

Throop Beat

Frosh to be Reoriented

by millikan troll

Planners of the Freshman Education Workshop expect a good turn-out this Saturday. According to its sponsors, it is both "a continuation of the orientation process" and an opportunity "to air questions and puzzlements."

The morning session will be devoted to what freshmen think about what the past seven months of being Techers had done to them. They will meet in small groups, each led by a freshman, with upperclassmen and faculty ready with advice (the current jargon for such is "resource people").

Major Minor

The afternoon will offer freshmen information on the Options available to them, including Independent Studies and exchanges. Although freshmen must specify an option their third term, Dr. Bonner reminds them that choices of option are not "forever and always" decisions; you can change your mind latter without the forces of darkness being unleashed.

In any event, the Y and the Student Affairs people have put a lot of work into making this happen. Good luck!

Top of the Week

The Dean's fund has been exhausted, so no ticket refunds will be available for the rest of the academic year. Anyone with ideas for uses for the Dean's fund should bring them to Dr. Huttenback. This last year, the Dean's fund has supported ticket rebates, the speed reading class, and partial financing for faculty members who invite students to their homes for dinners.

AM 95 may soon become AMA 95. ... The Genial Dean may appear on the Olive Walk soon. ... Plots are afoot to extend the exchange program to include Scripps on the same basis as Oxy. We'll relay details as they become available.

New Grading?

The Academic Policies Committee presented a new version of Pass-Fail grading for freshmen to the Faculty Board Monday which included such features as adding the grad of "H" ("Honors"). The grade would be given for students who do extra or outstanding work in a course, but, as in the current scheme, would not be reflected in any sort of grade-point average.

The APC also recommended making F's "erasable;" that is, subsequently passing a course failed would erase the F. This would not go as far as a Credit-No Credit plan since F's not made up would apparently remain on the record, whereas under Credit-No Credit, no indication of failing a course is recorded at all.

The APC called for a faculty discussion meeting on the whole matter of grade systems before the faculty votes on the plan.

The Statistics

The APC report included a statistical study of attrition rates, mean GPA's, and GRE scores both before and after the adoption of Pass-Fail grades. No significant difference could be found on any of those indicators under grades or Pass-Fail. However, the Institute psychologists indicated that they feel that freshmen have suffered from fewer academically-based psychological problems since the institution of Pass-Fail.

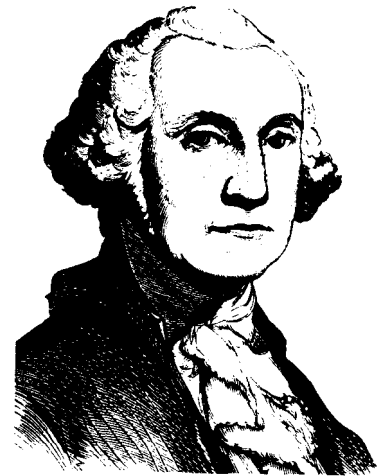
So They Tell Me

A new version of the Humanities requirement has been proposed which, although still requiring a total of 108 units, would require 54 of those units to be in "humanistic subjects" such as English and history, with 27 units in English in particular. The old business with English 1 and English 7 would be ended. ... Would you believe a petition for granting a BS without a major? ...

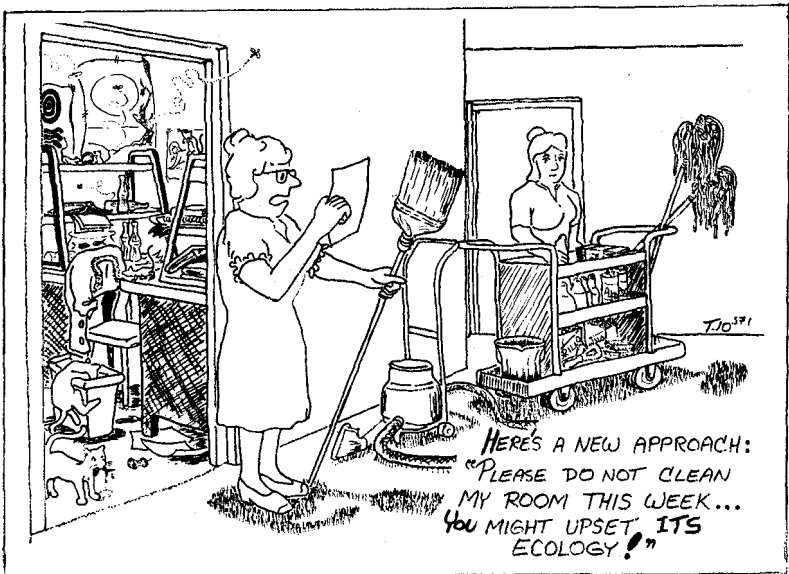
Watch for an Arden House beer and pizza bash around the 28th (the date is not certain yet). ... The Dean's office noted that an unusual number of academic problems for the middle term occurred in the middle of last term. ... Watch for announcements concerning new computers for Booth in about two weeks.

