industry. All of you, I hope, will continue your association with Rose through the Alumni Association. I would like to urge each of you to become acquainted with the Rose Tech Alumni Club nearest to you wherever you may be.

This year I had the privilege and pleasure of meeting and talking to various Rose Tech Clubs on fourteen different occasions. Over four hundred alumni attended these various meetings. It is my intention to meet as many times as possible each year with the various Clubs. Other members of the staff likewise will visit the Alumni Clubs. It is hoped that each alumnus will be able to renew his acquaintance with Rose every year either through attendance at a Rose Tech Club meeting or by returning for Homecoming. Put the date of October 15, 1960 on your calendar now for this year's Homecoming.

For those of you who start on your first industrial job, the success of your education at Rose will be measured by the amount of study that you will continue to do. Education is a continuing process. Paul Chenea has estimated that the education "half life" of an engineer is about ten years. Thus, at the end of ten years an engineer is down to about fifty percent of his educational value at graduation and at the end of twenty years, the decay is seventy-five percent.

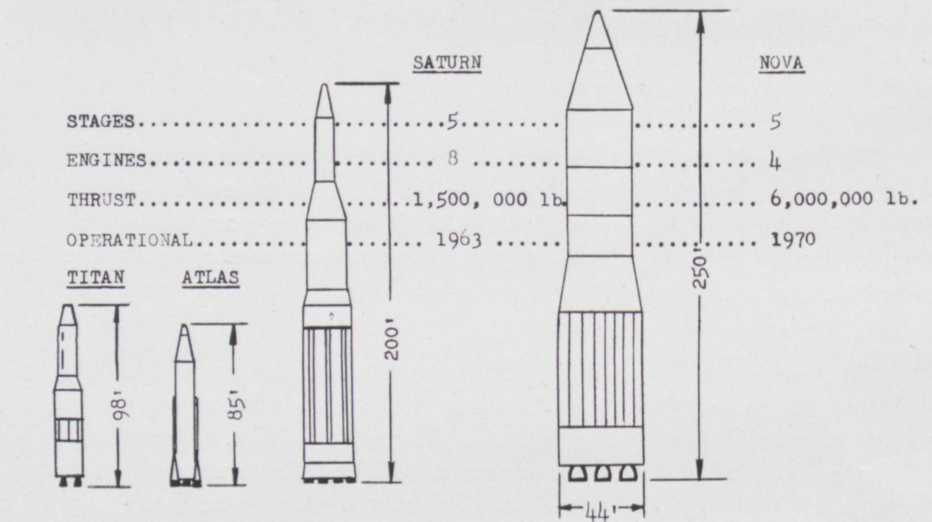
The only solution is continued study. This can be accomplished in a variety of ways. The first and foremost is continued reading of technical magazines and other current literature. Ordinarily, however, this is not enough. In addition it is necessary to attend technical meetings where the exchange of ideas may be made verbally. Finally from time to time each practicing engineer should enroll in formal courses to keep up to date in his particular area of specialty.

Wherever you live visit the college or university nearest you. Take the courses offered by that institution to keep alive and abreast of the world. Let it never be said that a Rose graduate became technologically obsolescent.

U. S. ARSENAL

One hears so much criticism of the U. S. missile and space program that he is inclined to belittle American scientific progress. True, the 365,000 pound maximum thrust developed by an American missile does not compare favorably with the estimated 750,000 pound thrust that the Russians utilize to launch their space probes. Many attribute this to superior technology or some exotic fuel. Dr. Rettaliata contends that neither assumption is true, but the U. S. is temporarily suffering from being too scientifically competent. This seemingly paradoxical statement can best be explained by the fact that the missile was originally developed as a military weapon whose sole function was to transport a nuclear warhead to its target. American scientists ingeniously devised a small nuclear warhead that required only as much lifting power as provided by our modern missiles. The Russians, on the other hand, were not so efficient in miniaturizing their warhead. As a result, they had to develop a huge rocket thrust in order to do the same job we could do with less rocket power. Therefore, one might say that we have penalized ourselves by being too competent in the first place.

The Russians have now made a "virtue of necessity" by transposing military inefficiency into scientific advantage in space exploration. The Russians are reportedly using the same kerosene and liquid oxygen combination we use, but their bigger



America's future space vehicles, the Saturn and Nova, are compared to the Atlas and Titan.

rocket boosters enable them to fire large payloads into orbit. Usually, we would not be overly concerned, but the Russians have been using the large Sputniks as propaganda devices in swaying uncommitted nations. Consequently, Russia is commanding greater respect and trust from these weaker nations. While Russia has exploited the spectacular in trying to impress other nations, the U.S. has been content with smaller satellites of greater scientific value.

At the present time the U.S. has in its repertoire of weapons over seventy-five different missiles of all sizes and every category: air-to-air, air-to-surface, surface-to-air, surface-to-surface, and water-to-water. Although the missile program is top secret, some things can be said on behalf of the nation's top missiles: Atlas, Titan, Minute-

man, and Polaris.

The eighty-five foot Atlas ICBM is so accurate that it "will come within a mile of its target" at full range, 6000 miles. With such a revelation, the U. S. cannot be too lacking in missile technology. The Atlas is capable of striking any Russian target if launched from within the free world. With recent improvements the Atlas may be able to carry a warhead up to 7500 miles, almost one-third the distance around the earth. America's other operational ICBM, the ninety-eight foot Titan, is a two-stage missile with a take-off thrust of 300,000 pounds. Theoretically, it could launch a 2200 pound satellite into a 300 mile high orbit or a 300 pound probe deep into outer space. Also an extremely accurate weapon, the Titan can be flown hundreds of miles above the earth at a velocity ex-

APPRAISAL

by Ken Miller, frosh

ceeding 17,000 miles per hour, or 25,000 feet per second. At such speed a slight error of only one foot per second would cause the missile to deviate one mile from its target. Provided that its more than 300,000 separate parts function perfectly during flight, the Titan stays on course.

The three-stage Minuteman missile, still in the planning stage, should be operational in three years. About fifty-five feet long and weighing approximately 90,000 pounds, the Minuteman will have a reported range of 6300 miles. A solid fuel rocket, the Minuteman will be smaller, lighter, and cheaper than its liquid-fueled counterparts, the Atlas and Titan, and it will also carry a warhead. In addition, to being placed in strategically located launching pits, the Minuteman will have the advantage of being mobile. The missile will be launched from specially constructed railway flatcars, highway vehicles, or barges, which could carry it to all parts of the country. The Minuteman will always be ready for firing, thus explaining the use of the name "Minuteman." It will require very little launching preparation, because it can be quickly ignited and the guidance system will have been previously aimed at a specified target. Each ground-launched Minuteman will be down in a fifty-foot deep firing pit, or silo, as it is called. All silos will be unmanned but will be connected to a command center by a "non-jammable" communications

system. One need only push a remote control button at the command center to fire any Minuteman missile. But again mobility is the keyword. The day will come when no fixed launching site is safe from attack.

The operational 1500 mile Polaris is a solid-fuel rocket with extreme mobility because it can be fired from a submerged submarine. The Polaris, with its electronic brain and precise guidance system, is as accurate as any missile we now have in the U. S. arsenal. We feel safe in claiming that the Polaris will bring any military target in the world within a fifteen minute range of attack from the sea. A fleet of Polaris missiles, coupled with our present nuclear submarines, which would be, for all intents and purposes, undetectable by radar, would serve as a tremendous deterrent to war. Many regard the Polaris as an "unearthly" weapon.

Steps are now being taken to design the gigantic 200-foot Saturn, powered by eight boosters providing upwards of one and one half million pounds of thrust. According to the calendar, the five-stage Saturn should be operational by 1963. Experts hope that Saturn will be capable of placing a 6000 pound space station in orbit 22,000 miles from the earth. At this height the space station is intended to serve as a guidance system for airplanes and space vehicles. When project Saturn has been completed, our scientists and military men will direct their atten-

tion towards an even more spectacular undertaking, the Nova missile. This project will dwarf anything previous, but it is at least ten years away. Nova will be provided with four rocket boosters producing a total of six million pounds of thrust. Plenty of reserve power is needed to take man to the moon, make a "soft moon landing" by the use of reverse rockets, and bring him back. Nova will have enough power to place a 150,000 pound satellite into a 300 mile high orbit, or a 42,000 pound space station 22,000 miles above the earth. Compared to Nova, any existing missile, Russian or otherwise, will seem like a mere toy.

A potential boon to American defense is the development of the Bell X-15 Rocket plane. For short periods of sustained flight, the X-15 has taken man higher and faster than he has ever flown before. This fifty-five foot long, black, streamlined vehicle has successfully passed tests at six g's and will soon carry man into the fringes of outer space. It's 50,000 pound thrust motors propel the X-15 at speeds greater than 4000 miles per hour. However, it has not yet reached its full velocity potential. At such tremendous speed the X-15 burns 10,000 pounds, or five tons of fuel per minute. It would take two years to burn an equivalent amount in the family automobile. The X-15 is so fast that ordinary control surfaces are ineffective, and small steam jets in its nose must be used to keep the ship

(Continued on page 24)

FARM OUT THE FACULTY

Is the computer that we now have the first step toward automatic teaching at Rose? To illustrate this we will set forth our version of "The Roselectronic Easy-Teach-Hard-To-Learn Classroom Teaching Device". We feel that this electric system will eliminate the faculty, the chief cause of student difficulties. We will now describe in detail the workings and possibilities of this modern marvel which has been dreamed up and developed by the Tau Beta Pi Spring Pledge class of 1960.

The electronics of the "working" apparatus consist of 17.5 ultra-sonic ramitronic high frequency computer connected alternately in series-parallel. The 'ramitronics' essential function is to ram in information to the student painlessly.

The central control room in the system is the resonance part of the ultra-sonic and a storehouse for the 10 trillion lectures the student will receive before graduation. The control room will send out the lectures to the various classrooms by video microwave tape. The tape is highly sensitive to graphite, therefore when it strikes the blackboard of the classroom, the high energy video wave is converted directly to an infrared picture on the board. Each student must have a special pair of glasses, which he will purchase before entering school at a cost of \$1500. These will convert this infrared picture to a video wave to which the human retina is sensitive, you know what I mean?

