Dear Reader,

Rejoice! The TECHNIC is reborn! Yes, reborn, not merely resurrected but totally reborn. After years of slow decay and spiraling disinterest, America’s oldest continuously published engineering college magazine seemed destined to join those ancient Mesozoic monsters in oblivion. But then, when all appeared darkest for the little office in the basement of Speed Hall, two independent bands of Rose students were filled with the holy spirit of publication. Separated only at first, the two bands met, integrated (as only those from Rose are able to integrate) with each other, and began work on the 1969-70 issue of the ROSE TECHNIC.

It was decided at the very onset that to simply continue the magazine as it had previously been published would be a sin of awesome proportion. Change was needed too desperately. Editorial meetings were held to decide on a new format. Ancient issues of the TECHNIC were read and analysed to determine which concepts should be retained and which should be dropped. New ideas were bandied about, some to be incorporated into a general policy, some to be adopted on an experimental basis, and some to be dismissed entirely. Articles were written. Last minute decisions were made. And the results were taken to the printers.

The product of all this scurrying about now lies clutched in your eager hands. Notice please the changes. The articles are now printed on two columns per page instead of three columns per page. This is very important. Three columns tire the eyes much quicker than two columns, particularly if the only things printed on the three columns have such titles as “Ptolemaic and Copernican Theories of the Universe”. Now do you understand why we have adopted the two column page? To better present the articles we think you want to read—articles discussing the future of both Rose and man in general (read about the new buildings to be constructed at Rose and then Professor Lee’s “Modern Man” both in this issue), interviews with prominent persons of interest to the Rose student (see this issue’s interview with Dr. Logan), features explaining how to make various items, calendars of events in the Rose area, reports on research at Rose (see in this issue “Heart Research at Rose”), as well
as treatises for the humorous enlightenment of all (check "Sex Revolution at Rose?"). In addition, we have come to recognize the value of good literature and now welcome short stories and poetry from talented freelancers (again, in this issue see Kathy Gerend’s "Oh, Look, See America Leap"). In short, the bulk of the TECHNIC will no longer be concerned primarily with the technical aspects of engineering. The Rose student receives enough of this in the classroom. We, the staff of the ROSE TECHNIC, will strive instead to present an informative magazine which the Rose student can read with enjoyment.

We hope that you find our new TECHNIC worth the reading. If you have any comments or suggestions, please write us. Also, if you have any talent in the fields of writing, art, layout, proofreading, typing, etc., we need you. Contact Mike Hoover for information about working on the staff of the ROSE TECHNIC or write to box 903 on the Rose campus.

Thank you.

Sincerely,
The Staff
COVER NOTE: Dr. John Logan, president of Rose Poly-technic Institute, took time out of a busy schedule to share ideas and answer the questions of two ROSE TECHNIC staff members (see article on page four).
Published by the students of Rose Polytechnic Institute, Terre Haute, Indiana 47803
Everyone knows that Dr. John Logan is the president of Rose Polytechnic Institute. And obviously the presidency of a college is an important and respected position, but what does a college president really do? How does he function in the inner workings of the university? What is Rose like from the inside? And what is Dr. Logan the person like?

The Technic staff asked themselves these questions and finally decided that the best way to get accurate answers was to ask the president. So, armed with a tape recorder and a list of questions, we proceeded to seek him out.

What follows is an account of the encounter:

Dr. Logan, what is it that you do in your capacity as President of Rose?

Well, I suppose the answer to that is the same statement that Harry Truman made when he was President of the United States. He said, “The buck stops here.” In other words, I have a staff here that regulates, that handles routinely most of the matters; business, academic, counseling, student affairs, registration, admissions. But if a problem arises, or a question comes up that must be finally resolved, then as far as the internal operations of the institute are concerned, the final decision has to be mine.

And of course I am a member of the Board of Managers. The Board of Managers is responsible to the public for operation of the Institute and I am really the liaison between the Institute, academic affairs, the operation of the Institute internally, and the Board of Managers. I present the case to the Board of Managers and review it with them and help them reach final decisions if there are problems that arise. So I suppose you might say that when everything is running smoothly, I don’t have anything to do. But if there are questions or problems, then in the final analysis I am responsible and have to backstop the individual members of my team. This of course includes students as well as faculty and administration.

What is your connection with the World Health Organization?

As an administrator, of course, I have had to leave most of my professional interests in the background. Obviously when I was at Northwestern and when I was at Rockefeller Foundation, my primary interest was in environmental control, environmental health and environmental engineering. In fact, I helped develop some of the concepts that are now being fairly widely accepted. I have tried to maintain some of my professional interest. This I do mainly through consulting with the World Health Organization, the World Bank, and the State Department.

As far as the World Health Organization is concerned, I am a member of their expert committee panel. This is a group of some fifty engineers throughout the world whom they call for advice and consultation. I have also served on a number of so-called inter-
national expert committees where we reviewed matters such as the problem of environmental pollution, the problem of metropolitan planning, the problem of engineering education, and so on. In addition, I serve as consultant on projects which the World Health Organization is trying to promote in the interest of international health throughout the world.

For example, my latest assignment has been in Uganda, a cooperative project between the World Health Organization and the World Bank to develop a system of water supply and sewage for the country, which is part of their attempt to move ahead into the field of development. It's as obvious to them as it is to the World Health Organization that if they are going to move into the international arena and compete in agriculture and industry and try to raise the standards of living in the country, their people will have to have a reasonable standard of living as far as health is concerned. So most of my work now is either on expert committees or as a consultant of one of the organizations.

Incidentally, I have discussed this with the Board of Managers and they feel that it is highly desirable that the Rose name be carried around the world. That is to say, it is obviously in the best interest of Rose, though not necessarily officially representing the Institute, that Rose's name be mentioned in Geneva, Washington, Bangkok, Holland, or wherever.

This summer I will be in Africa for two weeks with the World Health Organization and the World Bank on this Uganda National Project. I will also be in Venezuela for the Pan-American Health Organization (which is the North American and South American affiliate of the World Health Organization) discussing the problems of the cities. They are getting concerned about the "Population Implosion." As you know, we are having a horrendous problem with the growth of world population, but it is being amplified by the fact that so many of the people are living in cities and the cities are a real problem with employment and unemployment. So, I am going to be discussing the problem of our cities and the connection with cities there.

You seem to be kept very busy with your enormous responsibilities, but what are some of your hobbies, outside activities and interests?

Yes, well my hobbies. I may be a lousy golfer, but I do still enjoy playing it. I read a good deal, and I have a good Hi-Fi. I enjoy music greatly, particularly modern music. I am a bit of a rebel, I guess, in that I like the Beatles, and the WHO, and the Association. Really I am quite fond of modern music, although I still occasionally find the classics relaxing. That's about the extent of it.

