Grad Drafting to Result
In Serious Loss of Ph.Ds

WASHINGTON (CPS) — Undergraduate classes, and 47 percent of all graduate students who were liable to induction last week by the Graduate Drafting Commission, an independent Washington research firm.

The survey's findings are based on a representative sample of graduate students who were surveyed. The survey was conducted among graduate students across the United States, including those who were not currently enrolled in graduate programs. The survey aimed to assess the impact of the draft on graduate students' career aspirations and academic performance.

The survey revealed that graduate students, especially those in fields such as engineering and computer science, are facing serious challenges in finding enough students to teach under unique circumstances, such as the absence of some faculty members due to military service. The survey also highlighted the importance of support systems in place to mitigate the impact of the draft on the research and teaching activities of graduate students.

In addition, the survey found that graduate students face significant challenges in finding employment after graduation, as the job market is highly competitive and industry hiring practices have become more stringent in recent years. The survey emphasized the need for better outreach and support systems to help graduate students navigate these challenges.

Overall, the survey findings underscore the critical role graduate students play in academic and research institutions, and the need for increased support and resources to help them thrive in their academic careers.

Mime Draws Maximum Crowd

At 2:00 last Sunday at Calhoun Hall an audience was treated to an experience in theater. The admission price was a reasonable $1.00. The San Francisco Mime Troupe appeared under the auspices of ASICT to perform “The Farce of Patelin” and a series of three puppet shows for adults. For a ten year old, the San Francisco Mime Troupe is doing excellently, but still suffers from the youthful naiveté of not controlling the loudness of its voice. The actual volume of their speech was correct, but the message it carried babbled the senses in the second part of the program.

The first half of the program was superbly done. A personal feeling developed between the audience and the actors by seeing the set made of painted curtail- tions being put up. Then, the cast stood to the side of Calhoun and began to sing songs to the accompaniment of a drum, a recorder and other rhythm instruments. The songs ranged from old English tunes to a Cuban revolutionary song. The audience responded with gestures, claps and a large section of the stage, to be announced, and introduced. They wore medieval type robes and masks.

The play, “The Farce of Patelin” is French, and from the 13th century. The basic plot presents a shyster (Patelin) who decides to defend a shepherd in court. The shepherd is accused of killing the sheep of a merchant (Patelin). The merchant, however, has also been fleeced by Patelin. The merchant confuses the two stories in court, and the shepherd goes free. When Patelin asks for his fee, he finds that the shepherd has already paid it.

Mime Troupe: (see article below)

The MME TROUPE, or MIFFLE TROUPE, as you prefer to call them, is an organization of student actors, who use the movement of the body as the main instrument of expression. They try to transcend the limitations of speech by expressing themselves through mime and pantomime.

The MME TROUPE is a group of student actors who use the movement of the body as the main instrument of expression. They believe that through mime and pantomime they can transcend the limitations of speech and express themselves in a way that is more powerful and direct.

The MME TROUPE performs a variety of plays, from classical works to modern pieces, and includes a range of different styles and techniques in their performances. They are known for their unique approach to theater, and their ability to use movement and expression to convey complex ideas and emotions.

The MME TROUPE often works with other groups and organizations, and has collaborated with various universities and cultural centers to bring their performances to a wider audience. They are dedicated to exploring the possibilities of mime and pantomime, and sharing their art form with others.
Dear Dr. DuBridge:

You have served us, the students of the California Institute of Technology, faithfully and well for over two decades. We feel that some token of our respect is in order, and for, the first time in the history of the California Tech, we are presenting an honorary lifetime subscription to the Tech. Your only responsibility will be to keep us supplied with your address, so that we may continue to send you the paper. Good luck in your future work in rocketry. It is safe for scientists.

With the greatest respect,

[Signature]

[Name]

Dear Joseph Rhodes:

It is our belief that you have served the student body, as student president, in a most extraordinary and commendable manner. Because of your excellent service, we are presenting you with an honorary lifetime subscription to the California Tech. In order to be completely worthy of this honor, your duty will be to keep us supplied with your future addresses. Best of luck to you.

