The Beam Line

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Placement Assistance PROGRAM

The Placement Assistance Program at SLAC was devised to help employees whose employment is ending because of a reduction in the work force. Assistance has been provided in various forms - exploring job opportunities in other departments of the University, counseling employees on job hunting and writing resumes, providing lists of local employers of technical personnel, and referrals to specific jobs with Peninsula firms. In addition, workshops have been held on how to conduct a job search.

Finding a new job requres independent dedication of the job-hunter. Counseling and tips help but the primary ingredient is perseverance. Most of the employees on notice have recognized this essential fact and are acting positively and effectively.

The University has been the natural first place for many employees to look for possible transfers. Pat Devaney, of the University Personnel Office, and Elaine Hoffman, of the Hospital Personnel staff, have talked to many and explored opportunities in other departments. While it is possible that a few employees may find suitable positions either at SLAC or other departments of the University, the vast majority will be absorbed by other Peninsula employers.

The business of job hunting has led quite a few persons to seek the advice of Gail Venables in the preparation of resumes and also in suggested places to search. Gerry Renner is counseling employees on job hunting.

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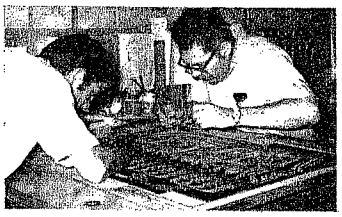
SHOP TALK

"There's a certain magic to the operation and design of printed circuit boards," said one technician in the Fab Shops recently. "I don't really believe it works -- I just do it."

More than by magic, the Electronics Fabrication Shop, headed by Frank Generali, is run like a small company within SLAC. The main purpose of the shop is to provide fast fabrication services and short term electronic technician loans to departments in need throughout the project. They specialize in five main areas: (1) printed circuit (p.c.) board design, (2) p.c. board fabrication, (3) chassis fabrication, (4) circuitry modifications in the klystron gallery and Central Control Room, and (5) inspection of all electronic devices prior to delivery.



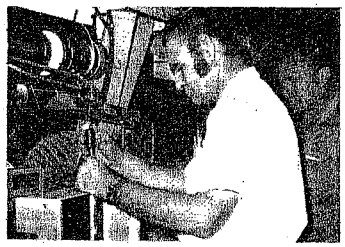
Al Burzynski (l.) and Ed Austin laying out the printed circuit board.

Millions of wires have to be wrapped around special connectors. Marvin McCoy is wire wrapping a chassis.

Robert Noriega operates the wave soldering machine which solders printed circuit boards in mass production.

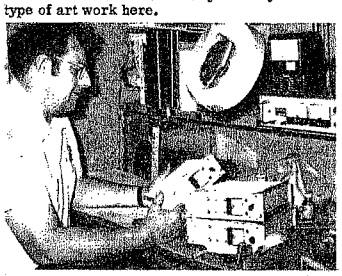
Though the shop is run with precision in order to meet schedules and also maintain standards of the quality of their "products," there is a great deal of flexibility and variety in the duties of the various shop members. The longer an employee remains in the shop, the more he or she can learn to rotate freely from one job to another, doing whatever is required according to work load.

The shop also provides a launching pad for employees who are participants in the Skills Training Program. Methodically, each trainee about electronics through the necessary stages of both theoretical training and practical application to the point where he might be "trouble shooting" after about one year on the job. For these trainees, up to 11 hours a week is allowed for taking classes offered here at SLAC which relate directly to their job and increase their knowledge in the fields of mathematics and electronics.



Jim Kosch (l.) and Boyd Rogers have a session on chassis fabrication.

Areas on the p.c. boards have to be "masked" so as not to be soldered. Carolyn Nunley does her type of art work here.



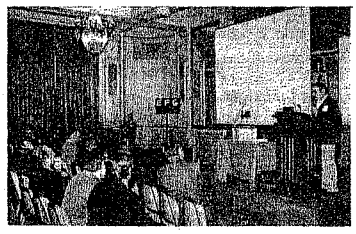
Everett Ferrell inspects an electronic module.

