The Beam Line

VOLUME 2, NO. 5 — Stanford Linear Accelerator Center — DECEMBER 20, 1971

BOMBS CAUSE $45,000 DAMAGE

—however, subsequent beam tests prove successful

Two bombs, probably made of dynamite, exploded early Tuesday, December 7, causing roughly $45,000 in damage to various electronic devices in Sector O of the Klystron Gallery. The two-mile accelerator itself, not operating at the time, was unaffected.

The first bomb probably went off at 3:28 a.m. This was deduced with the help of the PDP-9 computer in the Central Control Room, which constantly monitors the trigger generator and which showed only "gibberish" from the generator after 3:28 a.m. In addition, a recording device monitoring the accelerator's temperature near the injector indicated two, five-minute-apart disturbances sometime around 3:00 a.m. Also, four local residents reported hearing two blasts a few minutes apart at about 3:30 a.m.

Indications are that the bombs were simple fuse-lit devices without timers.

The bomb causing the most damage was placed inside the 40 megacycle beam knockout amplifier near the western end of the Klystron Gallery and located between the master trigger generator and the injector steering magnet power supplies, and directly adjacent to the 6-20 megacycle beam knockout amplifier. Both beam knockout devices suffered extensive damage, while the power supplies and the trigger generator incurred slight to moderate damage.

The other bomb went off "downstream" of the first, in an area surrounded by the two master oscillators, the "A" electron gun modulator, the main booster amplifier, and one of two subbooster modulators for Sector 1. Both master oscillators were destroyed, but a backup unit was available. The most expensive damage from this blast was the destruction of the subbooster modulator's klystron, which will cost an estimated $3,000 to replace.

Virtually all the damage suffered was due to shock — there was no heat damage, and although the two bombs were centrally located, relatively little damage occurred. Ron Koontz, Accelerator Physics, estimates, for example, that only about $80 worth of damage was sustained by the trigger generator. Of the estimated $45,000 damage, it is expected that less than half will be expended for new equipment, the rest representing labor.

One lucky outcome of an otherwise very unfortunate occurrence is that SLAC's ability to turn on January 3 for the January operating cycle appears to be unaffected. All the damaged equipment, with the exception of the beam knockout system, was repaired by Friday, December 10, only two days after the FBI, the agency conducting the investigation, allowed repairs to begin. On December 15, electrons were successfully accelerated through Sectors 1 and 2, and the 1.35 GeV beam achieved was steered to a beam analyzing station two-thirds of the way down the accelerator. Jim Sirois, AOG, who was involved with the December 15 test, told us the machine functioned remarkably well considering that it was started up in the middle of a "down" period. Ron Koontz noted that it only took about three hours to get the beam going, while startup very often takes eight or more hours.

The only system still not functioning is the knockout system, but the odds are much better than even that this too will be operable for the January cycle.

A large number of people are responsible for the rapid repair and cleanup jobs in the gallery.

On Tuesday, one of the first things which had to be done was to "repatch" the electronics associated with the accelerator vacuum system. This was done by Bob Davis, Tom McKinney, Roger Miller, and Ron Koontz, all of AP. On Wednesday, after the conclusion of the FBI "seal-off," cleanup operations

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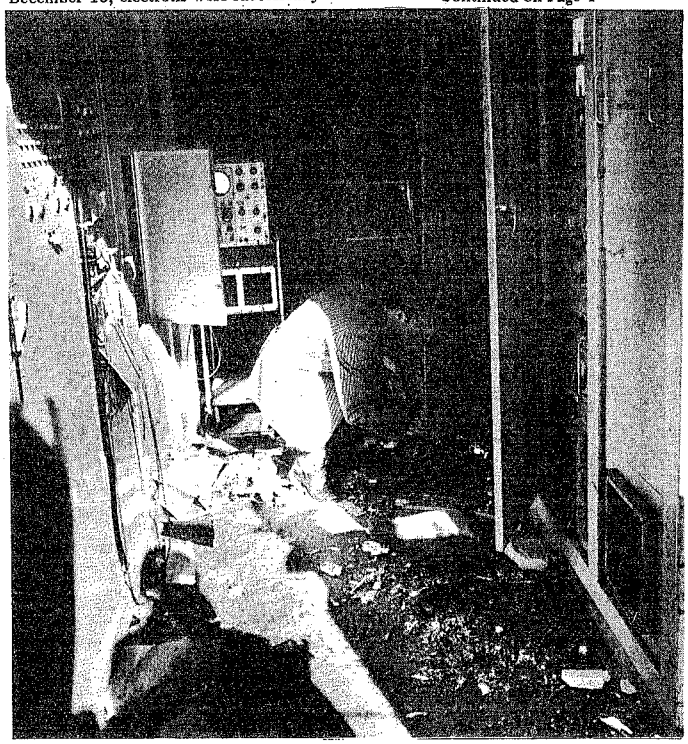

Investigator assessing damage done by one bomb. Main booster amplifiers are behind him. The investigator's flashlight is approximately where the bomb went off, between a subbooster modulator (right) and the master oscillators.

