



Engineering Days



May, 1970

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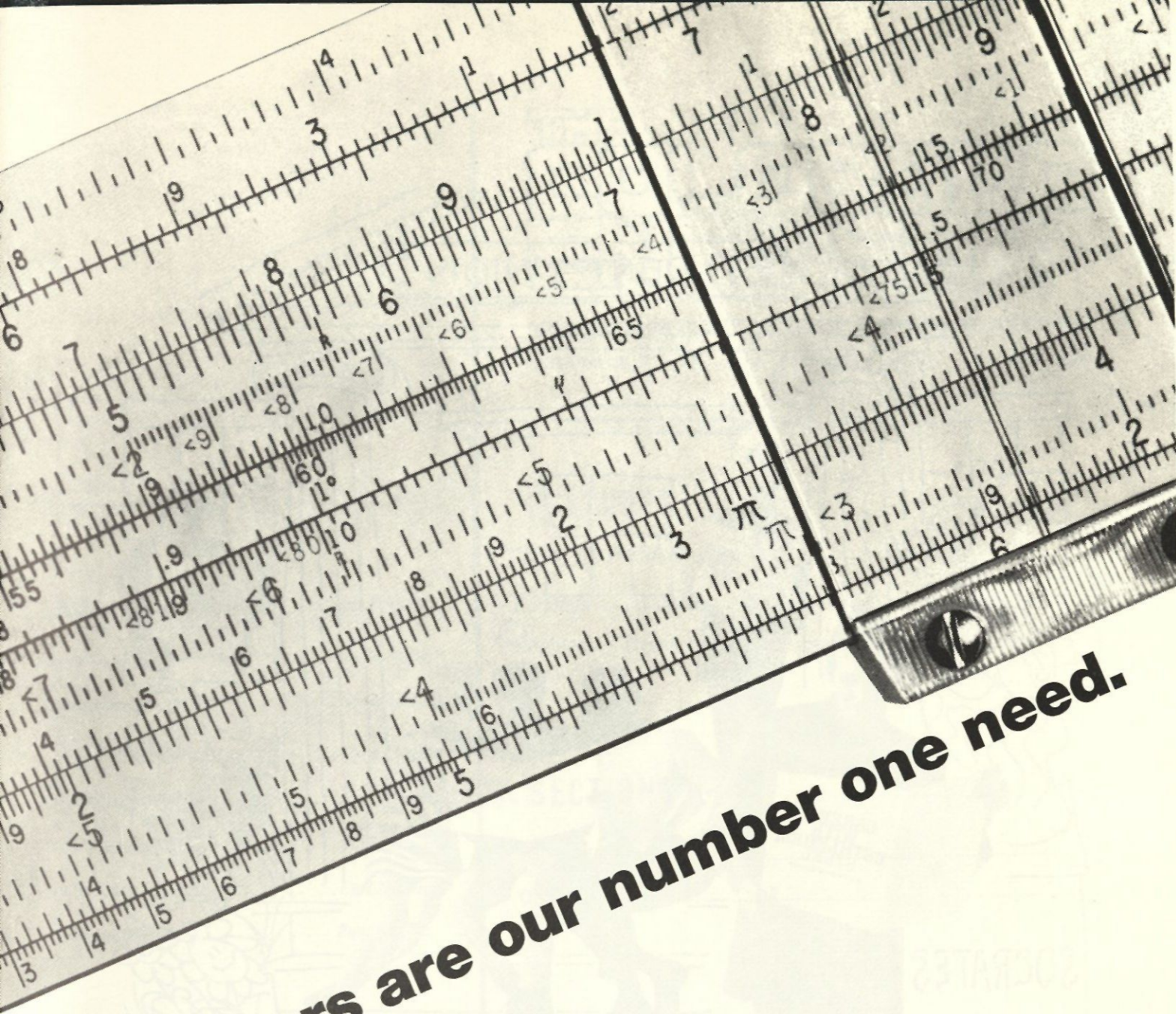
