POMPIDOU'S VISIT CONSIDERED SUCCESS

French President Georges Pompidou's visit to SLAC, despite a large, noisy, but orderly crowd of onlookers, and an unbelievable army of police, was considered a success by all those directly involved, including the President himself. Dr. Panofsky has received several letters from high-level French dignitaries thanking him and the SLAC staff for arranging the visit and for the way in which it was conducted. An example of these is the following letter from Charles Lucet, French Ambassador to Washington and also the tour party leader.

"Dear Dr. Panofsky, You have been kind enough to organize a visit of the Stanford Linear Accelerator Center during the stay of the President of the French Republic on the West Coast of the United States. As you probably realized during your visit, the President was extremely pleased with your presentation as well as the very interesting conversations he had with members of the SLAC and of Stanford University. This was an extremely successful and exciting event and I am sure that the President will remember it as one of the highlights of his trip in this country.

"I know how difficult it was for you to organize in detail such a complicated event and I would like to thank you very sincerely as well as your staff for all the trouble you have taken to make this visit useful and enjoyable, and for the valuable contribution you have made to the success of the whole journey. Sincerely yours, Charles Lucet."

The President's tour included a visit to the Central Control Room where he and his party were able to see the instrumentation of the machine in actual operation. From there, the group walked down the main path to Sector 27 of the Klystron Gallery and to its adjoining Visitors' Alcove which contains a 40-foot demonstration section of the accelerator and all associated hardware. This arrangement simulates the Accelerator Housing itself and it was here that the only unforeseen event of the tour took place. Someone upset a garbage can and the echoing clatter over the two mile stretch of the Gallery had the secret servicemen, official party and SLAC hosts slightly unhinged for a short moment.

From the Gallery, the party was driven to the Research Yard and End Station A where the magnetoспектrometers and the physics personnel in that facility were explained to the President. The group then went to the Orange Room of the Central Lab where Pompidou was briefed by Professor Weiskopf of MIT on trends in high-energy physics. Commissioner Thompson of the U.S. Atomic Energy Commission described how the A.E.C. conducts its research and development programs and explained that, though the number of direct Commission employees is less than 7,000, the number of people working on A.E.C. programs at universities, major laboratories and in private industry is over 120,000. Provost and Vice-President Richard Lyman, acting for President Pitzer, gave the group basic information on Stanford University and the meeting concluded with a general discussion and question and answer session. President Pompidou, himself a former educator, asked a number of penetrating questions concerning the University and SLAC's organization, financing, student fees and student unrest and commented to enjoy the opportunity to illuminate his visit with several exchanges with Pat Shew, one of Stanford's student leaders, and Pierre Recondo, a French exchange student representing the 83-plus French students on campus.

SLAC Benefits Office News

In response to many requests from employees, the SLAC Benefits Office has created a catalog of premiums to be given to any employee who submits a valid claim for an expense incurred no later than December 31, 1970, and who is employed by SLAC at the time the claim is submitted.

The catalog of premiums is a compilation of the most frequently asked for premiums, and is intended to make the process of submitting claims easier and more efficient. However, it cannot be comprehensive, and employees are encouraged to submit claims for any premium that is not included in the catalog.

The catalog is available at the SLAC Benefits Office, and can be obtained by calling Ext. 2357.

The catalog includes a wide variety of premiums, such as travel insurance, life insurance, and home and automobile repair. Employees are encouraged to contact the Benefits Office for more information or assistance in preparing their claims.

Vector Dominance Model Undergoes Test Here

One of the major contributions SLAC has made to high energy physics is the discovery of vector mesons, which are believed to be the building blocks of the atomic nucleus. The recent discovery of the rho meson, a particle that decays into two pions, has added to our understanding of this fascinating field.

The rho meson was discovered during a test of the Vector Dominance Model (VDM) at SLAC. The model predicts that the rho meson decays into two pions, and is an important test of the model's validity.