New Linac Takes Wing

(Editor's note: the following appeared as a letter in the April 1971 issue of PHYSICS TODAY magazine and is reprinted, slightly abridged, by permission of PHYSICS TODAY and the author).

At a time when physics is faced with funding crises everywhere, it is reasuring to find that some research projects can still be run on mere chicken feed. In this regard, we call attention to the recent announcement, by the National Research Council of Canada, of the successful operation of a new linear chicken accelerator, or LCA (see Chemical and Engineering News, 2 November 1970, page 56). The LCA, which is capable of

accelerating a four-pound chicken to speeds of 620 mph, is currently being used as a flight-impact simulator in an engineering study of airplane-bird collisions. But we believe it may have application as a basic research instrument, since — in more familiar terms — it has a rated energy of 500 trillion GeV, which makes the LCA the most powerful accelerator of its kind in the world today.

A careful study of high-energy chicken-chicken collissions, with due attention paid to the production of virtual chickens (i.e., eggs), could lead to

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Group 'BC' Formed

A new group formed by combining the former Bubble Chamber Development Group with the Ballam part of Group B has been established with J. Ballam Group Leader, R. Blumberg, Administrative Deputy and G. Chadwick, Physics Deputy.

At present Research Division membership of the group is:

J. Ballam	H. (Casey) James
Howard Barney	Philip Larrick
Richard Blumberg	Kenneth Moffeit
John (Terry) Carroll	Henning Petersen
George Chadwick	A. (Buck) Rogers
Michel Della Negra	Ralph Sanchez
Y. Eisenberg	Peter Seyboth
Kenneth Eymann	Burnett Specht
Dennis Feick	Hartwig Spitzer
Ann Greenwood	Jerry White
Eldon Harris	Calvin Williams
E. Kogan	

And the following people are on long-term loan from the Technical Division:

Frank Barrera
Knut Skarpaas
Bohdan (Bob) Sukiennicki
James Troger
Edward Wong

This new group was formed mainly for two reasons: one, the increasing emphasis of the major portion of the old Group B in the wire chamber spectrometer technique as opposed to bubble chambers, and two, the need for a closer connection between particle physicists and the new developments in bubble chamber techniques (hybrid systems, triggered bubble chambers, etc.).

Although it is new, Group BC does not constitute an increase in the total number of groups in the Research Division.

Ann Greenwood will act as secretary and questions as to location of people, telephones, and other similar problems should be addressed to her.

Holiday Greetings

New Experiments Probe Inelastic Scattering

by Charles Oxley

Deep inelastic electron scattering at SLAC has characteristics which reveal the possible existence of point-like substructures ("partons") within the proton and neutron. Inelastic electron scattering results when an electron collides with a proton and produces other particles which subtract from the original energy of the electron. The experiments which uncovered the parton structure detected the scattered electron and analyzed its large energy and momentum loss without regard to the final particles produced.

Two experiments now in their preliminary stages at SLAC plan to study particles produced during deep inelastic scattering. This may add to the understanding of the aspects of the deep inelastic scattering which are particularly involved with the parton idea, refining the theory or perhaps even leading to its demise and replacement.

The magnetic spectrometers used in the earlier experiments are not very well suited to overall recording of final products in the rare deep inelastic scattering. One, therefore, would like to turn to bubble chambers or streamer chambers which record and provide analysis of a wide variety of products simultaneously. SLAC's 40-inch bubble chamber and two-meter streamer chamber are to be used in the upcoming experiments described below.

If one attempts to use electrons from the accelerator in a bubble chamber, for example, one finds that electro-magnetic processes — bremsstralung and pair production — produce showers within the chamber volume which would obscure and overwhelm the analysis of the rare deep inelastic scattering. Both planned experiments, therefore, turn to the heavy electron — the muon — which is similar to the electron in charge but less radiative since it is 207 times more massive at rest than the electron.

BUBBLE CHAMBER EXPERIMENT

Using a bubble chamber, even with muons, would require analysis and scanning of a prodigious number of pictures to gain the data desired. If the experimenter provides scintillation counter triggering of expansions to be photographed (which is highly selective of expansions containing the desired rare events) a tremendous reduction in the amount of film to be scanned (by perhaps a factor of 1000) can be achieved.