The student will not be required to take notes. He will be equipped with a handy-dandy pocket size

ultrasonic video wave recorder. He will be able to develop the film in a few seconds and will have recorded every word presented in lecture. Because of the tremendous volume of notes each student will possess after only a few lectures, provisions have been made to convert the Civil Department into a self-cooled magnetic drum which will store each student's notes.

To fill the need to answer questions which will arise in the students' minds, there will be a question and answer component which, due to the tremendous confusion, of the students, unfortunately, will occupy all of the Mechanical Department, except the water cooler. To run a lab, all the students will do is to punch a computer button. Because of this, results will be infinitely accurate. You know what I mean?

The Physics lab will have to relinquish its upper and lower labs to the test division of the Roselectronic Easy-to-Teach Hard-to-Learn classroom teaching device. So that there will be no panicing or choke factor on the test, each student will be completely relaxed by and electro-emission shock wave. Caution will have to be exercised in applying this shock wave because a deviation in the output wave of 0.0006 angstroms will be fatal. You know what I mean? No direct question will be asked; only whether the student knows what button to push. After all, the object of today's education is not to teach the student all there is to know about everything, but only to teach him where to find such knowledge.

Discipline will be controlled di-

rectly from the Chemistry lab, which must also be relinquished to progress. Discipline will be administered through the special electronic chairs and beanies (green for freshmen and everyone is a freshman because this concentrated comprehensive course only takes one year to complete). A simple snore will send a shock through the student's body proportional to the decibel coefficient of the snore. Other disciplinary actions will be acted upon in a similar manner. In extreme cases a fatal shock is given.

The extra-curricular activity division of the computer will occupy one cubic chemical engineering department and most of the upstairs classrooms. This department will perform such functions as the nitely dance, refereeing of intramural and varsity sporting events via closed circuit telephone-television. It will also include daily matinee movies for the students. In the mornings it will awaken the students gently with models and serve them breakfast in bed. Editors of the *TECHNIC*, *MODULUS*, and the *EXPLORER* will have to only push a button when they want an issue of their publication to come out.

We can see that our computer will require a great deal of space. As yet we have said nothing as to the control center of our computer. It can be seen that the complexity of the computer will require a large control center; having gone to great expense and spent endless hours in calculation in exhaustive research concerning the location of this con-

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AIR - BLAST CIRCUIT BREAKER

by Hal Booher, senior e.e.

Since there is an increasingly greater desire for circuit breakers requiring less outage time for maintenance and also a greater interest in extra high voltage transmission lines, new outdoor air blast circuit breakers have been introduced. Their advantages are of such importance that they can now compete with the oil circuit breakers.

Some of many advantages of the air blast breakers are listed below.

1. There should be an approximate 25% reduction of outage time for maintenance.
2. The breakers are lighter and ground shock is eliminated, thus reducing foundation costs.
3. Oil fire hazard is eliminated.
4. Short arc duration and high speed arc.
5. Interchangeability of parts between voltage ratings reduces parts costs.
6. Design can be extended to any voltage using an A-C system.
7. Rated withstand levels of dielectric strength to ground are retained even with complete loss of air pressure.
8. The arc products are nontoxic and noncorrosive and may also be exhausted to the atmosphere.

In 1930 the English Research Association developed the first successful air blast breaker. While investigating an oil circuit, they concluded that the actual mechanism was the generation of hydrogen gas by the decomposition of the oil during arcing. Hydrogen was found to

be the most effective gas, but air at higher pressures worked about as well as other gasses tested. General Electric developed outdoor air blast breakers for 34.5, 69, and 138 KV about 1940. In recent years a new design has been introduced by raising the air storage tank to high voltage and mounting on porcelain, with the contacts and mechanism installed in the storage tank.

In studying air blast interruption, a transmission line fault gives traveling waves which appear between the circuit breaker and the fault after interruption. The effect is to make the air blast interrupter fail somewhat short of its short circuit capacity. To compensate for the high ratio of recovery voltage, a high thermal capacity resistor is placed in parallel with each break and in series with an auxiliary break. This resistor is low in ohmic value and tends to reduce the magnitude and rate of rise of the traveling waves as they strike the breaker.

The entrance bushings and the current transformers are filled with sulfur hexafluoride.

The air blast circuit breakers are of a building block design. There are one or more columns per phase with storage tank at high voltage at the top of the columns. Each tank has a pair of interrupter contacts and a contact mechanism. A central main valve pneumatically operates the breakers. Current transformers are located in the breaker support columns. Coupling capacitors and

potential devices have been developed to attach to the breaker frames.

OPERATION OF THE CIRCUIT BREAKER

The current flows through a bushing to the bottom of the first interrupter, through the nozzle into the moving contact. The contact is kept closed against the nozzle by employing heavy compression springs. The current then flows through the current collecting fingers through the removable connector to a second interrupter. The sequence is then reversed and the other bushing connection is made.

When the system has a fault, a pneumatic control valve opens all the blast simultaneously. High pressure air rushes through the interrupters, collars, blast tubes, and into the atmosphere through the blast valves.

There is a pressure differential across the nozzle which causes it to snap down. The air blast and the action draw the arc between the arc-centering electrode and the silver tungsten button or similar material on the moving contact.

Deionization takes place in the coolers beneath the interrupters. At this same time, a second control valve has been pneumatically operated to allow high-pressure air to come in behind the moving contacts. This will occur after the blast valves have been open the desired length of time. The contacts separate and the blast valves close.

Campus Survey

by Don Bonness, soph., e.e.

As this second semester draws to a close, we warily anticipate that week which causes us so much anguish — finals week. But we also see this week as a means to the end with the arrival of summer vacation, our hard-earned rest.

OBSERVATORY

More than likely in the very near future, a new and different building will be seen on the Rose Campus. Pending favorable student opinion, plans for the erection of an astronomical observatory have been submitted.

This building would probably be located in the "old barracks area" overlooking the highway. Its beautiful contemporary lines of the hyperboloid roof make the observatory an eye-pleasing addition to the campus.

The erection of this observatory would be in conjunction with the Moonwatch program and thus relocate the local station, giving Rose the opportunity to serve the community as sponsor of the local program.

Our students would be welcomed and encouraged to participate in the Operation Moonwatch as volunteer Moonwatch observers. Affiliated with the Smithsonian Visual Observing Program, the observatory would be loaned small apogee type telescopes. The aims of the Moonwatch program consists mainly of spotting new satellites, relocating satellites that become "lost", and tracking satellites on a regular basis so the ephemerides

may be corrected.

This observatory would also be equipped with a 12½ inch Newtonian reflector telescope which would be made available for the use of the staff and of the student body.

Such new facilities would make possible an extension of our present academic program. New courses such as space technology and astronomy would be a natural outgrowth of the new observatory: research in this field would be almost unlimited. This expansion of our curriculum would be an important step in view of the present day em-

phasis on space and the importance of engineers in solving space travel problems.

ST. PAT'S DANCE

Again this year St. Patrick's birthday was celebrated at Rose in the traditional manner. The Blue Key Honor Fraternity presented the St. Pat's Dance and again sponsored its annual beard-growing contest.

Held in the school auditorium, the modest decorations, which included lighted candles and of course the appropriate green, set an especially pleasing atmosphere. Play-



Several Junior Cord Day celebrators egging senior Jim Tubby on for a fair tussle. (Note decorated tree in background.)

ed by Dave Baker's orchestra, the music, which included a good mixture of "fast" and "slow" numbers, was enjoyed by all who attended.

Bill Nicewanger, with his glittering green chin growth, won the prize for the most unique beard, while John Egan was judged by the three barbers as the man having the fullest beard. Strange as it may seem, both men are freshmen.

The members of Blue Key deserve praise for their efforts in the coordination of this very successful affair.

FLYING CLUB

Catering to those men who are interested in obtaining private flying licenses and those who fly just for the sport is the Flying Club at Rose. This new innovation will provide those men, as nearly as possible, an economical means of learning about the "wild blue yonder."

Organized by students Carl Garmong and Paul Davison with the staff supervision of Gustav Zader, the club has grown until it now includes 16 members who have paid their initiation fee of \$25. Monthly dues of \$6 along with the initial fees will be used to procure new equipment.

For the time being, the club will use a Luscombe dual control plane which is owned by the Air Force Reserve and will operate out of Hulman Field.

Although the club has not elected officers and a board of directors, it has adopted a constitution which is fairly standard for flying clubs. By October or November of next year the group expects to be in a position to start paying off a plane of their own; but if the present program works out satisfactorily, they might continue it until funds for a better plane can be raised. In the present program, the plane is rented at the cost of \$3 an hour, including gas and maintenance, which is almost as inexpensive as owning a plane.

Part of the changing scene, the Flying Club is a worthwhile addition to our campus activities.

RUSSIAN CLUB

The curriculum has this year been expanded to meet the changing times. In the addition of the course in Russian language, an important step was taken, not only in the scientific enlightenment field, but also in the international relations field. We must not only be able to understand Russian techni-

cal writings, which are among the best in the world, but we must understand their way of thinking, their problems, and their cultural heritage, so that we may better cope with these people who now threaten our way of life.

In meeting this challenge, a Russian Club is being organized at Rose. The new organization is based on the following promise:

"The objectives of this organization shall be to promote within the faculty and student body at Rose Polytechnic Institute a better understanding of the Russian people and their culture."

Membership to this group is not at all restricted to Russian speaking students, and in fact its program is geared so as to interest all members of the student body. In the immediate future, speakers such as our president, Dr. Ralph Morgen, will speak informally to the club concerning education and technology. Later programs will include films which show life in Russia before, during, and after the Bolshevik Revolution. Material available for the use of the club is almost limitless.

Since this club is entirely a student organization, its success depends upon student support.

GLASS MENAGERIE

Included in our diversified convocation program was a dramatic presentation by the "Little Theater" players from DePauw University.

A Tennessee Williams play *Glass Menagerie*, was well-presented by the DePauw Thespians. The cast of two actors and two actresses displayed exceptional talent in very effectively portraying the pathetic characters in this psychological production.