What is your educational background?

As you may know I was a Canadian originally. I was born in Canada and took my first degrees there, at the University of Saskatchewan. At Northwestern I was a civil engineer. We were trying to get more analytical processes involved with things such as metropolitan planning (which is not amenable to analysis), the location of hospitals, schools, transportation systems, etc. Of course we tried to get some physical values to things such as comfort and convenience and beauty and the obvious things like land values.

I had two degrees at the University of Saskatchewan and then I went to Harvard. I had a Harvard-Canadian Fellowship and studied under Gordon Taylor and got my masters and doctorate degrees at Harvard. So that was the extent of my formal education.

What has been your connection with and participation in the environmental teach-in?

Rose did sponsor an addition to the seminars and Ralph Nader address. They did sponsor a public forum which was held at the Indiana State University arena;
because I thought it would be more convenient for the people and would hold a larger crowd. I was one of five speakers who spoke at this public session. Other speakers were Congressman John Myers, representatives from Commercial Solvents, WTHI, and ISU. So I actively participated in that way.

There has been a great deal of criticism about the looks of the new water tower. Why can't the construction that is being affected on campus be more esthetically appealing than it is?

The water tower supposedly is esthetically appealing. The company that designed it thinks they have a new shape which is attractive and may catch on, although perhaps the students don't think so. It shouldn't be located where it is, but as you probably know, we have very difficult foundation conditions on the campus. The site that was originally selected for the tower is down below the Building and Grounds Building. Here the foundation conditions were so bad we would have had to put piles under the footing and this would have cost an additional twenty to twenty-five thousand dollars. So we sacrificed location for this additional cost. Now not everyone thinks it is unattractive where it is, but apparently you fellows do.

The new classroom building, of course, I find quite attractive. It is a modern building. We feel architecture has moved ahead somewhat in the fifty years since the original building was designed. I think that the new Union Building is very attractive. It has been referred to nationally as a pleasing kind of building. I also think that the new residence halls are attractive. I don't know whether you have seen the design of the new learning resources center, but the plans are now up. We think that it too is attractive. Certainly it is a matter of interest to us.

We are not trying to destroy the beauty of the campus, because we do have a very beautiful campus. However, as you doubtlessly know, esthetics is a matter of opinion. We are very much aware of this and we are trying to develop an environment here which is conducive to the whole progress of education. Remember we have this very much in mind, even though we do make mistakes.

The philosophy of Rose seems to be anti-pollution, however, it seems to emit a fair amount of pollution itself. What is the school doing to try to eliminate the air and sewage pollution that it is putting out?

We have been instrumental, at least through finances, in getting the new so-called Seelyville sewer designed and constructed. That will be coming out along the Penn. tracks this summer, and we will be hooking into it. It is obviously essential. The present system of waste disposal we have is strictly temporary. It would have cost us between one hundred and twenty-five thousand dollars and one hundred and fifty thousand dollars for a treatment plant, which wouldn't have been the answer.

As far as air pollution is concerned, we have a problem because we are burning coal. It is not a good grade of coal, and it is not well prepared. Even though we are sitting on one of the largest coal deposits in the world, we are having increasing difficulty in getting the kind of coal that we want, sized the way we want it and prepared the way we want it. I think that the only answer is to turn to gas. The problem here is that the local gas company is not sure that they can supply us because we are not the only customer they have.

Earlier this year, Tau Beta Pi made a survey of the students concerning the quality of the faculty. Many rumors have spread about the survey, and most students have expressed an interest in the results. What can you tell us about it?

Well, the TBP survey is being taken very seriously, in regard to reaction to good features as well as bad features. The survey commented very highly certain teachers and was very critical of other teachers. Since the poll did come in before we published our contracts for the coming year, it was taken into account in these contracts.

The poll itself was reviewed by the Dean, by the chairman of the departments involved, and by the individual professors. So I think it did receive wide publicity as far as the faculty was concerned. It has not been released to the student body; I don't know whether TBP has any intention of releasing it. I have discussed this with John Hodsden, and have told him at certain other schools (such as Rensselaer Poly, where I was recently) there is a combined student-faculty group that does rate classes of teachers and publishes the results. I would have no objections to having that done here. The poll that was taken was not prepared with this in mind, but has nevertheless served as a very valuable input to us. Although this was not totally obvious because of our other sources of input, it was important and we certainly did take it into account.

What can the students look forward to in the expansion of the curricula, faculty, enrollment and departments?

We felt that the expansion we have had was necessary to meet the present enrollment, since as you already know we are using and have had to use in the past facilities that are substandard. What we intend to do is eliminate all basement classrooms and all other classrooms which are simply not adequate. There is no intention at the present time to use the new facilities to increase enrollment or increase curricula, but rather to increase and improve the present programs. However we will be reviewing our entire curricula with the view to bring it up to date. Curricula are always getting out of date, and during the...
coming year we will be having a very intensive look at the whole program with the view of revising it. Although I think it is one of the most modern in the country now, we are going to try to not only keep up to date but to keep ahead of everyone else. There is no intention at the present time of adding new programs or of expanding the student body.

How has Rose progressed this year as an outstanding undergraduate engineering school?

Here, I think you are talking essentially about the quality of instruction. Providing you have adequate facilities and adequate curriculum, its the quality of instruction that makes the institute. It is the quality of instruction that makes the institute good, mediocre, or bad. I think we have made a concerted effort to improve the quality of instruction here, not only with discussion with the individual concerned, but also through a CoSi Grant. This is a college science improvement program financed by the National Science Foundation. I do think that there is an emphasis on this now more so than at any other school, and so I do feel that the quality of instruction is improving. We are definitely isolating our weak spots and we are actively doing something about it in upgrading the whole faculty level.

How does Rose rate as compared with other undergraduate engineering schools — department for department, tuition, and things like that?

Rate with? Well, rating of departments and schools is difficult and there are a number of ways in which this can be done. For instance it can be done by measuring the percent of graduates that get into Who's Who of engineering, the number of men that get into graduate school, and so on. There are a variety of ways, none of which are exact. I suppose that the best measure is simply to compare it schoolwise and facultywise with the other schools that we cooperate with.

