

# CHAPARRAL

The Stanford Weekly

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January 13, 1972



Sundance



Karmi



Finnian

## A Bevy of BDOCs

(See pages 4 and 5)

### News Notes

## Space War, Senate, Genealogy, and Franklin

To no one's surprise, Dick Lyman, Stanford's current president, accepted the Advisory Board's recommendation that Professor H. Bruce Franklin be fired and has passed the word on to the Board of Trustees. The event was barely newsworthy, since, after all, Lyman himself was hired by the Board and could always be fired by them as well. Moral: Please your boss(es).

The McGovern for President Headquarters opened Tuesday evening, located conveniently near the County Courthouse, where Angela Davis is held. Both Sandy Dornbusch and Robert McAfee Brown were there for the gala event, but Sandy skipped out before anyone could have a word with him. For men who disagree on the Franklin case, their choices for President are remarkably consistent. Maybe they don't disagree so much as we thought.

The Space War game in the coffee house seems to be attracting large crowds these days. So far only space ships and stars have appeared as targets on the screen, but in the

future we may see strategic hamlets, free-fire zones, jungle maps, and phantom jets—just like the war games at Hansen Labs. Maybe the Young Crows should start their own "revolutionary war games."

The *Chaparral* is taking time off to celebrate the sacred initiation rites of the Hammer and Coffin Society in the Nubian Valley and will not publish next week. If anyone is interested in finally meeting "the Old Boy," come by on Thursday evening.

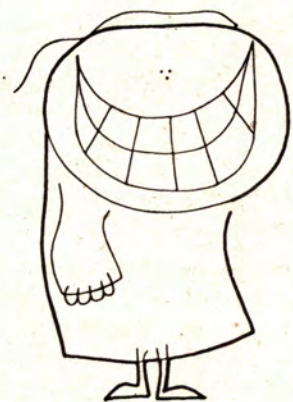
Last Thursday's Faculty Senate meeting was remarkable in only one way: the professors managed to sit in the Graduate School of Business for three hours in the wake of the Franklin decision and mention the fact only once—when Provost Miller cancelled the Academic Council meeting scheduled for Friday. The reason? The only item on the agenda, he claimed, was a report on Franklin by Lyman, who, as everyone knows, is ill-disposed.

What *did* the professors discuss? Whether or

not to replace the word "common" with the word "general" in the charge to the Committee on the Professoriate, and whether or not to reschedule six fall registration days or the first day of classes between now and the year 2000. The "general" was inserted, and the reg-days decision was postponed. The Student Senate may be rambunctious, but at least it's entertaining.

The Stanford Genealogical Society is holding its first meeting this evening at 7:30 in Meyer Library. The informal grouping will share experiences and results of fellow genealogists. Women's Liberationists take note: do Stanford genealogists trace noble family origins through a matriarchal or a patriarchal system?

The first set of movies in the film series accompanying the Symposium on Imperialism is scheduled for next Thursday. It features *Children of The Revolution* and *Blood of the Condor*. Appear in Bishop next Thursday if you're interested.



### IMPORTANT:

*Chaparral* staff meeting tonight, January 13, 8:00 p.m., old and new people.

THURS., JAN. 13, 8 PM





# The STANFORD Chaparral

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some of  
THE CHAPPIES

TINA SWENT  
editor

GEORGE RUTHERFORD  
business

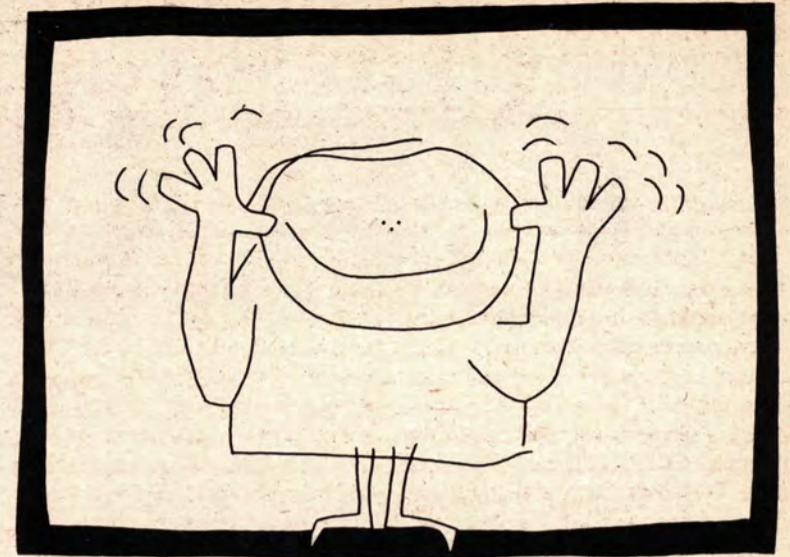
DAVID SZONYI  
entertainment

ALAN WACHTEL  
production

TIM CLARK  
features

TINKER RAMEY  
art

CARTER  
TOM CRYSTAL  
Photographers



*You are enveloped in  
an aura of decency, purity,  
wholesomeness, and goodness...*

## Letter to the Editor

Dear Sir/Madam,

Chile may be unique for as many things as Neruda is, but I'd like to point out—for the benefit of Mr. Turregian and his various audiences—the existence, in South America, of the Cooperative Republic of Guyana. The first Ambassador to the UN and the USA after Guyana attained independence was her novelist E. R. "Ted" Brathwaite, best known for *To Sir, With Love*. Martin Carter, long known behind

and beyond the Iron Curtain for his *Poems of Resistance*, was for some time Minister of Information and Culture, and now, under the system of Proportional Representation, a calypsonian known in the region as King Fighter sits in the House of Assembly.

This is merely for clarification, not axe-grinding.

LILLITH M. HAYNES  
Linguistics

### Opinion

## Rational Response to Franklin's Firing

The issues in the case of Bruce Franklin have been greatly obscured by two major factors. The first is the personal attitudes of individuals in the community which have given rise to irrational, emotional outbursts either for or against dismissal. The statements by so-called student and faculty leaders in last week's *Daily* are examples of this kind of response, and can safely be wholly discounted in any attempt to discover a justifiable position toward the issue.