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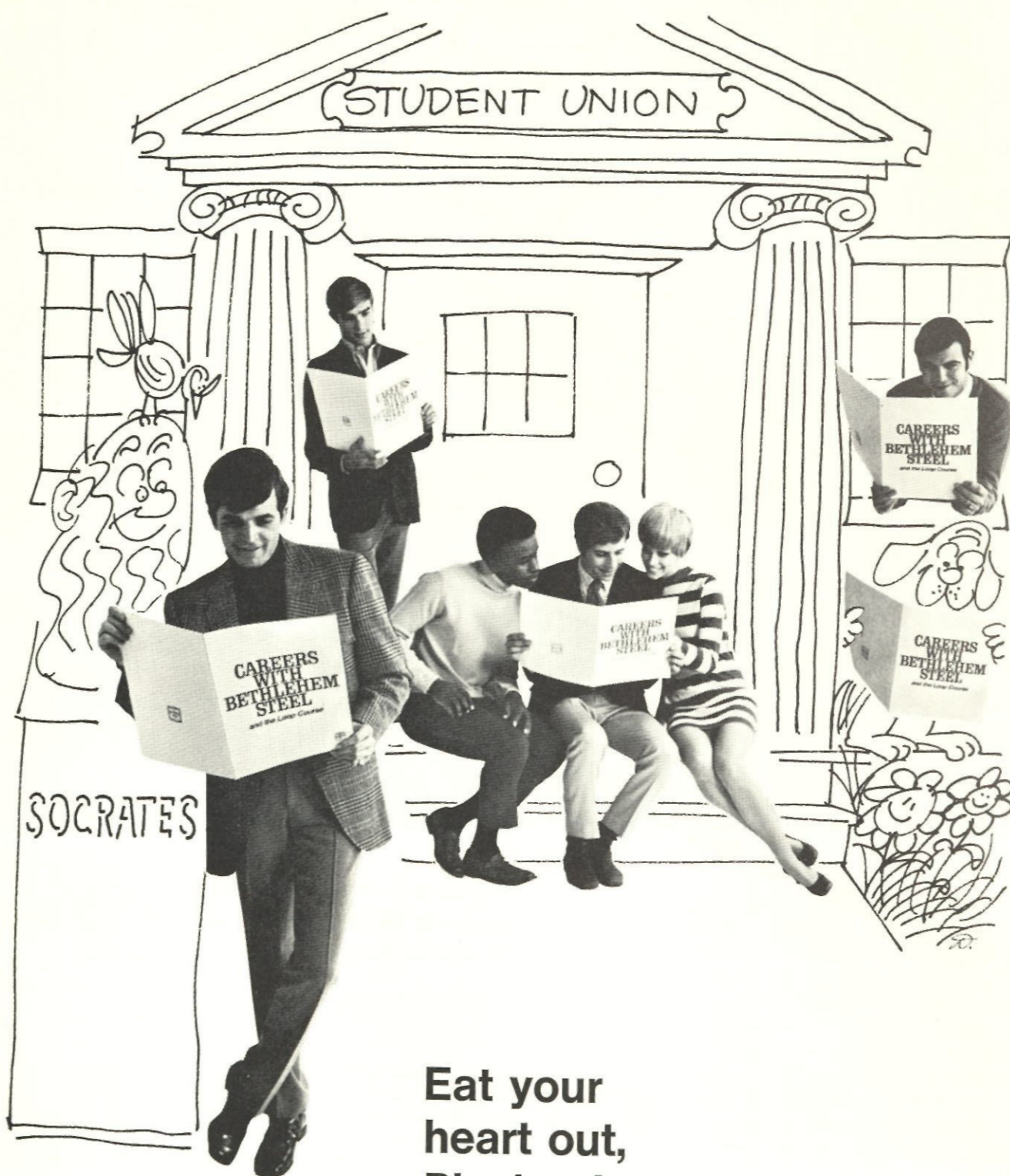
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THE COLORADO ENGINEER