Considering the caliber of the acting and the serious mood of the presentation, the Rose audience responded poorly, showing little understanding of the plot and its implications. Perhaps we need more programs and activities of this type to develop us into well-rounded professional men rather than just slide-rule wielders.



Mirthful juniors air-condition Jim's apparel. The handshakes came afterward.

Fraternity

THETA XI

The advent of Spring has inspired two more Kappa men to relinquish their pins. Mike Clayton gave his Badge of Honor to Miss Mary Jane Deatruck, while Baker lost his to Miss Beverly McGaffey. Congratulations to all concerned.

The Annual Spring Pledge Dance proved the highlight of Kappa Chapter's social season. The theme was "Hawaiian Holiday" — the pledges, with the able assistance of Dick Uahinui, decorated the interior of the house with an abundant assortment of tropical flowers and plants. Favors were orchid leis and miniature Hawaiian war gods. Entertainment was furnished by three lovely Hawaiian hula girls. Other features included various island foods, a model volcano which, thanks to the chemicals, did a creditable job of erupting, and an indoor fish pond (which leaked only slightly). Many thanks to Dick and to the pledges for an enjoyable and memorable evening.

The TX Tigers are currently 1 and 1 in the IF softball league, losing the opening game to ATO and defeating Sigma Nu in their second start. Members of the team include Brothers Schreiner, McGivern, Blase, Cunningham, Honegger, Gross, Gilpatrick, Andis, Wardle, Brown, McCardle, and LaGatta, and pledges Murray and McClure.

Several Theta Xi's are participating in varsity sports. Don Lanning,

Ed Goheen, and Bill Edmonds are members of the 1960 Engineer baseball squad. Larry Landis, Bob McCardle, and John Anderson are on the varsity track team.

Kappa will hold its annual Parent's Day on May 15. Formal initiation ceremonies will be held on May 8.

Song leader Jim Tubby is busy readying his charges for IF competition. Practice is being held daily, and it is hoped that everyone will have memorized the words by the latter part of May.

Brothers Gilpatrick, Blase, Malone, Andis, and Reece will attend a regional meeting of Theta Xi at Indianapolis on May 6.

At the insistence of Jim Funk, who is muttering something about a deadline and attempting to pull the sheet out of the type.

Bob McCardle

ALPHA TAU OMEGA

With the spring season finally arriving the softballs and gloves are being hauled out of the closets and dusted off. After school you will find many men, both veterans and rookies, outside loosening up their arms preparing for the oncoming softball season. In tuning up for this year's race, an exhibition game was scheduled between the actives and the pledges, the pledges going down to defeat by a decisive margin. Although we have lost several men at key positions, Gamma Gamma is

still confident of fielding a winning team.

Recent social events at the Tau House included a very successful mixer with the Sigma Kappa sorority. A house party was held before the St. Pat's Dance for the actives and their dates. One of the main events on the remainder of the ATO social calendar is the picnic being held after the Inter-Fraternity Dance.

The living room now has a new look thanks to our wonderful Mother's Club. New wall-to-wall drapes have been installed over the west wall, and new drapes have also replaced the old ones at the windows facing the south.

Looking at the varsity baseball and track rosters, we find many Taus participating. Mainstays on the baseball team include Brothers Jerry Heiniger, Jim Godwin, and Louis Roehm, with Brother Bill Perkins and pledge Rick Rapson handling the statistics and equipment. Taus on the track and team include Brothers John Stiles and Jack Munro with pledge Sheridian Skidmore the track manager.

Final plans are being made for the Goodwill help Day as the pledges are busy folding empty sacks. April 30 and May 14 have been selected as the dates for delivering the empty sacks and collecting the full ones.

This concludes the news for this spring. See you again this fall.

Scott Herrin

Notes

LAMBDA CHI ALPHA

Finals are almost here again! The brothers are having a difficult time finding time to study on weekends with all the social events occurring in the month of May.

On May 6 we had a picnic trade party with the Alpha Omicron Pi Sorority from I.S.T.C. The mixer was held at the I.S.T.C. Lodge in Allendale. A great time was had by all, including assorted games and an egg throwing contest.

Brothers Gale Hurst, Steve Burton and Bob Micheal attended the Lamba Chi Alpha Conclave at Michigan State University on the weekend of May 7. They brought back many new ideas which will strengthen the chapter.

The Lambda Chis were hosts to the other three campus fraternities at a house party before the Junior Prom. Numerous couples attended the festive affair and enjoyed the congenial company and fine refreshments.

Congratulations to Ron Klinect, the new editor of the Theta Kappa News. Ron has done a fine job of keeping the alumni informed.

Parents Day was an important event at Theta Kappa. May 8 was the big day; parents of the brothers enjoyed a fine luncheon and friendly visit at 912 South Sixth Street.

The Lambda Chi Softball team was sharp in its first game with Sigma Nu. The game was tied after seven innings and was called because of darkness. Coach Steve Ban

is doing a fine job and the team is expected to place high in the I.F. standings.

The I.F. Dance was a fine success this year. A record number of Lambda Chis attended the gay event which featured the I.F. Sing.

Carl Herakovich, '59, and Marlene Vukovich were married April 23 in East Chicago, Indiana. Brothers Tom Feutz, Terry Halcom and Bob Amos attended the beautiful ceremony.

Spring is here in full force now and the brothers are having quite a few dates. It is suspected that Phil Ballantyne is in love! Believe it or not!

Until then—

Bob Amos

SIGMA NU

Four more freshmen have been pledged to Sigma Nu; they are:

Ray Heit—Cleveland, Ohio

Max Hinshaw—Lynn, Ind.

Gary Reynolds—Straughn, Ind.

Dick Shade—Seymour, Ind.

This makes a total of nineteen freshman pledges, which, along with the rest of the chapter, makes fifty-nine in the chapter. With eleven seniors graduating, Beta Upsilon will have a good number with which to start off next year. Most of the pledges tell us that they plan to move in the house next semester, so it looks as though there'll be a "full house" for Mom to cook for.

Our pledges are really showing some get up and go. They have already planned "The First Annual

Pledge Dance" (at least the first for a long time) to be held at the Student Center April 23. To finance this they held a car wash and are now planning to raffle over a portable transistor radio to raise the rest of the money—all this on their own without help or suggestion from the chapter. Congratulations for some fine spirit and initiative, pledges!

Election were held April 11, with the following results:

Eminent Commander—

Charlie Smith

Lieutenant Commander—Lee Brda

Recorder—Dave Laterneau

Treasurer—Rich Carter

Assistant Treasurer—Johnny Kirk

Chaplin—Dick Landenberger

Alumni Contact Officer—

Morris Cleverly

Sentinel—Don Hurst

Marshal—Fred Morgan

Reporter—Bob Carter

Historian—Gary Valbert

On the social side, we had a mixer with the AOPi's April 1, and had a date party the following Friday. Also, Division Conference is to be held here at the house April 24, and I-F Help Day is April 30.

Sigma Nu stands first place in I-F Sports competition, although we lost to Theta Xi in basketball, finishing the season with six wins and one loss. Softball hasn't started yet, but our chances for winning the All-Sports trophy look very good.

The I-F Sing and Dance will be held May 14. The chapter will sing

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THE BATTLE OF TECHNOLOGY

by Bob Stark, junior m.e.

American response will meet the Soviet challenge. This is not necessarily because of more natural resources but a more efficient use of the resources that the United States has at its command.

The actual challenge that we are facing is to our willingness to see the danger of the current thoughts then; act in a manner which will not only add a better sense of direction to our individual lives but also to the life of the United States as well.

The challenge the U.S. faces is one of many aspects. Among these are: economical, religious, social, physical, intellectual, and technological aspects. The technological side of the every-day struggle will be presented here.

Technology is the basic application of scientific principles in order to make more efficient use of natural resources. The basic problem facing the U.S. in the area of technology is twofold. First, to counter the external threat, we must mobilize and coordinate our natural resources to the point where our physical force provides a sufficient deterrent to Russian attack. Secondly, can our democratic institutions cope with the internal disintegration of political order that follows in the wake of advancing technology.

We must show the people of the world that our democratic way of life is better equipped to withstand the instability induced by the constant change which follows in the wake of the technological path. Our struggle with the Communists is not

a disagreement about ideas carried on in a vacuum. The substance of the contest is this disordered world itself; the only rational objective of either contender is to stop the disintegration of political order that threatens to destroy all of us.

"Lead-time", the time between the concept of a new scientific discovery and its practical applications, is a fairly accurate measure of the relative technological efficiency. Admiral Rickover has stated that during the last 10 years the Russians have applied devices to their natural resources which enabled them to cut their lead time by 75% while ours in some cases has doubled.

What are the devices used and why is not the United States following suit? Here our freedom of life puts us at a distinct disadvantage. Many of the devices used by the Russians would not be acceptable to us. Communism centers all power in the state, the authority of the government starting from the top and going to the very bottom.

Democracy centers the power with the people, the authority traveling from the bottom up. Therefore Communism can naturally effect a great degree of centralized planning and organization which would be morally unacceptable to the United States.

Education is an important device in the growth of technology. The Soviets have a mechanized sort of educational system. Education is competitive, thus giving him a chance to go to college and do something besides play football. I doubt

if many deans of engineering will get the "Dickens" treatment for recruiting engineers. Our educational system is not established that way. It should be.

Research and development is a very important part of the technological process. Here is where Russia again has the advantage. Research costs money and needs to be coordinated to a high degree in order to produce results which are practicable. Yet the U. S. worries more about balancing the budget than national security. While reliable figures bear out the fact that we will be outstripped by the Russian's in the missile field by a 3-1 margin by 1965, missile research and development is cut. The irony is that the top governmental officials will admit that a 1-3 margin in our favor will not provide a sufficient deterrent force.

The coordination of human effort is another important part of using our resources effectively. In Russia the capable technician, after his education looks forward to a life of prestige, social acceptability and high income. In the Soviet Union, most of the technical decisions are made by the technicians themselves, contrasting to the U. S. system where technical decisions are made by the social scientist. In the U. S. the engineer in the contemporary business world is hidden from view by the salesman, public relations man and the business man in general. Although his starting salary may be higher than his social sci-

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Locker Rumors

by Bob Michael, jr., e.e.

