

Conant Begins Visit Monday

Army Loss, NASA Gain; JPL Now For Civilian Use

by Roger Noll

Caltech's Jet Propulsion Laboratory was transferred from Army control to the hands of the National Aeronautics and Space Administration last month. The transfer is regarded as a significant move to strengthen the civilian space program, according to Caltech President L. A. DuBridge.

The change is mainly administrative with Army personnel remaining in research and development, but direction of the projects will be handled by NASA. JPL will be used solely for civilian space exploration and aeronautical development as soon as it completes its present work on the Army Sargeant missile.

Rivalry Held As Cause

The reason behind the shift is that the government thought too much interservice rivalry and duplication of research was being fostered by the system of each branch of the service conducting its own non-military aeronautics experiments. To relieve this condition, the government decided to strip the army of its principle research and development center, JPL, and hand it over to NASA, thus pro-

Music Seminar Set Next Week

A weekly seminar in music, the first of its kind at the Institute, will begin next week, according to Dr. Hunter Mead.

Dave Schuster, a graduate student in chemistry, will have charge of the discussions on "The History and Development of the Symphony As a Musical Form."

Mead indicated that there have been many requests for some sort of music courses at Caltech and pointed out that the new seminar will indicate the interest such a program might generate.

The first meeting will be held in Dabney Lounge next Wednesday night at 7:30. All students, grad and undergrad, are invited. The seminar carries no credit.

Lindvall Visits Russian Schools

Although the Russians live under a regimented system, I believe they are more flexible than we in taking care of their exceptional students," Dr. Frederick C. Lindvall, chairman of the Institute's Engineering Division, said yesterday.

He headed a group of eight American educators who have just returned after six weeks in the Soviet Union studying the quality of that country's engineering instruction.

There are many rewards and honors for the exceptional student in Russia," he said. "He is

paid by the state to go to school and the amount of his pay is partly determined by the quality of his grades.

JPL Best In Its Field

JPL has become the nation's leading rocket instrumentation and missile improvement center since developing the first operational ballistic missile (Corporal) and, along with the Army's Huntsville Laboratory, developing the first successful United States satellite (Explorer) and the most successful American moon rocket (Juno 2).

NASA was originally a small but important research organ of the government, investigating many new areas in aerodynamics through the use of wind tunnels, balloons, some limited rocketry and drawing board innovation. In this early formative period it was known as the National Advisory Council on Aeronautics.

NASA Made Director

Recently NASA was advanced to the position of coordinator of non-military space experiments. The Army and Air Force were retained in their positions as independent research divisions, but also assumed the new role of carrying out experiments for and directed by NASA.

Defense Department officials decided that this system was causing an even greater amount of service rivalry than already existed because the Army and Air Force were not only competing in attaining military research assignments, but also in being granted NASA assignments.

BOC To Pick New Member

Dick Johnson will take applications this week for the senior class Board of Control position he vacated when he was elected ASCIT vice-president last term.

The Board will appoint the new member from the group of applicants at a meeting next week.

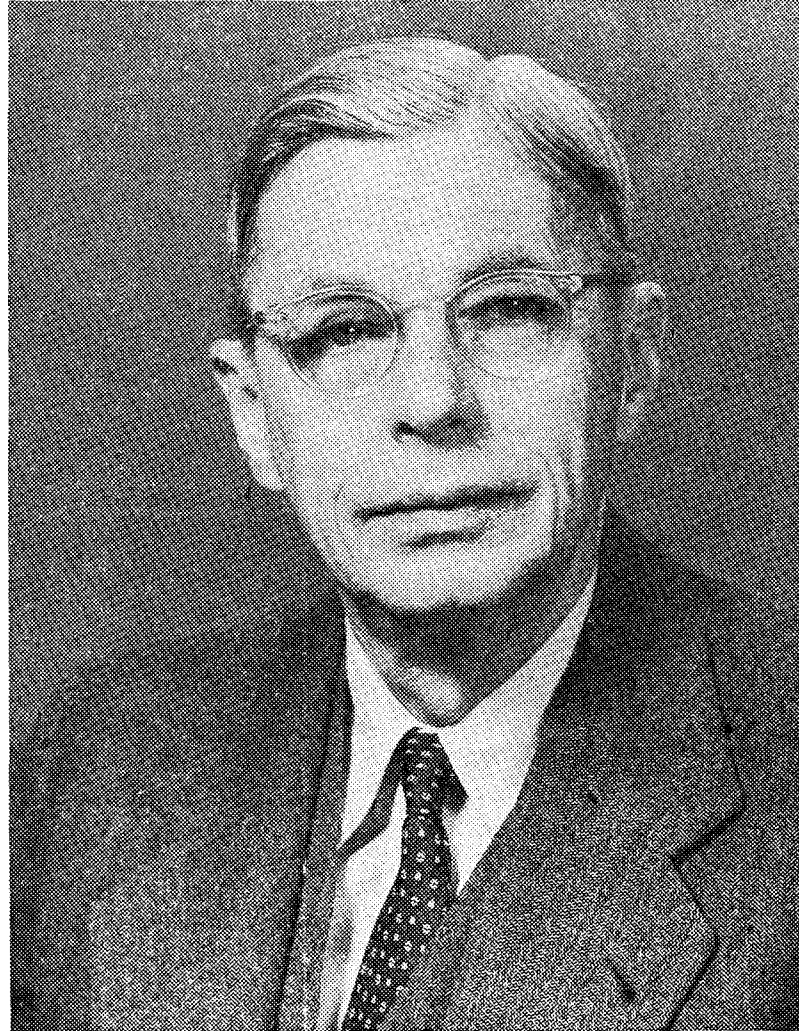
Any interested senior should contact Johnson by next Wednesday.

Russians have fewer extra-curricular activities of a social nature. They have science and mathematics clubs that have a real educational value and in which the students often do significant work.

"In many ways Russians use more capitalistic incentives than we."

Good students have their pictures placed on bulletin boards of universities alongside pictures of Lenin, and the pictures are removed if a student's grades fall down, Lindvall added.

