

To Fight We Must Know

"We have been pioneers in creating a new type of community-- one that I have called a 'community of technical scholars.' Such a community is composed of industries using highly sophisticated technologies, together with a strong university that is sensitive to the creative activities of the surrounding industry. This pattern appears to be the wave of the future."

FREDERICK TERMAN

STANFORD OBSERVED

When President Nixon announced the "non-invasion" of Cambodia this spring, most of the Stanford community reacted angrily, participating in the nationwide "strike" against the War. Though opposition to the Nixon administration was nearly unanimous throughout the Stanford community, strong strategic differences emerged. Most "striking" students, faculty, and administrators considered the strike a show of strength to influence the President. Members of the Strike's radical caucus and the Off-ROTC Movement, however, attempted to direct the strike against the University. Anti-war liberals were aghast. Nixon and the government, they contended, were much more suitable targets. However, radicals believe that Stanford University, with its academic partners across the country, is an integral part of the U.S. Imperial machine. In serving the U.S. military and providing the academic resources for an imperialist corporate and government policy, the Universities deserve the attacks that they now face, and much more.

Stanford's country-club atmosphere often takes one back thirty years or so to the days when the University was a finishing school for the sons and daughters of the California elite. But Stanford has grown since then, and now half the student body is engaged in specialized post-graduate study. Students are trained to be corporate lawyers, medical experts, engineers, State Department experts, and junior executives. In addition, research institutes from communication to secondary education now dot the campus.

Stanford currently does \$14 million in research for the Department of Defense (DOD), spread throughout the departments of geology, statistics, physiology, sociology, political science, and the Hoover Institution, as well as the sciences and engineering. Stanford's total research budget, excluding SLAC, is in the neighborhood of \$40 million. The Public Health Service, the National Science Foundation, and NASA join the DOD as the chief sources of government funds.

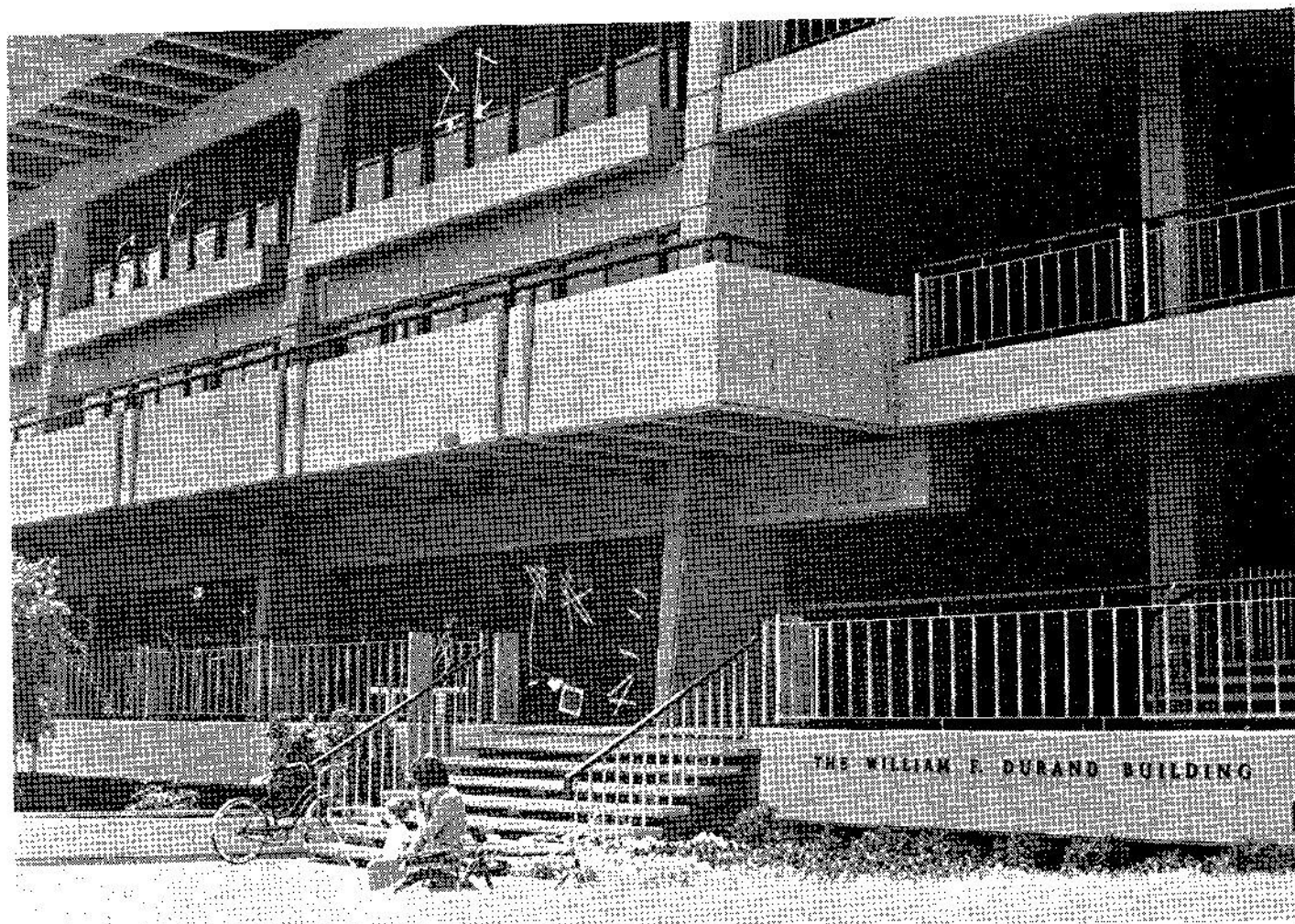
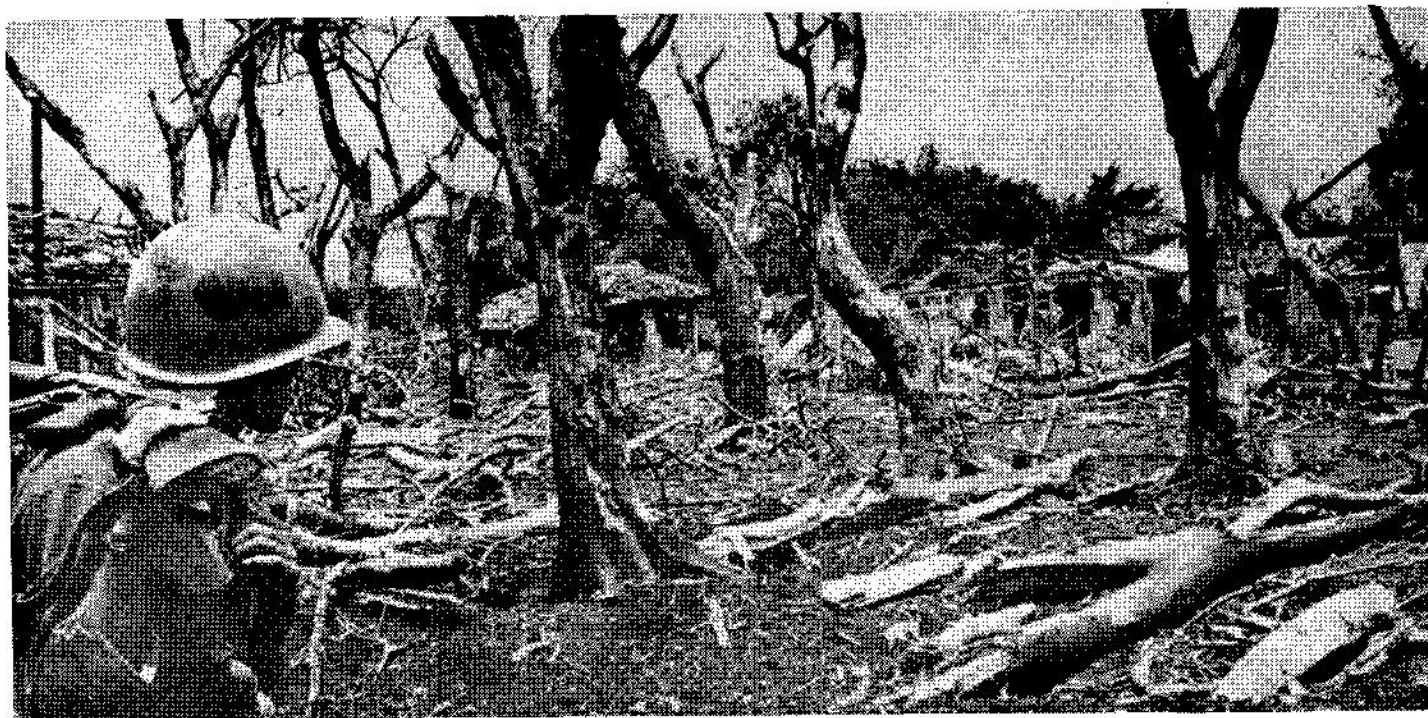
Stanford extends beyond the academic campus. In conjunction with the Atomic Energy Commission, it operates the non-military Stanford Linear Accelerator (SLAC), which does \$30 million of research annually. Near the

