

SLAC BEAM LINE

Max Planck
Is the man to thank
For the quantum theory:

$$\rho_{\nu} = \frac{8\pi h\nu^3}{c^3} \cdot \frac{1}{e^{h\nu/kT} - 1}$$

Thanks,
Max,
dearie.

Volume 6, Number 9

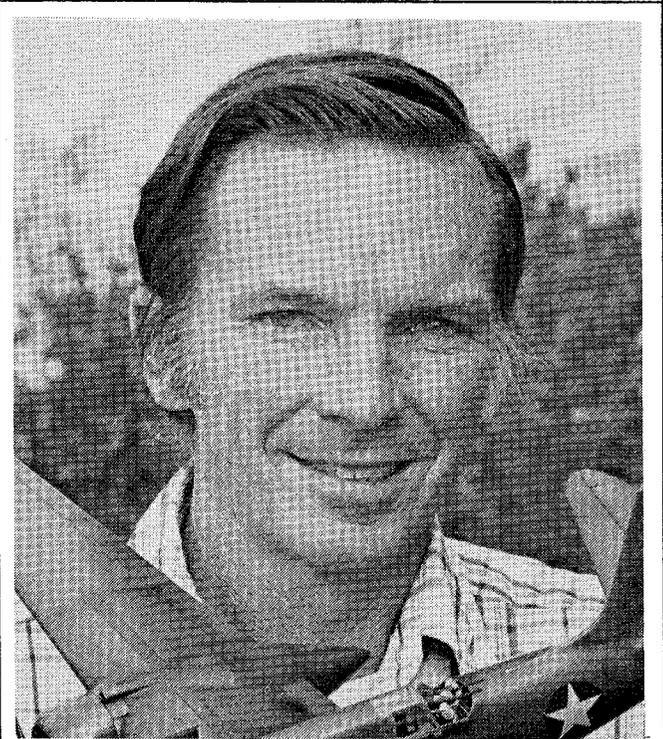
September 1975

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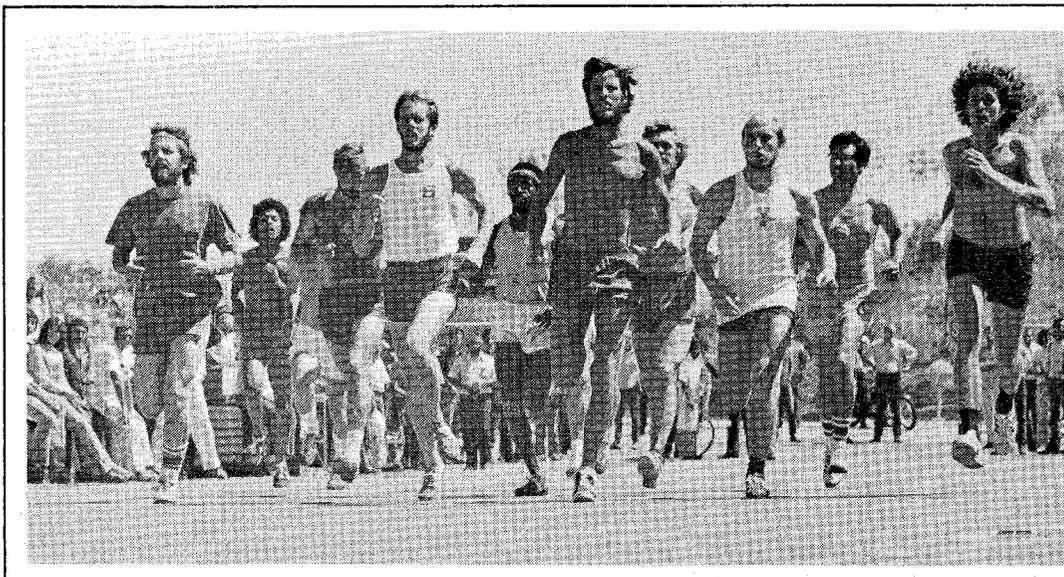
Editor's Note: This issue of the *Beam Line* is very late. We'll try to shape up. A recent distraction for us, and for many of the physicists at SLAC, was the 1975 *International Symposium on Lepton and Photon Interactions at High Energy*, which was held in the new Law School facilities at Stanford from August 21 to August 27. The high point of the Symposium was the discussion of the recent discoveries, at SPEAR and at the German electron-positron storage ring called DORIS in Hamburg, of a half-dozen new particles or "resonances," most (perhaps all) of which are related to the two psi particles discovered last fall. Things have started to pop again in particle physics, and the excitement is running very high. We hope to have a *Beam Line* article on these new developments ready for the next issue.