Marianne Hiatt is caught while installing electronic components on the p.c. boards before wave

"Annunciator" used at CONFERENCE

Suppose you're attending a conference with three sessions going on simultaneously at different locations. You would like to hear paper B-1, scheduled to begin at 2:00 p.m. at one location, but then want to hear C-2, starting

Alan Wilmunder operating the touch tone system at a Particle Accelerator Conference session chairman's table.



An annunciator in operation during a Conference session.

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Katie Duggan relaxes for a moment in her little palace with garden in the Fab Shops.

The "rules" of the shop are clear. The workmanship must be precise, the finished product must look good, shop members are flexibly changed around, and there is a "right way to do things." Operating within those guidelines, effort goes into avoiding the attitude that people are machines and should continue to do one job repeatedly. One shop member says about his past work experience,

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SLAC's little corner of desert up in the field opposite the A&E Building. Mil Strachan (Office Services) found out it was planted just for fun to see if it would grow, but nobody remembers who did the deed!

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Spring at Stanford

(Editor's note: The following is the text of a memo to Deans, Department Heads, and Administrators from Dan DeYoung, Stanford's Director of Plant Services. While the activities referred to will take place only on campus, SLAC volunteers are welcome.)

Spring has come!

Plant Services has great ideas and enthusiastic personnel who wish to celebrate the coming of Spring. We would appreciate the interest of the Stanford Community in helping in our Spring program.

We intend to:

(a) Provide paint, buckets, brushes, rollers, ladders and drop-cloths to anyone who wishes to paint his Stanford office, laboratory, or classroom. Contact Andy Just, Paint Shop Supervisor (ext. 2856) for selection from 75 standard colors and loan of equipment.

(b) Plant 500 trees. We have the trees and the plan. We want to plant 300 oaks on the hills behind the main campus in small fenced enclosures to protect them from the cattle. We need help to put up the fences and plant the trees. Volunteers may call Perry Hackett, Manager of Roads and Grounds (ext. 4388). From the volunteers, water brigades will be organized for the summer.

(c) Replant flower beds. Opportunities exist for flower lovers to assist our dedicated groundsmen replace plants lost in the "Big Freeze." To adopt a flower bed, call Fred Priddle, Grounds Supervisor (ext. 4995).

(d) Build an irrigation line to water the eight thousand feet of rose bushes along El Camino Real. A group of volunteer engineers is needed to help in the trenching and installation. With the manpower saved, the Oval will be maintained again year-round.

(e) Wash first floor windows. Plant Services will provide plastic buckets, rags and cleaning solutions. We'll leave upper floor windows to the professionals. Those wishing to improve visibility should call Joe Diani, Building Maintenance Supervisor (ext. 2117) for supplies.

(f) Recreate and rejuvenate the Cactus Garden. Near the Mausoleum, Mrs. Stanford planted many exotic cactus plants from all over the world. Although this garden has been neglected, many of the original plants are still growing. A student group is going to take on the task of cleaning and replanting for all to enjoy.

(g) Most of all, the personnel of Plant Services want everyone to share our sense of pride and satisfaction in living, working, and studying in this beautiful place. Our semi-weekly film and lecture series on gardening and our "Walk in the Stanford Trees" scheduled for May 13 is organized for this purpose.

Join us in making the campus sparkle. We'll welcome your ideas and your assistance.

SLAC Job Opening

Mathematician: The Spectrometer Facilities Group has an opening for a mathematician. The position involves programming, both in Fortran and assembly language, at a medium sized computer for scientific and largely real-time application. The duties include development and modification of programs for reading, interpreting, or controlling experimental equipment; development and documentation of routines for testing and diagnosing experimental equipment; modification of installation wire listing program. Qualifications: Applicant should have B.S. Degree or equivalent experience in physics, mathematics or related fields and must have experience in Fortran and/or assembly language programmings and must be able to adapt programming logic to practical experimental conditions. Salary - open.