This year's Engineers have a potentially powerful team. The big question mark of the team seems to be whether or not the pitching staff can carry the load of chores ahead. However, with lettermen Jim "No-hit" Godwin and Jerry Heiniger, and the addition of newcomers Bill Yochum, a junior, Bob Johnson, a senior, and Jack Hobbs, a freshman, the possibilities look pretty good.

In the power department the team has men like Larry Myers, hard-hitting outfielder, Bill Fenoglio, driving infielder, Louie Roehm, towering first baseman, and Don Dekker, another outfielder.

In their first outing of the season Rose did not fair too well. On April 8 the Engineers were host to Marion College. The team lacked the one game of experience which Marion possessed. In the first game of the double-header, Rose was downed by a score of 8 to 6. In the second game the roof completely fell in on the Engineers. After the Marion players had finished circling the base paths, the dust finally settled and upon cleaning off the scoreboard, the shocking truth of the 25 to 8 drubbing became apparent. Although the team hit fairly well, they were hurt in the field by errors aided by a 20 mile per hour wind which made fly balls dance.

The fighting Engineers, determined to get on their winning ways, appeared on the field the following Tuesday, April 12, looking like a

completely different team. Their opponent was Indiana Central, who had beaten Purdue the previous Saturday. With a well-rounded attack and a good field game, Rose put together timely hits and finally, after 9 innings of play, emerged victorious by an 8-4 margin.

TRACK

The Rose thinclads are once again on the track. Heading the list of men returning veterans Bob McCardle, John Ray, Joe Andel, and Jack Munro. Along with them are some promising "rookies."

The first meet of the season was an indoor meet against Earlham College of Richmond, Indiana. Although very strong in the field events, Rose was outmanned in the distance events. Earlham swept all 3 places in the 440, 880, and the mile, and took the first two places for the 2 mile in winning 65-42.

Jack Munro turned in a fine performance for the Engineers by winning both the broad jump and the shot put. Bob McCardle won the high jump with a 6'0" leap while John Ray went 10'9" to win the pole vault and Dave Dumford took the 60-yard high hurdles.

On April 9, Rose traveled to Decatur, Illinois, to compete with Millikin University and MacMurray College. Again the same story prevailed as the Engineers looked good in the field events but lost valuable points in the distance events. Millikin University, showing

a well-rounded squad, took the honors with 85 points followed by Rose with 43 and MacMurray with 36.

Bob McCardle again won the high jump with a 5'10" leap and John Ray tied for first place in the pole vault at 10'6". Indiana Central and Anderson were the next opponents faced by the R. P. I. thinclads. This triangular meet was held at Indiana Central, which is located outside Indianapolis.

Warm weather and a fast track could do nothing to help the Engineers' efforts. Although the men performed well, they were faced with tough competition in all events. The only bright spot was John Ray's and Jack Munro's showing in the high jump as they tied for first place with the jumper from Indiana Central. The final score read: Indiana Central 85 $\frac{1}{3}$, Anderson 53 $\frac{1}{3}$, Rose 33 $\frac{1}{3}$.

Spring intramurals are getting into high gear as the weather is now beginning to show signs of cooperating. Softball action began immediately following spring vacation. In a practice game April 12, the "Mighty Midgets" of BSB II clubbed Deming in a real pitchers' battle 35-2. If all the games are like that, this could prove to be a very interesting season.

A new thing which was started this year was open intramural bridge tournament. There seemed to be quite a few fellows who spent their lunch hours and spare time

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Alumni News

by Larry Shaffer, frosh

The *Rose Technic*, on behalf of the alumni, students and faculty, extends hearty congratulations to Benjamin K. Sollars. We have been notified that Mr. Sollars has been promoted to Vice-President and Assistant General Manager of the Diamond Chain Company. He is also a director and has been with the company since 1946. He was graduated in the class of 1942 with honors and is now residing in Indianapolis.

In the last issue of the *Technic* two Rose Alumni from the Chemical and Mechanical Engineering fields offered their services of consultation to the students of Rose. This issue we have two men from the Electrical and Civil Engineering fields.

Mr. Paul Ford, a graduate of the class of 1951, resides at 4341 South 8th Street in Terre Haute. His telephone number is C-4496. Mr. Ford is an electrical engineer who does consulting work for radio broadcasting stations. His field at present is rather specialized. There are only 245 engineers in the country engaged in this type of work. He has had experience working for other people, but he says that he was satisfied only when he started working on his own.

When going to Rose, Mr. Ford was active in the radio club. He also is a member of Sigma Nu. In civic activities he has worked with the Community Theatre and the Toastmaster's Club. He is a member of the Indiana Society of Professional



Benjamin Sollars

Engineers. Being active in church work, he is an elder at the Central Presbyterian Church.

When asked about his philosophy of engineering or any advice he would like to offer the students he said, "You must find the kind of work you want to do. If you don't like your job don't be afraid to look for one you will enjoy. If one really likes a job, he doesn't want to quit at 5 o'clock. He also said that when one goes into business for himself, he should know something about basic law with special emphasis on contracts. When asked about his experiences as a student Mr. Ford said that the basic purpose of a college is to teach and to learn, with all other activities secondary. This last statement is one which all of us connect-

ed with the college should consider more seriously.

Carl North is a graduate of the Class of 1954. He lives in a section of Terre Town, which he laid out, at 1902 Berne Street. His telephone number is North 2388.

Mr. North is a Civil Engineer and is working for Paul Kleiser and Sons consulting firm. Most of his work is involved with water distribution and sewage disposal; however, on the side, he has a class in surveying here at Rose.

In school his activities included the American Society of Civil Engineers. He was a member of the Inter-Fraternity Council and is a member of Sigma Nu and Tau Beta Pi.

Mr. North is in the National Society of Professional Engineers and the American Water Works Association. His civic activities include membership in the Masonic Lodge. He is also an active member of the 4th Avenue Methodist Church.

When asked for comments or his advice to the students, he said, "Pay particular attention to the classes in Letters and Reports and Public Speaking. One of the more important yet least realized facets of engineering, as a student, is the exchange of ideas. In my work, we have dealings with laymen to whom we must explain technical terms in simplified language. Economics also plays an important role in engineering. Many times the cost of an operation must receive preference over the basic engineering practices."

A Campus-to-Career Case History



“I found I could be an engineer —and a businessman, too”

William M. Stiffler majored in mechanical engineering at Penn State University—but he also liked economics. “I wanted to apply engineering and economics in business,” he says, “and have administrative responsibility.”

Bill got his B.S. degree in June, 1956, and went to work with the Bell Telephone Company of Pennsylvania at Harrisburg. During his first two years, he gained on-the-job experience in all departments of the company. Since June, 1958, he’s been working on transmission engineering projects.

Today, Bill is getting the blend of engineering and practical business-engineering he wanted. “The economic aspects of each project are just as important as the technical

aspects,” he says. “The greatest challenge lies in finding the best solution to each problem in terms of costs, present and future needs, and new technological developments.

“Another thing I like is that I get full job-responsibility. For example, I recently completed plans for carrier systems between Scranton and four other communities which will bring Direct Distance Dialing to customers there. The transmission phase of the project cost almost a half-million dollars and was ‘my baby’ from terminal to terminal.

“Telephone engineering has everything you could ask for—training, interesting and varied work, responsibility, and real management opportunities.”

Bill Stiffler and many college men like him have found interesting careers with the Bell Telephone Companies. There may be a real opportunity for you, too. Be sure to talk with the Bell interviewer when he visits your campus—and read the Bell Telephone booklet on file in your Placement Office.



**BELL
TELEPHONE
COMPANIES**

ARSENAL APPRAISAL

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on course. The steam is generated by a hydrogen peroxide reaction within the missile. The X-15 lands at such great speed that it is necessary to blow off a stabilizing fin on the bottom of the plane before landing. Thereupon the ship glides to a stop on skids located at the rear of the plane. With additional flights of the X-15, Americans may soon be sending the first man into outer space.

In case you doubt the striking power of the U. S. missile fleet, let's consider the versatile Sidewinder. This is an air-to-air weapon with a heat detection device that is sensitive to infrared given off by the exhausts of planes. A fighter plane may carry many of these aloft during actual combat. When an enemy plane is sighted, the pilot merely releases a Sidewinder, which then seeks out the cone of exhaust heat emitted by the other plane. The Sidewinder is one missile that has

already proven its effectiveness. Two years ago we gave several Sidewinders to the Chinese Nationalists for use with their F86-F Sabre jets in air combat with the Chinese Communists over Quemoy. These ingenious weapons crawled right up the tail pipes of the attacking Communist jet fighters and exploded. The kills were horrifying. The Red Chinese, those that survived, were forced to retreat. Of seventeen Sidewinders fired, fourteen of them scored direct hits. That is not a bad percentage (82.3%), is it? I would be satisfied with a .823 batting average any time. Incidentally, the Chinese Communists have not come back to Quemoy since.

The U. S. arsenal is reported to contain more than 10,000 nuclear warheads for use with the growing missile supply. Whereas it once took trained soldiers ten to fifteen hours to prepare one of these warheads for detonation, the assembly can now be completed in two minutes by making three settings.

In conclusion, perhaps we have grossly underrated American mis-

sile know-how in so vehemently criticizing the U. S. missile and space program. It is not a question of a more advanced Russian technology. The U. S. simply had no need to build the huge rocket boosters that the Russians required for their bulky warhead. The U. S. program has remained sensible; while the Russians have delved into the realm of the spectacular in order to make a great impression. The American-made missiles are capable of destruction, as demonstrated by the Sidewinder, and we should take a back seat to no one.

NOTE:

[Condensed from an interview with Dr. John T. Rettaliata, president of Illinois Institute of Technology, leading scientist and educator, and member of the National Aeronautics and Space Council. This latter organization meets regularly with President Eisenhower, the Council's chairman, and exerts much influence over America's space and missile program. Dr. Rettaliata's views can thus be noted with more than ordinary validity.]

MEN of ROSE

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FRATERNITY NOTES

(Continued from page 19)

"The White Rose of Sigma Nu" and "Roadways," directed by song chairman Bob Carter, who has stated that he thinks we can win again this year, by hard and diligent practice. Along the line of singing, Brother Dick Landenberger has been chosen to tour Europe for six weeks this summer with the "All America Chorus," whose purpose is to spread good will for America in Europe. Brother Landenberger is a fine tenor, and will well represent Sigma Nu, Rose, and America.