With the greatest respect,

[Signature]

[Name]

Electric Rocket Advances Swiftly

The first flights of electric rockets — the ultimate propulsion systems that eventually will replace electric rockets — were made within the solar system by panels of solar cells attached to the spacecraft. But the energy of the sun captured in this manner. Because of your formless nature, this is a steady energy source, and development effort on power conversion.

Pile Is High

The first electric power he said in the opening talk of the winter Caltech Lecture Series, will use as a heat source the energy of the ions captured by panels of solar cells attached to the spacecraft.

For flights beyond Mars where solar energy is not directly available, the electric rockets will use a gas source, a nuclear reaction. Some nuclear-waste rocket engine is used as an ordinary wastebasket. Dr. Elliott's team of physicists is working on a nuclear-waste rocket engine with serious power plants. The advantage of nuclear power is that it would enable spacecraft to operate regardless of distance from the sun.

Elliott likened deep-space missions to "a race on a celestial drag track." He said he would be able to make 20 to 22 miles per second with a gas source. In orbits around Jupiter and Saturn, all missions are transferred in a straight line without gravity. That's only 1,000 to 1,700 miles an hour.

For More Efficiency

The speed required is so great that the drag can "run away enough gas," he observed. "What we need is better mileage." To obtain this, space engineers seek propulsion systems with higher specific impulse (thrust per pound per second). This would mean that the spacecraft would fly 10,000 pounds of methane to Jupiter (over 10,000 million miles) at a speed of 10,000 kilometers an hour.

"The electric rocket solves the propulsion problem instantaneously by using electric power," said Elliott. "None of the other propulsion systems can achieve it."

But Elliott is the supervisor of the propulsion energy conversion group at JPL, which Caltech operates for the National Aeronautics and Space Administration. This is a model of electric power that may eventually propel men beyond the sun and down to other stars and even other galaxies.

Dr. Elliott is supervising the propulsion energy conversion group at JPL, which Caltech operates for the National Aeronautics and Space Administration. This is a model of electric power that may eventually propel men beyond the sun and down to other stars and even other galaxies.

Soprano Verrett Plays Beckman

Shirley Verrett, the talented mezzo-soprano who will give a recital in Caltech's Beckman Auditorium on Saturday, February 1, at 8:30 p.m., has taken her place among the major American art singers. She was catapulted to fame recently with her Met debut as "Carmencita" in Bizet's "Carmen," and also for the "Princess Ebeli" role in Donizetti's "Linda di Chamounix.

This New York Philharmonic Hall, her mastery of the art song and her stage presence are unmistakable. Miss Verrett has appeared with virtually every major American orchestra. The New States, Igor Stravinsky selected her as the "definitive" Jocasta for both stage performance and the recording of "Oedipus Rex."
What's Bugging You MAC

Thursday, January 23, 1969

a system like REL, the ability to
bodies of data, of census
istics, stock market records, even
sports records, should be as avail-
able as the services of the library
now.

The ability of the computer to
answer depends upon whether
the information is stored in its
memory.

(juestion it does not have the
extend its capabilities rapidly is
vided with new information
mediately and will remember it

REL using a typewriter linked
Tech's Booth Computing Center
cluding population, gross
each major religion,
and radio distribution.

"If
Dr. Thompson demonstrated
using a typewriter linked
Booth Computing Center
cluding population, gross
each major religion,
and radio distribution.

The computer's memory now
Having defined for the

Dr. Prausnitz, 40, is professor of
Engineering at the Uni-
vation of California, Berkeley.
His main research interests have
have dealt with solar and sta-
istical mechanics and molecular
physiology, directed primarily toward
the problem of charging and
geologic and petrochemical

Dr. Prausnitz was honored last
and served as dean of graduate
53 years, joined Caltech in 1916
and became professor in 1931. He
also served as dean of graduate
and dean of the faculty during his
tenure. Lacey was
honored last month with a
Founders Award from the Ameri-
can Institute of Chemical Engi-
neers.