The second obscuring factor is the mistaken belief that there is anything that can be done to cause university authorities to permit Franklin to stay here. Nothing that either students or professors opposed to the dismissal can do will have any effect on either President Lyman or the Board of Trustees. It should be clear by now that they have identified their own interests and those of the university as demanding Franklin's firing. This is not to say that no action should be taken by concerned students and faculty, only that it is a senseless waste of time and effort to attempt to change the decision within the university by any means whatsoever. Marches,

protests, attempts to embarrass Sandy Dornbusch and Wolfgang Panofsky, and other actions of this sort are useless in these terms.

In order to determine the proper response to the Franklin dismissal, it is necessary first to determine the effects of the dismissal; second, to determine whether or not the interests of the university are advanced or hurt by these effects; and finally, to determine how these effects can be limited if they are opposed to the interests of the university.

The primary effects of the dismissal are twofold. First, students are denied the opportunity to evaluate Marxism through the eyes of one who honestly believes in and lives that philosophy. This is the case because Franklin is, to my knowledge, the only professor here who both calls himself a Marxist and lives as though he were one. Is this effect beneficial or detrimental to the interests of the university? The answer to this question depends upon the purpose it is assumed the university should serve.

If, as I believe, the primary justification for the existence of

this institution is to foster the education of the students attending it, then the major issue is this: does the effect of denying students the opportunity to evaluate the world-view of Marxism through the eyes of one who honestly believes and lives it help or hinder the process of education?

To educate is "to develop mentally and morally by instruction." In order for a person to develop mentally and morally, he must have exposure to as many approaches to the fundamental problems of human existence as possible, and consciously and independently choose among them that which appears to him most truthful.

It is an indisputable fact that Franklin exposed students here to the most powerful and influential philosophical-political-economic systems presently existing, and did so in a positive fashion such as no one not fully committed to its principles is capable of doing. Since notice has now been served upon the faculty that such actions will not be tolerated in the future, the opportunity for exposure to

Marxist philosophy in the life and actions of a professor is not possible. Thus, the process of education is limited in a narrow way by Franklin's firing and the interests of the university are harmed by it.

The second major effect of the dismissal is that the grounds used to justify it now are precedent and will serve to limit what other professors may advocate. Franklin was fired for advocacy "directed to inciting or producing imminent lawless action" and "likely to produce such action." Since laws are no more than attempts to preserve and protect the political system in ascendancy at a particular moment, this means in essence that professors may not advocate that others take immediate action that will seriously threaten the maintenance of the established order. This quite obviously greatly limits the freedom of professors here, since rigid boundaries have been established curtailing what they may say.

This limiting impairs the function of the university, because it prevents students from hearing the true beliefs and opinions of their professors in a

sphere that is literally of the greatest importance—the taking of action during the present, in response to existing conditions. Thus the process of education, and the purpose of the university, is harmed by this action, for unless he is willing to lose his job, no Stanford professor will now dare to advocate that which might possibly bring about imminent "lawless" action.

The response to the firing can take two rational courses. First, the effort can be made entirely to negate the decision by asking the outside courts to overturn the dismissal. Second, efforts within the Stanford community itself can be made to persuade our often meek professors not to be unduly intimidated by the decision, and to refuse to allow any limits to be placed upon what they advocate. The way such demonstrations are made is a matter that each professor should decide for himself.

—SCOTT BURKE

(Scott Burke is a junior in philosophy and a member of the Trustees' Committee on Academic Affairs.)



# CIA Supports Bengali Elite

At long last—a television war. Every night we watched to see who was winning, to count casualties, and to give thanks that we wouldn't have to fight. And, after a few weeks, it ended. Indian troops occupy Bangladesh attempting "to keep the peace" and disarm the Bengali guerrilla forces. Sheik Mujibur Rahman, the President of Bangladesh, is freed from a West Pakistan jail after nine months of imprisonment and is returning home.

Why did it happen? What now? When Indian policy-makers decided to intervene in East Bengal (East Pakistan or Bangladesh) this November, they were responding to a series of economic and political crises. Though masses of anti-Moslem, anti-Pakistani Indians had been demonstrating in the streets since March, the war fever only made it easier for Indian leaders to go to war.

## Refugee Burden

Ten million East Bengali refugees now living in India have been a tremendous burden on the Indian economy. Resources,

Today, the guerrillas—most of them are not Maoists—equipped with light machine guns, sten guns, and other small arms, are refusing to surrender their weapons to the Awami League government or its Indian Army allies.

including foreign aid originally intended for India, have been reallocated for the refugees. The total expenditure on refugees this fiscal year will be at least 20% of the entire Indian budget.

Mrs. Gandhi's government was worried about the potential political explosiveness of the ten million refugees. India feared that the Bangladesh struggle would spill over into an already unstable West Bengal. John P. Lewis, formed AID director in India and the chief South Asian adviser to Senator Edward Kennedy, reports that "refugees from East Pakistan, who have entered eastern India in several surges beginning in 1947, have tended to join extremist political factions. . . ."

## Worker's Rebellion

Discontent among the natives of West Bengal (the Indian province surrounding Calcutta) also threatens the authority of the Indian government. West Bengal landowners and employers have hired many of the refugees, lowering wages and forcing many Indians out of work in an area with already sizable unemployment. While there have been reports of clashes between native wage-earners and refugees, the real threat to India is the specter of a rebellion by West Bengali workers.

India has tried to contain the refugees in isolated camps. The

government even hired several thousand young men to try curbing extremist agitation in and around the refugee camps. Indian officials contended that the refugees should return to their homes, but the bulk of the refugees would not return so long as Pakistani troops occupied East Bengal. And as long as the refugees remain in India, they are a political liability for Mrs. Gandhi's government.

On the other hand, a pro-Indian Bangladesh government will be an asset to India's economy. Before independence in 1948, Indian businessmen in Calcutta ran the East Bengal jute trade. Until 1965 West Bengal (India) traded extensively and profitably with East Pakistan. Now Calcutta businessmen hope to resume old business ties.

