

Industrial Relations To Hold Listening And Memory Seminar

Caltech in Pasadena will conduct a one-day Seminar Workshop on "Memory and Listening" for owners and managers of small businesses, on Saturday, May 8, 1971.

The Conference will start at 8:00 a.m. and adjourn at 4:15 p.m. Luncheon will be served. It will be held on the campus of California Institute of Technology in the Humanities Lecture Hall, Room 205 in Baxter Hall. Parking will be provided.

The conference is being co-sponsored by the U.S. Small Business Administration, Gilbert Montano, District Director.

The purpose is to help owners and managers of small businesses learn methods of remembering and listening that they can use immediately in their work and business and that they will retain for a more successful and profitable business.

Mr. Robert Martin, a staff member of the Industrial Relations Center at Caltech, stated that "Today's manager of a small business must have a good grasp of all aspects of a business operation. This conference will help him acquire additional knowledge that will aid him for the rest of his life. He will be taught to remember people, including first and last names, facts about customers, clients and friends, etc."

Martin further said, "The tremendous competition in almost every field of business today requires the executives of small businesses to keep abreast of new ideas that will help them increase profits and earnings through increased mental efficiency. Progressive management is of primary concern to every business, large or small. It is particularly true of small business, where one man, the owner or manager, is often the key to the success or failure of the firm. One must strive to function more effectively each day to keep ahead of his competitors."

For additional information, please write or phone Industrial Relations Center, California Institute of Technology, Pasadena, California 91109. Phone 795-6841.

News Briefs

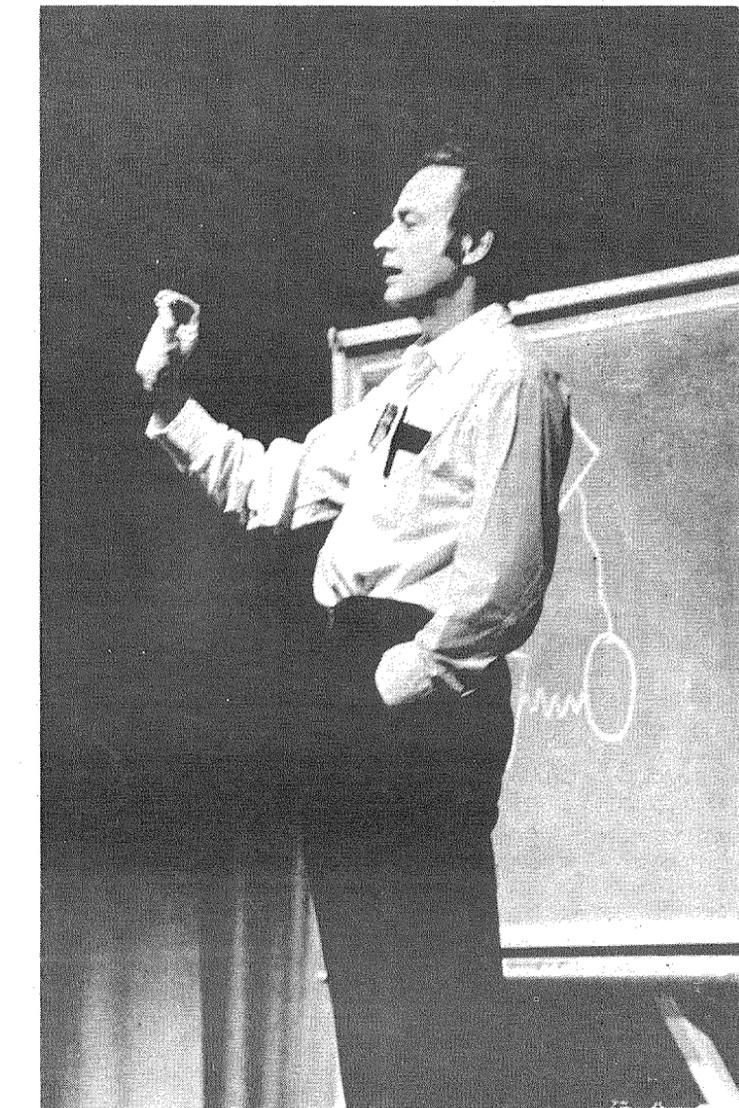
Tech Loans Kip Thorne

Professor Kip S. Thorne of the Division of Physics, Mathematics, and Astronomy at California Institute of Technology, Pasadena, California will serve as a visiting lecturer at Sacramento City College, Sacramento, California, Thursday and Friday, May 13 and 14.

He will visit under the auspices of the American Association of Physics Teachers and the American Institute of Physics as part of a broad, nationwide program to stimulate interest in physics. The program is now in its fourteenth year and is supported by the National Science Foundation.

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And Feynman said, "Let there be quarks. Let there be one round, one square, and one triangular. Let them be connected by springs so that their quantum states might interact exceedingly and spread light and truth on the land of physics." Moving gracefully from the mysteries of the universe to the secrets of the soul held by art, Feynman will lecture on Mayan hieroglyphics at the Monday Night Beckman Lecture on May 17.

Massey On Beckman?

by Philip Massey

Monday night saw Dr. Goldreich introduce Dr. Goldstein who talked about Goldstone at the Beckman Lecture: "Reflections on Venus."

Dr. Goldstein has been one of the people at the Goldstone instrument who has been engaged these past ten years in mapping planetary features by radar. Venus has received a great deal of this attention because the radar waves are one of the very few Earth-bound ways in determining what

the surface of Venus is really like.