In addition to the above position available at SLAC, a complete listing of open positions on the Stanford campus and the Stanford Hospital is posted outside of the Employee Relations Office, Room 238, A&E Building, and in the Employee's Canteen in the Research Yard.

Contact the Employee Relations Office (phone extension 2355) if you are interested in any of these positions.

The Colonization of Space
— Noon Program

Dr. Gerry O'Neill, Professor of Physics at Princeton University and a visitor at SLAC for the next several months, will present a non-technical, slide-illustrated talk at 12:15 p.m. in the SLAC Auditorium on Tuesday, May 15.

The talk outlines a plan, requiring only 1970's technology, for the construction of large communities in "nearby" space, between the Earth and Moon. Each community would house about 200,000 people, at low population density (comparable to the overall average for Switzerland or California). The talk will include discussion of agriculture, sports, travel and possible life-styles for the colonists. The ultimate limit of development is many thousand times the land area of the Earth.

Wilmunder's Conference "Annunciator"

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(hopefully) at 2:10 p.m. at a different location. Since sessions rarely start or finish on schedule, you could leave B-1 early and arrive (maybe) on time for C-2, or you could leave at the conclusion of B-1 and arrive, probably late, for C-2. Either way, it's a guess.

Alan Wilmunder, an engineer in Accelerator Physics, acting upon a suggestion by Dr. Richard Neal, has taken the guesswork out of parallel session conferences by designing and, with the help of technician Peter Walsh, building a device known as an "acoustically coupled annunciator panel," which has become popularly known as a "session-in-progress indicator."

The device was used successfully at the National Particle Accelerator Conference, held March 5-7 at the Sheraton Palace Hotel in San Francisco under the co-sponsorship of SLAC and the Lawrence Berkeley Laboratory. Aside from the two plenary sessions, the conference consisted of four sets of three parallel sessions. Annunciators were placed in each of the rooms for the parallel sessions and also in the room for coffee breaks. They enabled a participant to know which paper was being presented at each session.

Each of the sessions had a chairman, who used a small keyboard to flash the session number for his session into all four locations. The photo shows Mr. Wilmunder checking out the system at a session chairman's table. The annunciator behind him shows that paper three of session H as well as paper nine of session I and six of session J were occurring at that time in the three meeting rooms.

We asked Mr. Wilmunder to explain how the system works and what problems he had in getting it to work.

The first problem, he told us, was how to display the session numbers on a panel which could be seen 120 feet away. After ruling out liquid crystals as "too passive" because they would require an outside light source to be seen in a darkened room and a neon display as too small, a display made up of devices called light-emitting diodes (LED's) was decided upon.

LED's are to ordinary light bulbs as transistors are to radio tubes. They're small solid crystals which emit light when current passes through them. No vacuum is necessary. When lighted they appear to be 50 percent larger than their physical dimensions. LED technology is relatively new, but now fairly cheap LED's are on the market with 1 million hour operating lifetimes. Some of these are currently being tested to replace indicator lights at SLAC in the sector control alcoves, since the experience gained with them at the conference has helped confirm LED reliability and usefulness.

Each letter on each enunciator panel is made up of seven segments of LED's with six LED's per segment. All of the six LED's in a segment are in series and the segments form essentially a tilted number eight. By turning on the appropriate displays, each showing what is happening in all three sessions, together. The simplest technique would be to run wires between the displays, but since session rooms were located on either side of the hotel's famed Garden Court restaurant, this idea wasn't well received.

The next idea was to hook the displays together by means of a telephone touch tone system, and this was adopted. Touch tone transmitters or encoders (as in a touch tone telephone) were bought and a touch tone receiver (decoder) was built. Although the decoder manufacturer's schematics were followed religiously, the services of Harry Hogg and Dave Farkas were commissioned to design a set of filters to help discriminate between the tones which are used to determine which number is to appear. Then acoustical telephone couplers were bought to transmit and receive signals.

