ASCIT Elections Next Tuesday

BOD Awards Honor Keys, Certificates

The ASCIT Board of Directors voted honor awards to 36 people Tuesday in recognition of outstanding contributions to campus extra-curricular activity during the past year. Honor keys will go to Bill Boyer, Carl Gotschall, Lee Hood, Tom Jovin, Hugh Kieffer, Bob Lee, Doug Dunham, Frank Greenman, Carl Ryovainen, Art Rubin, Stan Moler, Editor of the California Tech, and Ken Casey hopes for some Social Studies will start at 9 p.m. Wednesday.

Tuesday night in the Beverly Hilton. Dress for the dance will be $0.00. Attendances at the Beverly Hilton will be provided by and Ken Casey hopes for some half-time entertainment to top off his final effort as ASCIT Social Chairman.

Votes for the dance will be semi-final and the cost per couple will be $0.00.

ASCIT Elections Next Tuesday

Bauder, Moler Vie For Pres.

Seven ASCIT offices and the presidency of the IHC will be contested at next Tuesday's student body election, as all nominations closed this week.

Candidates will finish speaking in the Student Houses today and the election rally is set for Monday night in Cohorn. Campaign statements appear on page 2.

Uncontested offices are: IHC President—Stan Sajadera. Co-editor of the California Tech — Tim Tisch, John Todoroff.


Athletic Manager—Bob Janoe, Representative - at - Large - Chuck Brooks. Secretary of the Board of Control — Carl Hamilton.

For President are: Cleve Moler, Editor of the California Tech, and Bill Bauer, current ASCIT Secretary.

Competing for Vice-President and Chairman of the Board of Control are: Salim Schubert and Clyde Zaiden.

Four candidates are seeking the Secretary post: Les Inger, Pete Lipman, Dave Pritchard and Paul Purdom.

Contesting the Business Manager job are Bob Golden and Art McCarr.

Eight of the 19 candidates will be members of the new House next fall.

The February 23 ballot will contain an amendment to the ASCIT by-laws, which would permit members of the Board of Control to serve more than one term, so as to permit experienced people to be re-elected.

Also there will be a resolution to put the Caltech undergraduate body on record opposing the loyalty oath required in the National Defense Education Act and urging the passage of the Kennedy-Clark bill.

Africa Expert Munger To Be AUFS Visitor

Dr. Edwin S. Munger, the last member of the American University Field Staff to visit Tech this year, will arrive on campus next Monday, February 22. Munger will report to the Caltech community on developments in sub-Saharan Africa.

Munger has studied and lived in Africa for the greater part of the past 12 years. In his travels he has visited all of the territories and major offlying islands of Africa south of the Sahara.

This is the fourth time Munger has participated in the AUFS program of visits to member campuses. He returned from his latest African trip in the fall of 1959. During 1958-59 Munger observed national elections in Southern Rhodesia and South Africa, the French referendum in the Ivory Coast, the 1st Pan-African Student Conference in Uganda, and the All-African People’s Conference in Ghana.

Munger’s visit will last from next Monday, February 22, until Wednesday, March 2. His tentative schedule, through Friday, February 26, follows:

Monday afternoon, Munger will be interviewed by student reporters. Monday evening he will attend a YMCA-sponsored dinner and discussion with graduate students.

Tuesday morning Munger will (Continued on page 10)

Lady Jackson Speaks On Indian Economics

By CARNOY

Barbara Ward Jackson, here for a packed eight days of talks, seminars and dinners, is certainly one of the most charming guests that Caltech has ever seen. She is appearing under the sponsorship of the Haynes Foundation, whose trustees, milked decked, filled the front three rows of the Dabney Lounge Mon night for the first of Lady Jackson’s four lectures.

At present, the British economist is living in Ghana, where her husband, Commander Sir Robert Jackson, is Chairman of the Development Commission. He is on loan from the British government to the Ghana government in the latest phase of a long career as an expert on international development. Lady Jackson, meanwhile, is on a four year fellowship on Economic Assitance. She is working currently on the problems of India, and afterwards plans to use the Indian information to bear on Africa and later, if there is time, “Uncle Carnegie,” as she calls the fellowship, would like to take a look at South America.

In speaking to the woman that Harrison Brown described as “remarkable,” one is immediately drawn to the dynamic personality and wonderful informality that marks her conversation. After all, India’s economic situation and the tribal agriculture of Africa could easily be the dryest subjects on record. Yet, in the hands of Barbara Ward Jackson they became integrated with a sparkling British sense of humor that has audiences laughing several seconds late.

She was educated in England and France and Germany and received an honors degree in philosophy, politics, and economics at Oxford University in 1935. She has written several books which have played a notable part in the development of public policy in the West, and plans, in fact, to include the Caltech lectures as the basis of her next work.

On Monday, Lady Jackson will speak on “Industrialization and the mixed Economy,” and on Tuesday, “Trade, Aid, and Development.” Both lectures will be held in Dabney Lounge and start at 8:15.