COLLEGE OF ENGINEERING • UNIVERSITY OF COLORADO

VOLUME SIXTY-SIX • NUMBER 4 • MAY 1970

IN THIS ISSUE

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FEATURES

"Naw, We Had A Physics Test"	4
E - Days	10
Engineers - Throw Away Your Earth Day Buttons.....	14

SECTIONS

Table of Contents	3
Chips.....	16

COVER

Photographs of E-Days 1970 by Martain Barber

MEMBER OF ENGINEERING COLLEGE MAGAZINES ASSOCIATED

The Colorado Engineer is published by the students of the University of Colorado College of Engineering and does not necessarily reflect the opinions of the faculty and administration. No part of this magazine may be reproduced without the express written consent of the editor.

Entered as second-class matter March 9, 1916, at the Post Office at Boulder, Colorado, under the Act of March 3, 1879.

General Offices: Engineering Center, OT 1-7, University of Colorado, Boulder, Colorado 80302.

Published four times per academic year in November, January, March and May.
Subscriptions: Controlled free distribution to undergraduate students in the College of Engineering; otherwise, \$2.00 per year, \$5.00 for three years.
Circulation: 2,200.
Publisher's Representative — Littell-Murray-Barnhill, Inc., 369 Lexington Avenue, New York 17, N.Y., and 737 North Michigan Avenue, Chicago 11, Illinois.

“Now, We Had

By David Kimball

Two love birds are sitting in a cage. One opens its nagging hooked beak and says unlovingly to the other, “We’re through, do you hear? Through! Washed up! Kaput!” It’s a cartoon in *The New Yorker* magazine. And the resident of New York reads it, laughs with bronchial irony and . . . turns the page.

Well, let one love bird equal Science, the other the Humanities, and the cage the world. You may laugh at this allegorical equation, with its burden of meaning imposed on a mere joke. But in an age when it’s rather difficult for a man to find something to take seriously, laughter becomes a pretty serious (hysterical?) form of expression. It may seem that the seriousness of laughter is a rather strange topic for a man to whom nearly everything seems slightly ridiculous. But I have developed an interest in the dark laughter which has begun to express the engineering student’s awareness of what C.P. Snow would call the separate culture of the College of Engineering at the University of Colorado.

The concept of the evolution of the two cultures, science and the humanities, has become one of the great intellectual clichés of the age. But what interests me is the perpetuation of that cultural division while we all sit wringing our hands in academic despair. Perhaps that other great cliché about the weather might also apply, except that rather than to complain of a problem about which they do nothing, engineers chuckle at a problem about which they do nothing. It’s a laughter to take seriously.

When I began teaching humanities in the College of Engineering two years ago, I expected to find a humorless devotion to science, a devotion unchallenged by any sense of irony. But I was mistaken. Engineering students are now quite willing to laugh at themselves. They seem to have a

growing awareness of the faults of their educational process and of their profession. It’s an awareness clearly stated in the topics for the E-days discussions last year: *Engineering: a threat to society?* and *Computers: a threat to society?*

Many of the faults of the College of Engineering are obvious enough, although we are told that DU’s College of Engineering has a comparatively “liberal” program. In the rigorous curriculum of the College, there is very little time for anything but engineering, and seldom any choice of instructors on the underclass level. (To grant such a choice would result in the embarrassment of dull teachers through a deserved evacuation of their classes. And it would *make difficulties* for the administrator.) One can also see a degree of student non-involvement in the shaping of the curriculum which is hard to justify even in a field so refined that most of the technical curriculum must obviously be structured by the faculty.

I recently had an interview with the Dean which revealed this exclusion of the students from the making of even minor decisions. In this interview, I learned that when all of the students in a course (mine) do not want to meet on Saturday morning, when the instructor does not want to meet on Saturday morning, and when there are many rooms available to meet at a time other than Saturday morning, these are only the arguments of mere *convenience* for student and teacher. They are arguments dismissed by the unquestioned mandate of administrative authority, and by the curious necessity of conforming to the Class Schedule.

And what justifies the Puritan quantities of work required of the engineering student within his allotted four years at the College? I realize that one cannot talk of reducing the pressures on the engineering student without talking about reducing the pressures of American society as a whole. But

A Physics Test ''

the university should be an important source of such broad changes in the culture. Why not take five years to get a degree in engineering, to allow a growth of interest in painting, pottery, music, politics, environment, literature, fornication, parachuting? Why not? Simply answered. Take five years and the draft has got you. And if the draft doesn't get you, then it will be the sheer expense of higher education in a country where the student is expected to provide himself with a mysterious source of income while devoting himself to an exhausting course load. Our society assures an unharried, liberal education only to those students who are draft exempt and who have either rich parents or the kind of special talent that attracts those few scholarships offered to the *promising* student.

Even if the draft is somehow circumvented, even if you have rich parents or a scholarship, still there is that vague but forceful expectation, rising from its deep roots withing American culture: an expectation that we will economize our student days and finish up, start working, start being useful, start contributing to progress, and start earning a salary — that money carrot which is so often dangled obscenely before the bloodshot eyes of the engineering student. I don't question the value of earning a salary, and I am committed to social responsibility, but I doubt that society is really served by hastily squeezing the student through an education press which may produce clean, flattened, rigid and *useful* engineers.

