Democracy in the Computer Age

Computerized Vote-Counting
Raises Troubling Questions
in Texas and Across the Nation

BY RONNIE DUGGER

ABOUT TWO OUT OF THREE votes that Texans cast on Tuesday, November 8, will be counted in computers. Despite the continued use of the old thousand-pound mechanical-lever machines in four of the state's 12 largest metropolitan centers and the old-fashioned paper ballots in 173 smaller Texas counties, computers now count the votes where more than 68 percent of Texans live.

On October 22 in Austin, Secretary of State Jack Rains estimated that 8,245,719 Texans have registered to vote. If they turn out on election day at the same rate as they did in the last Presidential campaign, about 5,600,000 Texans will vote this year, and if the distribution of all the people and of the voters is roughly the same, about 3,900,000 of the votes in Texas will be tabulated in computers, more than three and a half million of them in the eight largest counties that have computerized systems.

The tabulation of votes in accordance with the instructions given to computers by operators and programmers began in earnest in the United States in 1964, and during the next 20 years 350 million votes were counted by the "Votomatic" vote-counting systems marketed by Computer Election Services, Inc. (CES), of Berkeley, California. This year, invisible, sprite-like, quicker-than-thought electronic events inside computers will tabulate about 55 percent of the votes in the United States and 75 percent of those cast in the country's 28 major metropolitan areas.

During the 1980s, however, doubts about the accuracy and security of computerized vote-counting have been gradually gathering force and credibility. To date no instance of the manipulation of a computerized vote-counting program has been proved in a court of law. Nowhere more than in Texas, but in varying degrees across the country, concern about the possibility has become a preoccupation of "the election community" that is made up of local and state election officials, the companies which market the computerized systems that tabulate public elections, and the computer scientists who have specialized in this subject.

DIALOGUE

Bi-Partisan Deregulation

I enjoyed reading your article by Mr. Curtis Lang on "The Sordid History of the S&L Crisis" in Texas (*TO*, 9/30/88). The article was well documented and very factual. During the 1980-81 period of deregulation, I was in charge of lending at a major savings association here in Austin.

I don't agree with Mr. Lang's inference that the situation which currently plagues the S&L industry is a partisan issue. The course for disaster was set many years ago. Deregulation became a period of no-regulation. A S&L even today may loan an amount equal to its entire net worth to one borrower or one project. Any one of the empty office buildings on Loop 360 in Austin may very well represent the entire net worth of some S&L which made the loan. Comparing this policy to a FDIC-regulated institution (commercial bank), they may only loan a small fraction of their net worth to a single borrower. FSLIC did not have nor do they currently have the ability to monitor the actions of the industry which they are charged with regulating. This situation coupled with the absurd loans to one borrower rule make the entire industry a potential disaster.

Major changes in the regulatory environment which surround the industry are desperately needed. The entire S&L industry should be required to return to the arena for which it was created — residential lending. Any industry which accepts any government guarantees, as the S&L industry does with the $100,000 insurance of accounts, should operate under very rigid guidelines dictated by the government. I believe that the current debacle in Texas is a microcosm of what very well may be developing in other parts of the country. Stay tuned.

Harold Coates
Austin

Crime Conundrums

I appreciate the content of the *Texas Observer*; it truly is "A Journal of Free Voices" and addresses many issues ignored by practically all other papers in the state. However, much criticism is heaped (and quite rightly so) on the judicial system, prisons, and capital punishment. Many valid points are raised on these issues, but other than criticism, I rarely see any suggestions as to what can be done to improve or, in many cases, replace the overloaded and inefficient systems in place.

It seems that statistics (and hold your fire on this because, unfortunately, stats are all we have) show that many of our problems stem from letting people out on the streets that should not be out; repeat offenders continue to repeat violent crimes *ad infinitum*. Now, I expect cries of "They wouldn't be in jail in the first place if they had a better start as a child!" or some other sociological theory, but the undeniable fact remains that regardless of the causes there *are* people like that out here and we need relief, folks!

All I'm asking for, then, is some suggestion, some ideas that may be implemented to take the place of imprisonment, and we're talking major crime in this instance. What punishment is appropriate for such "inhuman" behavior as murder, rape, and child molestation? We hear many complaints about overcrowded prisons and jails around the country, particularly Texas, but I've yet to hear of any alternative proposals to alleviate the problem.

If there's one thing I've learned in life, it's that society has to have protections from those that would bring it down, and as inefficient as the "system" seems to be, I can't think of a better way at this time, short of martial law or something similar, and that of course is unthinkable and unacceptable under any conditions. Back to you, sir.

R. Bennett
Comfort

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The *Observer* welcomes comments from readers. Short letters (two or three paragraphs) are preferred. Write: "Dialogue", The Texas Observer, 307 W. 7th, Austin, TX 78701.

CORRECTION

In our issue dated October 28, it was incorrectly stated that Supreme Court Associate Justice Ted Z. Robertson had been reprimanded by the state Commission on Judicial Conduct. Justice Robertson, who is the Democratic candidate for the position of Chief Justice, was *not* reprimanded nor disciplined in any way by the Commission on Judicial Conduct. We regret the untimely error. □

EDITORIAL

Campaign Poop

WHAT A SWEET moment it was in this election season when, amidst general lamentations over the sorry moral tenor of the Presidential campaign, the voice of Richard Milhous Nixon sang forth. The former President, who, as we recall, did not make his reputation through the gentle and high-minded practice of politics, issued a public complaint that the campaign between Michael Dukakis and George Bush had deteriorated to an intolerable level.

George Bush must have popped a few buttons thinking about that. Here he had gone around the country waving his arms and pounding lecterns in 1973 exclaiming that he "knew" his President wasn't guilty of any of the charges the liberal Eastern media were accusing him of. And then it turned out that Nixon had been wading knee-deep in his own muck all along. For all his devotion in Nixon's time of need, what does Bush get now? A sermon from the former President on running a clean and uplifting campaign.

It is in times such as these when we realize that American politics is threatening to destroy political satire forever.

In this state, some of the prime culprits in the conspiracy against satire come from West Texas. Who could invent a politician as derisible as Bill Sarpalius of Amarillo, who is now running for Congress? While in the state Senate, Sarpalius qualified for the Legislative Bonehead Hall of Fame. Then, in a strange and as yet not fully explained West Texas event, Sarpalius got decked in a Amarillo nightclub and turned up with a broken jaw. Out of the hospital with his jaw wired shut, he announced for Congress.

We would like to make a joke and say that the race between Sarpalius and his Republican opponent Larry Milner has turned into a pissing match, but it's not a joke — it's true. Responding to a group called Drug-Free North Texas, the candidates have stepped forward to prove themselves pure with public urinalysis tests. In fact, Milner gave his urine sample on TV! According to Wichita Falls lawyer Bob Hampton, the television cameras of the local TV station showed Milner disappearing into a room and then emerging with the waste sample in a jar. "He was there grinnin' in his hospital robe," says Hampton. To the best we have been able to tell, Sarpalius has not yet taken his urinalysis test in public, though he did agree to the test. We are reminded by these campaign events of North Carolina Senator Terry Sanford's line that

he would be willing to take a drug test as soon as his opponent agreed to take an IQ test. But in this West Texas race, neither candidate would be well advised to make such an offer.

THERE ARE SEVERAL races around the state that we did not address in our endorsement issue last time (*TO*, 10/28/88) due to a lack of time and space. Here is a brief run-down of those races.

The most serious Congressional contest is taking place in the 14th District, which includes the area Southwest of Houston. This race gives the Democrats their best chance to knock off one of the Republicans swept in by the Reagan tide in 1984: Rep. Mac Sweeney of Wharton. Greg Laughlin, a West Columbia lawyer who nearly beat Sweeney in 1986, is running again — this time with better financial backing. Laughlin is a conservative Democrat in the Lloyd Bentsen school of politics. He is a former U.S. Army captain who served in Turkey at a U.S. listening post. Laughlin is criticizing Sweeney for spending $130,000 more than the average Texas Congressman to support his Congressional staff and office. Sweeney responds that his district is bigger than average and that if he didn't spend the money it would go back to a Jim Wright "slush fund," anyway.

Sweeney and Laughlin have also been embroiled in a controversy over what to do about a proposed Wharton County waste dump. Laughlin claims Sweeney is ineffective in fighting against it; Sweeney, who is on the outs with local officials, says he wants to fight it on the federal instead of the state level. An interesting factor of Sweeney's race for reelection is his attempt to cast himself as a populist hero and to play down his Republican affiliation. Rather than campaigning on Reagan Republican themes, Sweeney is selling himself as an environmentally conscious Congressman who stands up for the little people in the district. "It's a tough and lonely job fighting against the powerful," says one of his campaign ads. Of course, it's all packaging. Sweeney has voted down the line for every anti-poor, anti-middle class, anti-environment item on the Reagan agenda. Americans for Democratic Action rates his Congressional voting record at zero. Certainly Laughlin could be expected to stand up against the powerful at least once in a while.

East Texas Congressman Jim Chapman faces a challenge from Republican Horace McQueen, a farm reporter from Troup.

McQueen's television ads tie Chapman with "liberals" such as Michael Dukakis and Jim Wright while associating McQueen with George Bush and Phil Gramm. According to Bowie County Democratic chairman William Feazell, McQueen actually lives a half mile outside of the east Texas Congressional district. Feazell claims that "everybody's sold on Chapman," and even went so far as to compare Chapman with the legendary Wright Patman, who used to represent East Texans in Congress. Chapman has been more conservative than Patman, Feazell admitted, "but he's coming off that." At this point it looks as if McQueen's only hope is a Bush landslide. East Texans still vote for very few Republicans below the top of the ticket.

San Antonio voters have the opportunity to vote for Congressman Henry B. Gonzalez again for reelection — and they should. Who else but Henry B. will stand up in Congress and tell it like it is with regard to the federal government's bailout of big banks, or the Reagan administration's shameful war on Nicaragua? Certainly not Gonzalez's Republican opponent, Lee Trevino.

In the state Railroad Commission races, we recommend Clint Hackney over Republican Kent Hance. Hackney was chairman of the House energy committee, he was a solid legislator, and would be a strong voice on the commission for consumers and working people. Furthermore, any chance to set back the political career of Kent Hance (who was appointed by Gov. Clements) is worth a trip to the polls. We have no preference in the other Railroad Commission race, which pits incumbent Jim Nugent against Republican Ed Emmett.

We do not believe that any of the three proposed constitutional amendments are particularly worth voting for, least of all Amendment number one. This is a highway lobby scheme to require federal highway money to be constitutionally dedicated to the Highway Department. It would give the department more "untouchable" money in case of budget austerity. Historically, that lobby has been perfectly able to take care of itself without the help of new constitutional amendments.

—D.D.

Rights Advocates Warn of Reversal by Supreme Court

AUSTIN

In cities across the nation civil rights activists gathered in mid-October to raise the issue of a Supreme Court reversal of a 12-year-old precedent protecting individuals from harassment by private sector employers. Representatives of the National Lawyer's Guild, NAACP, Texas Civil Liberties Union, and other groups, warned some 70 people gathered on the steps of the Federal Courthouse here October 12 about the possible consequences of the Court's decision to reconsider *Runyon v. McCreary*. The press conferences corresponded with opening arguments before the Court; a final decision is not expected until June.

The Civil Rights Act of 1866, otherwise known as Section 1981, gives all citizens equal rights to make and enforce contracts. The 1976 *Runyon* decision, written by Chief Justice William Rehnquist, held that Section 1981 applies not only to governmental discrimination, but to discrimination by private actors as well. *Runyon* held that a private school violated a black student's civil rights by refusing to admit him.

Jeff Thorne, a third-year University of Texas law student and member of the National Lawyers Guild, said in cases of private discrimination, "many states have similar provisions (to Section 1981) which will give you some kind of remedy. But many states don't. So the federal law is the only remedy." Austin attorney and Guild member Elizabeth Zeck, said: "Section 1981 has been used in literally hundreds of cases. So we're not talking about some obscure law here."

Zeck cited a publicized example of Vietnamese fishermen in South Texas who sued the Ku Klux Klan under Section 1981 for intimidating them in their fishing business. Victims of housing and employment discrimination have also relied on Section 1981.

The current dispute over the *Runyon* decision arose in the case of a black file clerk, Brenda Patterson, who claimed her white employers at a North Carolina credit union discriminated against her by assigning her larger work loads, refusing to promote her, and finally, by laying her off. Lower courts dismissed Patterson's claim, saying the 1866 civil rights law does not cover acts of private racial harassment. Patterson could have relied on Title VII of the Civil Rights Act of 1964, which provides private parties

LOUIS DUBOSE

Stephen Yelenosky

a statutory right to file an employment discrimination lawsuits. But according to Zeck, Title VII only covers businesses with 15 or more employees, leaving Section 1981 to cover smaller businesses.

When *Patterson v. McLean Credit Union* came before the Supreme Court, *Runyon* was invoked as a precedent. But in a rare move, the Court decided to reconsider its 1976 decision. Neither side had requested the reconsideration and civil rights groups questioned the Supreme Court's motives.

Gary Bledsoe, Director of the Austin Chapter of the NAACP, said, "Beyond what it [overturning *Runyon*] might do as far as the civil rights law of Section 1981, the court's actions indicate . . . that it is engaging in judicial activism. What we have great concern about is this could be the first case of many. That many of the rights that have been protected and recently achieved, could be undermined by such activity."

The National Lawyers Guild fears the "unprecedented" reconsideration may be a signal that the Court's new conservative bloc, with the appointment of Justice Anthony Kennedy, is preparing to "turn back the clock" on civil rights. Chief Justice

Rehnquist, and Justices Sandra Day O'Connor, Antonin Scalia, and Byron White make up the rest of the conservative majority.

Stephen Yelenosky, coordinator for the local chapter of the National Lawyers Guild, warned that the reconsideration "is a signal that this Reagan Supreme Court is willing to reach out and touch other civil rights safeguards that we now have and that none are immune to reconsideration and reversal. And perhaps that signal is more important than the reversal of this one particular statute."

—GREGG WATKINS

Gregg Watkins is an Observer *editorial intern.*

Guatemalan Exile Describes Life in Her Country

AUSTIN

The Guatemala that Rigoberta Menchu describes is not the country where a young president navigates the dangerous passage between an army with a documented history of brutalizing its own people and land owners intent on continued exploitation of an entire peasant class. It is, rather, a country where free primary education is now available to adults and children, where the people have organized into simple collectives of *ladinos, mestizos, and indigenas,*. It is a country where a people have at last reclaimed a dignity lost 34 years ago.

Nor is this Guatemala that Rigoberta Menchu describes a fragment of apocrypha from her book, *I Rigoberta*. It exists, she told a large group gathered in the sanctuary of Austin's First Methodist Church — the church with the most humane foreign policy in the state. It exists in the provinces of Huehuetenango and Quiche — in the Guatemalan Highlands where thousands live in the country's great jungles, surviving on nothing more than what food "blessed nature provides them." This is perhaps Guatemala's best-kept secret — better kept than the country's number of orphans, 125,000; and widows, 46,000; and disappeared, 40,000; and displaced persons, 1,000,000.

"These are people who instead of crossing the border," Menchu said, "chose to go into the mountains. Many have survived offensive after offensive . . . in what constitutes a first experience in our

Latin America, in our Central America, where people have organized on a collective level in order to survive." They remain in the mountains, always just ahead of the army, rather than submit to the country's civil patrols and the routine of life in model villages. And they will continue to remain in the mountains. But for how long, Menchu is not certain.

Menchu told how her own father burned to death in January of 1980, in the Guatemalan government's fiery resolution of a peasant occupation of the Spanish embassy. And how several months later her mother was taken into custody, tortured, raped, then finally killed by Guatemalan soldiers. And how two of her brothers were publicly executed by government forces. And how she went into exile, determined to take her people's plea for justice to foreign embassies, consulates, and international forums.