The test was conducted using a 40-inch liquid hydrogen target placed in the switchyard of the SLAC. The target was hit with a beam of pions, and the resulting decay products were detected by a set of detectors placed behind the target. The detectors were able to measure the energy and momentum of the decay products, and were able to confirm that the rho meson was indeed decaying into two pions.

This test is an important step in the ongoing quest to understand the fundamental forces that govern the interactions of particles in the universe. The discovery of the rho meson and the work being done at SLAC to study it are important contributions to this field, and are a testament to the power of scientific inquiry.
Streamrer Chamber Readies For New Experiment

The SLAC streamer group is in the final stages of shakedown for a new experimental collaboration with Brookhaven National Laboratory on the study of decay of the long-lived neutral K meson (N\(\pi^-\)). More than the previous photoproduction experiment, it will make use of the distinctive advantages of the streamer chamber, which are triggered operation, pictorial information about particle tracks, and fast cycling. Other important features of this experiment are time of flight selection and counter arrays within the streamer chamber itself.

Interest in the decay of the neutral K meson is currently centered on very serious disagreements among many previous experiments. Much more may be involved in such cases than resolving a situation. If more definitive information is obtained, real difficulties in the present state of our knowledge may be brought to light.

Three quarters of the time the decay of the long-lived neutral K meson takes place by formation of a neutral particle and a charged particle of opposite sign. All of these particles in 15% of the previous work. In addition, this experiment will determine Xi by two and possibly three methods.

The inset figure shows the essentials of the experimental arrangement. From the bottom, the electron beam strikes a beryllium target which produces low and short-lived Ks along with radiation and a profusion of other particles. Filters and magnets select K neutral particles with a background of neutrinos. A long flight path eliminates the short-lived K component with its few-hundred-micron shorter life.

The active volume of the streamer chamber is designated by the trapezoid; the extend of the magnetic field for bending particles is shown by the circle. The cameras which view the streamer chamber are indicated. Two dotted lines show not only the separation of viewing field, but the line along which counters and lead-foil plates are placed to distinguish particles. Another extremely important part of the experiment is the electron arrival time indicator operating on secondary emission to give a short, precise pulse for time of flight. Operating

cases are pi mesons. The other decays are by electrons, heavy or light, a neutrino, and a pi meson. The pi, electron, and neutrino occur 49% of the time; and the pi and electron 49%, by measurement of the muon polarization, or by a more detailed treatment of all the measurable momenta (which indicate the spatial behavior of a particle beam). These decays are known to about 10% accuracy. There is little known about secondary emissions.

In the decay of the long-lived neutral K meson, the most important feature of this experiment are: (a) Bunnel, Liu, Mozley, and two charged particles of opposite sign. All of these particles in 15% of the previous work. In addition, this experiment will determine Xi by two and possibly three methods.

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Paint Your Wagon?

This sounded like a great idea to me from a Public Relations and Publicity standpoint, of which our office is necessarily conscious, and from a publicity standpoint! I could envision our jeeps, provided only that the finished product would be accepted if introduced by a member of the club.

The biggest drive of the club is for increased membership. They are hoping to have a playground and community center ready in the fall of the year, to offer a pre-ski conditioning course and stroman ski trip in January.

For the balance of the season, the group is planning a ski weekend in April and a possible trip to Mammoth Mountain for the Memorial Day Weekend. To gain information about the ski or to join, contact any of the following SLAC officers:

President: Bob Sulkiswecki - 2851
Social Chairman: Bob Friday - 2282
Secretary: Gloria Strelchuk - 2745
Treasurer: Janscheche - 2285
Membership Chairman: Dennis Fock 2286

Letter to the Editor

Dear Editor:

I am sure that by now most SLAC employees have noticed our new acquisitions — drab, economical, and利用率 original army jeeps. I am sure that we all support the economy motive behind the procurement of these convoymen out of the GAO surplus list; however, there is something about an army jeep that is esthetically unpleasing.

For a minimal amount of money these old army jeeps could be converted into mobile object d’art; they would be a joy to all who saw them on the streets. I have been told that since they are off-site, SLAC would not risk offending some of the more upright members of the local citizenry.

