

**SB**

**296**

# SENATE COMMITTEE REPORT

## First Committee of Referral

DATE: 2/4/04

FURTHER: Finance

Date of 5-Day Notice: 2/10/04  
 (in accordance with Uniform Rule 23)

DATE TURNED  
 IN TO OFFICE: 2/22/04

State Affairs Committee considered      SENATE BILL NO. 296

### SB 296 PAPER TRAIL FOR ELECTRONIC VOTING MACHINE

"An Act requiring an auditable paper trail for electronic voting machines."

and recommends:

- be replaced with \_\_\_\_\_ CS \_\_\_\_\_ (\_\_\_\_\_)
- adopt previous \_\_\_\_\_ CS \_\_\_\_\_ (\_\_\_\_\_)
- attached amendment(s)
- adopt Letter of Intent by \_\_\_\_\_ Committee
- further referral to \_\_\_\_\_ Committee

<b>Senate Bill:</b>	
<input type="checkbox"/>	Same Title
<input type="checkbox"/>	New Title
<b>House Bill:</b>	
<input type="checkbox"/>	Same Title
<input type="checkbox"/>	Technical Title Change
<input type="checkbox"/>	New Title w/ SCR # _____

**NEW FISCAL NOTE(S):**

Department	Date	Fiscal	Indet.	Zero	FN#
COG	2/19/04	✓			1

**PREVIOUS FISCAL NOTE(S):**

Department	Date	Fiscal	Indet.	Zero	FN#

APPROPRIATION - no fiscal note

SIGNATURES AND RECOMMENDATIONS:	DO PASS	DO NOT PASS	NO REC	AMEND
<i>John J. Conover</i>			✓	
<i>Robert A. Anderson</i>			✓	
<i>Michael J. ...</i>	✓			
CHAIR: <i>[Signature]</i>	✓			

*Revised*  
**FISCAL NOTE**

STATE OF ALASKA  
2004 LEGISLATIVE SESSION

Fiscal Note Number: \_\_\_\_\_  
Bill Version: SB 296  
( ) Publish Date: \_\_\_\_\_

Revision Date/Time (Note if correction): \_\_\_\_\_ Dept. Affected: OOG  
Title An Act requiring an auditable paper trail for RDU Elections  
electronic voting machines. Component Elections  
Sponsor Senator Ellis  
Requester State Affairs Committee Component No. 21

**Expenditures/Revenues** (Thousands of Dollars)

Note: Amounts do not include inflation unless otherwise noted below.

OPERATING EXPENDITURES	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010
Personal Services						
Travel						
Contractual						
Supplies	1.8		1.8		1.8	
Equipment	441.0					
Land & Structures						
Grants & Claims						
Miscellaneous						
<b>TOTAL OPERATING</b>	<b>442.8</b>	<b>0.0</b>	<b>1.8</b>	<b>0.0</b>	<b>1.8</b>	<b>0.0</b>

<b>CAPITAL EXPENDITURES</b>						
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<b>CHANGE IN REVENUES ( )</b>						
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**FUND SOURCE** (Thousands of Dollars)

1002 Federal Receipts						
1003 GF Match						
1004 GF			1.8		1.8	
1005 GF/Program Receipts						
1037 GF/Mental Health						
Other (Specify Type--Do not abbreviate)	442.8					
<b>TOTAL</b>	<b>442.8</b>	<b>0.0</b>	<b>1.8</b>	<b>0.0</b>	<b>1.8</b>	<b>0.0</b>

Estimate of any current year (FY2004) cost: 0.0  
Mark this box (X) if funding for this bill is included in the Governor's FY 2005 budget proposal:

**POSITIONS**

Full-time						
Part-time						
Temporary						

**ANALYSIS:** (Attach a separate page if necessary)

At this time, the cost per unit to implement a modification to the touch screen voting equipment that would allow for voter verifiable paper records is unknown. This technology is currently in the research and development stage within the industry. However, it is estimated that each touch screen voting system would require additional hardware i.e., unit printer and 2 rolls of thermal paper. The division estimates the printer units may range in price from \$500.00 - \$1,000.00. If only one touch screen system were used in each precinct (441 precincts) the estimated cost would be \$441.0. The thermal paper required is estimated to cost \$2.00 per roll for an additional cost of \$1.8 in supplies. The total estimated cost of implementation by January 1, 2006, is \$442.8 (HAVA funds). The division will require GF appropriations of \$1.8 in future years for supplies (thermal paper) to support the equipment that provides a voter verifiable paper record.