The rigors of the engineering curriculum seem to crystallize the American conviction that anything worth getting, even education, must be gotten through Great Suffering. A good student, it seems, is a man capable of an iron-jawed discipline. Is the process of education to be equated with an heroic act of will? I doubt it, with the support of writers such as A.S. Neill in this century, and Montaigne in the Renaissance, who thus described the persuit of learning: *There is nothing more gay, more lusty, more sprightly, and I*

might say more frolicsome. Can this be said of the student's experience in the College of Engineering? It seems to me that education **can** be a labor of love which lacks none of the intensity but much of the drudgery of our present system.

But this is only to restate the familiar complaints about an educational system which channels a science student into an unnatural isolation from *the rest of us*. And perhaps the persistent strength of this division should not surprise us, for as recently as the 1930's, in what Lord Rutherford called *the heroic age of physics, science and progress* passed as apparent synonyms. But the College of Engineering must come to terms with the disenchantment with science in the years since Hiroshima, thalidomide, DDT and such well constructed ecological disasters as the Aswan dam. Science was once as sacred as motherhood, but we live in an age which is deeply suspicious of even motherhood. A member of a recent University panel discussion on environmental problems divided the world into the good people and the people who are *the friends of the engineers*. Yet the movement to introduce environmental courses into the curriculum seems much weaker in the College of Engineering than in the arts college.

In spite of this new interest in making science the instrument rather than the definition of progress, the engineering student remains isolated by the meagerly spiced technical porridge of his curriculum, and even by the geographical isolation of his College on the edge of the campus. In addition to the four semester English requirement, the engineering student takes only about twelve credits of non-technical electives in four years of study. And yet I began by saying that somehow engineering students feel a growing interest in their integration with the rest of the culture.

What, then, is their reaction to this continued isolation? I often ask the following question in my classes: *Did anyone go to the film last night (or the rock concert or the speech or*

the riot)? The answer: *Naw, we had a physics test, heh, heh.* Engineering students no longer plead overwork with a straight face. They are aware of what they are missing. The "heh, heh" which ends each explanation is serious laughter. Of course, it's directed partly at my chagrin as a frustrated missionary from the other side of the cage. But I think they are also laughing at themselves. Perhaps the jokes about the eccentricity of engineering students give them a sense of being *something* in a world where it's painfully difficult to find even the most questionable identity. But most important, they laugh because they see the irony of their enforced detachment from all that is not engineering. As one of my engineering students said in a recent essay, *we realize that this kind of life is paralyzed through its stationary isolation.*

Laughter is a source of heightened consciousness, a consciousness which can lead to the elimination of the unwanted comedy in our lives. And yet, for all the comic consciousness of the resident of New York, for all his awareness of the absurdity of the urban culture of our most absurd city, he laughs at the cartoon of the two estranged love birds...and turns the page. He straightens his tie and boards the subway filled with people toward whom he feels only varying degrees of antagonism.

Henri Bergson felt that laughter requires "a momentary anaesthesia of the heart": we laugh at what we momentarily do not love. Perhaps this is not always true. Perhaps I can laugh at Chaplin and love him as well. But what if my heart becomes anaesthetized against my own being, through laughing too often at myself? There may be too great a willingness to resign ourselves to an uneasy acceptance of the failures at which we laugh so desperately. If we laugh at the ironic distance between what Saul Bellow calls the *true soul* of man and the false *pretender soul* of his civilized role, that laughter can be very near to the bitter grimace of tragedy if it does not move us toward reconciling those alienated selves, getting our selves together.

But if I am right in thinking that the engineering student occasionally laughs the absurd laugh at the demanding external role he is expected to play, does he then find a course of action directed toward healing that painful division between himself and his exterior identity as a student of engineering? Does he commit some act of rebellion against the absurdity of his outer life, a rebellion without which, according to Camus, we sacrifice a part of our humanity?

In the last decade, university students, along with minority groups, have indeed acted against the culture's tendency to divide each of its citizens into inner man and outer role, real and pretender souls. But even in this age, when many university students have begun to make student organizations a political reality, the Associated Engineering Students find it difficult to locate two candidates to run against each other. If the provocative topics of the E-days discussions reveal a new awareness on the part of the students, that awareness has not yet expressed itself in the most obvious course of action: the transformation of the AES into an active source of reform.

The E-days rituals may provide some evidence suggesting that the engineering student has failed to take even ritual actions against the absurdity of his isolation. *Most Perfectly Engineered Coed!* Engineers claiming Powers of Creation? There are few women in the monkish world of the engineering student, and such a *contest* seems to express the students' comic awareness of his tendency to make into

comfortable quantities the mysteries of human affairs. Or can this ritual be explained as the result of his unnatural seclusion from the realities of female form? Does he climb furtively to the top of the angular grey turrets of his College and gaze wistfully across Brackett field, dreaming of the arts college, where *coeds* are said to move as ideal forms, embodying those canons of mathematical proportion which Polykleitos was wise enough to seek only in sculpture?