Two Lectures
Prausnitz, a native of Berlin,
Germany, will give two lectures at
Caltech each after 4 p.m.,

The second, on
Thursday, Jan. 30, will be
"Physical and Chemical Representation
of Liquid Mixtures." The second, on
Thursday, Jan. 30, will be "High-
Pressure Phase Equilibria."

Prausnitz has received numer-
ous awards for his contributions to
electrochemical engineering, includ-
ing the AIChE's 1962 Colburn
Award, given annually to a
electrochemical engineer who has pub-
lished an unusually significant
article on the subject, and completed
for reaching age 35. He has also
held a Guggenheim Fellowship and
a Miller Research Profes-
sionatship at the University of Cali-
ifornia, Berkeley. In 1967, at age
39, he received the AIChE's Walk-
ner Award, the most presti-
gious award given by the instit-
tion in recognition of unusual
accomplishments in research.

The lectures, in 102 of Steele,
are open to the public.

The Lacey lectures were made
possible by the W. N. Lacey
Fund, established by the pro-
essor's friends and former stu-
dents. The objective of the lect-
ure series is to bring world-fame-
dowed experts currently active in
electrochemical engineering to the
Caltech campus.

Are you:
looking for good Italian food
hungry for a midnight pizza
thirsty for beer or imported wines
sick of B&G food
sick because of B&G food
looking for a nice place for a dinner date
desperate to get away from Tech, and see
some real people

Now That Will Take a Pill!

27 Day Sun Cycle Shown

A seven-year history of the sun
has just been published in the
unique forms of a series of maps
that show the continual
behavior and decay of magnetic
fields on the sun's surface.

Each map, 11 by 28 inches in
diameter, displays in blue and
red the magnetic field patterns for
a period of 27,273 days,
which is the time required for
the sun to make one complete
rotation on its axis.

Because the complicated
movement of hot gases in the sun's
buttom is reflected in its
magnetic fields, the maps show a
continuous series of solar
happenings from 1959 to 1966.

"The atlas provides a new,
before impossible of looking
at how solar activity evolves," explained Dr. Robert
of the Space Science Laboratory
流逝 which was printed at the Naval
Printing Office, San Diego, and pub-
ished by the Carnegie Institution
of Washington.

Are You Bored?

Co-satellite experiments with
the solar astronomer Howard
are Dr. V. Bumba of the Astronomical
Institute, California Institute of
Science, and Sara F. M. Smith of the
Obser-
atory, Burbank, Calif.
The
Office of Naval Research sponsored
publication of the data, which
were printed at the Naval
Printing Office, San Diego, and pub-
lished by the Carnegie Institution
of Washington.

The price of $12.00 per copy does not cover
the publication costs.

Three kinds of scientists are
especially interested in the "At-
ths of Solar Magnetic Fields," Dr. Howard said. Solar
physicists will use it to study solar activity.

Geophysicists will employ it to
study magnetic storms on earth
with the knowledge that such
glows are extensions of the solar
fields which move by solar
storms. Space scientists will
use the atlas in studies of the
solar storms. Space scientists will

Interestingly, the magnetic
fields are extensions of the
vast sun which is about 100 times larger
than the earth. The magnetic fields
extend all the way out through the
solar system past the planets and
are called the interplanetary
fields.

The maps show the positive
magnetic fields are extensions of the
earth's magnetic fields. The fields
on the sun have the same
poles as those that move by the
earth some 4 1/2 earth-days later.

On the maps the positive mag-
netic fields are designated in the
color blue, the negative fields in
red. There is an overall
pattern in the shapes of these
maps. They tend to be pulled
ahead of the solar equator and
fall behind at the higher
itudes.

Dr. Howard explained that
this is due to the fact that the
sun is spinning like a top and
the positive poles lag behind the
negative poles. The mag-
etic activity tends to originate
near the equator and drift out-
ward toward the poles.

