

California Tech

Associated Students of the California Institute of Technology

Volume LXII.

Pasadena, California, Thursday, October 13, 1960

Number 4

Come Yell Tonight!

A Pep Rally will be held on the Olive Walk tonight in honor of Friday's football game with Pomona. Festivities will start at 8 p.m.

Head cheerleader Wendell Mendell promises a lot of yelling, if nothing else. Chances are, he says, that there may also be some genuine girl assistant cheerleaders. Students are requested to bring their own refreshments.

The Caltech-Pomona game will be Friday night in the Rose Bowl at 8. Since the Sagehens lost to Claremont last week, the locals have some chance for a victory (see sports page).

There will also be a post-game dance in Ruddock House.



Sprechen Sie?

Language Lab A Valuable Aid

Do you want to speak a foreign language? Then you'll be glad to learn about Caltech's new language laboratory. Linguists believe that we learn new languages best by speaking them. But it is almost impossible for an instructor to give each student in a language class enough individual attention to make his pronunciation correct and his aural responses rapid. However, the language lab is capable of giving this personal attention.

The basic principle of the language laboratory is that the individual student can hear the language he is learning spoken by its natives, and then attempt to imitate what he hears. Its basic tool is the tape recorder. After recording, the student can then listen to the correctly spoken phrase and attempt to imitate what he heard. After a few lessons he can learn to sense what he says wrong and try to correct it. In the classroom, a student hears only the speech of his professor, and even if this is perfect he tends to associate the sounds of the language with the only way he has ever heard them. The advantage of the language lab in this respect is that any number of speakers can be used, and the student learns to hear patterns of speech instead of a single image.

Robert Wayne, instructor in German, emphasizes, however, that even though the language lab is a powerful tool, it does not replace the classroom. The

Art Turner Prexy Of Freshman Class

ASCIT Board last Monday selected Art Turner for Freshman Class President. Other elected officers were Jacques Colma and Spicer Conant, BOC; Stephen Gorman, athletic manager; Robert McEliece, vice-president; Gayle Ruebel, secretary; and Thomas Latham, treasurer.

Freshman class officers are selected on the basis of recommendations of frosh camp counselors and House presidents.

tapes do not teach the grammar and idiom of a language. Instead, they effectively supplement what is taught in class by allowing the student to naturally assimilate the syntax and word patterns of the language along with good pronunciation and accent.

The Caltech language lab is specifically designed to exploit the possibilities of a language lab as fully as possible. The equipment, designed by Science Electronics, Inc., of Cambridge, Mass., is almost completely automatic. Unlike older types of installations, it uses endless loop-tape cartridges played in a single console. Thus, lost time in starting, threading, stopping, rewinding, and repairing breaks in the tape are practically elimi-

nated; and full time can be devoted to the material. At present, a maximum of 12 students may occupy the lab at one time, each using his own tape to record his responses and listening to a master tape. However, the installation is designed to include eventually up to 30 positions.

The method of teaching used is to give the student a stimulus, perhaps a question, in the language, and then to let him record his response. He then hears a correct response and is given a chance to imitate it and correct the mistakes in his own. In the course of a tape this cycle is repeated many times. By using this method a student learns not only to correctly imitate

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Illness Makes Rock Quit Basketball Coaching Job

Eugene Rock, Caltech varsity basketball coach for the last three years, resigned last week due to illness. He will be replaced by former frosh cage coach Ed Priesler.

Coach Rock is currently in bed with a virus disease he contracted last winter. After some improvement over the summer, he became more ill this fall, and his doctors predict he will be confined for a month or more.

Rock came to Caltech after lettering three years in basketball at USC in 1942, 1943, and, after military duty, in 1947. He won the Sam Barry award in 1947 for being the most valuable SC player, and was voted team captain the same year.

Ed Priesler, incoming varsity coach, has been at Tech since 1947, when he started as frosh coach. Since then he has coached varsity baseball, frosh football, and helped out with the PE program.

Priesler was a three-year letterman in basketball, baseball and football at San Diego State College. In addition, he was named State's "outstanding all-

around athlete" for two years running. He was an all-conference baseball player for two years, and all-conference football for one year. He played on first place San Diego team in the 1941 NAIB tourney.

Jim Young, former USC gridder, will take over Priesler's duties as frosh football coach, and Gary Shair, Los Angeles State cager, will take over in basketball. Priesler will continue as full-time coach, while Young and Shair will be around part time, during their seasons.

Announcements

FRESHMEN

If your section has not as yet elected a section leader, this should be done immediately. All section leaders should report their names to Dean Strong by Friday, October 14.

'Y' MEMBERSHIP

The YMCA is now conducting its membership drive and wants lots of new members. All that is needed is a slight interest in present Y programs and a few original ideas for some new programs. No money necessary.

YMCA Campaigns For New Members

BY BARRY GORDON

The annual YMCA membership drive blasts off today with an attempt to explain the purpose and activities of the YMCA.