Etaoin Shrdlu Winner

This week's winner of the Etaoin Shrdlu Award for Wedgeheadedness Above and Beyond the Call of Duty is the intrepid Business Manager of the California Tech, for doubling the length of this issue without notice last Tuesday evening. Wear it in good health, Marv.



Artist's Conception of Mr. Millikan Troll



The Caltech Forum

Justice—American Style

by Ira Moskate

Monday, two verdicts were handed down, marking perhaps a centimeter-stone in the development of awareness and justice in dealing with the criminal manifestations of our society. On the same day, Charles Manson and three female followers were sentenced to die, and a small cog in the military hierarchy, Lt. William Calley, was declared guilty in the massacre of a small Vietnamese village.

Each of these cases exemplifies an increase in social awareness as well as the frightening inability of our leaders to address themselves to the problem of criminal causes and the reaction of society to criminal acts. Manson and his Clan have been sentenced to death; it is highly likely that Calley will be subject to the same fate. By eliminating the performers in the nightmare, it is hoped that the dream will not recur.

The trouble is, however, that it isn't a dream. The Manson clan, it is true, is a social extreme; and there will always be social extremes. Why does a Manson clan develop: Charles Manson is an ex-convict, and certainly no hippie. Somehow, and even the long trial failed to show how, Manson managed to draw into his group several young women and several transient musicians and students. When we shudder at Manson, should we not shudder at ourselves for not understanding why our society produced the defects we lament?

One of the network news commentators remarked that if the Manson clan were permitted to live, they might be used as subjects in the study of social mental disorder. Perhaps we could learn something. The Manson trial threw at us, as did the Eichmann trial, the mental contortions a human being is capable of performing. The death penalty, however, is one of the contortions we should have observed.

The trial of Lt. William Calley is said not to be the American equivalent of the trial of Eichmann. It is said not to be the trial of a war criminal, but of a murderer. Six men have decided that Calley killed

or was responsible for the death of 102 persons, not involved in combat. It is my recollection that Calley did not deny this fact, but that his superiors even tried to cover up the facts after the indictment. It is hence true that the trial of William Calley is not an analogue of the trial of a war criminal; but the truth is that the murders of the villagers is set apart from the act of continuous murder that involves all of the participants of the war.

No one, not even Lt. Calley, knows now what happened in that village. Removed from the military, Calley probably wouldn't be moved to commit murder. Perhaps this should be the question: Are not the superior officers, knowing that such things might happen, just as guilty as those that have committed the act?

The often stated principle that capital punishment is in itself a murder is true. It is the opinion of this author that the trial of a man is a public thing, and, as such, fulfills an educational purpose. As a trial of law, it also furnishes us with a reasonably fair means of testing the suitability of an offender for life in not for life itself. A penal institution serves two purposes: to remove from society those who have proven themselves dangerous to society by criminal acts which might be repeated; and to prepare and reform a criminal for a life compatible with the society in which he lives.

Death, of course, is a permanent means of removing an individual from society. It also removes the threat of a criminal's similarity to social beings from that same society. We are implementing the very means by which we accuse, to remove the threat of self-accusation.

The legal system we believe in bases its judgments upon the standards of procedural law which we have set up. We cannot decry the proper implementation of those proceedings. Both the Manson and Calley trials appear to be proper implementations of the jury system and trial by advocacy. Our procedural laws are wrong. Manson has been found guilty of murder and it



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100 RIFLES April 23
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TOM JONES May 7
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FAMES & WAIT UNTIL DARK May 21
2001: A SPACE ODYSSEY May 28
THE TRAIN June 4

My poor baby boy!

House Extends Draft, Screws Frosh

by Mark Peterson

On April 1, the House of Representatives overwhelmingly voted to extend the draft law for another two years. The House also voted to change the draft by abolishing student deferments, lengthening the term of alternative service for conscientious objectors and modifying the lottery system. The extension and changes in the draft are extremely important and will be discussed in the next several articles.