One of India's motives for invading was fear of the growing leadership of local leftists in the Bangladesh liberation movement. These groups—virtually ignored by the American press—wished to create a socialist Bangladesh,

independent of India as well as Pakistan. Even before the Pakistani civil war began in March, 1971, the East Pakistan Communist Party (Marxist-Leninist) had organized guerrilla bands, killed several landlords, and distributed land to the peasants. Just before the Indian invasion the *Far Eastern Economic Review* reported fierce fighting between the Maoists and the Awami-League-backed guerrillas in East Bengal.

## Armed Guerrillas

Today, the guerrillas—most of them are not Maoists—equipped with light machine guns, sten guns, and other small arms are refusing to surrender their weapons to the Awami League government or its Indian Army allies. The Mukti Bahini control many areas of Bangladesh, including the banks, the offices, and the local treasury. A large proportion of the guerrillas are students who are radicalized and want the struggle to be carried to its logical end. They do not want any "going back" on their revolution.

"We want an exploitation-free, socialist, democratic society with social ownership over modes of production," one of them told a reporter.

The Awami League elite, which basked in the sunshine of the

Mukti Bahini's guerrilla operations, is now in power after nine months in the relative comfort of exile, in India. They do not relish such talk. They would like the guerrillas to be disbanded before the Indian Army withdraws from the country.

## Awami League

The new Peoples Republic of Bangladesh will be governed by the popularly elected Awami League, but the future is uncertain. There are many strong factions within as well as outside the Awami League. The popularity the Awami League won by pushing towards autonomy may not continue when it is forced to deal with other issues.

Because many of the East Bengali leftist parties have strong socialist programs, they will gain support among the people in these times of suffering. Though most of these parties did not participate in the ill-fated national elections, several joined together in June, 1971 to form a Coordinating Committee for Bangladesh liberation, and called for the formation of a National Liberation Front that included the Awami League.

According to the *Pakistan Forum* the Awami League ignored that call, and formed its own front, which excluded many working class and leftist groups. Indecisive at first, the pro-Moscow Communist Party of East Pakistan consolidated its alliance with the Awami League Provisional Government after the August India-Russia Mutual Security Pact was signed.

## CIA Supports Elite

One might expect that after the disastrous war and civil strife that killed hundreds of thousands of East Bengalis, including many intellectuals, the Peoples Republic of Bangladesh would have difficulty building an elite to administer the country's affairs. But since July, 1971, CIA-associated voluntary humanitarian organizations have quietly supported thousands of exiled East Bengali professionals.

The International Rescue Committee (IRC), a private, non-profit organization which has been heavily financed by the U.S. government, paid the salaries of refugee doctors, teachers, lawyers, politicians, and even Indian chiefs. Though hard pressed for more funds, the IRC, working closely with the Indian government, even found small amounts of money for refugee writers, scientists, and journalists.

The Ford Foundation and John Galbraith's Congress for Cultural Freedom—which actively supported Diem in South Vietnam—also chipped in. Rather than urge the professionals to fight for their country's liberation, the large American philanthropic/educational institutions paid the elites to wait out the civil war in India, and

prepared them to administer a non-revolutionary government when they returned to Bangladesh after "liberation."

## New Dependency

The liberation of Bangladesh

Bank and voluntary agencies such as IRC, CARE, and Catholic Relief Services.

Both sides in the recent war came out behind. Newspapers talk of a stronger India. This is far

Rather than urge the professionals to fight for their country's liberation, the large American philanthropic/educational institutions paid the elites to wait out the civil war in India.

leaves the new country dependent on foreign powers—the Indians, the Russians, the World Bank, and even the U.S. The new government will begin toward India as its first step toward economic rehabilitation, but it will have enormous problems feeding its people, who have not had a substantial harvest all year. Neither India nor Russia has large agricultural surpluses to give away. Only the U.S. can provide massive food relief, as it has done before. The Bangladesh government also needs aid to receive millions of returning refugees, and to rebuild houses, schools, bridges, and communications.

## Money Channels

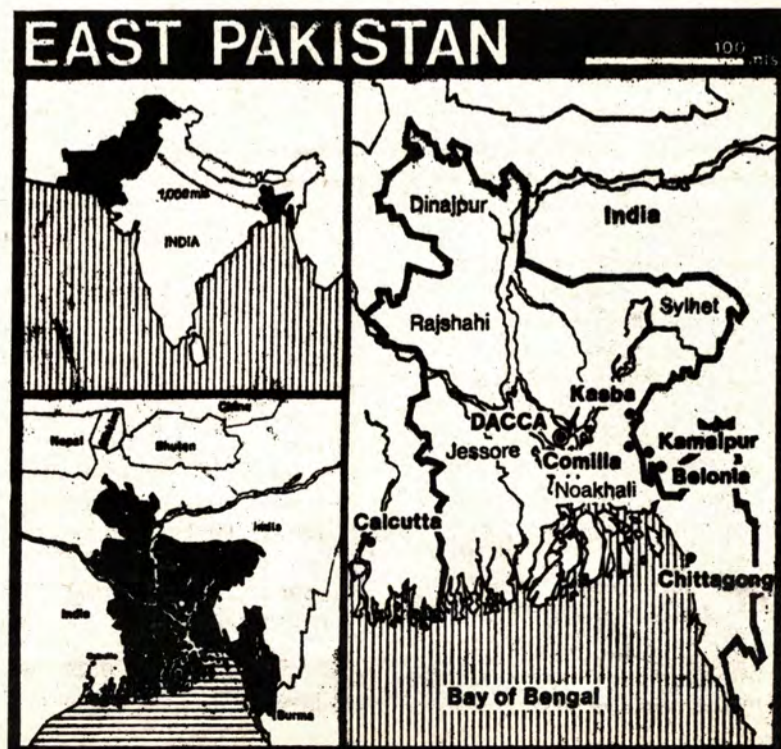
Russia will certainly attempt to aid Bangladesh, but the great bulk of assistance will come from the World Bank and the U.S. Last March, two weeks before the West Pakistan army invaded East Pakistan, Joseph Farland, U.S. ambassador to Pakistan, told an American reporter that the U.S. could provide an autonomous East Bengal with immediate aid amounting to as much as 500 million dollars. When it appeared that the Awami League would rule Pakistan, the U.S. prepared to support the Awami League. Now, until the political situation changes, the U.S. will channel its aid through multilateral institutions such as the World

from the truth: India has gained prestige, but its resources are exhausted. Pakistan, in the short run, will be economically weakened by loss of its colony—East Pakistan. Both countries have enormous debts to the World Bank and the U.S. government.