The use of triggered chamber photography has been covered in previous BEAM LINE articles concerning the rapid cycling bubble chamber program, the eighty-two inch chamber and the forty inch chamber. The present Group A, Group B, EFD experiment uses the forty inch chamber, now operating at 10 expansions per second, with the hope that the rate of 12 expansions per second can be achieved by February, when the experiment will take data.

The forty inch bubble chamber, with its advantages and limitations, forms a vital part of the experiment. Bubble chambers have been extremely useful in uncovering new particles and in the quantitative study of events which occur with reasonable frequency. With rarer events a great amount of running time and analysis of photographs is required. Two techniques that alleviate these situations are the upping of bubble chamber cycling so as to produce many more potentially usable beam passages and the selection, by auxiliary counters of spark chambers, of interesting events to be photographed. Recently in the BEAM LINE the use of the forty inch chamber with a stepped-up cycling rate and triggered photography in a pi meson experiment done by a Caltech-Berkeley collaboration was described.

The construction, owing much to Louis Keller of EFD, forms a critical part of experiments. The beam must be uncontaminated by other particles, and must be of desired spacial extent and nearly parallel. The mu beams for the experiments are formed by allowing the accelerator electrons to strike a gold target (see illustration) where mu pairs are created. Subsequently these are energy-selected by a magnetic field and focused onto a beryllium filter which eliminates strongly interacting particles and allows the muons which have no strong interactions to continue. Further magnetic selection, focusing, collimating and beam scraping are done before the high purity mu beam reaches the experimental area.

The successful mu beam owes much to over-time work beyond the call of ordinary duty by several laboratory crews. Groups contributing were: surveyors under Wade Miller; mechanical technicians and riggers under Ed Keyser; and power technicians under Henry Boatner.

The mu beam enters the bubble chamber through apertures in beam-defining counters. The undeflected mu beam goes through the bubble chamber and into "holes" in the mu meson detector that is set around the beam to detect deeply inelastically scattered mu's. Outside of the beam, scintillation counters preselect events in which a muon is scattered at an angle of more than one and one half degrees. In addition, wire spark chambers contribute more refined information for "good" event selection. They also will be used to reconstruct tracks and thus extend the information in the bubble chamber photograph. Contributing to the construction and setting up of the counters and spark chambers were Gary Johnson and Warner Weeks.

Inescapably, there is some pi meson contamination in the beam. An iron filter between scintillation counters identifies pi mesons by their strong interactions.

The wire spark chambers are of the common magnetostrictive readout type. Wire planes are situated before the iron filter and after. The electrical information derived from the wire spark chamber is combined, with the aid of a small computer, with the favorable scintillation counter signals to further specify the event and reject pi contamination. These selections are not fool-proof, but the preselection of one analyzable event in four to eight photographs of the chamber will be satisfactory in terms of economy of film and scanning time. The wire chamber reconstruction will also localize the scattering event in the bubble chamber so scanners may go directly to it.

Output from the experiment will be pictures of about two thousand to three thousand deep inelastic scatterings per cycle of running time. They will be analyzed for types, charges and energies of emerging particles from the residual excitation of the proton. In some cases event reconstruction may allow identification of missing neutral particles. Secondary particles are typically pions, kaons and vector mesons, identified by association with their meson decay products.

These processes, because they are few in number, will have to be grouped for analysis. Experts say they will examine these for persistence of diffractive behavior, peripherality, rho or other channel resonances as well as possible new particles.

The experimenters are appreciative of the great efforts of the SLAC machine shop under Harold Zeiss. The efforts of Aaron Baumgarten as Beam Line engineer (not to be confused with this newspaper!) are also appreciated.