Prepared by: Leonard G. Jones Phone 465-3051  
Division: Division of Elections Date/Time 2/19/04 2:18 PM  
Approved by: Laura A. Glaiser, Director Date 2/19/2004  
Agency: Office of the Lt. Governor, Division of Elections

**Subject:** Judge denies electronic voting challenge to March 2 elections  
**Date:** Thu, 19 Feb 2004 10:16:26 -0900  
**From:** Laura Glaiser <laura\_glaiser@gov.state.ak.us>  
**Organization:** Alaska Office of the Governor  
**To:** Katrina M Matheny <katrina\_matheny@legis.state.ak.us>,  
Dana Owen <dana\_owen@legis.state.ak.us>  
**CC:** Whitney H Brewster <whitney\_brewster@gov.state.ak.us>

I just received this today...thought you might be interested

laura

<http://www.sfgate.com/cgi-bin/article.cgi?file=/news/archive/2004/02/18/state1839EST01>  
<<http://www.sfgate.com/cgi-bin/article.cgi?file=/news/archive/2004/02/18/state1839EST01>>

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## Judge denies electronic voting challenge to March 2 elections

JIM WASSERMAN, Associated Press Writer  
Wednesday, February 18, 2004  
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URL: [sfgate.com/article.cgi?file=/news/archive/2004/02/18/state1839EST0155.DTL](http://www.sfgate.com/article.cgi?file=/news/archive/2004/02/18/state1839EST0155.DTL)

(02-18) 16:43 PST SACRAMENTO (AP) --

A Sacramento County Superior Court judge rejected a legal challenge Wednesday to California's March 2 election over allegations that new electronic voting systems are vulnerable to hackers.

Judge Raymond Cadei denied a temporary restraining order sought against electronic voter machine maker Diebold Election Systems, Inc., saying there isn't enough evidence of security threats to justify interfering in an election just 13 days away.

A group of computer programmers and California voters alleged that new electronic touch-screen voting machines being used in at least 14 counties on March 2 are insecure and could be manipulated to disrupt election results. Legal challengers included Sacramento computer consultant Jim March and Washington state resident Bev Harris, who has written extensively on possible security glitches in new electronic voting systems.

But 40 minutes into Wednesday's hearing, Cadei said he remained unconvinced "that there is a serious actual threat to the election process" and quickly ended a legal threat looming over elections that will elect legislative candidates and decide ballot propositions and U.S. presidential candidates.

Cadei, several times expressing his reluctance to disrupt an election where absentee voting has already begun, cited last year's judicial rulings that finally stopped final-hour efforts to cancel the Oct. 7 recall election.

County officials, who maintain their new voting systems will prove reliable, expressed relief over the ruling. Many had predicted greater chaos from the proposed last-minute security improvements sought by the legal challenge than from risks of doing nothing.

"We're 12 and a half days before a major election. You can't change the rules of the game at this stage," said Contra Costa County Clerk Stephen Weir, who attended the hearing.

Doug Stone, spokesman for Secretary of State Kevin Shelley, also praised the decision, saying Shelley appreciates "that the court has chosen not to interfere with the upcoming election."

Diebold attorney Daniel D. McMillan called the challenge a "waste of public resources" brought on by publicity-seeking "conspiracy theorists."

"Certainly, it reaffirms the company's position that its products are effective and clients, when they use them, are satisfied with them," McMillan said.

