

CaliforniaTech

Associated Students of the California Institute of Technology

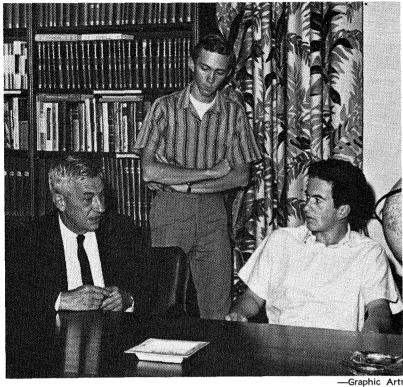
The Tech would rather fight than twitch

Volume LXVI.

Pasadena, California, Thursday, April 22, 1965

Number 25

New Beckman Policy Adopted



President DuBridge discusses Beckman use fee revisions with Mike Cunningham and Fred Brunswig.

Press Leaves Seismo Lab

BY RICH TEZAK

Nestled snugly in the wooded hills northwest of Pasadena lies the Caltech seismological laboratory. Although it is one of the most advanced centers of its kind in the world, few people — Techmen included — are aware of the variety of research being carried on at the lab. Neither are they aware of the changes taking place there.

Frank Press, general director of the laboratory, will be leaving soon for MIT to accept the positions of Director of Seismology

Notices

ON, YOU GREAT BEAST!

All you turtle herders are invited to a turtle race at Cal State at LA tomorrow. Starts at noon and will be judged by a bunny. See your friendly neighborhood editor for details.

GO SEE JUDY COLLINS

next Thursday in Beckman. Tickets are only \$1.50 and \$2.00 for students; ASCIT needs the money. Erudite critic and man-about-town Barry (no relation) Lieberman recommends her. She hasn't gotten sick yet, but when she does, we will inform you first.

SPRING BAND CONCERT

Techmen, remember the Caltech Band's SPRING CONCERT Sunday, May 2, in Beckman. Impress wives and lovers with Kleinsinger's "Tubby the Tuba" featuring John Johnson as soloist, with renowned guest conductor Carmen Dragon (he really doesn't look like he sounds), and with the superb musicianship of the Caltech Concert Band.

Get tickets (cheap!) in the Beckman ticket office: \$1 for adults, \$.50 for students and children. And best of all, ASCIT members—you—get in free!

ODE TO CIARDI

Poetry of the Y's next Leader of America will be placed in the House libraries today. Those interested are reminded to prepare poetry for submission to Ciardi. and Professor of geophysics there. In a less immediate change, the personnel and administration will be moved to the Caltech campus in order to be close to the Computing Center and the other geophysical research being conducted on campus. The seismographs, however, will remain at the present site, since the campus lacks the solid granite bedrock needed to support the instrument.

Lab of Laxury

The lab is housed in two stately mansions, formerly private residential structures, which for years have served as lab headquarters. Upon entering the mansion, one notices a remarkable contrast between the quiet Victorian atmosphere of the building and the modern scientific apparatus scattered throughout the two-story structure. The library is modest in size, but well supplied with periodicals pertaining to all branches of geophysics. Otherwise there is nothing that would attract one's attention - except of course, the seismographs, At the slightest earth tremor, the machines begin to emit a soft hum, control panel lights flash, and the pen traces the shock waves on a rotating drum. This information is subsequently analvzed by high-speed computers. Scientists at the lab are proud of the excellent equipment at their disposal. The digital seismograph, the first ever built, is still the only one of its kind in existence.

Next stop on the tour was a visit to Dr. Don Anderson, one of the geophysicists on the laboratory staff. Anderson explained that research is carried on in order to determine the nature of earthquake sources and the nature of the earth. In studying the shock waves transmitted by an earthquake, it is possible to get a good idea of the underlying structure of the earth.

Grubby Geologists

Not all information is gathered at the Pasadena site. Cars and freeways interfere with readings,

(Continued on page 6)

Thanks to the combined efforts of the ASCIT Board of Directors, the administration, and the YMCA, a new policy for student use of Beckman Auditorium has been adopted and approved. In an announcement culminating a two month effort, President DuBridge praised the members of the Ad Hoc Student Committee for the Beckman Use Fee for their sincerity and thoughfulness in helping resolve the problem.

Ad Hoc Proposals

At a meeting of students and faculty on March 10, certain principles were agreed upon and the student leaders were urged to formulate a specific set of proposals. After much discussion, the Ad Hoc Committee, composed of Fred Brunswig, ASCIT President; Mike Cunningham, YMCA President; and Jerry Yudelson, ASCIT Activities Chairman, agreed on a program to modify use of Beckman. (Ed. Note: The committee's proposals are included at the end of this article.)

Only two weeks after being submitted, the proposals were approved by the Auditorium Committee and the administration. In DuBridge's words: "In your memorandum of April 1 you have made proposals in line with the principles agreed on at the previous meeting. The Auditorium Committee has endorsed these proposals, and the administration

hereby adds its endorsement and will have them implemented immediately.

Reciprocal Back-Patting

"I want to extend my sincere thanks to you and your student colleagues for the thoughtful and considerate way in which you have worked with us to develop a plan which I trust will be fully satisfactory in assuring the fruitful use of the Beckman Auditorium."

In retrospect Fred Brunswig commented, "In view of all the bad feelings on the part of the students over the original Beckman policy, and the pressures they were bent on exerting to force its change, I want to thank Dr. DuBridge for his wholehearted acceptance of our proposal for a Beckman Policy. After all the time spent discussing the problem, I am confident the new student committee will work like a well coordinated team."

Recommendations of the Ad Hoc Student Committee for the Beckman Use Fee

The Institute sets aside for the academic year a reasonable amount of money to be used in supporting student sponsored events in Beckman Auditorium.

This fund will be administered by the ASCIT Beckman Auditorium Committee to consist of the current ASCIT and YMCA Presidents, ASCIT Activities Chair-

man, and the Y Vice-President, ASCIT Assembly Series chairman and an appointive chairman, to be known as Secretary General, as permanent members. This Committee shall decide what events are to be supported and by what amount. Furthermore, the Committee should encourage the use of Beckman by any groups who have worthwhile cultural events in the planning stage. A simple majority of those voting (by proxy or presence) shall be required to use the money and a quorum shall consist of four mem-

bers of the Committee. New Appointive Office

The Beckman office shall charge this account on receipt of an authorization from the committee signed by the ASCIT President.