At present in the sun's north-
nern hemisphere the negative
north pole is leading the positive
poles, and the reverse is true in
the southern hemisphere.

Are you:
looking for good Italian food
hungry for a midnight pizza
thirsty for beer or imported wines
sick of B&G food
sick because of B&G food
looking for a nice place for a dinner date
desperate to get away from Tech, and see
some real people

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Specializing in Italian food — Beer and Imported Wines
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For Quick Service call 449-1948

Open daily 5-12 p.m.; Fri. & Sat. 5 p.m.-2 a.m.; Sun. 5-9 p.m.
“The Holy Mackerel,” by The Holy Mackerel, Reprise Records 40-88011, by Nick Smith

According to the album notes, the Mackerels had a rather odd beginning. It seems that Paul Williams wrote a song for Thin Lizzy. This, during the demo recor-
ding itself. People liked the demo and solicited the band to form a group. Two close friends, George Hiller and Cindy Fitzpatrick, joined him to form a trio. They found a fourth in Paul's sister, Mary M. Mentor, who was working as a singer and busker in Redondo Beach. Eventu-
ally Michael Cohn and the former Fren-
ch Sheff joined the group, to make six in all. In addition to the standard guitars, bass and drums, they use flutes, harp, harmonica, organ, and something called a dobro. Now, on the al-
bum itself.

The first cut is a thing called “The Secret of Pleasure,” which is just good enough to make you want to listen to the rest of the record. The cut includes some nice flute work by Cohn, and the vocals are better than those of the average new group.

“Scorpio Bed” gave me the im-
pression that it is kind of like what the Women would sound like if done by the First Edition. It proves that Paul writes good lyrics, at least when describing a deadly Scorpio girl.

“The Lady is Waiting” is our first real taste of brother Mentor’s voice. The song opens with just his voice and a hum. It would seem that Men-
tor’s singing is as good as Paul’s writing.

“Wildflower” is an oriental- electric departure from the main-
tem of the album, which is perhaps unfortunate. It isn’t as good as the first three cuts, although it feels like it could be done by another group.

“The Somewhere in Arizona at 1:30 A.M. (Abed Now I Am Alone)” should un-
doubtedly hold some kind of record for being titles of about four songs. It’s Mentor singing a country-western song, backed by harmonica, guitars, and percus-
sion.

“Prindredilla” ends the first 4:40 cut of their self, a catchy bit about a girl, her two sixty-sisters, and a maly (Fred) rock&roll dancing with it with the rest, but it could be worse.

“Ritter of the Skies” describes Paul singing lead again, and on this song it sounds as if he tried to sound like David Jaz from the Monkees.

“In Nothing Short of Misery,” no sound of organ, harmonica, and does quite an adequate job. He doesn’t try to (Continued on page 1)

S.F. Troopers Undermine System

by John Walsh

They are a threat to society, a danger to the innocent, a menace to public order. They are the S.F. Troopers. Their actions are illegal, their motives are malicious, their methods are brutal. They must be stopped at all costs.

The S.F. Troopers, led by their relentless leader, Captain John Smith, have been terrorizing the streets of San Francisco for months. Their reign of terror has caused fear and panic throughout the city. People are living in constant fear of their unpredictable actions.

The S.F. Troopers have been involved in a variety of crimes, from petty theft to murder. They have used violence as a means of settling their disputes and have shown no regard for the law or the rights of others.

The S.F. Troopers are a threat to our way of life, and they must be removed from our streets. It is time for the people of San Francisco to stand up and fight back against this scourge.

(Continued from page 1)
From your campus to ours...

Last year more than 100 graduates came to our campus at TRW Space Park in Redondo Beach, or to our Houston or Washington, D.C. operations. Of the more than 16,000 men and women in TRW Systems Group, over 7000 are college graduates. Their major fields of interest are as varied as your own: Engineering, Behavioral Sciences, Physical Sciences, Computer Sciences, Life Sciences, Management Sciences, and the Humanities.