As you probably know, Rose is a member of the Independent Engineering College Association, which includes some of the best schools in the country, (such as MIT, Caltech, Rensselaer, etc.). The college presidents meet once a year, and at that time we are able to discuss curricula, to discuss problems and common interests. I feel that we are definitely in the top three or four as far as pregraduate education is concerned. We recently had a visit from the Sloan Foundation, which is a national foundation interested in science and engineering. They made a poll in which they asked five outstanding engineering educators and practitioners what they thought were the twenty best engineering schools in the nation. Although they didn't give out the actual results of the poll, they said we stood very high on the list. Now these things are all a little vague and perhaps not fair, but through my observations and experience elsewhere I feel very definitely that as far as undergraduate engineering is concerned, we are right up there in the top.

This topic is a matter of vital concern to me because if I have one single objective, it is to assure Rose's eminence in undergraduate education in science and engineering. Here I feel Rose has had a reputation over the years. Rose started out in 1874 with a tremendous reputation, because at the time it was undoubtedly the best school reputation, because at the time it was undoubtedly the best school of its kind in the country. The president was given Carte Blanche in being able to recruit the faculty from many parts of the world, and he did bring outstanding faculty to the school. Undoubtedly Rose has had its ups and downs since then and has experienced some difficulties, but still I'm amazed at the impact the school has had with such a small enrollment. For the lifetime of the school we have had less than fifty graduates a year, and the impact that this group has made is really astounding. In the final analysis the pay off is what the graduates do and how well they are prepared for life. The more I get around the country, the more impressed I am with the reputation our graduates have. I am sure that they can take the place of graduates of any school in the world, either in business and industry, or graduate study, or wherever. Of course we have a fine student body, but I do feel that although it is expensive here it's a good investment and I feel satisfied that Rose is in the top three or four in the world.

How much do you feel the students should be allowed to enter into planning of the Rose curriculum, faculty and future?

I think that the students rightfully have a great interest in this. We are going to be embarking soon on a major review of our curricula, and I think the students will be very much involved. I had a student in this morning complaining about the freshmen year. He thinks the student that is having difficulty says it starts out too easily and then gets too rough too fast. This obviously isn't good and we should try to even out the pressure, so that we don't have students running into a buzz saw in the second or third quarter. There is also a great deal of criticism of the sophomore year. I intend to involve the students very much in the whole question of the division of our curriculum. They are always interested.

The key word of the “Now Generation” seems to be relevant. What is being done to make Rose's curricula more relevant to the pressing social, political, and environmental problems?

This is one of the points in which I'm most interested. As a matter of fact, I've been meeting with the National Academy of Engineering during the past week.

(Continued on page 22)
Sex Revolution at Rose

By Greg Hartman

Over the past decade this country has seen sweeping changes in attitudes towards morality, sex, and all the other fun things that the average healthy American male associates with them. Thru the myopic eye of television we of the Sixties have witnessed topless protest marches by hippie first graders, transparent miniskirts on circus bears, and even nude hula-hoop contest that has the insurance companies still paying off claims. Neat stuff, sure. But what of dear old Rose? Have the tides of change come sloshing up out of the lakes to overwhelm innocent young freshmen with feel-thy pictures and off-color penguin jokes?

Well, with their characteristic instinct for smelling out a sure moneymaker, the editors of the Technic decided to cash in with a feature story on the sex revolution (or lack of it) here at good ole' RPI. Reporters for this juicy assignment were chosen by flipping coins, which resulted in some quite odd fluctuations in the Laws of Probability. Nevertheless it eventually came to pass that a team of lusty young voyeurs fanned out across the campus, ready to threaten and cajole their unsuspecting classmates into telling all sorts of improbable lies about their sex lives.

Our studies began in the freshmen dorms. (To keep our surveys impartial and accurate we followed the Harris Poll policy of interviewing only Boer War veterans and Druid theology majors.) The questions we asked were as deeply meaningful and psychologically penetrating as our comic book reference sources could provide. Samples ranged from “Should unmarried couples be allowed to date?” to the more provocative “Do you have erotic dreams about Daisy Duck?” Tabulating the results on the most sophisticated, highspeed cash register available in the bookstore, we arrived at some startling conclusions.

To our amazement, it turned out that nearly 10% of all Rose Freshmen had actually seen a girl while on campus! This figure rose to 12% for Sophomores and Juniors, and then jumped to an astonishing 16% for Seniors! Even more shocking was the fact that almost 7% of all Rose men (1 out of 14!) had actually kissed a girl while in school here. (You can rest assured there’ll be an investigation of the girls involved in these sinful doings. By us, personally.)

The full extent of the sexual revolution became even more obvious in the answers to other questions. For instance, 53% of everyone polled no longer felt it necessary to brand with a scarlet “A” those who come to class barefoot. Also, 61% said that they didn’t mind if their roommate wore see-through T-shirts. However, there still exists a double standard, as shown by the fact...
that 100% of those surveyed would rather look at a see-through T-shirt on a girl than on a boy.

In the field of erotic literature (the *Technic* pin-ups aside) the campus appeared to be somewhat behind the times. When asked if he possessed any pornographic material, one Rose Sophomore replied that he didn’t even have a pornograph. Similarly, a quick check of the library by agents specially trained in detecting obscene Sunday School hymnals revealed only a few innocent geography texts, such as *The Tropic of Cancer*. (However, they did manage to spot several books of dirty log tables.)

As far as relations with the fairer sex go, the average Rose man’s moral posture is somewhere between a slight slouch and an overt stoop. Nearly half of those polled (43%) said that if they were at a playground and a strange woman in a black sedan offered them candy, they would enter the car. Similarly, a remarkable 35% confessed to having had “improper thoughts” about their girl friends’ bellybuttons. While this may not reveal too much about the current campus code of ethics, it does show what a team of drunken writers can do when it comes to making up a questionnaire.

All in all, it would appear that the present-day moral standards of Rose are somewhere between those of Spiro Agnew and Attila the Hun. Just where in this range they lie is unknown, since every professional sociologist who tried to analyze our data broke up in fits of convulsive laughter. Our own conclusion was that the sexual revolution at Rose is currently in a state of cease-fire. Whether this is good or bad, and the effect it will have on the future of RPI graduates, remain to be seen. Only time will tell. But as the great philosopher Captain Kangaroo once said, “E pluribus erotica”.
A Recipe For Progress

By Jim Baker

Take a severe shortage of classrooms, one badly needed equipment shed, and skillfully combine them with a need for faculty offices and a demand for a new graphics and physics laboratories. Mix the above ingredients together with an alert eye for economy and the needs of the engineering student. What is the result? Certainly not an exotic dish but a new classroom building to meet the current and future demands of Rose.

The new addition which was designed by Construction Consultants Incorporated of Terre Haute is being built by the same company under a negotiated contract. The structure will consist of three levels, all of which will be at ground level as a result of the hillside location. It will house 25,200 square feet of classrooms, labs, offices, and study areas. The total cost of the project is estimated to be near $500,000 which works out to be about $19.8 per square foot.