Some people are surprised that the House would extend the draft, almost without debate, since the draft is uniformly unpopular. Furthermore, draft resistance has made the draft virtually unworkable in large urban areas. For the entire country only one of two men ordered for induction ends up being inducted. In California, the site of the greatest opposition to the draft, three of four men ordered for induction either avoid or refuse to be inducted. Even with attempts to close draft loopholes, draft counselors and lawyers can assure almost every man that he can avoid the draft.

Despite these problems, the Senate and President will extend the draft law and almost certainly accept the House changes in the law. The draft will be extended because there is nothing to replace it. The military and foreign policy of the United States require that several hundred thousand men enter the military every year to maintain bases and United States influence around the world. Although many congressmen oppose the Viet Nam war, few question foreign and military policy to such an extent that they would cut off the supply of draftees necessary for such policies. They want to end the Viet Nam war, not the military.

The draft must continue because the military cannot get the hundreds of thousands of men it needs through volunteers. Despite military pay raises, a new armed forces public relations image and a ten million dollar advertising campaign to promote enlistment, government and military leaders know that they will still not get enough volunteers. Furthermore, selective service and military leaders admit that the draft must continue while the Viet Nam

war continues. Thus, the Nixon administration promises a volunteer army when the Viet Nam war is ended. The earliest date projected for a volunteer army is in 1973, after the next presidential election. That way Nixon cannot be accused in the election of failing to meet his promise of ending the draft.

Frosh, Things are Looking Down

The House not only extended the draft, but also abolished student deferments and lengthened the term of alternative service for conscientious objectors. Those changes are tied in with the new lottery system. Under that system, if your number is reached, you are supposed to be drafted. If your number is not reached, you are safe. In order to assure that those men whose numbers are reached are drafted, Nixon and Congress are trying to end all loopholes, such as deferments. The administration has abolished fatherhood deferments, and occupational deferments and intends to abolish student deferments. The only deferments which will still be available for most men will be conscientious objection and physical and hardship deferments.

Despite the House action, some men will continue to keep student deferments. The House did not abolish student deferments but rather gave President Nixon the power to abolish those deferments as he wishes. On April 23, 1970, Nixon requested Congress to give him such power to abolish student deferments for all men who were not in college before that date. In January of this year, Nixon again announced that if he were given the power by Congress, only men who were in college before April 23,

1970 could continue to hold student deferments in the future. Thus, if Nixon is to be believed, men who were in college before that date will continue to get 2-S deferments. However, if you are now a first year student you will not be able to get a student deferment next year even if you have a 2-S now. Similarly, men who enter college next year will never be able to get a student deferment.

As a result of the House's changes in the draft law, this year's freshmen and men entering college next year must start planning now to avoid the draft. If you start early enough almost anyone can avoid the draft. If you wait, however, you may find that you have no way of avoiding the draft when your student deferment is taken away.

The next article will discuss the other significant changes in the draft contained in the bill enacted by the House of Representatives. If you have any questions that you would like discussed by a draft lawyer in this paper write to:

Mark A. Peterson
1627 West Washington Blvd.
Venice, California 90291

W. Hasaiah Williams Talks to Techers On Educational Issues

by Alex Seita

This past Monday night, the prominent educational reformer W. Hasaiah Williams talked about "What do we want from Education" before students of PL 104 (Educational Issues) and citizens of Pasadena. As President of the Berkeley school board, Dr. Williams engineered voluntary integration in its school system and initiated needed programs. Presently a member of the Berkeley Board of Education, Williams also heads the Graduate Theological Union for Urban Black Studies in Berkeley. Sponsored by the Humanities Division and the Caltech Y, Dr. Williams was the first of several speakers who will speak on educational issues and reforms.

With his slightly flashy clothes and broad smile, Hasaiah Williams impresses an audience favorably. A good speaker with dramatic gestures, he strikes people as being an intelligent man committed to the goal of better education. Williams relates his experiences as a school board member in a sonorous voice which discusses faults (especially racism) and their remedies in public education.