One of the really big high points of Monday's lecture was a slide brought by Dr. Goldstein which showed the results of the most recent mapping. These results have not been refined sufficiently for release, but it was obvious at a glance that the mapping confirmed the existence and locations of many very prominent and obvious markings found the year before in a mapping survey. A few surface features of unknown nature but features which give very definite returns of radar waves circularly polarized in a direction opposite to that usually returned by the planet (thus indicating they are rough surface features) for several years. Smaller and less obvious features have now been found, and their existence confirmed.

Of course, radar observation of the planets are not an easy thing. Tremendously energetic waves must be sent out, and the receiving instruments must be extremely sensitive. The temperature of the apparatus must be kept low in order to reduce the interference of the return signal by the electric fields produced by heated particles in the receiver itself. To accomplish this, the receiving mechanism is kept at 20 degrees Kelvin.

Another problem, that of determining just where a feature is on the planet, has been solved rather well by means of carefully noting the time delay and dropper shifts.

Dr. Goldstein concluded his lecture by leaving.

Systems Engineering

Mathematicians Are Useful

by Paul Levin

Dr. Robert E. Machol, this week's lecturer at the systems engineering seminar series, was presented with a very difficult task. Dr. Ralph Miles, coordinator of the series, told him that previous speakers had already covered both the generalities and the specifics, so he could have what was left. (What is next week's speaker going to do?) Machol, a Professor of Systems at Northwestern University, decided that there was nothing for him to do but to spend the entire time answering questions.

He had already received a list of fifteen questions from Dr. Miles, so he began answering some of these; others didn't interest him in the least. He began his definition of systems engineering by assuming that everyone knew what engineering was. "All that's left is to define systems, and I'm not fool enough to do that." He finally relented by offering seven characteristics of a system: man-made, intergity, all parts possess a common purpose), large, complex, stochastic (possessing random inputs), and competitive, but added that none of these requirements in necessary while no proper subset of them is sufficient.

Loop the Loop

The purpose and real value of systems engineering, he felt, was to "keep going around the loop; find inadequacies and make improvements." Hopefully this process will converge, but if it converges, it implies that each successive iteration will yield less improvement, and the cost of an iteration will definitely not go down. Hence you stop the process when the expected return will no longer justify the work involved. In other words, you don't optimize the system.

It was obvious from the rest of the lecture that Dr. Machol simply loved mathematics. He asserted that mathematical modeling was one of the most important tools available to the systems engineer. In this game one attempted to quantify the relationships between the outputs of the system and the controllable inputs, no easy task. "When you go out to get a number, it's gonna cost more than you thought, and it's not gonna be as accurate as you thought." He advised getting at least one more significant digit than you

think you need. He emphasized that computers were a last resort and nothing more; use them only if an analytic solution is impossible or unfeasible.

He tried to show that one could save a lot of work by using one's head a bit. This was driven home by a quick, "one-line" proof of the Pythagorean Theorem and the solution of an integer-only algebra problem. While a mathematician's rigor is not always required, it can at times prove useful. A Rand Corporation researcher once used the computer to design a balanced diet which would maximize bulk while keeping to a given calorie input. Imagine his dismay when the printout included 2000 quarts of vinegar a day. He had forgotten a major constraint. "Mathematicians are there to find the constraints and to eliminate those things that aren't constraints...I know this will surprise many of you, but they are useful!"

Next he turned to the contributions of science and the scientific method could make to systems engineering. First, scientists possess healthy skepticism. They realize that "you've got to know the answer before you measure it," and that one must do successive experiments to narrow the range. Scientists are also better equipped to handle experimental biases and data that has a large deviation from the mean.

The Compleat Systems Engineer

Dr. Machol said that the ideal system engineer was an engineer thoroughly versed in his field but conversant with and knowledgeable of other fields. "You have to have the capability and desire to become a 'six-month expert'...You've got to want to become a generalist, too." Referring to an onion-skin model, he said that "you can be interested in only three layers-yours and those immediately above and below." While such supermen do not exist, close approximations do, and these people can make great contributions.

Next week, Dr. Henry S. Rowen, the President of Rand Corporation, will discuss the "Planning-Programming-Budgeting System" and its application in both government and industry.

The Boss's Boss



The California Tech warmly congratulates Ned Hale on the 24th anniversary of her employment at Caltech. Her smile has eased the way for many a Techer. Good luck, Ned!

Editorial

The Eighteen Year Old Vote

The problem of the eighteen year old vote was the subject of a small news article that appeared this week. It concerns Vermont, that buttress of the Puritan ethic, where a law has just been enacted that extends the rights and obligations of adulthood to those persons between eighteen and twenty-one. Everyone eighteen or above has all the rights previously reserved for those who had reached the magical age of twenty-one. They may vote, drink, marry without parental consent, fornicate (in private), make contracts, etc., but at the same time they are fully liable for their actions. The law will consider them adults in all respects.