"*The Meanest Professor.*" Does this contest disguise the messy emotional embarrassment of thanking the best professor or does it really celebrate the comfortable tyranny of teacher over student? And the E-days tug of war between student and faculty—what do these tribal rituals mean? Do they represent a satirical casting off or a chuckling acceptance of the special problems of the engineering student?

But perhaps I'm wrong in describing the engineering student in the vocabulary of Saul Bellow, as an unfulfilled inner man suffocating under the burdens of absurd responsibilities. And perhaps Bellow (and Jung and Hesse) are wrong in describing modern man as a victim of his external roles. Maybe there is no natural, inherited, *real self* lying beneath *the cake of custom*, in Carlyle's phrase, and perhaps the true image of man is projected by the existentialist writers who often claim that the *real self* of man is something we must define and create through conscious choice. But if this second case is true, if men are burdened even with the responsibility of choosing their deepest nature, this too is an argument for the kind of education which allows a man of eighteen to expose himself to a true spectrum of choice, to an authentic version of the diversity of life.

I am not arguing for any particular definition of man. Rather, I am arguing for each man's need to make that definition for himself. And I don't see that an engineering student has that choice when such a small portion of his course work exposes him to something other than engineering. I'll grant that the classical ideal of human wholeness and integration can itself be taken to excess. Perhaps we need a narrow commitment to one thing or another. Goethe was, after all, deeply troubled by the fragmenting range of his interests and talents. And Ortega y Gasset has said that a man must choose among his possibilities. He must respond to a vocation in order to pass from the infinite potential of adolescence to the partial fulfillment of maturity: *Life consists in giving up the state of availability.*

But what man in this age, in this country, should be willing to forgo so much of the range of his possibilities in his eighteenth or nineteenth year? What could I say to such a man, one who even in the first bloom of his manhood might describe a beautiful woman as a *perfectly engineered coed*? I could say that he and I will have to share the same cage and its maintenance, until we find another. But perhaps I'll let Robinson Jeffers reply, the poet of the Big Sur:

Science and mathematics

Run parallel to reality,
they symbolize it,
they squint at it,

They never touch it: consider what an explosion
Would rock the bones of men into little white fragments
and unsky the world

If any mind should for a moment touch truth.

DO YOU THINK A BRIGHT ENGINEER-TO-BE SHOULD SPEND HIS MOST IMAGINATIVE YEARS UNIMAGINATIVELY?

NEITHER DO WE!
THAT'S WHY WE ASK YOU
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COLORADO ENGINEER
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APPLY AT OT 1-7

Research opportunities in highway engineering

The Asphalt Institute suggests projects in five vital areas

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Traffic evaluation, essential for thickness design, requires improved procedures for predicting future amounts and loads.

Evaluation of climatic effects on the performance of the pavement structure also is an important area for research.

2. Materials specifications and construction quality-control. Needed are more scientific methods of writing specifications, particularly acceptance and rejection criteria. Additionally, faster methods for quality-control tests at construction sites are needed.

3. Drainage of pavement structures. More should be known about the need for sub-surface drainage of Asphalt pavement structures. Limited information indicates that untreated granular bases often accumulate moisture rather than facilitate drainage. Also, indications are that Full-Depth Asphalt bases resting directly on impermeable subgrades may not require sub-surface drainage.

4. Compaction and thickness measurements of pavements. The recent use of much thicker lifts in Asphalt pavement construction suggests the need for new studies to develop and refine rapid techniques for measuring compaction and layer thickness.

5. Conservation and beneficiation of aggregates. More study is needed on beneficiation of lower-quality base-course aggregates by mixing them with Asphalt.

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**Putting ideas to work in Machinery,
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Throughout the year, while students on the other side of campus are going to classes and having fun, engineering students are going to classes and studying. Once a year, however, AES gives the engineering students a chance to break the monotony of school with festivities of E-DAYS. This year the action began Friday, May 1, at 11:00 am with the traditional blow of the E-Days whistle, dismissing all engineering classes.

At noon that day all engineers were invited to Macky to hear the 40 minute address by Sheldon Novick, the distinguished editor of *Environment Magazine*, and author of "The Careless Atom" who spoke on the problem of pollution. The traditional E-Days luncheon followed at 1:00 pm at the Lamp Post, with shrimp and roast beef on the menu. Entertainment was provided by the University Jazz Ensemble, followed by presentation of awards to outstanding students.