The Western capitalist nations, including the U.S., will continue to control the economies of India and Pakistan, as well as the new republic in Bengal. The U.S. will shortly renew its massive aid program to India and Pakistan. The World Bank, which suspended its aid to Pakistan until "a political accommodation" was made in East Pakistan, will also renew its assistance. Pakistan and India have been the two largest recipients of World Bank aid. With Bangladesh they will be the three largest.

Western aid, whether from the World Bank or directly from the U.S., requires the South Asian countries to adhere to principles of "free trade" and to maintain a favorable climate for foreign private investment. Although the press may talk of the growing hegemony of Russia and China, in the long run the Western capitalists will consolidate their control of the economies—and thus the politics—of India, Pakistan, and Bangladesh.

—JUDY CARNOY







Familiar Campus Figures



Oz



Wadsworth



**TDOR BEE**



Oscar

## The Truth Behind The Tails

# Big Dogs

When it comes to familiar features on campus, Stanford dogs are doing fine. Their heads, cold noses, pranks, and other antics are well known to all the Tresidder and coffee house regulars. The article that follows is a conversation with several Big Dogs On Campus.

**Q:** All of you are well known on campus. What do you see as your main role?

**OZ:** To educate people about dogs. The attitudes are incredibly medieval. Right here on campus you can see signs saying "No Pets Allowed." The fuzz hassle us for no reason at all. They'll pick you up just because you're a dog. They seem to think "if it has fur, arrest it."

**NOW:** The liberals are just as bad. Even people that say they like dogs, they don't want to eat with you. They're afraid of fleas.

**SAM:** I see the role of dogs as the only cheap non-polluting alternative to garbage trucks. I handle anything except dishes. Hamburgers, doughnuts, cigarette butts, you name it - I'll eat it.

**Q:** What about discrimination? Do you feel that people discriminate against you?

**SUNDANCE:** Yes and no. When it comes to simple tasks, the shit work, on any project, we're the first choice. But when a position of power or responsibility comes up, we're never even considered.

**KARMI:** I'd like to point out that with all the other members of the community sitting on committees, there isn't a single dog. Except running dogs, that is, and you know what we think of them.

**GLADYS:** That's a pretty controversial question. I don't think I'd better comment.

**Q:** What committees do you think you'd be interested in?

**FINIAN:** Well, there's the land use, and the housing committees.

**NOW:** Yes, and the Public Events, Buildings and Grounds, and Employee Benefits.

**WADSWORTH:** The Tresidder Board, Minority Affairs and Financial Aids. (Some of us don't come from wealthy families, you know.)

**DUCHESS:** I want to be on the Athletics Committee myself.

**KARMI:** Put me down for the Foreign Studies programs and Innovative Education.

**Q:** Getting back to politics, what do you think of our current president, Dick Lyman?

**OZ:** I can take him or leave him.

**CHELSEA:** He never impressed me much. But that dog of his, 'Apple, she's something else again!

**GLADYS:** If this is for publication, I can't comment.

**SAM:** The Lymans usually have some pretty good garbage. In fact, it bears a distinct resemblance to the Faculty Club food.

**OSCAR:** The Dutch Goose has steam beer on tap . . .

**Q:** Finian, what kind of dog are you anyway?

**FINIAN:** I'm a big dog, around campus at least.

**Q:** What I meant was, what breed of dog?

**FINIAN:** Well, as it happens I'm an Irish wolfhound, but dogs don't really make much of pedigrees.

**Q:** Do you mean that dogs don't discriminate at all?

**FINIAN:** Certainly not on the basis of parents or the color of someone's coat. I have friends of all colors—white, black, red, and spotted. In fact, one of my best friends is a German shepherd.

**Q:** What do you think about campus life?

**FINIAN:** Really, I don't see too much of it. Mostly I stay out near the golf course. People get uptight, you see, because I'm bigger than most dogs. Little kids get scared easily. You might talk to Wadsworth about the campus.





Sam



Napoleon

# On Campus

**Q:** Do you think that the campus has changed over the last five or six years?

**CHELSEA:** I'll say it has. Have you seen those newly painted fire hydrants? Outa sight, man, outa sight. And the chow in the Union really deserves a plug. The other day Tigger and I found a full dish of Boeuf Bourignonne. Superb, even the spinach noodles. At last we have a chef who understands how to cook with wine. I wonder why it was left there on the terrace?

**Q:** How about the people? Have they changed?

**OSCAR:** Naw, they all smell pretty much the same. I mean, when you've smelled one Stanford student, you've smelled them all.

**Q:** How did you get involved in the work you're doing?

**SUNDANCE:** It took a while to sort of grow into it. I mean, I had to learn all about the campus and the bureaucracy around here. And keeping in touch with the other dogs is really a bitch. If I'm gone a week, I begin to lose touch. But I feel if I'm going to hold this position I ought to do the work.

**WADSWORTH:** Actually I'm just supervising; I don't really get involved too much any more. I try to be a resource so as to speak for other dogs on campus. One of them wanted to know about the Judicial Council the other day, so I explained it. The IJB, the temporary Judicial Council, and so on. I guess you just have to have sat in a Friedenthal hearing to appreciate the drama. Those were exciting times. And remember the Tresidder Dog Bust? Peter Bulkeley, the Dean of Students, and Yale Braunstein had to come down to the Santa Clara pound and bail us out. Students should know that their bail fund was well used that day. Even so, a couple of dogs have never been seen around here again. That health officer (we

won't mention his name) who promoted the bust has a questionable future as far as we're concerned.