Most Techmen are aware that the YMCA sponsors a variety of programs, but are unaware of the activity which produces these programs. The true content of the Y lies not in its external programs, but in the creative involvement of its members.

In order to illustrate this involvement, we will follow one Techman as he becomes interested in the Y. How does he become interested? He may attend Y events that strike his interest, or he may come in contact with Y members with mutual interests through lounge bull sessions or discussions after Y-sponsored programs.

The next step is for him to come to a commission meeting. He may do this because he saw it publicized and thought it might be interesting, or he was invited (and unfortunately, the latter reasons prevails). Probably the commission seems to him to be just a group of people with similar interests. However, there is more to a commission than that.

Theoretically, the commissions cover three broad areas: Religious Emphasis, Man and the Arts, and Public Affairs. Those involved in the Religious Emphasis Commission have raised ultimate questions and found dogmatic answers to be insufficient. Members of the Man and the

Parents Here Next Saturday

A Parents' Day for the relatives of all freshmen and new transfer students will be held Saturday, October 22. About 200 parents have been invited to attend the day's activities and visit the campus.

The purpose of the program is to enable the parents to see for themselves the school atmosphere and conditions in which their sons will be working.

Tentatively, the program for the day consists of registration in Dabney Hall Lounge at 9:30, at which time the parents will be given name tags with their sons' section on it, followed by a welcoming of the parents and a description of life at Tech by Dean Eaton, Dean Jones, Dean Strong, and Dr. Huttenback, as well as an introduction to the undergraduate teaching staff and a chance for the parents to meet the Resident Associates and teaching assistants of the particular sections.

Lunch will be at noon in the Athenaeum, and President Lee DuBridgely will speak there. At 2:15 the parents will be given a guided tour of the campus, and at 3:30, the Caltech Service League has arranged for a tea at the Athenaeum.

Arts Commission are interested in man as a cultural beast and his aesthetic efforts. The Public Affairs Commission is concerned with problems of society and its political structures. However, there is nothing rigid about these definitions.

The new commission member helps in brainstorming possible programs, discussing their merits and planning ways to put them into effect. A particular idea stimulates him into action. He calls up possible speakers, arranges for a meeting place, or handles publicity.

He soon finds there are many worthwhile facets of being in a commission. Of course, talking and working with students of like interest is one of these. Also, there is a certain satisfaction in seeing an event which one has helped to plan turn out successfully. Lastly, is the enjoyment of discussing programs with professors and getting to know politicians, artists, theologians, and other guests brought to campus.

Foreign Films Show At PCC

Cinema Limited, Inc., a non-profit organization which offers its members and other interested people special showings of new and unusual films, will be presenting a fine series of shows this term in the Pasadena area. Each showing will be headed by a prize-winning or new foreign film, which will be accompanied by a second picture of an unusual nature.

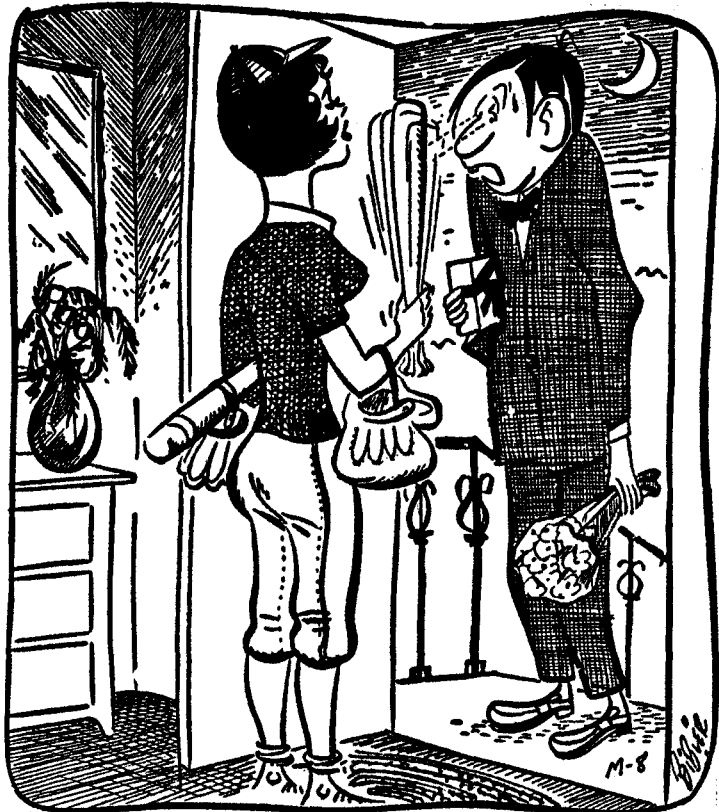
The Pasadena series will start on October 15 with the showing of a French picture, winner of an award at the Brussels World's Fair as one of the five greatest motion pictures of all time, entitled *Grand Illusion*, a study of the experiences of French POWs held by the Germans in World War II; with it will be the English film, *Bow Bells*. On November 5, *The Eighth Day of the Week*, a Polish film about life in Communist controlled Warsaw, will be presented along with *Song of the Prairie*, a satire on musical westerns. A film from Greece, *A Girl in Black*, and a French film will make up the November 19 showing.

