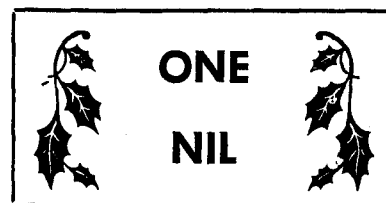


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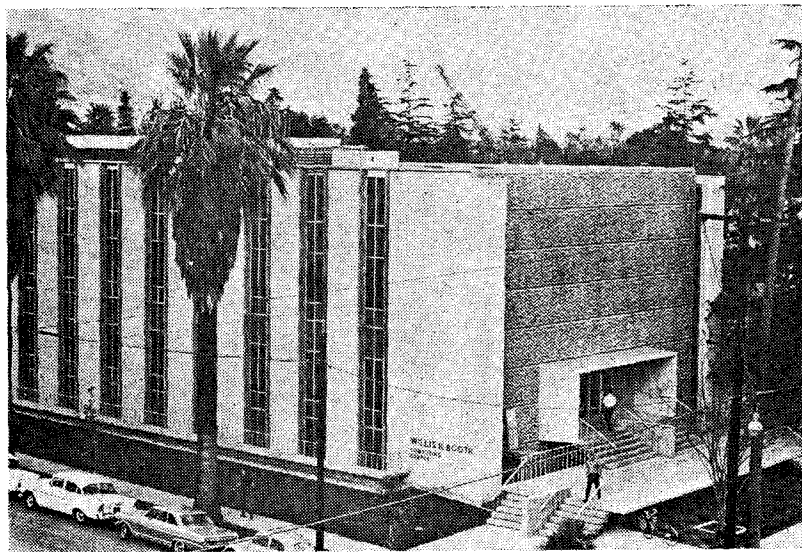


Volume LXV.

Pasadena, California, Thursday, December 12, 1963

No. 11

Computer Center Dedicated



—photo by Phil Liapis

Booth Computing Center set amidst the famous Pasadena smog.

Beckman Elected to Head Caltech Board of Trustees

Dr. Arnold O. Beckman was elected Chairman of the Caltech Board of Trustees at the meeting of the Board last Monday. Dr. Beckman succeeds the late Robert L. Minckler, who died last summer after serving as Chairman for two years. John O'Melveny has been the interim Chairman, and will continue as such until January first, when Dr. Beckman will take office.

Commenting on the election of Dr. Beckman, Dr. DuBridge said: "Dr. Beckman is uniquely qualified to be Chairman of the Board of Trustees. His interest in Caltech has never lagged since he arrived here as a graduate student in 1926. He has served devotedly as a trustee and we all look forward to further progress of the Institute under his leadership."

Dr. Beckman received his PhD from Caltech in 1928, and served as a faculty member until 1940. In 1953, he was elected to the Board of Trustees, the first alumnus to become a member. He served as chairman of the development program, which

raised \$19.5 million for new buildings and faculty salaries. More recently, he and Mrs. Beckman donated over \$1 million for construction of the new Beckman Auditorium, soon to be dedicated.

Dr. Beckman is founder and president of Beckman Instruments, Inc., which manufactures a wide variety of scientific items. He is a director of Security First National Bank, the Southern California Edison Company, and Continental Airlines. He is also chairman of the executive committee and vice chairman of the board of trustees of System Development Corporation.

Tech Debaters Rate Excellent At Tourney

BY MICHAEL ROBEL

The team of sophomore Fred Shultz and freshman Michael Robel received an over-all rating of excellent in debate at the Western States Alternate Tournament. Fred Shultz also entered the individual event of extemporaneous speaking, in which he secured a rating of good.

This tournament, held at Los Angeles State College, was open to those persons who had not participated in the Humboldt Tournament of the Western Speech Association. Among the 67 institutions represented at the alternate tournament were U. C. L. A., the University of Arizona, Claremont Mens College, and the University of Redlands.

The handsome three-floor Willis H. Booth Computing Center building and the large IBM information processing facilities contained therein were dedicated during all-day ceremonies before guests watching through the medium of closed circuit television Monday, December 9.