**Q:** Wadsworth, what do you think about the campus now?

**WADSWORTH:** The campus, you say? Well, I could tell you some stories about campus goings-on that you just wouldn't believe. I've been around for about seven years off and on, and I know the real people—the ones who work here, that is. Some other dogs think that by now I have tenure here, but I'm not sure if that's an asset or a liability these days.

**Q:** Do you always stand near the door?

**WADSWORTH:** Sure, it's sort of my office. All my friends come by around noon to chat.

**Q:** What about politics?

**WADSWORTH:** The politics around Stanford aren't much compared to the Free Speech Movement at Berkeley. I was there then, and I marched to People's Park, too. It was three days before anybody came back to get me. I tried to get arrested with my friends, but biting a policeman's boot just didn't make it. Down here at Stanford people are more mellow. And more devious, too. You should hear some of the conversations between administrators.

**Q:** Are there a lot of dogs who've been around as long as you have?

**WADSWORTH:** That's hard to say. Gladys has been here a long time. But she just sleeps mostly. Oscar has been here for about five years. He knows parts of this campus that even I've never ever been to. He knows the medical school like the back of his hand.

**Q:** I see Oz and Now over there. Are they friends of yours?

**WADSWORTH:** Sure, they get around.

*(Editor's Note: The preceding interview is more or less true in its historical facts.)*



Duchess



Conrad



# Military Uses Microwaves

Over the last three decades microwave radio signal devices have been playing an increasingly important role in military applications. High frequency microwave communications systems, radar and electronic warfare (including electronic countermeasures) have become essential elements for the operation of any modern military force. This trend has been even more marked due to the requirements of the Vietnam war, and the projected needs for future counter-insurgency and semi-conventional warfare.

Ever since the invention of the klystron tube, Stanford University has been an important and steady contributor to the technological base for microwave warfare applications. A small dent was put into Stanford's efforts in this area when some electronic warfare research was driven off campus by anti-war activities in 1969. Nevertheless, significant work in this area still goes on.

## Long Histories

Marvin Chodorow (Professor of Applied Physics and Electrical Engineering, and Director of the Hansen Microwave Laboratories) and H. J. Shaw (Senior Research Staff, Hansen Laboratories) both have long histories of significant work in the microwave field, performed mostly under military contracts. Between the two of them they hold at least three contracts in the practically revolutionary (with respect to microwave systems) technological area of microwave acoustics.

Chodorow holds a contract from the Air Force's Rome Air Development Center (RADC) entitled MICROWAVE DEVICE TECHNIQUES FOR AEROSPACE USERS. Shaw holds a Navy Electronics Systems

**Stanford University has been an important and steady contributor to the technological base for microwave warfare applications.**

Command (NESC) contract entitled RESEARCH ON DEVICES USING ACOUSTIC SURFACE WAVES. Finally, they are co-investigators for a new Army Electronics Command (ECOM) contract, LARGE TIME BANDWIDTH DELAY LINES AND PARAMETRIC SIGNAL PROCESSING USING SURFACE ACOUSTIC WAVES.

## Wave Properties

Microwave acoustics (or surface wave acoustics) refers to the conversion of microwave electronic signals into sound waves across the surface of a crystal. Since sound waves (or acoustic waves) travel at much slower rates than microwave electronic signals across the crystal, unique signal processing properties are possible through the use of this principle. The military has already begun to exploit these properties in some of

their most essential microwave applications.

## Research and Development

The purpose of the Stanford research is both to provide the military with fundamental knowledge of this crystal phenomenon, and to apply it to the development of various electronic system components and devices. For example, according to the SWOPSI study (Vol. 1), Chodorow's Air Force research "involves investigating new kinds of delay lines for information storage, transducers for generating and detecting acoustic signals, and investigation of new materials for acoustic propagation." It also includes "parametric signal processing (controlling by a second signal what happens to the original signal as it propagates through the crystal). The contract further states that breadboard models "shall be delivered for further evaluation in the Rome Air Development Center signal processing test facility."

This work is an extension of a formerly classified RADC contract, MICROWAVE DEVICE TECHNIQUES FOR AEROSPACE SURVEILLANCE, that began, it seems, somewhere in the early or mid-1960's. It was one of several contracts under Chodorow that included research and development of microwave acoustic devices (a Navy contract begun in 1967 is still active). Similarly, although Shaw's NESC contract is recent, military sponsored research in microwave acoustics, performed under Shaw, stems from the early or mid-1960's (perhaps earlier).

## Military Interest

Finally, the joint Chodorow/Shaw ECOM contract has the stated program objective of (1) define, study, and improve

general external device characteristics of acoustic parametric devices for signal processing, and (2) development of long delay lines for large time bandwidth products.

Thus interest in microwave acoustics is exhibited by all three service branches for application to such devices as delay lines, parametric signal processors, filters, pulse compression and transducers. These applications offer significant advantages in the development of military microwave systems.

## Reduced Size Possible

One of the most widely touted advantages is indicated in the 1971 Senate, Department of Defense (DOD) Appropriations Hearings (Pt. 3) when the Navy testified that "acoustic surface wave research (microwave acoustics) brings closer to realization a host of signal

processing devices having components of greatly reduced size (by a factor of 100,000) when compared with conventional parts operating at the same (gigahertz) frequencies."

For example, an article in *MICROWAVES* (Dec. 1970) notes that "Solid state acoustic delay lines have been developed which are very small in size compared to a coaxial delay line of comparable delay. . . . In order to obtain 150 to 250 ns ( $1 \text{ ns} = 10^{-9} \text{ sec}$ ) delay in the memory loops . . . 100 to 150 feet of coaxial cable must be used." Surface wave delay lines are being manufactured at 1 cubic inch sizes.

This kind of delay line,

**The military will be the first and foremost beneficiary of the evolving microwaves technology at Stanford.**

according to an article in the *IEEE Spectrum* (Aug. 1971), is "now being readied for use in radar, sonar, communications, and computer apparatus." Delay lines also find important use in electronic warfare equipment (See "Deception Repeaters Jam Hostile Radars," *MICROWAVES*, Dec. 1970).