--Bill Kirk



--Photo Stanford

John Alcorn, artist, model-builder, and engineer *par excellence*, has recently left SLAC for other work. Charlie Hoard's farewell salute begins on page 2 of this issue.



--Photo by
Joe Faust

The field takes off at the start of the 3.8-mile race held during SLAC's annual Sports Spectacular on August 28. See page 4 for story.

JOHN ALCORN LEAVES SLAC

John Alcorn is gone. A ten-year veteran of Mechanical Engineering at SLAC, he left for browner pastures in San Diego. John is both a cracker-jack engineer and an emotional experience. He brings a contagious intensity to all of his activities, whether art, running, engineering design, mountain climbing, model making, or just meticulous observation of the movements that women are liberating. With Dmitri Karamazov (if you recall your classics) he could say, "If I am going to hell, I shall go head-first!"

John was born in Tulsa on the day of the Lindbergh kidnapping and has therefore passed his tenth birthday. He grew up in the other oil capital of Houston and went to Rice Institute, where he held the radical view that watching football was not a sport since it involved no activity (other than the elbow). His buddies therefore considered him a natural for Yell King and tricked him into signing the nominating petition. They also provided a plan to run for the office: he was to start in Galveston at midnight and literally run the 36 miles to the rally. By this time John had joined the spirit of the gag and trotted off with an escort car as per plan. By 1 AM he was kneeling at the side of the highway violently ill and wanted to go home. "But John," he was told, "the whole world is out there watching!" Onward. The fog thickened, and a Plymouth loaded with loaded celebrants began to pace him. They simply could not understand why a half-naked man running down a deserted highway (the escort was waiting ahead) in heavy fog at 3 AM did not want a ride. At that moment a couple in a Studebaker rammed the Plymouth with no chance for brakes. When he had sent off the last ambulance, John was really ready to quit, but he was greeted with a chorus of "You can't let us down now!" So John's picture breaking a ribbon at the finish line with a fireworks display (the buddies again) is a prominent feature of the '55 Rice Yearbook. It was a landslide election, but then John had to learn all those stupid cheers.

With Naval ROTC behind him, John made two tours of the Pacific on a destroyer. He doesn't remember the ocean--he was either seasick or hungover underway--but he does remember Japan, the Phillipines, Rangoon and Singapore.

After the war, John's father wanted him to join the family's oil business. John had spent six summers growing those shoulders as an oil field roughneck, so he went through Humble's Petroleum Reservoir Engineering Training Program (!). However, when the best of his friends left for California, he chased and finally married her, leaving Texas and four moving violations behind.

(John has a rare ability to concentrate and blot out his environment, so Francie does the driving now.)

After stints with Aerojet General Nucleonics and Bill Brobeck's Cyclotron Corporation, John and Francie spent three months touring the great art museums of Europe and Russia. Pen and ink is John's medium, and his superb draughtmanship and intense involvement are as personal as his signature. His works range from outbursts of moral rage, such as his "Triumph of Abundance" that is reproduced with this article, to quiet--even static--concepts. But all speak to the power of one man over another--that is, politics--and with the same wealth of symbols taken from life. He is the only artist who can depict the complementary relationships between racism, impotence, authority, and colonial war, all in one picture. John has had one-man shows of all of his works at UC-Berkeley and at Foothill College.