The computer complex, capable of remembering 43 million computer words, will enable students, faculty members, and research facilities to make full use of the system at any time. Dr. DuBridge claimed that the facilities "will accelerate Caltech's entire research program. It makes possible an immediate attack on some of today's most challenging scientific and engineering problems."

The formal dedication ceremonies were held at 10:30, and provided the preliminary for a three day symposium on "Information Processing for Research and Education" held here in conjunction with the opening of Booth. The symposium was held in Dabney and featured talks by Caltech and visiting professors on computers in basic research, education, mathema-

tics, biology, geology and similar topics.

IBM Complex

The heart of the computer complex is two IBM computers, the 7040 and the 7090. Caltech engineers and IBM engineers worked together to join the two so that the 7040 monitors input and output and other trivial chores, leaving the 7090 free to do more complex high-speed calculations.

Communications to this "heart" of the computer complex are handled by an IBM 7288 Multiplexor. This device links the 7090-7040 complex to other units on campus, such as the Burroughs 220 and data-gathering units capable of controlling and gathering data from experiments.

Versatile

The system is designed to handle a wide variety of problems virtually simultaneously. Data fed into consoles is relayed to the complex, where it will be reassigned. Some problems might be referred to the Burroughs 220, others might be resolved by the 7040, but complex and dif-

ficult problems will be sent to the 7090. Furthermore, the 7040 may stop the 7090, direct it to store the information concerning the problem being worked upon, give the 7090 a more pressing problem, and then direct it to resume the original problem.

Simple to Use

However, while the computer system is sophisticated, it is simple to use. The system is designed for easy programming and corrects its own mistakes. The system can make short work of data reduction tasks so involved that the human mind cannot cope with them. Thus, according to Dr. McCann, "the new center will make it possible for Caltech to undertake big research programs."

When the complex is operating at full potential it will be available to any of Caltech's 800 research projects. Eventually the system will be linked with Mount Wilson and Palomar and the Caltech Radio Observatory in Owens Valley.

The new building was made possible by gifts from the Booth Ferris Foundation and the National Science Foundation.

Leader Of America

Helstein Discusses Automation

BY STUART GALLEY

The crisis in unemployment forthcoming from increased automation was the subject of Mr. Ralph L. Helstein's major address last Thursday night. Helstein, president of the United Packinghouse Workers of America, spoke in half-full Dabney Lounge as part of his three-day visit on campus as the Y's first Leader of America this year.

Helstein began by giving the current picture. Four million people, or 5% of the labor force, are unemployed, more than ever before outside the Depression. Moreover, 40,000 jobs are vanishing each week because of automation. He claimed that 13½ million American families, or 45 million people, "live below the poverty level" of \$4000 income; yet he also said that the average income was \$6000 now, a figure which has almost doubled since the War.

Excessive Workforce

Also, "for the first time, in a period of prosperity in this country, we are unable to absorb the young people entering the work force." There are 26 million entering each year, of which eight million are dropouts and only 4½ million go on to college. He quoted Mr. Richard Bellman on RAND extensively, saying that in the future all production could be handled by 2% of the

population at the upper administration level, that technology is now sufficient almost completely to automate American industry (he ignored the prohibitive cost), and that unemployment would be worse now, were industry not holding back automation, even at the expense of profits.

Compensation Methods

"How do we begin to deal with problems of this magnitude?" Many methods have been tried by the UPWA and other unions and companies, with the result that "on the whole, we have

come to the conclusion that collective bargaining offers no conclusion, or even an effective stopgap." Also tried were training and relocation allowances for obsolete employees; Technological Adjustment Pay, which compensates for lost wages while a displaced employee is awaiting transfer to another plant; termination compensation, which actually only puts off the date the unemployable goes on relief; and retraining.

What is Solution?

What, then, is the solution? (Continued on page 2)



—photo by James McClanahan

Ralph Helstein comments on a question during his Wednesday afternoon panel discussion on "New Challenges For Labor." Panel members are, left to right, Byrd Jones, Helstein, J. C. Simpson, and Peter Fahy.