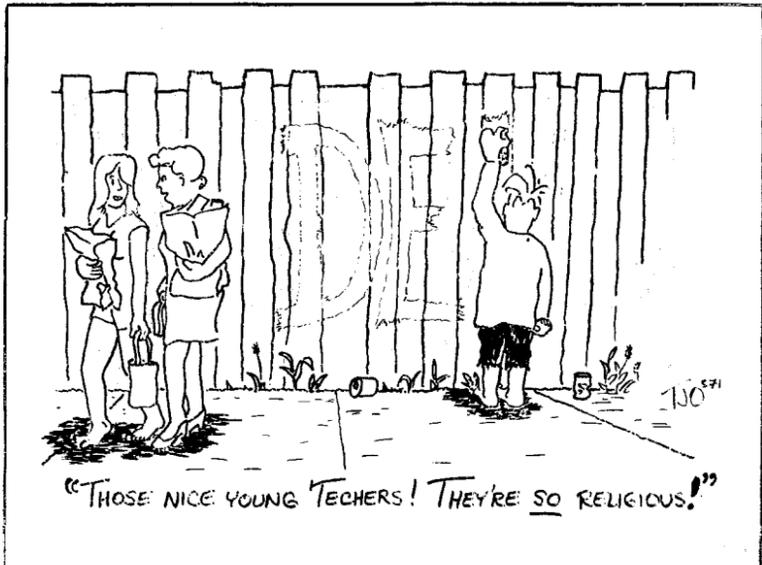
Vermont's law represents a very sensible measure from a very sensible state. In comparison it makes the other measures on eighteen year old rights appear as what they are—the worst form of condescension. In these cases the vote is thrown to us like a bone to a dog while the rest of the rights and duties of citizenship are withheld.

This is not intended to downgrade voting; it is the most important right and duty of every citizen. But some politicians are using it for their own purposes. They may have the self-righteous cry, "We are aware of youth", but in their eagerness to give away the vote they sidestep the basic issue: "Are eighteen year olds responsible enough to accept the rights and duties of adulthood?" If the answer is "yes" then we deserve all the rights and obligations; if it is "no" then we deserve nothing.

Perhaps this is the reason why so many young people are disillusioned with "the system": it cannot make up its mind as to what we are. It holds out one hand and declares, "You are adults—join us", while it heedlessly sheds our blood with the other, deaf to our pleas. Thus, youth views the current Constitutional Amendment as a hollow honor that is only another example of "the system" at work while the establishment sees the franchise as a free gift, given by an indulgent uncle to a rather bad tempered nephew to end a tantrum.

This situation cannot continue to exist. The nation must realize that we are adults, impatient and headstrong, yes, but not immature adolescents. Every state should follow Vermont's lead in granting full adult status to eighteen year olds. We know full well the obligations to go with the rights, and we willingly accept them. We cannot see going only half-way, granting only the vote. This can only lead to a second "separate-but-unequal" policy directed toward young adults this time and another parody of the philosophy upon which this country was founded.

—Peter W. Beckman
Paul A. Levin
Philip M. Neches



LETTERS? WHAT LETTERS?

**Communal Living
Is Alive and Well**

To the Editors of the *California Tech*:
Communal living is alive and well at Caltech. We would like to tell you about our modest experiment in group living, which has been going on for almost a year, and which we hope will go on for many more years. There are about ten of us. We include one faculty member, his wife and three children, a number of graduate and undergraduate students, and one person who works outside of Caltech. We share a six-bedroom house; we cook together at supertime, and split the weekly food bill. We do not have communal incomes, bedrooms, or raising of children, and we do not represent any particular philosophy or belief. We are a rather ordinary group of Teachers and their friends, and we've found that living together is more fun than living separately. In fact, we are so undistinguished as individuals that we feel there must be many more people who would enjoy this kind of living, and who would like to know how to get started. That's why we're writing this letter.

Group living is many different things. To a married couple with children, it offers an escape from suburbia. To the unmarried, it offers a chance to live with children. To those who dislike

ThroopBeat

Faculty Board Okays ISP

The Faculty Board gave its blessings to the Independent Studies Program at its marathon meeting this last Monday. Students who wish to go on Independent Studies next term need to submit a written proposal and find three faculty advisors for their plan. If you're contemplating ISP, it might be a good idea to check with one of the members of the Independent Studies Committee. (For the benefit of our readers, we hereby repeat the list: Barish (chairman), Anson, Bohnenblust, Goldreich, Humphrey, Knowles, Neugebauer, Scudder, and W. Wood).

In other action, the Faculty Board approved the plan for the splitting Physics 1 and 2 into Feynman and non-Feynman sections. Numerous other courses have

**Computer Center
Comes Under Fire Again**

Dear Sir,
Like Mr. Nicolaides, I, too, have had unpalatable and unsatisfactory experiences at Booth Computing Center. In my view there is inadequate communication between users and those providing computing facilities.

What is needed is a regular (once a month?) meeting of representatives from Booth and computer users. Perhaps at such meetings we can find out who is responsible for what and can participate in decisions which affect us as users.

Yours sincerely,
John McKay

housework, it offers relief. (Cooking for 10 people only 1/10 of the time is easier than cooking for 1 person all of the time). To students and faculty, it offers a glimpse into each other's lives. For the children, it offers a wide variety of adult friendships. Our house is not the ideal of genteel living, but it is inexpensive, casual and pleasant.

Working out the details of life is also part of the fun. We seem to have unlimited enthusiasm for discussing who does the cooking, the shopping, the dishwashing, the grass cutting, and how we should organize parties and holidays. We respect each other's privacy, but we are

been added and deleted, or suffered number and/or title changes; for full details, scan next year's catalog (when it comes out).