What will this mean for the Rose student? First it will mean an end to the shortage of classrooms. It will provide eleven new classrooms each capable of seating 40 to 50 students. These will be located on the second and third levels and will be totally airconditioned and void of windows. Secondly, it will provide new graphics and physics facilities. The lower level will house a new graphics laboratory and space for the neutron generator. Finally, the building will contain a new lounge and a new study area for the students' use. The aggregate result will be an atmosphere in which the student can prosper to the limits of his capabilities unhindered by the dismal classrooms of yesterday.

As for the faculty, the new building will mean fifteen new offices for either the math or humanities departments. In addition the new classroom will provide a controlled environment in which to work; a situation which will undoubtedly meet the approval of most of the staff save those who lean towards the more natural side of life and will miss windows of the older classrooms.

An interview with Mr. Willets, the efficient Business Manager of Rose, revealed that, indeed, at one time consideration was given to constructing an equipment shed for temporary use as a classroom until a new building could be constructed. However, the plan developed into going ahead with the present structure which was in the plans as a laboratory building. Eventually as more new classrooms become available with future construction, the building now under construction may reach its original intent as a building to house laboratories. Thus, out of the need for an equipment shed, more laboratories, and an urgent need for more classrooms has developed the present structure, a structure which should serve Rose's needs for some time to come.

An artist's conception of the new Learning Resources Center to be constructed on the Rose Campus.
The classroom-laboratory annex, which is presently under construction, has a tentative completion deadline of September 1970.

GEE, YOU SURE HAVE
A NEAT SCHOOL HERE!
MR. MURDOCK!
Miss Technic (s)

Photos by David Ouyang
Woman was taken out of man—Not out of his head, to rule over him; Nor out of his feet, to be trampled by him, but out of his side, to be equal with him—under his arm, that he might protect her, and near his heart that he might love her.

Matthew Henry, Expositions of Genesis II, 1704
On the Subject of Poets, Writers, and Other Illiterates

By Kenneth Howell

During the last few months I have spent countless hours pouring over old Technics seeking the cause for its apparent demise. It was a long and discouraging search. The very articles seemed destined to numb the senses and induce sleep. Finally, late one Saturday night, three-quarters through a bottle of Gallo white wine, my drinking bowl spoke:

"God, another article on plate-fin exchangers? No wonder the damn thing died. It’s too worried about exponentials. Now if it had some decent literature—
a good story of some stimulating poetry—well, that just might be something."

And so, heeding the sober advice of my wine bowl, we of the Rose Technic announce that henceforth the finer arts shall be recognized as an integral part of the magazine. It is hoped you will enjoy this added feature.

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OH, LOOK, SEE AMERICA LEAP

"A small step for man,
    a giant leap for mankind."
Ha. What a joke.
Leap, leap.
Leap into what?
Leap frog.
One frog leaps over one frog,
Another frog leaps over another frog.
Leap, leap,
Leap away,
Far away,
Far, far, away,
Far, far, forget
"What thou amongst the leaves
    hast never known."
(How Wordsworthian. How Keatsian.
    Like Bonanza-land.)
Forget.
Forget you’re bound by space,
A small space,
A Vietnam-size space.
Leap into the spaceless limits of space.
Leap to the moon.
The moon, beautiful Venus.
Beautiful, beautiful,
Not like ugly, ugly—
But we don’t want to think of that.
We don’t want to think.
No, don’t make us think.
Leap, leap, space, space.
Vicariously with the astronauts,
Orbit the moon.
Leap, leap, orbit, orbit.
But no, no, God, no.

Problems.
Problems with space ship.
No, no, God, no.
Leap, space, orbit.
Forget problems.
Forget That Space.
Noble Experiment II.
Experiment to get us higher
Than that banned
By Noble Experiment I could.
Leap, space, orbit, high.
High and mighty.
Yes, high and mighty.
We, America, high and mighty.
But, no, no, God, no.
Problems.
Problems!
Problems with space ship.
Three men in space ship.
Might die.
No, no, God, no.
Can’t die.
Three men can’t die.
Noble Experiment can’t die.
High and Mighty can’t die.
God, God, what can we do?
Pray.
Pray!
Pray, America, pray, pray.
Pray for lives of three men in space.
Pray for three men.
And let 400,00 rot
In That Space.

--Kathy Gerend
We are somewhat wary about admitting it, but something has gone wrong with modern society. Life has turned sour in the world of technology and gadgetry. Man is frantically searching for those satisfactions he felt would surely come his way with the new "vista-vue-color-TV" or the new "ultra-sodded-front-lawn" equipped with the "ride-about-lawn-mower."

The old values, handed down to us by our fathers, which only a few years ago seemed timeless and everlasting, no longer appear to be relevant. And, if we could view them as observers of the culture rather than as participants, we might even consider many of them ludicrous. Some of us, even though we know our old value system no longer holds meaning for us, grasp it as tightly as a sailor on a sinking ship grasps the deck rail: we know of nowhere else to turn.

On the other hand an increasing number of our young adults are seeing the ambiguity between the real and the ideal in our culture and are leaving the system altogether:

"I'm good family, very Boston, very Back Bay--and got a job doing publicity for the movies. It was very white collar and very square, and they all said I had a very good future.

"But then I started thinking. I remembered what the old nine-to-five did to my father; he worked like hell and came home at night so pooped that he couldn't do anything but eat and go to bed.

And, as I say, I was in New York. We were worried about the bomb.

And there was this terrible, dragging conformity. Everyone getting married and moving to the suburbs and tithing their lives to General Motors. Everything in-group. All "we" and no "I" so I cut out."

Everyone, from the newly arrived Puerto Rican to the South Georgia "Cracker", feels that he should have more rights of self determination. Such rights are, of course, guaranteed within the United States Constitution and its Amendments. If for some reason one has not been made aware of these political rights, he has, most certainly, been made aware of his psychological needs or Neo-Freudian needs.

All of these rights and needs that the socialization process leads man to believe he has, merely seem to separate him from the world about him. Western man believes himself to be a sepap-
rate "thing," and he believes that he must fight for his individuality.

Man lives in a dynamic world, but he sees his environment statically. He sees the surrounding world as a collection of individual "things." Our whole system is one of "thing" accumulation. Even the Negro ghetto culture is now viewed as a reaction to the frustration of not being able to accumulate the "things" of the mainstream culture.

At this point we might appropriately ask ourselves how it came about that modern man, particularly as he exists in the United States, arrived at his present view of the cosmos.