E. DAYS 70

by PAM SEDILLO



The Meanest Professor, voted for by engineering students, was Professor Fred Chernow, EE. department. Other vicious nominees were "Gamma-Ray" Gamow (Professor R. Igor Gamow, aerospace); "Dippy Dan" Linstedt (Professor Daniel Linstedt, CE.); and "Barbarous" Brown (Professor Lee Brown, Chem. E.).

The Beard Contest winner was Richard Harpel, who was suitably awarded an electric shaver. The losers were Robert Showalter, Vern Bunch, Ray Van Tassle, Gary D. Lowe, and Paul Natale.

E-Days celebrations were brought to a formal close with the ball held in the Engineering foyer Saturday night. Susan Maisel was crowned E-Days Queen. Finalists in that contest were Bonnie Campbell, Gamma Phi Beta; Holliday Eckart, Alpha Phi; Ann Farnsworth, Alpha Chi Omega; Molly Gardner, Delta Gamma; Susan Maisel, Alpha Epsilon; and Kathy Tilden, Alpha Delta Pi.

The judges for the queen finalists were Irv Susel, AES president; Bob Powell, AES president-elect; Tena Poljanec, E-Days Queen 1969-70; Richard Harpel, director of counseling; and Tim Rector, AES councilman. The finalists were then placed on a student ballot.

Outstanding senior for the 1969-70 year is Irv Susel, who was chosen over the other two finalists: James King, EE.; and Gilbert Walker, EE.

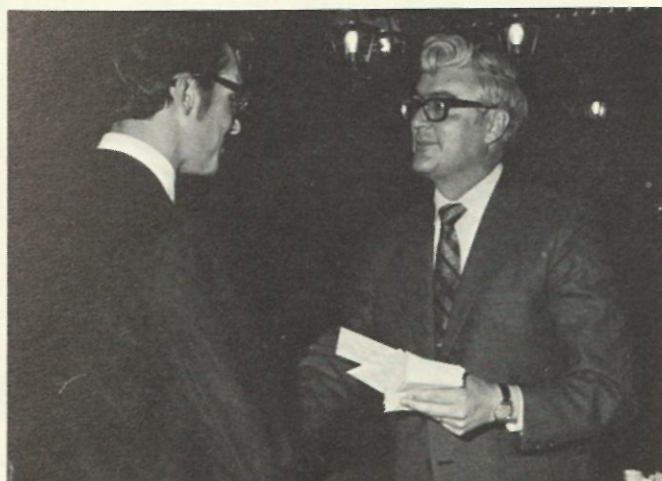
Also held the afternoon of the banquet was an Aerospace Engineering paper airplane contest and, simultaneously, the interdepartmental softball games.

Saturday's festivities started with a picnic at Chataqua Park, featuring baseball, beer, food, and fun. One of the better attended seminars was the naming of the 1970 Most perfectly Engineered Coed, Dawn Dummermuth. Finalists in that contest were: Sally, Pi Beta Phi; Dawn, Kappa Kappa Gamma; Garrie, Gamma Phi Beta; Chrissy, Delta Gamma; Cindy, Pi Beta Phi; and Dianne, Delta Gamma. Narrowing the field from sixteen contestants to six was done by five judges: Barry Cassettee, Cassettee Advertising Agency; Mr. and Mrs. Charles Lent, owners of Boutique Elegant; Dale Mattson, Mattson's on The Hill. The winner was then voted for by students throughout the campus.



Luncheon

and Convocation





Picnic





Engineering Ball



ENGINEERS -

THROW AWAY YOUR

I would like to express my appreciation to Dean Peters and Bob Powell, without whose assistance this article would not have been possible.

By CONNI JAMES

According to Art Buchwald, Pollution has been selected as Miss American Problem for 1970. As per usual, he is right.

People turned out *en masse* for the recent Earth Day festivities, driving a grand total of 20 million extra¹ miles in order to participate in such activities as internal combustion engine burials. In fact, concerned citizens drive to churches, schools, and civic centers by the thousands each week to discuss pollution. They also write letters to their Congressmen. Groovy. But who's going to *do* anything about it?

Causes of Pollution

The principal causes of air pollution in the United States today are photo-chemical reactions involving nitrogen oxides, ozone, hydrocarbons, free radicals (resulting from photochemical decomposition of hydrocarbons) and sulphur dioxide. Because of the photochemical nature of these reactions, they take place only during daylight hours — the most active period being around midday. When there is the most sunlight "night" smog is merely cold left-over day smog trapped by a nocturnal temperature inversion.