In the last years at SLAC, inspired by George Lee who was already an international champion model-maker, John started bending, gluing, filing and sanding to make a Douglas A-20. He kept track of the time involved--about 2500 hours! (George meanwhile made a Curtis Carrier Pigeon and a WWI tank.) At the International Plastic Modelers' Society Convention (1974), George won first prizes in two categories while John won the Best In Show award, thereby becoming George's last pupil. With that notoriety, both George and John received grants from the Smithsonian Institute to build models of 1920's-30's racing planes that will be placed on permanent display in the air-racers' exhibit of the new National Air and Space Museum in Washington.

At SLAC, John started out on the design of the 40-inch bubble chamber magnet, became a BC crew chief, worked with Hab Brechna on a new superconducting version of the 40-inch (not built), and finished up with the superconducting solenoid for the LASS facility which went full power in August. He will be missed.

John has gone to the Fusion Reactor Division of General Atomics in San Diego, where he will work on the Doublet III (a Tokomak), followed by the superconducting Doublet IV. GA hopes the IV will "break even" in the fusion sweepstakes. Good luck, John. And look out, San Diego. He's coming headfirst!

--Charlie Hoard

(John Alcorn's pen and ink drawing "Triumph of Abundance" is reproduced on the next page.) 



1975 SPORTS SPECTACULAR

The Fourth Annual Sports Spectacular was held at midday on Thursday, August 28, this year. In addition to the usual long-distance run and bike race, a 100-yard dash was added to the program of events this year and proved very popular. Here are some of the details of the three individual races.

100-Yard Dash

Nine sprinters participated in this new event, which was run from Sector 29 to Sector 30 along the north side of the klystron gallery. The winner was SLAC visitor Jeff Coleman from Princeton University, who led the pack all the way to a winning time of 10.7 seconds. Mo White of SLAC Stores finished second in 11.0 seconds. The other dash contestants were Jeff Moss, Hal Townsend, Dennis Sivers, M.L. Winston, Archie Moore, Jr., Rich Fall and Cordell Pennix.

3.8-Mile Run

In the long-distance run, it was Bill Divita of SLAC Stores taking first place for the second year in a row in a winning time of 21 minutes and 46 seconds. Some times for other runners were as follows:

Craig Rasmussen	22:36	Don Burwell	26:14
Gene Haynes	22:56	Phil Limbacher	27:49
Ken Moore	23:25	Jon Pumplin	28:27
Bob Hettel	24:46	Charlie Hoard	30:01
Bill Dawkins	25:07	Jeff Moss	31:05
Alex Gallegos	25:24	Cordell Pennix	33:49
John Alcorn	25:41	Mo White	34:36

SLAC Stores had the honor of winning the team award this year and will hold the perpetual trophy in this event for the 1975-76 season.



--Photo by Joe Faust

Bill Divita of SLAC Stores flashes the winning smile as the end of the 3.8-mile run. His time was an impressive 21 minutes, 46 seconds.

To compete for the team award there must be at least three entrants from the same SLAC group in the same event. John Barreiro, Head Storekeeper, is justly proud of the three men (Divita, White and Pennix) who won for his group.



--Photo by Joe Faust

Jeff Coleman shows his heels to the pack at the finish of the 100-yard dash.



--Photo by Joe Faust

The bike racers are shown here churning around the west end of the klystron gallery with some interested bystanders cheering them on.

7.6-Mile Bike Race

The long-distance bicycle race attracted eight entrants this year, and the event was won by Dave Coward of SLAC's Spectrometer Facilities Group in a time of 20 minutes and 37 seconds. Joe Faust's son Dave actually had the best time for this race, 19:14, but this year he decided simply to ride as pacemaker for the group because he has won all the previous bike races at SLAC in which he was entered. The remaining six riders finished as follows:

Robert Kennelly	20:46	Martin Berndt	21:54
Skip Stritter	21:04	John Zolnowski	22:28
Bob Young	21:19	Max Marshall	23:32

The team trophy for the bike race was unclaimed this year. Perhaps next year a SLAC group will field the required three riders in order to be eligible for the team award.