I propose that SLAC:
1) Buy a large assortment of different colors of “jeep paint.”
2) Turn over the paint supply with brushes to:
   a) any Slac employee who wishes to try out his artistic skill on our new used jeeps, provided only that the finished work of art be moderately inoffensive and not obscene as defined by the prevailing contemporary standards at SLAC;
   b) schoolchildren from the Menlo Park area and in particular from local ghetto areas who could be encouraged to come and try their artistic talents out on our jeeps;
   c) any member of the Stanford community who has a long-repressed desire to be an artist;
   d) other community residents.

It seems that at a small cost, we could dramatically brighten the atmosphere here at SLAC. In fact, the cost of paint and brushes is so cheap that if SLAC is eligible for federal funds we could even plan a charitable drive going to buy the art materials for one, with the start ticket, kick in a bucket of funds to start it off. At any rate, I hope this is the start of a solution to the problem of what to do with the unsightly jeeps.

Yours sincerely,
Lance J. Hoffman
Computation Group
SLAC Dictionary

Part I

A number of terms not commonly used in everyday discourse are used in a high energy environment. While these terms are well understood by physicists and engineers, they often make no sense to nonspecialists. In an attempt to remedy this, here is the first installment of a brief glossary, adapted from "Science News Letter" and "Division of Technical Information. It is to be continued in future issues.

ACCELERATOR A machine that accelerates charged atomic particles to high velocities. Electrons, protons, deuterons, and alpha particles can be accelerated to nearly the speed of light for use in nuclear research. Types of accelerators include the betatron, cyclotron, linear accelerator, and synchrotron. Familiarly known as "atom smasher."

ALPHA PARTICLE (alpha radiation, alpha ray) A positively charged particle emitted by certain radioactive materials. It is made up of two neutrons and two protons; hence it is identical with the nucleus of a helium atom. It is the least penetrating of the three common forms of radiation (alpha, beta, gamma), being stopped by a sheet of paper. It is not dangerous to living things unless the alpha-emitting substance is inhaled or ingested.

ANTIMATTER Matter in which the ordinary particles (protons, neutrons, electrons, etc.) are conceived to be replaced by their corresponding antiparticles (antiprotons, antineutrons, positrons, etc.). Normal matter and antimatter would mutually annihilate each other upon contact and be converted into gamma rays.

ATOM A particle of matter indivisible by chemical means. It is the fundamental building block of matter. The elements, such as iron, lead, and sulfur, differ from each other because they contain different atoms. Atoms are unbelievably small. There are six sextillion (6 followed by 21 zeros) atoms in an ordinary drop of water. According to current theory, an electrically neutral atom contains a dense inner core (the nucleus) and a much less dense outer domain consisting of electrons in motion around the nucleus.

ATOM SMASHER (See accelerator).

BETA PARTICLE Elementary particle emitted from a nucleus during radioactive decay. It has a single electrical charge and a mass of 5.57 x 10^-28 that of a proton. Beta particles are easily stopped by a thin sheet of metal. A negatively charged beta particle is physically identical to the electron. If the beta particle is positively charged, it is called a positron. Beta radiation may cause skin burns, and beta emitters are harmful if inhaled or ingested.

BETATRON A doughnut-shaped accelerator in which electrons are accelerated by a changing magnetic field. Energies as high as 340 MeV have been attained.

BeV A billion electron volts. (GeV is the European equivalent of this.)

BUBBLE CHAMBER A device that marks the paths of charged particles by photographing the trail of bubbles they produce as they move through a transparent superheated liquid. The bubble chamber effect is observed when charged particles pass through a transparent material at a velocity greater than that of light in the material, as, for example, a blue glow in the water around the fuel elements of pool reactors.

CERENKOV RADIATION Visible blue glow in the water around the fuel elements of the Stanford Linear Accelerator Center. A blue glow in the water around the fuel elements of the SLAC Linear Accelerator Center (LAC) can be observed by increasing the brightness of the water's surface. This glow is caused by the passage of high-energy electrons through the water. The glow is a result of the interaction between the electrons and the water molecules, which is known as Cerenkov radiation. The glow is usually visible to the naked eye and can be observed at night in areas where the SLAC is operating.