Last year in Geneva Rigoberta Menchu was extended an invitation by the Guatemalan ambassador to return home to witness firsthand the democratic advances that had occurred since she had gone into exile. In April she returned to Guatemala, under protection guaranteed by the Central American Peace Accords. The only condition she accepted, Menchu said, was that upon returning she would neither openly denounce the country's human rights abuses nor criticize the government. At the airport in Guatemala City, Menchu and a companion were received by 400 police officers and both were taken into custody. "Four-hundred police officers to arrest two women, to me, seemed a bit irrational," Menchu said.

Two hours after she was arrested a large number of people in the capital took to the streets to protest the government's violation of its promise. (North American photographer Pat Goudvis, who now lives in Austin, photographed Menchu's arrival, arrest and release.)

The Guatemala that Menchu describes is also a place where the army and large landowners hold the future at bay. (Two percent of the population, according to a publication of the country's Roman Catholic bishops, own 65 percent of the most fertile arable land.) "There are 5 million Guatemalans without land," Menchu said. "How long can we tell our people not to invade the large estates?"

At 28, Rigoberta Menchu has become an internationally recognized human-rights activist and her book has been translated into 10 languages. Upon completion of her 18-city speaking tour, she will return to Mexico where she now lives in exile.

—LOUIS DUBOSE
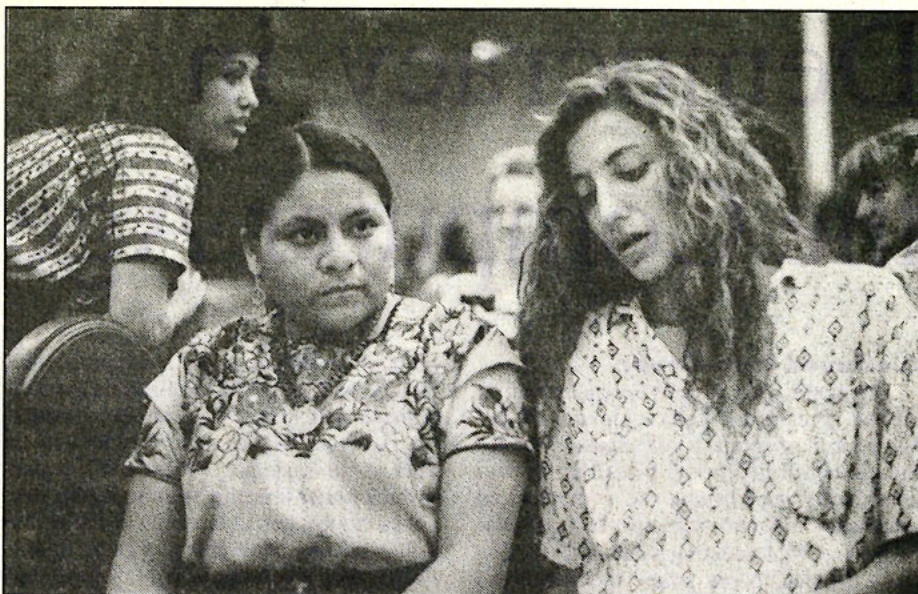
LOUIS DUBOSE

Rigoberta Menchu and translator Isolda Ortega

Democracy in the Computer Age

Continued from Cover

The month after Ronald Reagan was first elected President, Texas Governor Bill Clements's Secretary of State, George Strake, confirmed in the press that he was considering decertifying the computerized punchcard and mark-sense (or optical-scan) ballot and vote-counting systems in Texas. "We decided to reexamine the punchcard and the optical scanner systems for possible decertification," Strake's assistant, Preston Goodwin, had told Tarrant County commissioners considering the new systems. Strake's director of elections, Douglas Caddy, was quoted as warning: "The possibility for fraud is . . . much greater with punchcards than with any other system of voting." Eight years later, computerized punchcard vote-counting systems ar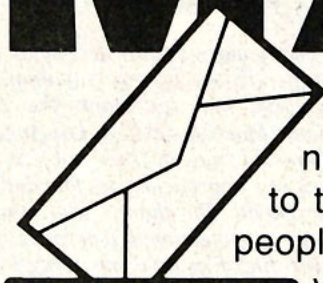e still in place in counties where about 50 percent of the people of the state live, including the cities of Houston, Dallas, El Paso, Austin, Lubbock, Beaumont, Abilene, Wichita Falls, Odessa, and Tyler (see table, page 7).

However, there has been a slow trend away from the older CES systems. For example, this year both El Paso and Travis counties are trying out, under leasing agreements, a new "personal computer network" system mark-sense vote-counting system that is marketed by Cronus Industries, Inc., of Dallas through its sole subsidiary, Business Records Corp. (BRC). Cronus/BRC is now the nation's leading company in the manufacture, sale, programming, and maintenance of computerized vote-counting equipment.

Helen Jamison, the election administrator in El Paso County, said the new Cronus system has been leased there for $85,000 and was first used in November 1987. Dana DeBeauvoir, the clerk of Travis County, explained that her election department has leased a similar system to test it out this year in the course of considering the replacement of the slowing-down CES system.

In the older CES punchcard systems, voters use a stylus to punch out holes beside the names of the candidates and the statements of the propositions listed on a vote-recorder booklet device called the Votomatic. The stylus also punches out small numbered rectangles in a computer-punchcard ballot that is positioned underneath the booklet. Each candidate and the yes and no positions on each proposition are assigned one of the numbers on the card, matched to the holes beside their written-out positions in the vote recorder. In the mark-sense systems, which BRC is now pushing rather than the Votomatic, the voter marks his or her choices on a ballot that is then counted by computers using light or electrical conductivity. Medium-sized cities

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that are located in the computerized mark-sense counties in Texas include Waco, Laredo, Longview, and Galveston (see table, page 7).

Strake, the chairman of the Texas Republican Party until recently, explained in a telephone interview on October 20 that the computerized systems about which he was dubious in 1980 are still in widespread use because "you're talkin' about lots and lots of money" that has been invested in them by the county governments that use them.

Now engaged in a Houston trading company that does business in countries of the Pacific rim, Strake explained why he had become leery of the computerized systems. "You can fix those machines to count wrong, and that was a concern with me," he said. "I think the system is out there for people to abuse it. We're just gonna try to keep on top of it." Asked if he knew of any elections that have been stolen by computers, Strake replied: "I don't have any firm evidence, but it wouldn't surprise me. . . . Somebody could just program it to count just 90 percent of the votes. That's why we've got to have things like unannounced spot checks."

Computer programmers employed by the election companies write the central programs that direct the vote-counting, and by long-standing practice the companies have kept these "source codes," as they are called, secret from everyone outside their corporate enclaves as proprietary trade secrets. According to one well-informed company source, the private election companies also do about half of the local-code programming which particularizes the source code's instructions for the different contests and ballot positions of each local election. The local election officials in Texas may or may not do their own local programming, but none of them possesses, examines, or has any access to the source codes.

For example, El Paso's Helen Jamison said that she and one of her secretaries do the local coding that particularizes the computer vote-counting program to the specific candidates and their ballot positions in El Paso County elections, but the election company that provided her county's equipment has always programmed the source code, which officials in El Paso have never seen. For Travis County vote-counting, said DeBeauvoir, BRC programs not only the company's proprietary source code, but also the local "initializing" code that applies the source code to the unique variables of the local election.

Public escrowing of the source codes may soon be recommended by a forthcoming federal report recommending new voluntary national standards for the security of

computer-tallied elections. A law passed in Texas in 1987 was a perceivably direct consequence of a challenge mounted by Dallas political activists Terry Elkins and Pat Cotten to the correctness of the computer-produced outcome of the 1985 mayor's race in Dallas. H.B. 1412, passed after hearings in 1986 in which Elkins testified, effectively required the recertification of all computerized voting systems used in the state and gave the Secretary of State the power to demand that the companies produce the source codes for examination by the state.

Recommended as a model for other states in a just-issued report on the accuracy and security of computerized elections by Roy Saltman of the National Bureau of Standards, the leading federal expert on this topic, the new Texas law also requires, for computer-tabulated elections, "a manual recount of all the races in at least one percent of the election precincts or in three precincts, whichever is greater." Computer terminals outside the central counting station may be capable of communicating with the vote-counting computers for "inquiry functions only," and modems, devices which enable computers to communicate with each other over telephone lines, are prohibited in the vote-counting equipment.

Randall E. Erben, the Assistant Secretary of State in Texas, said last fall that he had received phone calls from some election company people declaring that they don't want their proprietary information infringed, but, Erben said, "they won't get certified if they don't give it to us." If, he continued, someone took the companies into court and argued, " 'Hey, look, this is not only integral to our democratic process, this *is* our democratic process, it's too integral to it for you even to raise this claim,' I think they'd have to cough it up. Now, the way we're gonna do it, we're gonna say, 'If you don't give it to us, we're not gonna certify you so you don't get the money.' "

Last September, however, Erben said no source codes had been obtained or examined and that all vote-counting systems in use in Texas had simply been conditionally approved for use again next month. He attributed this situation to insufficient funding for his agency and a consequently overworked staff. As of October 21, no source code had yet been examined, although one of Secretary of State Rains's three examiners, Tom Quirk of San Antonio, said he understood such codes had been obtained by the state and were going to be examined by the other two examiners who are computer specialists, Peter Vogel of Dallas and Tom Watson of Austin.

Vogel, a Dallas attorney specializing in computer matters for corporate accounts, said: "I expected more to happen. . . . We just never got that done." The new tabulating system adopted in Dallas, sold by a small Berkeley, California, firm called Votec, was inspected cursorily in January,

Vogel said. Votec had provided the source code as required by its contract with Dallas, but, Vogel said, "I don't think anybody in Dallas examined it."

In an interview, Rep. Ernestine Glossbrenner, the Alice Democrat who is chairperson of the elections committee of the Texas House of Representatives, raised a possibility which has become, *sotto voce*, a topic of debate among specialists in computer-tabulated elections around the country — whether a close national election could be stolen by fixing computer programs in major jurisdictions in the few swing states.

"I have a big concern about punchcard ballots," Glossbrenner said. "I'm not convinced that you can make punchcards secure. You have to believe in conspiracies

— sometimes I do. I'm not a conspiracy buff, but I think it can happen. . . . Suppose you had somebody that wanted to dump votes from one race to another. I'm not a computer expert, but people who are say that the change could be so subtle that it would be very difficult to find. . . . I bet you a majority of the votes that are cast on punchcards, a very large proportion, are prepared by two or three companies at most. If you could get a mole into those companies' programming — yes, you could do it. I'm not sayin' it's going to happen."

Glossbrenner added: "I think that there's been enough computer crime now that it's not as difficult to explain about this. You know, if you can break into the Pentagon and the Bank of America [computers], not too many of us think you couldn't break

THE 69 COMPUTERIZED VOTE-COUNTING COUNTIES IN TEXAS AS OF NOVEMBER 1987

PUNCHCARD Counties	County Seat or Courthouse	County Population 1980 Census	OPTICAL-SCAN Counties	County Seat or Courthouse	County Population 1980 Census
Andrews	Andrews	13,323	Anderson	Palestine	38,381
Angelina	Lufkin	64,172	Brown	Brownwood	33,057
Bowie	Boston	75,301	Calhoun	Port Lavaca	19,574
Brazoria	Angleton	169,587	Deaf Smith	Hereford	21,165
Brazos	Bryan	95,588	Ellis	Waxahachie	59,743
Chambers	Anahuac	18,538	Fort Bend	Richmond	130,962
Collin	McKinney	144,490	Galveston	Galveston	195,738
Comal	New Braunfels	34,446	Gillespie	Fredericksburg	13,532
Dallas	Dallas	1,566,419	Gray	Pampa	26,386
Denton	Denton	143,126	Gregg	Longview	99,495
Ector	Odessa	115,374	Guadalupe	Seguin	46,708
El Paso	El Paso	479,899	Hood	Granbury	17,714
Gaines	Seminole	13,150	Hunt	Greenville	55,248
Grayson	Sherman	89,796	Hutchinson	Sinnett	26,304
Harris	Houston	2,409,544	Jasper	Jasper	30,781
Hays	San Marcos	40,594	Johnson	Cleburne	67,649
Hockley	Levelland	23,230	Kerr	Kerrville	28,780
Hudspeth	Sierra Blanca	2,728	Liberty	Liberty	47,088
Irion	Merton	1,386	Matagorda	Bay City	37,828
Jack	Jacksboro	7,408	McLennan	Waco	170,755
Jackson	Edna	13,352	Montgomery	Conroe	127,222
Jefferson	Beaumont	248,652	Moore	Dumas	16,575
Kaufman	Kaufman	39,038	Orange	Orange	83,838
Lubbock	Lubbock	211,651	Parker	Weatherford	44,609
Nolan	Sweetwater	17,359	Tarrant	Fort Worth	860,880
Pecos	Fort Stockton	14,618	Waller	Hempstead	19,798
Polk	Livingston	24,407	Washington	Brenham	21,998
Potter	Amarillo	98,637	Webb	Laredo	99,258
Randall	Canyon	75,062	Wharton	Wharton	40,242
Reeves	Pecos	15,801	Williamson	Georgetown	76,521
Rockwall	Rockwall	14,528			
Smith	Tyler	128,366	**TOTAL POPULATION,**		
Taylor	Abilene	110,932	1980 CENSUS	. . . .	**2,557,829**
Tom Green	San Angelo	84,784	Percentage of the population	. . . .	**18%**
Travis	Austin	419,335			
Ward	Monahans	13,976			
Wichita	Wichita Falls	121,082			
Winkler	Kermit	9,944			
Yoakum	Plains	8,299			

TOTAL POPULATION,
1980 CENSUS **7,167,922**
Percentage of the population **50.4%**

POPULATION AS OF 1980 IN THE 69 COMPUTERIZED VOTE-COUNTING TEXAS COUNTIES AS OF NOVEMBER 1987

In the 39 punchcard counties 7,167,922
In the 30 optical-scan counties 2,557,829
                                          9,725,851
Percentage of the population 68.4%

into Harris County's computers."

A STOLEN ELECTION?

UNEASE DEVELOPED about the security of the computer-tabulated mayoralty election in Dallas in 1985 after the incumbent mayor, Starke Taylor, attained just a 472-vote majority over the field, although he had a 3,981-vote margin over the second-finishing candidate, Max Goldblatt. "There is every basis [to believe] that it was stolen," Goldblatt said at the time, but he firmly absolved the winner of any suspicion. On his motion a computerized recount was granted, but it changed the outcome by only 26 votes out of the roughly 77,000 cast.

"The allegation is," Terry Elkins, Goldblatt's campaign manager, was quoted at the time, "that the computer used to count the votes was given new instructions after it calculated that Max Goldblatt was leading Starke Taylor by 40 votes." Not convinced by the second computerized count, Elkins, a political independent, and her friend, Republican precinct chairwoman and political organizer Pat Cotten of Dallas, conducted an extensive excavation into the records of the Dallas County election warehouse. Their findings and Elkins's report and representations to the office of Attorney General Jim Mattox precipitated an official state investigation.

Conny McCormack, the Dallas County elections administrator in 1985 who last year resigned that post to take a bigger job running the elections in San Diego County, California, declared during an interview I had with her over breakfast in San Francisco that Elkins had never brought her charges directly to her for explanations, instead "running to the Attorney General" with them. As she had done before, McCormack offered innocent explanations for discrepancies in the election records that had been turned up by Elkins and Cotten.

Fred Meyer, now the chairman of the Texas Republican Party, played a role in the matter. He had been president of Tyler Corp., the Dallas conglomerate out of which Cronus Industries was spun in 1977, and had held stock in Cronus until, as he announced in the press, he sold it early in 1986. When Meyer ran for mayor of Dallas in 1987, the chairman and then-CEO of Cronus, C. A. Rundell, who described himself as a close personal friend of the candidate, made a $5,000 contribution to his campaign.

Responding in the press during publicity concerning the Attorney General's investigation, Meyer joined Democratic county chairman Mike McKool in saying that the CES system used in Dallas was secure. In 1986, as the county GOP chairman, Meyer said: "I could see [fraud] if you counted in one central spot, but not with the kind of equipment we have. The chance of fraud in the system we have is very, very low." Since, Meyer said, two of Mattox's cam-

paign workers in a 1980 Congressional election had pleaded guilty to charges that they had illegally witnessed absentee votes of elderly nursing home residents, "asking Mattox to investigate voter fraud is like asking the fox to guard the hen house." Commenting on the investigation of the 1985 mayor's race, he was quoted by *Dallas Times-Herald* politics writer Tim Graham: "It is a tragedy what they're trying to do with no evidence. There is not one scintilla of evidence. . . . It is really disgusting."