On December 3, the society will present *Ordet* (The Word), a Danish film, along with an unusual French film consisting of abstract paintings in color, accompanied by a jazz background. In January, a Charlie Chaplin film, entitled *The Gold Rush*, will be shown on the 7th and *Yellow Crow*, a Japanese film, will be presented on the 21st.

The Pasadena series will be held on Saturday evenings at 8:15 in Sexson Hall, Pasadena City College, 1570 E. Colorado Blvd. The special student rate is \$1.00 per showing, and a \$5.00 special student membership is available on the first night.

LITTLE MAN ON CAMPUS

by Dick Bibler



"BUT--WHEN I SAID 'PLAY BALL WITH ME TONITE'--I HAD SOMETHING ELSE IN MIND."

Language Lab

(Continued from page 4)

sounds but also to associate them with their meanings. This helps him to increase his speed of response to the written language, since he sees there the same word patterns he has learned to hear. Thus he is learning a foreign language very much as he learned his own.

The language lab at Caltech was put into operation about two weeks before the end of the second term last year. This marks the first year that it has been correlated from the beginning with the language classes. It cost approximately \$11,000, of which about \$8,000 was spent for equipment, and was financed with funds from a Carnegie grant to the Institute. Temporarily, it is located in a room in the east part of the YMCA office. Any registered language student is eligible to use the language lab, through his professor.

Since the primary purpose of language study at CIT is to enable a student to read foreign technical and scientific information, the material used at present is oriented toward a scientific vocabulary. However, Wayne says it might be possible to persuade the administration to schedule classes in colloquial French or German, provided there was sufficient general de-

mand from the student body. In any case, the new lab is a very powerful tool in language study and certainly a valuable asset to Caltech.

Nixon Speaks At SC Friday

Vice-President Richard Nixon will speak on the USC campus tomorrow at 11:00 a.m. as part of the USC First-Time Voter Convocations.

Senator John F. Kennedy has also accepted USC's invitation and November 1 has been set as a tentative date.

Both convocations will be held out-of-doors in front of USC's Doheny Library.

Although Presidential candidates have appeared on the same university campuses during election campaigns of years past, the USC convocations will be unique in that they are directed specifically toward satisfying the interest of the first-time voter element.

To this end, both candidates have indicated their addresses will be made at the major policy level and with particular attention to problems vitally affecting the young people who will be the heads of the next generation's families.

Letters

Editorial Stand Attacked

Editor, The California Tech:

Your editorial of last week contained several unfortunate implications about both Dr. Pauling and the Caltech YMCA. This letter, in attempting to irradiate these misconceptions, represents my own opinions and not necessarily those of the Y members, officers, or staff.

First and foremost, of course, is the distinction between Dr. Pauling's opinions and his right to express them. On any issue he may be right or wrong or neither or both. Furthermore, if he is entirely correct, domestic and international pressure may prevent the United States from the course he prescribes, but his right to express his ideas and work for their adoption as international policies is the cornerstone of American liberty.

You state that Dr. Pauling did not present enough factual evidence against the committee to justify his position to you and from this you conclude those who circulated and signed the petitions were "spouting off hastily formed opinions." The prob-

lem of the invasion of civil liberties in the name of security has been in the public eye for a decade.

Various aspects of it are covered in the H2c course and last year's controversy about loyalty oaths raged on the Caltech campus. With this as background the circulation and signing of carefully worded petitions by intelligent, thoughtful students was far from a blind leap into the intellectual unknown.

You also bring up the more general question of the role of the Y in public affairs and blithely suggest that it enlighten the students on all facets of the problem. This, of course, is a practical absurdity, e.g., witness the fact the Institute is currently spending 300,000 Carnegie dollars and several years investigating the problem to which Dr. Pauling speaks.

Although the question of investigating committees is far less complex, presenting spokesmen for all (not both) sides of the issue would place a considerable burden on the Institute itself,

let alone the YMCA.

Far more important than practical impossibility, however, is philosophical undesirability. The purpose of the presentations of the Y public affairs commission is not to answer questions but to raise them.

The only effective course to understanding issues is critical study of them by the individual and it is to stimulate this process that the Y presents many speakers throughout the year who challenge the status quo. When the campus imagination is captured by a controversial issue the facilities of the YMCA, the California Tech, and all other resources at our disposal should be exploited to provide as much information as possible.

As in this case a spokesman for the House Un-American Activities Committee will present his views on campus in the near future. But either of these programs and their sum will form only a superficial discussion of this issue. The only possible worthwhile result of these pro-

(Continued on page 3)



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Letters Solicited

Editorial Note:

Letters on all topics of interest to students and faculty are solicited by the California Tech. We ask only that you sign your name to the letter, but names will be withheld upon request. Editing is done only to conform with good taste and to meet space requirements. So let's have 'em!