The Committee shall meet at least once each term. At its first meeting third term, the new committee shall decide on a recommendation for a Secretary General who should be chosen as a person who can best represent smaller student organizations. This recommendation shall be decided upon by the ASCIT Board in accordance with the normal selection of appointive officers (Resolution V, ASCIT By-Laws). All requests should be directed to the Secretary General who shall be responsible for calling the necessary meetings. All decisions shall be recorded at the following ASCIT Board meeting.

Budget Request

At the end of the academic year the Committee shall submit to the Institute a request for funds for the next year along with a report of its use of the funds during its year in office.

(Continued on page 2)

CIT Hosts Festival

BY PAUL SWATEK

On Saturday Caltech will host over 700 singers and musicians representing eleven of the finest college choruses and glee clubs in Southern California. The 35th annual festival concert of the Pacific Southwest Intercollegiate Choral Association will be held in Beckman at 7:30 Saturday evening

The seats left after participants have been seated are available to the general public. Techmen may obtain tickets in advance through the Beckman Ticket Of-

Composers Tell All

Techmen will have a chance to hear about the works and problems of American composers in a symposium to be given in Beckman April 28. The program will begin at 8:15 p.m. and will be free. Tickets will not be required.

Dr. Raymond Kendall, Dean of the USC School of Music, will moderate the symposium. The other participants will be Alfred Wallenstein, musical director of the Los Angeles Philharmonic Orchestra from 1942 to 1955; William Kraft, percussionist with the orchestra; Karl Kohn, Pomona professor; and Gunther Schuller, Yale professor. These four composers will join Kendall in a discussion of their compositions and "The Pressures of Contemporary Society on Creativity Today."

fice or at the door. Prices are: Reserved section (balcony), \$1.50; General admission, \$1.25; and student rate on general admission tickets, \$1.00.

The Festival has received wide publicity and a sizeable crowd of outsiders is expected.

Fine Choral Music

Because the audience is the most critical and musically discriminating that a chorus is likely to perform before, the music presented represents the best each club has to offer.

It is traditional that a guest adjudicator be provided to offer constructive criticism and comment on the performance of each club. This year Caltech has imported John Baldwin, director of the Hamilton College Choir, one of the best men's groups in the East. He will be coming all the way from New York specifically for this festival.

Bob Sweet reports that Baldwin is "a cool head", having partied with him at last year's Intercollegiate Music Convention in Michigan.

Caltech First

Caltech will open the program singing "O Vos Omnes" by T. L. da Victoria and Claude Debussy's "Invocation." Clubs or choirs from Biola, Cal Lutheran, Fullerton, LA State, Long Beach, Chapman, Occidental, Pomona, USC, and Whittier will follow in a random order determined at the banquet which precedes the festival program.

Wow!

The groups range in size from approximately 50 to 90. LA State will attempt to fit a 74 voice choir, two pianos, and a 16-piece string

(Continued on page 2)

EPC to Take Millikan Poll

BY MAMMY MEO

The 18 applicants for Educational Policies Committee have something to put in their pipes and smoke. Last Monday night the ASCIT Board of Directors decided to run a survey of undergraduate opinion on the use of the Millikan Library, and assigned the new EPC to do it.

Dr. R. W. Paul, chairman of the Faculty Library Committee, requested the poll, in order to give students a hand in the designing of the building. Money has been set aside for snaking aids, and Teckers will be queried on what kind of desks they like best. The library's hours will also be influenced by the result of the poll, which hopefully will establish a better rapport between builders and users than has been evident in Beckman Auditorium.

EPC Works

Since the Educational Policies Committee undertook and completed its monumental quadrennial poll on Institute undergraduate courses last year, it definitely needs something to keep it busy this year. Old members such as Galley and Simpson, BMOC's both, approved the idea, so the Board of Directors unanimously presented the task to next year's EPC.

Editorials

Ax and Ye Shall Receive

Techmen and athletic managers, take heed. Coming to Caltech is a bully opportunity for you to establish intercollegiate records and to achieve fame, glory, honor, and national prestige.

Millikan Library ground-breaking ceremonies are set for May 26. Barring strike, flood, or plague, construction will begin immediately—as soon as June 1, according to Wesley Hertenstein, director of physical plant. But before any excavation can take place, somebody is going to have to level the Eucalyptus arove.

That somebody can be we Techmen. Armed with axes, vocal cords primed to yodel the famous cry "TIMMBERRR," we can do our just share in contributing to Caltech's manifest destiny by decimating the 60 Eucalypti. Perhaps some form of timed Interhouse competition may be arranged; if not on an Interhouse level, chopping can be done on a more individual basis. Student apathy shouldn't be a problem; by Memorial Day weekend—two weeks after Lost Weekend and one week before finals—most of us will be in the ideal frame of mind for making kindling of Eucalypti.

There are some practical aspects that will have to be arranged. Agitation by the SPEUPA—San Pasqual Eucalyptus Protective Association—may prove bothersome. Certain reasonable precautions will have to be taken so that one doesn't accidentally chop off his roommate's pince-nez, or fell an enraged Eucalyptus into Bridge library. Axes must be obtained (B&G has one power saw, but that's cheating), and somebody will have to clean up the branches and debris.

One thing must be done immediately, since bids are soon to be taken on Millikan. Prospective contractors must be informed of the condition in which they will find the Millikan site. So, Caltech Eucalyptus haters, **today** is the day to drop a note to the **Tech** expressing your interest; fame and glory are sure to be ours!

TIMMMBERRR . . .



—Tim Bob Norton

"Tech" Ends in Blaze of Glory

BY STUART GALLEY

Taking over where Wally left off last week (since he has a P-Chem lab write-up due Tuesday), I will describe the fun-loving session that occurs on Wednesday afternoon at the Bickley Printing Company. Since the **Tech** (that never-ending epic tragedy) goes to press about 4 on Wednesday, this is the last chance anyone has to make changes, and after the session is over, the yellow rag is in its final form.

The fun-loving group of Techmen, comprised of an Editor and any other random people that can be cajoled into coming along, hies itself to Bickley right after lunch, carefully parking on arrival in the alley behind the shop, right under the No Parking sign.

Proofreading

Once inside, the first battle is with proofreading (again). The copy that was prepared Monday night has now been corrected, and the corrections have to be checked for possible new errors; likewise, the Tuesday copy has been set up in type that morning, and it must be proofread completely. Occasionally a late news flash such as a story about the Wednesday morning assembly or a last-minute editorial — will be taken down to the printer on Wednesday, and it must be set up, proofread and corrected in about an hour.