Of the major factors, nitrogen oxides are the most critical: controlled tests with concentrated hydrocarbons No. 3 on the pollutant list alone exhibited little evidence of what is commonly associated with air pollution (e.g. plant damage, eye irritation, smog layers over polluted areas.)

The most common forms of these nitrogen oxides are nitric oxide (NO) and nitrogen dioxide (NO₂).

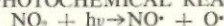
The nitrogen oxides are notorious for their catalytic power — very small amounts are needed to produce relatively large amounts of ozone, which in turn react with free radicals to cause a massive conglomeration of pollution problems. (For specific reactions, see Table 1.)

Causes of Causes

Man-made air pollution emanates from two sources: mobile and stationary. Mobile sources are all motor vehicles powered by combustion engines. Stationary sources are combustion processes: industrial furnaces, boilers, gas stoves, backyard cookouts. Catalyst regeneration units add a little, as do electric discharges from power lines.

The worst offenders are, beyond question, combustion processes. Automobile exhaust takes the lead in this classification, emitting an overwhelming 75% of all nitrogen oxides in even moderately industrial cities. It is interesting to note that, in highly industrial areas where there are automobiles present, *at least half* of the nitrogen oxides in the area are produced by automobile exhausts. Amazingly, the nitrogen oxides content of Diesel exhaust is only about half that of automobiles.²

1. PHOTOCHEMICAL REACTIONS



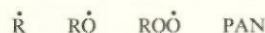
2. OZONE REACTIONS



3. THE NITROGEN OXIDES FAMILY OF REACTIONS



4. FREE RADICAL REACTIONS



5. REACTIONS INVOLVING SULFUR COMPOUNDS AND MISCELLANEOUS



TABLE 1. CLASSIFICATION OF CHEMICAL REACTIONS IN AIR POLLUTION

Possible Solutions—Chemical³

1) Absorption

a. Aqueous absorptions — this is an excellent method for removing very high concentrations of nitrogen oxides; however, concentrations in polluted air are comparatively very low and efficiency of this method lowers with the concentration of NO_x. Highly unsatisfactory in this context.

b. Zeolite absorption — a relatively effective absorbing agent in removing NO_x from dilute gases. Worth of additional study.

2) Control at Source

a. Inhibit or slow down catalysis of N₂ + O₂ → 2HO reaction. Success with this method is highly unlikely.

b. Lower combustion temperature. Change the air-fuel ratio (lean carburetion and shorten the sparking time. A remote possibility.

Recycle of exhaust gases. This reduces combustion temperature and lengthens quenching period. Decreases nitrogen oxides 80–90% and cuts down on unburned hydrocarbons and carbon monoxide. Also reduces engine efficiency.

3) Catalytic reduction. This has great possibilities, however, catalysis remains more of an art than a science at the present time. Organic semiconductors have the highest potential. Much more research is needed before this method can be put to practical use.

Other Suggestions

PUT OUT YOUR CIGARET BEFORE READING ANY FURTHER.

Industry

The industrial air pollution level set by many states is one at which the pollution level is immediately hazardous to the

EARTH DAY BUTTONS

health of the workers therein. Furthermore, if a company is issued a complaint concerning its contribution to pollution, it is often months before the trial date, at which time the company is usually given from 6 to 18 months to "do something about the pollution." If the pollution has not been reduced to a specified level within the specified time, they are handed another complaint, have another trial, and so on until the state threatens "or else" and they finally try a little. Great. Three years and we can breathe again. This is partly the fault of the state for not setting strict enough controls or enforcing the laws in the past. States should immediately set new (lower) limits and give industry adequate time to meet the new standards.

Then any company which chooses to operate within the bounds of a certain state will be obligated to know the laws of that state—particularly those laws concerning industry. If a company chooses to ignore those laws, it will not be the responsibility of the state to them another chance. Each company should *know* how much pollution it emits, and should it exceed the prescribed limit ⁴ the plant should be shut down *immediately*—no questions, no tears, no 6 months of grace. This might be slightly more effective than present policies.

Transportation Reforms

There are enough litterbugs in the cities to sufficiently pollute the environment without cars adding to it. A rechanneling of tax funds would make efficient mass transit systems a reality. If cars were eliminated from city streets there would be plenty of room for either electric trolley cars or Diesel buses; possibly both.

Although more expensive, a monorail would be cleaner, produce less noise pollution, and end all pedestrian-motor vehicle fatalities.