California Tech

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Demo's Speak

Ike, Nixon Policies Hit

BY ELI CHERNOW

It has long been observed that both major parties pay lip service, at least, to the same general goals. Everyone wants peace, liberty, prosperity and general welfare. The key real differences between the parties lies in the method and speed used to work toward them.

In California we have an excellent example of the results of vigorous Democratic leadership and a Democratic legislature, contrasted with a Republican history. This state has for the first time in history, a fair employment practices act and a fair housing act. The state attorney general's office now has a constitutional rights section. The consumers of California now have a spokesman before the state legislature representing the public interest. State scholarship stipends have been increased by 50 per cent and the number of awards has been doubled. In spite of all the increased state services since Governor Brown took office all of his budgets have been balanced!

While California was entering this period of social progress the United States as a whole continued sliding down hill with a government by default, or more accurately, leadership from the bureau of the budget. The most bitter irony of the Eisenhower administration is that in spite of his almost fanatical concern for a balanced budget he produced the biggest imbalanced peace-time budget in history.

He did, however, slash the budget enough to delay Polaris developments for one year. He did save money by drastically curtailing SAC activity. The salaries of generals who resigned in protest could also be used to reduce the national debt. Ike is content to answer critics such as Nelson Rockefeller by stating that he knows more about defense than any one else in this country.

Far more damaging in the long run than Ike's failure to prepare for war is his failure to prepare for peace. We will never make progress through negotiations until we seriously and thoroughly analyse the political and economic consequences of each possible step toward arms control. Only then can we propose equitable mutual concessions and only then might we possibly convince Russia of the mutual advantage of each step in itself. This is an ambitious, long-range process and it is advocated today only in the Democratic platform and only by Senator Kennedy.

Similarly the Eisenhower domestic and foreign policy has been to drift along, pinching pennies, until disaster strikes and to provide a program of too little and too late. Only the loss of Cuba prompted Eisenhower to aid Latin America. Only anarchy in the Congo prompted U.S. action in Africa. When the U.S. needed moral leadership on the school integration issue, it found a vacuum

in the White House.

What part did Little Richard play in this eight-year farce? When Eisenhower was asked to name a major idea of Nixon's which was adopted by the administration, he replied: "If you gave me a week I might think of one. I don't remember." (Press conference of August 24, 1960.) The GOP claims that somehow being around but not connected with the Eisenhower disasters qualifies Nixon for the presidency.

Nixon, however, is responsible for some things. He is responsible for co-authorship of the Bricker amendment (1952). He is responsible for a tie-breaking vote against federal aid to education (Feb. 3, 1960). He is responsible for voting against slum clearance (June 29, 1949), small businessmen (October 14, 1949), and aid to Korea (January 19, 1950). He is responsible for the smear campaign against Helen Gahagen Douglas in 1950.

Senator Kennedy, on the other hand, has a public record of consistent and vigorous liberal leadership. His is a record of fights for federal aid to education (seven times), for extension of social security (six times), minimum wage benefits (two times), and for civil rights legislation (six times). He has voted for federal medical care to the aged (two times), against loyalty oaths for student loans (two times), for increased military spending (11 times) and to

Editorial Stand

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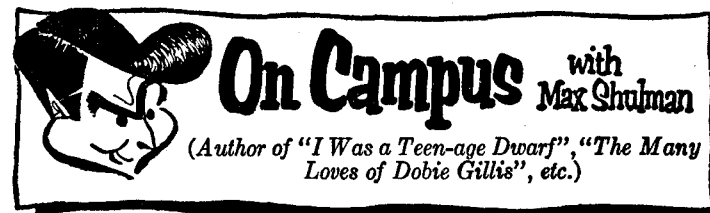
grams will be to stimulate those not acquainted with this issue to investigate further.

Finally you point out that petitions are not an effective means of political action.

Certainly petitions are unsatisfactory as the final step of an

individual in political action, but responsible citizenship begins with an individual's expression of his opinions. Moreover, formal protest is a significant step in the slow process of political change. If this protest stimulates other steps it will have served its purpose even though it may not influence the immediate issue at all.

Eli Chernow



"HOME SWEET HOMECOMING"

A great number of people have been asking me lately, "What is Homecoming?" but I have been so busy trying to find out why my new sports car leaks that I haven't had time to answer. I am now pleased to report that I finally discovered why my sports car leaks—I have been driving it upside down—and so I am ready today to turn my attention to Homecoming.

Let's begin with definitions. Homecoming is a weekend when old grads return to their alma maters to watch a football game, visit old classrooms and dormitories and inspect each other's bald spots.

The weekend is marked by the singing of old songs, the slapping of old backs and the frequent exchange of such greetings as "Harry, you old polecat!" or "Harry, you old porcupine!" or "Harry, you old rooster!" or "Harry, you old wombat!" As you can see, all old grads are named Harry.