"As nearly as we could tell, the student work load in American and Russian engineering schools is about the same. The



Dr. James B. Conant, President Emeritus of Harvard, former U. S. Ambassador to Germany and a prominent authority on education, will visit the Tech campus next week.

New Radio 'Ears' Officially Ready

Dedication of the California Institute of Technology Radio Observatory late last month marked completion of virtually all mechanical construction and the start of the "shakedown" phase of the \$1,500,000 installation.

Participating in the formal dedication at the observatory site in Owens Valley 250 miles north of Caltech's campus in Pasadena were Dr. L. A. DuBridge, Caltech president; Rear Adm. Rawson Bennett II, Chief of Naval Research; John G. Bolton, scientific director of the observatory, and Albert B. Ruddock, chairman of Caltech's board of trustees.

Each of the two 90-foot-in-diameter steel mesh, dish-shaped antenna skins is adjustable at 324 points. This is to assure a

perfect parabola and consequently an accurate reception of signals, explained Bruce H. Rule, Caltech chief engineer.

The dishes move separately or may be used as a team for interferometry to pinpoint positions of signal sources.

Bolton hopes that all construction and installation work will be completed by next May—except for additions or replacements. The full scientific program is not expected to get under way until about then.

The program will include attempts to identify hundreds of radio sources in space with visible stars so that the mechanism for generating the signals can be studied.

The observatory will operate on an annual budget of about \$150,000, furnished by the Office of Naval Research. ONR has contributed more than \$1,300,000 for development and construction. Winnett Trust Fund has appropriated \$74,000 and Radio Corporation of America \$25,000.

First 'Totem' Due Tomorrow

Undergraduates can pick up this year's edition of "Totem," cost-free, tomorrow noon on the Olive Walk.

Gene Robkin, Tom Morton and Ken Scholtz are editors of this year's Totem, which will feature student written poetry and prose, along with some artwork.

World Famous Educator-Diplomat Next Y-Leader

Dr. James B. Conant, noted educator and lecturer, will visit the Caltech campus next Monday, Tuesday and Wednesday under the auspices of the YMCA Leaders of America program.

Conant is nationally famous for his current two-year study of the American high school on a grant from the Carnegie Foundation. He served as United States ambassador to West Germany from 1953 until 1957 and as president of Harvard University from 1933 until 1953.

On the basis of his study of U.S. high schools Conant believes that academically talented students do not have enough secondary background. He suggests strictly segregating advanced students on the basis of aptitude and giving them courses including much more math science, and language study than is currently available in most American high schools.

When Conant arrives on campus next Monday, he will immediately take part in a faculty seminar on educational methods and policy in the Athenaeum at 4 p.m.

Following dinner in Ricketts House, Conant will give his only formal speech—"A Look at the American High School"—at 7:30 in Culbertson.

Conant will have lunch at Throop Club Tuesday noon, followed by office hours from 1:30 until 2:30 in the Y lounge. From 3:00 until 4:30, he will conduct an informal discussion period with grad students in the Y lounge. From 3:00 until 4:30, he will conduct an informal discussion period with grad students in the Y lounge, followed by dinner in Blacker House.

On Wednesday, he will lunch in Dabney House, and then hold a discussion on post-war Germany in the Y Lounge from 3:00 until 4:30. Dinner at Fleming House will close his campus visit.

Around The Quad

John Scott Award

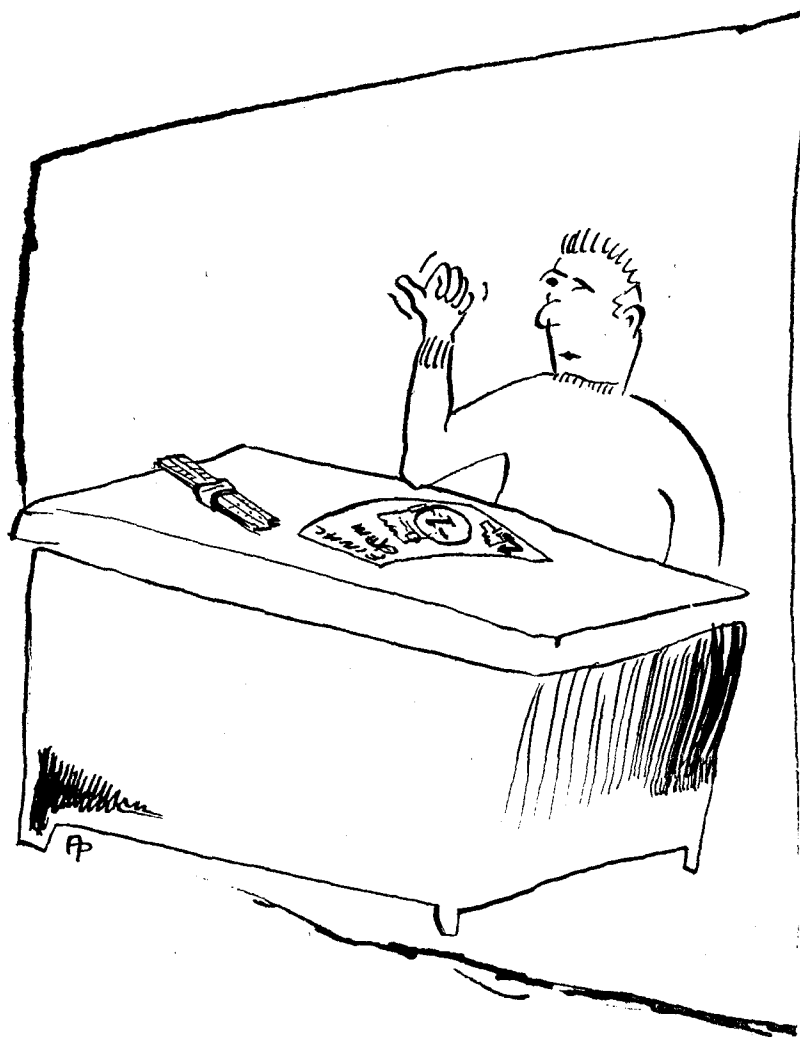
Dr. Renato Dulbecco, Professor of Biology was recently presented with the 1958 John Scott award.