Ahead of the News

Reportedly, a new head of Campus Security has been chosen. ... We're still standing by for development from Booth (as reported in an earlier column, the 360/75 system will be replaced, probably before the end of the calendar year). ... The social ritual of building dedication will be practiced this Monday on Baxter at 4:30 in the p.m.

The Campus Newsletter reports that Dr. Weldon will resign July 1. Dr. William P. Schaefer will replace Dr. Weldon as Registrar, and keep his job in the Admissions Office.

That's it for the week.

**Does Honor System
Apply to Food Service?**

Editors,
Caltech is to be admired for its long term success with the honor system. Evidently, however, there are differences of opinion as to how the honor system applies to food service. All too often, off campus students without board contracts are found to be mooching off food service (usually by swiping desserts after meals). These students do not pay for what they eat; those with contracts do. In the interest of fairness to all, an immediate halt should be brought to this kind of pilfering.

Mike Schroeder

definitely not a dormitory. We live together, and try to settle our differences instead of ignoring them. This commitment is the only thing we all share, and we value it.

The history of how we got started and acquired our house is an interesting study of buracracy and the individual. During the spring of 1970, there was some discussion around campus about forming a "halfway house," which was to be an off-campus house, run by the Institute in the same way that the undergraduate student houses are run, except that it would be smaller and might have a faculty member acting as resident associate. After winning the approval of the Faculty Committee on Undergraduate Student Houses, the Master of Student Life, the idea finally came to rest in the office of the Director of Property Management and Assistant Treasurer of the Institute. That office is in charge of managing the part of the Institute's endowment

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The CALIFORNIA Tech

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Staff Bob Bresler,
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Photographers..... John Belsher,
Bill Loucks, Ken Mills, A. J. Owens, Alan Stein.

Business Manager..Marvin Mandelbaum
Circulation Manager Kim Border

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**Flems Beat Page
in Interhouse
Bridge Championship**

by Charles Johnson
In an appropriately exciting final round completed this past Sunday, the Fleming Interhouse Bridge Team of Bill Delaney, Loring Craymer, Dave Dobrin and Charles Johnson captured this year's championship trophy. Down by 27 International Match Points at the three quarters mark, Fleming rallied to gain 31 IMPs in the final 14 hands to win the 56-board two-day final by 4 IMPs.

The match had been tied after 28 boards. The last 28 boards were rather a bloodbath with Fleming gaining 86 IMPs to Page's 82. The hands proved especially volatile and included a number of difficult situations revolving about 7 slam swing hands. No slam was bid and made at both tables. Fleming was hurt when they reached an odds on slam which failed and was not bid at the other table and also when defense inspired by a Lightner Slam Double set a slam made at the other table.

More consistent game bidding seemed after all to have won if for Fleming; they bid and made a total of 10 games (excluding slams) in the final 28 hands.

Innovations in Education

Teacher Trainer Talks

by Alex Seita
At Immaculate Heart College, Miss Bonnie Flynn heads the innovative teacher training program designed to create better teachers. Talking about "Teacher Training and Commitment," she was the fifth speaker in the Institute-Caltech YMCA sponsored course PI 104 (Educational Issues) which meets every Monday night at 7:30 in 25 Baxter. Visitors are welcome.

For the past year at Immaculate Heart College, education majors have found themselves cast into a program featuring much freedom, little structure, and on the job training. Responsible for the success of IHC students in becoming teachers, Miss Flynn was instrumental in changing the old teacher training program. As a response to improving future teachers, the old program shifted from one of pre-designated courses, rigid ideas of a perfect teacher's behavior, and sparse practice-teaching experience to one where participants determined their own curricula, tried to adopt effective teaching techniques compatible to their personalities, and received as much practice-teaching experience as desired.

"We're asking students to select their curricula, to find a place in teaching, to think. There is an

emphasis on obtaining different kinds of experience—we have students observing dog training schools, police departments, military training methods, and regular public schools—in order that students go through a long time searching for the proper teaching techniques for themselves." Miss Flynn said that the program "humanizes education." In other words, it offers students real choices in planning their education as future teachers, in giving them early exposure to the occupation by teaching perhaps two mornings a week in a public school, and in sponsoring encounter sessions where students evaluated each other.

Presently, 25% of the student body at IHC goes into teaching. Of the ones in Miss Flynn's special program (85) approximately half teach in the public schools for a few hours a week. Freshmen at IHC are thus able to determine immediately whether or not teaching is attractive to them. By asking these students to develop self-satisfying concepts of a teacher, they examine reasons for present teaching methods. The great feature to the IHC special teacher training program lies in its intent to have students become teachers at "their own timing and preparation."

Avoid the rush!

Flunk Your Physical Now

by Mark Peterson

Earlier articles explained that you will probably need a physical deferment to avoid the draft. This article will deal with how to find a medical condition which should disqualify you from induction.

The army publishes a long list of medical conditions which will cause you to be unacceptable for induction. Most draft counselors will have a copy of this list, Army Regulations 4-501, but you are likely to find the list hard to read. Since it is written for examining doctors, it is filled with technical terms which mean little to laymen.

Books

Fortunately several books have been written interpreting AR 40-501, *A Doctor's Guide to the Draft* by Forster and *IV-F, A Guide to the Draft* by Sutler. Both books attempt to explain the medical language in AR 40-501 in lay language. Either book would be very useful for you in trying to see if you might have a medical condition which should cause you to be deferred.