It is not just old grads who behave with such liveliness during Homecoming; the faculty also comports itself with unaccustomed animation. Teachers laugh and smile and pound backs and keep shouting "Harry, you old Airedale!" This unscholarly behavior is carried on in the hope that old grads, in a transport of *bonhomie* will endow a new geology building.

The old grads, however, are seldom seduced. By game time on Saturday their backs are so sore, their eyeballs so eroded, their extremities so frayed, that it is impossible to get a kind word out of them, much less a new geology building.



Even the football game does not improve their tempers. "Hmmp!" they snort as the home team completes a 101-yard march to a touchdown. "Do you call that football? Why, back in my day, they'd have been over on the first down! By George, football was football in those days—not this namby-pamby girls' game that passes for football today! Take a look at that bench—50 substitutes sitting there. Why, in my day, there were 11 men on a team and that was it. When you broke a leg, they slapped a piece of tape on it and you went right back in. Why, I remember the big game against State. Harry Sigafos, our star quarterback, was killed in the third quarter. I mean, he was pronounced dead. But did that stop old Harry? Not on your tintype! Back in he went and kicked the winning drop kick in the last four seconds of play, dead as he was. Back in my day, they played *football*, by George!"

Everything, say the old grads, was better back in their day—everything except one. Even the most unreconstructed of the old grads has to admit that back in his day they never had a smoke like Marlboro—never a cigarette with such a lot to like—never a filter so easy drawing, a flavor so mild yet hearty, so abundant, so bountiful—never a choice of flip-top box or soft pack.

So old grads, young grads, and undergrads, why don't you settle back and have a full-flavored smoke? Try Marlboro, the filtered cigarette with the unfiltered taste, and Homecoming will be a happy occasion and the sun will shine and the air will be filled with the murmur of wings and no man's hand will be raised against you.

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Young Democrats To Meet, Candidate For Congress Speaks

Most people agree that H. Allen Smith, incumbent Republican Congressman from this district, will probably regain his seat this November. Monday evening Caltech will get a chance to hear one who reluctantly concedes this point — Gary Sadler, Smith's Democratic opponent.

Because of his relatively small chance of election, Mr. Sadler speaks his views freely, as can be attested by those who heard him speak on campus last term. At that time he supported such things as the abolition of the HUAC and the admission of Red China to the UN. He is one of the few liberals who unequivocally states his opinions.

Mr. Sadler, a young Pasadena attorney, was a leader in the Young Democrats and ran for the State Assembly in the 1958 election. He will speak Monday, October 17, at 7:30 p.m., in 206 Dabney. Republicans as well as Democrats are encouraged to come, although they will be required to leave their Nixon buttons at the door. A question

period will follow the speech. Mr. Sadler was invited to campus by the Caltech Young Democrats, who plan to have John Lake, local assembly candidate, here in the near future.

Nixon Attack

(Continued from page 3)
change the Senate filibuster rule (five times).

Senator Kennedy has assembled the finest brain trust in political history. His foreign policy advisers include Chester Bowles and Adlai Stevenson. On economics he has John Kenneth Galbraith. The team also includes Arthur Schlesinger, Jr. and Pierre Salinger. With this record and these advisers Kennedy can provide what America needs most — leadership for the '60's.

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Breakfast Lunch Dinner

Nixon, Ribicoff Give Speeches At Forum

Richard Nixon and Abraham Ribicoff will highlight the World Newspaper Forum to be held today and tomorrow, October 13 and 14, at the Beverly Hilton Hotel. Caltech students will be admitted free upon presentation of student body cards.

Nixon will speak at 8:00 p.m. Friday night, while Ribicoff will speak at 8:30 p.m. Saturday. Other speakers include Lee A. DuBridge, president of Caltech,

at 9:30 a.m. Thursday; U.S. Senator William F. Knowland, Or. William Pickering, director of JPL, and Dr. Edward Teller of UCLA, all at about 2:30 p.m. Thursday.

Interested Tech students should call MA 3-1184 or get in touch with the California Newspaper Publisher's Association. All meetings at the Beverly Hilton will be in the International Room.