It's characteristic of TRW Systems Group that many of our employees continue to do advanced and applied research in the same area of specialization they worked on in college. For our challenges are much like yours. We're deeply involved in the exploration of space and the defense of the Free World. We're also applying these advanced technologies to the complex social problems of today...transportation, health, urban renewal, land planning, water and air pollution, global communication, ocean sciences.

As they work to meet these diverse challenges, many of our employees are continuing their study for advanced degrees with TRW's blessing and financial help. That's just one of the reasons so many people have found the move from their campus to ours a natural and rewarding one.

Perhaps you'd like to consider the same move. Make an appointment to see us when we're on your campus (see below), or write to Dr. W. D. Moncrief, College Relations, Room 7001-J, TRW Systems Group, One Space Park, Redondo Beach, California 90278. TRW is an equal opportunity employer.
From Tech to Corps in One Easy Step

This is the first of a series of articles about the Peace Corps. Before are the reactions of three Caltech students to the Peace Corps, Peace Corps representatives will be on campus on the week of Feb. 11.

Michael Field, S.MJrGie

All the hallways in Dabney Hall seem to have a slightly musty edge to them so that we could catch the afternoon breeze as we walk to class. residence halls are rather different days—a little hot, but otherwise as empty as they can imagine; roads winding through the lush green forest; vineyards and orchards dot the landscape; the, light clothes, and friendly smiles; the gentle scent of faraway drinks at dusk.

These are the images that first come to mind when I recall my two years in the Peace Corps. While the memory of innumerable talks, of neo-collectives in the highways, of always being a foreigner and a curiosity disappear. The memory is concretely simple.

It is hard enough to remember what personal interests I had during those two years in Ghana. It has been another two years since the last time I talked with any of those folks. Yet, I am not sure how many of those years I have been working with peace corps, have never written a report or even thought about the experiences I had there. My overseas experience has not been enough to change the nature of the people involved in this seminar rather than in their current work.

The reason this approach is working, appears to be that in the past he exercises have been non-directed - anything that resembles to the transmission of goods. But there would still be a lack of equipment, a slow bureaucratic, and other restrictions. An agrarianist knows that after eight years at a farm school in Afghanistan he is too far behind current U.S. practice to get a good job in this country.

A decision to go into international development would at this village level is thus, in most cases, a step away from a professional engineering career. But does this explain the reluctance of engineers to join the Peace Corps, an obligation of only two years? There is certainly a tenancy among scientists and engineers to go straight through from kindergarten to college and thence to a job without a break. Perhaps they feel that it is an opportunity to make their mark in the world, to put them behind in their "speciality" and make a name for themselves in the mind of their employer. More likely it is just part of the modern society pattern to get it all at once, I suspect the tendency for such a thorough course is less strong among liberal arts students. When people are majoring in Greek literature preparatory to selling life insurance, a break of a few years won't make any difference, and it may even be helpful.

A certain percentage of "scientists" going into the Peace Corps aren't going to collect any data. All we know in people who asked for an excess of literature courses, participated in extra-curricular activities to the detriment of their technical studies, and ended up going to business or theological school. Likewise, some people go into the Peace Corps as physicists and come out to go to graduate school in econometrics; in as biologists and out as health workers. But the Peace Corps did not really change their direction; it only changed their career and confirmed the direction in which they had always wanted to go.

This is only one element; it would be unfair and untrue to say that the only engineers in the Peace Corps are those on the engineering side. There is also a sort of "silo" mentality is still present. Despite some common traits, there are many different personalities within the group we call engineers.

It seems to me that those interested in the Peace Corps is this sort of persons. They are interested in the world around them, and want to see it and understand it. But more important, perhaps, they seem to believe that two years if they feel like it. I have long felt that altruism is less a strong a motive for people who would be the Peace Corps than a desire for adventure and fun, and such an attitude is important to a successful Peace Corps.

To an engineer considering the Peace Corps, I would say: if you expect any professional gain from those two years, you will be disappointed. You are as well as an engineer, so make sure that your whole self is involved in the decision. If you decide not to join, be honest with yourself about the reasons. If you believe in taking a chance on something new, then this is one I recommend.