STREAMER CHAMBER EXPERIMENT

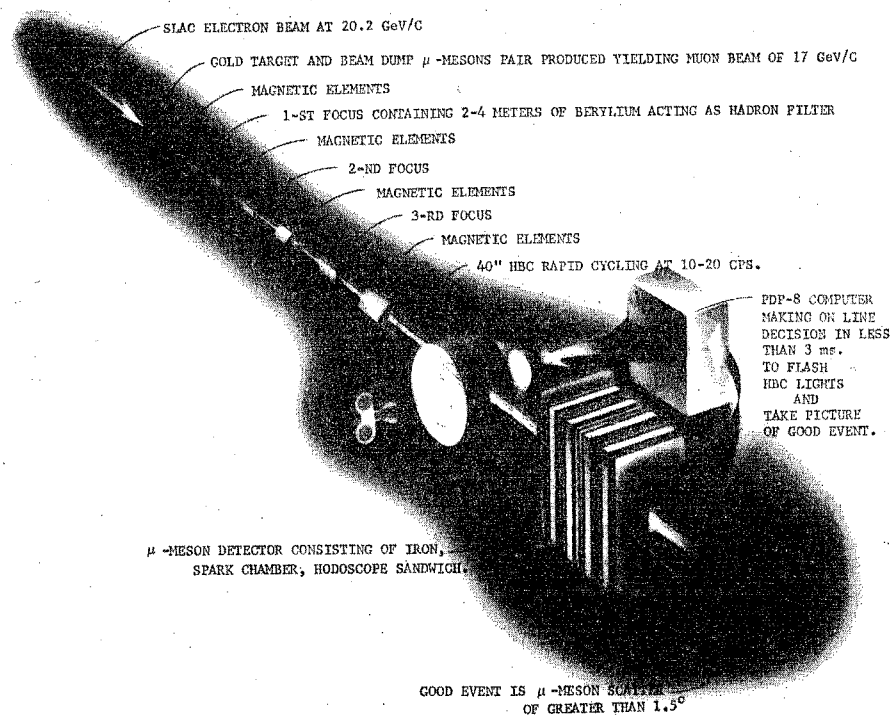
The study of deep inelastic muon-proton scattering with the streamer chamber is similar in many ways to the bubble chamber experiment. Operating in the central beam line, electrons again strike a heavy target, producing mu pairs which are selected, filtered and collimated, and then sent on to the streamer chamber building. There muons of 14 GeV or more enter a liquid hydrogen target one inch in diameter, suspended within the active streamer chamber volume. Muons exist through a pipe which is surrounded by iron muon filters sandwiched with sectored-ring scintillation counters.

The streamer chamber, it will be recalled, operates with a filling of neon (with 10% helium) gas. In operation, a very short voltage pulse of more than half a million volts is applied between conducting planes within the chamber. The ionization trials left by charged particles are amplified and energized by the applied voltage acting within the gas, so that they form visible streamer trails along the particle paths. These are photographed with stereo cameras and analyzed in much the same way as bubble chamber pictures. The streamer chamber is also in a magnet which bends the tracks and makes energy analysis possible.

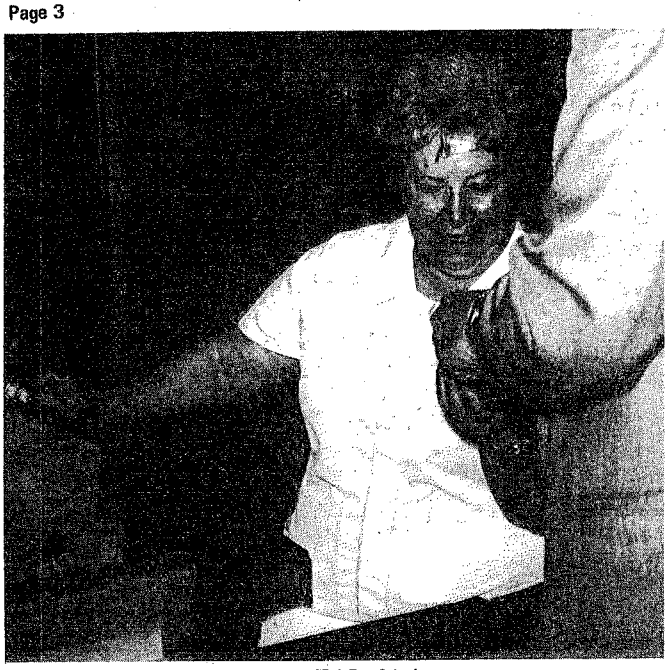
In the experiment being prepared, deep inelastic scatterings will occur within a liquid target. The actual interaction "vertex" is not seen as it would be in the bubble chamber. However, exiting secondary charged reaction products can be analysed and identified in most cases.

In the streamer chamber, the high voltage pulse sensitizes the chamber much as the expansion sensitizes the bubble chamber. In the streamer chamber the external counters can be used to select interesting events and then apply the high voltage pulse ex post facto, thus forming the visible streamers. The array of counters which defines the muon beam and rejects the unscattered muons and selects only muons which have lost enough energy to be deeply inelastically scattered, is much like that used in the bubble chamber experiment. The streamer chamber will be able to work with a hundred and twenty pulses per second input, compared to the ten pulses per second of the bubble chamber, and thus possibly accumulate more events.

The streamer chamber experiment was proposed by C. Heusch of UC Santa Cruz, and the experiment itself will be a UC Santa Cruz-SLAC Group D collaboration. Involved will be K. Bunnell, A. Odian, R. Mozley, F. Villa, and L.C. Wang, of SLAC, and D. Dorfa, S. Flatte, C. Heusch, B. Lieberman, G. Lunstan and A. Seiden of UC Santa Cruz.