Lowell Finley, the Berkeley attorney who sought the order, said he was disappointed but that "we don't believe the issues are going away."

Finley argued that Diebold's electronic systems have weaknesses that "pose a grave threat to the security and integrity" of the March and November elections. He cited studies that called them "vulnerable to vote tampering both by company insiders and outside computer hackers."

He also argued that Shelley's orders to counties for extra security safeguards before March 2 will still leave "gaping security holes" in electronic voting systems.

Wednesday's ruling came as 10 counties continue resisting Shelley's Feb. 5 directives. The secretary, fearful of software corruption or malfunctions as many counties roll out new electronic voting systems as a result of the 2000 Florida punch-card fiasco, has ordered random state testing of county machines and beefed-up security precautions. But registrars in counties using touch screen systems say Shelley lacks authority over them, and that his rules will disrupt their preparations.

"You don't want to change the process anywhere near this stage of the election," said Weir, a statewide spokesman for registrars during last October's recall election.

---

On the Net:

California Secretary of State: <http://www.ss.ca.gov>

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# FISCAL NOTE

**STATE OF ALASKA**  
**2004 LEGISLATIVE SESSION**

Fiscal Note Number: \_\_\_\_\_  
 Bill Version: SB 296  
 ( ) Publish Date: \_\_\_\_\_

Revision Date/Time (Note if correction): \_\_\_\_\_ Dept. Affected: OOG  
 Title An Act requiring an auditable paper trail for RDU Elections  
electronic voting machines. Component Elections  
 Sponsor Senator Ellis  
 Requester State Affairs Committee Component No. 21

**Expenditures/Revenues** (Thousands of Dollars)

Note: Amounts do not include inflation unless otherwise noted below.

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Personal Services						
Travel						
Contractual						
Supplies	1.8		1.8		1.8	
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Land & Structures						
Grants & Claims						
Miscellaneous						
<b>TOTAL OPERATING</b>	<b>442.8</b>	<b>0.0</b>	<b>1.8</b>	<b>0.0</b>	<b>1.8</b>	<b>0.0</b>

<b>CAPITAL EXPENDITURES</b>						
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<b>CHANGE IN REVENUES ( )</b>						
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**FUND SOURCE** (Thousands of Dollars)

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Estimate of any current year (FY2004) cost: 0.0  
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**POSITIONS**

Full-time						
Part-time						
Temporary						

**ANALYSIS:** (Attach a separate page if necessary)

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Prepared by: Leonard G. Jones Phone 465-3051  
 Division Division of Elections Date/Time 2/19/04 2:18 PM  
 Approved by: Laura A. Glaiser, Director Date 2/19/2004  
 Agency Office of the Lt. Governor, Division of Elections

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Dana Owen <dana\_owen@legis.state.ak.us>  
**CC:** Whitney H Brewster <whitney\_brewster@gov.state.ak.us>

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Wednesday, February 18, 2004  
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"We're 12 and a half days before a major election. You can't change the rules of the game at this stage," said Contra Costa County Clerk Stephen Weir, who attended the hearing.

Doug Stone, spokesman for Secretary of State Kevin Shelley, also praised the decision, saying Shelley appreciates "that the court has chosen not to interfere with the upcoming election."

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"Certainly, it reaffirms the company's position that its products are effective and clients, when they use them, are satisfied with them," McMillan said.

Lowell Finley, the Berkeley attorney who sought the order, said he was disappointed but that "we don't believe the issues are going away."

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He also argued that Shelley's orders to counties for extra security safeguards before March 2 will still leave "gaping security holes" in electronic voting systems.

Wednesday's ruling came as 10 counties continue resisting Shelley's Feb. 5 directives. The secretary, fearful of software corruption or malfunctions as many counties roll out new electronic voting systems as a result of the 2000 Florida punch-card fiasco, has ordered random state testing of county machines and beefed-up security precautions. But registrars in counties using touch screen systems say Shelley lacks authority over them, and that his rules will disrupt their preparations.