Dulbecco received the award for inventing a method of identifying and isolating viruses. The technique is useful in preparing the Salk and other vaccines.

All-American

Dr. Robert Sharp, chairman of the Geology Division, was named to Sports Illustrated's third annual Silver Anniversary All-America football team in the Christmas issue of the magazine.

The All-Americans chosen each year are college football players of twenty-five years ago who have excelled in later life. Sharp played quarterback on Caltech's 1933 football team.



Editorial

War Of The Worlds (II)

The ExComm sat down at a table this morning to draw up their battle plans. They think they have come up with a weapon to combat the thorough ignorance about student life and institutions that seems to pervade the faculty and administration of Caltech.

The idea is that ASCIT should publish a comprehensive report of student life here at Tech and distribute it at large throughout the Caltech community. The report would be prepared by a committee of students and would attempt to describe faithfully the undergraduate experience as seen from the inside—student activities, customs, attitudes, and maybe some observations on the psychology of students.

ExComm hasn't worked out all the details yet, but the one fact is already clear: the job of "describing student life" is far from a simple task, and many students are going to have to to a lot of thinking, arguing and planning before anything is put on paper.

Another fact is clear: the project is really worthwhile, and if ExComm accomplishes it and nothing else, ExComm's recent formation will have been fully justified. At its worst, the report will wake up the faculty to the fact that the sociology of Tech's student body is a factor that greatly influences the student's development and his response to education. Further, the report will stimulate a great deal of healthy, but long overdue, discussion and introspection within the student body.

At its best, the report will arm the administration and faculty with some accurate and penetrating information—information that will be of great assistance to them when they must decide on such issues as educational policy, student housing, and student counseling.

The project has opened up opportunities for the present generation of students to make valuable contributions to student-faculty relations. If you are a little proud of Tech student life, or a little critical, and would like to tell the world, talk to an ExComm member about joining the project. You will be letting yourself in for some rewarding work.

Fineman's Shilling Scandal Sheet: Behind The Scenes In British Student Life

Scotland
31 Oct., 1958
(Continued from last issue)

THERE IS WIDE interest and participation in athletics but very little talk about it; there is an explicit scorn for the man who talks about sports on and off the field amusingly similar to that of the American student for the man who talks about academic subjects in and out of class. Interhouse competition seems to be limited to a yearly relay race and is not very strong.

A GREAT DEAL more organized *gemutlichkeit* is stood for here than would be at any American college, and in this regard students go farther both in the direction of formality and that of informality than they do in the U.S.

A formal meal in Sallies is a fine sight. The students assemble behind their benches in their crimson gowns; a gong sounds, and in march the faculty and guests (if any) in black gowns, up to the head table. The Warden rings a bell, and the multitude chant to a medieval tune: "Sit nomen Domini benedictum per Iesum Christum Saluatorem nostrum, Amen." Everyone then sits down.

After the meal, all rise and stand behind their benches and intone: "Gloria Patri Filio Spirituique Sancto in saec'lo saec'lum Amen," whereupon the faculty file out, followed by the Magistrands, Tartians, Semis and Bejants in order.

This happens every Wednesday and Sunday. On the other hand, at ordinary meals many students straggle in in a state of grubbiness barely concealed by their gowns, and they all insult the waiters (adult, hired) shamelessly, and hold their plates up for seconds like so many Statues of Liberty. (Table manners as such are fairly good, though the British method of eating, in which the knife is used as a spatula to smear the food onto the back of an inverted fork, has to be seen to be believed.

Again: When the president arrives at a meeting of the (male) Student Union, he is greeted by the following mass chorus, to the tune of "Landlord, Fill the Flowing Bowl": "The President of the Union is a God-forsaken bastard. (Two times He's not fit to shovel s—t. (Three times) the God-forsaken bastard."

Nevertheless, everyone entering the room thereafter must bow to the President on the way, and parliamentary procedure (though somewhat different from, and in general more sensible than, the U.S. brand) is pretty strictly observed; all remarks are addressed to the chair,

can hardly be managed with the hands.

ST. ANDREWS is now in the throes of a Rectorial election campaign. The Rector elected by the undergraduate students every three years presides over the University Court and is titular head of the University. Actual power resides in the Principal (the motto, "In principio erat verbum" which appears over one of the gates is popularly translated "the principal has the last word.") but the Rector can be very influential if he has the time to be around much.

He is usually a well-known personage; candidates in this election are Lord Boothby (ex-MP, tory) and Hugh MacDiarmid (Scottish poet, Communist) and a couple of dark horses of whom I know nothing. The election is not till next Friday, but already there has been a riot between Boothby and MacDiarmid supporters, with cheerleading by American students and some damage to a car.

Several hot pamphlets have been published. (The principal, by the way, whose name is Knox, is responsible for the great popularity of the word "noxious" at Andrews.)

I am socially a Bejant for the Marthimas (fall) term, and so I see more Bejants since I eat at their table. I spend a lot of time after meals piano hacking with Angus Roberson (Semi. Character.) who likes songs too. I met one fairly nice woman at a hop last week, a biologist who spends her time cutting up lobsters to see how their nerves rot

Regards,
JOE

FOREIGN CORRESPONDENT

This installment concludes the present series of letters from Joe Fineman '57 to the California Tech. Fineman has been attending St. Andrews University in Scotland on a Fulbright Fellowship, doing graduate work in physics. His pointed observations on student life in the British Isles have been entertaining Techmen for several weeks, now—and he promises more.

even in the heckling of candidates for Bejant member of the Students' Representative Council: "Mr. President, sir, are the Bejant's hands cold?" "Mr. President, sir, the Rejant is keeping his hands out of sight until he has good use for them." (loud stamping).

Students, unlike common people, stamp instead of clapping and scrape their feet instead of hissing; this seems to be true of many European universities. It is at least more easily modulated that way; a low sardonic rumble

EUROPE
Dublin to the Iron Curtain; Africa to Sweden. You're accompanied — not herded around. COLLEGE GROUP. Also shorter trips. \$685 - \$1340.
EUROPE SUMMER TOURS
255 Sequoia, Box 34 Pasadena, Calif.