At the conference Pacific Telephone hooked up a closed telephone system between the session and coffee rooms. One telephone per location was set in the acoustical telephone coupler, and the signals went to a logic board contained within the coupler which decoded the tones transmitted by the session chairmen into numbers. Mr. Wilmunder was on hand before each session to help session chairmen use the system.

Comments from people both during and after the conference indicated the session annunciators were an excellent idea and no doubt they'll be used in future conferences with parallel sessions and in a number of other ways at SLAC.

Three at SLAC RECEIVE Gugenheims

SLAC Director W.K.H. Panofsky, theorist J.D. Bjorken, and Group G experimentalist S.E. Wojcicki are among 16 Stanford faculty members to be awarded John Simon Guggenheim fellowships to pursue individual studies during the 1973-74 academic year.

The awards nationally amounted to $3.8 million, divided among 339 winners from over 2500 applicants.

Dr. Panofsky plans to leave for the CERN laboratory in Geneva in late August and spend the rest of 1973 there. In his absence, Dr. Sid Drell will serve as Director and Dr. Richard Neal will serve as Deputy Director. (Dr. Panofsky's secretary, Mary Beth Jensen, plans to take a one-month R&R "sabbatical" of her own during his absence!)

Dr. Wojcicki will also be traveling to CERN, probably in September. He plans to remain there for 11 months both catching up on the latest theoretical developments in particle physics and doing some experimental work.

Placement Assistance Program

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The Placement Assistance Program also held four series of workshops on how to conduct a job search. Each series consisted of four or five sessions of three hours duration, with an average of seven participants.

The content of the workshops was designed to make job hunters aware of their own situation and to increase their skills in finding a suitable job. Before taking up the subject of job hunting, some discussion took place on ways of handling personal finances. The purpose of this discussion was not only to exchange useful information, but also to allay any concern about finances which might otherwise impede job hunting. The first workshop then explored the job market in general, various sources of information about employers, and the many ways of developing leads on job openings. The remainder of the session was devoted to identifying the "hiring influence," i.e. the person who makes the hiring decision, and how to avoid the "deselection" process typical of most employers, whether industrial, governmental, or academic.

The second and third workshops concentrated on letters of application and resumes. Participants examined sample letters and resumes, and distinguished between "broadcast" letters and those tailored to a specific opening. The effectiveness of a letter in getting an appointment for an interview was contrasted with the traditional chronological resume which all too often resulted in "deselection." Workshop members learned from one another by hearing reactions to their letters and resumes as they critiqued each others' efforts.

The fourth and fifth sessions were practice interviews. By this time members of each group had developed a sense of concern for one another and took turns in interviewing and being interviewed. After each interview the whole group critiqued what had taken place, and although criticism was consistently constructive and supportive, it was also very frank. These last workshops also stressed the importance of being prepared to answer difficult questions and avoiding flat statements about salary requirements.

The results of these workshops can best be measured both in the market place and in the confidence with which participants pursue the job search. Time alone will tell the story. The key factor in the workshops was the active and supportive participation of all members.

Our thanks and acknowledgment are due Mr. John Love of Lockheed Missiles and Space Company and Mr. Norm Hill of the American Institute of Aeronautics and Astronautics, who have donated the workshop booklets, and whose kindness and cooperation made the workshops possible.

Further workshop series will be given if sufficient demand is forthcoming. Call Gerry Renner at 2351.

Shop Talk

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"What really kills a person is too much repetition, doing the same old thing 8 hours a day, for instance, when you're in assembly work. This way if somebody gets sick or is on vacation, there's always someone around who can get the job done. We have rules, but there's freedom, too."

Shop employees are given a written as well as a verbal review every year. It is a "face to face" approach which entitles each employee to either a pat on the back for a job well done or the converse, knowledge that he's done a lousy job. No bones about it.

Along with all that serious work going on, a