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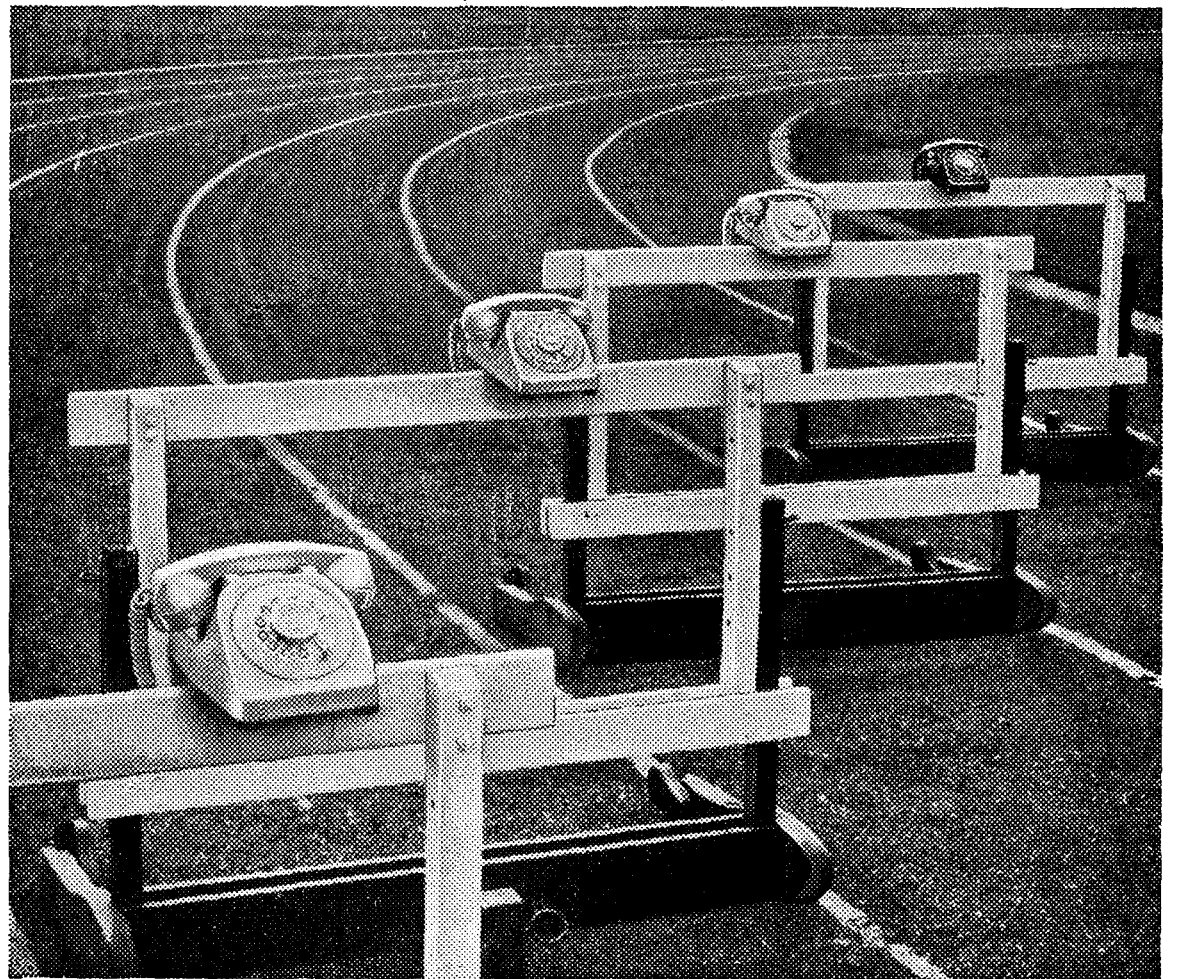
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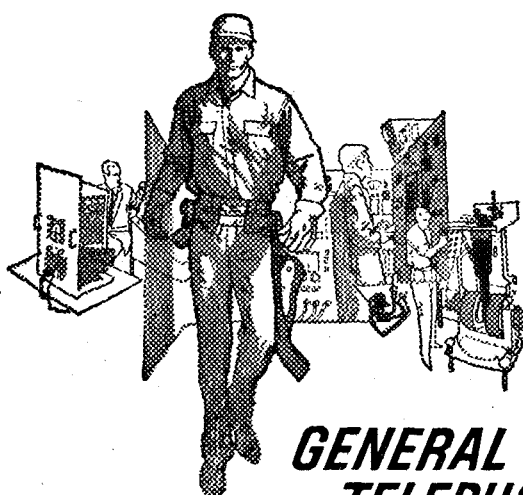
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GENERAL TELEPHONE & ELECTRONICS



Elliot Reports On Confab Considering Arms Control

Caltech history professor Dr. David Elliot returned to the campus Monday, September 3, after attending the Annual General Meeting for the Institute of Strategic Studies. Dr. Elliot is the chairman of the faculty committee in control of the Carnegie Humanities Program. He attended the conference because it concerned "Arms Control," the subject of the Carnegie lecture series for this year.

The Institute of Strategic Studies is a British organization devoted to the analysis of international military problems.

This year's meeting was held at Worcester College, Oxford, from September 23 through 25. Those present made up a very mixed group, including Members of Parliament, college professors, officers of the British

and French military, Americans, industrial representatives, etc.

SOCIAL PROBLEMS

Dr. Elliot stated that the purpose of the convention was to evaluate the possibilities of disarmament and arms control within the near future. The meeting concerned itself with broad social problems of arms control and disarmament rather than the technical problems involved. The Institute sought the reasons for and purpose of arms reduction.

In his discussion of the meeting, Dr. Elliot said that four main reasons for arms control were apparent; moral — the use of force is wrong; economic — armament is a net waste; fear

for personal safety; and desire for international security under acceptable conditions. (It was observed that immediate surrender of the West to the USSR would solve the armament problem completely, but not satisfactorily.)