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Clyde Zaidins  
Jr. Ph., Blacker; House Vice- President, ExComm  
The major consideration of the Veep is our Honor System, of which the BOC is the guardian. There is much that can be done to clear up misunderstandings, introduce the philosophy of the system to ourselves and to the outside world, and examine the "fringe" issues where most of the problems occur.

The developing ExComm is the place where we should look for true leadership in governing this body, along with a position of responsibility of educating all UCs, given me the background to carry out the duties with originality and inspiration.

Finally, we should lead a discussion of as many phases of Caltech life—from parking problems to the philosophy of a student house—as room on our editorial page permits.

* Treasurer  
Sid Leibovich  
Jr. Ph., B/OC; BOC, BOC, Tech's Fresh Press, Tech staff, House social chrm.

One of the most important considerations of this year, ASCIT treasurer will be the much talked about "Big T Problem." As the Big T raises, we will cause more trouble than what appears on the surface. A significant number of important victuallers are understandably disturbed, and with the Big T business manager will have a more difficult job next year.

The job of the treasurer and business manager should work closely with the Big T staff. They should make sure that the T is put on out time and with a minimum cost to the student body.

* Social Chrmn.  
Tim Litle  
Soph, E/OC, A/BoC, Tech's Fresh Press, Tech staff.

I am interested in seeing the ASCIT social program grow. While there have been many complaints about the social program, last year, for example, there was not less than 60 percent adequate of the $1000 winter formal. I think that this number would have been greater had there been more publicity about the importance of this activity to plan for ASCIT's events rather than simply acknowledging their existence.

With the majority of the student body living on campus next fall, it is an important matter for all excomm members to keep the student body relatively informed and truly representative of the student body.

Poul Purdom  
Soph, Ph., B/OC; New Student House Comm.

If elected secretary I intend to make the activities of the BOD to the students and to fulfill his voting position on the BOD.

In order to do the former efficiently, I favor two approaches. One is the continued wide distribution of ASCIT minutes. The other approach is to make it a requirement of the secretary's column in the Tech and more interesting-mail-out announcements will create student interest in things before they are done—leading the way for more student participation.

As a member of the BOD, I will exert what influence I can toward keeping ASCIT relatively inform- and truly representative of the student body.

* Athletic Mgr.  
Bob Juola  
Soph, Chem E, House A/BoC; Rackers, Track and Cross-Country (Ed. note: Bob Juola has been spending the last few days in Europe at the International Medical Research Health Center and, as a result, could not contribute a blurb for this magazine. As a member of the faculty, Juola works at the fresh and varisty cross-country and track squad and one of the people who 'locks the Big T campus has.)

More candidates' statements on page 3.

Under ASCIT's corporate structure, the president serves in two capacities: president of the corporation and chairman of its board of directors. These two different jobs and should be dealt with as such.

"President of the corporation" is another way of saying "representative of the members." The ASCIT president represents the student body on the Executive Committee, the Board of Control and the Student Faculty Relations Committee. He also represents a facutlty member to the corporation and to the general public. It is in this capacity as representative that the president faces his greatest challenges and opportunities for significant accomplishment. It is in this area that I, if elected, would devote the greater part of my efforts.

The President's second responsibility is to chair the board of directors—which, in recent years, have been over-emphasized. The Board of Directors is the only functional body to coordinate the activities of its individual members. It should have little importance in and of itself.

I am not advocating abolishment of the board, or any other drastic re- vision of basicASCIT structure. I simply am calling for a re- view to make student government a little more enjoyable for all concerned.

Cleve Moler  
Jr. Math, House B/BoC; California Tech Director, BOC

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BOC and Loyalty

Next Tuesday's ballot will include a proposed by-law amendment and a policy resolution. Both these measures are deserving of student body support.

The by-law amendment deals with membership on the Board of Control. At present men who are elected to these positions (during class elections third term) may not succeed themselves in office. The amendment would eliminate this restriction.

Although we rarely see or hear of its activities, the Board of Control is ASCIT's most important single organization. Participation and application of the Board of Control should be our student body government's primary responsibility. Consequently, the men elected to the BOC should be our most capable. The present resolution eliminates several good candidates each year.

Experience in any activity is valuable. A year and a half on the Board convinced us that experience is especially valuable when dealing with the type of problems the BOC faces. A man should not be eliminated from consideration as a Board of Control member simply because he is experienced.

The second proposal on Tuesday's ballot, if passed, would put the Caltech student body on record as opposing the loyalty affidavit requirement in the National Defense Education Act. If not passed, the affidavit is required in the National Defense Education Act. The affidavit affidavit requirement is, at best, useless. At worst, it is a nasty slap at the educational community, a curtailment of individual rights and a bad precedent for future federal legislation.

The California Tech was one of the first groups on this campus to speak out against the loyalty provision and is in favor of the glory which should rightfully be theirs has come in the form of accurately representing in the National Defense Education Act.