Continued on Page Eight

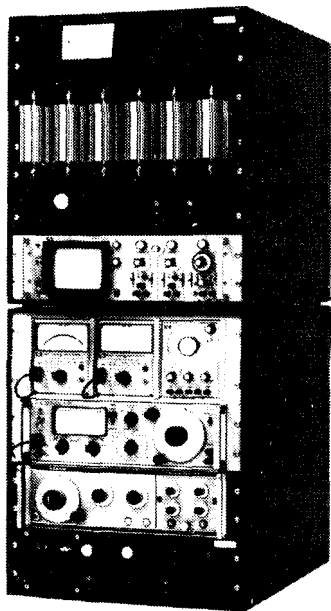
News Briefs

Continued from Page One
student houses and in Louise Hood's office in Winnett. If you want to get a copy when the issue comes out, sign up before tomorrow. The magazines will be free to ASCIT members, but signing the sheets is still necessary so that the correct quantity of the things are printed.

Anybody who wishes to submit material (poems, short stories, draw-

ings, photos, and whatever else) should direct items to Philip Massey at Ruddock House or leave them in the Tech office. Material will be accepted at any time, but it will not get in the first issue unless submitted before this Saturday.

There will also be one more meeting of all those person interested on the selection of material and production, to be held tonight in the Tech office at 7:30.



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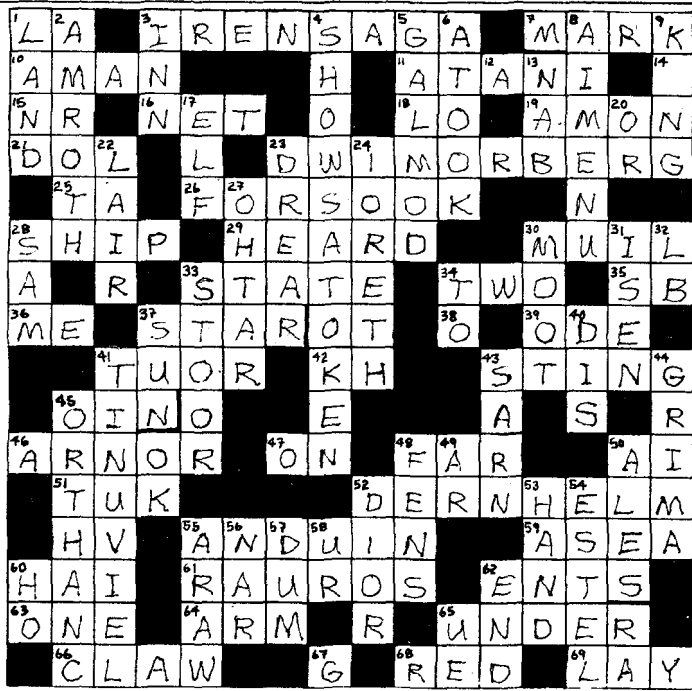
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13. Seeing Stone
14. Father of Beren
15. Minas —, City of Gondor.
16. Site of Meduseld, Halls of the Kings of Rohan.
17. — of Dead Faces, through which Frodo passed.
18. Rapids of — Gebir, or Andvin.
19. The Lady of Rivendell.
20. Sindarin for 'north'
21. —
22. Sindarin for 'north' as in —-waith.
23. "Legolas Greenleaf long under —
In joy thou hast lived. Beware the
Sea!"-Galadriel.
24. Si man — yulma nin enquantuva?"
-Elvish song.
25. " — os fpr Saruman, I guess,"
" — is for Saruman, I guess," "
-Aragorn.
26. " — i-Estel Edain"-Gilraen.
27. The White Tree of Gondor was of
this line.
28. —
29. A Ringbearer (Init.).
30. Term for Eldar's solar year.
31. "O! Tra- —-lally/ Come
back Valley." -Elvish song. (3 uses
of word)
32. The Nine Riders (Init.).
33. Quenya for 'gift' also a letter.
34. The Age of "the fading years of the
Eldar." (Abbr.).
35. Evensstar of the people.
36. Minas Ithil: Tower of the (Rising)
—
37. Numenorean royal prefix.
38. "...you look almost as one of our
children, — of nine summers
or so." -Beregond, to Pippin.
39. "Here is Aragorn...Shall he be King?"
"And ... all the people cried —
with one voice."
40. "Sauron asks this ... that you get from
from (Bilbo), willing or no, a little
ring, the least of rings, that he
—." -"Messenger of Sauron to
Dain.