Late in 1986 the House elections committee, then presided over by Rep. Clinton Hackney, the Houston Democrat, conducted a hearing which became a confrontation between Elkins and her allies on one side and, on the other, McCormack and representatives of Cronus/BRC, which had become responsible by corporate inheritance for the CES vote-tallying system that had been used in Dallas since 1972.

Some big-county clerks led by Anita Rodeheaver of Harris County are now lobbying to repeal the mandatory hand recount of all computer-counted elections on grounds that it is needless work. "I have done recounts. They never change," Rodeheaver said. "You may get four or five or ten or twelve change because of chad [the irregular separations of the punched-out particles of the card]. . . . To ask for a recount without any ground, I don't believe in that. . . . If they have grounds and want a recount, let 'em pay for it."

Rodeheaver, who is the chairwoman of the county clerks' elections committee, added: "A lot of these [provisions of new law] were put in there because of an unhappy situation comin' out of Dallas County. I don't think the whole state should be punished." With her CES system, she said, "I could not be happier." As for the company's retention of the secrecy of the source code, she said: "I feel personally that that is the privilege of the company who originated the program. As long as that program is doing what is required, I'm happy with it." She does not care that she has not seen it, she said, continuing: "I have a problem when they start talkin' about that — they can do this, can do that. All of this talk — *prove* it! They're talkin' about all this junk they can do, put new cards in. . . . It really gets my hackles up."

Robert Parten, the election administrator of Tarrant County, where votes are counted in a computerized "OpTech I" mark-sense system bought from BRC in 1985, said when asked about the one-percent recount requirement: "I approve of anything that increases public confidence." Asked to comment on Rodeheaver's position for repealing it, Parten said: "I am too." He added, however: "I will never go out there and lobby to repeal it. I'm all for any kind of security that they want. The one-percent rule really is not benefitting us that much. We've spent many hours counting ballots for absolutely nothing." Errors found in the

recounts, he said, were probably made during the recounts themselves, except that "of course, if people don't follow instructions the computer won't count it right."

"I've talked to Anita about it," said Rep. Glossbrenner, alluding to Rodeheaver's lobbying for the repeal of the one-percent recount requirement. The House elections committee chairperson said she told Rodeheaver she would fight her on it. "She said, 'but they come out exactly the same,'" Glossbrenner recounted. "I said, 'They probably will continue to as long as we count them,' I think it's the large counties that want to do that." Glossbrenner did not think the legislature would repeal the requirement.

The controversy over the 1985 Dallas election, playing out according to its own rhythms and logic, has come to an inconclusive end, cast into limbo by contradictory calls that have been made by county authorities in Dallas and state authorities in Austin.

October a year ago, Theodore Steinke, Dallas County assistant district attorney, wrote Robert L. Lemens, the state assistant attorney general at the time who conducted the investigation, rejecting 13 "discrepancies" discussed in a still-secret 39-page report submitted to the district attorney by the state.

"Each of the 'discrepancies' have been explained to our satisfaction; and although we verified that a few coding errors were in fact made, we have concluded that they were the result of unintentional 'human error.' We find no evidence whatsoever to indicate any deliberate fraud in the 1985 election, nor do we find any credible evidence to indicate an attempt to manipulate the election or its outcome," Steinke wrote Lemens.

"We also note that in the court-ordered recount conducted in two of the races, including the mayor's race, the vote count differed by only 20 votes out of over 77,000 cast . . . which indicates to us beyond any reasonable doubt that the 'original' winners were in fact the winners. . . . We are accordingly closing our investigation at this time."

Steinke, asked to reveal the explanations to the 13 "discrepancies" which his office had found satisfactory, refused, giving as his reason the fact that the inquiry had been a criminal investigation. Elkins said no one from the Dallas DA's office had communicated with her or asked to see her and Cotten's copious work on the election records.

"I don't think you can take it the next step, is what the problem is," Attorney General Mattox said in Austin. "I think they have found incidents of clearly very questionable actions, and activity which is unexplainable without going outside normal computer operational procedures. . . . We were unable to tell who shoulda been the mayor of Dallas, Max Goldblatt or Starke

Taylor. The election was that close. We felt that the count had enough questions, and the tabulating procedure, that it was impossible to say with any certainty who won that election. . . . What we found was that there was no way private citizens, nor the Attorney General's office, nor the Secretary of State, nor the municipality or political subdivision for whom the election was being conducted, could say with any certainty that it's a valid election. . . .

"There's a suspicion that there is a second program in the vendor's product," the highest law enforcement official in Texas said last autumn in his official car on his way to attend a picnic under the trees beside the University of Texas School of Law. "The suspicion we're investigating was whether or not they [the vendor] and people working with them had the ability to influence the outcome of these elections and were doing so. Our belief is that the vendor has the ability to influence the elections should they want to, but we could not prove that they have purposely influenced any elections. The suspicions are still there. The people on my staff — we still have suspicions about the security of the individual vote."

Swinging himself up out of his car and walking across the grass toward the picnic, accompanied by two of his top assistants, Mattox continued: "The real story is a simple story: there's really one simple question. That is, once the election is completed, can you accurately count the ballots, and recount them? What we would say is that we cannot say with any certainty that with this vendor's program we can do that. We can't accurately count 'em, nor can we recount 'em. I do not feel any confidence that we can get an accurate count out of the system."

Local election officials "have no idea what's going on, and neither do we," Mattox said. "If anybody knows what's going on it's the company, because nobody else does," Mary Keller, his first assistant, remarked at this point: " 'Trust us,' that's their point, 'we'll take care of it.' "

Inside a limousine as the official party returned to the Capitol, Lou McCreary, a special assistant to Mattox, observed: "You know, computers can do anything. You've got this private company doing it — you wonder, why doesn't the Secretary of State run the computers? Then, if somethin' goes wrong, at least you can fire him."

C. A. Rundell, the chairman and at the time the chief executive officer of Cronus, indicated during an interview in his Dallas office that he believes Mattox is a demagogue on this issue, coming out with blasts about it shortly before election times.

THE ELECTION COMPANY

JUST WHY Cronus Industries of Dallas was named for one of the ancient Titan gods of Greek mythology is not known. The enterprise from
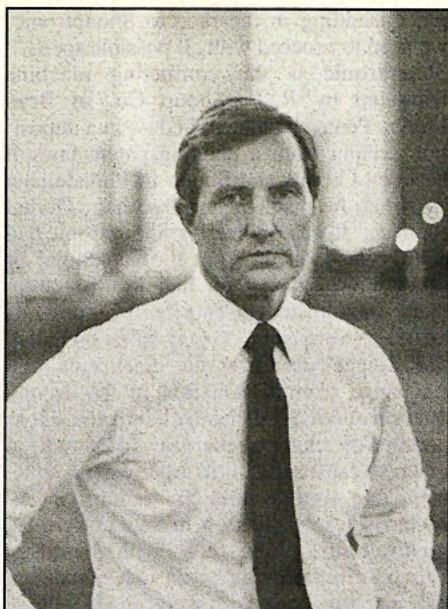
George Strake

FILE PHOTO

"You can fix those machines to count wrong, and that was a concern with me."

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which Cronus was spun out in 1977, the previously mentioned Tyler Corp. of Dallas, which distributes electronic components and deals in specialty industry coatings, industrial explosives, and pipe fittings, had originally been a high-tech military contractor named Saturn Industries. Joseph McKinney, the CEO of Tyler, who became a director of Cronus, gave Rundell, the CEO of the new company, this sendoff in a Dallas newspaper story: "He was ready for CEO responsibility. On a new canvas, he could paint something new, maybe a masterpiece."

Originally Cronus owned not only BRC, which then serviced local governments' office and data processing requirements, but also three other subsidiaries that dealt in agricultural equipment, heat transfer equipment, and metal buildings (as late as 1986 the metal buildings division brought in about two-thirds of profits and sales). Why did Cronus decide to sell three of its four subsidiaries and concentrate on the election equipment business and BRC? In a 1986 proxy statement, the stockholders (who numbered about 3,600 as of the first of the next year) were told that the directors'

decision to sell two subsidiaries "was influenced by the strong performance of the company's information services segment [BRC] and stockholder interest in this segment. The information services segment has experienced rapid growth in both sales and earnings, and the company intends to devote more time and capital resources to [its] development." During my interview with Rundell last October, he noted that BRC already serviced many of the information-processing needs of the same local-government customers who bought election-counting equipment. The hope was, Rundell said, that the entry into the field of a well-capitalized public company with some staying power "would be worthwhile."

The decision to sell the farm equipment business was made in 1983; in 1986 the metal buildings line was sold for $97 million, and by 1987 all of Cronus's other business but BRC had been disposed. In the approaches and bargaining during the period of acquisitions of election companies, according to California election-company executive Richard Stephens, BRC, acting for Cronus, was represented by William D. (Sonny) Oates, the impresario of the pre-Cronus BRC, and Vaughn Duck, who had joined Cronus from the election business in Illinois. Cronus's advance on the election field began in 1985 with the acquisition of Thornber, a Chicago voting-equipment firm, and Roberts & Son, Inc., of Birmingham, which also sold such equipment.

Cronus bought CES, on whose equipment almost 35,000,000 votes had been counted in 1984, from the interests of the Hale family of northern California. A spokesperson for the Hale interests said Cronus had made the approach to CES with an offer. "I think we bought the biggest and the best," Edward H. Belanger, who would head up the election division of BRC, told a San Francisco newspaper. Belanger also said that Cronus had investigated certain vote-tampering charges involving CES equipment in West Virginia and Indiana and (in the story's words) "decided the problems were not as serious as originally reported." The sale price, which was paid in cash, was not disclosed.

Cronus also bought, with cash and shares of its stock, Election Supplies, Ltd., of Napa, California, which had competed with it in the punchcard market; Western Data Services, Inc., of Waxahachie, Texas, which provided computer-services for local governmental agencies in Texas; Dayton Legal Blank Co. of Ohio, an election-printing firm; Governmental Data Systems (with which Duck had been associated) and Integrated Micro Systems of Rockford, Illinois, both of which provided computerized election-counting equipment; Computer Concepts and Services, a Minnesota computer software firm that serviced local governments; and some other firms in the field. Even in Dallas these acquisitions, except for CES, usually occasioned only

items an inch or two long in the newspapers.

Near Dallas in Addison, and at the plant it acquired in Napa, Cronus manufactures the punchcard ballots that are a principal source of its revenues. According to Cronus competitors and Conny McCormack, who had run the elections in Dallas for almost six years, Cronus makes and sells probably 90 percent of all the prescored punchcard ballots that are used in American elections. The Dallas company produced about 100 million of the pre-perforated ballots in 1986, according to a recent annual report, and if its market share has held firm since then it may have sold approximately 160 million of them in this more important political year. Since 1984 when CES competed in the market for this same product with IBM (which has since dropped out), the average price for a single CES or BRC punchcard ballot has increased from about four-and-a-half cents to eight cents (that is, to about $80 dollars for a thousand ballots).

In 1986 Cronus concentrated all of its election business in a subsidiary called "The Election Company." According to industry sources, this was Vaughn Duck's move when he was being given a chance to make a success of the election division. "He had a few months to try and make a go of it early '86 until August or September," said George H. H. Mitchell, a BRC programmer at that time, whom I interviewed in his home in Berkeley. Then Richard McKay, another BRC executive from Illinois, was given control of the election division, and "his response was to abolish The Election Company," Mitchell said.

Duck continued to concentrate on the development of the V-2000, the company's entry in competition for New York City's $40-million order for new "direct-recording electronic" vote-counting machines, but no V-2000s were being sold. "With N.Y.C. breathing down my back," CES/BRC supersalesman Jack Gerbel wrote Duck on March 4, 1987, "and our obvious second-place standing in the race to Shouptronic, we need to proceed with all possible speed." Shouptronic is the competing machine marketed by R. F. Shoup Co. of Bryn Mawr, Pennsylvania. Asked — in a deposition arising from a pending patent lawsuit between Cronus and Shoup in Philadelphia — what he had meant by that, Gerbel replied: "It was my feeling Shouptronic had a large lead on us from the standpoint of production, sales, they had just been out there for a lot longer and that's an obvious lead. We were trying to play catch-up ball."

Belanger informed the Securities and Exchange Commission that in the second quarter of 1987 Cronus had suffered a loss because of "unusual charges" of 16 million dollars, caused by a write-down of some computer systems and the failure of expected sales of election hardware systems to materialize. In a filing with the SEC, Cronus reported that it has lost money on its continuing operations and made money on its discontinued operations every year from 1983 through 1987, a cumulative pattern that totaled $18 million in losses and $51 million in gains in those respective categories.

STRUGGLE FOR CONTROL

SIGNS OF STRUGGLES for control of Cronus appear in the public records. Major investors began to take an interest during the first half of 1987; almost two million dollars' worth of its outstanding warrants. By August three investment companies, First Pacific Advisors in California, Alex Brown Investment Management Co. in Baltimore, and Charter Oak Partners of Connecticut owned blocs of Cronus stock that, added together, comprised 19 percent of the stock outstanding. Early in 1988 the company informed the SEC that "certain anti-takeover effects" had been achieved by a complicated scheme to dilute the value of the holdings of an intruding investor after any one person or group had obtained ownership of a fifth of the company or had offered to acquire 30 percent.

In response to many of my questions about the election business, Rundell had referred me to McKay and others in Chicago, which was the headquarters of the election division. By early last December, however, McKay had been removed as chief and the division was being concentrated in Dallas. "The accounting has been moved down there," Jeff Ryan, a regional sales manager of the firm, told me in Chicago. "The basic programming was always done out of Dallas. . . . They talk to programmers around the country — but really it's done out of Dallas, Addison, actually."

Rundell had readily discussed his personal politics — his contribution to Meyer in the latter's 1987 race for mayor of Dallas had been the largest he had ever made, he said; he had also made contributions to such conservative Democrats as Senator Lloyd Bentsen and state Senator Ray Farabee of Wichita Falls. On December 22, in a telephone call, Rundell stated, however, that he did not feel comfortable having his directors asked about their politics.

"I guess overall," Rundell said, "the thing that concerns me the most is, there's a possibility of exciting a tremendous amount of attention from among people who have suspicions about the system and might have a slight touch of paranoia. We feel it's our goal to try to build confidence in

"If you could get a mole into those companies' programming..."

our elections. There are always people who think the Russians are coming. I don't think that's doing any of us any good. We don't think that sort of thing is good for the country. . . . It's bad for the country for there to be the implication that some unseen force somewhere is attempting to control the election so that every fourth ballot goes into the Democratic column or something like that."

"I haven't as yet told our people not to talk to you," Rundell remarked as this call came to an end. On January 12 he telephoned again to say that he would arrange a set of interviews with top BRC officials if my work on this subject was shown to him in advance of publication. He was advised that the requested review before publication would not be agreed to.

"As you know," Rundell wrote later that month, "We have been factually abused by the fourth estate from *The New York Times* to the *Dallas Morning News*." The source code "is a non-issue," he said. "The temptation of sensationalism versus accuracy to which others have succumbed in this area causes us to be touchy." The patent suit "creates a need for caution." So, Rundell concluded, "I guess you will have to go with what you've got."