CERN The name of the European Laboratory for Particle Physics located in Geneva, Switzerland. CERN is one of the largest and most important research centers in the world, dedicated to the study of subatomic particles.

CONTINUUM All of the possible states of a system. In quantum mechanics, the term is used to describe the range of possible energy levels of a system. The term is also used in other areas of physics, such as thermodynamics and electrodynamics.

COSMIC RAYS High-energy particles that originate in outer space and are detected on Earth. These particles include protons, electrons, and other charged particles. Cosmic rays are believed to be produced by the explosion of stars and by the interaction of the Sun with the interstellar medium.

Curve Smasher. The name of a 1970s rock band that was known for its energetic and high-energy sound. The band's name is a reference to the SLAC Linear Accelerator Center (LAC), which is located in Stanford, California. The band's music was characterized by its use of electronic instruments and its fast-paced, hard-driving sound. Curve Smasher's popularity declined in the late 1970s, and the band disbanded in 1980.

DUSSELRUU Dictionary. A dictionary is a reference work that lists words, phrases, or other units of language and provides information about them. Dusserluuu is a dictionary of technical terms used in high-energy physics research. It is published by the Science News Letter and Division of Technical Information. Dusserluuu is a popular dictionary among physicists and engineers who work in the field of high-energy physics.

GOLF LEAGUE NEWS

Spring is Here And So's Baseball

Spring is almost here and Dennis Love, administrative assistant at the Research Area Department and Manager of SLAC's Soft Ball team, has his announcements out regarding season's play.

Soft ball is another SLAC-sponsored sports activity, with uniforms, fees and equipment provided by SLAC. The team is made up of members of the Palo Alto Recreation League, and Tom Osborne of that group held a meeting the 25th of this month at which time schedules listing practice sessions were established. Actual games will start sometime in May.

Anyone interested in joining the SLAC team should contact Dennis Love at 211 in the Research Area or call him there on extension 2173. He would like to have your name before April 1st because the Palo Alto Recreation League is again holding two slots open for SLAC.

Last year we had two teams, SLAC A and B with 20 men at each; however, if we only have enough people for one team, Dennis would like to open the League so that they can open one of the slots to some other organization.

Many Bay Area industries sponsor these teams and SLAC has played in most of them. Last year we took second place trophy in the final play-off games. The team that beat ours to first place also beat SLAC two other times during the season, Manager Henegy is now anxious for another try at the trophy this time for first place. Indeed, this year's trophy is on display in Bldg. 211.

Practice sessions take place once a week right after work and are played over once a week but at either 7:00 or 8:00 p.m. Games continue, with the exception of a shower break, until September, and most of them are played at Palo Alto's night baseball park, the Stanford Shopping Center.

Practice is still open and anyone interested is welcome.

EDITOR'S NOTE: As opposed to "soft ball" as it is defined in some areas, this is a slow-pitch or "lob-ball" league. The League so that they can open one of the slots to some other organization.

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Cheering spectators are always welcome.

News Grabbers

Contributors of certain articles to this month's issue of the NEWS may notice the article has been modified or added to slightly. (This is not the case in the single Editor to the Editor which was printed exactly as it was submitted. The editor's comments are entirely his own there too as is the statement from the Director.)

Realizing the paper might be late enough so it would be coming out on April 3rd, we thought you'd add a few "news grabbers." We planned to throw a "quickies" type, but we know what our readers want to do. Next time.

The Staff

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SLAC NEWS

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was looking at a pin rather than, say, a K meson.

By knowing precisely the pails of the decay pions it is possible to work backwards and compute the important data for this experiment; namely, the probability of producing a rho meson depending upon the momentum transferred in the course of the collision. Momentum transfer is a measure of how sensitively the interaction is being probed.