Although both books will be useful in finding whether you have medical problems which may get you deferred, you should not rely exclusively on the advice in those books. Both books contain some

inaccuracies with regard to the legal considerations of the physical deferment. Also, draft regulations change frequently and some previously correct information contained in both books has become inaccurate because of such changes. Finally, both books are overly optimistic. Especially if you take a physical examination in California you are likely to be found physically acceptable even if you have a medical condition which should disqualify you. Therefore, if you find out that you have a medical condition which should disqualify you, see a draft counselor or lawyer for help in documenting and presenting your claim for a physical deferment and for help in appealing if your claim is turned down.

Different Standards

You should be aware that the Army regulations contain several different medical standards. Sutler's and Forster's books deal with the standards for induction by which most men are judged. However, if you plan on becoming a medical doctor you may be inducted under much looser standards. It is almost impossible for doctors to fail those looser standards. Similarly, for service men who have been on active duty for at least 120 days and reservists or National Guardsmen who have completed active duty training, the medical standards which require a discharge are different from those standards you must pass to enlist or be drafted. It's tougher to get out of the service than to get in.

If you are planning to join a reserve or National Guard unit to avoid the draft, you must pass the same medical standards used for examining men who are ordered for induction. Therefore, if you cannot pass the reserve or guard physical examination you should also fail the draft induction physical. If the reserve unit offers to overlook the medical standards and let you in anyway, turn them down. If you can't be drafted, why join the reserves?

Don't Give Up

Finally, if you don't think you can get a physical deferment and neither book helps you find a medical problem to get out, don't give up. An examination by a doctor familiar with army medical standards may show that you have a disqualifying condition which you did not know about. Draft counselors or lawyers should be able to refer you to such a doctor. Even if the doctor cannot find anything wrong at this time you should not give up. As earlier articles explained, when you are classified 1A you should have from one to two years during which you can put off your induction. You should use that time to see doctors and develop a medical history which you can use later to get you out.

If you have any topics which you would like discussed in this paper by a draft lawyer, write to: Mark A. Peterson 1627 West Washington Blvd. Venice, California 90291

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Techer Pans L.A. Philharmonic

Last Wednesday evening the Los Angeles Philharmonic Orchestra came to the Pasadena Civic Auditorium to play Schubert, Strauss, and Tchaikovsky. Schubert and Strauss lost, and it took all of Tchaikovsky's resourcefulness to overcome an uninspired conductor and a lackadaisical orchestra.

The program opened with Schubert's Unfinished Symphony, which (contrary to popular belief) was neither his last work nor terminated by his death. Schubert simply ran out of ideas while composing the symphony and put it aside, never to return to it. Although Schubert's reluctance to "finish" the symphony was dictated by a reluctance to add inferior material to what he considered one of his best efforts, the orchestra played it as if no one really cared. The phrasing and style were quite wooden, and there were far more lapses of timing and intonation than one expects from an orchestra of L.A. calibre in such a familiar work. In this extremely beautiful and expressive work, Zubin Mehta looked like a lifeless parody of himself, conducting the notes but putting no emotion or interpretation into his conducting. It was like an onerous duty that had to be performed rather than the heartfelt involvement that the work deserves. Even the generally unsophisticated Pasadena audience sensed this and responded with a very lukewarm reception.

Next on the program was the Duet Concertino for clarinet (Michele Zukovsky), bassoon (David Breidenthal) and strings, by Richard Strauss. The work was the last major work by the composer, written in 1947. It was a belated response to a suggestion, over sixty years earlier, by Hans von Bulow. Strauss should have acted sooner on the suggestion; as it is, the music is pure nineteenth century, written half a century too late. How Strauss could have completely ignored the evolution of music during those fifty-odd years is a mystery. The music has no direction or purpose, except perhaps to show off a pair of soloists. One is immediately struck with a shiftlessness and lack of organization. There is neither melody nor development, just superfluous ornamentation. I had never heard of the work before, and my regard for both Strauss and Mehta was greater then; it is a tiresome work which could well be forgotten. The performance was a lackluster as

the Schubert had been, with two notable exceptions. First, the soloists (both from the Philharmonic) were quite good performers, Miss Zukovsky especially. She put charm and personality into her playing and obviously was enjoying herself—a crime which the conductor probably punished during intermission. She moved and danced with the music very much like a jazz singer "belting it home", and her enthusiasm was the one bright spot of the first half of the concert. The other soloist was technically and musically competent, but his bassoon parts were often lost in the muddle of the orchestral parts. The second exception is that the timing and intonation, a small but forgivable problem in the Schubert, were almost intolerably bad in the Strauss. Especially annoying were many of the frequent clashing unison passages with the solo clarinet and the solo violin, played by the assistant concertmaster. The entire piece, except for the liveliness of Miss Zukovsky, was memorably forgettable.