Drugs Sundries Cosmetics Tobaccos
CALIFORNIA REXALL PHARMACY
555 S. Lake SY 2-3156
Breakfast Lunch Dinner

ENGINEERING OPPORTUNITIES
for Seniors and Graduates in

**APPLIED MATHEMATICS
ENGINEERING MECHANICS
ENGINEERING PHYSICS
AND
AERONAUTICAL, CHEMICAL,
MECHANICAL,
METALLURGICAL,
and NUCLEAR
ENGINEERING**

CAMPUS INTERVIEWS

**THURSDAY JANUARY 15
FRIDAY, JANUARY 16**

Appointments should be made in advance through your College Placement Office

PRATT & WHITNEY AIRCRAFT

Foremost in the design and development of gas turbine, ramjet, nuclear, rocket and other advanced types of flight and space propulsion systems

The California Tech

EDITOR: Mike Milder
EDITORIAL BOARD: Marty Carnoy, Cleve Moler, John Todoroff, Howard Weisberg.
STAFF: Pete Bickel, Carl Gottschall, Gerhard Klose, Bob Koh, Sid Leibovich, Steve Langley, Roger Noll, Arny Perey, Stan Sajdera, Lance Taylor, Joel Tenebaum.
BUSINESS MANAGER: Howard Weisberg
Circulation: Neil Sheeley

Entered as second-class matter November 22, 1947, at the Post Office in Pasadena, California, under the act of March 3, 1879.

Amiin And The Arts

By Joel Amiin

An overwhelming question which is asked by each generation of writers, and a question which is often answered futilely or facetiously, is: why do we write about the particular things we are writing about? Considerations of this question are particularly apt at this time because of the almost it would seem, adventitious growth of the "Movement," the clique of poets and novelists writing with what seems common ideas, having elemental similarities in all their work.

reader and listener to think, to evaluate, to judge? This doesn't mean that all writers who attempt to express themselves sincerely in this manner are good - - I think Kerouac is a prime example of a sincere intellectual moron; neither does it intimate that to communicate the author has to write turbid sex novels, or plays having characters who break their own limbs and minds without being originally demented; but it does say that in order to communicate one needs something striking enough that it catches the mind's eye, that sends the reader to an extreme of passionate denunciation or a vale of ecstasy. This forced introspection is the essence of the "why" of beat, vapidly, and existentialism.

POCKET GUIDE

To "Amiin and the Arts"

Ad'ven-ti'tious, adj. 1. Added extrinsically; not essentially inherent; acquired, accidental or casual.

In'e-luc'table, adj. Not to be overcome; irresistible; inevitable — Obs.

The three sections of the Movement which come inevitably to mind are the "beat" generation in this country (Kerouac, Ginsberg, Solomon, Patchen, perhaps Mailer), the "angry young men" in Britain (Amis, Hinde, etc.), and the French group, unnamed—unless you want to call them the Existentialists—but distinguished individually (Sartre, Gide, Camus, Celine).

An Old Story

The parallel one can draw between the works of all these men (The one woman who might belong, Françoise Sagan, is a little peasant child clutching her broken doll in the empty fields and wailing in her loneliness and frustration) is a basic, atavistic one. The beatniks orient themselves around sex; the angry young men - - stupid young men would be more apropos - - cry out over the tyrannies of society, the conflicts forced on the individual; the French consider a potpourri of basic emotions and pain.

Though there is nothing new in writing sex oriented literature, - - Sophocles came before Ginsberg - - the reaction in this country to it has not been overwhelmingly favorable.

These developments in literature were far from adventitious, rather they were almost ineluctable.

How Is It Possible?

One always asks: how is it possible to communicate socially and emotionally without speaking on a level that forces the

The

by Brad Efron

It was less than a fortnight ago that I first learned of a terrible deficiency in the fibre of Caltech life. Having brought my Stutz-Bearcat to a rolling halt in front of an octagonal stop-sign, I suddenly became aware of the Austin-Healy lodging itself beneath my rear axle. Descending from my vehicle to inspect for possible damage, I was greeted by a crewcut young man who clutched a broken pipe-stem in his mouth:

"Do you always stop for those things, square?" (Later I was to learn that it had been his favorite pipe.) While we waited for the police to arrive, our conversation naturally turned to matters of college life. He was fairly ignorant of the calculus, so soon I was confined to the listener's role.

As closely as I could ascertain, his was a typical background

among his fellows ("cubscouts, boy scouts, car-club, frat.") Let me quote verbatim his discourse on the mating ("pinning") customs of his people:

"The guy goes up to the girl's sorority house, but doesn't ring. Then all his frat brothers, we're standing back in the gutter, sing the frat's sweetheart song-four-part harmony, the works. (It's a buck fine if you're not there—two bucks for tenors.) By this time the girls are clued in, so the door opens and there she is, with all the sisters standing in back. They sing their sweetheart song, and then the couple kisses over the threshold.

While they're going at it we sing the school rouser and the girls hum "Messiah." They have to keep kissing for at least 16 halleluiahs. Then there's the pinning, and everybody together sings "Coming Round the

Fifth Column

Mountain." After that we have a beer-blast. Real informal—blue jeans and U.S. Olympic Drinking Team Sweatshirts. Then we talk about Big Game a little and go home."

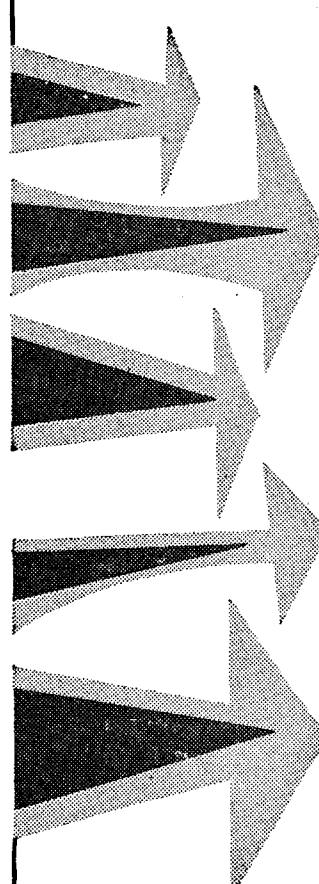
Later, when going over my notes of the conversation, I realized with a start that Caltech has neither sweetheart song nor rouser. All we have is "Noble C.I.T." (Manton M. Barnes, '21.) Would this do for a "pinning?" Hardly, a little careful analysis will show. Hence, spurred by a desire to maintain Tech's competitive position in the collegiate world, I have turned my pen to composition.