Well, why do this? How does rho production by pions relate to the photon? The relationship is the motivating force behind VMD, developed in the early 1960's by Bakker and others, and is based upon photon-vector meson similarities. In particular, photons and vector mesons have the same "spin" and "parity." The spin of a particle is an intrinsic property of the particle, and is thought of as an inherent rotation about its axis, as the earth rotates about an axix. Parity is a property of the

Continued on Page 4

Golf League News

The SLAC Golf League will begin its 5th season on April 27th. (beginning of Daylight Savings Time). Regular league play consists of about 24 weekly Tuesday and Sunday afternoon and Saturday morning tournaments.

The weekend tournaments are held at various other courses in the area. Members are encouraged to participate in these tournaments. The number of flights is determined by the number of entries and the handicaps. Usually there is a special flight for ladies. Last year 65% of the participants won prizes.

Sign up salaries for specific participating teams will be distributed soon. If you do not receive one by April 1, 1970, and would like to sign up, please contact Peggy Goudas, Ext. 2430, Room 106, A & E Building.

Last year's team members hit a total of 19 holes-in-one among them. This would have been considered a spectacular phenomena except they were all hit on the 19th hole! How's that grab you?
SLAC Personality-
Mary Beth Jensen

Mary Elizabeth Jensen, an attractive, blue-eyed blonde with a very agreeable personality, holds down one of the most interesting, demanding jobs on the project. She is secretary to Dr. Panofsky, Director of SLAC.

Mary Beth has a bright pleasant office in the Central Lab and her desk is covered with books, papers and reports. She has held her present job for the past five years and prior to that worked as secretary to W.K. Field, Legal Counsel for SLAC. She also worked for Fred Pindar when he was at Hansen Labs and for Alf Brandin in the Stanford University Business Office.

Despite her excellent business background, Mary Beth remembers her lack of confidence at the time when she was offered a chance at her present job. A bit nervous about so much responsibility, she proposed that she might try the work for a few weeks.

She recalls how the people in her group, among them Fred Pindar, Gene Rickham and Win Field, encouraged her and urged her to take the position, adding little bits of advice such as being sure to proof-read for errors all her letters before she gave them to Pief to sign! She thought she could handle that part of the job.

The University of North Dakota had awarded her the right to teach English and grammar and she spent two years doing so at Grafton High School, Grafton, North Dakota prior to her move to the West Coast.

Another admonition was to consider that in this job, she might not always be able to leave work right at five o’clock — a fact which turned out to be all too true. But Mary Beth tried doing the best she could, and five years later, she is still on the job.

Her work involves the usual secretarial duties of dictation and typing, arranging meetings, and opening and following up on the daily mail. This latter job is one of the heaviest parts of her work (and since Dr. Panofsky receives a tremendous volume of mail not only from the project itself but from all over the world. All of this correspondence must be answered and Dr. Panofsky believes in the old-fashioned virtue of not putting off until tomorrow something that can be done today. Since Mary Beth prefers activity and keeping busy, this, too, is no problem for her.

She also enjoys her contacts with the many fascinating and interesting people who visit Dr. Panofsky and SLAC. She told us she has met many of these people and occasionally they send her greeting cards or thank you notes. One of the more recent of these notes was a Christmas card from the wife of a Russian physicist. The woman and her husband had visited SLAC last fall; and Mary Beth succeeded in another aspect of her job by taking the wife on an American shopping tour — apparently a delight for women of any nationality.

As a footnote, Mary Beth, giving one of her delightful grins, said that this same woman’s son (who is also a scientist) was here two years ago and made a very special request of her. Would she please take him to some store where he could buy his wife an American dress for a present? Mary Beth was exacting about the wife’s size, and he would be so grateful. Mary Beth agreed, they went to Macy’s, and she obligingly tried on several dresses for him. One very pleased Russian scientist returned to his country with a black silk dress for his wife and Mary Beth had done her part for international good will.

We suggested then that perhaps Mary Beth was planning a vacation this summer as glamorous and exciting as her career position — Acapulco, the Costa Brava, perhaps a Ukrainian resort along the Black Sea? No such thing. She’s looking forward to going back to that part of the American mid-west where she was born and where her parents still live — Minnesota.

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