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**BRIGHT LIGHTS . . . COFFEE . . . AND SHOES**
by griffin

Poor old Arturo Rubino lived in the very warmest pool of his own good . . . it wasn't until an hour later that Alan Tobias and his rowdy friends had pulled out of the parking lot and were in front of the tear-rymaking dancers found the scene almost too big with motorcycles. From all outward appearances, Rubino was dead—his face had been mutilated beyond recognition. Yet, there was a certain serenity in the whole scene that made the normally humorous teenagers look up to the heavens . . . and then they knew . . . this was no ordinary mortal that lay at their feet . . . someone was speaking to them . . . the booming voice of immor-tality, goodness and virtue called to them in a sense that Rubino had already crossed . . . They knew . . . they knew . . . and they dropped their instruments and before their eyes the whole scene unfolded, being animated and the blood flowed from the atoning face. This . . . this was the God who . . . Life meant nothing now that this face had been mutilated beyond recognition . . .

(He had to die, you see, because a member of Fleming whose name accidentally almost coincides with Rubino's couldn't take the publicity, in fact, he tended to be rather a sorehead about the whole thing.) Tobias didn't mean to kill "our hero" of course; he just wanted to keep him alive a bit. Tobias didn't learn what had happened until he read the California Tech the next Thurs-

day. It didn't affect him too much—after all, those things happen; the whole affair just accentuates the fact that Grant's son, especially of the Rubino type, didn't have a half cup of corn sugar. Then add malt. Stir until the ingredients are well in solution. Meanwhile put one-half or less of a package of yeast into a pint of hake-water and allow it to become active before use. Fill the crock almost to the top and then add the active yeast. Attempt to have the final mixture at about 70 deg. to 80 deg. F. **FERMENTATION:**

Bit back, relax, light up a cheroot and wait. The bear should build up a big head after the first 12 hours. Attempt to maintain the 70 deg. F. optimal brewing temperature, as this provides the most satisfactory brewing rate as well as keeping the conditions more favorable for yeast action, as opposed to bac-tarial action. In another week the crock in relation to a heat source is about the only method available. You use an electric light bulb under a stand. The stand is very necessary if the floor tends to be cold. Skimming the head is the favorite indoor sport of nervous brewers. To do this is not necessary for the less energetic and more relaxed. In any case don't stir it up a lot, as this promotes bacterial action instead of yeast.

**BOTTLING:**

All good things must come to an end, and I'm afraid you will have to go to work shortly. Place the hydrometer in the so-lution the third day and follow its progress toward the "O" of "bottling mark." When it ar-rives (usually at the most inconvenient moment conceivable, sort of like hiking), plus or minus two hours you must bottle.

Last week I was informed that at this stage you may reap a benefit by chilling the crock in ice, after it hits the "O" mark (for four to six hours immediately). The crock must be at zero degrees when you bottle. You can also use a small ice box, but do not cool the crock completely. Chilling is not necessary for the less energetic and more relaxed. In any case don't stir it up a lot, as this promotes bacterial action instead of yeast.

**FOR THE ASCIT DANCE**

Jonker's FLORIST

SPECIAL RATES TO TECH MEN

500 South Lake Avenue

Stycomore 3-7167

**Letter To The Editor**

Social Life Lacks Luster

Editor, The California Tech

Excomm, In its new capacity as a thinking group, last week discussed the serious decline in the social life of the campus. This is certainly characterized by the social chairmen with which ASCIT and the Housemen are find-ing candidates for the social chairman office and the tremen-dous decline over the last year of House social programs. With three hundred students the only a finite amount of sex sources, there will be an even greater problem in satisfying the obvious need of the underclass-man with feminine company. It is my shaky conclusion that the type of functions that the Houses are now sponsoring, as well as ASCIT, are either very boring because of their constant repetition, or just do not appeal to the group of people that at-tend social functions. In many ways, the Housemen have tried to organize affairs that will appeal to a more womanly type of per-son, but even these functions fail to draw. When the whole menstuff comes together in a mess, the fault seems to lie nowhere, except in the underclass-men. There is no sincere effort on this campus to "fix" Caltech men with reasonable dates to take to functions where they will enjoy themselves.

The rest of the fault is, of course, on the shoulder of the underclassman himself. In many cases the Techie is a lot more particular in his choice of womanliness than the average

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**THE COMPLEAT BREWER**

**(Part II)**

**PREPARATION PROCEDURE**

Heat the open can of malt in boiling water long enough to im-prove markedly the viscosity of the malt fluid. Fill a clean crock one-third full of hot water. Add all but a half cup of corn sugar. Then add malt. Stir until the ingredients are well in solution. Meanwhile put one-half or less of a package of yeast into a pint of hake-water and allow it to become active before use. Fill the crock almost to the top and then add the active yeast. Attempt to have the final mixture at about 70 deg. to 80 deg. F.

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**As an RCA Engineer**

Receive your MS in Electrical Engineering, Mechanical Engineering or Physics at RCA's expense, through the RCA Graduate Study Fund. At the same time you're beginning your RCA career as an engineer on a fully professional level, getting a head start in the field you prefer. RCA pays the full cost of your tuition, fees and approved texts while you take graduate study part-time at the University of Pennsylvania, Rutgers University or at Caltech.