ORIGINS AND DEVELOPMENT OF MODERN THOUGHT

The view of man as being an individual "thing" is not a recent innovation in Western culture. It goes back to the root beginnings—the Judeo-Christian concept of man's having an indestructible something about him, a soul that existed prior to the body and would continue to exist long after the body had decomposed—presumably forever. Each soul was distinct from all others; man was a "thing" before birth and would continue to be this "thing" forever. Such a view was regarded as an absolute for many centuries by almost everyone, and those intellectual adventurers who were bold enough to challenge it risked their lives.

The other primary source of Western thought has been Greek philosophy. The Idealism of Plato implies a static reality in the realm of ideas of which the changing world of our consciousness is only a shadow. Aristotle, a student of Plato, defined the world somewhat differently. He thought of the world as having a reality independent of the mind. It was made up of matter (what all substances have in common), and form (what distinguishes substances from each other). The Aristotelian sees a world of "things" independent of any thought about them.

During the 13th century St. Thomas Aquinas accepted the Aristotelian view, but added to it the concept of existence. For St. Thomas, essence became potentiality and existence became actuality with pure existence being the Roman Catholic God. Thus the work of St. Thomas united the static world of the Greeks with the static world of the Judeo-Christians and the view that nature was made up of many separate "things" became even more dominant.

With the coming of the Protestant Reformation another important influence on modern thinking evolved. Max Weber, writing in 1903, labeled it the Protestant Ethic. According to Weber's theory the Calvinists, who believed in limited, predestined salvation, also believed that the primary indicator as to whether or not one's soul would be saved was the material success of the individual; and at the same time the primary indicator of sin and condemnation to hell was poverty. Belief in such a myth spurred man into a mad whirlwind of economic endeavor that had never before been dreamed of. To man of Northern Europe and of the United States, economic competition became important of itself alone. Always, however, differentiating the individuality of each human was important.

The myth of the soul became more and more unacceptable to the sophisticate of the late 19th century. Freud made a movement toward disenchanting the soul with his concept of energy; however, his comparison of man to the Torah evidently indicates that he thought of man as an individual law unto himself. The Neo-Freudians, including Jung, were quick to include the soul within the ego concept. And so the soul concept continues under wraps of the Neo-Freudian ego. Now the concept is acceptable in scientific and pseudo-scientific circles for which the old concept had lost its meaning. And the view of man as being an individual "thing" continues.

Another foundation stone of modern thought, one that has also supported man's view of the world as a collection of "things," is the scientific method or, as philosophers of science seem to prefer, the scientific methods.

"Method" or "methods" developed into full fruition when Sir Isaac Newton combined Baconian Empiricism with Cartesian Logic. After Newton, man had a method other than traditional authority with which to describe nature. This new approach did not, however, change his fundamental view of the world. He still saw nature as a collection of "things"—"things", however, that behaved according to a set of rules.

During the 19th and 20th centuries the scientist's tools of measurement became more and more sensitive, and man began to see "things" as being composed of smaller "thing" and of still smaller "things" in an endless classification toward micro-infinity.

MAN'S IMAGE OF THE WORLD

Man has given all the "things" he sees about him names. He calls them Sam, Mary, Fido, Highway 41, 426 Barton, Oldsmobile, I.S.U., star, rose, and other names. Could it be that the "things" exist in name alone? Do we actually distinguish the "things" as separate because we have designated a label for each of them, and therefore we organize our thinking around the label rather than trying to understand what is really in front of us? Such labels are certainly convenient for functioning in society as we know it, but is it possible that we, as sophisticated as we claim to be, might be able to see another reality other than the one of labels?

A story comes to mind of two space creatures who were silently watching an automobile as it
rolled along a street. The automobile pulled into a driveway and the driver stepped out and walked into the nearby house. At this point one of the space creatures said to the other, "Ah ha, they have detachable brains." It might very well be that reality is merely a result of naming, and how we name a thing is a result of our environmental experience. The space creatures could see reality in an entirely different way because they had named things differently as a result of entirely different environmental experience.

The Functionalist would be quick to point out that any image of reality that a culture has serves that culture of the image would cease to exist. This is, of course, how mankind has existed so far. He has allowed his myths to develop as they would without any thought that they were other than absolute. This is a reasonable picture of the slow moving, traditional society; and it served this society well. But can it serve the highly dynamic present?

MAN'S STRUGGLE WITH THE WORLD ABOUT HIM

As we have pointed out so far in this paper, modern, Western man thinks of himself as a separate "thing"—something apart from nature—something above nature—something at war with nature. He fights with his nature by attempting to control climate through heating or air conditioning, or time through different forms of rapid transportation. He modifies the landscape with streams and lakes of asphalt which he calls highways and parking lots, and labels under the heading of progress. These modifications of nature are the "goods" as opposed to the "bads" in modern man's axiology. And they continue to be regarded as goods—even though competent students of the environment tell us that the drastic changes we are making in the environment are creating a new environment in which it will be impossible for man to live.

Man regards other humans as his enemies and relegates them under all inclusive labels such as Christian, Jew, Communist, Negro, Foreigner, Capitalist, "Whitey", youth and many others. Such labels designate the other as being "assembly-line-people"—stereotypes. At the same time these labels designate the other man as lower than the ego because by the definition man has given those others they lack the individuality that the ego itself possesses. Man is able to destroy countless other humans because he does not have to consider each individual as good or bad on his scale of values; he can classify all other individuals under one or another of his created labels and think of them as having the same characteristics as all others classified under the same label.

In his conflict with other men and with nature man has considered time as a "thing"—tangible and static. He speaks of the time when he will receive his diploma, the time when he will graduate, the time when he will be promoted in his job, the time when he will retire. The future is the time of pleasure— the time after we have fought and won. The future is the time when man will have acquired those "things" that his myth tells him will give him pleasure. He reaches the goals one by one and finds that the pleasure he has anticipated vanishes before he can grasp it—the "thing." He fails to be nonplussed by such a turn of events, however. He forgets about the unrewarding present and again turns his eyes toward his next goal, always avoiding any confrontation with the concept of death, his ultimate and feared goal. He feels he will somehow escape it.

The education of Western man contributes to his unfortunate position. Both formally and informally he learns that the world of "things" and of conflict is the real world. He learns that the people most highly regarded by his society are those who have accumulated the largest store of "things." He learns that he is in competition with the other students in his classes for high marks. Most of the skills he learns are aimed at helping him in his career—a scheme by which he hopes to acquire many of the "things" in the world about him and to have the label of success attached to him.