After I approached some CES/BRC people for interviews last spring in California, Rundell wrote me: "Nice try. Same deal. No Soap." Having received, sometime during the ensuing four days, copies of form letters which had been addressed to the heads of all election companies known to the author, some of them Cronus subsidiaries, Rundell wrote again: "We do not want you to contact any of our people for information. . . . I would hope that in the spirit of honor and cooperation . . . you would honor our request." In Berkeley at CES headquarters, CES/BRC programmers

THE 11 TEXAS COUNTIES THAT COUNTED VOTES ON MECHANICAL-LEVER MACHINES AS OF NOVEMBER 1987

Counties	County Seat or Courthouse	County Population 1980 Census
Bell	Belton	157,820
Bexar	San Antonio	988,971
Cameron	Brownsville	209,680
Duval	San Diego	12,517
Harrison	Marshall	52,265
Hidalgo	Edinburg	283,323
Kleberg	Kingsville	33,358
Nueces	Corpus Christi	268,215
Rusk	Henderson	41,382
San Patricio	Sinten	58,013
Victoria	Victoria	68,807

TOTAL POPULATION, 1980 CENSUS 2,174,355

Percentage of the population 15.3%

P. J. Lyon and Jerry Williams declined to be interviewed for this report, explaining that a memorandum from Dallas had stated company policy that all press queries were to be cleared through the Dallas headquarters. Williams learned upon making a telephone inquiry on the point that company employees were instructed specifically not to talk with me. In this context, Rundell wrote a third letter at the end of April which contained an assurance that Cronus was doing all it could to upgrade voting security in the United States.

Cronis is a publicly held company traded on the Nasdaq exchange, and recently three investors have acquired blocs of its stock large enough to require their reporting to the Securities and Exchange Commission. The private Connecticut investment partnership, the previously mentioned Charter Oak Partners, which as of 1986 had assets of more than a hundred million dollars, owns ten percent of the company. The Charter Oak partners decline to divulge anything about their politics. Two important Texans have each acquired more than five percent of Cronus: L. D. "Brink" Brinkman of Kerrville, an entrepreneur and investor and a conservative independent who recently backed Tom Loeffler for governor of Texas, and Caroline Rose Hunt of Dallas, an heiress of the late right-wing oil billionaire, H. L. Hunt of Dallas, and described by *The New York Times* in 1986 as "the wealthiest woman in America." In the current *Forbes Magazine Four Hundred*, Mrs. Hunt's worth is estimated at $900 million. She is noted for her engagement in a variety of community good works. President Reagan appointed her to the board of the Kennedy Center.

A spokesman for Brinkman, Byron Smith, said, "It's really strictly an investment. We're not all that familiar with it." Jeb Terry, one of Mrs. Hunt's investment advisers, confirmed that she is the beneficiary of the Caroline Hunt Trust Estate which holds, through corporate entities, the Cronus stock, but said: "She may be aware that we've invested in that company, but she might not even recall. There wouldn't be enough there to be reason for her to. . . . We're outsiders and passive investors. We have no interest in the running of the company."

ELECTION ENTREPRENEUR

LAST MAY Perry E. Esping of Nebraska and New York, a well-established entrepreneur in the corporate software field, replaced Rundell as chief executive officer (though the latter continues as chairman) and took over day-to-day control of Cronus by acquiring what was deemed to be 12 percent ownership of the company through a ten-million-dollar loan he made to it. Who is Perry Esping?

He was born 52 years ago in Minnesota. After serving as an Air Force pilot, he obtained a business degree at the University of Minnesota in 1960 and spent his next ten years as a salesman for IBM in Omaha, which became his home base. After a few years as president of the MidAmerica Bankcard Association, in 1971 he founded and ran First Data Resources, Inc., of Omaha, a computer software company which provides data-based services to financial institutions.

"Esping is a tremendous guy," said one businessman who is interested in his endeavors, but did not want to be named. "He built a computer software company — it was appreciating at 42 percent a year." Esping was also a director of FirsTier Financial, a bank holding company the principal assets of which are national banks in Omaha and Lincoln, Nebraska. (He gave up that position after he took over Cronus in 1988.) In Omaha he was active, too, in civic and military affairs, sitting on the boards of the chamber of commerce, the United Way, the Boys Club, Nebraska Methodist Hospital, Bellevue College, and BioNexus, Inc., and serving as a member of the Strategic Air Command Consultation Committee.

His First Data was so successful that in 1980 he was able to sell it to American Express and join the financial giant to run his former enterprise. "We acquired it and him along with it," said Matthew J. Stover, Amex's vice-president for corporate communications. That year American Express described itself as "one of the world's leaders in the use of computer systems" and First Data, its new subsidiary, as one of the largest third-party, data-based processors of debit and credit cards in the country, handling about 12 million card accounts held by almost 4,000 financial institutions and correspondents. Esping became president of a new Amex financial services division and continued as CEO of First Data. By last year First Data was providing billing services for securities systems, cable television companies, hospitals, and doctors. The four most politically prominent members of the 18-member board of directors of American Express in 1987 were Vernon E. Jordan, Jr., the black leader, and Henry A. Kissinger, Anne L. Armstrong, and Drew Lewis, all well-known Republicans. Former President Gerald R. Ford was one of four advisors to the board.

Tired of New York City, according to Stover, Esping quit American Express and last spring moved to Dallas. There, in the arrangement that was deemed to have given him the ownership of one-eighth of Cronus, in exchange for his loan to the firm he acquired notes convertible into special preferred stock. According to records on file at the SEC, half of the ten million dollars came from Esping's own "available funds," while the other half was a loan he had made in turn from a Dallas bank. In recent years, according to reports from Washington On-Line, a responsible campaign-contributions research organization, Esping has made

Attorney General Mattox

contributions to Democratic Senator Edward Zorinsky and Republican Congressman Hal Daub of that state, and in 1987 Esping gave a thousand dollars to the Presidential campaign of George Bush.

When Esping replaced Rundell as CEO in May, he was asked to reconsider Rundell's position on the matter of providing information. "The bottom line," Esping responded by telephone on July 18, "is that we have from time to time talked to the press about our position in the marketplace, and — well, I haven't been here, but they tell me that a hundred percent of the time it's backfired. It's helped one place and hurt someplace else. There's no percentage in talking." I asked Esping some questions about his background and politics. "Lot of things — why I did what I did — I see some downside on that," he said.

NEWS BREAKS

ON JULY 29, 1985, an article entitled "Computerized Systems for Voting Seen as Vulnerable to Tampering," written by David Burnham, was published on the front page of *The New York Times*. Burnham wrote that the CES vote-counting program had been challenged in Indiana, West Virginia, Maryland, and Florida as "very vulnerable to manipulation and fraud." He followed up with four related pieces through the summer and early fall and one more in 1986 on the controversy over the vote-counting in the Dallas race for mayor the year before, all published on inside pages of the *Times*.

The acquisition of the trunkline and many of the feeder lines of the election business by Cronus and the publication of Burnham's work, which were taking place during the
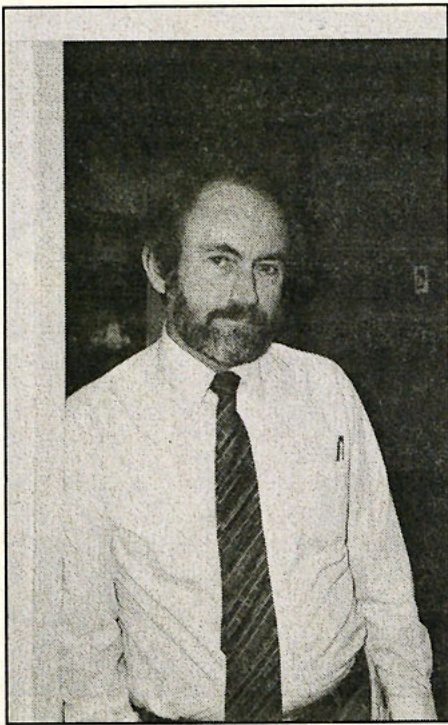
RONNIE DUGGER

Programmer P.J. Lyon

same two years, were the beginning of the the current period in the history of computerized democracy, which so far has been characterized by the turmoil in the leading company, a choked-back, but penetrating unease about vote-counting security, some rancor and name-calling, and several fresh undertakings of reform.

Burnham said mournfully that his work "fell like a goddam rock," and it is true that follow-ups in the rest of the press were rare, but some critics about computerized vote-tallying who had been relatively isolated in their own communities were emboldened to slog forward. In 1986 in Boston and last October in Dallas at the Doubletree Inn during a two-day conference, some of the skeptics taught each other what, refracted glint by richocheted conjecture, they had been learning in their home precincts. Because of Burnham's work the Markle Foundation, according to the relevant program officer, transformed its original interest in the futuristic technologies of computerized voting into funding for the new study on the integrity of computer-tabulated elections by Roy Saltman; a conference on Captiva Island off Florida in 1987 on the security of such elections; and a technical evaluation (still in progress) of currently used computerized vote-counting systems by ECRI of Plymouth Meeting, Pennsylvania, a nonprofit engineering and technical research organization (which was originally named the Emergency Care Research Institute). The Election Center of Washington, D.C., a quasi-governmental association of local election officials and vendors, which is led by Carol Garner of Austin, has commissioned new work on the general problem, and Election Watch, formed from the small group of persons who met at the Doubletree, is keeping an eye on the Election Center.

In Illinois as well as Texas, advocates of stronger laws on electronic vote-tallying were able to pass them in 1987, although not much yet has changed in consequence. Rick Fulle, the deputy director of voting systems in Illinois, said his state now obtains, and holds until 60 days after each election, the source codes for counting votes in the form of executable object-code (that is, source code in binary machine language which is ready to be fed directly into the vote-counting computers), but Illinois still does not have the authority to obtain and examine the codes themselves.

SOME BROAD QUESTIONS

THE QUESTIONS THAT ARE suggested by the computerization of democracy are neither narrowly legal nor limited by the special situations of any one state. Although the topic has had little or no public currency, the issues it suggests could hardly be broader or more profound.

Should computer codes that control the counting of public elections be the secret property of the election companies? Should the programming of the counting of public elections be left to these companies or should public agencies do it?

Computer recounts of elections counted by the computerized punchcard systems seldom produce exactly the same total figures as those of the original count and sometimes even give different numbers of total votes cast. "We ought to be able to produce elections 100 percent the same," scientist Saltman said during a conference of election officials in San Francisco. "If we can't do that with computers, then what are we using computers for?"

Elections in the United States are decentralized, but computer technology, because of its recursive efficiencies, speed, and ease of operation, works powerfully to centralize vote-counting. Which tendency should prevail? Would there be anything wrong with transmitting for tabulation all electronically cast votes for President to central state computer centers or to a federal computer center in Washington?

Is there a prudential or a political limit to the technological simplifications of voting that should be permitted? Could each citizen be issued a political credit card, good for one vote on election day? Will it be all right, technology permitting, if, as recently suggested by a columnist in the magazine *Computerworld*, people vote by push-button telephone? Why not even more simply, by a phone call that is voice-printed?

Should local election officials let citizens and reporters watch central computers counting the votes? In some of the major jurisdictions, such as Miami and (now) Fort Lauderdale, election chiefs say yes. In others, such as Houston and the City of Chicago, they say no.

"It's an enclosed room," said David Leahy, supervisor of elections for Dade County, "but we have glass walls through which people can observe that whole process. I think it's very important."

On the other hand, "Let me tell you why I don't," said Anita Rodeheaver, the county clerk in Harris County. "My computer room is a very small room. I don't need people in there who don't know what's going on. I don't need 'em there. I don't think that the press has a right to be there." The computer room is her office, she explained further, in answer to a question.

During the counting of the Presidential primary in Cook County last March, the reigning county clerk, Stanley Cusper, Jr., told me he had no objection to my watching the central computer counting the votes, although all I would see, he said, would be "a mainframe with a lot of red and blinking lights and stuff, all from modems from remote stations being pumped in." But soon thereafter a tense Robert Logay, Cusper's chief of elections, countermanded the permission his boss had given. "No, you can't," Logay said. "We're not trying to keep you from seeing anything. We can't have 30 people or one person wandering around and interrupting the tabulation." When I returned to Cusper to ask him about his subordinate's declaration, the county clerk replied: "Well, they say they can't permit unauthorized access, so I guess the answer's gotta be no."

What accounts for the prevailing silence about the issues posed by computerized vote-counting among almost all officeholders and local and state election officials? Is it better to keep silent about these matters and to concentrate, perhaps, on improving election administration, or is it better to deal frontally with doubts about counting votes in computers? Roy Saltman, who had labored across two decades to improve vote-counting computer security, believes that focusing too much on the election companies jeopardizes the public's trust and therefore the national welfare. "I think what's being called into question is the whole fabric of society," he exclaimed to me one afternoon recently in his office at the National Bureau of Standards. To the opposite effect, computer scientist Frederick Weingarten at Congress's Office of Technology Assessment warned that "computers in some sense institutionalize vulnerability to an extent that if it ever does happen, it'll be too late. . . . It would be a disaster for this country, total political chaos. . . . You don't know who's President."

As a preface to certain other questions raised by this subject, we may review some information about a situation pending in New York City. The City of New York is preparing to buy the direct-recording electronic (DRE) machines, the newest type of computerized vote-counting equipment, on

behalf of the voters of the city. Four companies are still contending for the contract, Cronus, Shoup, Sequoia Pacific Systems Corp. of California, and Nixdorf Computer Engineering Corp. Shoup is a family-owned enterprise, but its Shouptronic is manufactured by Veeder Root, which is a subsidiary of Danaher Corp., an 800-million-dollar conglomerate whose products include electronic counting and controlling devices. Sequoia Pacific, about 40 percent of which is owned by Jefferson Smurfit Corp., a billion-dollar container and newsprint conglomerate which in turn is owned mostly by a company in Dublin, Ireland, considers itself the only national rival to Cronus in the overall business of vote-counting equipment because Sequoia supports and services mechanical-lever voting machines on which tens of millions of votes are counted. Acting through McAuto Systems, a subsidiary, the 13-billion-dollar McDonnell Douglas, the world's largest private producer of combat aircraft, made a move on the election business by joining Sequoia in its DRE bid in order, according to Kenneth W. Finn, the president of McAuto, to develop "complex software solutions for New York City." Nixdorf Engineering is a wholly owned subsidiary of Nixdorf AG, a West German company.

These facts serve as preface for one question asked by W. Edward Weems, president of Office Technology Corp. of McLean, Virginia, a smaller election-computerizing company: "Do you think New York will let a German company count their votes?"
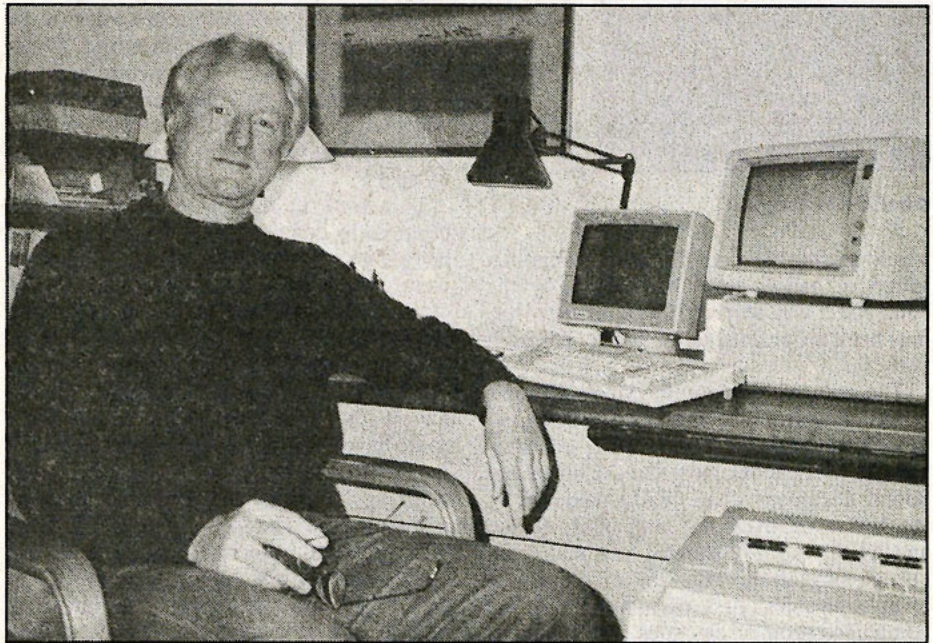
In addition to the interest of McDonnell-Douglas and GTE, Unisys, the six-billion-dollar military electronics company, has been considering entering the vote-counting field. Would there be anything problematical about computer scientists who were working for multinational military companies programming the vote-counting machines?