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---

**BS CANDIDATES**

Choose specialized training, program, graduate study or direct assignment

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RCA CANDIDATES

Receive assignments in design and development of radar, airborne electronics, computers, missile electronics, television, radio and other equipment fields, as well as in electron tubes, semiconductor materials and devices, and space electronics.

Your experience or advanced education may point your way to direct assignment. Dozens of RCA engineering fields lie open to the man who's thoroughly acquainted with the direction he wants to take and who qualifications open this path to him.

There's a lot more that's extremely interesting about an RCA engineering career. You should have these facts to make a wise decision about your future. Get them in person very soon at the RCA engineering management repre-sentative's desk.

February 23

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**TOMORROW IS HERE AT RCA**

Mr. Robert Haklisch, Manager College Relations, Dept. CR 2

Radio Corporation of America

Camden 2, N.J.
Society

Marjorie Cheney, Neil Pings Announce Betrothal At Afternoon Valentine's Party

With the words “Marge and Neil” gaily lettered in white on a background of a red heart, the engagement of Miss Marjorie A. Cheney to Dr. Cornelius J. Pings was announced on Valentine's Day at a party at the home of Miss Cheney in Portland. The wedding is set for June 25 in St. Paul, Minnesota.

Although coming as a surprise to institute officials (little do they really know of the Student Houses), the joyous event had been the subject of much speculation among Student House members, since Miss Cheney and Pings were first seen together in public at last fall's Interhouse Dance.

One hundred and thirty people attended the party, which began at two in the afternoon and lasted until six in the evening.

Miss Cheney looked ravishing in a wedding suit of taffeta, chosen as a symbolic color, designed by a magnificent white chesire, and was certainly the center attraction at the party.

Also seen at the party were Dr. and Mrs. William Corcoran, Dr. and Mrs. William Laocy, and members of the Institute Dramatics, all affiliated with the Caltech Chemical Engineering Department.

Also present were the Messrs. H. Dambour, J. Feldin, R. Foss, and the remaining Resident Associates.

Mr. George Green, Vice-President for Business Affairs, was also present.

CIVIL ENGINEERING SENIORS! PLAN YOUR FUTURE!

ENGINEERING with the CITY OF LOS ANGELES

The tremendous growth and development of Los Angeles presents challenging career opportunities to young engineers, helping to build the fastest-growing major city in the nation.

Arrange with the Placement Office to talk with our engineering representatives, who will be on campus.

Friday, February 26, 1960
CITY OF LOS ANGELES
Bureau of Engineering

TELEPHONE COMPANY ENGINEERING HAS IT FOR REAL INTEREST AND VARIETY

Ronald F. Radke got his B.S. degree in Mechanical Engineering from Oregon State College in June, 1956. In July, he went to work for The Pacific Telephone and Telegraph Company in Portland.

“I wanted variety in my engineering career,” says Ron, “and this looked like the place to find it.”

It was. Ron has handled a great variety of interesting, productive assignments.

He worked on new-building construction projects—sometimes doing design himself, sometimes working with outside architects. He programmed additions to central office buildings. Then, as a staff assistant and chief frameman in the Plant Department, he supervised eight people responsible for maintaining switching equipment. In this capacity he visited and became familiar with most of the 60 telephone buildings in the state.

Since April, 1958, Ron has worked on SAGE defense systems, and has the special responsibilities of carrier and cable routes for long distance telephone circuits. Recently, he finished special training in IBM equipment and methods, and is currently introducing new, mechanized procedures to many company engineering departments.

“There are always new challenges and opportunities,” says Ron. “For real interest and variety, telephone company engineering has it.”

**”**

There may be a bright future for you, too, in the Bell Telephone Companies. Talk with the Bell interviewer wherever you decide among those deals, and read the Bell Telephone booklet filed in your Placement Office.
The Chaoston: An Important Advance in Learning Machines

BY J. B. CDPWALLER-COHEN, W. Y. ZSYFRECK, AND R. R. DONNELLY

Chaoston is a learning machine which incorporates several radically new design features. Although Chaoston has not been completely built, its operation has resulted in a number of rather surprising results obtained. This paper, which is to appear in the Journal of Psychophysics, describes the work.

The concept of the Chaoston developed from reported observations of animal learning behavior in stress-inducing situations. Two examples are especially worth citing.