Singular Matrices

Once all proofreading is over, there is a lag until more work can be done, and this dead time can be filled in a number of ways. One can watch the Linotype operator make line slugs for the corrections; for the Linotype machine is a fascinating beast, with its belts and arms and pulleys and cams and the little matrices (casting molds) clinking around

and the little pot of lead sitting there being molten. One can look through the drawers of "Miscellaneous" little pictures, finding maybe a bull-head to stick in the Audience headline, or some holly leaves or a picture of Abe Lincoln. One can look at the various fonts of type in the drawers, and imagine a front-page headline set up in Chaucer or Pasadena or Antique Shaded or Venus Extra Bold Extended.

Queynte Idea

Meanwhile, all the corrections to late copy have been made, and now they have to be checked. All at once all the beautiful flawless piles of slugs that will print the copy are inserted into the chases — the frames that hold all the type for printing two full pages - and it is immediately discovered that half of the stories are too long for their spaces and half are too short. The problem then lies in figuring out ways to fill in a hole on page five with the remnants of the end of a pagetwo story. Occasionally the layout for a whole page has to be drastically revised in order to make it look reasonable. Discrepancies that are irreconcilable call for either cutting out part of

(Continued on page 6)



THE WONDERFUL ICE CREAM SUIT BY RAY BRADBURY

Two one acts, "The Wonderful Ice Cream Suit" and "The Day It Rained Forever." Coronet Theater, Los Angeles.

It was a very nice evening, very nice indeed. Marlene, an old high school buddy who used to be Schwartz but now she's married, and Al, her husband, thought so, too. Barbara, who used to be Sapperstein but now is Shannon for the stage, and who plays a padded "Guadalajara cow" in the title play, agreed. So we all agreed that it was nice. But here the agreement ended.

Marlene thought "the language was wonderful," and she's right. Bradbury has a flair for the descriptive. His written words paint

Y Explores Creativity

BY TOM GREENFIELD

Last weekend the Caltech YMCA sponsored a workshop on creativity at Firestone Camp near Brea. The conference was attended by Techmen and Scrippsies, and also included girls from USC and UCLA.

Dr. John Weir, Caltech psychologist, was the chief organizer; his aim was to set up a situation in which people could actualize their creative potential more fully.

A Long Drink of Water

Students who participated viewed the purpose of the conference from various standpoints. One expressed the view that the weekend "did something towards creating a new society." Others thought that the principal achievement was to remove barriers and promote the loss of inhibitions.

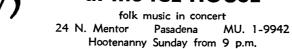
The whole group of about 50 (including the faculty who had been invited — the Huffs, the Langstons, the Rogers, the Weirs, the Eells, and Dick Feynman) was broken down into four groups. While one group was "moving" in the pool house, others were "improvising" in the elbow room, painting people with finger paints, and "imaging" or trying to stimulate their partner's subconsciousnesses.

Good Grief

All agreed that some singular things happened during the weekend. When Joyce, the movement leader, said, "Up until now we've been expressing ourselves verbally, so now we're going to learn to express ourselves physically; let's all go down on the floor," the results were interesting. It was in these "movement" sessions that people began to feel most creative.

Few who saw will forget Feynman's portrayal of an idiot or his virtuosity on bongo drums improvised from garbage cans. There was much volleyball and swimming between moments of more intense concentration; the food was excellent; group spirit matched the weather which was at its finest; and of course Ed Bauer got lost in the night.

at the ICE HOUSE



The Greenwood County Singers end this Sunday, April 25

Starting Tuesday, April 27

The Stoneman Family

Great Comedy and Folk Music

World-Pacific Recording Artists

Two Weeks Only

BY BEN SALTZER

scenes and populate the imagination. But put descriptive phrases in the mouths of the characters they create, as is done in **The Day It Rained Forever**, and the redundancy is unbearable. One old desert rat of a man, for example, says dramatically but bookishly, "Look at that red, iron-forge Sun that has tanned my heart like leather."

The stereotyped language of The Wonderful Ice Cream Suit hurts, too. Six Spanish-American men use more cliches than Jack the Bear, and he uses plenty. Throughout the two plays one has the impression that the scripts came from the stories, with most of the conjunctive phrases rephrased. It is obvious that they were not written especially for the stage.

Barbara, who appears in the cast, contends that the whole show makes for a fun evening. "I mean," she explained, "that if you come home from the office all worn out and tired, and you want to laugh and be entertained, then Ice Cream Suit is a good place to go." Sure, but so are many other theatrical performances. Shouldn't a play have more reason than niceness for being on stage? The stories are good; Bradbury is good. But why are these scenes any better than those conjured by words alone?

But despite our disagreement it was, as I said, a nice evening.

Beckman Policy

(Continued from page 1)

The Committee should have the authority to approve events through the end of the school year, in order that the film series and other long-range programs may be started well in advance. The use of these funds is contingent on approval of a request for the use of the Auditorium through the Beckman office.

The Committee proposes the following fund be appropriated for the new committee to administer:

2 ASCIT concerts \$ 300 5 YMCA cultural events 750 5 ASCIT miscellaneous events 750

750 Total \$1,800

A budget of \$1,200 for a yearlong Y Film Series is also recommended.

FLICK GUIDE

ACADEMY
1003 E. Colorado 796-3191
Admission: \$1.49 w/Fox student card.*
Friday and Saturday:
It's a Mad etc. World — 12:45, 3:45,
6:45, 9:45.

COLORADO
2586 E. Colorado 796-9704
Admission: \$1.25 for students.
Friday:

Send Me No Flowers — 7:00, 10:58. Father Goose — 9:00. (No schedule available for Saturday.)

CROWN
129 N. Raymond 796-3131
Admission: \$1.25 w/Statewide student card, \$1.49 without.

Friday and Saturday:
Becket — 12:30, 5:20, 10:15.
The Unsinkable Molly Brown — 3:05, 8:00.

ESQUIRE
2670 E. Colorado 793-6149
Admission: \$1.50 for students.
Friday:

The Umbrellas of Cherbourg — 6:15, 8:15, 10:15.

Extra matinees at 2:30, 4:15.

STATE
770 E. Colorado
792-7139
Admission: \$1.49 w/Fox student card.*
Friday and Saturday:
Mary Poppins — 12:00, 2:30, 5:00,

7:30, 10:00.

UNITED ARTISTS
606 E. Colorado 793-6139
(No schedule available before press

(No schedule available before press Time.)