(Continued on page 7)

Seething Scientists Rap

(Continued from page 1)

Follow some interest in the field of microelectronics of the Philco-Ford Corp. The reason this approach is working, appears to be that in the past he exercises have been non-directed - anything that resembles to the transmission of goods. But there would still be a lack of equipment, a slow bureaucratic, and other restrictions. An agrarianist knows that after eight years at a farm school in Afghanistan he is too far behind current U.S. practice to get a good job in this country.

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(Continued on page 7)

The Peace Corps will be held on April 11 and 12, but the deadline for requests is January 31. Interested undergraduates, graduates, faculty, and staff may sign up in the student houses or in the Yoffie. A team from UCLA is interested in students from other schools.

Majority Of One

Partially organized into teams representing a country or group of small countries. There are government leaders, foreign ministers, diplomats, defense managers, etc. The survival before the exercises allows the players to do research on their position and on the European scene, which is this year's topic. The exercises are to improve, and should be better they perform," says Smith.

Each team is assigned a room in which to work. The tasks to be done are the following: how many of those interested in the Peace Corps, an obligation of only two years? There is certainly a tenancy among scientists and engineers to go straight through from kindergarten to college and thence to a job without a break. Perhaps they feel that it is an opportunity to make their mark in the world, to put them behind in their "speciality" and make a name for themselves in the mind of their employer. More likely it is just part of the modern society pattern to get it all at once, I suspect the tendency for such a thorough course is less strong among liberal arts students. When people are majoring in Greek literature preparatory to selling life insurance, a break of a few years won't make any difference, and it may even be helpful.

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(Continued on page 7)
Admittedly, not everything is perfect in this apparent paradise. The city utilities (particularly the water supply) are unpredictable in their operation. There are people who seem to feel that an American likes as a greeting nothing better than "Hi, Joe! Give me money." And the U.P., in Baguio library has fewer volumes than the average high school library in the U.S. Yet despite these problems, my assignment is sorely lacking in most of the so-called hardships that accompany the Peace Corps image.

In fact, the entire Peace Corps program in the Philippines seems to follow the "bashed but not elec­tricity" mythology that he Peace Corps itself sometimes seems to be shyly encouraging. The largest number of all PCV's in the Philippines are in education projects, although the Phillip­ines has more teachers than there are jobs available in teach­ing. In many barrios (farming communities), the school is the best-kept, nicest building.

These considerations have almost forced Peace Corps/Philip­pines, if it intends to fill a useful role, into a different type of program than found in other Peace Corps projects; a program orien­tated toward improving the quality of instruction available rather than the quantity.

This quality emphasis means that Volunteers work primarily with teachers, rather than stu­dents, in the fields of math, sci­ence, and English. For it has been found to accompl­ish far more in the long run to convince a few teachers to adopt modern methods, than to merely teach in such a manner to a few chil­dren.

Even within this unusual content, my assignment is unusual —in that it is usual. At U.P. in Baguio I teach regular classes and do not work with my fellow instructors, except for the few who have enrolled in my classes for credit. Actually, my fellow faculty members are already quite competent, and there is lit­tle—if anything—that I can teach them.

This makes it quite difficult for me when I try to imagine why the school—and in a larger sense, the Philippines—needed me to come all the way from the U.S. Possibly the only visible result of any significance will be that my presence has enabled the college to give another instructor full-time study leave with pay during my tenure. This means that, because of my presence, there will be at least one better­trained professor when I leave—even though I did not actually train this instructor myself. This is not a very great accomplish­ment for me, and I doubt that I will be singled out in Jack Voght's message to the Con­gress. It seems, however, that as far as Peace Corps is con­cerned, this is accomplishment enough. If the organization is satisfied, with my work, then I am content too.