Notices

BECKMAN SQUELCHED

Reliable **Tech** sources have informed us that there is absolutely no truth to the current rumor that Dr. Beckman was named Board of Trustees chairman in retaliation for his auditorium.

CHEM E's ARE BITCHIN'

Despite a lamentable error in last week's paper, the **Tech** would like to assure its readers that Chem E's are indeed the true royalty of the human race, despite occasionally processing physicists.

Editorials

More Efficiency

This week the **Tech** returns to its policy of bringing to your attention real achievements of note. Once again, the firm-hearted band known as B & G has reached new heights on the frontiers of Remedial Engineering.

Faced with a gaping five-inch hole in the plaster of Fleming wall, similar to the five-inch hole this editorial is destined to fill, the alert emergency Blow-for-Blow squad stood respectfully aside while their intrepid leader planned his strategy. A little chip here, a little chip there and lo and behold—a new plaster-inlaid Picasso extending across the once plain wall.

A scant day later, a pair of young B & G executives of the SeweResearch group were busily removing a mass of sand and mud that had accumulated in the courtyard drain. Each handful was carefully added to the growing pile beside the drain. The job was completed—but came five o'clock, so scurry scurry away home. Came the rosy-fingered dawn, came the grimy-fingered hose-handler, came the deluge of moisture and away went the tidy pile down, down the drain.

—Don Green
J. C. Simpson

Helstein, Hangan Featured In Program of Protest Songs

Folksinger Clabe Hangan performed a selection of songs of the American labor movement in Winnet Lounge last Friday in a combined program with Ralph Helstein. Helstein, labor leader and the Y's Leader of America for this term, commented on the songs.

Hangan, who graduated from Redlands, is a social psychologist and is active in interracial and interreligious matters. He began the performance with "John Henry", which he explained was a protest against automation in the 1880's. Hangan eulogized in song Joe Hill, a labor leader who was executed in the 1920's for a controversial murder. "Preacher's Song", written by Joe Hill, told the workingman that he could achieve a better life by joining a union. Hagan recited the "Talking Union Speech", a device used by union organizers to increase and hold union membership. He sang "Which Side

Are You On" which was written by a wife of a Harlin County, Kentucky, miner during a bloody union organizing fight.

Helstein reviewed the history of protest songs, stating that protest songs are probably older than recorded history and have proceeded to the labor songs and now the freedom songs of today. He recounted how the labor movement had to fight management and membership apathy for recognition. The first official governmental approval of unions was the Wagner Act of 1933. Hangan concluded the program by singing labor songs which have been transformed into freedom songs such as "We Shall Not Be Moved" and "We Shall Overcome."

Automation

(Continued from page 1)

First, "I think we're going to have to think of education as our major industry." Helstein believes it is still possible to change the education level of our society, mostly by keeping people from dropping out of school (without indicating how). Second, he says that the major political task of the age is to produce institutions that will distribute the abundance of production justly. Congressional procedures must be revised in order not to allow one man to decide when legislation shall be passed. Third, every man, regardless of his humanity, should be able to participate in the affairs of the nation.

Work To Be Redefined?

Fourth, and perhaps most important, "new incentives, definitions, and values will be forthcoming." Revision of concepts as old as organized society will make them "artifacts of the age of scarcity" and out of place in the age of abundance, for example, the notions that production is wealth, or that income must come from work. An alternative, of course, is to "begin redefining what we call 'work'."

Concluding, Helstein said that, while the crisis is not immediately at hand, what must be done now is to find solutions before the problems get out of hand; he says that many people in labor and industry are not aware of the problem. "I would suggest that there is still time, but that we must plan and think and debate."



By
Steve Gorman

Well, the Ash Grove has finally exonerated itself, for the time being at least. Their latest attraction is a combination of a blind soloist, Doc Watson, and a bluegrass string band headed by Bill Monroe, and is really worth seeing. The big attraction is Watson, who may not be able to see his guitar, but that still doesn't stop him from being the best flat-picking guitarist I've ever heard. (Definition: a flat-picker is a hill-billy style guitar player who uses only a pick; this is contrasted with, say, flamenco players who use everything they can get their hands on — teeth, elbows, etc.) He is really terrific; Dave Hammer and I were snowed out of our minds. It's amazing how this man can get so much out of "only" picking. He also has a vast repertoire and even more, an All-American, homespun-boy-from-the-back-woods way of talking and joking around.