hospital and medical school lies the Stanford professional area and the chic shopping center. South of campus, extending from El Camino Real and the "Dillingham" building site beyond Coyote Hill, lies the Stanford Industrial Park, major brain-center for the military-electronics industry. And secluded a few miles away in Menlo Park is the Stanford Research Institute.

Stanford is not the result of accidental development. It has been developed to serve the interests of the men who control it. We contend that such interests are contrary to the needs of most people. This section focuses on the clearest examples -- the Engineering School, the dying ROTC program, the Graduate School of Business, the industrial park, and the Stanford Research Institute -- but the analysis extends, to one degree to another, to the entire Stanford complex.



Fred Terman



PEOPLE WHO WORK IN GLASS BUILDINGS SHOULD NOT DO WAR RESEARCH.

Engineering at Stanford

A few years ago the Stanford School of Engineering was rated first in the nation in a prestigious magazine poll. The Engineering School, led by the Department of Electrical Engineering and the growing Aeronautics and Astronautics Department, is the center of the Mid-Peninsula "Community of Technical Scholars," created and celebrated by Provost Emeritus Frederick Terman. The Engineering School has attracted -- and grown with -- the aerospace and electronics industries which populate the Stanford Industrial Park and much of the rest of the Peninsula.

Through research, consulting, sponsoring conferences, and training on all levels, the School of Engineering has made Stanford and its environs the West Coast brain center for the American military empire. In return, those who have profited from the services of Stanford Engineering have supported it well.

RESEARCH

Engineering's most direct link to the U.S. military is its research. The Department of Defense (DOD) sponsors several million dollars of research annually in the Engineering school, primarily in the Stanford Electronics Laboratories. This research varies in the nature of its applicability. Most, however, fits into a long-range strategy for maintaining America's leadership in all aspects of technological warfare.

Stanford's DOD-sponsored research is now unclassified. Secret research, which has the most immediate military application, was thrown off campus by the April Third Movement with the occupation of the Applied Electronics Laboratory in 1969. However, that same research now continues at off-campus centers such as SRI.

Unclassified research on the Stanford campus is difficult to judge. Projects vary along a scale from "mission-oriented" through "basic" to useless. Sensitive researchers attempt to mask the military applications of their work when presenting them to the anti-war Stanford community -- in AEL the April Third Movement discovered that the "Electromagnetic Techniques" contract approved by a faculty committee was actually entitled "Electromagnetic Warfare Techniques." The same researchers emphasize the military possibilities of their work when they apply to the Department of Defense for funds. Recent congressional pressure -- through the Mansfield amendment and general fund cutbacks -- is sufficient to assure us that all DOD-sponsored research has military value to the United States.

Even the most "basic" research merits challenge. Given the political context of American society and the concerns of the sponsor, research must be judged in terms of how we expect it to be used -- not how much it might serve the people if only America changed its policies. Is research neutral when only those who are building missiles or supersonic aircraft can use it? Worried scientists and engineers often assure themselves that their research is probably useless. This, too, is no justification at a time when the resources are needed elsewhere.

TRAINING

Stanford's engineering research for the DOD must be

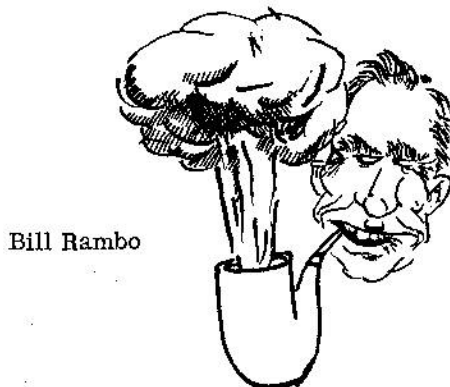
understood as part of the training and socialization of engineering students. Graduate students trained on DOD research drift easily into military-connected work once they get their degrees. In fact, recent graduates have found that DOD-oriented training has hindered their obtaining jobs in non-military engineering.

Furthermore, anyone seeking a career in engineering has a strong chance of working for the Department of Defense or war-related industries. That is, the bulk of Stanford's engineering graduates end up doing war-work because today in America most scientific and technical work is military-oriented. As Frederick Terman boasts, Stanford engineering graduates naturally accept work in local companies. Unfortunately, these companies draw the bulk of their business from the Department of Defense and its contractors. In addition, many engineering departments or research groups have "affiliate" programs. Co-operating companies -- again, chiefly defense-oriented -- receive biographies of employable graduate students.

Many Stanford engineering students are men already working for private war-industry or for military laboratories. On leave from their jobs, or attending Stanford part-time, they take advanced coursework in their special fields. Two years ago the training of engineers already in industry took a giant step forward with the "Instruction Television Fixed Service," emanating from the Durand Building. Through this program, whose cost is defrayed by participating companies such as Lockheed and Hewlett-Packard, several hundred engineers, chiefly from local war-industries, are able to participate in Stanford's Honors Cooperative Program.