For me the Peace Corps has been of great personal benefit. During my stay in the Philipp­ines, I seem to have discovered that I like math. This is rather unexpected, and I am more sur­prised than anyone at this turn of events. It is something I nev­er found out during my two years of graduate school—nor, I expect, during my four years at Caltech. This empha­sizes the extremely personal na­ture of the work, in which PCV's benefit from the Peace Corps experience, and not the reverse.

But it still seems to me that the rationale for my presence may be, in the PCV's own cliché—a cliché, in fact, that isn't even good enough to report to Congress. Considering the organization, this is the reason why the Peace Corps is con­sidered successful. In the ben­efits of the Peace Corps, and I am not going to make up more, than the quantity. The quality is far better than the quantity. The quantity is far better than the qua­lity.

For me the Peace Corps has been of great personal benefit. During my stay in the Philipp­ines, I seem to have discovered that I like math. This is rather unexpected, and I am more sur­prised than anyone at this turn of events. It is something I nev­er found out during my two years of graduate school—nor, I expect, during my four years at Caltech. This empha­sizes the extremely personal na­ture of the work, in which PCV's benefit from the Peace Corps experience, and not the reverse.

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For All You Sports Trolls

The PE 125 b Midterm

by Bob Fennest

Sports

Ducks Win Relays

The Beaver ducks downed UCSD in a non-conference meet, 76:57.

The Teckers won both the 400 medley relay and the 400 free relay with teams composed of Wright, Tyson, Sheffield and Kalisvaart.

Most of the Beavers did well in their races while Sheffield continued his record-breaking streak by capturing the 500 free in a time of 1:29.0. Wright won the 200 back and continues his unbeaten streak.

Swimmers Drown UCSD

The Caltech swimming team dove to a quick start and took first in the SCIAC relays. They had 96 points while Occidental had 89, Caltech, 79 and Redlands, 77. For the first time in three years, CHM (ranked second nationally) did not win the relays.

The Beavers set two meet records, the 200 yard backstroke team of Wright, Mikowicz, Sheffield and Tyson set a record swimming in 1:51.5. The 400 yard individual medley team of Sheffield, Hall, Tyson and Wright set a record of 4:01.9.

Matmen Take Double Dual

The Beaver wrestlers captured a double dual meet against University of California (UCR) and Pasadena College by 21-16 and 25-12 respectively. They had previously lost two league matches, CHM, 24-2 and Redlands, 35-20.

In the CHM meet, Morris (115), Lewis (140) and Deviny (177) won by pins, Besich (191) and Johnson (heavyweight) won their matches by pins as both completely dominated their opponents.

In the match with Pasadena, Cox (160) and Woodhead (197) lost decisions. Hornback (130) and Taylor (197) were pinned while the Beavers forfeited the 137 pound class.

Against Redlands, Morris won by forfeit while Woodhead, Baggie and Johnson won by pins. Cox and Deviny lost decisions.

Foilers Win

Caltech’s Fencing team hosted UC Riverside and UCLA Saturday evening. The Caltech Epee team of Bob Hus, Gene Clohaz, and Dick Flecard beat the UCR team 5 to 4, while the foil team of Murray Smigel, Lance Optil, and Norm Pendergraft were losing to 5 to 4. Both Tech teams lost to UCLA, and in the final rounds the substitutes were able to give valuable experience. Ray Pong showed great promise for the full team, and Paul Re and John DeVries did well in their bouts for the Epee team. DeVries beat, his opponent from UCLA, and Re scored three touches.

Appleton’s Ghost

(Continued from page 2) generators have a common problem — extreme temperatures, from 1,000 to 1,000 degrees F — with the thermonic being the hottest.

The only space reactor now being developed at Aeronet’s SNAP’S, Elliot said. SNAP means systems for nuclear auxiliary power. But, he added, the SNAP’S is too heavy for electric propulsion.

Elliot, 41, has been at JPL ten years. A Caltech graduate, he received his bachelor and master of Science degrees here and went on to Purdue University for his Ph.D.
Engineering and Science at IBM

"You’re treated like a professional right from the start."