Boose(1) in 1942 studied the behavior of cats in an agitated environment. Typically, a cat is confined to a cage totally immersed in water, exhibits an initial period of disorientation, apparently random action, involving either or both activities. This pattern of behavior ceases, often quite abruptly, when the animal is removed to a clean environment. The failure of any previous attempts to estimate the effective duration of Chaoston's learning process by simulating it on a high-speed digital computer. This procedure had the further advantage of allowing the investigator to simulate the brain or the brain's components. We found in Chaoston an excellent illustration of the brain's simple operations. Careful tests were made on its control system, and the results were compared with those obtained with a computer for the project, and the simulation was done by simulating the STRCSTCHI simulator Chaoston on an IBM 790. All simulation runs were conducted in essentially similar environments; the computer was presented with a sequence of circles, squares, and crosses represented by punched cards, and was required to respond, after examining each stimulus, one of the words "circle," "square," or "cross." No reinforcement was used from the experimenter was provided, since it was feared that such reinforcement would bias the learning process, and thus vitiate the validity of any conclusions we might wish to draw from the results.

The first trials were run with a single input stimuli on the punched cards as geometric patterns of punching in the computer's memory. As a result, one was made with no stored program initially in the machine, to check that the learning rate of the untutored machine was much greater to that of an analog computer and manual control. These patterns were placed in the card reader, and no analog computer was used. After three hours, the machine had not printed its response to the first input pattern: evidently the rate of learning under these conditions is very low (we judge it to be on the order of a milliliter of a concept per megayear).

Therefore, we proceeded with the main series of experiments, in which a random program was loaded into the computer ahead of each batch of data cards. A total of 133 random programs were tried in random sequence. Even in this series of experiments, the computer took a surprisingly long time to respond to the stimuli in which the run had been terminated before the first response occurred. However, on run number 73, the computer responded every stimulus, and on run 131 the computer elected the printer paper twice.

Unfortunately, budget difficulties force us to terminate our investigations of animal learning in stress-inducing situations; the computer was used in the simulations. Even this degree of structure, however, resulted in extremely slow response to comparatively simple stimuli.

(2) It seems evident that further understanding of machine learning requires redefinition in operational terms of the conceptual framework provided by the Lashley- Schneirenberg-Hilgendorff suggestion that memory traces are renewed by associative stochastic increments to ideometric subroutines shared by stimulus-correlated functional elements.

(3) Not only is machine learning possible, but in fact it occurs under conditions of considerable difficulty. Indeed, it appears that even the simplest machines have a great amount of innate "curiosity" (whereby "curiosity," of course, we do not mean to imply that anthropomorphic categories or judgments should be applied to machines, but merely that the machines have a desire to learn).

Our acknowledgments and thanks are due to Mr. J. B. Puff, for his assistance in the detailed design of Chaoston, and to Mr. V. A. Yvostowsky for manually simulating the STRCSTCHI simulator Chaoston, to complete run 133 after the budget funds ran out. Thanks are also due to the Navy Department, which provided partial support for this project under contract No.D-801-86A-111-2564b-0103-71-02. (Reprinted from a paper released at last week's symposium on computer programs and processes.)
Opinion (Continued from page 2)

Jovin has discovered that delegation of responsibility with regard to administrative duties is an extremely difficult problem at Caltech. It turns out that it is extremely difficult anywhere, and increasingly so where officials are elected on a principle of something other than administrative duties. This is one of the underlying principles of the need for by-laws and constitutions, parliamentary procedure, and official tradition. This is also a fact too frequently not understood by Caltech students.

ADMINISTRATIVE DUTIES

Each member of the BOD has administrative duties attached to his office, either by written word in the by-laws or by custom of precedent. It set down annually (and with finality) and then viewed as the basic principle, the BOD member would have a clear path to do with his office as he intended. But good intentions are more easily formed than acted upon. And in the effort to save face, it is only natural that the ASCIT officer should rapidly evolve, in harmony with the BOD as a whole, to the substitution of administrative bickering and foolishness rather than achieve progress in new fields.

It is frequently pointed out that a lack of incentive is produced by the electorate's great disinterest in a job well done. This allows mediocrity to trenched at Caltech because, in a bad job rather than a good job, no one is willing to go into detail on a job poorly done. And I find it difficult to understand how those persons who do a mediocre job can blame the system for their future to achieve ends. This view has seen the habit carried to extremes.

The student House system is the cause of the Caltech undergraduates' lack of well roundedness; the rotation setup that created the ExComm is at fault. Obviously we should do away with yearbooks. Always the system is at fault.

LOOK

Look again. Maybe the Student House system allowed those bad aspects to develop. Yet if the people in power had alone a good or even sufficient job, maybe we shouldn't have reached today's situation. Rotation, if handled properly and with discretion, could have allowed the reverse of present trends if people were interested along those lines. The ExComm, the Big T, cheerleading, Farrago, the IHC, ASCIT, you name it, can all use improvement — none has been perfected. But each as a system that can and has worked. It is the sense of responsibility of the those and electing that make up the system. The system lies ASCIT's future.

I would like to see Caltech's number one crime, the act of being genuinely interested in something, not become once again an honest virtue.

New House Memberships Announced


HOUSE A

Senior: C. Larson, R. Nash, S. Sajdera (30)


HOUSE C


The team that put the voice in Vanguard needs good technical and management talent

Come in and find out how far you can go with the BELL SYSTEM

Feb. 24 & 25

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Technical graduates for engineering and administrative positions throughout the United States.