49. The Gaffer.
51. Riders of _____. (Init.).
52. Red _____, sign of Gondor's need.
(Init.).
53. The _____ of Orthorc, cast down by
Wormtongue.
54. Where Bilbo was when the Eagles
rescued him. (4 words).
59. Radagust the _____, wizard. (Init.).
60. Branda_____, 'borderwater', older
Hobbit name for the Brandywine.
61. What Bilbo didn't want but ended
up having anyway.
67. One of the spiders' weapons against
Bilbo and the dwarves.
69. "If I was after the Ring I could
have it - _____!"-Aragorn to
Frodo, in Bree.
71. Aragorn.
72. "at the Stone of Erech (the oath-
breakers) shall stand again and
_____ there a horn in the hills
ringing."-words of Maibeth the
seer.
74. 'A knife in the Dark.'
75. "Your father loves you, Faramir, and
will remember it _____ the end."
- Gandalf.
76. Nocturnal forest bird.
78. "All things will _____ with joy there,
if the White Lady comes."-Faramir.
80. The Paths of the _____. (Init.).
81. The Elves. (Init.).
82. White Mountains. (init.).
83. "It was the morning of the fifteenth
of March... Theoden lay _____
on the Pelennor Fields.
84. Mother of Luthien.
87. "_____chebin estel anim" '- Gilraen.
88. _____ for the Dark Lord on his dark
throne."
89. "Inside it was filled with a grey dust
... in the middle of which was a
_____." (Samwise's box).
90. Dwarf-silver.

1. 'The Shadow of the Past.'
2. The land of —, in Gondor.
3. "Learn now the — of living creatures" —Fangorn.
4. The hills of Eryn —, in Ithilien, within sight of the city.
5. Bilbo's afternoon custom.
6. — Celebrindil, mother of Earindil the Mariner.
7. Bagshot —.
8. The Numinoreans broke the — of the Valar.
9. "... for mine is the choice of Luthien, and — she so have I chosen, both the sweet and the bitter." —Arwen.
10. Weathertop: — Sul.
11. "— is Gandalf! And none too soon it seems." —Gandalf.
12. "Together they wrested a silaril from the — Crown of Morgoth."
13. The — Book of Westmarch, the Hobbits' book of history and lore.
16. "I am wounded with knife, sting and tooth and a long burden. Where shall I find —?" —Frodo.
20. Seat of the King of Arnor.
26. Where the Elder King reigns.
27. "An Elven — there was of old
A shining star by day." —Legolas.
28. "I thought (Strider) was — a
Ranger." —Frodo.

29. The Doorward of Theoden.
30. "When pools are black and trees are bare/ 'tis evil in the Wild to _____." —Bilbo.
31. "The fairest maiden that has ever been among all the children of this world."
32. Nenia, the Ring of _____.
33. "Go back to the Land of Mordor, and follow me _____ more." —Frodo.
34. Quenya for mouth, and a letter.
35. "Here Follows a Part of the _____ of Aragorn and Arwin."
36. _____ and _____ Sackville-Baggins, annoyed with Bilbo. (Init.)
37. Taur _____ —Ndaedelos, 'forest of the great fear.'
38. 'Mountains.'
39. '_____ the Doorstep.'
40. '_____ Unexpected Party.'
41. "There _____ last. . . she laid herself to rest upon Cerin Amroth; and there is her green grave."
42. The home of the hobbits. (Init.)
43. The "mastering desire" that brought Gollum to Henneth Annun.
44. _____ Echor. (Init.)
45. "Our bread chokes you, and _____ coney chokes me." —Sam.
46. Lake _____, at Norbury of the Kings.
47. "they told us the tale of _____ One-Hand and the Great Jewel." —Sam.
48. Ashen Mountains. (Init.)
49. _____ of _____, (Init.), the Sword That Was Broken and its owner.
50. Quenya double consonant _____ as at end of title page.
51. "Magic rings are well, magical; and they are _____ and curious." —Gandalf.
52. The White Lady of Rohan.
53. The only companion of Thor to Maria.
54. The huntsman of the Valar, who often came to Middle-Earth.
55. A subject of one of Bilbo's riddles.
56. _____ Bane. (Init.)
57. Old _____ Proudfoot, the hobbit.
58. "long ago, while Sauron slept, (the ring) was rolled down the River to the Sea. There let it _____ until the End." —Sauron.
59. "If these two _____ now, hope may be born for our people." —Ivorwen.
60. Tree-herder.
61. _____ Homely House. (Init.)
62. "_____!" wailed Legolas. 'A Balrog! A Balrog is come!'" (same word.)
63. The last of the Feanorian letters.
64. _____ Deep. (Init.)
65. The _____ —men of Esgaroth. (Init.)