* * *

Next week: "The Sweetheart of C.I.T.", and "The Caltech Rouser Song."

IBM invites the 1959 Graduate with Bachelor's or Master's Degree to discuss career opportunities

Contact your college placement office for an appointment for campus interviews



Career opportunities

If your degree major is in:

- Sales**..... Liberal Arts • Business • Accounting • Engineering • Mathematics
- Applied Science**..... Physics • Mathematics • Engineering
- Product Development**..... Physics • Mechanical • Electrical • Engineering Physics • Mathematics
- Manufacturing**..... Industrial • Electrical • Mechanical • Mathematics • Physics
- Research**..... Physics • Mechanical • Engineering Physics • Mathematics

Some facts about IBM

IBM's phenomenal growth offers unlimited professional opportunities to highly qualified graduates. Company policies lay a firm groundwork for stimulating and rewarding careers in the areas listed above. At IBM, you will find respect for the individual . . . small-team operations . . . early recognition of merit . . . good financial reward . . . outstanding company-paid benefits . . . and many educational and training programs.

IBM's laboratories and manufacturing facilities are located in Endicott, Kingston, Owego, Poughkeepsie, Yorktown, N.Y.; Burlington, Vt.; San Jose, Calif.; Lexington, Ky.; and Rochester, Minn. Sales and service offices are located in 198 principal cities throughout the United States.

If you cannot attend the interviews, write or call the manager of the nearest IBM office:

IBM Corp.
645 No. Brand Blvd.
P.O. Box 1630
Glendale 3, Calif.



DATA PROCESSING • ELECTRIC TYPEWRITERS • MILITARY PRODUCTS
SPECIAL ENGINEERING PRODUCTS • SUPPLIES • TIME EQUIPMENT

CROWN

129 N. Raymond SY 6-3131

"I WANT TO LIVE," with
Susan Hayward
2nd Feature—
"PARTY GIRL," with
Cyd Charrise

STATE

A Fox West Coast Theatre
770 E. Colorado SY 2-7139
• 2 GREAT HITS •

TONKA

Staring Sal Mineo
and
TOM THUMB

Conant Pushes Program For Better Education

Contrasts U.S. And European Methods

By Lon Toth and Al Carlin

Germany and education, topics of current widespread interest and controversy in this country, will undoubtedly dominate the interchange between Dr. James Conant and Caltech students next week. However since Germany will undoubtedly receive most of the attention this article will attempt to outline his educational ideas, especially since they more closely correspond to his real interests as demonstrated by how he has spent his life.

While he did spend four years in Germany, ending in 1957, he spent the remainder first as a student, then successively as a professor of chemistry, President of Harvard University, and now as a student of the American secondary educational system. All this certainly qualifies him to evaluate the relative merits of various educational systems both here and abroad.

GOALS OF EDUCATION

No matter how "diverse the methods of education, their fundamental aims remain the same: the preservation and extension of personal freedom." But the extension of personal freedom implies the full utilization of one's potential. Does



the American educational system fully develop these potentialities? Not forcibly enough, maintains Conant. Although he praises the U.S. for the quantity of students completing high school and attending colleges, Conant cites as faults the lack of proficiency of graduating students in their major and the vast wastage of talent among the bright students. Many of the especially bright flounder. Their talents are wasted because of improper guidance or lack of incentive.

EUROPEAN SYSTEM

As a basis of comparison Conant has also studied the European educational system. A look at this system reveals an intensified pre-university and university curriculum. Only the top 15% of the student body are allowed to enter the pre-Universities; all but a few of these students will complete the University training. This segregation usually occurs when the student is 12.

In the pre-university, languages (at least two foreign) and the basic sciences are stressed. Standardization of the curriculum enables those passing the pre-university training to enter any university of their choosing.

In contrast U.S. students attend high schools which vary in size, quality, and breadth of curriculum offered. To sort the students of varied proficiencies, college boards and special tests are administered in the "mad hazzle" and "prestige battle" to be accepted by the nation's top schools.

Once in college the American student is often required to make up courses not offered by his high school and increase his knowledge of languages. These courses cut into the student's professional training time.

LARGER HIGH SCHOOLS

To achieve uniformity in the American school system, Conant's major recommendation is the elimination of the small high school (100 or less in the graduating class). The advantage, of course, would be an expanded curriculum offered to all students.

STANDARDIZE CURRICULUM

Conant also recommends standardization and toughening of the general curriculum. All students would be required to complete the following general curriculum: four years of English, four years of History, two years of Math and one year of some science. Conant further recommends the adoption of absolute standards including failing any student who does not fulfill the requirements, no matter how great the effort.

ADVANCED PLACEMENT PROGRAM

By means of an advanced placement program, the top three to five percent of the student population would be identified by the seventh grade and started in the eighth grade on a tougher, more intensified curriculum. Besides the general courses, these students would take four years of math, three years of science, and four years of one foreign language. They would also have the option of three years in a second foreign language in place of 12th grade math and science.

Grouping together the more talented students in Math, English, and foreign languages could create a healthy scholastic competition.

The scholastic competition and better counseling could awaken the academic ambitions of the academically talented. Since knowledge, not grades, should be sought after, Dr. Conant would eliminate the Dean's list, and the Class Valedictorian, which he describes as incentives for the brighter students to take the easier subjects.