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**STATE OF ALASKA**  
**2004 LEGISLATIVE SESSION**

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electronic voting machines. Component Elections  
 Sponsor Senator Ellis  
 Requester State Affairs Committee Component No. 21

**Expenditures/Revenues (Thousands of Dollars)**

Note: Amounts do not include inflation unless otherwise noted below.

OPERATING EXPENDITURES	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010
Personal Services						
Travel						
Contractual						
Supplies						
Equipment	447.8					
Land & Structures						
Grants & Claims						
Miscellaneous						
<b>TOTAL OPERATING</b>	<b>447.8</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>

<b>CAPITAL EXPENDITURES</b>						
-----------------------------	--	--	--	--	--	--

<b>CHANGE IN REVENUES ( )</b>						
-------------------------------	--	--	--	--	--	--

**FUND SOURCE (Thousands of Dollars)**

FUND SOURCE	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010
1002 Federal Receipts						
1003 GF Match						
1004 GF						
1005 GF/Program Receipts						
1037 GF/Mental Health						
Other (HAVA- Election Fund)	447.8					
<b>TOTAL</b>	<b>447.8</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>

Estimate of any current year (FY2004) cost: 0.0  
 Mark this box (X) if funding for this bill is included in the Governor's FY 2005 budget proposal:

**POSITIONS**

Full-time						
Part-time						
Temporary						

**ANALYSIS:** (Attach a separate page if necessary)  
 The Division of Elections does not have exact cost per unit to implement an auditable paper record at this time due to continued research and development within the industry. However, based on our best calculation each direct recording electronic (DRE) voting system (total 446) would require additional hardware i.e., unit printer and 2 rolls of thermal paper. The division estimates the printer units may range in price from \$500.00 - \$1,000.00 for an estimated cost of \$446.0. The thermal paper required is estimated to cost \$2.00 per roll for an estimated cost of \$1.8. The total estimated cost of implementation by January 1, 2006, for equipment from federal HAVA funds is \$447.8.

Prepared by: Leonard G. Jones Phone 465-3051  
 Division: Division of Elections Date/Time 2/13/04 5:10 PM  
 Approved by: Laura A. Glaiser, Director Date 2/13/2004  
 Agency: Office of the Lt. Governor, Division of Elections

# ALASKA STATE LEGISLATURE



Senate Rules Committee  
•  
Senate Judiciary Committee  
•  
Department of Law  
Budget Subcommittee

*While in Session*  
State Capitol, Rm. 9  
Juneau, Alaska 99801  
(907) 465-3704  
Fax: (907) 465-2529  
•

*While in Anchorage*  
716 West 4th Ave., Ste 440  
Anchorage, Alaska 99501  
(907) 269-0169  
fax: (907) 269-0172

## SENATE MINORITY LEADER JOHNNY ELLIS

### **SB 296, Voter Verified Paper Trails for Electronic Voting Machines**

#### **Sponsor Statement**

In the wake of the 2000 federal election, and with the impetus of the federal Help America Vote Act, states across the nation are replacing punch card and paper ballots with computerized vote casting, tabulation and reporting. Alaska has successfully used the AcuVote system of optically scanned ballots since 1998. New direct recording equipment (DRE) machines – also known as touch-screen – are scheduled to be used for the first time in 2004.

Unfortunately, computer experts have warned of numerous problems with both DRE and optical scan machines. Hardware problems, unreliable computer code and lack of security have raised serious questions about whether votes are being accurately recorded, tallied and reported. The experiences of many localities have demonstrated these failings. In Bernalillo County, N.M. a programming error caused a computer to delete 25 percent of the ballots cast by early voters. In Maryland voters for the Republican candidate for governor watched as their vote appeared beside the Democratic candidate's name. In Fairfax County, Va. a machine was found to have subtracted one vote for every 100 cast for a school board candidate. In one Texas matchup, optical scan machines declared two low vote getters to be landslide winners.