UPTOWN
2316 E. Colorado 793-4330

Admission: \$1.75 for everybody. Friday: Marriage Italian Style — 7:00, 10:35. That Man From Rio — 8:45.

Saturday: That Man From Rio — 1:30, 5:10, 8:55. Marriage Italian Style — 3:30, 7:00, 10:50.

*If you are bereft of a Fox student card, one can be bought, included in an admission price of \$1.75. Good for six months.

CIT Hosts

(Continued from page 1)

orchestra on the Beckman stage!

Music by Brahms, Mendelssohn and Vaughan-Williams as well as by better known composers such as Gretchaninoff, Sweelinck, and Hugh Mullins (an LA State professor) will be presented by the other groups.

Following the concert the clubs will retire to Winnett where the social aspects of having roughly 300 lovely girls on campus will be explored to the music of the Caltech dance band.

California Tech

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men. What Yale must have is a pure science majors. This seduc-BY ANDY BEVERIDGE few giants in each area to bring Ed. Note: Andy Beveridge trans-

ALL SAINTS EPISCOPAL CHURCH

132 North Euclid, Pasadena (across from City Hall)

ferred after his frosh year from Caltech to Yale. The following article will be supplemented, we

hope, by others.

"We did make Gell-Mann an offer in the past two years . . . but when you consider that up to a few years ago the only decent people at Yale in science were a bunch of kooks anyway . . . stated the Director of the Yale Division of the Sciences with a wistful look in his eye.

The Director's statement points up the problems of old Eli's science. Yale does have a research center, and Yale is trying to bring its science up to where any Old Blue (alumnus) would be proud. With the end of the current building program in the sciences over \$20 million have been spent in various projects — Yale needs

8:00, 9:10, 11:00, 7:00 p.m. The Rev. Terence E. Lynberg

Episcopal Chaplain

SUNDAY SERVICES:

the science division to an acceptable level, but real giants, in the words of the Director, are "pretty rare birds."

Turkeys without Feathers

"We have had some pretty hairless turkeys around here, and you don't get much by plucking them," he continued. "There are still people here who think that chemical and physical aspects of biology are fads. We had to bring in outside committees to get some new men to break into these areas. It is an uphill battle all the way."

Ranked about eleventh or twelfth across the nation in physics and chemistry, seventh in math, sixth in astronomy, and unmentionally lower in other departments, Yale also faces yearly decreases in the number of

College Group meets every

Sunday evening at 7:00 p.m.

in the Parish House.

tion of scientists — engineering majors are not taking up the slack — will be examined in later columns.

Until WW II Yale had a competent science division; afterwards, the bottom fell out. Few people were willing to come to Yale and the president, A. Whitney Griswold, discouraged federal money and other forms of institutional aid. By the end of the 1950's the trend was clear: Caltech, University of Chicago, Harvard, MIT, Stanford, and Princeton were receiving nearly all federal research grants.

Millikan is Shorter

By the time more grants were finally encouraged, the scientific world was quickly passing Yale by. But provost Brewster, now president, worked to get more money for Yale's physical facilities; now a new science centeran 11-floor tower for biology, an addition to the chemistry laboratory, a new geology laboratory, and a powerful electrostatic particle accelerator — graces Science Hill.

Our Man In The Ivy League Scared of the Draft? Here's How to Avoid it

BY JUAN LARGO

Are you dissatisfied? Are you tired of taking it in the ear from Tech? . . . of spending a pile year after year on your education? Try something refreshing, cool, clean. Try getting drafted! It will prove to be a new and unique experience . . . and it's free!

For a complete discussion of the issue read the feature articles in the current issue of Moderator (summer). The Moderator articles deal with the essential points of conscription and its relation to college students. Since most Teckers are college students, these articles have far-reaching importance, especially since our classification is at stake.

The classification of nearly all Teckers is II-S, which is the college student deferment, valid as long as one is engaged in a "reasonable course of study." Chances are that Caltech graduates will probably be deferred as engineers or scientists who are "essential to the industry." "Industry" may refer to anything ranging from research and a faculty position to a position with the big corporations.

Get Married

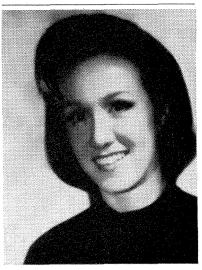
For those of you who are still worried about the draft, the quotas are presently being filled with men from classification I-A (available for military service). I-A-O (conscientious objector available for non-combatant military service only), and I-O (conscientious objector available for civilian service).

These distributions are a result of the order of induction given below:

First: Men declared delinquent for failure to comply with the law who are 19 or older (oldest first).

Second: Volunteers for induction (in order in which they have volunteered).

(Continued on page 6)



This beauty is red-headed Marni Nixon, who will be featured in the first of the Esquire's current concert series this Sunday at 1:30 Acclaimed for both her theatrical and classical singing and as an "adroit comedienne," her voice has been used as dubbing for Audrey Hepburn in "My Fair Lady" and for Natalie Wood in "West Side Story," among others. Her Sunday program will present the French Art Song, with work by Faure, Debussy, Bachelet, Barber, Poulenc, and Chausson.

___PAID AD



RADAR THAT SEES LIKE A FROG

Now there's a new radar system which, like the frog, can see everywhere without motion. It does three jobs simultaneously: searches the entire sky for missiles, pinpoints the location of targets already spotted, and sorts out real missiles from decoys. All in less time than it takes to blink an eye.

It's done by steering the radar beam growth.

electronically, and is the result of development work for missile defense by the scientists of a GT&E subsidiary.

Producing a radar system as versatile as this is the result of the ever increasing emphasis on research by the GT&E family of subsidiaries—research that stands as our solid base for future If you intend to take up any branch of communications as a career, General Telephone & Electronics is a good place to start. Information is available from your Placement Director. Or obtain details by writing to General Telephone & Electronics Laboratories, 730 Third Avenue, New York, N.Y. 10017.