A Nab?

Any of you who have read "No Time for Sergeants" will know what I'm talking about. When he first came out he had one of those big metal capos which he referred to as a "pig yoke"; later, when he came back with one of the more modern elastic ones, he pointed it out saying, "this one has a garter on it, by nab." A statement which makes one immediately wonder what a nab is, but I guess that isn't too important.

String Band and Stringy Elvis

The other part of the bill is a whole bunch of people with a

fiddle, a banjo, a bass, a guitar, etc. I'm no connoisseur of string bands, but this one was very entertaining. Especially intriguing was the guitar player's face — he was like a short, emaciated Elvis Presley — which quite openly displayed whatever emotions were running through his head. When little Miss Julie (or something like that) came out to sing, these facial expressions became rather interesting.

She wasn't really so little, and had an unusual way of thrusting out her bust. The old man, Bill Monroe, was a real tiger on the mandolin — that is, if one can be a tiger on such a small instrument; perhaps he was more of an ocelot.

The Folk

The Ash Grove itself is a much more interesting place when they've got somebody good there. They have a front room, which had been empty before, but tonight was filled with all manner of interesting people.

There were washed-out bearded guys standing around looking "with-it"; there were also some washed-out stringy haired girls sitting around looking "with-it." There were even some ogling displaced serfers (sic), wondering if maintaining their appearance was worth being left out. A few of the more fortunates had achieved the zenith of "with-it-ness" by sitting there and strumming and singing so the whole worthless, money grubbing, bourgeois world could see what they thought of them.

In all it's a good show and for those of you who have the time in the next two weeks, is well worth going to see.

AWARD!

The editors and staff of the **California Tech** would like to present
Bob Liebermann
with the following Christmas present in token of our esteem:



California Tech

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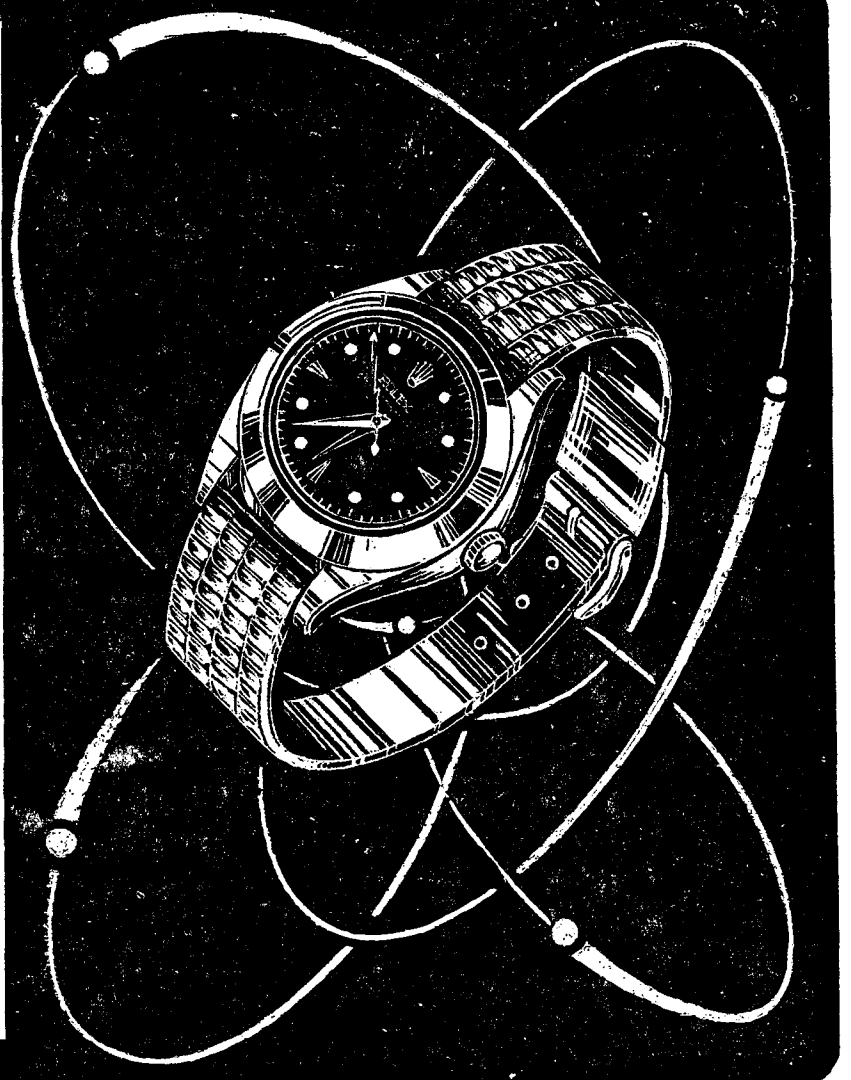
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Beavers Bash Bruins Twice; Lose Anyway