"We've been doing some work [on this overall topic] at the National Security Agency," computer-security specialist Donn Parker of SRI International said last autumn. "They have become interested in the possibility of foreign powers causing widespread damage to the country by physically or logically attacking vote-counting systems because of their high visibility at certain times." In Parker's view, such well-placed attacks, if repeated, could "ultimately erode the confidence of the society." Is such a fear groundless? I directed questions about this and related matters to the NSA. "We're coordinating our responses," Pat Colson, an NSA spokesperson, told me. "Several people are working on a response." When the agency's reply was received, however, there was no comment about foreign powers. The NSA "follows, with interest, many reports and instances involving computer security," the coordinated response intoned.

Should votes be counted in computers at all? "There are limits to what computers ought to be put to do," one philosopher of the electronic age, Joseph Weizenbaum of the Massachusetts Institute of Technology, has written. "Just when in the deepest sense man has ceased to believe in — let alone to trust — his own autonomy, he has begun to rely on autonomous machines. . . ." Asked on the telephone about counting votes in computers, he replied: ". . . with the help of computers it's awfully easy to miscount — let me say it kindly — and even massively, and it would be very, very difficult to check. So it's a very dangerous thing. . . . Attempts should be made to control it and to check," he said, but "the deeper issue is really the question, what's the hurry? Suppose that it took three days to do a national count. What harm would

RONNIE DUGGER

Programmer Ken Hazlett quit work because he missed his dinner

it do? Now, that's a very hard thing to get across. People don't reason out why it's important — it just is. It's the technological imperative."

THE CORPORATE LINE

ALTHOUGH THERE ARE smaller companies in the field, broadly speaking, the computerized vote-counting industry in the United States has developed mainly through one corporate line which was based on the Votomatic vote-recorder and inaugurated in 1963 by the investor of the Votomatic, the late Joseph P. Harris, a political scientist and a professor at the University of California in Berkeley. After Harris got the business started and IBM took it over for four years, but then withdrew, CES — Computer Election Systems — was formed in 1969 by Robert P. Varni of San Francisco and three other men who had quit IBM to sell the

Votomatic. The Varni group ran the burgeoning venture for eight years until 1977, when they sold it for about 12 million dollars in cash to the Northern California Hale family interests led by Prentis Cobb Hale of San Francisco, a multimillionaire Republican retailing tycoon who has been a strong supporter of President Reagan throughout the '80s. The Hale family's venture capital company, Hale Brothers Associates, owned and ran the nation's leading election company until late 1985, when Cronus bought it.

By the mid-1960s probably more than half the votes in the country were being cast and counted on the lever machines made and sold by Automatic Voting Machine Co. (AVM) and Shoup Voting Machine Co. (SVM). As the IBM Votomatic took hold in Georgia, Minnesota, and Michigan, the rivals struck.

In 1966, according to Varni, AVM commissioned the Merle Thomas Corporation of Baltimore "to prepare a computer program which would demonstrate that computer tallying could easily be rigged. A program was prepared in Baltimore which counted votes accurately for a period of time and after a given signal would throw every fourth vote to an erroneous candidate." This was a simple vote-shifting Trojan horse, activated by a signal. The program and a write-up about it, distributed throughout the country, "served the purpose of undermining the confidence of election officials in the ability of computers to properly count votes," Varni said.

"They could run it for election officials who understood nothing about computers," he remembered. "First they would run the ballots through the computer and print out a count from the computer tally. Then they
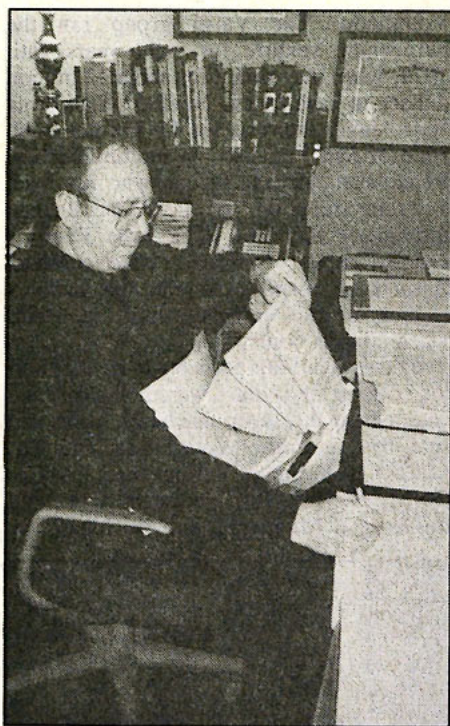
David Stutsman

would ask the election officials to count that group of ballots by hand. Obviously the hand count was correct. The computer [had not] been programed to tally 'one' for each vote."

The man who wrote the Merle Thomas report, Edward Weems of Office Technology Corporation, told me during an interview in McLean recently that the typed and bound document "was really paid for by the two lever-machine companies, Shoup and AVM. . . . We showed how you could change programs." But the effect of the lever companies' first offensive against the computerization of elections was minimal, according to Varni. "The report did not hurt us," he said. "At best, it delayed our progress."

During the years of Richard Nixon, Gerald Ford, Jimmy Carter and the first term of Ronald Reagan, the computerized vote-counting business divided into two realms wherein quite different kinds of things were happening.

Nationally CES sold and sold and sold. What some of the IBMers regarded as the most high-powered sales force they had ever known outsmarted potential corporate rivals and dispelled concerns about fraud. "We didn't have choirboys as salesmen," said CES comptroller Douglas McLeod. "They weren't dishonest, but they sold like they'd play football." In 15 years these drummers turned the Votomatic vote-recording booklet, propped up in a flimsy little voting booth itself in turn perched on spindly metal legs, into the heart of democracy in a thousand jurisdictions.

In the other realm, the local one, where each election happened, the "glitches,"

computer-related errors and accidents, occurred sporadically, and suspicions and accusations, losers' outcries and specialists' warnings, recurred with an ornery persistence. Yet it was the compounded good luck of the private business of counting public elections that the national press paid almost no attention to the mere hundred or so people of CES who were computerizing self-government and almost always the errors, accidents, suspicions, and accusations aroused only local concern. Although an attentive citizen in this city and that town might worry for a while, when there were news stories at all they seldom made the national wires or the nightly network news, they did not travel like the CES men who flew from state to state 50 weeks a year. While most people, when they paid attention to public matters at all, were wondering about the accumulating calamities and half-listening to the political cacophonies of the period, democracy was electronized. It was as if the crowd at the circus was so engrossed amidst all the barking and din watching the tricks in the center ring they didn't see it when the leopard changed its spots.

Immersed in the business of counting elections by computers, the founders of CES had politics of their own. Their alignments were mixed, more Republican than Democratic. Varni started out as a registered Republican; in 1972 he voted for Nixon. After he moved into San Francisco, though, "the city is so liberal," he said, "in the mid-1970s I registered Democrat so that I could have some voice in who was elected." In 1978, a year after he left the vote-counting business, he was the highest-spending candidate for a minor nonpartisan office in San Francisco, but he lost. He voted, he said, for Jimmy Carter in 1976 and for Reagan in 1980. He identifies himself now as a moderate Democrat who votes for some Republicans.

"I have been registered as a Republican," Kenneth Hazlett, the original programmer for the Votomatic and another of the four CES founders, said. "However, I sometimes vote for Democrat candidates. I don't want to disclose who I have voted for." Joseph Chowning, another founder, was an original: he said he voted for Barry Goldwater in 1964, Humphrey in 1968, and George McGovern in 1972. Of the original four Chowning said, "I think most of 'em were Democrats. I'd say social liberals, fiscal conservatives. Jack probably was a Republican." Chowning was referring to Jack Gerbel, the company's sales wizard, who was the fourth founder.

The company had not been in business two months when it was besieged by alarms in Los Angeles that didn't subside completely for several years. In the summer of 1969 an article entitled "How Elections Can Be Rigged Via Computers" was published in the *Los Angeles Times*, a great daily newspaper whose readership, however, was

largely confined to Southern California. "Technically," the paper's political writer, Richard Bergholz, reported in his 42nd paragraph, "it is possible to alter the computer's program so that it counts the first nine votes for candidate A but gives the tenth vote to his opponent, candidate B. And this . . . can be applied to specified precincts or groups of precincts. And, at the end, it can be told to go back to being honest again — and forget about its aberrations in case anyone asks."

As the story also (in part) related, in work sponsored by Intellectron International, Inc., of Los Angeles, six computer scientists, led by James Farmer, who directed the work of all data processing centers operated by the state college system, had demonstrated on a computer how to steal votes by modifying a computer's operating system, a source code, and an object deck (which represents the instructions to the computer in binary language, the luxuriant sprays of ones and zeros which the computer uses). To illustrate the danger, Bergholz noted that in Pasadena, California, a computer had failed to count any yes votes on a bond issue in five precincts and of course this had been caught at once. "But suppose," he closed the story, "the program error had resulted in the machine counting all but one-tenth of the yes votes for the bond issue. . . . How would the error have been detected?"

As Varni was checking over his shoulder for the lever companies' agents cloaked in trenchcoats, the fears caused by this story spread through the political offices of the sprawling metropolis of the desert. "Your vote was computerized," said the heading of a regional advertisement in *TV Guide* announcing the LA showing of a documentary on computer vote-counting. "But was it counted? Are computer experts tampering with your future?" In a report the six specialists presented to county and state legislative committees during public hearings in the city, they alleged no vote fraud, but said a computer's vote-counting program could be modified by one person or at most two so that, for example, every fourth would be counted for a chosen candidate. The public "logic and accuracy" tests had "no value" in detecting sophisticated fraud, they added.

In response, the county's official election security committee recommended the requirement of a recount of randomly chosen precincts, an idea which then became the law of the state (but did not reach Texas for another 15 years). The Votomatic was less vulnerable to fraud than paper ballots, the committee declared, adding: "While an operating system is vulnerable to modifications, the county-generated operating system is not available to unauthorized personnel." A report summoned up by an official state inquiry concluded that the Intellectron study "greatly exaggerates" the danger "because of its failure to take proper account of the

security measures used by the county, the practical consequences of the logic and accuracy tests, and the complexity inherent in altering a significant but reasonable number of votes." Still, the state's inquiry conceded that "it is technically feasible to fraudulently influence the outcome of an election by means of computer software modification," that "a dormant rigging routine may not be discovered unless all software is audited," and that a knowledgeable member of the county's data processing division "could accomplish the fraud acting alone."

During a talk Varni delivered at the Stanford Research Institute in the spring of 1970 he positioned CES on this controversy that was threatening it. Speaking of the Intellectron-sponsored scientists, he said: "They claim to have purchased a program which will transfer the votes of one candidate to another. The fact that a computer would do such a thing is merely evidence that it performs exactly as instructed. If it is instructed to transfer votes, it will, and, if it is instructed to count votes correctly, it will do just that. The reason for a thorough test of the computer before and after an election is to insure that the count is correct. . . .

"One must question why," Varni continued, "a company such as Intellectron International, engaged in the business of selling computer services, would . . . be so active in an attempt to discourage prospective users of computerized vote tally equipment. The answer can be found upon examining the 1969 annual report of Macrodyne-Chatillon Corp. . . . Both the Shoup Voting Machine Corp. and Intellectron International, Inc., are divisions of Macrodyne. Is this a coincidence or the result of a long-range plan?"

SUSPICIONS OF FRAUD

UNEASE ABOUT computerized counting crept into the 1972 Presidential campaign of George McGovern. According to a brief article in *Computerworld*, Eli Segal, an official with the campaign, said: "We were especially worried about the large computerized counties. . . . There was a fear that the programs that had been developed for vote-counting had already been tampered with." A section was formed in the campaign to deal with possible computer frauds, but too late to do much.

A Los Angeles county supervisor who was elected in 1972, Baxter Ward, was not satisfied that doubts he had about the vote-counting there could be put to rest by the random precinct recounts. In at least 34 cases, complained the winning candidate, identical vote totals for candidates had been reported by the computer in successive precincts. One four-in-a-row series, he said, was "a million to one."

Possibly Ward's suspicions gave the idea to a certain computer fraud investigator in

Los Angeles for a bizarre challenge to computerized-punchcard results in El Paso in 1975. The late Woodrow Bean, a canny and audacious, but also outrageous character many Texans will well remember, had been defeated for mayor of the West Texas city by several thousand votes out of about 50,000 cast. Bean thereupon hired the Los Angeles investigator, whose special claim to distinction was his theft of a million dollars' worth of telephone equipment. This fellow looked into the election and declared that identical vote totals reported by the CES system in three precincts for a certain candidate were a 5,000-to-1 shot and indicated the computer might have been fixed, causing Bean's defeat. Bean and another local politician took the question to federal court. One reporter, watching the controversy from the Bay Area, all but

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"There is absolutely no way fraud can occur in this system."

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wrung his hands in a news story in the *San Francisco Examiner*. "The implications of the charges are tremendous," he wrote. "The dangers are obvious. For example, could a computer voting machine company, in financial trouble, allow a candidate to buy an election without having to approach one precinct worker?" CES hired its own expert to controvert Bean's. Then, the anticlimax: a hand recount was granted and confirmed the election results with trivial variations.

The Berkeley company had three leading programmers, although several others played lesser roles. In an episode his former colleagues still regard as weird and comic, Hazlett quit CES in the fall of 1970 because he liked to have dinner at a regular hour and objected to Varni's having kept him in a meeting one night until 8:30. He gave Varni his letter of resignation the next morning. This meant, as the other three founders well realized, that Hazlett had to turn in most of his CES stock at its par value of ten cents a share, and "Varni and Chowning weren't about to let him off the hook," McLeod recalled. Gerbel said that he offered Hazlett a chance to change his mind, but that he quit anyway. In 1972 CES went public at $12 a share, meaning that Hazlett had foregone several million dollars, so, as Gerbel said, evidently "as far as he was concerned, when he ate was more important than money." Married to an heiress of the W. T. Grant fortune, Hazlett was well fixed. "He was Charley Potatoes

— he didn't have to do anything," said Dunbar, who succeeded Varni as the president of C.E.S.

P. J. Lyon, whom Hazlett had been training, became the principal programmer then, and after 1974 CES also turned to C. Stephen Carr, who held a doctorate, unusual for that time, in electrical engineering and computer science from the University of Utah and who had just set himself up in northern California as an independent programming consultant.

Gerbel was a friend of Stanley Cusper, who was to become the county clerk of Cook County, and Cusper had told him, Gerbel said, that there and in Chicago, "Nobody'll believe anything except results at the precinct." When Hazlett's life changed (the income from the Grant trust declined, for one thing) and he needed money, on his own he designed for CES the precinct ballot counter (the "PBC") which enables punchcard ballots to be counted in the precincts. This then enabled Gerbel to sell the Votomatic system to Cook County. (Gerbel, in the interview in Albany, New York, said very little about this accomplishment except to quote officials in Chicago as having said: "If it's that good, let's go with it.") Eventually, Ken Hazlett said during an interview at his apartment in Corvallis, Oregon, he was paid about $250,000 for the PBC.

P. J. Lyon worked for a while directly for Carr, and Hazlett returned to the CES payroll, but if these ins and outs are taken account of, one may say that the key CES programmers were Hazlett, Lyon, and Carr.

A publicly listed company since 1973, CES had about 1200 stockholders, but because its revenues, keyed as they were to election-year rhythms, were unusually cyclical, the price of its stock had remained improbably low, in 1977 about half the initial offering price, and this pattern reduced the gains that were being realized by the company's insiders. Varni had also concluded — he showed his colleagues a graph illustrating it — that the market for the company's products would be flattening out not very far in the future. He had been offered a chance to buy half of the 24-story Portola Towers on Nob Hill, for which he needed ready cash. He was looking for a buyer.

CALIFORNIA GLITTERATI

PRENTIS COBB HALE declined to be interviewed on his eight years in the computerized vote-counting field. His secretary, Barbara French, explained: "He really isn't much interested in doing interviews and that sort of thing, to be frank with you. He really wasn't involved in the day-to-day operations."