BUILDING AND SERVING INDUSTRY

Many local industries have developed directly from the Stanford Engineering School. Others have located in the area because of the Engineering School. Many professors sit on the Boards of local electronics firms, and others consult part-time. For a more extensive description of this phenomenon see the section on the Stanford Industrial Park.



Bill Rambo

Engineering departments and laboratories provide another continuing service for the defense industry: they sponsor conferences. For example, in 1962 the Electronics Laboratories, under the direction of William R. Rambo, hosted 400 engineers and scientists from government and industrial laboratories for the "Department of Defense Electromagnetic Warfare Symposium." Similar electronics research reviews, with less fanfare, occur yearly at Stanford, as well as occasional conferences in other fields in engineering.

GOVERNMENT AND INDUSTRY SUPPORT

The corporations which benefit from research, training, and other services of the Engineering School would like to see such benefits continue and expand. Consequently

private financial support, scarce around much of the rest of the university, is readily available. In addition to scholarship and grant programs, some departments maintain "associate" or "affiliate" programs. Aerospace-defense companies pay \$5,000 to \$10,000 annually for five-year memberships in the Aero and Astro Associate Program. According to a department publication, the Associate Program "assures an expeditious transfer of research results to its members through seminars, reports, and faculty visits to member corporations."

Private industry and government agencies also support the engineering school when construction funds are needed. The Electronics Research Laboratory was "made possible by the generosity of William Hewlett and David Packard" according to a plaque on its walls. (David Packard, now Deputy Secretary of Defense, was chairman of Stanford's Board of Trustees and president of Hewlett-Packard before he assumed his present position. He is worth over \$300 million.) The new Durand Space Engineering Building, home of Aero and Astro, Radioscience, and the Guidance and Control Laboratory, was funded with \$992,000 from the Air Force, \$2,080,000 from NASA, and \$1.4 million from private industry. Private funding was raised by the chairman of the Stanford Trustee Committee on Gifts, Roger Lewis -- Chairman of the Board of General Dynamics, of F-111 fame. Contributors included Lockheed, Boeing, General Electric, General Dynamics, Hughes, et al. According to Lewis, "the private funding, mainly from corporations, along with the excellent grants from NASA and the Air Force, will assure a well-rounded, integrated facility serving the needs of higher education, industry, and the government. This is an excellent example of joint co-operation."

Such cooperation requires coordination. While it would be foolish to assert that corporate executives run the School of Engineering, they do play an official advisory role. In January, 1967 the Engineering School formed an "Advisory Council" which reads like a "Who's Who in the Defense Industry." The Advisory Council provides "the distinguished counsel of leaders, a critical review of the School's current and projected programs and plans, outside viewpoints that will assist the school to provide a more complete and valuable education, and a liaison with the outside community."

The Government has a less official "advisory" role. With its massive funding leverage, it too can influence the direction of the school. But more often Stanford officials and researchers internalize Government standards and goals as they attempt to impress the frequent visitors from Government funding agencies who check up on their projects.

R.O.T.C.

The U.S. is presently conducting a staggered troop withdrawal from American universities, including Stanford. Recruitment into the Reserve Officer Training Corps (ROTC) has dropped sharply all over the country as students continue to wage increasingly militaristic struggles against this agency of American imperialism. More than fifty-five schools formerly having a compulsory ROTC program have ended the requirement, and numerous "elite" schools, including Princeton and Notre Dame, are now denying academic credit for "military science" courses. Harvard, Yale, Dartmouth, Columbia Brown and nine other schools are eliminating the program completely.

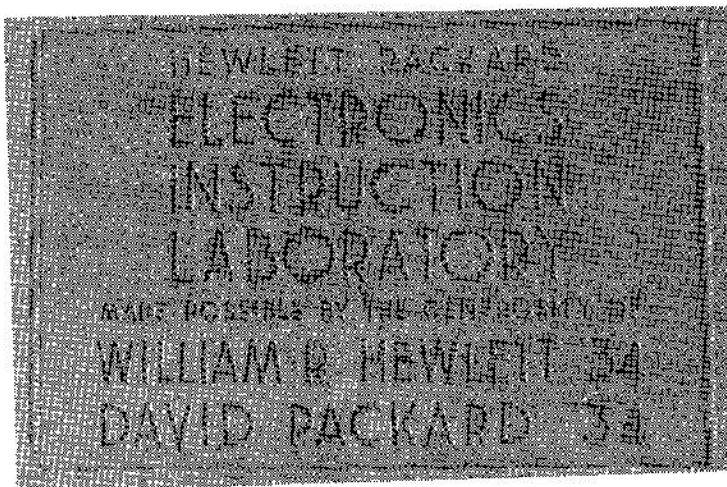
U.S. News and World Report noted on June 29, 1970, that "not in decades, since the program began, has the ROTC been dealt such a devastating blow." Last year over 400 separate attacks were directed against ROTC at the 364 schools with functioning programs, including seventy-three attempts to burn or blow up ROTC buildings (Stanford's Naval ROTC annex was twice destroyed by firebomb in the spring of 1968). All this despite a 1917 federal statute promising a thirty-year prison sentence and a \$10,000 fine to anyone making an attempt "to interfere with and obstruct the United States in preparing for and carrying out defense activities."