The data transmitters in the Vanguard satellite were made possible by two atomic inventors and developed in the Bell System: the transistor and the Bell Solar Battery.

The Bell System

Technical graduates for research and development work in communications and electronics with one of the world's foremost research laboratories.

Engineering and physical science graduates for research, development, and design of atomic weapons in Livermore, Calif.

Sign up now, at Placement Office
Tennis Tournament and Intercollegiate sports, Caltech does not liberate, control ball to win the Interhouse football, basketball, softball, et. al., along with the proudy announces its First Annual Beaver Ping Pong and Pool Championship Tournament, to be played the week of the entry blank below and put it in the sport room below Fleming. Every night a whole 54-45. Paced by liberate, control ball to win the Caltech crew, 71-70, last Tuesday, after erasing the Beavers’ eight point halftime bulge at 42-34. Tom Bopp led the charge with 28 points for the victors.

The frosh played an excellent game during the first half, with Bopp, Mike Perlman and Tom Anderson all looking sharp offensively and defensively. But during the second half the Beavers hit a cold streak, and blew a big lead, allowing Oxy to catch and pass them. With eight min-

Next move... "upstairs"

In the science of modern communications, the sky is no longer the limit. No one is more aware of that than a major communications system. That's why we are constantly exploring and developing new areas of research far beyond our celestial canopy. Take "MASER," for instance. This is a wonderful new device that can noiselessly amplify extremely weak signals from outer space.

In working to improve and simplify MASER, we are bringing closer the day of intercontinental communications via man-made satellites.

This is a typical example of how we use research —not only to meet today's communications needs, but to answer tomorrow's.

Frosh Cinch Second Place

The Caltech freshmen basketball squad clinched second place in the SCIAC last week by winning important games from Occidental and Claremont-Harvey Mudd. The little Beavers go after the big one tomorrow night —first place Whittier, who is thus far unbeaten in league play. The Poohshakes beat the Beavers last time out by nine points at the Whittier gym.

Occidental finally fell to the Caltech crew, 71-70, last Tuesday, after erasing the Beavers’ eight point halftime bulge at 42-34. Tom Bopp led the charge with 28 points for the victors.

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Basketballers Beat Claremont, Lose Contests To Oxy, Cal Poly

The Caltech basketball team, while losing the opening games to Cal Poly and Occidental, managed to clinch fourth place in the SCIAC by beating Claremont-Harvey Mudd last week.

The next Beaver encounter, and the last game of the season, will be played tomorrow night in Scott Brown gymnasium against the Poohshakes from Whittier.

Occidental smashed the Beaver hopes for a third place tie with the Tigers by soundly trouncing the Beavers' 83-52. No Tech player could muster more than twelve points during the game, while only three Beavers maintained their lead at from 26-20.

In the second half, the Beavers maintained their lead at from five to eight points until, with about thirteen minutes left, Claremont caught up at 33-33, and then sank a free throw to go ahead. But the Beavers then caught fire and pulled ahead to stay, gradually increasing their lead until the end.

Cal Poly ran roughshod over the Beavers last Saturday, winning 85-52. No Tech player could muster more than twelve points as Cal Poly grabbed an early ten point lead, and then ran away and hid for the win.

One bright spot for the Beavers was the apparent return to form of sophomore Gerry Clough. Clough, who was expected to add a lot to the team during his varsity years, has had a rough time this season, both offen-

With this in mind, the California Tech sports department proudly announces its First Annual Beaver Ping Pong and Pool Championship Tournament, to be played the week of March 1 through March 5. Anyone is eligible to enter—just cut out the entry blank below and put it in the "PE" box of any student house or lower-Thomas. Anyone is eligible, including the Alan Ram's who spend more time playing ping pong than sleeping.

Entry blanks will also be included in next week's Tech; deadline for entering is Friday, February 26.

No PE credit will be given! (Sorry, Al.)

OFFICIAL ENTRY BLANK, PING PONG & POOL TOURNAMENT
Name
Campus address
I wish to enter the pool division.
(circle one or both)

Beaver Chips
By Neil

Athletic Test Set For Game Room
Possibly the favorite hangout of Techmen on weekday nights is our own little game room below Fleming. Every night a whole crew of pool and ping pong players descends upon the area to engage in Caltech's most universal athletic program outside of PE.

It has come to our attention, however, that while we have our Interhouse football, basketball, softball, et. al., along with the SCIAC Tennis Tournament and Intercollegiate sports, Caltech does not have an official ping pong or pool tournament.

This is a typical example of how we use research —not only to meet today's communications needs, but to answer tomorrow's.

Frosh Pete Fischer drives in for a layup over the outstretched arms of a defender. Fischer has displayed a deadly outside jump shot in this year's frosh games.

(Continued on page 9)
Swimmers Face UCLA, Santa Monica This Week

The Caltech swimming team launches its new season this week end by meeting Santa Monica Junior College in the annual dual meet. The Bows will journey to UCLA on Saturday to engage the Bruins.