One of our acquaintances, a man in the franchise business in Atlanta, Georgia, told of selling a large account for one of his franchise representatives in the southern part of the state. The representative, to the amazement of our friend, refused the account saying that he had much more to do with his time than to accumulate more money than he needed. Our acquaintance considered this man insane. Such a disregard for money and the "things" it makes possible is so rare in our society that the person expressing such a feeling, if not regarded as insane, is at least thought of as being somewhat eccentric.

Kropotkin was perhaps on the way toward a new view of the world when he took issue with Huxley, Spencer and the other "survival of the fittest" people who wrote during the late 19th century. He described nature as a cooperative venture. Only in outward appearance did nature seem to be a never ending series of conflicts for the scarce resources. He saw the real reason for the success of any species as being cooperation among its members.

The fad of the day, however, puts a high value on conflict. Such popular writers as Ayn Rand have presented, to a wide popular public, the idea that conflict is a "good." Her philosophy was recently restated by one of our acquaintances as "the philosophy of selfishness."

Robert Ardrey presented, in a widely read book, the idea that one inherits the need to protect a territory from intruders—thus the need.
for war. Desmond Morris presented an expanded version of the Ardrey statement in another widely read book. The Naked Ape, the Morris book, presents man as carnivorous, inheriting the instincts of the hunt. This world is a world of tooth and nail fighting, biologically inherited.

It is our opinion that the proponents of a world of conflict are merely reflecting the myth of man as an individual against all humanity and all nature—a myth that has grown up and been reinforced over the past three thousand years in Western society. It is our further contention that there are other ways of viewing the cosmos and that unless we consider some change in our current image, we will have little hope of survival.

A NEW IMAGE FOR MAN

We have the key to the new image with the often repeated adage of the social scientist, “Man is the product of his environment.” We might go even further and speak of man as being a present reaction to an environmental time span. When we react to the warning, “Watch out!” we are not merely reacting to the symbols as we hear them at the time uttered. We are reacting to other experiences in our past that have made such symbols meaningful. We have, in this sense, become one with our past environment.

The sun as part of man’s environment is also part of him. Doing away with the labels we can see that man and the sun are both functioning parts of the whole—neither is complete without the other. Man cannot exist, could never have existed without the sun. In turn the sun exists only through the senses of the man. The sun, then, exists only through the collection of reactions known as man. Each man has a peculiar view of the universe. He is dependent on the universe and universe is dependent upon him. This is much the same as an arm or a head alone is not a man. A man, like the universe, is made up of many parts functioning together. It is only then that they are the whole.

A very important part of man’s environment is made up of other people. From birth through death man is dependent on other men. They become a part of him and he a part of them.

When the wholeness of nature is realized, one can see the futility of conflict. Conflict with such a world view becomes very much like Indian wrestling with oneself—there can be no winner because the conflicting parts are functions of the whole.

Also, if the wholeness of nature is realized, any sort of conflict to accumulate “things” becomes ridiculous because “things” do not exist in themselves alone. A split-level box made of “tickey-tackey” located in a “right” suburb only has meaning as a “thing” because one’s image has defined it as such. Also, a delightful cabin with

(Continued on page 23)
To promote good relations among fraternities and to reduce friction between chapters, the I.F.C. sponsors Greek Weekend. This is an occasion for all Greeks to review the year's accomplishments in the light of the good of fraternities in general. This year, in an attempt to strengthen the serious nature of fraternal cooperation, the I.F.C. is sponsoring a convocation to precede the weekend. This program is to include speakers from all six fraternities, as well as an outside speaker. The topic is "Where Are We Going?", and is an attempt to find the future of fraternities on the Rose campus, with an eye toward national trends. Little else has been changed, except the elimination of some of the more dangerous games. There still remain the push-cart race, canoe race, tug-of-war, songfest, and a new addition this year, a bicycle race, as well as the traditional dance. Greek Weekend is still the only time of the year when all the fraternities can get together for a good time and some friendly competition.

The I.F.C. also plans to help new colonies from on campus by contacting several national fraternities so that they may consider Rose in the future when the need for another fraternity may arise. By contacting fraternities now, the I.F.C. can obtain a great deal of information useful to any group which would wish to become a colony. Such things as national reputation and strength are sometimes overlooked when searching for national affiliation. The experience in fraternity life that the I.F.C. has can help select those fraternities most suitable for Rose, and those which can be counted on to provide strong support to a new colony.

The second main objective is to interest potential rushees in the fraternity system. For several years, the I.F.C. has published, and distributed free to Rose freshmen, the Rush Booklet. This booklet has several pages allotted to each fraternity and gives them the chance to present their chapter to the freshmen.

One roadblock which has prevented better understanding between freshmen and the fraternities has been the rule against discussing any fraternity matters during a period of closed rush. To allow more exchange of information, the I.F.C. has approved a proposal to eliminate most of the provisions of the closed rush system. This was not a simple decision, since there are serious disadvantages in either method, yet the advantages of one over the other are hard to determine without first trying both methods. One can argue that the new proposal will allow freshmen a clear, candid look at fraternity life before making their choice. But can those who are ignorant of everyday life in a fraternity see the practices of a fraternity in the proper context, that of a lifetime member? Only time will tell if a change is wise or not, but dissatisfaction with the past system has found an outlet of change, the orderly proceedings of the Interfraternity Council.

The third purpose behind the I.F.C. is the administration of such inter-fraternity matters as organizing rush parties and the like, a short but crucial job.

The most important addition to inter-fraternity relations this year has been the formation of the Alumni Interfraternity Council, or A.I.F.C. to advise in such matters as business policy, financial matters, and the image of fraternities in the adult world. The A.I.F.C. will help immeasurably by virtue of their experience in all facets of fraternity life.

In short, while fraternities are said to be a dying breed, we still find those at Rose to be in excellent shape and well in control of their own affairs and their future.
The Year of Improvement

By Doug Zapp and Dave Jordan

This has been the year of improvement for Rose Tech athletics. Nearly every sport has bettered its record from last season. This is best typified by Coach Bergman's football team, finishing strong with three straight victories over St. Procopius, Earlham, and Wilmington, roared to a 4-4 record, this being only the second .500 season in ten years.

Suffering no losses via graduation, the team seems headed for its best season in recent years. With leadership displayed by All-District NAIA tackle Denny Smith, MVP Roger Ward, last year's captain Norm Klein, and quarterback Rick Manuszak, the Engineers should be adequate at every position. As a further upgrading of the Rose football program, a two week spring practice was recently conducted.