Max & Robert Laemmle Present 4 GALA CONCERTS SUNDAYS AT 1:30 Celebrating the Pasadena Festival of Arts April MARNI NIXON, soprano NATALIE LIMONICK, **** May ALICE EHLERS-EUDICE SHAPIRO, Harpsichord and violin sonatas of Bach, Haydn & Mozart. ************* ALICE EHLERS May MALCOLM HAMILTON, Duo-harpsichord recital. ****** SUSANN McDONALD, harp. ALICE and ELEANORE SCHOEN-FELD, violin and celle. ORDER TICKETS NOW SERIES. \$ 8.00 \$10.00 (Reserved Section) \$ 5.00 (students) SINGLE, \$3.00 3.75 (Reserved Section) \$1.75 (students)

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SPORTS

Tech Thinclads Smash Biola, Edge Cal Poly and Riverside

Gage was second in the triple

jump, Innes placed third and Rad-

cliffe fourth in the intermediate

hurdles, and Frazzini was third

in the discus. Caltech showed its

usual strength in the distance

events as Meo finished third, Cross

fourth, and Putman fifth in the

its winning streak on the line at

Whittier on Saturday in a duel.

It will be the last meet the squad

will attend before launching into

the SCIAC prelims.

The Caltech track team will put

The Caltech Track Squad now has a three-meet winning streak going. In a meet at Cal Poly on April 17, the varsity walked away with a 74-69 victory. The combined varsity-frosh team handed Riverside a 71-70 defeat in a breath-taking finish while pummeling Biola by nearly 100 points in a double duel last Tuesday.

In the meet at Cal Poly Wyatt, Austin, Lamb, and Ludwig led off with a victory in the 440 relay. Cross and Miller then proceeded to sweep both the mile and 2-mile one-two. Gage won the high jump at 5' 10", Williams took second, and Paterson fifth. Gage went on to take the long jump at 20' 914" and the triple jump with a leap of 42' 11". Blackinton took fourth in the shotput, Austin tied for second in the quarter, and Wyatt and Ludwig finished second and third in the 100 yard dash. Levin, hampered by a sore back, was only able to get off a heave of 136' 134" in the javelin and had to settle for fourth. Caltech racked up two more clean sweeps with Radcliffe's 16.8 second victory and Ihas' second in the 120 yard high hurdles as Lamb and Guffrey took the half-mile. Innes vaulted 12' 6" for second, placed second in the triple jump, and got fourth in the long jump. Austin and Ludwig came away with third and fourth in the 220, and Tech piled up more points as Wyatt copped the intermediate hurdles with a time of 40.4 followed by Innes with third and Radcliffe with fourth. The frosh narrowly lost 70-65.

Outcome Hangs

The meet Tuesday was much livelier, with a record-breaking performance by Wyatt in the intermediate hurdles and the closeness of the Caltech-Riverside contest. Wyatt erased his own record of last year at 40.5 with a 40.1 clocking. The outcome of the Riverside meet hung in the balance throughout the afternoon. As the mile relay team went to the line in the last event of the day, the score stood at 70-66 in favor of Riverside. With the pressure on, Lamb, Ludwig, Austin, and Stanley ran away from the Riverside quartet and finished with a respectable time of 3:27.1, which was enough to hand the victory to Caltech.

Earlier in the afternoon Cross, Meo, and Miller helped lay the groundwork for the win by putting down the opposing distance runners with first, second, and third in the mile. Harley, Ludwig, Austin, and Wyatt took second in the 440 relay and Gage won the high jump at 6' 0". McKeever of UCR won the quarter in 50 flat but Ludwig finished a strong second. Blackinton placed third in the shotput and Sawicki placed second in the javelin behind the 176' 61/2" effort by Shelton of UCR. Halligan of UCR won the long jump at 21' 11/2", nipping Gage by only half an inch. Tech showed good strength in the 100 as Wyatt finished second, Harley third, and DeWith fourth. Lamb won the 880 in 2:03, Poltrock was third and Lehman fourth. Biola made its only strong showing in the pole vault with Long's first at 13' and Helyer's 42' 6" winning performance in the triple jump.

Win Giants Page Bowls Over Fleming, **But Flems Clinch Discobolus**

Major league baseball has started again, and in the tradition established by last year's California Tech we are going to predict this year's pennant winners.

The safest thing to say is that the team with the fewest injuries will win. But to go further than this there are four teams in the National League with a chance at the flag. They are St. Louis, Philadelphia, Cincinnati, and San Francisco. Looking at last year's results, Cincinnati has the best pitching, St. Louis the best fielding and hitting, and San Francisco the most power of the group. But the Giants have pitching close to that of the Reds; they have the greatest hitting potential and tremendously improved fielding. They will have a hard fight on their hands, but should win the pennant.

In the American League, Chicago and Baltimore will battle down to the wire, with the White Sox given an edge because of their pitching. This is the year to beat the Yankees.

Fleming virtually wrapped up the Discobolus trophy by trouncing Ricketts in basketball weekend before last at the Scott-Brown gymnasium.

The Flems had a powerful team, consisting of such big names as Tedder, Nady, and Holford, while the Scurves were forced to rely on Dillehay. Ricketts' only hope for a respectable showing disappeared when Potter did not play. The final score was

Easter Present

Then, on Easter Sunday, Page prevented Fleming from winning the trophy outright by outshooting the Flems in a bowling match at the Pasadena Bowling Center. Page's other challenges were in the sports of badminton and ten-

A Discobolus bowling match consists of three games bowled by five-man teams. Total pins for the five men determines the winner of a game and two out of three games must be won to win the match.

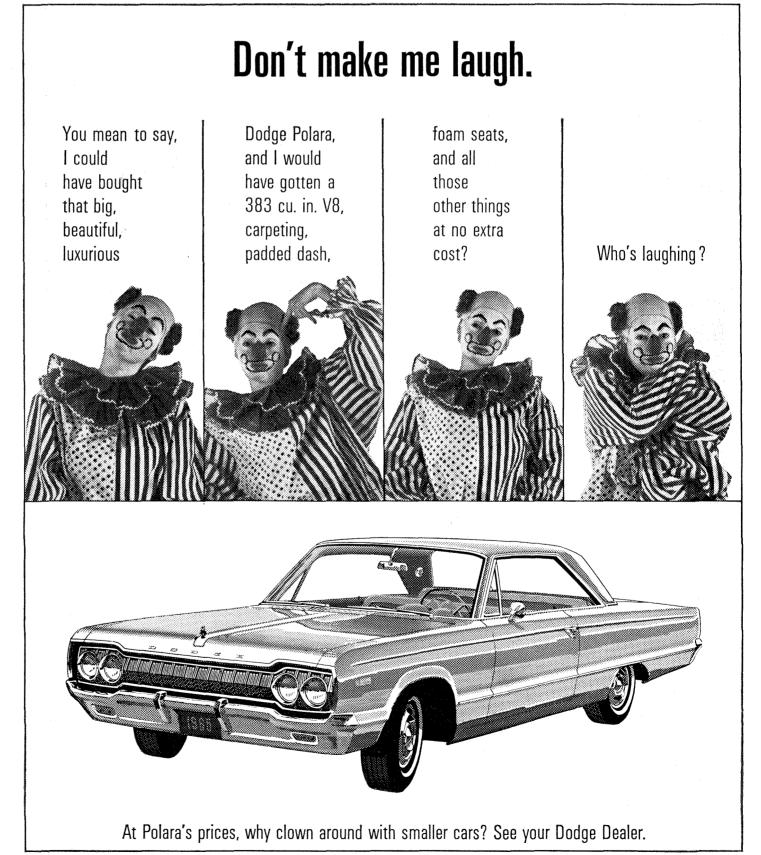
Page's team, which consisted of Schnuelle, Levy, Dessinger, Lau, and Isgur, won the first game by 101 pins and the deciding third game by 12 pins.