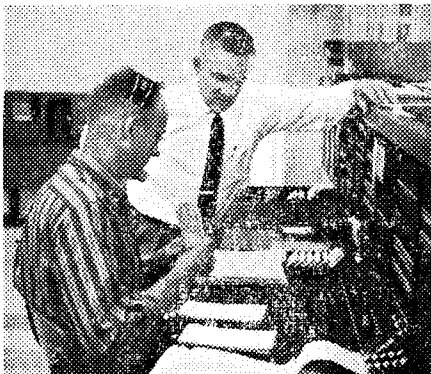
WILLIAM F. BLOOMFIELD, B.S.I.E., LEHIGH, '53, SAYS:

"Join me for a day at work?"

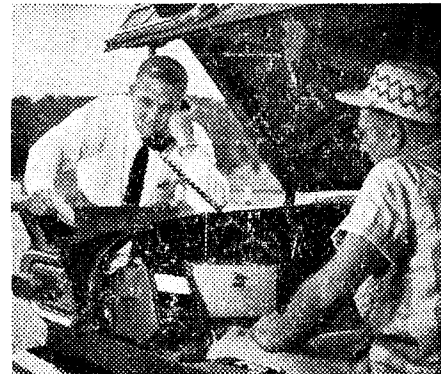
Bill is Plant Service Supervisor for New Jersey Bell Telephone Company at Dover. He joined the telephone company after graduation, has held many jobs to gain valuable experience. Now he has three foremen and 32 craft people working for him. "It's a challenging job and keeps me hopping," says Bill. "See for yourself."



"8:30 a.m. With my test bureau foreman, I plan work schedules for the coming week. Maintaining equitable schedules and being ready for emergencies is imperative for good morale and service."



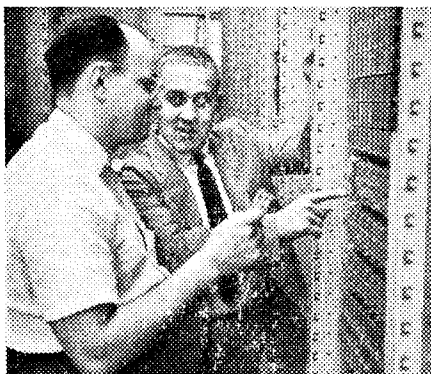
"9:10 a.m. The State Police at Andover have reported trouble with a mobile radio telephone. I discuss it with the test deskman. Naturally, we send a repairman out pronto to take care of it."



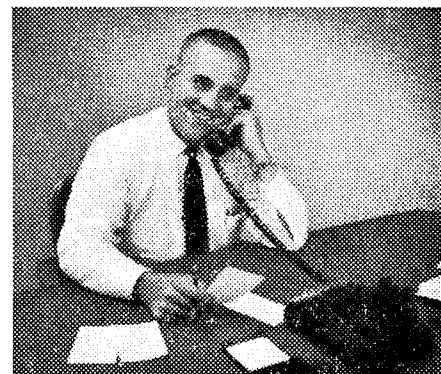
"11:00 a.m. As soon as things are lined up at the office, I drive out to check on the mobile radio repair job. The repairman has found the trouble—and together we run a test on the equipment."



"1:30 p.m. After lunch, I look in on a PBX and room-phone installation at an out-of-town motel. The installation supervisor, foreman and I discuss plans for running cable in from the highway."



"2:45 p.m. Next, I drive over to the central office at Denville, which is cutting over 7000 local telephones to dial service tomorrow night. I go over final arrangements with the supervisor."



"4:00 p.m. When I get back to my office, I find there are several phone messages to answer. As soon as I get them out of the way, I'll check over tomorrow's work schedule—then call it a day."

"Well, that's my job. You can see there's nothing monotonous about it. I'm responsible for keeping 50,000 subscriber lines over a 260-square-mile area in A-1 operating order. It's a big responsibility—but I love it."

Bill Bloomfield is moving ahead, like many young engineers in supervisory positions in the Bell Telephone Companies. There may be opportunities for you, too. Talk with the Bell interviewer when he visits your campus and get the whole story.

BELL TELEPHONE COMPANIES



SUCCESSFUL STUDENTS

M.I.T. LINCOLN LABORATORY has openings for a limited number of engineers, physicists and mathematicians in original research and development activities.

M.I.T. LINCOLN LABORATORY is an electronics research and development center established by M.I.T. in 1951.

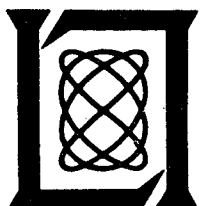
OUR REPRESENTATIVE WILL BE ON CAMPUS

January 13th

CONTACT YOUR PLACEMENT OFFICE NOW

Research and Development

M. I. T. LINCOLN LABORATORY



BOX 21 • LEXINGTON 73 MASSACHUSETTS

AS I SEE IT

Cagers Weak Without Newman

By Russ Pitzer

Playing without all-league ace Fred Newman, who has chosen to take his last year of eligibility next year instead, Caltech's varsity cagers have shown little promise of an exceptional season. All talent is new, and with the exception of captain John Stene, unseasoned under game pressure.

Coach Rock feels optimistic

Banta Selected On Star Eleven

Bren Banta, fullback of Tech's soccer team, was voted a first team all-conference berth by the Southern California Soccer Conference coaches. In addition seven booters were named from UCLA's undefeated conference champions, two from Pomona, and one from Redlands.

The Beavers placed halfback Glen Converse and forward Larry Tenn on the second team. Louis Baez-Duarte, Louis Linson and Ellis Cumberbatch rated honorable mention awards.

after the Beavers outplayed Riverside in the second half, but the two-week holiday layoff dull prospects for this Friday's return match.

With just a little more experience at the varsity pace, sophomore Bill Ripka should start hitting at his frosh pace again.

In general, all the basketball teams of the Southern California Conference will be weaker this year than last. Very few of last year's starting players are back.

Redlands will probably be the conference champion if they don't run into too much bad luck. They have two starters returning in Al Kelly (6'3"), center, and Jim Smith, guard, as well as several other lettermen and some junior college transfers.

Whittier lost almost everyone from last year's team except for Carroll Hooks, second string all-league guard. However, they have enough good junior college transfers and frosh to look good for second place in the league.