The hard-kicking varsity and JV soccer teams each dropped games to UCLA, 3-1 and 3-0, respectively, on Saturday. The UCLA JV's looked classy as they scored two quick goals in the first ten minutes of play. The first of these came on a baffling but impressive shot from 20 yards out.

After the initial shock wore off, the Tech defense stiffened and began to put the foot to the UCLA offensive threat. The referee noticed this, though, and Tech was penalized several times for roughness. Insult was added to ineptitude, however, when a nameless Tech backfield hero, after giving his all and absorbing a hard kicked ball in — yes, that very tender spot, was unjustly penalized for "hands."

Despite outplaying the UCLA varsity in the first half, the Tech varsity managed only a 1-1 halftime tie. Tech scored on a shot by Dave Clough while Jerry Schwartz held the Bruin goalie away from the play. UCLA tied the score, though, just at the end of the half.

The game opened up in the second half as both teams had numerous scoring opportunities. The Bruins scored twice to clinch the league championship for them. The game was not without its lively moments, though. When Tech goalie Don Wiberg was warned by Coach

Touton, Johnson Lead Swimmers

Ruddock led in the Interhouse Swimming preliminaries as their swimmers qualified 11 men in five individual events. Closely following were Fleming and Ricketts with 10 and 9; Blacker and Dabney qualified six apiece, and Lloyd and Page trailed with 3 each.

Expert analysis of the probable finishers shows Fleming the best bet to take the meet, with Ruddock only two points behind. This analysis does not include diving, relays, or the individual medley, in which no trials were held. Finals are this afternoon in the Tech pool.

Outstanding performances were turned in by Dick Touton of Dabney and Bruce Johnson of Ruddock. Touton bettered the 38-year old record of 25.0 sec. with is 24.6 in the 50 free, and was only .3 sec off the 100 free mark. Johnson bested the record of 33.3 in the 50 breast with his 32.4.

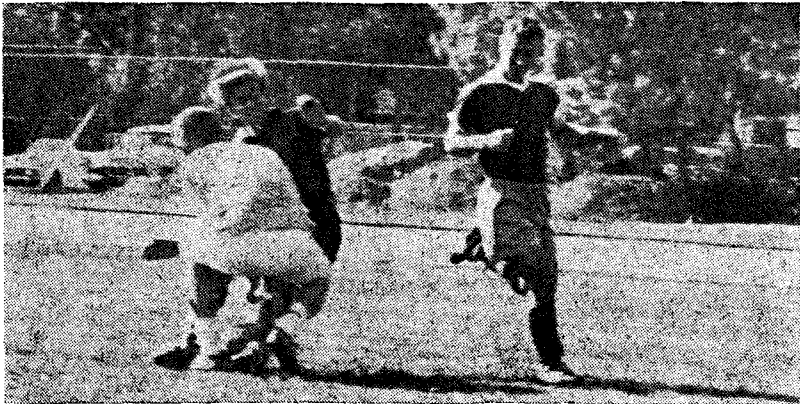
Flems Crush Page For Discobolus

In a preview of the upcoming Interhouse football season, Fleming easily defeated Page, 27-14, on the gridiron in the final Discobolus contest of the term.