Showing the apparatus for the inelastic muon bubble chamber experiment. This airbrush illustration by Walter Zawojski of SLAC appeared on the cover of the Nov. 20, 1971 issue of "Science News" magazine.



Mary Tropiano, SLAC cafeteria manager.

Cook's Corner

A quality control supervisor, a smiling cook-manager for the SLAC cafeteria — combine the two and you have Mary Tropiano.

Before going into cafeteria work, Mary worked for 19 years with General Electric in quality control for electric lights. When her branch of the company moved back east, she decided to stay in California and try something other than factory work. So she went job-hunting in Oakland. At Kaiser Center she was immediately offered a job as a salad girl by Manning's, who operated the cafeteria there. Soon, she transferred to Manning's at the First Western Bank close by, and stayed there 6 months.

Ben McDonough (now the business manager for SLAC cafeteria) then met Mary and promptly asked her to transfer to Manning's Sky Room at Soule Steel on Army Street in San Francisco. Very shortly, she was made cook manager and stayed for 6 years. Suddenly, Mary had a serious accident. Ultimately it was a fortunate accident because during the months that she was recovering, Ben asked her to come and take a look at SLAC to see how she might like to be cook-manager here. She did, and she wanted to stay.

Her Specialty — People

Though Mary has always liked to cook, she equally enjoys talking with all the people who come to the cafeteria. Her primary goal in running a cafeteria is to keep everyone happy with a cordial atmosphere, serve good food in generous portions, and as a result, people will come back again. At Soule Steel, men from all over the Bay Area used to come in for Mary's breakfasts and would tell her it was more like coming home! She regards people who come to the cafeteria more as friends than as customers, and her attitude is reflected in the abundance of good cheer and pleasant greetings from Frances Griffeth and Madeline Matteis, the two ladies who work with Mary, and also Pasqual Vargas who works usually behind the scenes.

Often Cooks from Scratch

In the mornings, cafeteria attendance has noticeably grown larger with people who appreciate the cooking and friendly atmosphere. Sprigs of colored flowers brighten the tables. Mary bakes fresh bisquits several times a week and likes to prepare each main dish differently from the last.

It is a fact that one current political gathering which had been scheduled for a particular noon hour was cancelled because Mary was offering one of her "specials" at the same time.

Likes Big Gatherings

Born in the country just outside of Naples, Italy, Mary had 5 brothers and 5 sisters, which is perhaps one reason why she likes to be around lots of people. She still has many cousins and aunts and uncles in Italy and some day she hopes to take a long vacation to go back and visit them. Until she does, it is certain that a warm atmosphere of good humor will prevail in the SLAC cafeteria as long as Mary is with us.

The present Cafeteria Advisory Group, Gloria Allen, Anna Laura Berg, Pete Munzell, and Gary Harrison, meet once a quarter to make their recommendations for changes in the cafeteria. Soon the group will need volunteers for the new term. Please call Harry Changnon, ext. 2674, if you wish to be a participant.

LORELEI

Tossed in the river of my life,
Where rocking billows rise and sink,
I plunged and dashed on rocks of strife
Oft seeing the splashy brink.

And floating down the river,
I was blinded from the bank
By a face with voice of silver
And a call around me rang.

To her high and stately tower,
I watched for glances every hour,
Where my love did build its bower
And culled its choicest flower.

Whether unfolded or in twine,
Her hair the lower world adorn,
Where imperial scepters shine
And crowns of those unborn.

And to her charms I did tremble
Breaking up in unseen pieces;
And while I tried to reassemble,
Felt my love within increases.

In the dampness of the river,
I shall wait until I die,
In my silence while I shiver
To see again my Lorelei.

Charles Xuereb

An opinion

Why SLAC Exists

by K. Maddern

There are surely many taxpayers who feel that atomic research in these days is a waste. They give many valid, logical reasons why SLAC, as some other high-energy physics accelerators have done, should close down all operation, therefore shifting all the extra money back toward what they believe is a more needy patch of society.

Do you agree? How many SLAC taxpayers would advocate shutting down for the good of "more needy" causes? Have you ever asked yourself just why we should continue operating (other than that you can continue to support yourself and family)?

Most of us here at SLAC are comfortably situated. We have steady work, we buy groceries with a piece of paper that comes each month — probably few extreme hardship cases here.

Yet SLAC itself is fed from the minds of men who can decide whether or not we float or sink. Like a horse on a ranch, SLAC is given a certain amount of hay each year, and recently has been given less to live on. Obviously the horse becomes a little thinner. What if the rancher decides he doesn't need that particular type of horse? The hay goes elsewhere — goodbye, horse. (Fortunately, SLAC at this point has the promise of a continuing hay supply for some time).