Fleming won the second game by 24 pins and was manned by Karski, Stanley, Kubler, Warren, and Harslem.

228! Wow!

Page almost lost the match because of the erratic bowling of its members, but a 228 by Schnuelle in the third game was sufficient to capture the trophy.

Lloyd has subsequently challenged Page in handball, volleyball, and table tennis. Page is accepting in volleyball in which sport Page beat Lloyd in two straight games last term in Interhouse volleyball. The challenge will be played off this Sunday.



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Blacker Clinches IH Basketball

BY STEVE BLUMSACK

Blacker emerged as the only undefeated team in a week that saw several unusual Interhouse basketball games. At least three games are worthy of mention because of the way they were won.

Page defeated Dabney Monday afternoon when the Darbs were held scoreless for fifteen consecutive minutes (including the entire second quarter) and amassed but 24 points during the entire contest.

Offense

The wildest game of the week saw Blacker take on Lloyd. The two teams scored a total of 121 points between them, by far the

highest total of the season. Black- contenders. er's 73 points makes one suspect that they played 15 minute quar-

Last Thursday, Lloyd had the distinction of winning the closest game of the year. The Lloyd men beat Ruddock after the final buzzer as Hall swished a free throw on his second attempt. He had been fouled in the final seconds of the game.

Big Scare

But the biggest games pitted Blacker against Fleming and Ricketts, and Ricketts against Fleming. The two games involving Ricketts were the closest as the Scurves scared both leading

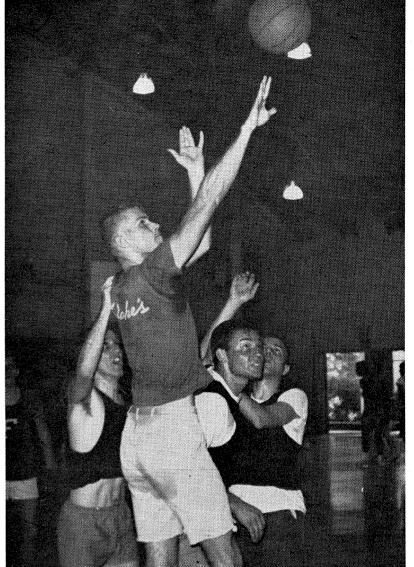
Blacker needed some sharpshooting from Aschbacher and clutch playing in the final minutes to turn back a determined Ricketts' bid for an upset. The Scurves were leading Fleming at the half by a point, but the Flems came back to win in the second half in a game close right up to the

Small Results

The anticipated championship game was a fizzle. Blacker took advantage of the absence of Fleming's Vitz, who was in Bakersfield engaging in questionable activities. When the Flems were unable to pass to their big center, the Blacker squad overcame its last major obstacle to first place. Fleming's inability to take advantage of their superiority in height proved to be crucial and

Overall, the defense and freethrow shooting have been atrocious. In fact, two ex-varsity players are shooting about 40 per cent from the charity line.

The best defensive effort was displayed by Page against Dabney; the worst exhibition occured in the Lloyd-Blacker carnival.



Frank in showing that basketball is really a non-contact sport.

| | | TOP | SCC | DRERS | | |
|------------|------------------------|--------------|------------------------|-----------------|-------------|------|
| Name | House | \mathbf{G} | $\mathbf{F}\mathbf{G}$ | $\mathbf{FT-A}$ | Pts. | Avg. |
| Potter | \mathbf{Ri} | 5 | 39 | 8-11 | 86 | 17.2 |
| Tedder | ${f F}$ | 5 | 40 | 6-9 | 86 | 17.2 |
| Aschbacher | ${f Bl}$ | 5 | 29 | 18-24 | 76 | 15.2 |
| Tyler | $_{ m Bl}$ | 6 | 32 | 6-10 | 70 | 11.7 |
| Josephson | $_{ m Bl}$ | 6 | 2 6 | 9-13 | 61 | 10.2 |
| Dillehay | \mathbf{Ri} | 5 | 2 3 | 10-17 | 56 | 11.2 |
| Zeller | \mathbf{D} | 5 | 27 | 2-8 | 56 | 11.2 |
| Barbosa | $\mathbf{R}\mathbf{u}$ | 5 | 21 | 13-29 | 55 • | 11.0 |
| Hall | ${f L}$ | 4 | 22 | 5-11 | 49 | 12.3 |
| Flannery | \mathbf{F} | 5 | 22 | 5-1 3 | 49 | 9.8 |
| Pitcher | $_{ m Bl}$ | 6 | 22 | 2-5 | 46 | 7.7 |
| Thacker | Ru | 5 | 19 | 6 - 14 | 44 | 8.8 |
| Jubin | \mathbf{P} | 4 | 16 | 7-17 | 39 | 9.8 |
| Carlson | \mathbf{Ri} | 5 | 19 | 1-8 | 39 | 7.8 |
| Ratner | Ri | 5 | 16 | 2-6 | 34 | 6.8 |

Two top Interhouse players, Tedder and Potter, are assisted by Dillehay and

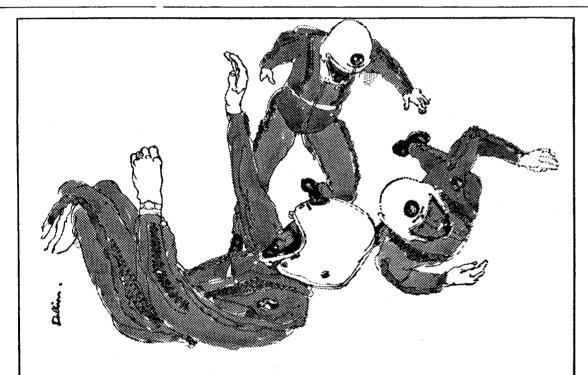
Lost Tennis Team Loses

Despite a small mix-up the frosh tennis team finally managed to get together with their opposition and to play their match last Saturday. They were supposed to play Pomona, but nobody seemed to know where. While our eager Beavers were motoring to the fair city of Claremont, the Pomona team made its appearance on the Caltech tennis courts. Fortunately, after frantic phone calls everything was straightened out and the frosh came back to play here in the Pasadena smog. (They did not want to look like they were running away in fear.)