## Electronic Warfare

There are several other electronic and technical advantages besides size and weight, which make microwave acoustics especially suitable for military radar and communications. It is in the area of electronic warfare, however, that potential applications seems to have stirred up the greatest interest. In another *MICROWAVES* article (Oct. 1971), "Surface Acoustic Waves: New Processing Tools for EW (Electronic Warfare)," it is noted: "An effective electronic warfare system requires the ability to identify the various elements in a hostile environment and to take appropriate action against them. In the two key areas of this problem, measurement of threat frequencies and deception of hostile radars, acoustic surface wave devices offer the prospect of dramatic improvement in system capability." It goes on to say, "Specifically, those surface wave devices which should find wide utility in EW systems include discretely variable delay lines for coherent range deception, banks of miniature bandpass filters for discriminator front ends, and large time-bandwidth dispersive delay lines for compressive receivers." The *MICROWAVES* article makes specific references to work at Stanford (including work by Shaw) with respect to advances in the state of the art, as applied to some of the existing problems. The research presently at Stanford follows in like tradition.

Despite the fact that the military's interest in microwave acoustics appears to be general, the reasons for the sponsorship of

the research are quite specific to the needs of the individual funding agencies. RADC, NESC and ECOM are all development agencies that fund very little basic research. Thus it is not surprising that the Stanford contracts fall into the category of exploratory development (applied research).

One of the most important programs at RADC is the Ground Electronics Exploratory Development program. Ground Electronics includes such projects as electronic warfare data processing techniques, electromagnetic surveillance techniques, information processes for communications, microwave tubes and devices, information processing development, lightweight radar technology, and applied ground communications techniques.

Work in this program has had direct impact on Air Force

hardware development. For example, the Senate hearings record that some "systems and equipments that are based on this program's efforts are the over-the-horizon (OTH) radar, high power laser radar, low-cost large screen display for tactical operations and digital communications capability."

One of the principal universities cited in the hearings as participating in the Ground Electronics program is Stanford, referring to the presently discussed Chodorow contract. The direct and apparent relationship of this research with the RADC mission should be obvious.

## New Devices

NESC is the major agency responsible for the development and procurement of Naval electronic equipment for such purposes as communications, radar, surveillance, and some EW. Although microwave acoustics will have an impact in all these areas according to the Defense Documentation Center statement, yet in the SWOPSI study, the purpose of Shaw's research is to extend "the usefulness of microwave acoustic surface waves into new areas likely to produce new devices for electronic countermeasures applications."

NESC participates in the Navy's Shipboard Electronic Warfare advanced development program. The major effort under this program is the Ship Advanced EW, Phase I of which is SHORTSTOP. "SHORTSTOP is a modular EW system which will be integrated into the command and control structure of a ship." (Senate, DOD Hearings, 1971, pt. 3.) It is likely therefore that NESC views Shaw's work in this context.

ECOM is the Army's principal agency for development and procurement of that service's electronics equipment. Among the applications with which ECOM is most directly concerned is small, rugged, portable communications and

high resolution stationary and moving target radar equipment, portable data processing equipment, surveillance and intelligence equipment. Surface wave acoustics delay lines and signal processing devices should have a significant impact on the future development of these equipments.

## Classified—Maybe

Further evidence that ECOM's interest in this research is not just academic appears in the contract which states that "in the event of a conflict between Stanford University unsolicited proposal dated Jan. 1971 and U.S. Army Electronics Command Technical Guidelines, the latter shall take precedence." The contracting officer shall make resolutions. It also states that if in the course of the experiment the researcher discovers significant developments with direct military applications he is authorized to classify them.

## Underwater Research

Another interesting microwaves contract is B. Widrow's (Professor of Electrical Engineering) THE STUDY AND GENERATION OF WIDEBAND AMBIGUITY FUNCTIONS, sponsored by the Naval Undersea Research and Development Center (URDC). This work, according to the SWOPSI questionnaire (See SWOPSI report), "is directed toward improving doppler radar, increasing range and range rate (velocity) resolution by reduction of background noise and clutter by signal processing."

Widrow's work in this area under Naval contracts goes at least as far back as the early or mid 1960's. It included ADAPTIVE PROCESSING OF UNDERWATER SOUND SIGNALS, and the classified ADAPTIVE SONAR ARRAY PROCESSORS contracts. His present research fits directly into the pattern of his past work.

It should be no surprise that it also matches the mission of URDC; which is to "conduct a program of warfare analysis, research, development, test, evaluation, system integration and fleet engineering support in undersea warfare and technology." (Senate 1971 DOD Approp. Hearings, Pt. 3). URDC is a warfare oriented agency which participates in programs such as the Advanced Submarine Sonar, Undersea Warfare Weaponry, Undersea Target Surveillance, etc. In all these cases the applications of doppler radar research to sonar have a direct relationship to the program missions.

## Moot Point

Although the researchers point to civilian applications of their research such as non-military communications, data processing, airport radar, and sonar mapping of the torso, the actual context of their work makes such justifications rather academic. In the first place, the present work is a continuation of past research which was then clearly earmarked for warfare, some of it being classified as well. In fact, the contributions of Stanford work in microwaves (particularly those of the Hansen Microwave

Please turn to page seven



# Chaplin Series

## 'City Lights' in San Jose

To call *City Lights*, a Charlie Chaplin feature now playing at the Towne Theatre in San Jose, a good film, is about as inadequate as saying Beethoven's music is pretty, or that Jesus Christ, Buddha, or Mahomet must have been pretty neat guys. In fact, when watching *City Lights*, you're not really aware that it's a movie; it is simply one of the major performances of an obvious genius. Only an idiot or a fanatic film student would worry about its technical qualities.

*City Lights* does have a structure, does tip its tramp hat to film conventions. But that structure has little to do with the technical, shot-by-shot conception of structure that our generation seems to share with most of today's big, superstar directors. *City Lights*, like its predecessor *The Gold Rush*, starts with slapstick bits, but moves farther and more quickly into melodrama than the earlier film. Most of the movie manages to hover within Chaplin's own lyrical, overlapping context of sentiment and pratfall. But eventually both develop the hard outlines that necessarily lead to the film's wrenching conclusion.