The UCLA game will be both fresh and varsity, while the 84-22 meet is just varsity.

This year the Beavers have plenty of talent, and should make an able defense of their conference crown. Led by Gary Tregge, Turner and Mitchell, 440 yard freestyle, 220 and 100 yard sprints, and the butterfly, respectively, and Roger Bland in the individual medley, the team has a good chance for top honors in several events.

In this weekend's matches, the Beavers should be able to handle Santa Monica with ease, but UCLA will be tough. Although the Bruins were completely out-classed by Stanford last week, this belies their real strength, since Stanford is loaded this year.

UCLA is very good in the sprints, but if the Beavers have against this, they may make up enough points in other events to grab a victory.

Caltech will probably have a tougher time in winning the conference crown this season since one of Claremont-Mudd and both have excellent teams. Claremont best the Beavers last year, and last year, was not a member of the SCIAC at that time.

Caltech's frosh team flexes its muscles for the first time this season when it hosts Cal Poly on Saturday. The Beavers look strong in many events, but Cal Poly will have more depth. It should prove to be an interesting meet.

The Beavers will have Dick Klett -- winner of the hundred in last year's frosh league meet -- in the sprints. He has done a 30.0 100 yard dash. Tom Kyle has shown great improvement over last year and has done well in the quarter, in the one event, he will probably enter.

Dick Tuft and Ben Burke will vie for honors in the half. Tuft looks especially good in this event, having set the frosh school record last year at 1:17.5. Sophie Robins and Dick Harris will lead the distance men.

Mike Ruesch's records look like Caltech's best in the entry high jump with a 9' 9" effort. Sid Liebrotish and Doug Krieger will hold down the discus at about 125 feet. Stewart also leads the shot putters with 40 7". If Lanners Purnell can regain the form he had as a froshman, he will be one of the best javelin throwers in the league. Purnell holds the Caltech frosh record still unbroken at 206.

The pole vault should be one of Caltech's strongest events with three good men. John Weigl, who has been shotting at 13' for years, will do a great job. He might get in shape and back on the team. Pete Rux and Ed Clinse, while less experienced, showed great improvement last year as frosh, and should provide a great deal of depth.

Geory Younce, while a newcomer to Caltech track, has looked good in the broad jump, low hurdles, and pole vault. He should certainly strengthen the team.

It will be too early to tell much about the frosh team, certain events look good. Pfeifer and Can have good times in the sprints, and Jan Dash has looked good in the middle distances.

Pat Early was outstanding in cross-country, and should provide real class in the two-mile. Bill Francis and Caro Johnson look strong in the weight events as do Aram Mekjian and Dennis Cour McC. Hasner, who has undergone successful move in the high jump and Bill Sasm won the broad jump in the Inter-league meet.

All in all, it looks like the Pac 8 has its usual depth of talent, and the fresh team may well have a successful year.

ADVICE TO FISH

When Kwan draws three to the bike, fold. When Lie bets, fold. When Sugahara calls or raises, fold.

When Walsh checks, fold. When your hand is so good that you will have to raise every chance you get, good fold now, because some other fellow will fold along and beat you.

If none of the above conditions hold, bet — you might win.

Tennis Squad Looks Sharp

In Redlands Loss, PCC Win

Starting off the season with a better-than-expected showing on the court, the Caltech tenis team faces Pomona Sunday on home courts in the next league test.

Redlands, ranked high in the national top ten rankings and defense conference champs, took a 7-2 win from the visiting Techs. Sporting an all-veteran squad with the frosh SCIAC champ and runner-up from last year, Redlands lost only the single stings and third doubles in split sets.

Sophomore Dick Hess, who wrested the number one berth from returning captain Carl Morris, lost 3-6, 2-6 to league titans Smith. Dave Butterfield, senior cocaptain, dropped a 3-6, 2-6 in second matches. Morris, sophomore Codon Jones and Holm, and Arndt and John Russ and Sugahara split wins in singles competition.

The Beavers fell against the Mounties, and won 9-0 over the Techs, for the second consecutive time.

Wilson salvaged a triumph with a 4-6, 6-4 comeback effort in the number two spot.

Coach John Lamb was happy with the Tech showing against the higher-seeded Mounties team, undefeated in more than six conference sessions. The Techs are sprakled liberally with three sophomores, and a junior in the number line up a junior and a sophomore playing doubles.

The Beaver courtmen have split three exhibition matches, winning 90 over PCC and losing to the Valley City Club in an abbreviated match.

College Men

Need Service

Check your supply... the average college man owns at least 8 collar buttons. She continually buys oxford cloth shits with the wrong labels. The University Shop offers the authentic, soft roll collar, luxurious "Sanford" fabric, Ask for "Buttondown" collar. $5.00

College Men

Need Service

Arrow Oxford

Buttondowns

Where to go... you look better in an Arrow shirt

Hopes Bright For Baseball This Season

Bolstered by a stout hitting attack and a sound defense, Caltech's baseball squad moves into action with an exhibition opener against San Fernando State Saturday.