Maybe they should have staved out at Pomona. The team came back to lose all but one of the matches. The lone victor for Caltech was Jeff Haight, who overcame his opponent 6-0, 6-1. His win might be attributed to the fact that he was captain of the team for this meet. If we had six captains, would they all win?

ITE OFFERS \$\$ TO **WORK In EUROPE**

Switzerland—The International Travel Establishment of Switzerland is offering a do-it-yourself summer in Europe that not only saves hundreds of dollars, but actually makes a trip to Europe possible for less than \$100, including transatlantic transportation. Complete details, including a large selection of jobs in Europe, instructions and money saving tips may be obtained by writing to Dept. 9, ITE, 68 Herrengasse, Vaduz, Liechtenstein (Switzerland). Send \$2 for the material handling and overseas airmail postage.



By solving problems in astronautics, Air Force scientists expand man's knowledge of the universe. Lt. Howard McKinley, M.A., tells about research careers on the Aerospace Team.

(Lt. McKinley holds degrees in electronics and electrical engineering from the Georgia Institute of Technology and the Armed Forces Institute of Technology. He received the 1963 Air Force Research & Development Award for his work with inertial guidance components. Here he answers some frequently-asked questions about the place of college-trained men and women in the U.S. Air Force.)

Is Air Force research really advanced, compared to what others are doing? It certainly is. As a matter of fact, much of the work being done right now in universities and industry had its beginnings in Air Force research and development projects. After all, when you're involved in the development of guidance systems for space vehicles—a current Air Force project in America's space program-you're working on the frontiers of knowledge.

What areas do Air Force scientists get involved in? Practically any you can name. Of course the principal aim of Air Force research is to expand our aerospace capability. But in carrying out this general purpose, individual projects explore an extremely wide range of topics. "Side effects" of Air Force research are often as important, scientifically, as the main thrust.

How important is the work a recent graduate can expect to do? It's just as important and exciting as his own knowledge and skill can make it. From my own experience, I can say that right from the start I was doing vital, absorbing research. That's one of the things that's so good about an Air Force career-it gives young people the chance to do meaningful work in the areas that really interest them.

What non-scientific jobs does the Air Force offer? Of course the Air Force has a continuing need for rated officers-pilots and navigators. There are also

many varied and challenging administrative-managerial positions. Remember, the Air Force is a vast and complex organization. It takes a great many different kinds of people to keep it running. But there are two uniform criteria: you've got to be intelligent, and you've got to be willing to work hard.

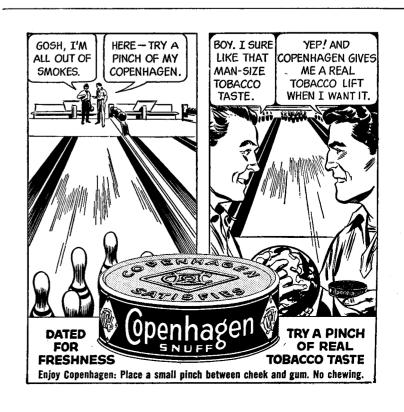
What sort of future do I have in the Air Force? Just as big as you want to make it. In the Air Force, talent has a way of coming to the top. It has to be that way, if we're going to have the best people in the right places, keeping America strong and free.

What's the best way to start an Air Force career? An excellent way-the way I started-is through Air Force Officer Training School. OTS is a three-month course, given at Lackland Air Force Base, near San Antonio, Texas, that's open to both men and women. You can apply when you're within 210 days of graduation, or after you've received your degree.

How long will I be committed to serve? Four years from the time you graduate from OTS and receive your commission. If you go on to pilot or navigator training, the four years starts when you're awarded

Are there other ways to become an Air Force officer? There's Air Force ROTC, active at many colleges and universities, and the Air Force Academy, where admission is by examination and Congressional appointment. If you'd like more information on any Air Force program, you can get it from the Professor of Aerospace Studies (if there's one on your campus) or from an Air Force recruiter.

United States Air Force



Space Patrol

Here are some satellite predictions from Caltech Space Patrol. First is the Saturn I satellite. It will be 1st or 2nd magnitude, and traveling from west to east lowish in the southern sky.

| SOCIETA | CALJ. | | |
|---------|-------|---------|--|
| DATE | TIME | ALTI- | |
| | | TUDE(°) | |
| 4/22 | 7:20 | 37 | |
| 4/24 | 7:20 | 39 | |
| 4/26 | 7:19 | 26 | |
| 4/28 | 7:17 | 14 | |
| | | | |

Also we have Echo I, traveling west to east in the northern sky

| mg | west | ю | east | \mathbf{m} | uie | HOLF |
|-----|------|---|------|--------------|--------------|------|
| ern | sky. | | | | | |
| | 4/22 | | 7:54 | | 36° | |
| | | | 9:56 | | 57 | |
| | 4/23 | | 4:36 | | 42 | |
| | 4/24 | | 7:15 | | 35 | |
| | | | 9:1 | 17 | Ę | 55 |
| | 4/25 | | 7:57 | | 4 | :0 |
| | | | 9:5 | 9 | 8 | 31 |
| | 4/26 | | 8:3 | 9 | 5 | 3 |
| | 4/27 | | 7:1 | 19 | 3 | 39 |
| | | | 9:2 | 20 | 7 | 78 |
| | 4/28 | | 8:00 | | 52 | |
| | | | 10:0 |)1 | 6 | 88 |
| | | | | | | |

Congratulations! A Soviet research satellite, 1965-12, exploded in orbit soon after launch; 195 pieces have been counted. Most of this garbage has already re-entered the atmosphere.

Final Galley

(Continued from page 2)

a story (and throwing it away or saving it for a future issue) or filling a hole with some personal message or witticism. Some of the best parts of the newspaper are born in this dire moment.

Who's Got Cars?