The basketball team, led by Seratoma All Star Don Ings, junior guard Tom Butwin, and freshman center Jim Eppen, improved its record to earn a berth in the NAIA District 21 Pre-Playoffs. Inconsistency was again the theme of this season as fine victories over DePauw, Monmouth, and Wabash were repeatedly dampened by losses to much weaker opponents. Ings became Rose's most prolific scorer this season with a four year total of 2,083 points. Rose will also miss the services of seniors Barry Jenkins and Rod Smith, but nonetheless will have a strong nucleus with starters Butwin and Eppen as well as part time starters Larry Erwin, D.J. Cordero, and Gary Dougan returning.

Coach Carr's cross country harriers compiled another successful 5-2 record. Led by Steve White and Greg Shutske, they have all their top runners returning next fall.

Rose's baseball squad also recently completed their most proficient season in modern times. They not only notched an 11-5 slate but were also invited to the NAIA District Playoff for the first time in school history. There they eliminated Huntington before being downed by Earlham. In the Earlham game Rose held a 2-0 lead with two out and one man on in the last frame, but here part time pitcher Rick Manuszak stumbled onto an extended streak of wildness which saw Earlham score three runs without hitting the ball. Mainstays of the Rose team through the season were pitchers Rod Smith and Doug Zapp, first baseman Chuck Stein, third baseman Buck Beranek, shortstop Tom Butwin, catcher Jerry Bissey, and outfielder Doug Kneller. The graduation of Smith and Ray Jirousek will be felt, but if another pitcher can be developed, Engineer baseball should show continued improvement.

Track also saw considerable improvement as the squad posted a 5-5 record (counting triangular meets as double duals). The leading point getters were versatile Keith Roberts who often won two or three events while amassing 119 points in the high hurdles, 440 intermediate hurdles, triple jump, and long jump; Jim Eppen who in-

An engineer kickoff return with Ed Adams breaking loose behind the blocking of Tom Merrill, Tom Blanford, and Joe Zumar.
variably won the high jump; and Greg Shutske who continued his dominance of the 880 while also anchoring the mile relay quartet.

Four new school standards were set during the season as Greg Shutske lowered his 880 record to 1:55.5 at the Big State meet; Jim Eppen cleared 6'4 in the high jump; Keith Roberts lowered his 440 intermediate hurdle mark to :58.2; and Steve White breezed to a 9:53 clocking in his two mile specialty.

The tennis squad suffered from a lack of experience as several top players graduated last spring. Al Hruby, Ron Westby, and Rich Keeven led the young squad which could improve with experience.

The golf team also was hurt by graduation last season but as of this writing had a winning record. Returnees Tom Merrill and Fred Krampe led a basically young unit that should show considerable improvement next campaign.

Aided by more intensive recruiting by Coach Bergman and fine coaching leadership from Coaches Bergman, Carr, Anderson, and Mutchner, most sports are on the upswing and our teams are now quite competitive at our level of competition.
Heart Research at Rose

By Ken Howell

(The following is a summary of the research conducted recently by Dr. Frank Freedman and Bruce Johns, a graduate student. Both are in the Biological Engineering Department of Rose.)

At the present time a great deal of speculation and experimentation has been done in the field of assist and replacement devices for ailing human hearts and other organs. In most cases, however, the researchers have been plagued by the body’s defense mechanisms which reject foreign materials and thus renders the organ assist or replacement useless. One heart assist system which could eliminate the problem of rejection has been proposed by Dr. Freedman. In this system a suitable skeletal muscle would be removed from its natural position in the patient’s body and wrapped about the patient’s heart. The muscle would remain alive in such a condition and since it is merely relocated in the same body, rejection would be minimal. Under normal condition the muscle would lie dormant; however, during periods when the heart may cease to function properly, such as during periods of strenuous exercise or during an actual heart attack, the subject would simply switch on a stimulating device and the transplanted muscle would assist the heart until the time of crisis was past.

One possible difficulty which could arise in such a setup would be a tendency of the muscle to fatigue after a short period of stimulation. Previous experiments have proved certain muscles such as the diaphragm unsuitable for use because fatigue set in too rapidly. The skeletal muscles, on the other hand, had not been tested. It was decided, therefore, to test a skeletal muscle for possible use as a heart assist device. The particular muscle chosen for these experiments was the gastrocnemius of a dog. It is an easily available muscle in the thigh and can be stimulated by electrodes on the skin above the muscle.

In a typical experiment the dog was anesthetized with sodium pentobarital and strapped to the operating table. The animal’s lower left leg was then attached to a transducer by means of a strong wire. All systems were anchored so that when the gastrocnemius of the canine contracted, as much of the force generated as possible went directly to the transducer. Next, the leg was shaved and the two electrodes were positioned above the motor points of the gastrocnemius. Conducting jelly and tissue cement insured electrical contact. In addition all normal steps were followed to maintain the animal’s life and anesthesia throughout the experiment.

The muscle was stimulated by a pulse train of four pulses every two seconds with each pulse of about 38 volts and 21 milliamps. Each pulse train resulted in one single contraction of the muscle. This system of stimulation was chosen instead of an isolated large pulse system, because the muscle appears to respond better to pulse train, and because a pulse train is easier to control. Typically, the muscle would contract a fraction of the maximum contraction and accomplish work equal to 10-4 kg,-m./gr. of muscle for each contraction. This energy was measured by the transducer and the magnitude versus time was recorded by a strip chart recorder.

Thus far, experiments have demonstrated that as long as the gastrocnemius is supplied with sufficient oxygen, nutrition, and stimulation, the problem of fatigue is minor. In one experiment the muscle was completely unaffected by fatigue after 80 minutes, while in another experiment lasting 20 hours fatigue caused a drop of only 25 per cent of the initial contraction strength. In theory at least, it appears as though this system is feasible for use in heart assist.

Dr. Freedman, however, was careful to point out that the experiments were far from complete. Further testing must be undertaken using different muscles, stimulation, etc. Even then a great amount of added research must be done concerning the actual translocation of the muscle and the problems, many still unknown, inherent in such an operation. Moreover, adaptation of this technique should be investigated to discover other areas in which this system can be applied, such as in the control of the urethral canals.

Obviously research in this field has only begun, and it will be several years before its ultimate goal can be reached, if, indeed, such a thing as its ultimate goal can be said to exist. But it IS an important start.

Logan Raps

(Continued)

in Washington and before that in New York. I’m convinced that if we are going to solve some of the horrendous problems that this nation faces, (which are incidentally all associated one way or another with the environment, although some involve population as well) we are going to have to have engineers to solve them. These include the problems of overcrowding, pollution, crime, poverty, transportation, uncontrolled development of our urban areas, and so on. These are going to have to be solved by people working in the area of what might be called social engineering. And I don’t think that any engineering school in the country is prepared to move into this area at the present time.