In general the conference agreed that reduction of the nuclear warfare risk and continuation of satisfactory social conditions are the primary objectives of disarmament and arms control. Those at the meeting further agreed that disarmament and effective arms control are impossible under present conditions.

CFSAFST Tie JV In Opener

The Senile Seven plus Four, playing with only six men, held the Caltech Junior Varsity to a 3-3 tie Saturday in soccer. Rapid Robert Huttenback led the CFSAFST team to its moral victory playing at right guard and left forward, and promptly panted out a plea for more players.

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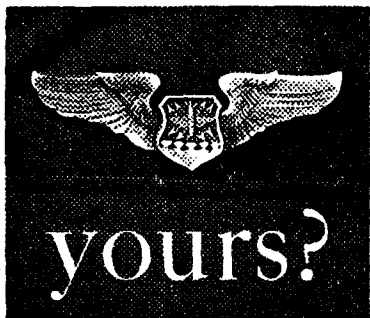
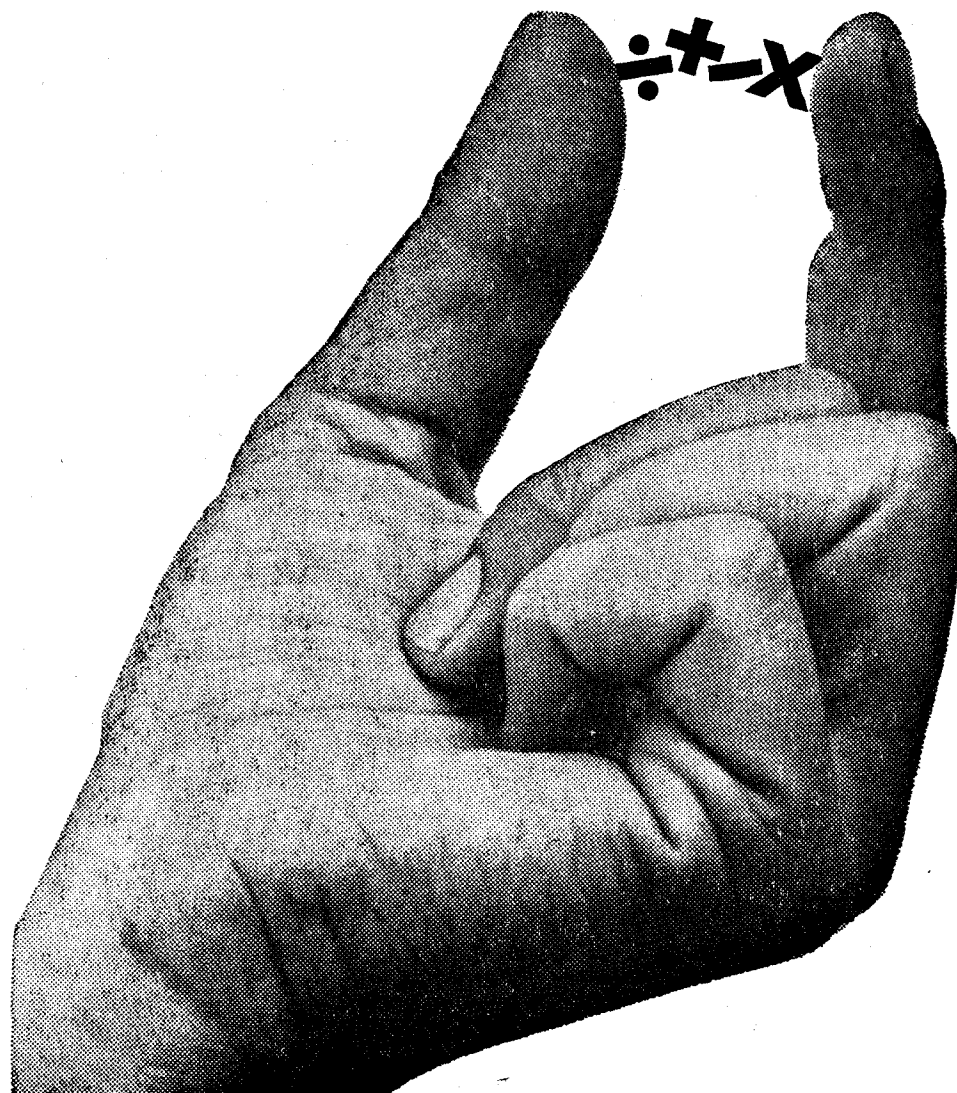
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SPORTS



Bob Ruby (Blue Hat, foreground) is pictured shooting another goal during the PCC-Caltech water polo match. Gary Tibbetts (Blue Hat, rear left) and Bruce Chesebro (Blue Hat, right rear) are looking on.