64. I, 377.
65. II, 136.
66. II, 237.
69. III, 119; I, 440-442.

4. See I, 323.
5. II, 151.
6. I, 408.
8. III, 513.
13. Hobbit, 69.
20. I, 520.
24. III, 172.
27. III, 456.
31. III, 465, 466.
32. III, 497.
33. III, 509, 510.
40. III, 449.
43. I, 234.
49. III, 392.
53. II, 202, 205.
54. III, 420, 426.
55. III, 395.
56. III, 441-442.
57. I, 198.
58. III, 491.
60. I, 186, 196.
62. III, 374.

1. Last Alliance (L.A.)
10. III, 47.
11. III, 388.
14. III, 46.
15. New Row (N.R.). III, 373-4.
16. II, 421.
18. III, 423.
25. Third Age (T.A.)
26. III, 427.
28. II, 58.
29. I, 323.
35. Sackville-Baggins (S.-B.)
36. See the posters—Come to Middle-Earth (M.E.)
38. I, 312.
50. I, 489.
51. I, 516.
52. III, 91, 93.
62. II, 244.

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Flems Win Big in Interhouse Bridge

by Charles Johnson

The Fleming House team of Bill Delaney, Loring Craymer, Dave Dobrin and Charles Johnson qualified first among seven teams vying for the interhouse bridge trophy. In the qualifying matches Sunday afternoon Fleming won all six of its contests amassing a total of 90 Victory Points.

Qualifying second with 67 Victory Points was the Dabney House team of Joel Friedman, Jack Stuart, Mike Hutchinson and Scott Cardell. In the final qualifying match the Fleming team playing with alternates Andy Chow and Don Rasmusen defeated Friedman's Dabney team 15 Victory Points to 5.

The third qualifier was Page's defending champs with 65 Victory Points and fourth was the Blacker House team captained by Bardi Jonsson with 63 Victory Points.

Thus, Fleming will meet Blacker in one 28 board semifinal match to be scheduled while Dabney Dabney met Page in the other semifinal Wednesday night at 7:30 in Club Room 1. The winners of these two matches will meet in a 32 board final to determine this year's interhouse champion.



Final Encounter

Terry Riley to give Concert



by E. Gansner

The "whys" and "hows" of spaced-out music, undefinable in terms of the classical or rock genres, will be presented to the Caltech community April 18 in the form of Terry Riley. As the final program in this year's Encounters series, Riley will present a solo concert of his music at 8 in Beckman Auditorium.

Tentatively, Riley will perform selections from "A Rainbow in Curved Air," "Poppy Nogood and the Phantom Band," and his "Keyboard Studies," as well as some new works especially prepared for this concert. However, Riley is known for his long (sometimes all night) concerts, in which he becomes so involved in his music and

its infinite variations that he just plays on and on, heedless of audience. In the usual Encounters format, the concert will be preceeded by Riley discussing his works.

Theoretically opposed to the constantly moving music of Reynolds and Carter, Riley's works tend to be incredibly static and simple. Aleatory in nature, his pieces are based on a few small bits of thematic material, which, through jazz improvisation, tape delay and/or sheer chance, form a unified musical structure, which may last for hours. In effect, the music plays itself.

Two of his best-known works are "In C" and "A Rainbow in Curved Air." Both exemplify his style. "In C" is meant for a group of any size composed of any types of instruments. Using 53 short motifs, each player moves through them in order. However, each player has the option of repeating a motif as much as he wants before moving on to the next, or he can rest whenever he wants. If the performers are good, they will react to each, improvising in time, when the music best calls for it.

A solo piece, "Rainbow," udrd electric organ, electric harpsichord, dumbec, and tambourine. The piece seems to flow on and on, but never go anywhere. It was probably best described as "Your own private babbling brook."

Riley was born in Calfax, California in 1935. He developed much of his technique playing ragtime piano in saloons in San Francisco. After earning an M.A. degree in composition from Berkeley, he went to Europe, continuing his cimposing and winning an assortment of awards. Through extensive travel and study, he claims a background in ragtime, jazz, pop, Country-and-Western, classical, electronic, African and East Indian music.

Caltech students can obtain tickets to this concert from \$1 from the Beckman Office.

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For

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10. What are the reasons young people take drugs?