Now, at last, comes the final task — that of composing jumpheads to identify the second parts of stories that jump from one page to another. And, if it hasn't already been done, the ears must be created and plugged into their places.

In the corner of the Bickley shop is a locomotive that has been disguised as a newspaper press, and whenever one of the chases is put in its final form, it is carted over and fed to this monster, which then starts coughing up Techs. The noise it makes is hideous, and it even breathes fire at the end to dry the ink. If the first press run begins before the jolly group decides to leave, then an advance copy of two pages of the paper usually leaves with it.

And so, gathering in their arms the ad plates and picture photoengravings from last week, these gallant warriors bid adieu to the Bickleyans and take off for their beloved campus, satisfied that there is nothing more they can do this day for the **Tech**, and looking forward to a rare evening, free for snaking.

STUDENTS, if you need HELP in fulfilling your language requirement inquire about tutoring services at BERLITZ, THE LANGUAGE CENTER

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Debaters Excellent

The Caltech Debating Team received an "excellent" rating in the Pi Kappa Delta Debating Fraternity convention in Tacoma, Washington, April 11-16.

Dave Close and Gary Scott represented Tech's Gamma chapter of the organization and introduced two resolutions at the convention, one dealing with extemporaneous speaking rules and the other with the choice of the national topic. The former was passed by the student meeting of the convention while the latter was approved by the National Council of Pi Kappa Delta.

Close and Scott were recognized at the convention banquet with a certificate of excellence for their debate record of six wins and two defeats. Close and Scott won decisions over Central College of Pella, Iowa; Westminster of Fulton, Missouri; Northern Michigan University of Marquette; and the University of Akron.

Close participated in extemporaneous speaking at the tournament, discussing topics on American Foreign Policy. Scott competed in oratory with a speech entitled "DeGaulle's Real Motives."

Press Leaves

(Continued from page 1)

so for better, more comprehensive data, a network of other stations covers the state. Moreover, to study the nature of earth faults, teams of geophysicists are sent on monthly expeditions in the field. Most research is concentrated on the San Andreas Fault. which extends the length of California. This phase of the research program is sponsored by an NSF grant. Among the information gathered is data on the elastic properties of earth material and the rate of heat flow therein. Results of this research, Anderson explained, show that Los Angeles is currently moving northward with respect to the Mojave Desert. Differences in the kinds of rocks lying on the east and west sides of a fault are evidence of this movement.

Wind Seismo

While the recording instruments at the laboratory are located above ground, the actual seismographic equipment is buried deep in a wine cellar below the mansion. A seismograph is essentially a pendulum suspended from a support resting on a granite outcrop. When the earth shakes, the pendulum remains stationary, and the earth movements are electronically transmitted to the recording instruments upstairs.

Lab research is not confined to terra firma. The seismological laboratory also built the moon seismometer carried on one of the

early Ranger flights. Original plans called for the seismograph to be ejected shortly before impact with the moon, allowing the device to land gently enough to gather data on lunar seismological activity. Although this particular Ranger failed to reach its destination, the geophysicists are not discouraged. They are already planning bigger and better things, including seismographic instrumentation to be used on the Surveyor flights, which will accomplish soft landings on the moon's surface.

Dodge the Draft

(Continued from page 3)

Third: Non-volunteers, 19-26, unmarried, oldest first. Fourth: Non-volunteers, 19-26,

married, oldest first. Fifth: Non-volunteers, 26 or older, youngest first.

Last: Non-volunteers, 18½ - 19, oldest first.

Those who wish to maintain their II-S deferment must realize that this will not carry them through until they are 36. However, the 36 year age limit is more of a technicality than a practice.

Draft dodgers who are really determined may find a jail sentence as a civil rights worker makes them a poor security risk. On the other hand, the rate of civil rights workers killed in Miss., man for man, is not substantially lower than the corresp-

onding AKV rate (Americans Killed in Viet Nam).

The Selective Service Act, now a tradition, was first passed by a hesitant Congress in 1917 to meet the needs for World War I. The draft was scrapped after the war and remained defunct until 1940, when the first peacetime conscription law was enacted. When the war broke out, the term of enlistment was changed from 15 months to "the war plus six months."

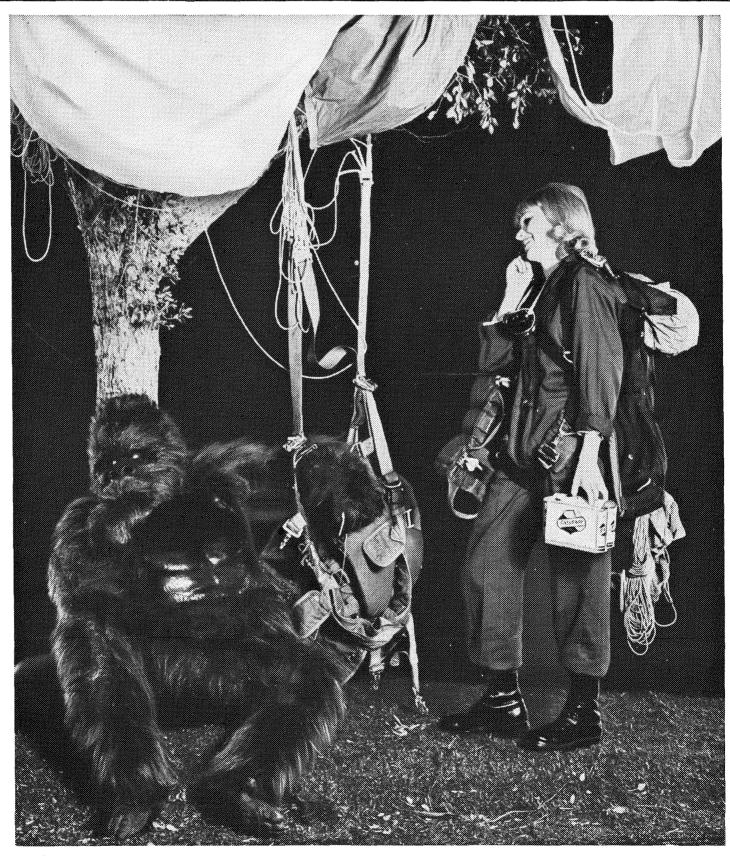
The Selective Service Act was allowed to expire in 1947, when enlistments dropped precipitiously. Hence, in 1948 the draft returned for another two years until 1950, when the Korean War broke out. It was subsequently renewed in 1955, 1959, and in 1963 by a House vote of 387-3.

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