Miscellaneous Notes

Our condolences to runner Charlie Hoard, whose time of 30:01 was just one second more than the personal goal he had set for himself. This was John Alcorn's last race at SLAC, since he will soon be leaving for a new job down south. We'll miss his enthusiastic participation in the annual races.

A vote of thanks to Fred Hill for escorting the bike riders safely around the klystron gallery on his motorcycle, to Ray Valenzuela for manning the "Koolit Lounge," and to the timers and others who helped make this year's Sports Spectacular a success.

--Ken Moore



--Photo by Joe Faust

After the conclusion of the 3.8-mile run, Charlie Hoard immediately plunges back into training with a can of whole-grain soup in preparation for next year.



--Photo by Joe Faust

Dave Coward relaxes after posting the winning time of 20:37 in the 7.6-mile bike race.

A DIFFERENT DRUM

(Editor's Note: Jim Ketcher has been SLAC's Affirmative Action Officer since June, 1973. He will soon be leaving this position. In the following article, Jim sums up his experience in affirmative action work.)

Equal employment opportunity, affirmative action, reverse discrimination, civil rights, minorities and women--all these are part of the jargon of the 60's and 70's. To employers who must adhere to certain rules and regulations imposed by the Federal Government, these terms have caused a collective shudder throughout the country. To individuals who must face the day-to-day problems of preferential treatment of certain groups, the same terms have created confusion in accepting the rights of other people. In the groups that the legislation was meant to help, there have been jealousies and struggles to control the movement. After 100-plus years of conflict and innumerable attempts to legislate moral and social values, it appears that the solution to the problem of equality, in America, will not be found for some time.

Since 1964 and the passage of the Civil Rights Act, there has been a quagmire of Federal regulations and Executive Orders (orders that have the force of law although they are not passed through the Congress). At first the racial issue was of primary importance; then sex was included; then the handicapped; then the aged; then Vietnam veterans; then Aunt Sophie's bridge club; until employers began to view the entire concept of Affirmative Action as a joke. The joke is a humorless one, though, because once this problem is viewed as a hopeless situation, or is treated as unmanageable, then neither this society nor any future society will realize true equality.

How does our own institution, SLAC, cope with the idea of Equal Opportunity? In all honesty, I do not believe that it has really come to grips with just how complicated the problem actually is. This is not to say that the SLAC community, as a whole, is insensitive or unaware of what the terms Affirmative Action or Equal Opportunity imply. The major fault that I have observed in dealing with these issues is the difficulty that SLAC has had in translating a knowledge of the problems into true Affirmative Action. Just what the term "true Affirmative Action" means, to me, is the acknowledgement that minorities and women are capable of contributing to the success of this laboratory and to society as a whole. The converse of this is the attitude that "realistic" employment standards for minorities and women will inevitably lead to delays, inefficiency and failure.

The two most common responses I have heard

from SLAC supervisors, when they talk about hiring minorities and women, are (1) "Well, there goes our deadline," and (2) "I'll take them, but only in a training slot." How absurd and totally degrading these typical replies are! I'm sure that almost everyone at SLAC went through some sort of indoctrination when they were first employed here. But "Aha!" you may say, "The difference between 'indoctrination' and 'training' is significant." But is it really? If the job qualifications are correctly identified and applied, then this subtle method of using over-qualification as a form of discrimination could be curtailed. Whether you are "indoctrinated" or "trained" depends upon understanding this premise. I do.