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PME Zots Globe

Continued from Page One

customary masterful fasion, aided by firm, indeed too firm, US support. Third place goes to the Chinese under Henri Farhi. Alone of the great powers, this group made no serious errors. With Britain's partial withdrawal from their "protected" Persian Gulf States (leaving enough force to be economically and politically untenable without being militarily viable), neither the French, the Americans, nor the Soviets made any serious attempt to establish themselves in its stead, preferring to play at higher risks for smaller stakes. The Chinese did, though—in American troop transports intended (by the donors) for use against the Soviets. Indeed, those transports were cleverly mined to self-destruct if directed elsewhere than at the USSR, but failed to blow until 100,000 Chinese troops got to Saudi Arabia (via Afghanistan and Iran) through equipment malfunction.

The campaign for worst play was equally intense. The Italians, after doing nothing about a state of civil disorder, did less still about a coup attempt—not even removing the mutinous officers and were rewarded by a second attempt, successful this time. The Jordanians, peaceful while their Arab neighbors attacked Israel, leaped to the fray as soon as cease-fire had been declared. The West Germans asked for "US support" if they attacked East Germany when Berlin was sealed off, but meant an all-out nuclear attack, which they didn't get. Luckily for them, Dennis Heimbigner of Control Board figured out their problem and cancelled their attack order, twice.

The Soviet's biggest boo-boo was their intervention at Suez. Actually, their intentions were peaceful; they did mean to ask Israel's permission to occupy both sides of the Canal (they never did consult Egypt). Their correspondence, however, was ambiguous (I read it twice myself: Israel's claim that they hadn't been asked is equally true). The furious US reaction nearly caused a nuclear war right then.

It will be observed at this point that nearly everything that went wrong arose from military adventurism, that nearly everything that went right was non-military or peripherally military, and that war is ultimately a loser's game. It is hoped that this will be recalled at next year's exercise, if there is one, and, if I may be permitted to add, beyond.

Big Loser

And now, the moment you've all been waiting for: the award for the worst team play of 1971. And the winner, by the greatest margin in the histroy of the gmae, is the USA team under Bruce Johnson. The play of this team was characterized throughout by brinkmanship. Three times before the final catastrophe, the US team nearly went over that brink. That is more than poor play. That is downright stupidity.

The Big Bang

The game's end, for those who do not know, came to pass in this wise: as the US elections approached, and Nixon's popularity sank, Vietnam had not ceased to exist. Nixon pulled troops out rapidly in the hope that the Saigon regime would not fall until after the elections. It did. Bruce Johnson (Nixon) then ordered a tactical nuclear strike on North Vietnam.

This, incidentally, was the most questionable message we passed in the game. In 1954, when the French were losing at Dienbienphu, then Vice President Richard Nixon urged most strongly use of American nuclear weapons. Many people feel he has matured since then; others think it more a question of sanity than maturity. But there was a reasonable doubt (which frankly scares me) and reasonable doubt goes to the player. We passed the order.

The Soviets and Chinese jointly responded with a demand for (1) immediate (and rather cheap) reparitions and (2) withdrawal from the base from which the bomber had come. The US did not reply within the allotted time. The Soviets then bombed Guam. The Americans got their "go code" in just before the



The Polacks Are Coming! The Polacks Are Coming!

—Photo by O'Neil

game was to have ended anyway, a had their .oss?es om tje aor at The matter of seconds, but both sides End.

Levin on Systems

Continued from Page One

man-power, noise levels, polution levels, loss of personal freedom, etc. The lists can be and are endless. (The model for one oil company involved 2,000,000 variables and 35,000 constraints !)

To solve these very complicated systems, much data is needed. Supplying the coefficients in the maximization equations proves to be one of the biggest headaches. Many people also thought that "if we have the model in hand, certainly any decent organization will have the data in hand." They couldn't have been further from the truth. For example, people involved in marketing couldn't begin to determine the cost of holding inventory, because this depends on the firm's overall financial policies for liquid assets, what it would do

with the money if it wasn't in the inventory, but it was usually the marketing people who posed the inventory problems.

The enthusiasm of the fifties made system analysts expect that once they had solved the system people would welcome the solution with open arms and that implementation would be instantaneous. False! The 1960's practitioner of systems analysis has a much different view of implementaion: he knows it is just as hard as any other steep.

Once this was done, all we had to do was find a new problem.

Where Did We Go Wrong?

All this is wonderful and no one can argue against it. Wrong again. Critics have rightly hit the quantification of goals outside the private and defense sectors. It is perhaps possible to quantify total profits or

the kill-factor, but what are you trying to maximize when you design a library? (The number of books that aren't stolen?) We just don't understand some of the things we are trying to design.