The structure of the film, then, is a kind of movement through the series of conventions that first established Chaplin as a great star

## Microwaves...

Continued from page six

Laboratories) to military weapons technology have not been given their due recognition alongside the lately departed Stanford Techniques Laboratory.

Second, it is in the distinctly non-civilian area of EW that some of the most important applications of this research will be made. Third, in the areas of radar, sonar, and microwave communications, military criteria and requirements are much more stringent than that of the civilian market. It is likely, therefore, that the military will be the first and foremost beneficiary of the evolving microwaves technology at Stanford.

Finally, almost all microwaves technology was developed via the military for primarily military reasons. The single largest user of microwaves equipment has always been the military. In fact, an SRI report on the microwaves industry has noted that the overwhelming majority of all microwaves equipment produced in the U.S. has been purchased by the government for "defense" purposes.

—JOEL YUDKEN

to the terribly realistic conclusion on the other side of them. This movement occurs, for example, in a magnificent boxing scene. Charlie, by trying to escape from his tough, paunchy opponent, nearly controls and wins his bout. He dances behind the referee, the referee dances to get out of the way, and the huge fat slob dances to get around the ref. The whole sequence is exquisitely delicate and hysterically funny; but it ends when Charlie gets knocked out in a normal, unfunny way. Suddenly you know that no miracles are going to issue from your laughter.

Chaplin is the great master of this slide into reality that occurs constantly throughout *City Lights*. Pushing both sentimentality and slapstick to their limits, he forces you to see the real beauty, loneliness, love and terror that underlie them. It is impossible to scoff when Chaplin

kisses his blind flower girl's hand because there are too many cumulative indications in his face and his actions, that he, Charles Chaplin, is in this story, suffering for it, in bondage to it. The face that ends *City Lights* isn't the Tramp's; it is Chaplin's face, staring at the flower girl, completely exposed to her and to us without artifice or inflection, terrified by her ability to see him, yet lost in joy. As such, it is a beautiful but painful revelation of Chaplin, the man beyond the melodrama and the sight gag.

*City Lights* is scheduled for a two-week run as part of a 14-week Chaplin festival of six feature-length films, and one anthology of two-reelers. Plans include *The Great Dictator* (Charlie as Adenoid Hynkel and as a Jewish barber) and *The King in New York* (his gently vicious swipe at American McCarthyism),

both of which are still hard to see in the United States (since Chaplin, you know, is a Nasty Communist). But the manager of the Towne said he might have to drop the whole thing if attendance doesn't pick up.

(Last Friday there were no more than forty people in the theatre watching *City Lights*; the manager said it was typical.)

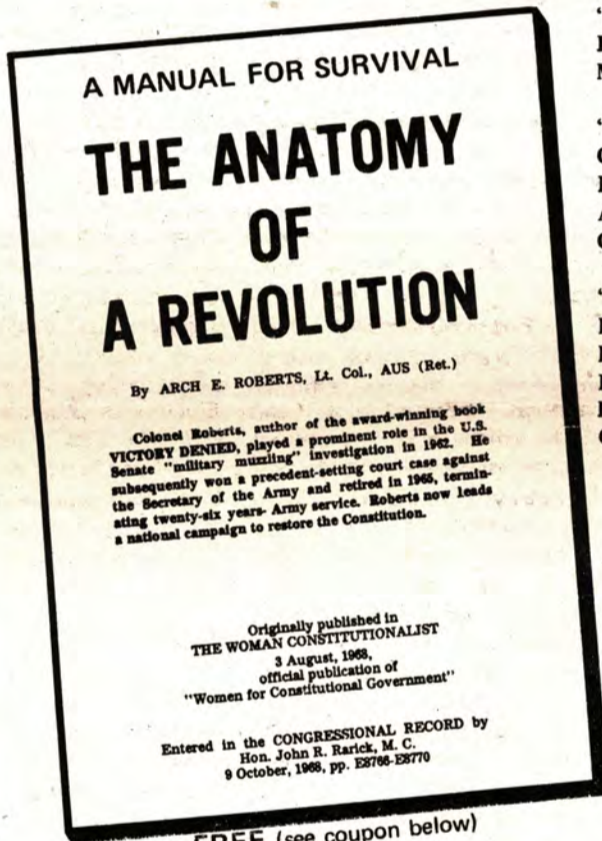
There are some possible explanations for the small attendance. We (meaning our post-World War II generation) tend to experience film in a highly technical way, searching for the directorial signature of the film in the kind and number of tracking shots, pans, zooms, and camera lenses. And it's possible to watch *City Lights* that way, but all you'll come out with is a frustrating, incorrect sense of Chaplin's technical crudeness. We all have to climb over a wall of

theories of what the movies are before we can watch something so directly and magnificently presented as *City Lights*.

Another explanation, one I can't totally exclude, is a more sufficient and insidious one. It lies in the fact that great art of any kind tends invariably first to move people, and then to supply them with material for study and chitchat. James Agee put it this way: "Official acceptance is the one unmistakable sign that salvation is beaten again, and is the one surest sign of fatal misunderstanding, and is the kiss of Judas." In that case, I hope we have not yet officially accepted Chaplin, and I hope you'll drive to San Jose to see his films. They deserve at the very least the drive down, the two bucks for admission, and all the attention and delight you are able to give.

—FRED PFEIL

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"The real enemy, Roberts said, is the clique of socialistic, one-worlders, also known as 'The Establishment', which is manipulating the issue of communism as a tool to bring about a totalitarian world order under a self-appointed and anointed intellectual elite."

THE GUIDE, Coral Gables, Florida

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# Preview: Harlem Ballet

A new dance company is always an exciting thing, and a new classical ballet company is enough of a rarity to be of considerable interest. The appearances in Memorial Auditorium tonight and tomorrow (Thursday and Friday January 13 and 14) of Arthur Mitchell's new Dance Theater of Harlem compel our attention, however, for more than the obvious reasons.