Brothers Jim Kvasnica and Dave Herrington are new co-house-managers, with Chuck Gilbert retiring because of baseball. Brothers Gilbert and Bill Yochum and pledges Max Hinshaw and Steve O'Neil are on the baseball team, with Ron Higginbotham and pledge Dave Niederhaus on the track team.

With June approaching, there is mixed feeling of happiness and sorrow. The underclassmen are looking

forward to vacation, and the seniors are looking forward to finally graduating from Rose! But with a bit of reflection, reminiscing over four (or five) years at Rose and the fellowship with their Brothers in Sigma Nu, the seniors are reluctant to leave all those good times they had while at Rose. And we will hate to see them go, for we'll miss their fellowship and their guidance. Therefore, these seniors are worthy of mention, having "run the gauntlet" and survived. They are:

GARY ANDERSON
KENNY BROWN
JIM BAUCH
BOB "SOGGY" CRISP
JOHNNY KIRK
DAN MAFFUCCI
HAL MILLER
JIM ONNEN
DON SCOTT
JOE WALDBIESER

Congratulations, MEN!

That's all for this year; Happy Summer Vacation!

Bob Carter

Research and Development

by Jon Modesitt, frosh

MITE-T-BREAKER

"The Remote Reset Mite-T-Breaker (Indicating)", one of the newest developments in circuit breakers has just been introduced by Sylvania Electric Products Inc. This new breaker (fig. 1), compares in size closely to a paper clip. The miniature breaker measures one and one quarter inches overall with a one quarter inch diameter. The entire unit is contained in a glass vacuum-sealed envelope which serves as a protector from dust, moisture and other foreign matter. The circuit breaker includes a tungsten filament that provides a light which acts as an indicator when the circuit is broken.

The filament becomes incandes-

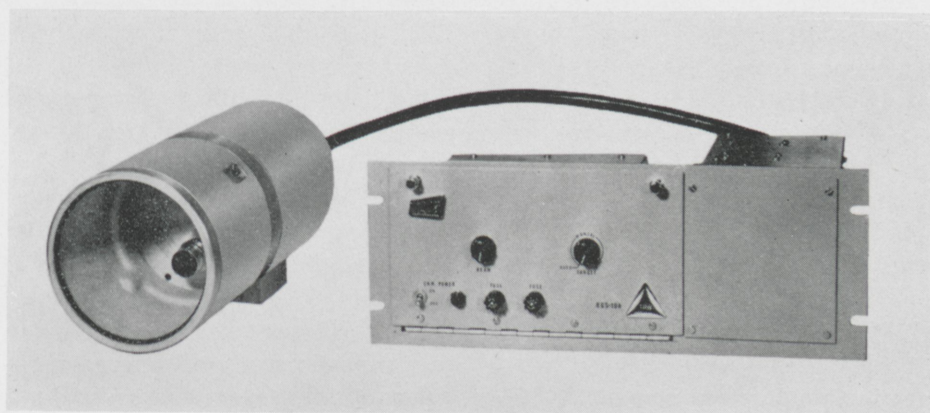
cent upon being overloaded, short circuited, or from excessive heat. The breaker contacts open furnishing a fraction of the current to

the filament. The breaker is reset by opening the line switch, removing the sources of trouble, and letting the breaker reset itself automatically.

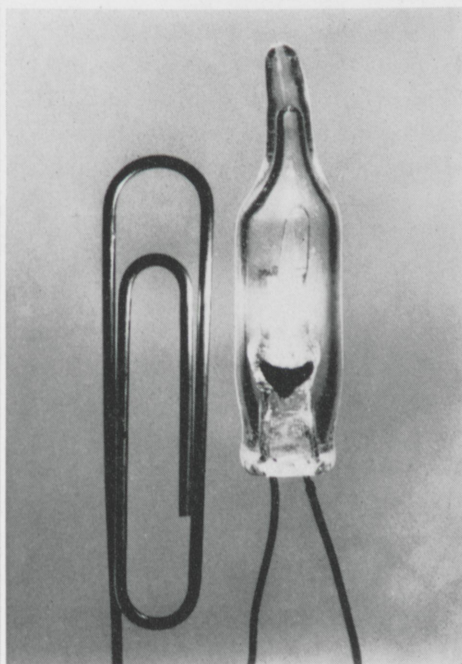
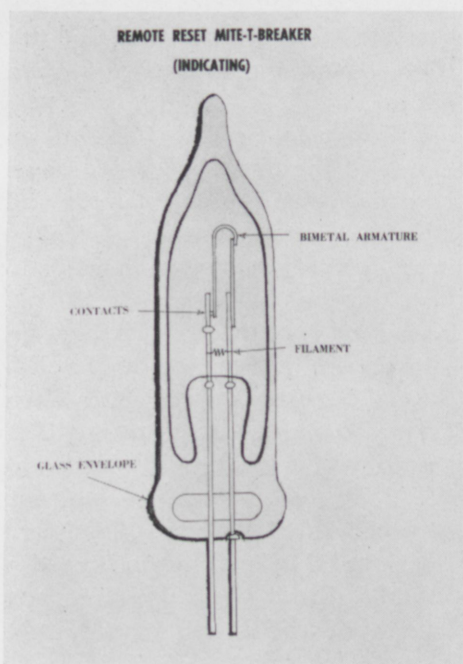
The Mite-T-Breaker has a bimetal thermal element. As the strip is heated or cooled it curls or straightens thus opening or closing the circuit. The Remote Reset Mite-T-Breaker operates on a voltage of 6 to 24 volts AC/DC, and has a range of from one to five amperes. The tripping amperage is twice the holding amperage. The tripping time varies from one to forty seconds at a temperature of 78°F. The breaker is activated by an external temperature of 200°F.

The many applications in store for this amazing new product may include use in products such as computers, electric trains, automobiles, fire alarm systems, appliances, electronic equipment and many

(Continued on page 29)



Small, rugged television camera available for production lines.



Tungsten filament remote reset circuit breaker.

Library Notes

by Carson Bennett and Anita Jackson

I NEVER HAVE TIME TO READ

Here are a few ideas to those of you who are always saying, "I never have time to read."

1. Talk less.
2. Carry a book in your bag.
3. Put a book under your pillow at night; if you can't sleep, read.
4. Wake up fifteen minutes earlier every morning and read.
5. Keep a book handy to pick up, while dressing or on the phone.
6. Have a book handy when meeting unpunctual people.
7. Take along a book when going to the dentist, doctor or lawyer.
8. Keep an unread book in your car in case traffic jams or a wait for repairs.
9. Never go on a journey in a public conveyance without a book; you might not like your seatmate.
10. Remember that a book in the hand is worth two in the bookstore.

from the *Alabama Librarian*
NEW RECORDS

Recently we ordered several records that are a little different from those we already have. They are readings of plays and poetry and critical discussions of music. Here are a few which we have already received. Why not take a few minutes to listen to one or all of them; they are of the highest quality and are worth your time.

Dylan Thomas Narrating Under Milk Wood

Faulkner Reads from his Works
Leonard Bernstein on Beethoven's Symphony No. 5

Oedipus Rex

T. S. Elliot Reading Poems and Choruses

What is Jazz (Leonard Bernstein)
FROM THE NEW BOOK SHELF
The Uncertain Trumpet, by Maxwell D. Taylor

We have the ability to wage total war. We can trigger near-total destruction. But can we defend Berlin, South Korea, Vietnam, Iran, Thailand, America?

One of the brilliant combat commanders in our military history, General Taylor has devoted his life to a realistic study of defense without national suicide, victory without total destruction. Since 1955, when he was appointed Chief of Staff of the U.S. Army, he has devoted every waking moment to an effort to develop the fighting forces, and particularly the Army, into an effective instrument of national policy without retaliation (i.e., total war).

Here is the inside story of history in the making as the Joint Chiefs of Staff, the National Security Council, the Pentagon, and the White House faced crisis after crisis—Hungary, Suez, Quemoy, Lebanon, Berlin—for the most part "local" situations which called for on-the-spot readiness in the form of mobile land, sea and air forces. But as the months passed the "economists" seemed unaware of the progressive deterioration of our military posture. Now the United States must live with the consequences of the missile gap and the insufficiency of our conventional forces.

The Uncertain Trumpet presents a fascinating inside story, but, more than that, it presents a practical program for combining new and old weapons to correct the threatened

imbalance of our military strength with that of the Communist bloc.

"If Elected, I Promise . . .", by John F. Parker

Here are some of the best jokes, stories and gems of wisdom by and about politicians—collected by Massachusetts State Senator John F. Parker, a wit with a keen eye for the witticisms and bloopers that help to enliven the political scene, nationally and locally.