After an intermission, during which a surprisingly small number or people left, the orchestra came back with Tchaikovsky's Fifth Symphony. Except for the "Firestone Hour" motive of the slow movement, the symphony is not as well known as most of the others that Tchaikovsky wrote. It came at a time in which he was involved in great personal turmoil, and the work is very tense and emotional. As always, the melodic line, orchestration, and harmonic development are superb. The orchestra, perhaps back from a half-time peptalk in which the conductor warned against lowering their guard and allowing

themselves to become lost in the music, began the first movement with as much restraint as had been in evidence earlier. But as the movement wore on and the music became more exciting, one could almost sense the awakening of the performers. Tchaikovsky has some kind of magic that seems to inspire the most lifeless orchestras and audiences alike. By the time the famous horn solo of the second movement (brilliantly played, by the way) had arrived, everyone was enjoying and partaking in real music. Zubin Mehta, previously a human metronome, became the Mehta who has built the Philharmonic into a good orchestra; he began conducting with fire and flair. And both the audience and the performers responded with the joy and pathos that Tchaikovsky wrote into the music. The third movement, a simple waltz, was like a calm between storms; one could sense the relaxation that this incidental movement provided between the passionate second and the fiery fourth. The final movement—much reminiscent in many respects to the tone poem Francesca da Rimini—is a showpiece of Tchaikovsky's talent. It also was the showpiece of the conductor and the symphony, as everything combined perfectly to give an impressive display of virtuosity. With roaring brassing and pounding drums, the movement ended amidst hearty and lengthy applause. It was well deserved—but more by Tchaikovsky, whose impressive score inspired everyone, than by the orchestra.

The Los Angeles Philharmonic will return to the Pasadena Civic Auditorium on May 12, playing a

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HEAD TO HEAD

A column devoted to the thoughts of distinguished public figures in America today and sponsored through the courtesy of the Theodore Hamm Company.



JERRY ROSENBERG, Ph.D.

Psychologist and author of *The Death of Privacy*, which is devoted to an attack on the government and industrial computers, and their threat to individual freedom. The following is based on his opening day testimony before the U.S. Senate Subcommittee hearings on surveillance and privacy.

THE COMPUTERIZED SHERLOCK HOLMES

The Potential Threat of Military-FBI-Government Surveillance and Electronic Dossiers to the Survival of Privacy and Freedom

There is growing evidence that the fictional big brother society as envisioned by George Orwell in 1984, may in 1971, be more of a reality than we would like to acknowledge.

The present attack upon the Federal Bureau of Investigation and its director J. Edgar Hoover is an outgrowth of the fear of some Congressmen that their telephones have been tapped; that voluminous computerized files are kept on many Americans whose actions should not come under the Justice Department's jurisdiction, and that the Bureau has become increasingly obsolete by its failure to uphold individual rights.

In addition, testimony at a recent Senate hearing revealed a new crack in the government surveillance wall. It was stated that the highest officials of the Johnson Administration had initiated Army surveillance of legitimate civilian political activity in 1967 and 1968. The request for the intelligence program was made by the military, with encouragement from White House officials.

A directive issued by the Army as part of its program to keep civilians under surveillance, showed that senior officers feared "a true insurgency, should external subversive forces develop successful control" of the racial and antiwar dissidents who were active at that time. The plan was an outgrowth of decisions by White House personnel during and after the riots that followed the assassination of the Rev. Dr. Martin Luther King Jr.

During the hectic days of civil disturbance from the summer of 1967 through the fall of 1969, the Army fed the names of about 18,000 Americans into its computers and dossiers in a wide-ranging intelligence operation known as Continental United States Intelligence, or Conus Intel. Even the military started to question the value of collecting this information to predict the site of future civil disturbances. With the rioting that followed King's death in 100 cities, it was decided that the exact location of a major disruption could not be predicted.

The Pentagon, according to testimony, has dossiers on 25 million Americans. In its data bank are files on 760,000 organizations and incidents and on an average day, 12,000 requests are processed. Certainly, our democratic principles are in danger when the military decides to act as a watchdog over civilians. To combine their defensive activities with public commentary and protest is to suggest a new power that could push all people into submission.

At present, computers in and out of government have an almost limitless capability to store, intermingle, and at the push of a button, process information on persons, organizations and a variety of their activities, all without the knowledge of those involved. Stacks of punched cards and tapes maintain statistics about us that we may not know exist. We might never escape in time or distance the bureaucratic machinery keeping tabs on us.

With all the splendid wonders of the computer we find ourselves asking: has man become submissive to the advanced machines of today? Can each individual profess to be more human in his actions than the complex system he has developed to assist in daily endeavors?

People want to determine for themselves in every particular situation of life just how much of their complex beliefs, attitudes and actions they choose to disclose. To the American, this data is more than just statistics. It is the data of judgment, a possible last judgment that can affect their schooling, employment possibilities, promotion, or role in the community. The citizens of this country have a right to a personal diary that is away and free from the organization's outstretched hands. They plead the case that if all their actions were documented, including their mistakes, it would be difficult to close a page of one's life and start anew. It would be a tyranny over mind and destiny.

There is a growing antagonism against people desiring power, who will through technical and mental coercion try to intrude upon our private lives. Unfortunately, we have learned that the man who wishes to gain control will employ various techniques to influence and force individuals into submission.

There is little doubt that as computerized systems spread throughout the nation and world, surveillance by data processing is bound to increase. If the trend continues, it will soon be possible to have all personal information about an individual gathered on a continuous basis and held indefinitely until requested. The snowballing effect is quite pronounced. When the decision is made to purchase a computer, more data are gathered. Although this may provide for better services, improved decision-making and policy-programming, it also provides personal information about persons never known before the advent of computers.

The computer cannot be blamed for loss of privacy. It is but an instrument created by man. Computers and other advanced machines are not permitted to be in error, but man is not a machine and does not have to be as efficient as the tools he has created to serve him. If man loses his right to be wrong, will he react by withdrawing from society? Will his curiosity to experiment with life falter? If this happens, man truly becomes nothing more than a machine.