There are many areas in which Affirmative Action can be applied. Training, upward mobility, personnel and personal relations are some examples. It is important that we all try to work with, not against, each other. In the past couple of years we have heard the term "reverse discrimination" being used more frequently. It is an inescapable fact that change necessitates change. To cause opportunities to exist requires a different approach in understanding why the change is necessary. Why weren't minorities and women in the trade unions and technical disciplines? Was it because they weren't smart enough? Or was it because they understood that their chances of getting a job were very small? Now everyone seems to be saying, "Boy, if you're a minority or woman in these areas you can write your own ticket." But what is that worth if after the struggle people feel that the only reason they succeeded was because of the color of their skins or the arrangement of their reproductive organs?--neither of which they had any control over.

So my response to the charge of reverse discrimination has several different parts. First, the understanding that there must be a change in the present system. Second, that this change requires some give and take. Third, that individuals should be judged by their capabilities and nothing else. And fourth, that the eventual benefits from this action will be benefits to all of us. Sure, there are those who would like to see this effort become meaningless and fail, but with them we have to try that much harder to convince them of our determination to make sure that it doesn't fail.

In the past there have been attempts to discredit the Equal Opportunity idea by including many diverse groups in the effort. But the most damaging situations are those which have resulted in in-fighting among the affected groups. When the Blacks, Latinos, Asians, Native Americans and women can be pitted against one

another in competing for "a slice of the pie," then a situation is created in which everyone stands to lose. At SLAC there seems to be a general atmosphere of togetherness, but there are still times when we must examine whether or not we believe that the "pie" includes all of us.

The outcome of all the bloodshed, grief and confusion over the equality issue has been a gradual adjustment in people's attitudes. Minorities and women are finally beginning to hold responsible positions and are being recognized for their talents and abilities, but there is still a long struggle ahead if we are to realize true equal opportunity. This cannot be done by burying our heads in the sand and hoping the problem of equality will solve itself. The solution involves patience, understanding, and a willingness to listen to a different drum.

--Jim Ketcher



RAY ROBBERS TO RETIRE

Raymond J. "Ray" Robbers has been SLAC's construction superintendent and chief inspector since joining SLAC in 1962. Ray's most recent assignment ended with the completion of the new SLAC Computer Building.

Ray was born in New York City and lived in an orphan's home for his first four years before he was adopted by the Joseph Robbers family in St. Cloud, Minnesota. His new father was an artisan in the granite industry, who carved stones for the state Capitol Building and for many other edifices. Ray attended the local St. Cloud schools, graduating from high school in 1928. He attended St. Cloud Teacher's College for one year and also spent a year at St. John's University studying engineering--and managing to get a little football in as well.

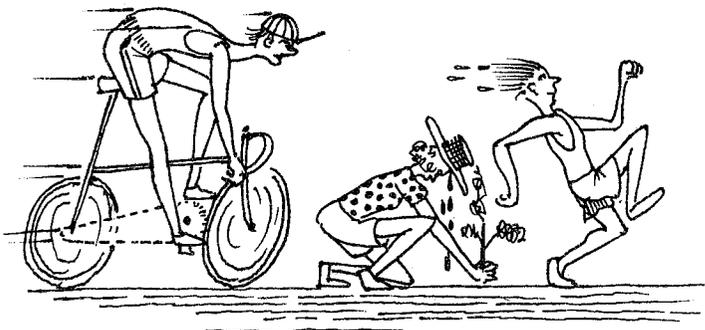
During the summers Ray worked for the Minnesota Highway Department. In 1930, he was hired full-time and was sent out on jobs all over the state. He continued his studies at night at the University of Minnesota.

In 1936 Ray married Kathleen Sullivan, the daughter of a State Senator. Their first child, Sheila, was born in 1937, and a son, Michael, was born in 1942.

During the ten-year period from 1936 to 1946 Ray worked in Alaska, Minnesota, Washington, and Arkansas. In 1947 he took a job with a construction firm in Colombia, working on a salt-evaporation plant and on a dam until 1951, when his wife's health forced a return to the U.S.