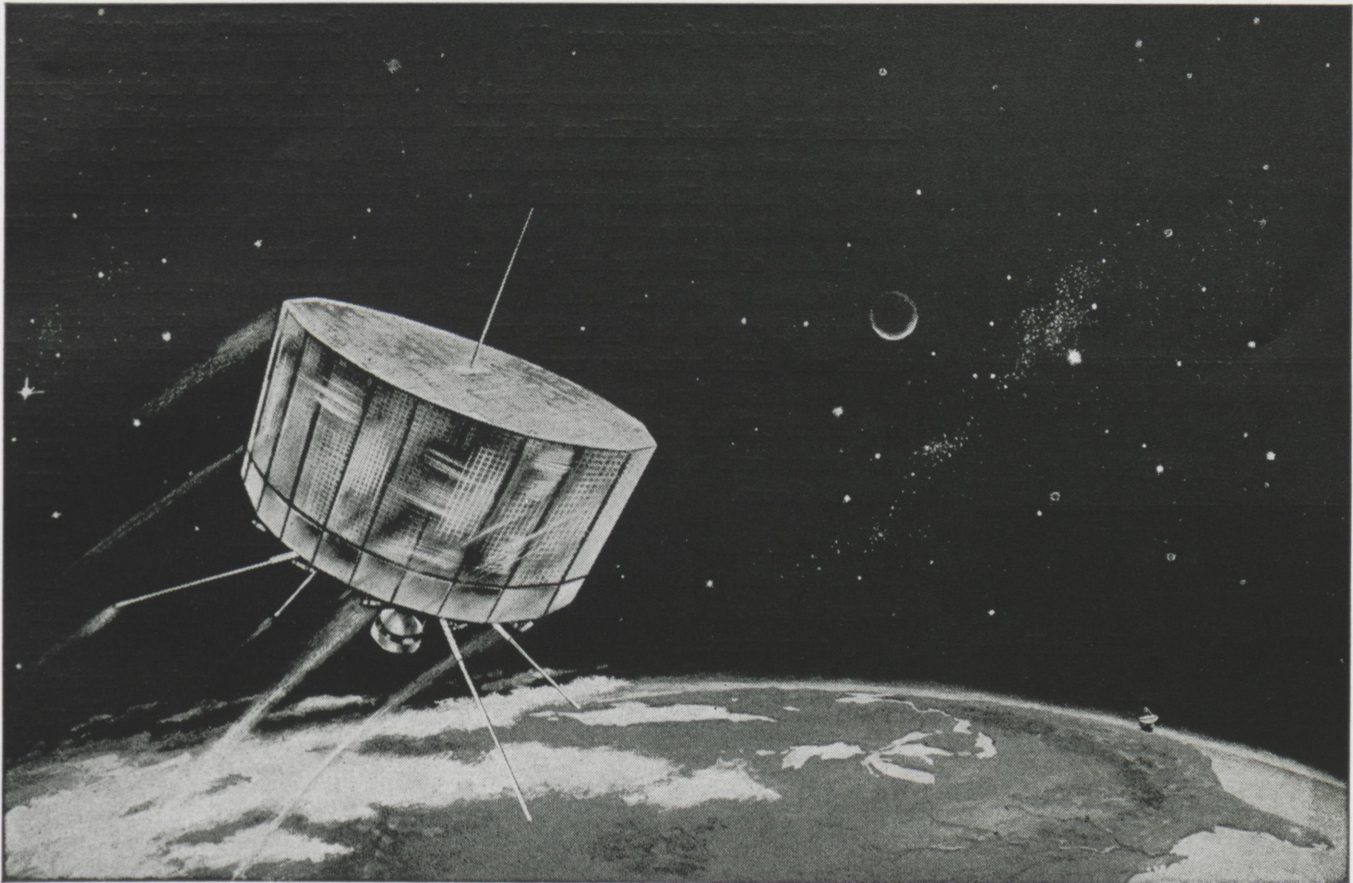
From anecdotes to quips such as the definition of a conservative ("a man who will not look at the new moon out of respect for that ancient and honorable institution, the old one"), Senator Parker has arranged his material in chapters with such titles as "Merrily We Roll a Log" and "From the Hauls of More Mazuma."

Speakers, politicians and hecklers—active and armchair—will find this fresh, sparkling collection a gold mine.

If It Moves, Salute It, by Bob Duncan

And at the Shogun Hotel, a home for transient army entertainers and athletes on the outskirts of Tokyo in 1945, everything was moving. In fact, the joint was jumping. It had been ever since pleasure-loving Captain Horace J. Stone of the Twelfth Special Service Company had taken over and turned it into a gilded resort with a sunken marble bathtub, some lusty murals, a whiskey decanter that played "Onward Christian Soldiers" when tipped—and Miss Nishimura, a Japanese lady who loved comfort and, when he was nice, the captain.

(Continued on page 28)



TIROS satellite orbiting towards ground station in Eastern United States.

RCA-BUILT "TIROS" SATELLITE REPORTS WORLD'S WEATHER FROM OUTER SPACE

As you read these lines, the most remarkable "weather reporter" the world has ever known hurtles around our globe many times a day, hundreds of miles up in outer space.

The TIROS satellite is an orbiting television system. Its mission is to televise cloud formations within a belt several thousand miles wide around the earth and transmit a series of pictures back to special ground stations. Weather forecasters can then locate storms in the making . . . to help make tomorrow's weather forecast more accurate than ever.

The success of experimental Project TIROS opens the door to a new era in weather forecasting—with benefits to people of all lands. This experiment may lead to advanced weather satellites which can provide weathermen with hour-by-hour reports of cloud cover prevailing over the entire world. Weather forecasts, based on these observations, may then give ample time to prepare for floods, hurricanes, tornadoes, typhoons and blizzards—time which can be used to minimize damage and save lives.

Many extremely "sophisticated" techniques and devices were required to make *Project TIROS* a success—two lightweight satellite television cameras, an infra-red

horizon-locating system, complex receiving and transmitting equipment, and a solar power supply that collects its energy from the sun itself. In addition to the design and development of the actual satellite, scientists and engineers at RCA's "Space Center" were responsible for the development and construction of a vast array of equipment for the earth-based data processing and command stations.

Project TIROS was sponsored by the National Aeronautics and Space Administration. The satellite payload and ground station equipment were developed and built by the Astro-Electronic Products Division of RCA, under the technical direction of the U. S. Army Signal Research and Development Laboratory.

The same electronic skills which made possible the success of man's most advanced weather satellite are embodied in all RCA products—RCA Victor black & white and color television sets, radio and high-fidelity systems enjoyed in millions of American homes.



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LIBRARY NOTES

(Continued from page 26)

Then, into this sensuous melee ambled Pfc. Frank Ellison, a new recruit straight from the corn belt. As night clerk, Ellison would have to learn "the army way" while in the midst of an invasion by this paratroopers' football team (barbarians who practiced punting with furniture and windowpanes); an economy drive by an over-zealous executive officer who lived by the rule book; and a roomful of black-market booze.

This hilarious novel is for all public-spirited citizens who want to know what, exactly, our boys were doing over there. *The Waters of Kronos*, by Conrad Richter

In this haunting, often beautiful novel, Conrad Richter writes of the journey of John Donner, who goes back to the town where he was born, hoping to find the meaning of a deep malaise. If he can only return to the past, he feels he might be free. But the quest seems futile. The town he seeks lies at the bottom of a great modern dam made by the River Kronos.

How he is drawn back through the waters of Kronos, Time, into the past forms the narrative of John Donner's classical journey. He finds himself in his own clear, light-filled world of youth at a moment of double crisis in the lives of his richly varied family, the Donners, Morgans, and Scarletts. But they are still young. John Donner is an old man. When he tries to re-enter the old intimate family relationships, he is rejected as a stranger, even by the boy-he-was as they stand face to face. Only his mother, from whom he holds himself until the last, cannot fail him, he thinks. Surely she will know him and receive him into the old heretofore never-failing love. What John Donner finally discovers of his own identity and that of the specter which haunts him is for the reader to learn.

LOCKER RUMORS

(Continued from page 21)

in the student center playing bridge, so this was put on the ever-growing list of competitive skills. A great vote of thanks should go to Max Kidd for his work maintaining and improving the intramural program here at Rose.

Intramural competition planned for later in the spring consists of tennis, horseshoes, and track. The standings in the race for the All-Intramural Trophy are as follows:

Juniors	255
BSB II	235
Deming	235
Sophomores	229
BSB I	209
Independent Freshmen	186
Seniors	124

In Inter-Fraternity action, the fraternities have been holding pre-season practice sessions in preparation for the beginning of softball competition.

For the first time, this year the fraternities are competing for a trophy similar to the one awarded to the intramural champions. It is known as the Inter-Fraternity All Sports Trophy and includes football, basketball, and baseball. With football and basketball completed, Sigma Nu leads the pack with 76 points. Following them are Theta Xi with 72, Lambda Chi Alpha with 68, and Alpha Tau Omega with 56.

"Lips that touch wine will never touch mine," declared the fair co-ed.

And after she graduated, she taught school for years, and years, and years . . .

* * *

Chemistry Instructor: "I suppose you wish I were dead so you could spit on my grave?"

Chem. E Major: "Not me. I hate to stand in lines."

* * *

Some girls are discreet — up to a pint.

* * *

The best way to get ahead is to be like a swimming duck. Keep calm and cool on top but paddle like hell underneath.

RESEARCH & DEVELOPMENT

(Continued from page 25)

varied applications in the instruments of our attempt to conquer space.

Rugged Television Camera

Engineered to military requirements, the Dage Television Division of Thompson Ramo Wooldridge Inc. has developed what it acclaims is the world's most rugged television camera. The official name of this new development is the "Dage Model RGS-10 Ruggedized Television System. The two major components of the system are the RGS-10 camera and the RGS-10 camera control unit.

The camera weighing 15 lbs. is six and seven-eighths inches in diameter and sixteen inches long, is capable of being operated two-thousand feet from the control unit. With the exception of the vidicon tube the camera is completely transistorized, and features EIA synchronization and has the provision for manual or automatic light level con-

trol with a compensation of 2000:1. Another feature of the ultra-portable camera is the four lens turret and a horizontal resolution of seven hundred lines. Altitude has no effect on the camera and it has a rather wide temperature operating range so it shows great possibility for use in outer space.

The transistorized control unit is contained in a master panel 7x19 inches with a weight of fifteen pounds. The control unit has VHF connectors which provide for either optimal modulated RF or peak to peak video composite.

Some of the uses of the new camera are in chemical plants, mines, and missile and aircraft plants where remote television is needed. Built to withstand extremes of weather, shock, vibration, and temperature the uses for this system are almost unlimited.

Vibration Pickup

High temperatures and humidi-

ties do not affect a new ceramic vibration pick-up developed by Shure Brothers Inc. The new model 61C pick-up which utilizes polarized polycrystalline barium titanate may be used for locating and measuring, checking surface smoothness, or other similar applications. The utilization of barium titanate rather than the conventional Rochelle salt crystal provides many advantages which are otherwise lost in temperature ranges above 130°F. and in extremely high humidities. Another advantage of the barium titanate is it's more stable impedance varying between 8,000 and 12,000 microfarads for temperatures between 0° F. and 180°F. In contrast the Rochelle salt varies between 2,000 and 32,000 microfarads. Another feature of the new pick-up is the four corner mounting which makes the pick-up non-sensitive to rotation. The internal impedance for the new pick-up is 10,000 micro-microfarads. at 80°F.