Systems engineers also tend to think that they are serving managers since managers are paying for their work. But these aren't the real clients, or more than a tiny fraction of them, in most cases. For whom do you design the hospital, the administrators or the patients? "We are solving precisely the wrong prblem," Dr. Churchman comments, and states that we will continue to do so until we understand the precise nature of the client.

Another difficulty encountered is the conflict between the individual and his values and the society and its values. There are ways that many companies could save millions of dollars, but it would entail the firing of hundreds of employees.

One problem that is becoming worse rather than better with time is the pervasiveness of problems: we're having trouble homing in on one sector at a time. In the "good old days" a school was divided into three parts: administration, faculty, and students. Each had its own decision-making responsibility. However, lately, students and faculty have seen their roles somewhat differently. It is the same with health. The "protein crisis" in undernourished countries is not really a health problem but rather one of education. Systems are not easily separable.

Perhaps too late people are beginning to realize that systems analysis needs a new philosophy, one of learning rather than one of business. Someone needs to apply the systems approach to the systems approach. We must recognize that we may have used the wron g model, a different representation of reality. But what we need most is the learning process, "but I don't know what that process means, and any attempt to clarify that issue tonight would be ridiculous." Dr. Churchman concluded.

Next week Professor Ronald A. Howard from Stanford will speak on "Decision Analysis in Systems Engineering."

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Williams Speaks

Continued from Page Three

ucation.

Beginning with blacks in public schools, Williams deplores America's reluctance to clearly define its integration policy, and then, he relates how the black response to promote integration and to control school boards has improved the quality of public education.

To Williams, America apparently believes that integration indicates a lowering of standards. Statistics regarding integration mean little in some areas where blacks and whites attend the same school but were segregated in terms of gym facilities, classes, shops, and clubs, where black students are taught that they are culturally deprived. "No," states Williams, "blacks aren't asking to take something away; in integration we're here to share our experiences. We have a culture," emphasizes Williams, "the feeling of the African heart as opposed to the Western cognitive mind; my emotionality is just as legitimate an avenue to truth as rationality." "Go to a black church," he states, "and you'll see that the rhythm in the singing and pauses conveys messages of deep meaning whether the words uttered are many or one."

Integration to Williams is not the static mixture of numbers but an exposure of blacks to whites designed to show both that a spectrum of blacks and whites exist, not just stereotypes. In Berkeley where Dr. Williams has succeeded in engineering voluntary integration,



benefits to whites and blacks have appeared. The black drive for integration, hiring of black teachers, and questioning of school boards and their policies and budgets has made whites realize the necessity of public supervision of public organs—"school boards must make their decisions known and their meetings open to the public; this way, people decide what's going to happen to their schools."

"In Berkeley," says Williams, "we've made sure that students understand that integration in schools is a serious effort; every business that deals with the school has to have minority representation in their employees, in absolute numbers and in the hierarchy." "We've been combating institutional racism by getting a responsible, representative [of races] school

board, but cultural and personal racism have been harder to eliminate."

"Cultural racism (mythology of black inferiority) has prevented the hiring of black principals while personal racism exhibits itself in the teacher who automatically assumes the inferiority of black students," states Williams. But William notes that Berkeley is now beginning to hire more black teachers, and that concepts such as the Black House (for black kids sensitive to racism), credit/non-credit grading, along with new researching methods and greater teacher (white) education about blacks have helped to abate cultural and personal racism.

Whites, too, have benefited from the black drive for better education in Berkeley: the non-punitive grad-

ing system (credit/non-credit), the program *Other Ways* for drug addicts, runaways, and mixed-up kids, and Dr. Williams' insistence that "the 1st Amendment [right of assembly, speech, press, and religion] doesn't stop when the kids come to school."

Throughout his talk, Dr. Williams was forceful in questioning present attitudes concerning the educational system. Schools, like Caltech, should commit a large budget to excite blacks and other minority students in junior high school. The awarding of degrees and accreditation should include the measurement of innovative research methods, a school's effort in promoting integration and its realization that scholars are valuable whether they have degrees or not.

By talking about black consciousness, Williams introduced black pride and culture. In admonishing two black teachers for their inactivity in changing Caltech, he demonstrated his hope that black students would awaken to their responsibility. Then, by correcting a white's use of the term Uncle Tom (words to be used only by blacks), he projected his strong identification as a black.

I saw Dr. Williams as a man hopeful that teachers, facilities and teaching techniques will improve in America, and determined to see that students, blacks in particular, would find school to be an enjoyable learning experience.

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