In the Texas case, elections officials were able to correct the mistake by hand counting the optically scanned paper ballots. Many DRE machines, however, produce no such paper trail to audit. Recognizing this crucial shortcoming of DRE technology, many observers are calling for voting machines to produce paper receipts that voters can verify before leaving the polling booth and that are subsequently held in lock boxes for audit purposes. The State of California recently moved to require such a voter verified paper audit trail in all elections. Senate Bill 296 would establish the same protections in Alaska.

Citizen trust in elections is the bedrock of democracy. Only an accurate count can assure voters that elections result in a true reflection of their will. Requiring a voter verified paper trail will assure Alaskans that no matter what technology is adopted in the future, their elections will be transparent and their votes counted accurately.

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## **Judge rejects lawsuit for printers to record votes in Palm Beach County**

By Kathy Bushouse  
Staff Writer

February 12, 2004

A Palm Beach County judge dismissed U.S. Rep. Robert Wexler's lawsuit against county Elections Supervisor Theresa LePore and Secretary of State Glenda Hood on Wednesday, handing a temporary setback to the congressman's efforts to get printers for the state's touch-screen voting machines.

Circuit Judge Karen Miller issued the ruling, finding that Wexler wasn't legally entitled to file his

lawsuit, and she thought the proper place to take up the case was in a Tallahassee courtroom, not in Palm Beach County.

She suggested Wexler's issues are matters more appropriate for the Legislature or the Secretary of State's office to handle, rather than the courts.

Wexler said Wednesday he was disappointed with the ruling, but had no plans to give up the effort to require the voting machine printers.

He is weighing other legal options, which could include suing in federal court or in Leon County court in Tallahassee. Leon County courts typically would handle a lawsuit against the secretary of state, because her office is based there.

"I feel justified in filing the case because it already produced a victory in Palm Beach County when commissioners agreed to buy ballot printers. I am not going to stop," Wexler said. "The people of Palm Beach County are being denied their equal protection rights under the United States Constitution."

County commissioners agreed Feb. 3 to buy printers for the county's 5,400 voting machines if the printers get state certification. LePore has said she would use the printers if the state certifies them and the county gives her money to buy and maintain the machines. It's expected to cost at least \$3.2 million to buy the printers.

LePore said she plans to focus on the March 9 election, when Democrats will choose a presidential candidate and some cities will have elections.

"I'm obviously happy with the judge's decision," LePore said. "I don't feel it's something I had any control over, in terms of getting the printers or not. The proper venue [for the lawsuit] should have been in Tallahassee."

She said state elections supervisors now have more time to outfit voting machines with printers and explore the ramifications of adding printers.

It's highly unlikely printers would have been available for November's presidential election, since they have yet to get either state or federal certification, said Kurt Browning, elections supervisor for Pasco County and legislative chairman for the Florida State Association of Supervisors of Elections.

The association has come out against the printers, because it thinks the printers to be too expensive and unnecessary. Browning said he is pleased the lawsuit was dismissed.

"I certainly think it buys us some time," Browning said. "But whether that lawsuit was going to be successful or not. ... I don't think that [printers for voting machines] was going to happen in 2004. How do you require something to be put onto voting systems that doesn't even exist yet?"

Even so, he doubts the judge's ruling will end the push for printers.

In addition to Wexler's lawsuit, both state and federal legislation has been filed to require the printers for touch-screen voting machines.

"I think that they will continue putting pressure on the Legislature. They'll continue putting pressure on county commissions. They'll continue putting pressure on Congress," he said. "All we can say is, 'You know what? We think it's not in the best interest of the system.'"

## **Congressman's suit seeking voting machine paper trail dismissed**

Associated Press

*Last update: 12 February 2004*

WEST PALM BEACH -- A congressman's lawsuit seeking to require electronic voting machines to produce a paper trail was dismissed Wednesday when a Palm Beach County judge ruled he did not have the standing to sue.