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FARM OUT THE FACULTY

(Continued from page 14)

trol center, it is with deepest regret that we publish our findings. The control center will occupy exactly one cubic military basement. You know what I mean?

The climatic condition control center will occupy the electrical department's present location and will extend from three-fourths of an inch from the east wall to .7 of an inch from the west, south, and north walls. You know what I mean?

Since the computer will occupy most or all of the space in the school buildings there will be room for only two students, (two in order that the possibility of Rose becoming a Co-ed school will not be eliminated). They will necessarily spend all of their time in the book store since all other space is occupied.

As to the financial aspects of a large scale computer system at Rose we have discovered, after due deliberation and thought plus everything else necessary to come to such a momentous conclusion, that the "Roselectronic-Easy-to-Teach Hard-to-Learn classroom teaching device" will cost one whale of a lot of money. The calculations by which this result was derived are intuitively obvious and require no further explanation.

You might say that the folly of such a center would approach that of buying a \$250.00 holly tree. You might say that it would be holly folly.

There is one very important advantage to the computer center. It will free the present faculty to work all day long at beautifying the campus. Each faculty member will be given a section of ground, sort of a homestead, for which he will be responsible. The faculty will, therefore, not be put out of a job, but will be kept on the payroll in a useful, productive, and responsible position.

From the foregoing discussion, anyone can see that for Rose to be a leader in the field of education a complete computer system is extremely necessary, and should be secured as soon as possible.

BATTLE OF TECHNOLOGY

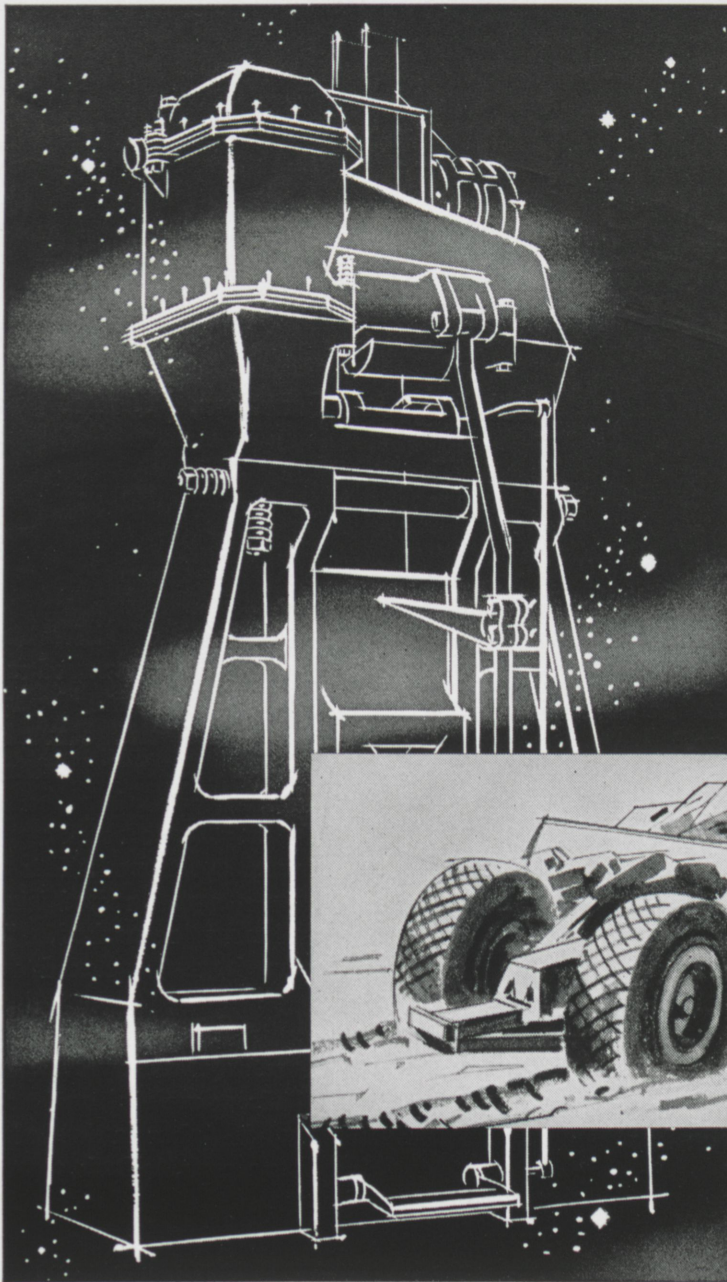
(Continued from page 20)

ence brother they will soon surpass him. According to tests administered throughout American industry, bureaucrats in this country have an IQ far below the engineers yet these people generally reap community prestige and higher salaries. At this point I would strongly recommend that everyone who has not read the book *Atlas Shrugged* by Ann Rand to do so. It would probably do us all good to memorize it.

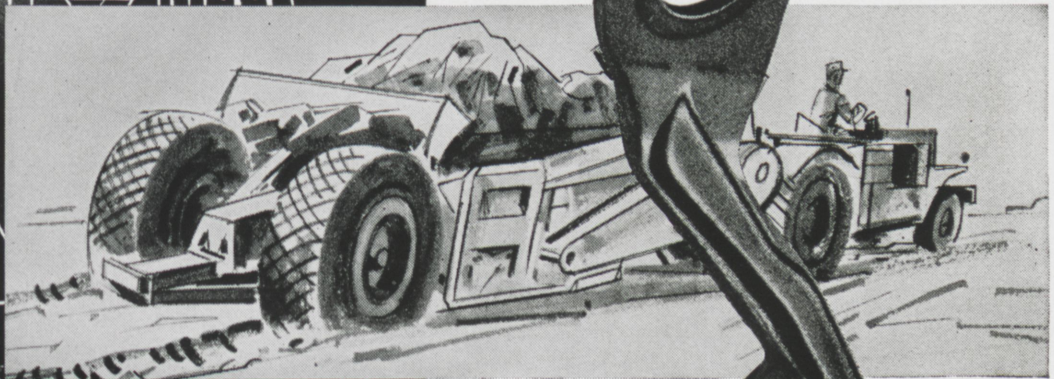
Inefficient administration is due in large measure to the lack of mutual respect between the bureaucrat and the engineer for one another's abilities and capacities. Administrators lacking any or having little technical skill are seeking to make technical decisions, setting up methods of planning and executing technical decisions and fostering rep-tape through the creation of numerous routines. There seems to be no concept in our society of a compatible division of authority between the administrator and the engineer.

Although we as a nation sometimes lost sight of it the ideal of the individual to strive for self-perfection. Our country is based on values of the dignity, equality, and rationality of man. It is not based on the values of the infallibility of the state and that man is no more than an animal making predictable decisions. The former are assumptions of democracy; the latter are foundations of Communism.

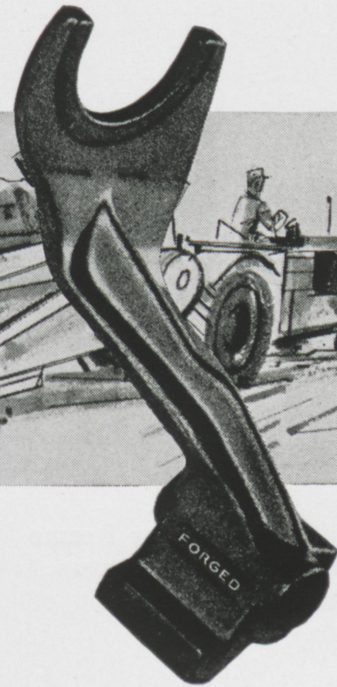
Any effective American response to the external and internal challenge in the area of technology depends on our finding common values or "fixed points of truth held in common" as Maxwell stated it. These common values when understood reveal to a society its purpose or goal and the means available to attain it. With a comprehensible public philosophy a society can muster its internal resources in an effective cooperative action to resist any aggressive attack physical or spiritual because it knows where it is going and how it is going to get there.



Modern board forging hammer



DEPENDABILITY of shifter fork improved by designing it to be FORGED



By designing the shifter fork of his transmission to be forged, a manufacturer of earthmovers eliminated costly equipment breakdowns in the field because of fork failure. Factor of safety was *increased* even while weight and over-all costs were being *decreased*.

Parts scrapped because of voids uncovered after much high-cost machining are eliminated... forgings are *naturally* sound all the way through. Forgings start as *better* metal... are further *improved* by the compacting hammer-blows or high-pressure of the forging process.

Design your parts to be forged... increase strength/weight ratio, reduce as-assembled cost, improve performance. Literature to help you design, specify, and procure forged parts is available on request.

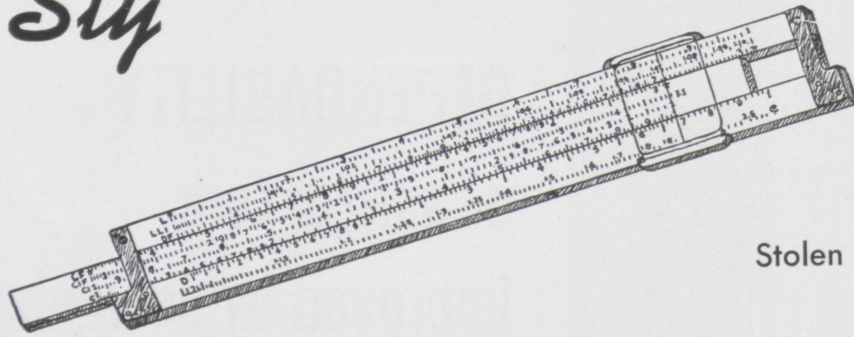
When it's a vital part, design it to be



Drop Forging Association • Cleveland 13, Ohio

Names of sponsoring companies on request to this magazine

Sly



Droolings

Stolen by Bob Franzwa, jr., m.e.

The **Technic** is a great publication
The school gets all the fame,
The printer gets all the money
And the staff gets all the blame!

* * *

I had an uncle who was a great
magician. He used to walk down
the street and turn into a saloon.

* * *

A college student was once
asked why he closed his eyes
when he drank. He replied, "At
the sight of liquor my mouth
waters and I don't like my drinks
diluted."