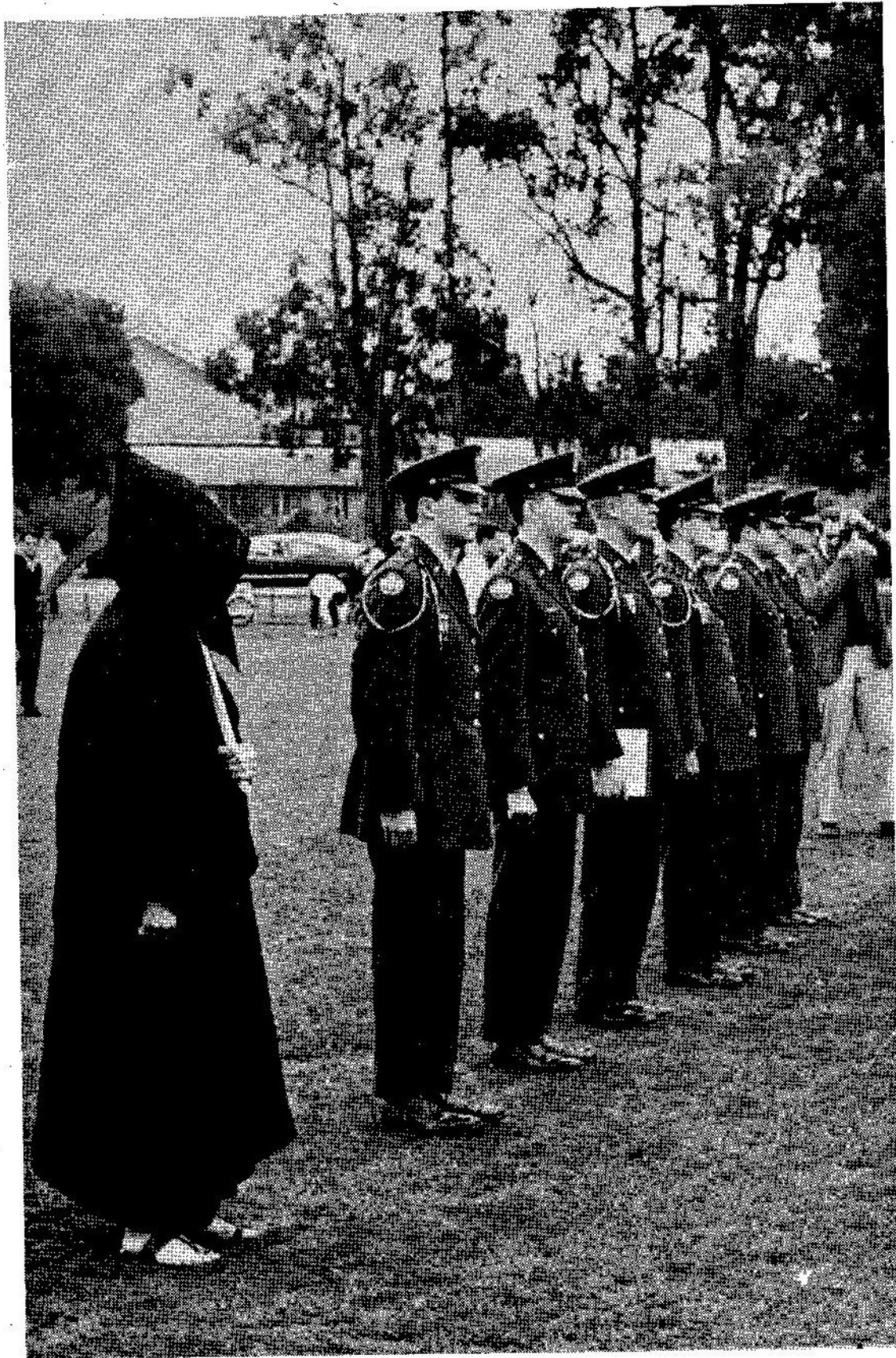
The importance of ROTC to the continuing U.S. war effort is most eloquently proclaimed in Where the Leader Are, an Army ROTC recruitment brochure: "Without ROTC, the rapid expansion of the American Army during the two World Wars, the Korean conflict and other period of national crisis would be difficult if not impossible." Last year, in the midst of the latest "period of national crisis," ROTC still supplied about 50% of the Army's new officers, 35% of the Air Force's and 20% of the Navy's, most of the rest coming from ninety-day Officer Candidate Schools.

The Department of Defense (DOD) has attempted to stem the tide and protect its most important source of new officers by greatly expanding the "material incentives." The ROTC Revitalization Act of 1964 created a full-tuition scholarship program, \$50 per month "subsistence" wages for cadets in the advanced program, and a "broadened curriculum." Last year, the DOD announced plans to expand this mercenary effort by nearly doubling the number of scholarships and amount of stipends. Meanwhile, the time of active duty for a graduated cadet officer has reportedly been reduced by more than half.

At the same time, the other prong of the Nixon "carrot/stick" policy has been considerably strengthened. The Administration asked Congress last June for an end to all student deferments except ROTC, issued veiled threats of an end to research grants to those schools not fully cooperating with the campus arm of the military, and continued to use the punitive clause in the ROTC individual contracts to prevent cadets from leaving the program after the end of the second year of training. In spite of all these efforts, national enrollment will spiral down an estimated 30% and almost 40% at Stanford. Part of the reason for this decline in popularity of the military on campus is the increasing identification of ROTC as an agency of U.S. imperialism, recruiting officers from the American elite to lead drafted troops in the protection of American interests overseas.

At Stanford, this understanding was reflected last year in a prolonged militant campaign against the U.S. military. The Off-ROTC Movement grew in response





to attempts by the local puppet government (Pitzer and Company) to reinstate a "traditional" ROTC program at Stanford after academic credit, punitive clauses, and faculty privileges to officers in the "Department of Military Science" had all been abolished by an Academic Senate decision of February, 1969. In response to an official U.S. Army memorandum of October, 1969, stating that it would not accept the faculty's recommendation, Pitzer began to campaign for a reversal. The President's employers, the Stanford Board of Trustees, had earlier expressed their view that "ROTC is vital to the continued supply of civilian leadership for the military services, and it is of crucial importance the first-ranking institutions, such as Stanford, lend their strength to that task. . . . This Board of Trustees urges the President of the University to continue his consultation with the Department of Defense, leading to appropriate actions which will improve and vitalize this important program."

Pitzer first pressured his own "President's Advisory Committee on ROTC Affairs" to recommend reconsideration of the faculty decision. This was made easy by the fact that the three newly appointed professors to the committee were pro-ROTC (one had openly campaigned for a reversal of the faculty vote) and two of the three student members of the committee were ROTC cadets. By a curious sleight-of-hand, Pitzer then convinced a majority of the Faculty Senate that "the Army has offered substantial concessions to the University" (including the change of title from "Department of Military Science" to "Center for Military Studies" and switching the basic courses in military history to regular University departments). The President went on to state that: "A group analogous to the military officers assigned to ROTC duty at Stanford might well be the members of the Stanford United Ministry." Needless to say, Pitzer got his way. The Senate adopted the Army proposal over the determined opposition of Professor Alan S. Manne, chairman of the ROTC Advisory Committee, who said to the Senate before resigning his chairmanship in protest: "This body is being asked to reverse last year's faculty decision and to adopt the Department of Defense position. . . . In my view this faculty decision was a sound one and long overdue--overdue for decades."

After an intensive campaign against this local resur- (see HOW THEY GONNA KEEP US DOWN ON THE FARM), the Off-ROTC Movement exploded into a student strike against the military invasion of Cambodia, an invasion planned by former ROTC cadet General Westmoreland, whose "civilian influence" on the military is exceeded only by such civilians as David Packard, who run the Defense Department.

Under severe pressure from the student body, the faculty resolved to end academic credit for ROTC, and instructed the same President's Committee on ROTC Affairs to make a report. The recommendations of this "Final Report," based on hearings, a questionnaire sent to faculty and students, and "extensive deliberations," were adopted. To no one's surprise, it was decided that ROTC would be phased out at Stanford, beginning with the elimination of academic credit and the discontinuation of ROTC programs for freshmen this fall.

The Air Force ROTC program at Stanford had already announced, because of student antipathy and declining enrollment, its intention to leave by June, 1971; and the Army ROTC, which only enrolled six Stanford freshmen last year, reluctantly agreed to the phase-out. Naval ROTC, however, has developed a three-year program through which thirty freshmen will enter Stanford's Naval ROTC program this fall.

The Committee Report also recommended a transitional withdrawal stage, a program of "Stanfordization"

of ROTC, including the provision of Stanford scholarships to replace those given by the DOD and an end to the repressive punitive clause for those who choose to leave the program after signing the contract. Long-term recommendations include off-campus ROTC training and a National Services Program "which will make available to university men and women, on a basis comparable to the officer training program, special training opportunities for roles in various types of service deemed essential to the welfare of the Nation."