Ray worked briefly with Bechtel in San Jose before joining Peter Kiewit & Sons to work on a hydroelectric plant in Alaska. There followed a succession of jobs in all parts of the U.S. until 1958, when settled down with Indenco Engineers of San Leandro. When Indenco went out

(continued)



Cartoon by Glenn Hughes

CYCLISTS, NOON-HOUR ATHLETES, GARDENERS PLEASE NOTE

Would you like SLAC to provide a place for you to keep your sweaty clothes and to take a shower? We are considering making such a request if we find enough interest expressed. The shower/locker room might be one of the small trailers that was used by the computer group. It would be relocated near the Sector 30 guard shack so that it could be locked nights and weekends, with the key in the possession of the guard.

The trailer might be arranged with a small locker room at each end with small metal lockers (about one cubic foot) and with four shower stalls in the middle section. If any interest in such a facility is shown by women employees, the trailer could be divided into two sections, or perhaps a second trailer could be obtained.

If you think you would use such a facility enough to justify setting it up, please drop a note to one of the sponsors:

Herb Weidner Bin 20
Wayne Bennett Bin 3

of business in 1962, Ray and a small army of other Indenco employees migrated across the bay to SLAC.

Kathleen Robbers died in 1964. Four years later, Ray was married again to Mary Ellen Mitchell, a widow with two children.

During the last few years the Robbers have really put their roots--grape roots--in the ground. They have acquired an interest in two vineyards near Lodi, and they also share ownership of a condominium on the coast at Pajaro Dunes.

Ray's training and experience have certainly been put to good use in much of the construction work at SLAC. His timely suggestions and effective coordination through the years have invariably kept the jobs going with a minimum of SLAC-contractor conflict, and with a maximum of efficient cooperation. Ray tells us that he is a little envious of those who will have a chance to get involved in the construction of the PEP project, but perhaps he'll be back again from time to time to help out.* It would be very reassuring to know that Ray's vast store of construction knowledge was still on tap.

--Harry Changnon

*We've just learned that Ray is already back at SLAC as a consultant. Say, Ray, what kept you so long?

MWC VACANCIES

The Minority and Women's Committee now has two vacancies in its membership. The Committee is appointed by the Director to assist in solving work-related problems of minorities and women at SLAC. Names submitted to the Committee will be forwarded to the Director for his approval. The Committee meets weekly, on Thursdays at 1:30, and members are expected to attend regularly and to take an active role in the work of the Committee.

If you are interested in joining us, please contact J. J. Lipari, Ext. 2272, Bin 21.

--Martha Zipf

SLAC MEDICAL DEPARTMENT: A REMINDER

Starting on September 2, the Medical Dept. will be open between the hours of 7:45 AM and 4:45 PM. The Doctor will be in every morning until noon.

Influenza vaccine is now available in the Medical Dept. for all SLAC employees who wish to avail themselves of it. Although health authorities do not predict an epidemic this year, continuance of immunization procedures is recommended for high risk groups. Immunizations are available every day from 8:00 AM to 4:30 PM. For full effectiveness, immunizations should be received before November 15.

The nurse on duty, normally Ms. Joan Gardner, now has a paging receiver, which she will carry when she plans to be out of the office for more than a few minutes. The page number is 220.

If you have any further questions, please stop by or phone us at extension 2281.

In calmer days in the world of particle physics, it used to be the case that only the most refined--indeed almost effete--experiments were done at electron accelerators. Occasionally a challenge to the formal theory of quantum electrodynamics would arise, and after a brief burst of activity the excitement would end as experiments reaffirmed more conservative theories of physics. After all, electrons were only point-like bits of charge, without a size or shape. How could they be as interesting as the big, varied hadrons that kept popping out of proton collisions like schmoos out of an Al Capp comic strip?

Well, the answer appears to be that head-on collisions between electrons and positrons are remarkable events, releasing as much pure energy in a very small space as a "big bang" at the beginning of the universe might have done

--William D. Metz
Science
8 August 1975

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