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Hale's interest in technology ran to remote computing and satellite communications. When he took over CES, he was also chairman of Hale Systems, Inc., of Palo Alto, which was owned by the Hales' family company, Hale Technology. In 1979 the Hale interests acquired the Remote Computing Corp., which as early as 1974 had its own national data network and which marketed specialized remote processing services, computer data bases, and customized software. As of 1983 the main divisions of Hale Systems were Remote Computing and Datron, which made and sold radar and satellite telemetry equipment primarily for military and other governmental use.

According to Thomas Wiley, Hale Brothers had invested in CES before, but had sold its stock when the vote-counting company had gone public in 1972. In the summer of 1977 the Varni group offered to sell 40 percent of the company to Hale Brothers, but the prospective buyer would settle for nothing less than the whole thing. "We did a friendly cash offer," said Wiley, whom I interviewed last spring in a hotel bar in San Francisco. "We put the money in the bank." And, as Varni said, "It was a good offer." The 12-million-dollar price might be evaluated in the light of CES's record profit of $1,400,000 in fiscal 1977. The sale became a fact on August 5, 1977.

As the husband of Denise Radosavljevic Minnelli Hale (the ex-wife of Hollywood director Vincente Minnelli), Prentis Cobb Hale was a figure in the international set the society editor of the *Los Angeles Times* called "the Beautiful People Pack." Many a morning and afternoon the gossip columns of the San Francisco newspapers glistened with items about Mrs. Hale's three-diamond necklace (35, 30, and 35 carats), her Oscar de la Renta and Galanos gowns, the hundred-carat diamond sunburst pin she wore to the opera, or her parties, where her guests might include Truman Capote or the Kirk Douglases.

As Denise Minnelli living on Sunset Boulevard in Los Angeles, Mrs. Hale had become a good friend of Nancy Reagan's. In 1968 a society columnist wrote in the course of a story about one of Mrs. Minnelli's parties: "Nancy (Mrs. Ronald) Reagan stood out from the crowd in a simple black wool, one-shoulder, unadorned. She looked lovely, as usual, despite her recent bout with the flu: 'It was the Reagan flu,' she joked." Once, because they had to attend a governors' conference in Washington, the Reagans had to miss the pleasure jaunt of half a dozen high-society couples, including the Hales, to Las Hadas, a resort in Mexico.

Prentis Hale was political. In June 1965, according to a copyrighted report in the *San Francisco Examiner* some months afterward, he played a part in the striking of

a secret agreement in Los Angeles between George Christopher, the former Republican mayor of San Francisco, and representatives of Reagan. The pact was supposed to guarantee that only one of the two politicians would run against Pat Brown for governor of California in 1966. According to what participants told a reporter, Hale was one of three important supporters at Christopher's side during a meeting on the deal that was held in the private dining room of a retail chain, Broadway-Hale Stores, of which Hale was then the chairman.

In the fall of 1972 a gossipy item in the *Examiner* from Washington said Hale "has

"The potential for undetectable fraud is great."

become so friendly with Henry Kissinger in recent months, [he] may become an ambassador after the election," which Mrs. Hale was subsequently quoted as having found "very amusing," although she pointed out she and her husband had both known Kissinger for some time. Later, during the Carter years, Denise Hale was a member of official U.S. delegations to a UNESCO conference and to the funeral of Marshal Tito in Yugoslavia, where she was born. In the present decade the chain with which Hale had become associated, Carter Hawley Hale Stores (CHH), contributed tens of thousands of dollars to both the political parties, Democratic Mayor Tom Bradley of Los Angeles, and California's GOP Governor George Deukmejian.

How much personal interest did Hale take in the election business? Dunbar, whose presidency of CES extended three years into the period of Hale's control, said of Hale and his people: "To them CES was investment, it was business." Wiley, Hale's man who succeeded Dunbar as president, agreed, saying that Hale and Pershing were active in the company, but only "as members of the board."

Lloyd Hackler of Texas, a lobbyist who owed much to Hale, provided a livelier picture of Hale's role at CES. Hackler had been an assistant press secretary to President Lyndon Johnson and staff chief for U.S. Sen. Lloyd Bentsen of Texas. In 1975 Hale had hired Hackler as president of the American Retail Federation, which Hackler describes as the umbrella group for all retailers except automobile and oil and gas dealers. When talking about CES, Hackler said, "Prentis was like all good salesmen — how easy it was, less cheating, that sort of stuff." After conferring with Richard Pershing, a registered Republican who ran

the Hale firm that held CES, in northern California, Hackler helped sell some vote-counting machines. "They were trying to sell 'em to the cities," the lobbyist said. "In Dallas I know we made some contacts for 'em. We helped in West Virginia. What I did was — we'd call people we know and help with intelligence. My role was really just tryin' to open doors for 'em."

Hackler told me in his office a long block from the White House that in 1981, when he was president of the retail federation, Hale took him into the Oval Office and introduced him to President Reagan as "my Democratic friend" (whereupon Reagan responded, "If it hadn't been for Democrats I wouldn't have won"). Hackler said of Hale: "He is a Reagan Republican. I guess he was a Ford and Nixon Republican. He liked John Connally."

Hale "loved the Washington end of it, the whole political scene," Hackler said. "Of course he was totally Republican. . . . Tell you about Prentis — he was a smart operator. He was a smart cookie. Prentis has got a good understanding of how the political process works."

Mrs. Hale's connection with Nancy Reagan was strong, Hackler said. "When she'd come to town, we'd hear about her bein' invited over by Nancy. They were not just casual acquaintances, actually." Mrs. Hale, in a telephone interview, confirmed that she and her husband are supporters of the Reagans. "Oh definitely, but definitely. But by all means!" she said on this point. She also stressed that her and her husband's relationship with the Reagans had no connection with Hale's role in the election business. "The only reason we went is because I was friends with Nancy in Beverly Hills," Mrs. Hale said. "I was married with Minnelli in the early '60s. He [Hale] only met her with me. . . . We've been about to three state dinners. I go to all Nancy Reagan's birthday parties. It's only that we're friends — nothing else. It's not there's any connection."

Under Hale, CES changed. To Dunbar, Wiley "was just a bottom-line, return-on-investment type guy," and "all the fun went out of it." C. Stephen Carr, who continued programming for CES (but who never worked directly for the company), regarded Wiley as "a believer in the numbers" who "knew nothing about the business, and frankly had a very low regard for staff." According to Jack Gerbel, "there was a lot of decline in service. When you lose your reputation, you lose everything." In 1981 Gerbel sold Votomatics to the City of Chicago for $10 million (his commission may have approached $500,000, although he was not definite on the point), but when service problems arose there afterward, he intimated, the attitude about it within the company was, "Well, let 'em sue us." Allusively, leaving much to the interpolations of the imagination, Gerbel indicated that he took the position in CES meetings,

"You might make more money cutting service this year — but what about next year?"

As service problems increased somewhat sharply beginning in the 1980 elections, suspicions about the computers counting elections began to be voiced openly in a small number of cases, no doubt at least partly because of the gradually increasing public awareness of computer-security problems in general. Interesting conflicts of this kind arose that year in several jurisdictions; we shall confine our attention here to one of these.

A LEGAL CHALLENGE

IN A RECTANGULAR Republican county, McHenry, in Illinois a few miles northwest of Chicago on the border with Wisconsin, Monty Yates, the Democratic chairman, informed the State Board of Elections in late October 1980 that "we are concerned" that the Thornber El-Pac computerized vote-counting program in use there "will" be used to overcount, undercount, or switch votes in races for U.S. Senator, Congress, sheriff, and a judgeship. (Thornber was one of the companies that would be acquired by Cronus five years later.) "We are now convinced that the computer programs used in at least one prior election in this county were deliberately modified to miscount votes," Yates said. "The method by which votes are actually tabulated in McHenry County is shrouded in secrecy. We believe that secrecy hides a clever method of miscounting votes by computer."

Rick Fulle, who was then a minor official at the state's board of elections, recalled during an interview in Chicago last December: "He had a computer expert — had no evidence." A testing program was thrown together, and the day before the election more than 56,000 test ballots were run through the questioned system, burning out one cardreader. The test, Fulle told a superior in a later report, "was just adequate to presume that the program was correct. No test can be designed to fully duplicate the infinite variables that occur on election night. A program can be designed to change counting modes by utilizing a combination of these variables."

A computer consultant who was involved, M. C. Wunderlich, communicated to the state board another caveat: "There is really no way that computer software can be certified to be accurate with a hundred percent certainty without an examination of the source code. . . . We cannot really 'prove' in a strict sense that the results of a ballot counting program [are] a hundred percent accurate, but we can, perhaps, make the results believable by the general public. . . ."

For the general election of 1980, Alix L. Perry of Fort Lauderdale, Florida, who was the president of the Broward County chapter of the National Organization for Women and whose husband was a computer specialist, took literally a Florida law that all vote-counting proceedings "shall be open to the public": she asked to be permitted to watch the vote-counting in the county's computer center. She was refused by county officials who cited to her a rule that had been laid down by Jane Carroll, the supervisor of elections. In protest Perry went to court *pro se* (that is, as her own advocate), drawing three lawyers for Carroll and the county into the courtroom to deal with her.

Perry argued that the use of computers "does not negate, but rather intensifies" the need for public scrutiny because such maneuvers as altering computer memory or tapes, mounting fraudulent tapes, and modifying computer programs "expose the data to the possibility of tampering that is almost invisible." Three days after the election she told circuit judge George Richardson, Jr., at the county courthouse: "The returns are fraudulent in that there were no observers of the process of counting the ballots. . . . The possibilities for fraud are so great . . . it is the process that I am attacking."

For the county, attorney Alexander Cocalis said the public could watch the logic and accuracy tests and the ballots being counted and converted onto magnetic tapes at the elections warehouse, but the county's computer systems room contained "very sensitive and vulnerable material" having to do with courts, payrolls, and utilities. Furthermore, he said, "We don't consider [the computers in the computer system room] tabulating equipment" because the tapes were "simply read on the tenth floor. . . . The confines of the computer room are such that to allow the general public or anybody from the general public, in the fervor of an election night, to go traipsing in there, would far more endanger the election results than by not allowing them in. . . . We can't allow any members of the public just to go traipsing into that computer room. And we are not interested in what could have gone wrong. She has got to allege what specifically went wrong."

He did not "want the public to think that there is anything to be hidden," Cocalis continued, so the county was offering to arrange a hand recount of any precinct that "she" (he never referred to Perry in any other way during the hearing, except for two occasions when he called her "you") might choose in one or two races. Thinking that reasonable, the judge said to Alix Perry: "You must realize what a horrendous thing you are asking for. You are asking for the whole election to be recounted." "I feel it was horrendous," she replied, "that there was no one, not even the canvassing board, in that computer room when the vote was counted. . . . Not one precinct, your honor. That would not in any way rest my mind, that was not what I feel we were entitled to before the days of computers. We don't have that any more. . . . These rights are

Deloris Davisson (L) and Pat Cotten

being taken away allegedly because we are using computers. And it needn't be so."

She won; the judge gave in. A week afterward her husband, Thomas J. Perry, representing her, and two other persons witnessed the rerunning of the counting of the magnetic tapes. According to Thomas J. Perry's written notes on this event, he tried to ask the operations manager some questions, but Cocalis said no questions were to be asked, and after this was appealed to the judge he ruled that no questions should be asked, but that the listings of the computer program should be supplied to Perry. He examined it, making some notes, but was interrupted by the county computer officials, three of whom he said warned him "against copying the program or making notes about it." Perry observed in his informal written report that the program relied on an operator's reply to determine what to do with data that appeared to be invalid, which he regarded as improper. "In effect," his notes said, "the operator validates the data."

Jane Carroll said in a telephone interview that the county now has a stand-alone CES vote-counting computer in a room with glass on all sides through which people are free to watch. She has had accounting firms come in and confirm outcomes in randomly selected precincts. "People don't trust computers, and they all were imagining everything," she said. "They trust it now. They never even have any charges to make any more."

In the opposite corner of the country in 1981, in Tacoma, Washington, a conservative Republican woman, Eleanora Ballasiotes, began a public campaign to allow the voters of her county, Pierce, to continue using lever machines and to bar computers from the vote-counting. The only two local referendums on computerized vote-counting in the United States of which I am aware occurred in 1982 and 1987 in

Tacoma, a traditionally Democratic city of about 160,000 people on the Puget Sound south of Seattle.

County officials (one of whom, Booth Gardner, has since become the governor of the state) proposed to buy and install a vote-counting CES system, and to stop them Mrs. Ballasiotes and her associates (a physician, a school teacher, a retired military person), some as conservative as she, but others Democrats, worked at malls and sporting events to obtain the thousands of signatures necessary to call the referendum.

" 'Votomatic' Punchcard Voting — Vote-Fraud in Our Future?" was the title of their flyer in the spring of 1981 and their recurrent theme; several hundred people would have to conspire to steal an election on lever machines, but only a few could do it on computers. "If something's wrong with the counting, you'll never know," Ballasiotes said. The editorial writers of the local daily, the *Tacoma News Tribune*, campaigning for the modern way of voting, emphasized that the critics had not produced "a single case in which such tampering has been proven, even though punchcard voting has been in use elsewhere for two decades." County Auditor Richard Greco declared: "There is absolutely no way fraud can occur on this system."

The first vote, in 1982, went against CES three to one, roughly 79 to 28 thousand votes. County officials returned to the cause four years later, proposing this second time to buy a computerized system sold by Sequoia Pacific, but after hearing the same arguments, in "another vote on how to vote" Tacomans voted no again, this time seven to two.

"I'm just a little granma with 11 grandchildren who'd prefer to stay home, but elections are our business," Ballasiotes, a trim and well-turned-out woman, told me in her family's two-story home in Fircrest, a separately incorporated Tacoma suburb where affluent people live. "I hated like crazy to get involved, but I figured if I didn't I wouldn't be able to sleep with myself. . . . The only way we can be sure of freedom is do everything possible to guarantee 'one man, one vote.' Through history we've found that some fundamentals are necessary: small precincts, no more than 350 voters, and that the citizens themselves are responsible for the counting and we have public counting, where there is a method of doublechecking results. Public tallying and public retallying, with anyone represented."

Sitting in the kitchen at the bar, facing across it into her living room, her husband sitting beside her listening quietly, Ballasiotes continued: "The election system must be simple enough for any person to be involved. Computers do not belong in the election process because it narrows the entire election system to computer experts and to invisible electronics. The citizens are aced out. They're eliminated. . . . They must have a faith, and an election system

shouldn't be based on trust of who you may want to get rid of. . . . We're really into a world where our freedom is in serious jeopardy. Yes, I believe it's possible to throw an election at the national level, and certainly at the state — maybe it's already been done, and how many times we'll never know."

ELECTION WATCH IN INDIANA

ELKHART COUNTY, Indiana, and its namesake town lie about 150 miles due east of Chicago. Beginning in Elkhart in 1982 attorney David T. Stutsman, acting on behalf of a group of Democratic candidates who had lost their races in the official returns of 1982 by convincing margins, began serial litigation that has constituted, willy-nilly, an ad hoc investigation of CES, on whose just-bought system the election in question had been tallied.

Stutsman's lead client was (and still is) Richard Clay Bodine, a former speaker of the Indiana House, who had lost his run for Congress in the disputed election by an apparently quite solid five-to-three margin. In mid-'85 the *Goshen News* said in an editorial, "Stutsman's suits haven't changed any races, but they have raised doubts of many people in our system." While this was pointed, no doubt it expressed the attitude of some of the local people toward his role in the matter. The outcome of his fourth lawsuit remains to be seen, but it is clear that he is animated by a general purpose. His basic conviction that the CES system of vote-counting "is not a true and valid counting system" might seem to be a matter of political philosophy. Beyond his duties as a lawyer he has become involved in the issues of computerized democracy as a citizen.

He knows a good deal about both cryptography and computers. In the Army he took specialized training at the NSA in Fort Meade, Maryland, served two years in the mid-1960s with the Army Security Agency in West Berlin as a "radio interceptor," and then back home in Indiana took a private course in computer programming. His occupation and preoccupation with the issues of computerized vote-counting proceed from some blend of his political and personal, as well as his legal interests. At one point during the election litigation he turned up at CES headquarters in Berkeley and was given a tour by programmer Jerry Williams before the latter realized who he was. When the informal group of 17 citizens concerned about computerized voting (who have come to call themselves "Election Watch") met last October in Dallas, Stutsman attended and agreed to serve there as their attorney. He is associated with two South Bend computer professionals who are seeking to develop a model testing program for computerized vote-counting systems. Recently he has obtained foundation funding to defray costs, but not legal fees, of the

fourth suit in the Elkhart series.