Thus, the "viable partnership" pattern of relations between the university and the military continues to exist, though in slightly different forms. However, as sociologist Joseph W. Scott writes in *Trans-Action* (September, 1969), "A break between the universities and the military would seriously impair the conduct of the war in Vietnam, and, for that matter, of any major war. By attacking the armed forces' major source of leadership potential, anti-war activists have discovered the most effective method to date for curbing the military establishment's ability to wage war."

Though ROTC is dying at Stanford, university and military officials intend to see that Stanford lives up to its "obligations" by preparing currently-enrolled cadets (plus thirty Navy freshmen) for positions of leadership in Vietnam, Germany, or the shores of Tripoli.

Graduate School of Business

"Recognition of the mutual interest between the business community and professional education for business led to the founding of the Stanford Graduate School of Business in 1925. At that time, a group of business executives, with the inspiration and leadership of Herbert Hoover, contributed the funds to establish the School. Through more than four decades, the objective of the school has been to develop responsible business leadership. More than 5,300 degrees have been conferred, and the School's graduates occupy general management positions throughout the world."

from "The Affiliate Program; Graduate School of Business, Stanford University"

The Stanford business school today represents perhaps the most "enlightened" forces in American business. From 1958-68, under the dynamic leadership of Dean Ernest Arbuckle -- now a Stanford Trustee and Chairman of the Board of both Wells Fargo Bank and the Stanford Research Institute -- the business school undertook a massive expansion program which included the construction of a sumptuous new building and the inception of numerous programs to supplement the growing MBA programs.

The ESAN (graduate school in Peru), the Sloan Program, ICAME, the Stanford Executive Program, the MBA program, and many more, all serve to rationalize the business practices of the "Free World" empire. These programs are guided by the needs of multi-national capitalism. The people usually lose out. The so-called progressive programs of the business school push social adjustment -- no social change. By this we mean that business urges reform only within the context of continued corporate stability and profit. We contend that the profit system itself is contrary to the interests of the vast major-

ity of people in the world, and that any program which makes the profit system more efficient only perpetuates oppression of the people. It is impossible to offer a detailed analysis of monopoly capitalism and imperialism in this short space -- many books have been written on the subject. Rather, we will restrict ourselves to a presentation of some of the activities of the Graduate School of Business and their immediate implications.

ESAN

La Escuela de Administracion de Negocios para Graduados (ESAN) was established in Peru in 1963 by the Alliance for Progress under the administration of the Stanford business school. Latin America's first "graduate school of business" is considered a model by Western corporate interests, and gradually Stanford is being phased out of its responsibility, as Peruvians assume control. The purpose of the program is to produce Western-style executives insulated from the student ferment in Peruvian Universities. ESAN graduates have assumed roles in companies associated with Stanford, such as Ernie Arbuckle's old company, W.R. Grace, or Utah Construction and Mining, whose president, Ed Littlefield, recently served as a Stanford Trustee and Chairman of the Business School Advisory Council. These corporations, with important interests in Peru, have been more interested in improving profit and guaranteeing stability than seeking improvement of general living conditions in Peru.

ICAME

The International Center for the Advancement of Management Education (ICAME), funded by the Ford Foundation, is open to "faculty members from institutions in the developing countries" and "researchers in business and public administration." Each year thirty to forty participants spend eight months on the Stanford campus learning business skills and developing an understanding of how multi-national capitalism works. While development--elevating the economy of participating countries--is the purpose of the program, "dependence" would be more appropriate. Business is taught within the context of existing practices of multi-national corporations. Often these practices are harmful to the capitalists of underdeveloping countries, and always they are harmful to the people.

MANAGEMENT CONTROL SEMINAR

The Management Control Seminar is one of a series of week-long "continuing education" seminars designed to meet the needs of working executives, especially those who "exercise general management responsibility." The advertising brochure for the program summarizes the purpose--"Effective management planning and control are crucial to the success of business enterprise." Again, the GSB is sponsoring a program which helps rationalize the status quo. Predictably, no consideration is given to "workers' control of production" or other modes of operation which could create radically new social conditions.

MBA PROGRAM

The heart of the business school is the two-year Masters of Business Administration program in which over 700 students are currently enrolled. The MBA program produces junior executives. Recent pressure led to the development of the "Leadership Program in Manage-

ment for Disadvantaged (Oppressed) Minorities," which has brought minority college graduates into the MBA program. The MBA program produces creative young executives who are often interested in adapting business to the social needs of America -- but again, as David Packard said, "Profit is the Monetary Measurement of our Contribution to Society."

FACULTY

The business school faculty, which supervises the numerous training programs sponsored by the Graduate School of Business, represents a wide range of service to the U.S. government and multi-national business. Business School Dean and Professor of Management Arjay Miller was recently the President of the Ford Motor Company, and is now a director of Wells Fargo and Utah Construction and Mining. Associate Dean (former acting Dean) Samuel Pond formerly held posts at Pan American Airways and FMC Corporation. Carlton Pederson, director of the Stanford-Sloan program, is a director of several companies, including State Farm Auto insurance. Professor Alexander Robichek served with military intelligence in the early fifties. George Bach consults for the Treasury department and the Federal Reserve. Several professors consult for RAND and other American businesses.



"ICAME, I saw, I conquered." --Arjay Miller

Stanford's relationship to industry goes beyond the educational programs and faculty experience. 180 companies in the affiliate program provided the school with \$300,000 in unrestricted financial support in 1968-69. At a time when Universities are finding fund-raising difficult, the Graduate School of Business maintains a separate endowment. A short tour of the business school will reveal plaques identifying companies which donated to the GSB construction fund.

To top off this close relationship, thirty-seven top-level executives serve as members of the Business School Advisory Council. More than a formality, this advisory council provides the business school with an important liaison with the leaders of American business -- chiefly from the West Coast -- and advice and support on the operation of the GSB.

Stanford Industrial Park

VARIAN

On October 16, 1951, Stanford University announced the lease of ten acres at the southeast edge of the University's 8800-acre landholdings to Varian Associates, a local electronics firm. This development was to become the model and cornerstone for the Stanford Industrial Park, now the site of over sixty firms employing close to twenty thousand men and women.

Varian Associates has always had a close relationship with Stanford. The Varian brothers, Russell and Sigurd, were given the use of Stanford laboratories at the urging of physics professor W. W. Hansen. The Klystron tube, which they developed in 1938 as unsalaried research associates, brought more than two million dollars in royalties to the University and led eventually to the formation of Varian Associates, which specialized in the production of klystrons. The klystron tube was essential to early radar.

At the time the lease was announced, three Stanford faculty members were on the Varian board of directors: Frederick Terman, who was then Dean of Engineering, Leonard Schiff, then the head of the physics department, and Edward L. Ginzton, director of the Microwave Laboratory at Stanford at the time. Dr. Ginzton is now the Chairman of Varian. David Packard, merely the President of Hewlett-Packard at the time, was also a director.

In 1951 Stanford professors did not feel the need to conceal their involvement as consultants for industry. A University press release lists Nobel-prize winner Felix Bloch, Marvin Chodorow, and Edward Jaynes of the physics department, together with Lester Field of electrical engineering, as Varian consultants.