Before SLAC was built, she existed as an idea. The idea was made powerful by men who supported it with their own energy and words. Put an idea, energy and words together and you've got persuasion power. Put an idea, energy, words, and money together and you've got SLAC.

Who really cares whether SLAC high-energy physics lives or dies, anyway? The President of the United States? the AEC? physicists throughout the world?

Someone cares enough so that SLAC still runs. In the minds of influential people there is an idea strong enough to win support for about 1200 employees. What motivates that idea? Scientific curiosity, prestige, pure knowledge, politics, man's drive to hunt? A mixture, perhaps.

Man has always hunted. Anciently he used to hunt bison or anything that was edible. Food existed, he searched for it. Sometimes he got killed in the process, which in any case was not pleasant, but especially when a 2-ton shaggy, hump-backed animal was charging after him. But still he hunted. The many widows left behind looked for new husbands, while planning ways to have fewer casualties. They helped their new husbands to further the art of self-preservation, namely how to plant and harvest food, how to develop more efficient weapons for greater results and less bungling or maiming in the hunt.

So man began to hunt in new directions for his livelihood — to look within his brain for solutions to problems and for food for thought rather than out in the plains with angry animals. The more time man had for contemplation of the wonders of the universe, the more things he found to hunt for.

Bisons, Mesons, Photons...

Man's search led him toward the tiny, and we have SLAC. The process has evolved from a primitive, physically dangerous hunt in the outdoors to a technically refined subatomic search for scientific answers to questions that have arisen in curious men.

Future?

Is it possible we will discover that there is no final elementary particle and that the atomic structure recedes into infinity? And is it still more possible that our search here at SLAC will enable us to unravel basic answers to current high-energy physics questions, thus facilitating such advances that unseen possibilities are opened in solving human problems?

Whatever direction SLAC eventually takes, all of us are witnessing one of the reasons why SLAC exists — the ancient hunt. This subatomic venture toward the unknown is our built-in drive to seek new life and new information, always just within reach of our own desire to find it.

(Ed. Note: The preceding is a personal perception of the meaning of SLAC. The BEAM LINE would welcome similar expositions).

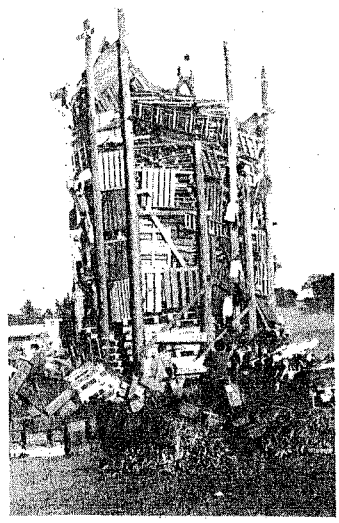
SERA Report

The present SERA Board of Directors wishes to thank all of the SERA members who renewed their pledges and/or made cash contributions to continue their memberships. We also thank those of you who joined SERA on a first-time basis. Support from all members is making it possible to relieve extremely pressing financial emergencies for some of our fellow employees. Incidentally — the total monthly income is somewhat below last year's and we take this opportunity of reminding you to send in your pledge form if you have overlooked doing so. (Forms are available from any of the Directors).

A Nominating Committee consisting of Harvey Hukari (Drafting), Bob Smith (Data Analysis) and Gail Venables (Personnel) has been appointed to present a list of names, from which a Director will be chosen to serve for an 18-month term, at the annual meeting on January 20, 1972. The Bylaws have been changed to provide for a) a shorter total time in office, 18 vs. 24 months, and b) elections semi-annually. At the annual meeting in January the members present will be asked to elect a present or past Director for an additional six month term in order to provide for an overlap of experience. (Two new Directors at one time works a hardship on the remaining board member and creates additional problems).

All members are urged to attend the annual meeting. Any of the Directors will welcome suggestions for items to be placed on the agenda.

Dorothy Ellison — President
Larry Esquibel — Vice President
Charlie Hoard — Secretary



"Innovative architectural concepts used in construction of new housing development on Stanford land. (Note: this structure is not to be confused with the efforts of the Urban Coalition which, according to R.H. Moulton of SLAC, does not build high-rise dwellings)."

Affirmative Action Conference

By Larry Esquibel

Jim Kallgren, Personnel Director, Larry Esquibel, Equal Opportunity Officer and Ray Ynegas, MAC representative, recently attended the Equal Opportunity and Labor Relations Affirmative Action Conference in Denver, Colorado. The conference was sponsored by the AEC and Contracting facilities and was held October 4-7, 1971.