The right to preserve privacy is a right worth fighting for. Computerized and manual data accumulating systems offer great potential for increased efficiency, yet they also represent the gravest threat of invasion of our innermost thoughts and actions. Some see this trend as leading to an Orwellian nightmare with Big Brother watching over us and reporting to the central record-keeping authorities any behavior adjudged out-of-line with stated policy. In the end, who will guard the guardians who control our destiny?

Our society is indeed complex, requiring the collection and use of files, mechanized and manual, to guide us in our decisions. Computers may continue to prove themselves the worthy servant of man. But the servant must yield to his master, and the necessary thought must be given to developing essential safeguards. Legal, social and technological innovations are needed to control the all-documenting, all-remembering systems and demonstrate that machine technology and data accumulation, whether by the military, government, or the private sector, need not necessarily bear the stamp of increased surveillance.

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MUST END TUESDAY!

L.A. Philharmonic

Continued from Page 4
concert which includes Beethoven's Symphony No. 8, Strauss' Till Eulenspiegel's Merry Pranks, and Brahms' Symphony No. 1. Although all three pieces are excellent works, it is a sad commentary on both Zubin Mehta and his opinion of Pasadena audiences that the great orchestral innovator will not present anything different or modern in this concert series. He believes that Pasadena wants the nineteenth century, Beethoven to Strauss. Not even Bach or Stravinsky. Perhaps he knows that he can always depend on Tchaikovsky or Brahms to salvage a lackadaisical concert. But I, for one, wish he'd show us some of the daring and innovation that he's known for.

A.J. Owens

The reviewer, a Caltech grad student (physics), is former 1st trumpeter with the Berkshire Symphony Orchestra and the Vermont State Symphony Orchestra. Not to mention the Caltech band.



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The Critical

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Stoneground by Stoneground; Warner Brothers WS 1895.

This album and group are the outgrowth of "The Great Medicine Ball Caravan," a group of 160 people who traveled across the country in 1970. Stoneground has a sound that is a combination of rock with the joy and spirit that came from their free concerts during the 1970 caravan. The music is hard to describe. It sounds a little like

Country Joe backed by the entire cast of "Hair."

The music is blues, rock, gospel and plain fun. There are about ten people in the group, which allows a variety of voices and instruments. The group includes two people from the San Francisco cast of "Hair," plus Sal Valentino, formerly of the Beau Brummels. Overall, the combination is a good one. The album is worth listening to, and from the sound, the group is probably even better in concert.

Rat On! by Swamp Dogg; Elektra EKS-74089.

I heard you snickering out there! Now stop that! This album is legit. It is even good sometimes.

Swamp Dogg is made up of Jerry Williams Jr. and a back-up group of six reasonable musicians. Jerry

Williams did 80% of the writing, all of the lead vocals, and played piano, in addition to producing and arranging the album. The album is rhythm and blues, with some other music done in R&B style, ("Got to Get a Message to You" by the BeeGees and "She Even Woke Me Up to Say Goodbye" by Mickey Newbury), and done quite well. I would call this a good R&B album packaged to look like bad rock.

M.F. Horn by Maynard Ferguson; Columbia C30466.

This album is either soft jazz or hard Muzak. It includes jazz versions of songs by Jimmy Webb and Laura Nyro, plus a few songs by people less well known. The small number of cuts allows the musicians to improvise a little, but somehow they just never cut loose completely. It's good music, but a little too tense to be good jazz. Maynard Ferguson plays trumpet, trombone and fluegelhorn on the album, and the other musicians play things ranging from saxes to veenas and tambouris. It's good listening music, but not exciting.

White Trash by Edgar Winter; Epic E 30512.

Edgar Winter may be a better musician than brother Johnny. His album is certainly an improvement over what I've heard of Johnny

Winter. This album is rock and roll of the type Belaney and Bonnie do, and done almost as well. Almost all of the songs on the album were written by Edgar Winter and another member of the group, Jerry LaCroix.

The group, White Trash, consists of Winter, LaCroix and five other musicians. There are at least 17 other people on the album, by actual count. These include Johnny Winter and Rick Derringer on a couple of cuts. White Trash is beginning to rival Delaney and Bonnie's group in size as well as quality and style.

Nick Smith

Warner Brothers Reprise Radio Show Pro 463

This album is a collection of fair to poor sound effects, very little music, and some of the worst dialog ever recorded. The album was made to promote many of the newer groups of the Warner Brothers family. Some of the groups, one of which is Faces, are really quite good. However, the long and usually obnoxious dialog which runs between and sometimes during the extremely short cuts, does not allow the listener a fair chance to evaluate the groups. In conclusion I can only say that I have been trying to give the record away.

John Tristano

Continued on Page 7

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More Record Reviews

Mary Mary Travers, Warner Bros. 1907

Here is my song.
For the asking...

Well, it's time to do the old review and there doesn't seem to be anything to say. (So why do it? Reason 1: I've never done a record review, I'm not the kind of person who does record reviews, but I haven't quite filled my quota of strange things this week. Reason 2: Someone ought to do it. Reason 3: It's my record. It's not that there isn't a lot that can probably be said about the record. There are a lot of things said in the songs, a lot of different moods and feelings, a lot of different things.