Occidental will have a height problem this year, as their only tall man will be letterman Al

Ralsston (6'4"). The rest of their men are about 6'0", including Dave Whitener, second string all-league forward, and a few other lettermen. Oxy has been using a full court press so far, especially on their small home court. They beat Pomona soundly in the only conference game so far, 76-48. Pomona and Caltech have the same problem in a lack of experienced players. Pomona has no lettermen back at all.

Among the other small college teams in the area, Chapman is the one to watch. Pasadena Nazarene is a lot weaker this year than their past championship teams.

SCHEDULE

Fri. Jan. 9 at Riverside
Sat. Jan. 10 at Cal Poly
Tue. Jan. 13 Redlands

Sat. Jan. 17 at Pomona
Tue. Jan. 20 Laverne (4:15)
Fri. Jan. 23 Occidental
Sat. Jan. 24 at Claremont-Mudd
Tue. Jan. 27 Cal Poly (4:15)
Sat. Jan. 31 at Redlands
Tue. Feb. 3 San Fernando Valley State (4:15)
Sat. Feb. 7 Pomona
Mon. Feb. 9 Cal Western (4:15)
Wed. Feb. 11 Claremont-Mudd

● Frosh

Ed Priesler has his strongest frosh basketball team in at least four years. Winners of their first two games, the little Beavers should upset a number of teams with actually better material. Gerber has combined sharp shooting and aggressive leadership to star at forward, and big Roger Noll's rebounding and tips at center promise strength there in the next four years.

Sailors Seventh In Coastal Meet; Oxy Overpowers

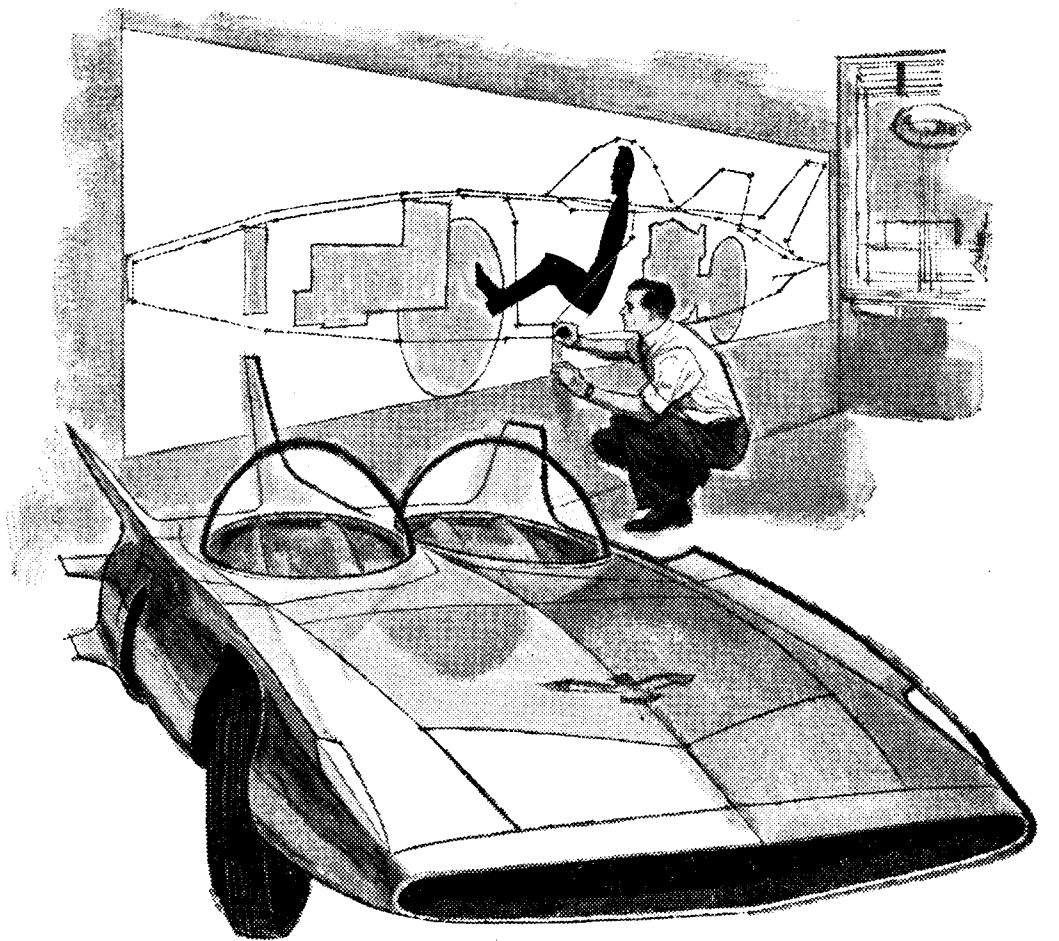
Caltech's sailors placed seventh in the Pacific Coast sailing championships at Newport Harbor Yacht club Dec. 20-21. Doug Stewart took one first place and Doug McLane one second for the Beavers.

Oxy's powerful team, on top from the beginning, won the meet with 91 points. Stanford edged Orange Coast College 71-70 for second place. CIT tallied 53. The Tigers and the Indians will travel to the national finals at the Rhode Island Yacht club, competing against two representatives each from the New England, Mid Atlantic, and Midwest areas.

JOB OPPORTUNITIES!

A General Motors representative will be on campus January 12 and 13.

Contact your college placement office to arrange an interview.



At General Motors there's room to stretch your imagination!

A single control starts, stops, and steers the Firebird III—or this GM "laboratory on wheels" can be safely guided by electronic impulses sent from a cable buried under the road!

Fabulous steps into the future, such as this, can be made only by men with fabulous imaginations. A lot of such men work for General Motors and its divisions. There's room for a lot more—maybe you.

In addition to research in the automotive and appliance fields, General Motors and its divisions are concerned with solar energy, astronautics, astrodynamics, electronics, and many fields of space engineering. If these areas of scientific study challenge your imagination, perhaps GM has a place for you at one of its plants in 71 cities.

Here is a real opportunity to put your imagination to work on everything from tiny transistors to dynamic diesels.