Today Varian is a giant in microwave electronics. Yearly sales for 1969 totalled \$186 million, at least \$15 million of which was directly to the Department of Defense (total is for Palo Alto-based contracts). With 3500 employees headquartered in a dozen or so buildings in the Industrial Park, Varian continues to draw on Stanford's (also SRI's) resources, hiring graduates and employing faculty as consultants. Joseph Pettit, current Dean of the Engineering School, is now a Varian director. In return, the company has supported the University from which it grew. Stanford now has the Varian physics laboratory and the McCullough building, named for Jack McCullough, a Varian director and founder of Varian's Eimac division.

APPLIED TECHNOLOGY

Another exemplary Industrial Park success is Applied Technology, Inc., formed by a Stanford group including E. Finley Carter (President of SRI 1953-63), Kendal Dazey (Assistant Controller of Stanford for eight years), William R. Rambo (Electrical Engineering Professor and Director of the Stanford Electronics Laboratories) and Oswald Villard (Electrical Engineering Professor and Director of Stanford's Radioscience Labs). According to a 1967 prospectus, ATI's business was "substantially all (with) the Government or other customers engaged in programs relating to national defense."

In September, 1967, Applied Technology merged with

Itek, a Rockefeller-funded spin-off from Boston University. E. Finley Carter is now a director of Itek, and ATI is a division of the eastern company. However, ATI continued to grow. With its new buildings on Hillview Dr., it employs 500 and held, in fiscal 1969, \$23 million in direct DOD contracts.

ATI specializes in electronic countermeasures (radar jamming, etc.). ATI designed or produced equipment which is used in Vietnam on aircraft such as the F-100, the F-4C, the F-105, and the B-52. Somehow ATI escaped public attention in the Spring of '69, when Stanford radials occupied the Applied Electronics Laboratory, on the Stanford campus. At the time we were opposing classified research, especially in the field of countermeasures, done in that laboratory. The countermeasures contract was carried out under the personal direction of Professor Rambo, who is a life-time member of the Association of Old Crows, a group dedicated "to the advancement of the art of electronic warfare." Research done at Stanford by Dr. Rambo, his research associates, and his graduate students made its way into design models and production for profit at ATI and death in Vietnam.

STANFORD INDUSTRIAL PARK TODAY

The Stanford Industrial Park today is a center for the expanding military-electronics industry, critical to the war in Vietnam as well as ABM, MIRV, and Poseidon programs. Light manufacturing exists at Varian, Hewlett-Packard, and Watkins-Johnson among others, but the park is noted mainly for its research and development. Many of the firms like ATI and Varian, are spin-offs from the University. Other companies have been attracted by the environment -- Frederick Terman's "community of technical scholars." Most rely heavily on military contracts. Some, like Hewlett-Packard, rely on DOD contracts for a small percentage of their income (in fiscal 1969 \$14 million out of \$324 million), but provide sophisticated equipment to other defense contractors.

Several industrial park firms use the Engineering School's instructional television network. (ENGINEERING AT STANFORD) A few more participate in the Honors Cooperative Program without the television link-up. Many Stanford professors consult in the industrial park, and some industrial park professionals lecture or lead seminars at Stanford. Many firms provide fellowships or give directly to science, business, and engineering departments at Stanford. In return, many Stanford graduates find employment in the Park.

Many firms have located near Stanford, but the industrial park offers the choicest sites. Aesthetically pleasing for an industrial park, it provides -- except when students are blocking traffic or breaking windows -- a white-collar environment conducive to research and development.

Last year, amid much controversy, Stanford expanded the industrial park in the Coyote Hill area. Conservationists were able to guarantee -- at least for now -- the preservation of the Coyote Hill summit, but Fairchild Semiconductor, Computer Time Sharing, and several other companies will soon establish themselves in the new section.

Within the old park development also continues. The Dillingham office complex -- Palo Alto Square -- is being developed despite widespread opposition. The older Stanford Square (Bank of America), the Dillingham complex, and several other proposed office buildings mark both the maturity and expected growth of the electronics complex. Planners expect a growing need for financial, legal, and other services for the Research and Development industry.

INDUSTRIAL PARK

LOCAL COMPANY Parent Company	Nature of Work in Park	\$\$ Defense Contracts (1)		
		nationally	locally	year
ALFRED ELECTRONICS	electronic components		396,000	69
Singer		116,242,000		69
APPLIED TECHNOLOGY	electronic countermeasures		23,559,000	69
Itek--see text			177,000	69
BECKMAN INSTRUMENTS (2)	electronics for varied use			
COMPUTER USAGE	data processing services			
CONTROL DATA	computers, guidance systems	56,913,000	44,000	69
DATA DISC	data processing equipment		13,000	68
EASTMAN KODAK	photographic processing	109,848,000		69
ENERGY SYSTEMS	electronics		134,000	68
FAIRCHILD SEMICONDUCTORS	electronics, solid-state circuitry		346,000	69
Fairchild Camera & Instrument				
FLUOR UTAH (3)	construction engineering			
Fluor			2,565,000	69
GRANGER ASSOCIATES (4)	communications equipment		13,816,000	69
HEWLETT-PACKARD (5)	electronics, measuring equipment	223,661,000		69
IBM (6)	data processing, guidance systems		25,000	68
ITEK (Optical Systems Division)	optics, aerial cameras	2,936,000	1,548,000	69
KAISER AEROSPACE & ELECTRONICS	missiles, navigation systems	142,398,000		69
Kaiser Industries			2,898,000	69
LOCKHEED MISSILES & SPACE CO.	Poseidon, advanced weapons	2,040,200,000		69
Lockheed Aircraft (7)			127,000	69
MELABS	electronic equip., countermeasures			
SCM			257,000	69
METRONICS	electronics		124,000	68
OPTICS-TECHNOLOGY (8)	laser devices		496,000	69
PRECISION INSTRUMENTS (9)	memory units, magnetic recording	1,906,000		69
SINGER-FRIDEN	calculating equipment	116,242,000		69
Singer			13,000	69
SMITH & KLINE INSTRUMENTS	pharmaceutical equipment		924,000	69
SYNTEX	pharmaceuticals, contraceptives		3,195,000	69
TELEDYNE (10)	microwave equipment	308,455,000	15,891,000	69
VARIAN ASSOCIATES--see text	electronics, radar		7,682,000	69
WATKINS-JOHNSON (11)	electronics for reconnaissance			
WEATHERFORD, R.V.	distributes electronics equipment			
WESTINGHOUSE LEARNING	programmed education	723,000		69
Westinghouse Electric		429,558,000		69

(1) Figures for national DOD contracts are from fiscal 1969 listings of the top 100 prime contractors. Local figures, for 1968 or 1969, come from geographical listings. Conceivably work is being done in Palo Alto under contracts listed in other communities, or vice versa.

(2) Chairman Arnold Beckman is an SRI director.

(3) In 1969 Fluor purchased the Engineering and Construction Division of Utah Construction and Mining, which built B-52 bases in Thailand. Fluor directors include Stanford Trustee and SRI director Thomas Pike.