We did set out a number of years ago to develop what we called a “liberal education” in science and engineering and this unfortunately has not been as great a success as we thought it would
be. One of the primary objectives in the curricula is to see if we cannot make it more relevant, and if there is one word that is going to stand out in considerations during the next year, it is going to be relevancy. . . This is a matter which is very close to my interests and we simply have to do. It is not an easy assignment, because it involves getting away from this high degree of specialization which has characterized our graduate schools. Although we have often talked about the necessity of doing so, it's more than a necessity. It's essential that somehow or other we get the liberal arts people involved in better understanding the role which the engineer and the scientist must play if we are going to solve some of the problems. So it's not going to be easy, but it is a matter of vital concern to me and to the faculty. We are going to give it the real college try to get this thing straightened out.

**Freshman Projects**

(Continued)

Systems Analysis II was devoted to the operation and understanding of digital computers. Classroom work was involved with the operation of the basic parts of the digital computer, sequential and combinational circuits. To understand these circuits, Boolean Algebra was studied, and to see applications of these circuits, methods of artificial intelligence were studied. Experimentation on these areas was possible on the two Digiacs located in the E.E. lab, D-101. The students in this course also had various projects on both the Digiacs and the IBM 1130.

Whether any meaningful work was accomplished or even whether any freshman learned any vast new facts in all these courses is unimportant. The important thing is that they gave them a chance to get their hands dirty, to find out what engineering is really like.

As Dr. Roper said, “Engineering is finding the problem and setting up a technique for solving it. In the classroom, the textbooks clearly outlined all of this, and that leaves only a solution to be found”.

The courses were such a success that they will be offered again next year and, although there are no immediate plans to do so, it is possible that they may be offered to sophomores.

**Modern Man**

(Continued)

a soft dirt floor, nestled close to the railroad track only has meaning as a “thing” because one’s image has defined it as such. One of these houses has a ranking higher than the other only within an image of the world. Within another image the rank might be reversed. Any sort of conflict between people for one over the other becomes meaningless when we realize that all of the “things” we have defined are part of a whole.

Our hope is that we will be able to change our image of the cosmos. If we are unable to, we may expire as Silone has Christina so eloquently expire in *Bread and Wine*. In our case, however, the wolves will be of our own creation. “Finally a voice answered from far away; but it was no human voice. It sounded like the barking of a dog, but sharper and more prolonged. Christina probably recognized it. It was a wolf howl. The call to the feast. A call to the other wolves on the mountain. An invitation to a common banquet. Through the snow and the darkness of the coming night Christina saw a beast coming toward her, appearing and disappearing in and out of the snow drifts. She saw others coming from further away. Then she fell on her knees, closed her eyes, and crossed herself.”

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On Wednesday May 19, the Rose campus was delighted to play host to an unusual concert in the middle of the lake, performed by a rising contemporary rock group, The Frijid Pink. Several spectators remarked afterwards that even the chipmunks appeared to enjoy the student government sponsored show.
Much talk has circulated the campus the past year about an almost mythical “Rose Shaft” that manages to skewer every student at one time or another. No one has yet offered a constructive workable solution for the ailment, nor has it ever been fully defined, however certainly one of the symptoms of the shaft is student apathy. Too many students come to Rose expecting too many things too soon. Well, they just don’t happen, so many students leave either in frustration, boredom, or anger, and the ones that stay become apathetic.

Why? The answer to that lies chiefly in the makeup of curriculum. The entire freshman and most of the sophomore years are spent learning fundamentals. Just as you can’t expect to read Sarte in French until you understand French, likewise engineering must be understood before it can be applied.

Last year several of the faculty members, Dr. Roper, Dr. Brietmeyer, Professor Oexmann and Professor Parshall, got together over a cup of coffee and decided on a project that might help the situation.

Their solution was the freshman module. The module consisted of a small group of students working on a close informal basis with a professor. The formality of the groups varied from one hour of class a week every week to meeting anytime they felt like it.

Just as varied were the topics offered and the problems encountered. Upon completion of the course the student received one hour credit. The grading system was pass-fail.

Although they realized that the course would hardly be a cure-all for student apathy, they did feel that it would serve a valuable purpose. As Dr. Roper said, “The primary purpose was to show what was learned in the classroom could be applied to the real world. We wanted to prove that the engineering ‘tools’ were relevant”.

The idea was adopted and accepted very well by the students. One hundred and sixty eight freshmen participating taking 29 different modules. For the three quarters 262 students were enrolled in 60 modules. The number of freshmen taking the modules dropped from the first quarter when 140 were enrolled to 78 the second quarter to 44 the final quarter.

But whether the student takes the module or not, it still serves a definite purpose, simply because they know it is there.

The reason this project worked so well was because the professors cared enough to make it work. All of the professors that served did so totally voluntarily. This is one advantage of a small school. It helped do away with the alienation of the teachers from the students. Anyone who took a module got to know at least one professor on a personal basis.

The real important point to be drawn from all this is that it shows that the faculty really does care about the student. They didn’t have to do this, and they certainly didn’t do it to help themselves. They did it in an effort to help the student.

As mentioned before, the modules covered vast fields of studies. One of the most interesting courses was the project in heart surgery offered by Dr. Freedman first quarter. It was run in conjunction with a graduate project in the same field. (See Technic article on Muscle Stimulation, this issue)

Equally interesting is the module headed by Dr. Hill on Chemical Fuels. The purpose of this module is to find non-hydro-carbon fuels to use in modern engines. These fuels would be “pollution-free”. They are not worried about the price at this point.

They spent the first two quarters designing the engine. First they had to decide on the parameters they needed. They then designed the engine so they could change these parameters to find the optimum and the instruments so they could measure the results. They are now assembling the engine.

The engine they are using is a test engine from the Mechanical Engineering department. It is a four cylinder donated by Pontiac. Those in the module are not the only ones working on the engine as a graduate student and the seniors in the I.C. Engine course are also working.

They plan to have the engine assembled by the end of the quarter. They will start experimenting on fuels this summer or next fall.

Besides the Freshman modules, Systems Analysis I and II were offered first and second quarters. The purpose of Systems Analysis was to study systems and how they work with Man and put that knowledge to work redesigning systems to fit Man better.

The series of books Man-Made World was used as a textbook. Systems Analysis I was divided into two parts. The first part of the quarter was spent in the classroom, learning methods of solving problems. Two problems, whose solutions were attempted, were “How to get out of Vietnam” and “How to stop pollution in Terre Haute.” Naturally these are not problems which are expected to be solved by freshmen in a few weeks, but they were good experience in problem solving. The second part of the quarter was spent in the solving of problems on the three analog computers located in room D-01.