GM positions now available in these fields for men holding Bachelors', Masters' and Doctors' degrees: Mechanical Engineering • Electrical Engineering • Industrial Engineering • Metallurgical Engineering • Chemical Engineering Aeronautical Engineering • Ceramic Engineering Mathematics • Industrial Design • Physics Chemistry • Engineering Mechanics.

GENERAL MOTORS

PERSONNEL STAFF
DETROIT 2, MICH.

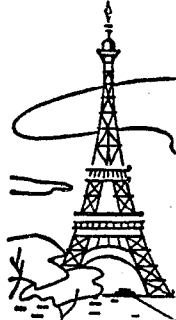
Invitation to LIVE IN EUROPE FOR 80 DAYS!

... or choose our exciting 60-day ROYAL TOUR!

You'll thrill to the grandeur of the Matterhorn ... ride a gondola in Venice ... climb the Eiffel Tower in fabulous Paris ... investigate life behind the Iron Curtain in East Berlin! You'll really get to KNOW the countries you visit by wandering through areas most travellers never see, as well as ALL the major attractions!

You'll share the excitement and adventure of this EXPERIENCE OF A LIFETIME with other college students and young graduates ... and you'll like the personal attention we give to every detail.

Before making ANY plans for next summer, you owe it to yourself to investigate the Eur-Cal Travel Tour. Drop us a line—today—for our informative 16-page folder. It's free, and we're sure it will interest you!



EUR-CAL TRAVEL

2308 Telegraph Ave., Berkeley 4, California

Memo for opportunity

Ingersoll-Rand will interview Senior Engineers January

Ingersoll-Rand offers attractive opportunities in design, manufacture and sales of pumps, compressors, engines, blowers, vacuum equipment, power tools, and mining and construction equipment.

Sports

Beaver Swimmers Promise Strong Season

Swimming practice started Monday for the Beavers as coach Web Emery wasted no time in getting his men into shape for what promises to be another good year.

Losing only four really outstanding seniors from last year and bolstered by some sophomore standouts Caltech stands a good chance of taking the conference championship this year with Whittier and Pomona posing the chief threats.

sprints. Don Owings, winner of the swimming trophy last year, figures to pace the Beavers again.

Frosh Look Good

The frosh team this year also has great potential with Howard in the butterfly, Hogan in breast stroke, Russell in the sprints, Turner in the back stroke, and a number of other prospects.

Overall the team seems well balanced and loaded with a good deal of talent—the requisites for a championship team.

Strong Newcomers

The first meet will be February 10 against Mt. San Antonio J.C. Up from last years frosh will be Erskine in the back-stroke, Mayer in the breast stroke and butterfly, Tibbitts in the distance and Tisch in the

They Just Out Think 'Em

'Senile Seven' Challenges All

By Carl Gottschall

"We may not be the best team around, but we're certainly the best educated," is the way Dr. Huttenback describes the unique, loosely knit group of soccer players who call themselves the Senile Seven Plus Four. The only team of its kind in the area, this group of faculty, staff, and alumni of Tech are dedicated to the pleasure and enjoyment of the game.

Generally on Wednesday nights or Saturday mornings the team

gets together to play the varsity, junior varsity, or just divides up for an intra-squad game. "We'll play anybody," is their motto, and though somewhat in abeyance due to reseeding of the field, the team has scheduled games in the future against PCC and a team of Norwegians.

Members of this squad reflect the hidden talent with Caltech's academic confines. Olaf Boedtker, Swiss M. E. research fellow for example, has represented Switzerland in both the summer

and winter Olympics.

Rafan Stefansson, a Caltech graduate, won the soccer MVP award two years as an undergraduate. "The Mighty Turk" Sedat Serdenghetti, who holds a Caltech PhD, also played here and won MVP honors.

Juan Gianbeiuji, a research fellow from the University of Buenos Aires, adds to the international flavor of the team as does Sverre Birkeland, a gardener for the Physical Plant Department.

Other team stalwarts include Jon Mathews, physics instructor; Harry Bingham, physics research assistant; Harry Williams, J.P.L.; Glyn Harris, chemistry instructor; Clarke Rees, last year's swimming star; and Dr. Huttenback, Master of Student Houses.

In view of the tough schedule looming in the future the Senile Seven Plus Four has decided to incorporate any varsity men who want to play in their outfit. "Once you survive the first two weeks, you really enjoy it," he commented, "—conditioning, you know."

Announcement

Frosh and varsity baseball players should report to coach Jack Peterson at 3:30 p.m. starting Monday, Wednesday, and Friday of next week.



Allesina

SENIORS AND GRADUATE STUDENTS IN ENGINEERING, PHYSICS AND MATHEMATICS

The Douglas Aircraft Company

INVITES YOU TO
ON CAMPUS INTERVIEWS

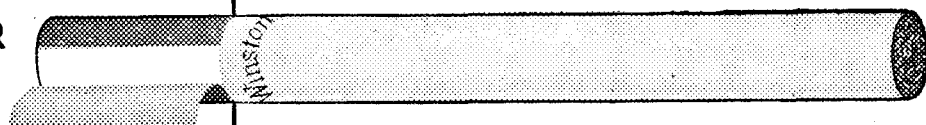
JANUARY 28, 29, 30

Find out about the interesting positions, assistance in furthering your education and outstanding promotion opportunities with the world's leading manufacturer of aircraft and missiles. Get facts on living conditions, research facilities and opportunities to advance professionally at Douglas facilities located in California, Florida, Oklahoma, North Carolina and New Mexico.

Reserve your career decision until you have talked with the Douglas representative. It may be the most important interview of your life.

SEE YOUR DIRECTOR OF PLACEMENT
FOR YOUR INTERVIEW APPOINTMENT

A PURE WHITE MODERN FILTER
IS ONLY THE BEGINNING OF A **WINSTON**



It's what's up front that counts



Winston puts its

FILTER-BLEND

up front...fine, flavorful tobaccos, specially processed for filter smoking



R. J. REYNOLDS
TOBACCO CO.
WINSTON-SALEM, N. C.

**WINSTON TASTES
GOOD** LIKE A CIGARETTE SHOULD!