(4) Directors include Provost Emeritus Frederick Terman and Electrical Engineering professor (EE) and SRI researcher Allen Peterson.

(5) Directors include Stanford Trustees Ernest Arbuckle, Robert M. Brown, Thomas Pike, and Bill Hewlett (company president). Chairman of the Board and Stanford Trustee David Packard is on leave at the Pentagon as Deputy Secretary of Defense.

(6) SRI director Paul Davies is a director of IBM.

(7) Charles Ducommun, Stanford Trustee, is a director of Lockheed.

(8) Physics department head Arthur Schawlow is a director.

(9) EE professor L. Farrell McGhie is a director.

(10) Before it merged into Teledyne, this plant was Microwave Electronics. William R. Rambo (director of the Stanford Electronics Labs) and L. Farrell McGhie were directors.

(11) Board Chairman Dean Watkins was originally an EE professor at Stanford. He served until this year as a Stanford Trustee. He is currently a Regent of the University of California.



Two years ago the Stanford Research Institute was the focal point of a major controversy over war research, chemical and biological warfare, and counter-insurgency studies. A wide coalition of Stanford and community groups demanded that SRI be retained by Stanford and be controlled by a review board according to a set of research guidelines developed by the April Third Movement. Today, with the addition of work done formerly on the Stanford campus, SRI's work is more objectionable than it has ever been, but few noticed when in January (1970) the Stanford Board of Trustees announced a final agreement on the separation of the University and the Stanford Research Institute.

Founded in 1946 by visionaries from Stanford, Lockheed, and Standard Oil of California, SRI is typical of a large number of non-profit, interdisciplinary "think tanks" serving government and industry. Originally serving primarily West Coast oil, gas, food, and chemicals industries,

SRI teamed with Stanford and Fred Terman to take advantage of the Korean War boom in military spending. Through the fifties and sixties it expanded its work in advanced technological warfare and counterinsurgency, adapting itself to the two major thrusts in American military policy. SRI International was formed in 1966 to pull together SRI's growing international program. SRI proudly reports that it has conducted research in the "constructive" areas of education, ecology, transportation and medicine, but this work is often limited by the interests of the sponsors and the corporate bias of SRI itself.

As an organization whose activities are restricted to research, development, test, and evaluation, SRI provides important services to industry. Such work is sponsored by individual companies, industrial associations (such as American Petroleum Institute), and government. Industrial projects at SRI over the years have included such diverse projects as finding new uses for Brazilian coffee, mineral resource exploration, and government-sponsored electronic warfare research. SRI has also conducted market studies for Akron department stores in Los Angeles.

The Institute also offers a "Long Range Planning

Service," which supplies client companies with regular forecasts of economic conditions and markets, as well as technological developments.

GOVERNMENT RESEARCH

In 1968 (the last year for which we have figures) \$44 million, or 71% of SRI's research, was sponsored by government agencies. Of that \$44 million, \$29.7 million (or 46.7% of SRI's work) was sponsored by the Department of Defense. The remaining government funding came primarily from the National Institute of Health and NASA.

ADVANCED WARFARE

For several years SRI has been doing millions of dollars worth of research each year on the anti-ballistic-missile systems (ABM), chiefly in electronics and discrimination studies. While the Senate produces a yearly controversy over the construction of missile sites, research and development continues. SRI has also done numerous studies in civil defense, including "A Methodology for Estimating Fall-Out Casualties." SRI has also done civil defense studies for West Germany.

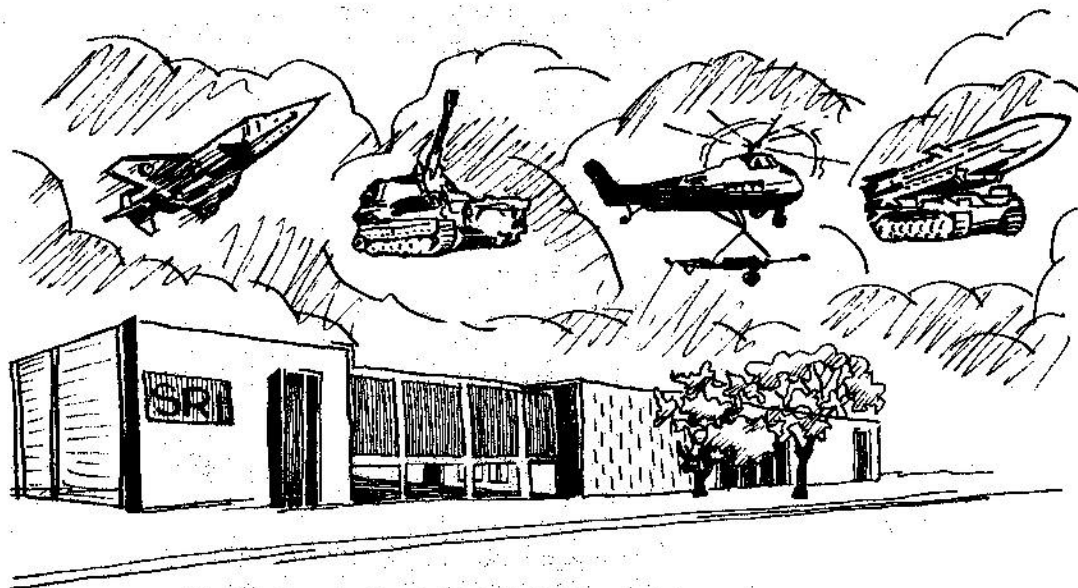
SRI has developed advanced electronic warfare techniques used in the air war in Southeast Asia as well as in the nuclear arms race. Electronic Countermeasures received significant attention at SRI even before Dr. Rambo moved his campus research team to SRI.

SRI used to conduct micro-encapsulation and dissemination studies for the U.S. Army's program in chemical and biological warfare. Under pressure from the April Third Movement, SRI agreed to phase this work out in 1969, and claims that it does no more work in the field of chemical and biological warfare.

COUNTERINSURGENCY

In 1957 SRI published, for McDonnell Aircraft, a study called "Environmental Conditions in Selected Areas of Potential Limited Warfare," which reviewed "the basic strategic and tactical considerations of limited warfare . . . and environment which would affect the conduct of small wars in various peripheral areas of Asia." The report, which successfully predicted the evolution of limited warfare in Southeast Asia, helped convince policy makers of the feasibility of such a war.

In 1961 liberal SRI economist Eugene Staley headed a



special government mission to Vietnam. Following the recommendations of the mission, the Kennedy and Diem administrations announced "a broad economic and social program" including resettlement into "strategic hamlets" (concentration camps.)

SRI researcher William Bredo continues SRI's involvement in U.S. Vietnam policy. After studying the successful "Land to the Tillers" program of the National Liberation Front, he developed recommendations for a land reform program which, he hoped, might help defeat the NLF. It would seem more sensible to advocate an NLF victory on the basis of their programs, but after all Mr. Bredo is an SRI researcher paid by Uncle Sam.