His first legal action, asking for a recount of the 1982 election, was disallowed because he was ruled to have filed the request past the noon deadline. He was late, he alleged, because the county clerk's office telephoned him 45 minutes before noon to inform him that his check on a trust account for $4,500 would not be accepted in satisfaction of costs associated with the filing, thereby causing him to rush to the bank to get cash and to reach the courthouse ten minutes after the deadline. More suspicious than before, he said, he tried again in state court, but again was turned back as late.

In 1983 his plaintiffs brought a federal civil rights suit against local officials alleging that the certification of the election count had been false and fraudulent, but this was thrown out by the Seventh Circuit Court of Appeals on grounds that the plaintiffs had "alleged nothing more than garden variety election irregularities" and "confuse fraud with what is at most willful neglect." In 1984, acting before a statute of limitations ran out, on his candidates' behalf Stutsman filed a second federal suit, this time naming CES as the defendant and alleging that the CES (which subsequently became, of course, the Cronus/BRC) system in Elkhart was fraudulently designed, manufactured, sold, installed, and operated. The defense, contending that no willful fraud has been alleged and that errors in the counting were "at worst, negligence," has moved for dismissal, Stutsman has responded, and a hearing on the subject is set in December.

As an Expert witness Stutsman called Deloris Davisson, who, after completing her Masters of Arts at Sacramento State University, obtained an associate of science degree in computer programming from Indiana Vocational Technical College and became (and still is) an instructor in computer science at an Indiana college and a member of the adjunct faculty on computing at Notre Dame University. In a 60-page affidavit her consulting company prepared for the Bodine litigation, she said the CES system in Elkhart provided no audit trail or error report, the program "uses alter verbs which allow program logic changes with the use of control cards," and the control cards, "if the console were turned off, could be used without any documentation."

The issues suggested by the 1982 election in Elkhart County are manifold. Two members of the election board who did not attend a pre-election test admitted that even if they had they would not have known what they were looking at ("I wouldn't have known if I had been there," one said). Michael D. Moon, Sr., who was in charge of the bank computer center in Goshen (near Elkhart) where the votes were counted, attested that on the last pre-election test on the CES equipment only 13 ballots were used to test only two precincts. Stutsman contended that even these showed

miscounting, which was not corrected; he alleged, therefore, that there had been no "errorless test." According to Moon, when the program was being loaded into the hardware it would not connect with the computer's internal clock correctly, so the representative of CES "disabled the system's clock so it would not print the time from the computer system's clock on the cumulative reports for the election."

At various moments during the counting it was realized that the election had been muffed. The votes of ineligible voters were counted in a township race (months later a recount reversed the announced result). "The computer had been programmed," said one member of the election board, "to count district two in the councilmanic race as if it were district three" and vice versa. People trying to vote for Philip Warner for the legislature were instructed to punch hole number 69, but the computer had been programmed to count number 67 for him.

CES in Berkeley was consulted twice by long distance, and changes were made in control cards, after which the system was not retested. The Democratic county chairman, Howard L. Hostetler, one of the plaintiffs, said he was awakened by the telephone ringing around 3:30 in the morning to be told that the mixed-up legislative race had been recounted and the outcome reversed.

Stutsman asked Wilmer L. McLaughlin, a member of the election board, whether the wrong totals in the reversed race had to be erased from the computer. "I was told it was done, and I believe it was done," the official said, "but when technicians are sitting there playing around with the keyboard, and the other, I have to take their word for it that that's what they're doing." Stutsman asked: "You don't really know . . . what changes were made to the computer program by the technical representative, do you?" "Oh, no," the board member said. "That's like asking me if I know of my own knowledge what my mechanic does to my car."

Dan McGinnis, a CES salesman in the area, told the *Elkhart Truth* the program errors should have been caught in Berkeley or by more adequate local tests. "McGinnis said this was his first experience in ten years with CES that an error had developed," according to the newspaper.

The county clerk, Peter Sarantos, a graduate of Elkhart high school with no knowledge about computers, said he would not know how to prepare a test ballot: "We relied on the guarantee of the company" that a CES person would "help us through." Speaking of the CES system, Peter Sarantos told me: "I think this is the most economical system. It is the most foolproof system. It's a good system, a solid system. That's been proven a number of times on recounts." Of David Stutsman, Sarantos said: "He was more of a rabble rouser, he was more of a confusion man. He wanted to cause confusion at all times."

In pursuing the litigation Stutsman obtained a listing of the CES source code of almost 4,000 lines, called EL-80 (EL stands for "Election Language"), that was used in the election he is contesting. (His description of the CES "spaghetti" source code: "It was like a rabbit running around crossing its own tracks.") He has focused on the purpose of one line in the code which states: "366200* Call 'CRT-RTN' using PRT-line."

Last July, while taking the deposition of CES programmer Jerry Williams in Indianapolis for the pending lawsuit, Stutsman asked him about the meaning and function of this line. "If you take that asterisk out" by modifying the source code, Williams explained, "it will attempt to call a subroutine CRT-RTN." "What is that?" Stutsman asked. "In places where that is used," Williams replied, "it's a routine to display cumulative [election-night] results on remote video terminals." "RTN" stands for routine, "CRT" for cathode-ray tube. Williams said the call is used in two Florida counties, Hillsborough and Pinellas, and also elsewhere, but he could not think where.

"And where is this subroutine that's called up?" Stutsman asked. "It doesn't exist. If you want to use that, you've got to write your own routine," the programmer responded, puzzlingly, it would seem, in light of what he had said a moment before. "And," asked Stutsman, "a subroutine [written when CRT-RTN is called] will do whatever the programmer says as long as he calls it that?" "Yes," Williams answered.

A dispute is developing in the second federal lawsuit in Indiana concerning a recount of the 1982 ballots that was conducted in 1986 by a CES representative, with Stutsman watching and making a notational record of the event, and a CES lawyer also watching, in the Elkhart bank vault where the ballots are stored. In this computer recount of about a third of the votes, with half the precincts chosen by the plaintiffs, three ballots were "found" and Bodine gained ten votes, but he had lost by more than 9,000.

In an amended complaint opposing dismissal of his fourth suit, Stutsman contended that the CES system in the 1982 election in Elkhart "was used to commit willful election fraud and computer manipulation of the vote totals" by preprogramming the results or changing totals with control cards, which are the same shape in the CES systems as the ballot punchcards. Noting that in percentages the results of the outcome of 1982 and 1986 off-year elections for a Congressional seat in his district varied only two-hundredths of a percentage point, Stutsman in his pleading referred to "a claim that a private vendor . . . has provided a computer voting system that preprograms the vote results by percentages in certain races." Most startlingly, he alleged that his notes on the recount establish that "CES software adds fictional ballots . . . and subtracts fictional numbers of ballots. . . . The system manufactures erroneous cumulative ballot totals."

Attorneys for CES (and thus Cronus) have not yet responded, but are known to be

impatient that the litigation series has not yet been ended. They are expected to ask the court to refuse to permit Stutsman to amend his earlier pleadings.

A PRACTICAL PROBLEM

WHATEVER COMES of the fourth suit in Elkhart, the state chairmen of both the major political parties in Indiana do not trust CES punchcard voting, even though it is used in more than 50 Indiana counties. "One person can put one card in and change hundreds, or perhaps thousands of votes," said John B. Livengood, the Democratic chairman, drawing on Davisson's affidavit. "The potential for fraud, for undetectable fraud, is great." Gordon K. Durnil, Indiana's Republican chairman, told me: "I'm just absolutely convinced that more votes are lost or destroyed because of that system than anything else that happens in elections. You don't know who wins and loses. Every time there's a recount you have a floor full of chads. It's like a snowstorm. . . . It's the easiest way to cheat. It's easier than the paper ballot. All you gotta have is a sharp fingernail." Durnil also reaffirmed, when asked about, a quotation attributed to him in the press: "The big question is who programs that counter. You can program that counter any way you want to."

"What we face," said Indiana Secretary of State Evan Bayh, recalling the position of George Strake when he was Secretary of State in Texas, "is a practical problem." The counties have now invested a significant amount of money in the CES systems, and abandoning them suddenly, he said, might cost $20 million in local tax money. "For all practical purposes," he added, "no further counties will be adopting that system."

"When we began this," Stutsman told me during interviews in the two-story house near downtown Elkhart which he has converted into his law offices, "I asked myself — 'This is crazy! That an outsider would come in and do this — nobody would dare! Why do I go on asking the next question?' People say to us in Elkhart in many forms, 'You're undermining confidence in the integrity of our system.' My fellow Democrats tell me, 'Don't say that, you'll discourage our people from voting.' And I think some people will be. A person in politics said to me, 'I'm not going to bother, it's fixed anyway.' " But, Stutsman said during dinner at his favorite local steakhouse, "This is a labor of love with me. I'd like to find the ultimate answer someday. . . . It's like a great mystery."

UNANSWERED QUESTIONS IN DALLAS

IN THE CONTROVERSY over the 1985 mayor's race in Dallas, described in outline at the outset of this report, the persistence of Terry Elkins, Max

Goldblatt's campaign manager, and Pat Cotten, her co-worker, in their investigation of the election despite the confirmatory outcome of the machine recount cannot be understood except in light of their unabated suspicion that the computer was miscounting the votes.

Elkins and Cotten stated they could not see the computer console from where the witnesses were permitted to stand outside the recounting room. They also asserted that County Clerk Earl Bullock, who was representing the judge who had ordered the recount, directed that no one cross a line of white duct tape on the floor to enter the recounting room. According to Mrs. Cotten, Bullock then said: "I hope that none of you want to cross this line, because in the corner is the deputy sheriff, and if anybody steps across the line he has instructions to shoot." Cotten said: "I didn't like it. I think he said it in jest."

Bullock, a big, blunt-spoken man, but a politician, too, said when asked about this in his office at the courthouse: "No, absolutely not. . . . I asked the people to retreat behind the line. . . . 'Please stay over there,' I said. 'The sheriff has provided a deputy to maintain order. I think you can recognize him. He's the one that has the gun.' That's all that was said." Elkins said notes she made two or three weeks later quoted him as having said: ". . . and he has orders to shoot." Speaking of the envelopes in which the records of the election were stored, she added: "The gun propelled me to the envelopes."

A sturdy, quick-speaking person with an unmistakable voice in one of the deeper registers, confident of her mind and prone to say what she thinks, Elkins suggested in the Dallas press that the results might have been preprogrammed. About eight o'clock her candidate had been ahead by 400 votes, she said, but after computer trouble at that time he had fallen back.

One consultant for the Attorney General's office concluded, according to Robert L. Lemens, the assistant attorney general who handled the matter, "that, although he has insufficient evidence to conclude that fraud has been committed, the electronic voting system in use lacks adequate security features to provide any assurances of the absence of fraud." An auditor from Arthur Andersen & Co. brought in by the state, Warner Croft, later told the 1986 legislative hearing that since laws did not require retention of the election records, "You really couldn't tell if there was fact to these allegations or not. . . . Records aren't available; there are no auditable results."

Elkins's and Cotten's work turned up comparatively large errors in the results that had been printed out by the CES system. The election-night combined canvass report gave two different figures for total ballots cast in the election, and two days later the official cumulative report gave still a third figure. The maximum difference among

these three totals was 1,810 votes. In one precinct the number of ballots cast that was initially reported subsequently almost doubled. In addition, the number for the total registered voters in the county had been typed onto the first page of the computer printout of the official cumulative report.

The different figures for total votes were explained as variations caused by whether votes cast on one side or the other of 11 precincts bisected by the city-county border had or had not been included in them. A written explanation, written by CES programmer P. J. Lyon and addressed to Vaughn Duck of Cronus/BRC, said that the county had not asked for the "extra statistical option" that would have taken account of the split precincts in the number of ballots cast.

Conny McCormack, the supervisor of elections at the time, a slender and friendly woman, sometimes wears a white smock with a large drawing of a punchcard ballot and the words, "Punch me out," on the back. She said the doubled total vote in one precinct had been caused by the failure of a PBC data pack, which she said occurs "two to four percent of the time." The first total produced at the precinct had not matched the voter sign-in, so the precinct was counted centrally, she explained. She denied there was any computer trouble around eight o'clock election night. Speaking at panel discussions during an election conference in San Francisco, she characterized herself as an official who had been victimized by the torrents of accusations and publicity in Dallas after the 1985 election. Richard McKay, who was then still the president of BRC's election services division, said in response to the Dallas controversy that the company's elections software could not be manipulated "without extensive conspiracy of a group of people."

Lemens, a brilliant figure behind the scenes of Texas politics, has continued to work on the general issue, attending the 1987 conference on Captiva Island and consulting with Saltman on his now-issued report on reforms to strengthen the integrity of computerized elections.

Since 1985 Elkins has become a kind of watchperson at every Dallas election. Questions she has raised, sometimes in association with fellow researchers such as the science writer Eva Waskell of Reston, Virginia, concern, among other things, the rates of errors in punchcard counting systems, punchholes which fall in the same locations on punchcard ballots that have different numbers of total positions, a concept of punchpatterns on punchcard ballots conceived as mirrors that can be read by computers from variant perspectives, various possibilities for misdirecting voters' styluses in punchcard voting, possible utilities of the "timing holes" on some punchcards for vote-counting programming, and percentage patterns in election outcomes.

To give one example on the latter point, Elkins has called attention to results reported by the computerized CES system then still in place for Dallas County Precinct 4498 in the general election of November 6, 1984. A total of 217 votes were shown to have been tabulated in this precinct. An analysis of the percentage distributions of the outcomes appeared to show that in 14 contests with differing total votes (the six top statewide or Congressional contests on the ballot and the eight constitutional amendments), eight outcomes came to exact whole-number percentages (such as 3-to-1, 7-to-3, or, in one case, 16-to-9) or the closest possible numerical approaches to them, and six were exact whole-number percentages plus or minus one. No voters lived in this precinct. McCormack explained in San Francisco that 4498 was used as a repository for "limited ballots" cast by persons who, because of recent moving-about, were entitled to vote just for federal or statewide offices.

Peter Vogel, the Dallas attorney who is now one of the Secretary of State's three computerized voting-system examiners, said Elkins's presentation to him about the 1985 election and associated matters convinced him, as the attorney for Democratic candidates in a subsequent election, to threaten to use Dallas election officials until, just in advance of the election, they provided him with materials and election-night concessions which he demanded. The officials complied. Vogel was not convinced, he said, that Elkins sufficiently understood computer technology, but after she had conferred with him he had not been able to sleep for several nights. Elkins and Vogel together convinced Assistant Secretary of State Erben that computerized vote-counting is susceptible to fraud, Erben said.

This year, to evaluate the counting of an election in 1986, Elkins asked the new elections director in Dallas, Bruce Sherbet, to be permitted to examine the records and materials concerning it. By letter last month he informed her that 13 types of materials she has requested had been destroyed by a flood caused by roof damage late in 1986, but that she could study the 20 types of materials that were still available. By letter, Elkins has asked the Attorney General's department to look into this matter.

THREE COMPUTERIZED VOTE-TALLIES

HOW IS COMPUTERIZED voting conducted now in a representative set of jurisdictions?

In Dade County, enveloping and counting the votes of Miami, also, Leahy, a professional election administrator who came up through the county elections department, explained during a breakfast interview in San Francisco that he continues a practice inaugurated by his predecessor: periodically he hires one of the Big Eight accounting firms to examine his creaky CES vote-

counting system. This strengthens public trust and might prevent mishaps. In 1979 Coopers & Lybrand made clear in its report on the system in Dade, though, that it was working effectively, but only "reasonable, but not absolute, assurance" could be provided. The CES system "appeared to function properly," the firm of Deloitte, Haskins & Sells told Leahy after its examination of it five years later, but added that "errors or irregularities may occur and not be detected." Coopers & Lybrand will examine the system again next month.