* * *

"You want to know why I came
home half loaded?" asked a soused
senior. "Because I ran out of
money that's why."

* * *

"Daddy if you give me a dime
I'll tell you what the ice man said
to Mama."

"Okay, here is your dime."

"He said, 'Do you want any
ice?'"

* * *

Little Boy: Mummy Mummy!
Can I go out and watch the
eclipse?

Mother: All right, but don't
stand too close.

* * *

Almost anyone can play cards,
but it takes a cannibal to throw
up a hand.

* * *

Are you sure this motel is Uni-
versity approved?

"How did you like the bridge
party last night?"

"Fine, until the cops looked un-
der the bridge."

* * *

Rush Chairman: "Our fraternity
maintains four homes for the
feeble minded."

Rushee: "I thought you had
more chapters than that."

* * *

"It isn't the amount of money
that a fellow's father has that
counts here at college."

"No, it's the amount of father's
money the son has."

* * *

Veteran of the South Seas:
"While in the Marshalls I saw the
craziest bird. It lays square eggs
and talks."

Prof.: "What does it say?"

Vet.: "Ouch!"

* * *

"It is going to be tough sled-
ding tonight."

"How come?"

"No snow."

* * *

He: "Why wait until we get
home before you tell me if you will
marry me or not?"

She: "I'm scared. This is the
very spot where my father pro-
posed to my mother."

He: "So what?"

She: "Well, on the way home
the horses ran away and my father
was killed."

* * *

A fellow and a girl charged
around a corner and bumped smack
into each other. They stepped
back, apologized and started up
again, but they both dodged in the
same direction and bumped once
more. Again they started up, and
bumped and apologized: This time
the fellow stopped, raised his hat
and gallantly remarked, "Just
once more honey, then I really
have to go."

* * *

In these days of low-cut gowns,
tight fitting waists and shear
stockings, it takes a lot of will
power for a man to look a woman
in the eye.

* * *

A college education is one of the
few things a person is willing to
pay for and not get.

* * *

Jimmy was assigned by his
teacher to write a composition
about his origin. He questioned
his mother.

"Mom, where did Grandma come
from?"

"The stork brought her."

"Well, where did you come
from?"

"The stork brought me and you
too."

So the small modern wrote as
the introduction to his composi-
tion: "There have been no natural
births in our family for three
generations."

If your sights are set



on outer space—

—you'll find
**Photography
at Work**
with you.

From the time a scientist's mind first sparks an idea for exploring space, photography gets to work with him. It saves countless hours in the drafting stage by reproducing engineers' plans and drawings. It probes the content and structure of metals needed by photomicrography, photospectrography or x-ray diffraction. It checks the operation of swift-moving parts with high-speed movies—records the flight of the device itself—and finally, pictures what it is in space the scientist went after in the first place.

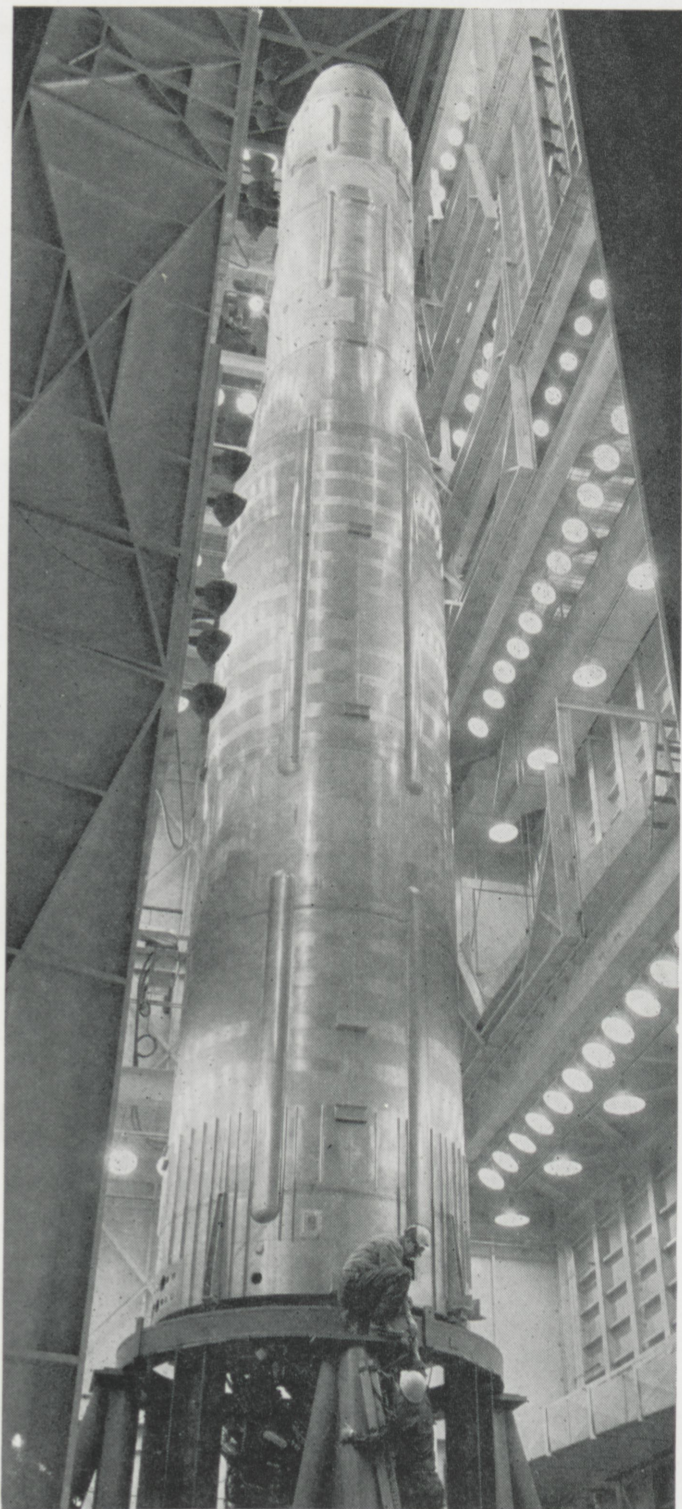
There's hardly a field on which you can set your sights where photography does not play a part in producing a better product or in simplifying work and routine. It saves time and costs in research, in production, in sales and in office routine.

So in whatever you plan to do, take full advantage of all of the ways photography can help.

CAREERS WITH KODAK :

With photography and photographic processes becoming increasingly important in the business and industry of tomorrow, there are new and challenging opportunities at Kodak in research, engineering, electronics, design, sales, and production.

If you are looking for such an interesting opportunity, write for information about careers with Kodak. Address: Business and Technical Personnel Department, Eastman Kodak Company, Rochester 4, N. Y.



U.S. Air Force I.C.B.M. "Titan" shown in the vertical test laboratory at the Martin Company, Denver, Colorado.

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TRADE MARK

*Interview with
General Electric's Byron A. Case
Manager—Employee Compensation Service*

Your Salary at General Electric

Several surveys indicate that salary is not the primary contributor to job satisfaction. Nevertheless, salary considerations will certainly play a big part in your evaluation of career opportunities. Perhaps an insight into the salary policies of a large employer of engineers like General Electric will help you focus your personal salary objectives.

Salary—a most individual and personal aspect of your job—is difficult to discuss in general terms. While recognizing this, Mr. Case has tried answering as directly as possible some of your questions concerning salary:

Q Mr. Case, what starting salary does your company pay graduate engineers?

A Well, you know as well as I that graduates' starting salaries are greatly influenced by the current demand for engineering talent. This demand establishes a range of "going rates" for engineering graduates which is no doubt widely known on your campus. Because General Electric seeks outstanding men, G-E starting salaries for these candidates lie in the upper part of the range of "going rates." And within General Electric's range of starting salaries, each candidate's ability and potential are carefully evaluated to determine his individual starting salary.

Q How do you go about evaluating my ability and potential value to your company?

A We evaluate each individual in the light of information available to us: type of degree; demonstrated scholarship; extra-curricular contributions; work experience; and personal qualities as appraised by interviewers and faculty members. These considerations determine where within G.E.'s current salary range the engineer's starting salary will be established.

Q When could I expect my first salary increase from General Electric and how much would it be?

A Whether a man is recruited for a specific job or for one of the principal training programs for engineers—the Engineering and Science Program, the Manufacturing Training Program, or the Technical Marketing Program—his individual performance and salary are reviewed at least once a year.

For engineers one year out of college, our recent experience indicates a first-year salary increase between 6 and 15 percent. This percentage spread reflects the individual's job performance and his demonstrated capacity to do more difficult work. So you see, salary adjustments reflect individual performance even at the earliest stages of professional development. And this emphasis on performance increases as experience and general competence increase.

Q How much can I expect to be making after five years with General Electric?

A As I just mentioned, ability has a sharply increasing influence on your salary, so you have a great deal of personal control over the answer to your question.

It may be helpful to look at the current salaries of all General Electric technical-college graduates who received their bachelor's degrees in 1954 (and now have five years' experience). Their current median salary, reflecting both merit and economic changes, is about 70 percent above the 1954 median starting rate. Current salaries for outstanding engineers from this

class are more than double the 1954 median starting rates and, in some cases, are three or four times as great.

Q What kinds of benefit programs does your company offer, Mr. Case?

A Since I must be brief, I shall merely outline the many General Electric employee benefit programs. These include a liberal pension plan, insurance plans, an emergency aid plan, employee discounts, and educational assistance programs.

The General Electric Insurance Plan has been widely hailed as a "pace setter" in American industry. In addition to helping employees and their families meet ordinary medical expenses, the Plan also affords protection against the expenses of "catastrophic" accidents and illnesses which can wipe out personal savings and put a family deeply in debt. Additional coverages include life insurance, accidental death insurance, and maternity benefits.

Our newest plan is the Savings and Security Program which permits employees to invest up to six percent of their earnings in U.S. Savings Bonds or in combinations of Bonds and General Electric stock. These savings are supplemented by a Company Proportionate Payment equal to 50 percent of the employee's investment, subject to a prescribed holding period.

If you would like a reprint of an informative article entitled, "How to Evaluate Job Offers" by Dr. L. E. Saline, write to Section 959-14, General Electric Co., Schenectady 5, New York.

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