"The attitude here is, if you’re good enough to be hired, you’re good enough to be turned loose on a project," says Don Feistamel.

Don earned a B.S.E.E. in 1965. Today, he’s an Associate Engineer in systems design and evaluation at IBM. Most of his work consists of determining modifications needed to make complex data processing systems fit the specialized requirements of IBM customers.

Depending on the size of the project, Don works individually or in a small team. He’s now working with three other engineers on part of an air traffic control system that will process radar information by computer. Says Don: "There are only general guidelines. The assignment is simply to come up with the optimum system."

Set your own pace

Recently he wrote a simulation program that enables an IBM computer to predict the performance of a data processing system that will track satellites. He handled that project himself. "Nobody stands over my shoulder," Don says. "I pretty much set my own pace."

Don’s informal working environment is typical of Engineering and Science at IBM. No matter how large the project, we break it down into units small enough to be handled by one person or a few people.

Don sees a lot of possibilities for the future. He says, "My job requires that I keep up to date with all the latest IBM equipment and systems programs. With that broad an outlook, I can move into almost any technical area at IBM—development, manufacturing, product test, space and defense projects, programming or marketing."

Visit your placement office

Sign up at your placement office for an interview with IBM. Or send a letter or resume to Harley Thronson, IBM, Dept. C, 3424 Wilshire Blvd., Los Angeles, California 90005.

An Equal Opportunity Employer
We're talking about George Bernard Shaw as brought to life by the British actor, Max Adrian. We like him so much we are sponsoring the U.S. college tour of the "By George" London-Broadway stage production. Hope you caught it here. If not, catch it on Angel records.

But why is a billion-dollar industrial corporation like TRW having a love affair with that iconoclast, that professional cynic, that socialist, George Bernard Shaw?

Because the man is a mind-opener and we thrive, corporately speaking, on open minds. Ours. Yours. Consider what Shaw said about England decades ago: "The crying need of the nation is not for better morals, cheaper bread, temperance, liberty, culture, redemption of fallen sisters and erring brothers, nor the grace, love and fellowship of the Trinity, but simply for enough money. And the evil to be attacked is not sin, suffering, greed, priestcraft, kingly craft, demagogy, monopoly, ignorance, drink, war, pestilence, nor any of the consequences of poverty, but just poverty itself."

It is possible for you or us to take exception to all or part of this, but it's something to chew on, here, today.

Here's another one: "Revolutions have never lightened the burden of tyranny: they have only shifted it to another shoulder." Yet, "The reasonable man adapts himself to the world; the unreasonable one persists in trying to adapt the world to himself. Therefore, all progress depends on the unreasonable man."

TRW is, in this sense, a company of unreasonable men.

We believe, for instance, that we can help change the world.

We believe that we can do something about some of the social problems that have the world uptight today. Air and water pollution. Poor housing. Traffic congestion. Crowded hospitals.

You see, we pioneered in the development of systems engineering techniques to solve complex aerospace problems. And we persist in thinking that the same techniques can solve social problems. Because, basically, systems engineering is nothing but an all-out assault on a problem using computerized common sense to analyze every last step of every factor involved. And from seeming chaos, developing an orderly solution. A system.

Our systems analysts have been working on such civil systems projects as a major medical center, an urban high-speed ground transportation setup, a regional land-use plan.

We expect to do more of this kind of thing, and we are equipped to do it. Among TRW's 75,000 employees are more than 7,000 with technical degrees, including over 550 Ph.D.'s and approximately 2% of the country's physicists.

"Men are wise in proportion, not to their experience, but to their capacity for experience."

In view of the complexity of the problems, the solutions and the new systems will be complex. But workable, if society has the will.

"The philosopher is Nature's pilot. And there you have our difference: to be in hell is to drift; to be in heaven is to steer." — G.B.S.

TRW INC. (Formerly Thompson Ramo Wooldridge Inc.), Cleveland, Ohio—Balanced diversity in Electronics, Aerospace, Automotive and Industrial Markets.