The theme of the conference was "Fitting EO Programs into the Mainstream of Contract Administration." This theme was developed through a series of panel discussions and workshop sessions as well as by invited speakers from various minority groups. Keynoting the conference was AEC Commissioner Clarance E. Larson, who described the theme of the conference as being of significant value for the awakening of thought and action within the AEC and its contractors in the area of Equal Opportunity.

Panel discussions covered a number of problem areas concerning the hiring and upgrading of minority members and females. There was general agreement among the panelists that there was inadequate representation and distribution and underutilization of minorities and females among the AEC and its Contracting facilities. There was less agreement as to the causes but racial and sex discrimination attitudes and policies were found still to be at the core of the present situation. It was urged upon all attendees to this conference to use every available resource to make Affirmative Action an integral part of the AEC's and laboratories' everyday business and to remove it from its present "appendicital" role.

Each panel presentation was followed by a workshop where small groups of people exchanged opinions and ideas. Results were reported to the larger conference after each workshop session.

U.S. Senator J.M. Montoya (Dem. N.M.) addressed the conference on the subject of "Equal Opportunities in Government for all Minorities." His address was critical of the federal government including the AEC and he proposed that the conference adopt innovative methods of dealing with the rampant exclusion of minorities and females from federal employment.

Mr. Ike Tribble, Minority Affairs Advisor for Mills College in Oakland spoke to the conference about the necessity for employers to stop looking at Equal Opportunity as a numbers game and to recognize it as a serious method of improving the unfortunate conditions of racial minorities and females in today's economic world.

Mr. Vine Deloria, author of "Custer Died for Your Sins," was the final speaker. His theme was based on the premise that if the AEC could very successfully research and develop destructive forces, then it could and should research and develop programs for improving opportunities for minority and female citizens.

The conference was attended by approximately 200 AEC and Contractor employees.

Airborne Chicken

Continued from Page 1

a resolution of an age-old question of causality, namely, which came first, the chicken or the egg? At somewhat higher energies, one could look for the production of the intermediate vector chicken, or hawk, and in general study the problem of rooster-hen coupling. At yet higher energies, the scaling would of course be discussed in terms of the Pomeran-chicken trajectory. Crossing symmetry would be important here, and one could hope to discover why, or even whether, the chicken crosses the road. By simply replacing the chickens with ducks, one could undoubtedly establish a threshold for the production of quacks.

Although group-theoretical cacklations based on the eight-fowled way can be expected to establish a pecking order, a really comprehensive theory would be based on an appropriate egghenvalue equation. Quantization would then naturally proceed by introducing the "capon," with appropriate truncation. It should be noted that capon-chicken coupling may be assumed to be very weak to all orders. A clue as to the correct form of the egghenvalue equation might be provided by noticing that Coop(er) paring is obviously described by interactions such as X*RX, where R is the propagator, or rooster function. Owing to a lack of bilateral symmetry, it seems clear that operations such as RX probably do not occur naturally, if at all. These theoretical difficulties obviously leave us with nothing to crow about.

Yet much can be done. The LCA should be used to measure brest masses and farm factors. A determination of Rooster's angle would probably help to establish the correct egghenvalue equation. Coherent production of chicken-anti-chicken pairs could be investigated by analogy with the well known dove-hawk interaction, which quickly produces a state of incoherence and annihilates to a large number of put-ons. In this regard, we might ask whether the beautiful picture of an elementary particle that appeared on the cover of the 27 November 1970 issue of Science is really a put-on or a capon? We suggest that a Feather's analysis be carried out immediately. Who knows: there may be a Pulletzer prize in all this. We have only scratched the surface!

Colonel Sanders
C/o R.T. Robiscoe
Montana State University
Bozeman, Montana

Peregoy's Promptings

"A chemical laboratory is either clean and orderly — or unsafe."

This expression may be overstated for emphasis ... but it does point up the link between chaos and danger.

Disorder, debris, and "dirty" equipment in a scientific workplace add up to and environment that's conducive to hazards.

Just two of many laboratory disasters documented in the files of the NFPA are cited to illustrate this fact. So simple a fault as failing to safely dispose of oily rags was believed to have caused spontaneous ignition and a fire that devastated several laboratories and endangered lives on a college campus.