The Mary of Peter, Paul, and, has borrowed a few things from their previous album ("The Song Is Love," "The First Time I Ever Saw Your Face"), changed them, and somehow they came out better. Some of the songs are from other people's works: Paul Simon's "Song for the Asking," Rod McKuen's "Children One and All," Petula Clark's "On the Path of Glory." Some of them are beautiful; some of them could stand listening to only once.

Some of the pieces are less well known, but very worth hearing: "Rhymes and Reasons," and "Indian Sunset" in particular.

And you ask me where
We're going now;
And where's the rhyme
And where's the reason. as n't

I think I was right—there wasn't much I wanted to say.

P. Massey

Summit Sessions Dave Brubeck
Columbia C-30522

The list of people who play in this album is unbelievable—Thelonius Monk, Leonard Bernstein (et. al.), Peter, Paul & Mary, Charlie Mingus, Carmen McRae, Louis

Armstrong, Brubeck's sons, Quartet, and Trio, and others. The album splits pretty evenly into two parts—in half the tracks Dave and the Quartet chunk chords for others (the best of these is "Trav'lin' Blues" with McRae); for the remainder Dave is in his customary role of leader (or at least equal). The track with Monk (a duet, the "C Jam Blues"), and "Koto Song" stand out here.

Brubeck aficionados should find the album interesting since 1) This is Brubeck's latest album (although composed of old recordings); and 2) Brubeck has never appeared in supporting roles quite like he does here. People who know little of Brubeck can relax and enjoy the incredibly variegated cuts (including two Indian numbers, one a real Raga with Palghat Ragha, one of India's best known percussionists).

Bruce Montgomery

Mud Slide Slim and the Blue Horizon James Taylor WB 2561 \$5.95

Truly beautiful. Another really big album for James Taylor. "You've Got a Friend" is in my opinion Taylor's best song since "Fire and Rain." Every song has a wonderful feeling of love and peace that is so rare in our society today. This feeling is even further enhanced by the lovely voice of Joni Mitchell singing the background parts with Taylor.

John Tristano

Scott Joplin Piano Rags played by Joshua Rifkin; Nonesuch H-71248.

Scott Joplin was probably the best and most popular black composer of his day. Joshua Rifkin is an excellent pianist. The combination produces music that is pure ragtime, a nice form of music. If you like ragtime, buy the album. If not, then don't.

Nick Smith



More About Communal Living

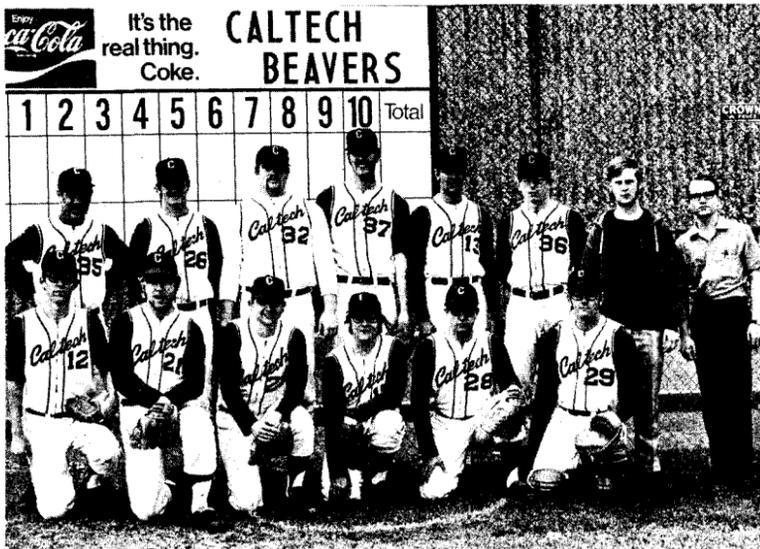
Continued from Page 2

which has been invested in real estate around Caltech. The Director, Mr. Kermit Jacobson, was therefore put in the unfortunate position of having to judge an experimental housing program as a financial investment to Caltech. Also, the group of individuals who hoped to participate in this experiment regarded the idea of Institute management as the kiss of death. The compromise solution was to have the Institute rent the house to the faculty couple involved, and then wash its hands of the affair, provided the rent continued to come in.

We hope other groups will try their own living experiments close to Caltech. The area around a great university should be an exciting place to live, and we feel the Institute is not taking advantage of the educational opportunities that experimental housing might provide. In order to rent a Caltech-owned house at present, a group needs an individual or couple who are willing to sign a rental agreement with Caltech. This individual or couple need not be on the faculty. Our experience has been that having one person responsible for the rent does not create any particular inequalities among the members. In the day-to-day running of things, what counts is who feels strongest about each issue.

To sum it up, we like our living arrangement, and we recommend it to members of the Caltech community.

Sincerely,
Marc Aaronson
Emily Champagne
Andy Ingersoll
Sarah Ingersoll
Judie Sharman
Pete Szolovits
and friends



Another Baseball Game... Whittier Squeezes Beavers

The Beavers almost upset Whittier in the second game of the double-header last Saturday. It almost seemed as history was repeating itself as Whittier was warming up the pitcher that Tech clobbered last year for their only league victory. It almost happened in the eighth inning. Tech had the bases full. John Ellis drew a walk forcing in the

first run. Then four-year veteran Mike Arenton fouled off several pitches before being issued a walk and scoring another run. Tom Howell hit into a force play, with the third and final run scoring. Whittier managed to score two runs in the top of the ninth bringing the final score to 7-3. Whittier had shut out Tech in the first game.

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