A guided tour of the CES punchcard system that is generally regarded in the election community as the best-secured in the country was provided by Ralph C. Heikkila, the assistant registrar-recorder for technical services in Los Angeles County. There, political observers are allowed in the central counting rooms, but normally not reporters ("I don't recall anyone asking," Heikkila said). The county programs both its own source and local codes.

Leading me through the vast flat rooms of the vote-counting area of a county building that covers two, or perhaps four blocks, Heikkila explained that the computer system is locked up every day of the year; there is a strict division of jobs so that, for example, only the cardreader operator touches that equipment; if there is a breakdown during the counting the system is retested before the counting is resumed. But "the best check," Heikkila said, "is that one-percent manual recount," mandatory under state law in California. "We allow the parties to choose precincts, and we choose some," he said.

Last spring during the Presidential primaries I sought to watch the counting of the votes in San Francisco, Atlantic County, New Jersey, and Chicago (and Cook County, as earlier mentioned). "You're welcome to watch it," said Michel Corwin, the acting registrar of voters for San Francisco, speaking of the vote-counting of a special election one night in city hall last April.

A tense, energetic woman, Corwin was quick to take offense when I asked her if she had examined the source code in her system. "I know everything the source code is doing. I understand computers." Only two persons had access to the system, she and her assistant — "and we are not buyable," she said coldly, apparently feeling that both her competence and her honesty had been affronted in the one question. "I do not need to see the source code, I *design* computer systems," she added.

Corwin operated the vote-counting computers. Concentrating intensely, alone in the counting room that was squared within itself by the lines of them and the readers and printers, she typed ferociously on a keyboard and tested cable connections in a tangle of wires at the backs of two consoles. As the stacks of voted punchcards arrived at city hall from the various precincts of

the peninsular city that is also the county, a young man from a computer company and a minor official fed stacks of the cards into the readers, the modern urban equivalent of the community activity known as counting the votes.

Curt Fielder, the vice-president and programmer for DFM, the California firm that provides computerized vote-counting systems for about 40 percent of voters of the state, was active with the computers during the evening, too. At one point he sat down at a keyboard and console and, quickly surrounded by Corwin and other officials, "ran a job," as he explained to me later what he had been doing, "to tell them what precincts haven't been counted yet."

Although apparently nobody had actually counted anything except how many stacks of cards had been processed, less than two hours after the polls had closed the final totals were printed out, and the candidate or two who were there, the several reporters from the dailies and the stations, and a couple of people with nothing at stake who had dropped by, accepted the presented outcomes without question and went home.

"No, no press," Tom Leach, the public relations chief for the Chicago board of elections, said in the melee of officials, citizens, and reporters at the city-council building on the day of the primary election last March. "We just don't let 'em go back there." Reporters would not be permitted to watch the two central computers counting the votes that night at a technical center four blocks away. "We don't let anybody in the computer room," explained James R. Nolan, the chairman. "We're not hiding anything." Said another election commissioner, Michael Hamblett: "There's nothing to watch — two big machines." Hamblett said he would have no objection, and guessed that the policy had been set by Michael Lavelle, the chairman of the board from 1978 to the end of 1987. "Mike Lavelle was very secretive about that stuff," Hamblett stated.

Under the computerized vote-counting system sold to Chicago by CES, usually memory cartridges containing the results from regional gathering points for the precincts are transmitted over telephone lines to the central counting installation. Last spring, however, Chicago's system could not handle the voting load, so the board had hired a local computer firm to receive the feeds at the technical center. From there the employees of the hired company and the BRC people who were assisting them fed the results, again by telephone lines, to the board's headquarters in city hall four blocks away, where the officials, their employees, the public, and reporters received them. The city's programmer, Dan Doyle, said he felt no need to be over where the returns were being consolidated. "I trust the people at [the local company], they know how to run those computers," Doyle told

me. "I wouldn't have any idea how to do it."

Recently, according to Lance Gough, who is the new staff chief at the city's board of elections, for $600,000 BRC has sold the board a new system, customized by BRC. The board of elections is buying the source code — "We will own and control it," Gough told me on the telephone — but "for the first couple of elections, they [BRC] will do it all. They're training us."

Lori Mooney is the Democratic clerk of Atlantic County and a jolly and voluble politician. Hers is the only county in New Jersey that uses the new direct-recording electronic "Shouptronic" vote-counting system of the R. F. Shoup Co. Her computers cannot recount an election (there are no ballots to recount by hand, and her machine cannot recount the electronic ones) because the county, like most of the jurisdictions which now use the Shouptronic, did not buy the option the company can provide to retain electronic images of the ballots. Therefore, within instants after each vote is cast the Shouptronic counts and destroys it.

During the already-mentioned conference of local officials in San Francisco, Mooney explained to me: "The recount has to be just taking the [memory] cartridge and putting it through the counters again. That's what has me concerned, because there's no audit trail. . . . You have to have complete trust in your programmer, and your supplier, and it's scary." The next month back home for her in the county seat of Mays Landing there had to be a recount of an outcome separated by one vote (a race between two Republicans for the city council of Atlantic City). The memory cartridge was processed again, the totals came out the same, and the candidates accepted this, but Mooney was still worried. "I just don't like the idea that we don't have complete control of our elections with the computer," she said in her courthouse office, the walls almost alive with the leading Democratic politicians who had signed their pictures for her. Speaking of R. J. Boram, the programmer for Shoup, she said: "He's assured me that there is a secret ingredient to assure that it hasn't been tampered with. . . . If it's not accepted [as a recount], it would be a challenge in court, and then that would be Shoup's problem. They would have to bring in their experts to prove that there really is an audit trail, even though it's not anything we can see or touch."

In the nature of the case, the facts of election controversies might go on forever, but it has occurred to at least several people that there is a novel in this subject. The veteran programmer for CES, P. J. Lyon, now an executive in programming for Cronus, said as he stood in the hallway at the old CES headquarters in Berkeley, regretfully declining to be interviewed: "It's a fascinating story! There are so many things — it would make a great novel. . . . Oh, you'd have to jazz it up a little." David Dunbar, while walking me back to my car in the parking lot of his modern little office building in Silicon Valley, shared his musings for the one he might write. "Of course," said the former CES president, "it would have to be national election, since that's what would hold people. You'd have to concentrate on a few states and counties and precincts that you'd need. It isn't a matter of millions of votes! You'd need ten votes in this precinct, 50 there, 100 there — and that's that one. Then over here you'd need so many. . . . You'd have to be careful about the politics and the precincts. You'd have to rifle in on the ones that were crucial! From there on it would be easy." □

POLITICAL INTELLIGENCE

✔ **FORMER** Congresswoman Barbara Jordan's remarks in September that seemed to blame Jesse Jackson for Michael Dukakis's faltering campaign did not go over well with Jordan's Congressional successor, Mickey Leland. Leland told Houston reporters that he was unhappy that Jordan was blaming Jackson. Jordan told the National Press Club in Washington D.C. that Jackson ought to have been more actively working for Dukakis. "And if he is going to be petulant and just come grudgingly and reluctantly, when the roll is called I hope everybody realizes who did what when," Jordan said. "I am prepared to say that if it is too late, it is an intentional matter on the part of Jesse Jackson."

✔ **FOR HIS PART**, Jackson responded mildly. "She was just misinformed," he said of Jordan in an interview in October on the PBS MacNeil/Lehrer Newshour. Jackson pointed out that his schedule of campaign stops has been full; he went on to claim, somewhat improbably, that he has logged more miles than the two leaders on the Democratic ticket put together. Asked if he expected to convince the nation's black voters to back Dukakis and Bentsen, Jackson said, "It is not my assignment . . . to deliver the black vote. . . .I do not run the Black Desk in the Dukakis campaign." Instead, the Reverend referred to a broader coalition of minorities and progressives that he hoped would rally to the Democratic ticket and remarked that he hoped Senator Bentsen would be able to rally the conservative wing of the party, as well.

✔ **AND IN A TRULY** bizarre flight of fancy, the conservative columnist William Safire wrote a column in mid-October that traced all Dukakis's problems directly to Jesse Jackson. Safire admitted Jackson has been "one good political soldier" by campaigning mostly in black areas for Dukakis, but theorized that the collapse of Dukakis's campaign started during the Democratic National Convention, when Jackson butted in to take media attention away from the Massachusetts governor. In Safire's view, "Middle America took a long look at the Democratic show — from its keynote of class-hating anti-Bush derision to its yells of 'we're gonna win!' at whatever banality the nominee offered to his let's-hear-it-for-competence acceptance speech — and said to itself, 'No, thanks.' "

Never mind that Jackson didn't give the keynote speech, nor the let's-hear-it-for-competence speech: *somehow* this has all got to be Jesse Jackson's fault. Somehow, Jackson is costing Dukakis the election, Barbara Jordan suggests and William Safire declares. He's either not doing enough, or he's doing too much.

✔ **A COUPLE OF WEEKS** before a befuddled-looking Ferdinand Marcos found himself in seriously deep doo-doo with the U.S. Justice Department, the *Village Voice*'s Joe Conason delivered a hard-hitting report linking George Bush's national finance chairman, oilman Robert A. Mosbacher of Houston, to the corrupt regime of the deposed Philippine dictator. Conason details how Marcos opened his coastal waters to oil exploration in 1972 and personally signed a drilling contract that "resulted in payments of at least $4.3 million to Mosbacher's corporation."

Conason does not claim Mosbacher violated any laws (the same cannot be so easily said of Marcos). "What Mosbacher did," according to Conason, "was to profit from one of the most corrupt regimes of the 20th century, assisting Ferdinand Marcos in the pillaging of his own country's natural wealth . . ." For those who want all the sordid details, see the September 27 issue of the *Voice*.

✔ **NOW THAT** the 1988 election is almost history, pre-candidates' posturing for the 1990 elections is about to resume. Land Commissioner Garry Mauro is said to be preparing for another fundraising cycle that will put him in position to run for attorney general. Who will replace Mauro? Some are already betting on John Hall, Mauro's senior deputy who is currently on leave from the land office and working for the Bentsen campaign. If elected, Hall will be the first black to hold statewide elected office.

SYNERGY '88

The seventh annual synergy exhibition, a juried art competition, opens at the Glassell School of Art in Houston on **October 30** and remains on view through **November 23**. The opening will be **Tuesday, November 1**, from 5:30 to 7:30 p.m. For information call (713) 529-7659 or (713) 893-8778.

TEN YEARS OF WOMEN & THEIR WORK

Twenty-eight artists will be showing pieces from an exhibit ten years ago along with their current work. The opening will be **November 2** from 6 to 8 p.m. at One Congress Plaza in Austin. The show will run until **December 3**. Call Women & Their Work at (512) 477-1064.

CINEFESTIVAL

The 13th annual San Antonio CineFestival, North America's oldest and largest international Latino film and video exhibition, is scheduled for **November 4 through 13**. This year's edition promises to offer an exciting sampling of current works by Latino filmmakers and video artists. Feature films, documentaries, and other film and video works will be shown each evening. Please call Linda Cuellar at (512) 271-9070.

RIGHTS ON TRIAL: THE ODYSSEY OF A PEOPLE'S LAWYER

The author Arthur Kinoy, a nationally known civil rights attorney, will be speaking on Thursday, **November 10** at 5:30 p.m. in Room 2.139 of the UT Law School in Austin. He is a founding member of the Center for Constitutional Rights. Kinoy represented witnesses before the McCarthy Committee and the House UnAmerican Activities Committee, as well as having successfully argued the appeals of the Chicago 7.

NATIONAL DAY OF HUMANITARIAN ACTION

On Veteran's Day, **November 11**, communities and cities all across the nation will be organizing humanitarian actions. In Austin a coalition of groups will be collecting and loading donated food, clothing, and medical supplies onto a tractor trailer container that will be delivered to Nicaragua. Several weeks ago the Nicaraguan government rejected "humanitarian" aid from the U.S. government because the aid was tied to

OBSERVANCES

November 2, 1920 • Eugene V. Debs receives almost one million votes for President while in prison.
November 3, 1883 • Supreme Court rules that Native Americans are "aliens."
November 4, 1979 • Iranian students seize U.S. Embassy in Tehran.
November 6, 1954 • President Eisenhower breaks ground at the first atomic power plant in Denver.
November 7, 1978 • Missoula, Montana, voters establish nation's first nuclear-free zone.
November 11, 1831 • Nat Turner hanged.
November 12, 1815 • Feminist Elizabeth Cady Stanton born.
November 14, 1916 • Margaret Sanger arrested for operating a birth control clinic.

a bill that would have given military aid to the contras. This aid shipment from Austin contains only humanitarian aid and is given unconditionally to the people of Nicaragua. The Austin chapter of Bikes Not Bombs is coordinating the shipment as well as donating over $2,000 of the shipping costs. For further information on this shipment contact Bruce Kaufman at (512) 836-5906.

CARD-CARRYING WINE TASTERS

The Central Texas Civil Liberties Foundation will hold a wine-tasting fundraiser on Saturday, **November 12** at 7:30 p.m. Funds raised will help defer $12,000 in office expenses for the Central Texas chapter that serves 750,000 citizens in 13 counties. The suggested contribution is $20. A cash wine bar will be open at 7:30 p.m. at 4 Little Bend in Westlake Hills (328-1130). For information call (512) 477-4335.

BEDS FOR THE HOMELESS IN AUSTIN

"64 Beds," a community based art-project/auction and entertainment event will be held on Saturday, **November 19** from 7 to 10 p.m at Mexic-Arte in Austin. The event will feature an auction of 64 beds designed by 64 Texas artists. State, local, and community leaders will participate as "sleepers" in the 64 beds.

Proceeds from the event, which is sponsored by Dance Umbrella with support of a National Endowment for the Arts grant, will go to two Austin organizations that serve the city's homeless population. For information, call Joy Sablatura at (512) 476-1089.

FALL CLASSIC: A DAY AT THE RACES

A horse racing fundraiser to benefit Laguna Gloria Art Museum in Austin will be held Saturday, **November 12** at Manor Downs Race Track, Manor. Gates open at 10:30 a.m; post time is 11 a.m. Admission is $5. Contact Laguna Gloria Art Museum at (512) 458-8191.

BENEFIT FOR PALUXY RIVER VALLEY

For the first time, an organization that works to protect the North Texas area from dangerous nuclear disaster has joined with landowners and environmentalists who are dedicated to preserving the peaceful Paluxy River Valley. This benefit for Citizens for Fair Utility Rates and the Save the Paluxy Association will be **November 12** at the Caravan of Dreams in Fort Worth. There will be a reception, art auction, and performances of music, poetry, and storytelling.

FIESTA A LA CASA

Casa Marianella, Austin's emergency shelter for Central American refugees, will be hosting a Fiesta fundraiser Sunday, **November 13** at 4 p.m. at Central Christian Church, 1110 Guadalupe in Austin. Admission, which includes food and entertainment, is $12.50 for adults and $2 for children. There will be an art show from an artists' cooperative, IRMAGRIZA, in Mexico City. Entertainment will include Mariachi music, international dancers, folksingers, and a special program for children. Tickets will be available at the door. For more information call Casa Marianella at (512) 385-5571.

JIMMY SANTIAGO BACA

Former National Endowment for the Arts Creative Writing Fellow, Jimmy Santiago Baca, will read from his fifth book of poetry the two long narrative poems of *Martin* and *Meditations on the South Valley*. This reading at noon on Friday, **November 18** at the Performing Arts Auditorium of Palo Alto College in San Antonio is free and open to the public.

CLASSIFIED

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ORGANIZATIONS

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$15, P.O. Box 190933, Dallas 75219.

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JOIN THE ACLU. Membership $20. Texas Civil Liberties Union, 1611 E. 1st, Austin 78702.

DRAFT REGISTRATION QUESTIONS? Draft counseling available from American Friends Service Committee, 1022 W. 6th, Austin 78703. (512) 474-2399.

CASA MARIANELLA, A SHORT-TERM SHELTER IN AUSTIN for refugees from oppression in Central America, needs volunteers for clerical tasks, tutoring, stocking and storing food and clothing, and legal and medical help. Financial contributions and donations of food, clothing, and household items are welcome. Call (512) 385-5571.

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