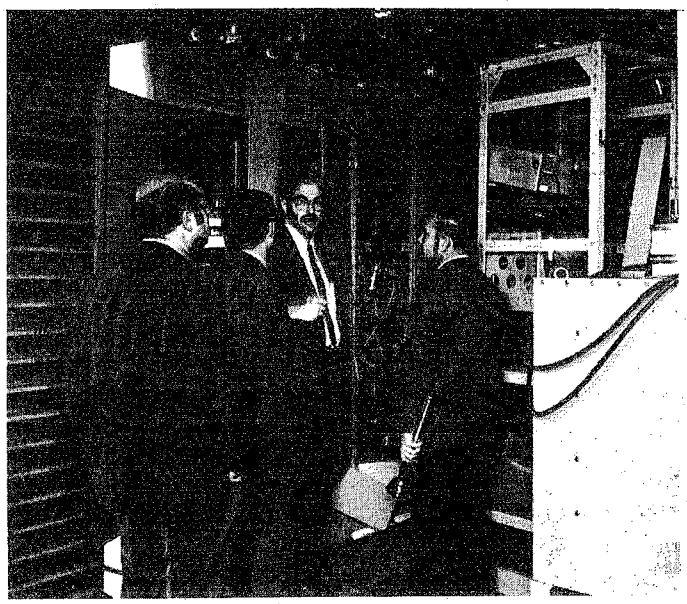
Because a large bottle had been only partially purged of residual ether before pressurizing it with oxygen, a fatal explosion occurred after contents were released to the atmosphere, and the ether-oxygen mixture was ignited by a bunsen burner 10 feet away.

Neglected spills, abandoned residues, glass fragments, misplaced containers, defaced, missing, or inaccurate identification labels can set the stage for injury.

So can clutter, uncleansed glassware, and mis-arranged, poorly maintained, or makeshift apparatus, especially if it's subject to energized and/or reactive applications.

Thus ... if your job includes laboratory work, make regular checks of your setup for cleanliness and order.

Correct the housekeeping faults you find unless they're too risky to tackle — or demand attention by others. Report all doubtful cases to your supervisor without delay.



Damage to the beam knockout system, located to the right of the investigator with the flashlight. This was done by the other bomb.

Bomb Damage

Continued fromPage 1

commenced. One person involved with this was Lee Perkins, AP. Also involved was a Plant Office crew under Ricardo Ramirez, including Claudio Mirelez and Benjamin Munoz.

By Wednesday afternoon, work on repairing other damaged electronics devices was in progress. Keith Henderson and Al Dunham, of Accelerator Electronics, repaired the master trigger generator. Work on the master oscillator and drive line was coordinated by Dick Wilson, AP, and crew. Work on the main booster amplifier and the subbooster modulator was done by an Accelerator Electronics team under Ray Jones. Ron Koontz was responsible for the gun modulator. Beam Knockout repairs are underway by an Accelerator Electronics crew under Willie Johnson.

General plant security has been stepped up somewhat as a result of the bombings. At present, from 7:00 p.m. until 6:00 a.m. it is necessary to be logged in and out of the main gate. A roving sentry has been added to the surveillance staff, and steps are being taken to lock the Klystron Gallery.

To date, neither the bomber(s) nor his (their) motives have been uncovered.

SLAC Blood Bank

The Peninsula Memorial Blood Bank mobile unit will be at the Recreation Center, Mielke & Alma Streets, Menlo Park on Friday, January 7, 1972 from 1:00 p.m. to 7:00 p.m. Those SLAC employees who wish to give blood for SLAC's account should be sure to state so.

Donors — please, no aspirin within the last 24 hours before donating (also perhaps read last issue of Beam Line for diet recommendations prior to giving blood).

Want Ads

...IMMEDIATE HOUSING needed for mother and new baby. Room with kitchen, small apartment, or will share house. Reasonable rates. Please contact Gwen Bowen, 964-0102.

...FOR SALE: Car seat for infant, $3.00. Also brand new strap-on back carrier for infant under 30 pounds, $8.00. Call Steve Kociol, 964-0572 or ext. 2204.

College Credit

The Foothill College District will give up to 16 college credits (at a maximum rate of 4 units per quarter) for major-related experience gained while on the job. These units are applicable toward the requirements of technical elective courses. In order to get these 4 units per quarter, the employee is required to attend two 2-hour seminars in the evening at either Foothill or De Anza college (one seminar at the beginning and one at the end of the quarter) plus turn in a 4 page typewritten term paper.

If anyone is interested in being enrolled, please contact Gerry Renner at ext. 2351. The next quarter begins the first week in January.

Pornography!

...and partisan politics are, of course, unacceptable for publication in your BEAM LINE, but most other things dealing with SLAC are fine, so if something exciting is happening in your group, let anyone in Public Information know — we'll be happy to do a story on it.

In addition, we welcome "creative" writing — poems, short stories, and opinions. In particular, what do you think about this issue's opinion? Let's hear from you!

THE BEAM LINE

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