John Walsh, two-time first team all-conference pick and winner of the Alumni Baseball Trophy for the second consecutive year, will lead the Beaver offensive. Walsh, conference batting champ, and left-fielder Russ Sterrill, second to Walsh in the hitting race last campaign, are the bright lights in the offensive punch.

Other regulars returning include Dave Blakemore at third, Skip Blevins at first, Horn Harring at second and Fred Newman at short-stop. Marty Kaplan is the only returning pitcher and therein lies the chief weakness of the team.

Up from last year's frosh squad, which also recorded a losing season, are hurlers Bill Polke and Steve Holmeyer, catchers Joe Bogleh and Hal Kurtis, infielders Frank Ridolfi, John Arndt and John Russ and right-fielder Bob Williams.

The co-curriculum basketball campaign is hurting practice sessions with many players on the varsity cage squad and Coach Ed Plesker doing exchange of the freshman basketball0853.

Replacing Jack Peterson as frosh coach is Tom Hunt, now a junior and student, and former captain and second baseman of the Pomona team last year.

Welcome to THE CAMPUS

BARBER SHOP

Near the Coffee Shop

ALL HAIRCUTS

$1.50

Two Barbers to Serve You

Track Season Begins

With Tough Cal Poly

This is going to be a crucial season for ASCTC, for it is believed I possess the capabilities and experience to put us through the bruise undercolor.

I'm ready, Mr. ASCIT.

Modered Starkweather

THE CALIFORNIA TECH

Thursday, February 18, 1960

Page Nine

New Improved — Trial Size 15c
Student Size $1.69
Factory Size $2.29
Professional Size $6.32
Difficult 4 oz. Orders — ARROW—
555 South Lake • 812 E. California Blvd.
Radio Club On Air, Sends Messages Free

Tech's Amateur Radio Club is back in action and is offering a free message service to everyone. The club station is now on the air regularly from its new location in a room near the Student Shop.

Through nationwide amateur networks, the Amateur Club can send private radiograms delivered anywhere in California with a day's notice, anywhere in the United States within two to three days. Notes can also be sent to any Army or Navy base in the world.

Messages should be of telegram length (less than 25 words) with the complete name and address of the person to receive the message and, if possible, his phone number. The full name and address of the person sending the message should be included. Items may be sent to the Amateur Club by putting them in the X-box in either Blacker or Lower Throop, or simply by sliding them under the station's door. There is no cost for this message service.

Recently the club equipment was installed into the old guard's room, which is next to the Student Shop and opposite the new Sloan Laboratory. Two antennas were erected atop Sloan last week end, and the station has been operating nightly since that time. The regular station call is KSFC, but until renewal of the station's license has been completed, it is operating under the call KTDEP/W.

Within a month the club plans to put its new transmitter on the air. This will boost the station's power from its present 120 watts to the legal limit of 1 kilowatt.

Interested Techmen can contact John Golden (Danby) for membership information; grad students should buttonhole Jim Kossell or Milt Leventberg (Chemistry).

Announcements

PRE-REGISTRATION
Pre-registration for third term is next week, February 22 to 26.

"Y" FILM
"Ivan the Terrible" will be presented next week at 7:30 in 206 Danby as part of the YMCA film series. Cost is 50 cents.

DANCE AND SING
The YMCA Folk Dancing Class meets Sunday night in Colberson at 7:30. The Folk Singing Groups meet Thursday evening in the Y Lobbies, 7:30 p.m. Bring vocal cords.

SAILING CLUB
The Sailing Club will show movies of the trans-Pacific yacht race at a meeting tonight, 8:30, 206 Engineering.

Engineers

Scientists

We're Looking Forward to Meeting You

Last year we had the pleasure of meeting many engineering and science seniors during our visit to the campus. As a result of our discussions, a gratifying number chose to join our company.

We'll be back on the dates below, and this notice is your invitation to come in and see us.

If you're interested in joining a company that's a leader in fields-with-a-future, you'll be interested in the advantages Boeing can offer you. Boeing is in volume production of Bomarc, the nation's longest range defense missile, and is a prime contractor on Minuteman, an advanced solid-propellant intercontinental ballistic missile system.

Boeing is also the nation's foremost designer and builder of multi-jet aircraft. Production includes eight-jet B-52G missile bombers, KC-135 jet transport-tankers and the famous Boeing 707 jet airliner.

Research projects at Boeing include celestial mechanics, solid state physics, nuclear and plasma physics, advanced propulsion systems, and space flight.

Expanding programs offer exceptional career opportunities to holders of B.S., M.S. and Ph.D. degrees in aeronautical, mechanical, civil (structures), electrical-electronic and welding engineering, and in engineering mechanics, engineering physics as well as in mathematics and physics. At Boeing you'll work in a small group where individual ability and initiative get plenty of visibility. You'll enjoy many other advantages, including an opportunity to take graduate studies at company expense to help you get ahead faster.

We hope you'll arrange an interview through your Placement Office. We're looking forward to meeting you.