Riverside Dumps Soccermen

In the league opener last Saturday, the Caltech soccer team was severely beaten at Riverside, 5 to 1. The score was a reflection of the inability of the halfback line to control the ball at mid-field and of the deep defense to decisively clear the ball from in front of the goal mouth. This inability was not manifest during the first half, at the end of which UCR led, 1 to 0, but cost dearly during the second. Bill Dowd scored the only Tech goal late in the game,

and Don Wyberg and John Weaver were each given good workouts at goalie.

This Saturday the team travels to UCLA for what promises to be a rough game. UCLA was league champion last year and has overwhelmed its opponents so far this year.

In addition to the already scheduled varsity soccer meet at UCLA this Saturday, there will be a JV soccer meet against UCLA at Caltech the same day.

Polomen Dunk PCC Handily, Alumni Drown

The Caltech Varsity water polo team splashed off on the right foot last weekend as they dumped Pasadena City College 13-7 and the Caltech Alumni 14-8 in quick succession.

This was the first time that the Caltech Alumni team has been beaten since the first game of the traditional series, some five years ago.

In the Pasadena City College game, the team quickly established a comfortable lead and coasted for the duration of the game. The forward line consisting of Bob Ruby, Fred Hammetman, Bruce Chesebro and Roger Bland looked very effective. With practice to sharpen the shooting and passing eye of the individual men, there will be a real scoring threat here.

The PCC offenses consisted of Tom Mei, top-flight forward, who played in the hole position. For the most part, the Caltech defense was able to neutralize any serious PCC scoring threat.

The Caltech Alumni team, boasting the presence of such stalwarts as Don Wyburg (all-conference goalie), Clark Rees (all-conference forward), and Don Garman (former water polo coach at CIT) was unable to get moving.

Again, the Caltech offensive power proved too much for the Alumni, and the defense was able to control any major scoring threats.

Last week, in a team election, Tom Tisch—senior guard with

Football Team Loses To Redlands 64-6

BY PETE METCALF

Caltech was defeated 64-6 Saturday by the University of Redlands football team. The game marked the opening of league play for both the Beavers and the Bulldogs and was the tenth time in nine years that Redlands has defeated the Pasadenaans.

On the third play of the game, Roger Chaney passed to Bill Wallace for a touchdown to set the pattern for the night. After the first string had scored a few touchdowns, the second string came in and scored a few more. It was clear that Caltech was no match for the powerful Bulldogs as Redlands showed its superiority in every department.

This is not to deride the fine play of some of the Caltech football players. John Arndt did a very good job at right end, catching seven passes for a total of 113 yards. His great catch of Frank Marshall's pass in the middle of the fourth quarter set up Caltech's only score as he ran 27 yards to the Redlands one-yard line. Ed Cline rammed over for the touchdown.

Two years' experience — was chosen team captain for the 1960 season.

Tomorrow the Caltech Varsity meets College of Pacific from Stockton, Calif., in a 4:15 game at Alumni pool. Information on the COP team indicates that they will be fairly evenly matched with Caltech.

Ed played a fine game at fullback. He gained 30 yards in seven carries to average better than four yards a carry, against an almost impregnable Redlands line.

Chuck Rogers began to live up to the reputation he gained for himself as he gained 24 yards in four carries.

Ross Carder, Dave Herting, and Carl Baum performed very well at tackle, considering the fact that they were outweighed up to 20 and 30 pounds apiece by the toughest line in the league.

The injury of Vince Hascall in the Riverside game cost the pass defense dearly, and Redlands threw four touchdown tallies. He should be able to play in the Pomona game.

Tomorrow night Caltech plays the Pomona Sagehens in the Rose bowl. This is the game that will make or break the team. The Sagehens have also gone winless, having lost to both Cal Western and Claremont-Harvey Mudd. If Caltech can win this game, they may finish fourth in the conference. If they can't, it will take quite an effort for them to avoid becoming the conference doormat for the first time in quite a few years.

Basketball Meeting

There will be a meeting of the basketball team tomorrow, Friday, October 14, in the chalk-talk room at the Alumni Gym. The time is 4:00 p.m.

PIONEERING IN WORLDWIDE COMMUNICATION VIA SATELLITES

PROJECT ECHO

On August 12th, 1960, JPL scientists at Goldstone, California, radioed the world's first transcontinental microwave message to be relayed by a passive, artificial earth satellite. This satellite was the 100 ft. plastic balloon Echo I orbiting around the Earth at an altitude of 1,000 miles. A pre-recorded statement by President Eisenhower was received 2,300 miles away by scientists of the Bell Telephone Laboratories at Holmdel, New Jersey, as clearly as any telephone call, in a fraction of a second. Later in the course of the Echo experiment, the scientists at Goldstone and Holmdel conducted 2-way voice communication off the balloon satellite, Goldstone transmitting at 2,390 megacycles and Holmdel at 960 megacycles. This successful experiment opens up vast new fields of development for worldwide communication and is typical of many pioneering achievements of the Jet Propulsion Laboratory.

RECEPTION
The 85 foot parabolic antenna at Goldstone, California built in 1958 and used in tracking and recording telemetry from U.S. spacecraft.

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