SRI has directly participated in the Southeast Asian air war. An SRI researcher reported in 1969 that he did cost-analysis studies for flight routes over North Vietnam.

SRI has also participated in the development of counter-insurgency hardware, such as aerial reconnaissance, "people sniffing" devices, and helicopter armor-plating. SRI conducted a "Preliminary Investigation of the Varian Wireless Sesimic ambush aids." It also held a project on how to keep U.S. helicopters from being shot down by angry peasants.

Today SRI's Counterinsurgency continues. Its focus has shifted, however, to the growing war in Thailand. In 1969 SRI reported that it held \$6.2 million in contracts directly related to Southeast Asia. Much of this

was conducted by SRI's Regional Security Studies Center for the DoD's Advanced Research Projects Agency in its study of Thailand. Studies included "Communist Terrorist (sic) Logistics in Southern Thailand--A Quantitative Analysis" and "Elements of Capability and a Scenario for a Possible Conflict Situation in Southern Thailand." Several other projects, including the comprehensive "Village Information Service," are still underway.

SRI INTERNATIONAL

SRI not only fights insurgency in Asia, it helps establish the economic policies which cause it. And SRI's program to serve business goes beyond simple research, development, and forecasting. SRI attempts to coordinate "Free World" business under the leadership of the American elite.

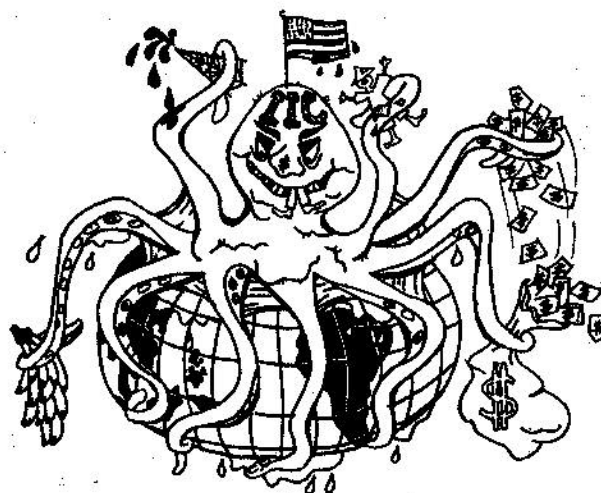
Every four years SRI sponsors an "International Industrial Conference" (IIC), bringing together several hundred of the world's top businessmen. The most recent IIC, held in September 1969 in San Francisco, provided a congenial forum for the World's largest capitalists. Many relationships were rationalized, though the Rockefeller push for "Free Trade" fell on deaf ears.

SRI has conducted other conferences dealing with regional problems. Europe and Latin America are "served" by such conferences, as well as continuing SRI studies, but the pride of SRI International is its Pacific Basin strategy. SRI, in cooperation with San Francisco-based financial and industrial giants, is laying out a strategy for continued Western expansion into the nations of East Asia and the Pacific. Weldon Gibson, head of SRI International, is a major force in the Japan-California Assoc., and SRI "has been handling the Association's affairs since 1966." SRI has cooperated with the Asia Foundation, a CIA "conduit," in an exploration of private investment possibilities in Pakistan, Ceylon, Burma, Thailand, Indonesia, Japan, and the Philippines. In August, 1967, following the coup which ousted President Sukarno and massacred hundreds of thousands of leftists in Indonesia,

SRI sponsored a conference at which 170 senior executives from fifteen countries were appraised of the opportunities for business in the newly expurgated islands.

"Were we California businessmen to play a more dynamic role in helping trade development in the Pacific Rim, we would have giant, hungry new markets for our products and vast new profit potentials for our firms."

Rudolph Peterson, former Chairman of the Board of the Bank of America and member of the SRI International Advisory Committee



"CONSTRUCTIVE" PROGRAMS

Constructive programs are defined as those programs which everyone, regardless of politics, concedes to be worthwhile. SRI does, in fact, do some work which is beneficial to mankind. Much, however, is misleading. SRI researcher Robert Robbins, in a report sponsored by the oil industry's American Petroleum Institute, concluded that swamp gas was a major cause of air pollution. SRI feasibility studies for Bay Area Rapid Transit (BART) were designed in the interests of middle-class commuters, not urban slum-dwellers. SRI's medical research focuses on expensive technology--not community preventive medicine.

SRI continues to grow, but federal cutbacks and student demonstrations have hurt it. Employing most of its staff of 3500 in Menlo Park, SRI maintains facilities around the world. It recently opened a \$1 million facility in Irvine, California. Though student pressure has diminished, the April Third Movement brought in-plant discontent and demoralization. Furthermore, cutbacks in many areas of government funding have forced many lay-offs in several research groups. However, SRI continues to forecast areas in which funding will be forthcoming, to lobby for funds in those areas, and to organize its staff to do work should these funds arrive.

METHOD TO THE MADNESS

The nature of the Stanford complex is not surprising. It primarily serves the needs of the men who run it and pay for it--perpetuating their immense concentration of power and wealth. Wealthy individuals, corporations, government, and private foundations control the purse-strings that determine the university's priorities. University trustees, SRI directors, and the directors of local companies set the fundamental policies of their institutions. As the chart following this section demonstrates, the Stanford trustees have important interests beyond the campus.

HE WHO PAYS THE PIPER . . .

Many corporations (and their executives) give to Stanford as a social investment. Instead of spending vast sums of money training potential employees themselves, they contribute to universities. In this way the company's cost per employee is much less. The university training is often superior. In supporting the expansion of specific departments within the university, the donors affect the overall nature of the institution. In return, the corporations are assured a continuing of employable graduates. Stanford's engineering and business schools, as described in previous articles, have relied heavily on industry support for their growth.

Many alumni give to the university. In thanks for the valuable training they received, they make tax-deductible contributions to various funds and endowments. Many stipulate uses for their funds which will perpetuate the university as they once knew it--hence the alumni who have generously supported fraternities in the past balk as their fraternities disaffiliate or change to keep up with the times. Departments which tend to produce graduates with money-making skills are better endowed than programs which do not. Often, the construction of new buildings is dependent upon the support of individual donors. The basketball pavillion and the art history building were both built with restricted private funds. Moreover, alumni have a good deal of conservative influence over university policy because their financial support is integral to the university as it now operates.

The federal government also has helped create Stanford as it is today. Federal building support, as well as contracted research, has been an important influence on university priorities. SRI, the industrial park, and the Engineering School would never be what they are today without the Department of Defense. The same is true for physics, computer science, and the medical school--other agencies such as the National Science Foundation and the National Institute of Health also augment their funds. The Stanford Linear Accelerator Center (SLAC), of course, has been entirely funded by the Atomic Energy Commission.

Occasionally the federal government tries to influence Stanford policy--such as the ROTC decision last year--by threatening to withdraw its support. These are usually idle threats, however, for the government needs Stanford almost as much as Stanford needs the federal government. Furthermore, the federal government is run by men with the same interests as those who run Stanford. David Packard's current position only serves to underline a

long-standing partnership.

Private foundations--controlled by the same class of men that runs the corporations, government, and univer-