Led by Christy, Nady, Schoene and Bill Smith, the Big Red offense clicked when it counted. Nady caught key passes from Christy to set up three touchdowns by the third period. Nady himself caught two for TD's, while Schoene caught the other. Fleming's final score came in the fourth period on an end sweep by quarterback Smith.

Page threatened the Fleming superiority only once. This came late in the first period when Resney caught a 35-yard pass from Mowery and Jerry Thomas caught a short hook pass for the point to put Page ahead 7-6. After this, though, the game was all Fleming as the Big Red played 15 different players in the game.

SPORTS



—photo by Phil Liapis

Tech goalie Don Wiberg applies elbow to Bruin forward in 3-1 loss.



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Hoopsters Take Thriller 83 - 82

Caltech staged a spectacular second half rally, Tuesday, to beat Pacific Christian College in the final seconds, 83-82. Caltech kept close in the first half until the final minute when PCC applied a full court press and scored six points to carry a 43-32 lead into the locker room. Caltech came out fighting and finally tied the score with six minutes left. The lead then saw-sawed until the final seconds. Dick Burgess, plagued by fouls throughout the game, scored 14 points but left with the score 74 all.

With 1:40 left, two consecutive Tech plays were executed perfectly, and Volker Vogt and Joe Weis hit for layups to put the game out of reach, 83-78, with 25 seconds left. Weis led Tech scorers with 26 while Gary Dahlgren got 16.

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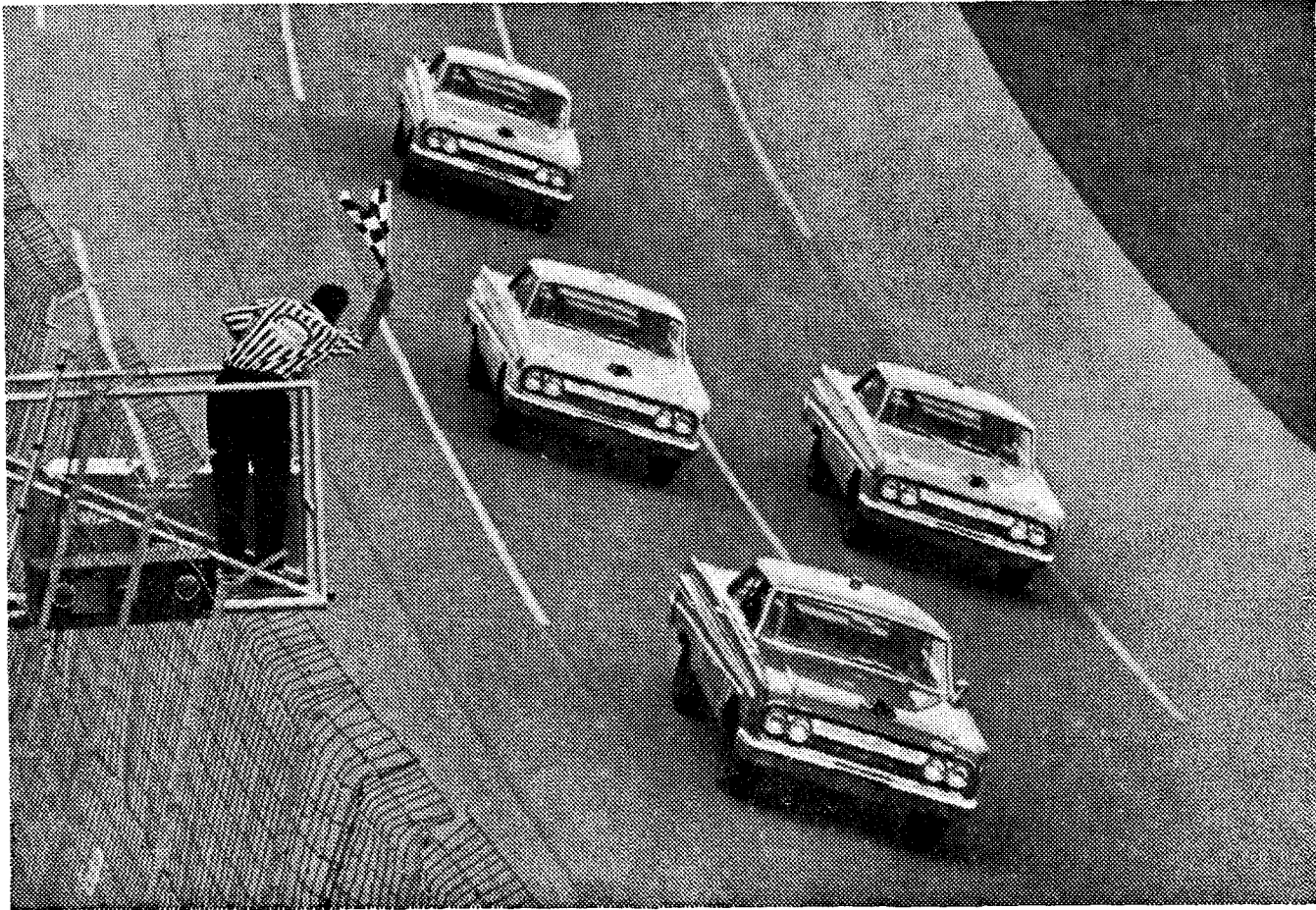
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Grapplers Open Season