In a more futuristic and less conventional vein, Dean Max S. Peters has suggested that "individuals in major population centers only drive their automobiles to an exterior loading center. The entire transit into the city would be controlled by the use of movable belts where individuals would sit on small seats which would then be transferred directly onto the covered moving belt with the total power for this being generated by nuclear energy at an external location. In any case, some totally new concepts may be needed relative to mass transit for our urban centers if we are to solve the ultimate problems of air pollution."⁵

Personal Suggestions

Throw out the rest of your cigarets.
Start walking to class.

Don't stop with a letter to your congressman. You're an engineer and you've got the ability to do something about pollution. If you're concerned about the environment and not a senior, look into chemical engineering. The Chem E's are getting scarce and we really need them now (Re: , Dean's Column, March 1970 issue). Will you be part of the problem, or part of the solution?

What the Establishment is Doing

(This is especially for all the radical "Arm Wavers"⁶ who are screaming about the military-industrial complex and their plan to watch us all choke to death as they gleefully count their money.

Industry is not ignoring pollution on the contrary, it has been quietly working on solutions for quite some time.

The "Inter-Industry Emission Control Project," for example, is a \$7 million, 3-year research project on the internal combustion engine supported by Mobil Oil, Ford Motor, Sun Oil, Marathon Oil, American Oil, Standard Oil of Ohio, and Atlantic Richfields. Others doing research in this area include the Automotive Manufacturing Association, the American Petroleum Institute, and Hazelton Laboratories, Inc.⁷

Footnotes

1. The Los Angeles Free Press. April 17, 1970
2. Max S. Peters The Role, Sources, and Control of Nitrogen Oxides in Air Pollution, Page 4
3. Ibid pages 10-12
4. Peters feels the same way. See Ibid Page 12.
5. "Arm Waver" one who is very concerned about pollution—but it's not his fault.
6. Max S. Peters "The Role Sources and Control of Nitrogen Oxides in Air Pollution" Page 12
7. Ibid Page 12

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Chips

Innovations in Campus Cafeterias

Ever-striving for the most modern and hygienic dietetic services in the U.S., it was recently announced that the food services have made several policy changes:

1. Since the plague last fall, guards have been stationed at warehouses to shoot the giant rats which come to drag off the horsemeat.
2. The new cesspool has been constructed ten feet away from the bakery, instead of under it, following the "THERE'S AN AIR ABOUT THE ROLLS" protest marches.
3. The mystery meat vat has been drained for the first time in 27 years.
4. Typhoid John has been promoted to head cook, in an effort to keep him from contact with as much of the food as is possible.
5. The food service has stopped buying canned goods from the local undertaker's brother, following last spring's kickback scandal.

A drunk stumbles into the house after a night out with the boys. His wife wakes up.

"That you, Henry?"

Silence . . . followed by a loud crash.

"Henry, what on earth is going on down there?"

"I'll teach your damn goldfish to snap at me. . . ."

"Last night I persuaded my girl to say 'yes.'"

"Congratulations, when's the wedding?"

"What wedding?"

"My son is home from college."

"How do you know?"

"He hasn't written for six weeks, and the car's gone."

"Hey, Murphy, what are you putting in your vest pocket?"

"A stick of dynamite. Everytime O'Leery sees me, he slaps me on the chest and breaks my cigars. The next time he tries it, he'll blow his damn hand off."

"What do you get when you cross a grape and an elephant?" "(grape) (elephant) sinΘ."

The couple, after twenty years of marriage, had decided to leave on a second honeymoon. As they made their plans, the husband glanced over his shoulder at the little old lady behind them who sat knitting.

"Just once," he whispered, "I'd like to take a trip without having your mother along."

"My mother," the wife exclaimed. "I thought she was your mother."

Suppose
thinking
wore
blisters



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Even if you don't like the air you breathe, you can't stop breathing.

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Engineers at General Electric are working on the problem from several directions.

Rapid transit is one. In many cities, the automobile causes more than half the air pollution. In some cities, as much as 90%. But engineers at GE are designing new equipment for rapid-transit systems, encouraging more people to leave their cars in the garage.

Another direction is nuclear power. General Electric's engineers designed the very first nuclear power plant ever licensed. A nuclear plant produces electricity without producing smoke. And as the need for new power plants continues to grow, that will make a big difference.

There are other ways General Electric is fighting air pollution. Maybe you'd like to help. We could use your help. But don't expect to come up with an overnight solution to the problem.

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