It comes as something of a shock (although only to white people, I suppose) to realize, particularly in view of the tremendous contribution of black people to American modern dance, the near-absence of blacks in classical ballet. References to Arthur Mitchell as the first black member of the New York City Ballet (he later became its premier danseur) generally fail to mention that as of this writing he is its last as well. Mitchell is well aware of the subtle pressures on any black studying ballet to switch to jazz dancing, as well as the generally prohibitive cost, in money and time, of acquiring the techniques of classical ballet.

To remedy this situation Mitchell founded a ballet school in Harlem in 1969. Dance Theater of Harlem (DTH), the company growing out of this school, made its formal New York debut just a year ago. This extraordinary progress has prompted a redefinition of the group's task, for it is apparent today that DTH is concerned with far more than getting blacks into established ballet. It is in fact developing its

own dance form, combining classical dance forms with "ethnic" music into what must be the only possible answer to the question of why blacks should bother with classical ballet in the first place.

Throughout its first year the company has relied on choreography from George Balanchine, Mitchell's mentor at the New York City Ballet, and from Mitchell himself, largely in the mode of his teacher. Tonight's program contains two Balanchine pieces, to music of Bach and Stravinsky ("Concerto Barocco" and "Agon"), and tomorrow will open with a Mitchell work much in Balanchine's style, "Fete Noire" (to music of Shostakovich), which was presented at the group's debut last January and which I find, in its recreation of what I take to be the graduation ball of the Tsar's cadets, to be its least successful venture.

That same debut concert also saw, however, Mitchell's "Rhythmetron" to music of Marlos Nobre, and it has been the success of this stunning quasi-African redefinition of classical ballet (which will conclude both programs here at Stanford) that has determined the new material DTH has developed since that time. Tomorrow their new work, "Forces of Rhythm," will be presented. I have not seen it, but we are promised "a pure dance work capturing the essence of ballet and ethnic dancing styles" by Louis Johnson, new to the company, and I, for one, await it eagerly.

Other works to be presented at Stanford are Lester Horton's "The Beloved" on tonight's program and on Friday, Mitchell's pas de deux "Biosfera."

DTH is composed mostly of teen-agers, and only one fourth of the company has had any prior training to speak of. A final thrill audiences tonight and tomorrow are assured is a glimpse of what will surely be at least a few of the major dance stars of the next decade. You may make your own guesses here, but if Stanford audiences are like the audience in which I first saw DTH, every eye will be on Lydia Abarca. This native New Yorker, who has been dancing for fewer than three of her twenty years, has an indefinable spark along with incredibly natural bodily grace that makes the stage hers the instant she steps onto it.

Even in its awkward imitations of Russian precision ballet, there is an inchoate beauty in the work of Dance Theater of Harlem. At its best, it is living proof of the contention of London-based musicologist Henry Pleasants that future musical historians will call our age the "Afro-American," and will find that tradition fruitful and musically provocative long after most of today's experiments in modern music have become curiosities. Tickets cost \$4, \$3, and \$2, with the usual 75-cent student discount; student rush tickets, if available, go on sale for \$2, fifteen minutes before the 8 p.m. curtain.

—ALAN HYDE



## Week's Entertainment

### FRIDAY

Sonny Terry and Brownie McGee at In Your Ear in Palo Alto.

Doobie Brothers, Nipple, at Homer's Warehouse on El Camino.

The Sound Barriers at The Bandstand in Redwood City.

### SATURDAY

Sonny Terry and Brownie McGee at In Your Ear.

Black Kangaroo, Lalapalooza, at Homer's.

The Sound Barriers at The Bandstand.

"Performance," shown at Cubberley Auditorium, 7:30 and 9:30.

### SUNDAY

Sonny Terry and Brownie McGee at In Your Ear.

"The Andromeda Strain," shown at Mem Aud, 6:45 and 10:00.

### MONDAY

Mordecai and the Doctor at In Your Ear.

### TUESDAY

Bobby Hutcherson at In Your Ear.

### WEDNESDAY

Bobby Hutcherson at In Your Ear.

Dennis Geyer Band, Country Fanfare, at Homer's.

Tower of Power at The Bandstand.

"The Public Enemy," shown at Cubberley, 7:30.

### THURSDAY

Bobby Hutcherson at In Your Ear.

Tower of Power at The Bandstand.

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## Gossip from the Music World

Well, well, well. Another week has passed. Let's spend some time going over the changes in various groups.

Grand Funk Railroad, the single most successful group to sell only their shaking asses, has decided to give up on Capitol Records. What this means is that numerous record companies are going to sell their souls to get them. You don't believe me? Well, Columbia Records has offered them an advance of an incredible eight million dollars. That's right folks! Now that you're properly revolted, let's continue.

Muddy Waters has been recording in London with the likes of Steve Winwood, Rick Grech, Mitch Mitchell, and Georgie Fame... Fairport Convention has replaced guitarist

Simon Nicol with Roger Hill... The relatively unknown but exceedingly good Terry Reid has made Mitch Mitchell his new drummer and they'll tour the U.S. soon... Mark/Almond's bassist Roger Sutton will probably be leaving the group at the end of this year... David Clayton Thomas, the lead singer for Blood, Sweat, and Tears, has left the group and they're looking for a replacement (if you think you're that good, call Columbia Records in the city)... Free, a once hot band from England, split and it now seems they may well reform... And last... the biggest rumor in ages has it that Santana is no more (personally I don't believe it, but I can't get any information from people who should know).

Interested in new albums? Expect some fine things from Emerson, Lake, and Palmer, Fanny, Muddy Waters, Mordecai Jones, Jackie Lomax, Captain Beefheart, the Rolling Stones, Alice Coltrane, Pharaoh Sanders, John Kay (yuk!), Bobby Whitlock, Yes, Mott the Hoople, King Crimson, Lord Sutch, Joan Baez, Cat Mother, Alex Taylor, Mother Earth, and how about a solo album from Jerry Garcia? Whew!

If you've made it this far, and you're tired of reading, why don't you try listening to what our beloved record industry has to offer? Turn on KZSU and find out if any of this stuff ever gets played. Till next week.

—THE TURTLE



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