Matmen Tie San Fernando In First Meet

The Caltech wrestling team tied its opening match with San Fernando Valley, 20-20. Each team forfeited a bout due to a lack of men in all weight classes. The six other bouts ended in pins.

Caltech forfeited the 123 lb. weight class. Wrestling at 130

Frosh Foul Out At Riverside Tilt

Foul trouble plagued the frosh hoopsters as they slipped to an 89-56 defeat at the hand of Riverside. Fresh from a victory over Rio Hondo, the frosh travelled to Riverside on Friday.

Caltech kept close early in the first period, chiefly on the shooting of Herb Jubin and Gray Jennings. Later in the period, a full court press by Riverside stifled the Caltech offense as Riverside controlled 27-21 at the quarter. Foul trouble forced the Techmen to pull several starters early in the second period. Riverside took advantage of this and carried a 49-35 halftime lead to the locker room.

The second half was merely more of the same. Riverside pulled the game out of reach toward the end of the third period and went on to win the game 89-56. The loss was especially hard on the frosh as Jubin was forced to leave the game early in the third period with a turned ankle.

Despite the loss, the junior hoopsters showed a balanced attack. Ed Hsi led Caltech scorers with 11 points, followed by Jennings and Dave Goodmanson with 10, and Jubin with nine.

Bruins Bashed

(Continued from page 3)

Andrews to beware of charging from UCLA forwards, he replied, "I'll just bring up my knees next time."

"No, no," retorted Andrews, "a penalty against our goalie would be disastrous. Use your elbows."

Center halfback Dick Wade was viciously attacked by a UCLA forward at one point in the game. Catching this same man off his guard a little later in the game, Wade attempted to apply the old one-two, but the UCLA's landed out of bounds on the first bounce and was out of play.

The soccer team meets Pomona in a replay of a game postponed last week. The game will be played at Pomona, Tuesday night.

lb., Dick McGehee stacked his opponent up for a pin in the first period. Frank Fujimura wrestled Valley's captain, and was pinned in the third period. Dave Faulconer, 147 lb., and Walt Paciorek, 157 lb., were both pinned in the second period. At 167 lb., Tom Latham used a half nelson to pin his man in the second period. Valley forfeited the 177 lb. class, and Andy Kam-

pe brought the score to a tie by pinning their heavyweight in the first period.

The proliferation of pins was accountable to a new rule which awards a pin when the shoulders touch the mat for only one second instead of the three formerly required. The Caltech team needs more conditioning, but has enough talent to make the season outlook hopeful.

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