U.S. Rep. Robert Wexler, D-Boca Raton, filed the lawsuit against Florida Secretary of State Glenda E. Hood and Palm Beach County Supervisor of Elections Theresa LePore, claiming the use of machines that do not produce paper duplicates of the votes cast violates voters' rights.

Without that paper trail, a manual recount isn't possible, Wexler argued.

But Circuit Judge Karen Miller ruled Wexler did not have the standing to file the suit, since he could not prove, either as a citizen or a public official, he had been hurt by the voting system. Wexler's complaints would be better addressed through legislative remedies, her order said.

Wexler said the judge's order seemed to erase Florida voters' ability to challenge the system.

"I see this as the judge dismissing Florida's voters and ... their voting rights," he said.

Hood said she was "very pleased" with the court's decision.

"We never had any doubt that, with the high level of confidence in the equipment across the state, we would continue to see accurate and secure elections," she said.

Wexler's lawyer, Jeffrey M. Liggio, said he and his client are considering turning to federal courts, refiling in Palm Beach County after tweaking their argument, or filing elsewhere.

In her ruling, Miller wrote Leon County, where Hood is based, would have been the proper venue for the suit.

Miller stressed the courts have no place in determining the remedy Wexler is seeking, since it would require them to determine a system for recounts, how to fund and oversee that system, and how to resolve potential problems.

She also cited a California case where a voter's claim that the lack of a paper ballot violated her right to equal protection and due process was denied. That should convince Wexler that alleging "the lack of a paper ballot violates his constitutional rights would be futile," Miller wrote.

Wexler said he wasn't deterred by her decision. "Voting rights were not won in a day," he said.

LePore could not be reached for comment Wednesday night.

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On the Net:

Florida Department of State: [www.dos.state.fl.us/](http://www.dos.state.fl.us/)

Palm Beach County Supervisor of Elections: [www.pbcelections.org/](http://www.pbcelections.org/)

## **Judge rejects ballot-printout suit**

**BY ERIKA BOLSTAD**

[ebolstad@herald.com](mailto:ebolstad@herald.com)

A Palm Beach County judge dismissed a lawsuit Wednesday brought by U.S. Rep. Robert Wexler, who wanted the state to order paper printouts of ballots cast on electronic voting machines used in 15 Florida counties.

The Boca Raton Democrat, who also represents part of Broward County, filed the suit against Florida Secretary of State Glenda Hood and Palm Beach County Supervisor of Elections Theresa LePore.

Wexler said he was disappointed but undeterred in his efforts to require what are known as voter verifiable receipts. Although voters wouldn't leave polls with the paper ballots, they would be able to review a paper record of their ballot before pressing the "vote" button on touch-screen machines.

"I believe it's undeniable that the secretary of state has permitted an election process that violates Florida law," Wexler said.

However, Wexler said he has made some headway. Palm Beach County commissioners agreed to buy printers to attach to their machines -- but only if the state certifies the equipment. Also, Broward, Miami-Dade and Palm Beach counties will press state lawmakers to allow such printers, which aren't currently certified in Florida.

Proponents of paper ballots say they would serve mostly to restore voter confidence in elections; they could also be used for recounts in close contests.

Lawyers for Hood and LePore argued last week that it's up to the Legislature to mandate the printers.

## **Wexler lawsuit over elections 'paper trail' dismissed**

*By George Bennett, Palm Beach Post Staff Writer*

Thursday, February 12, 2004

WEST PALM BEACH -- A judge threw out a lawsuit by U.S. Rep. Robert Wexler that challenged Palm Beach County's paperless electronic voting system, stating Wednesday that the creation of a ballot "paper trail" is an issue for state lawmakers and elections officials and not the courts.

Palm Beach County Circuit Judge Karen Miller ruled that Wexler, D-Delray Beach, lacks "standing" to sue because he does not claim to have been harmed by the paperless voting machines and merely speculates that he could be harmed in a future election.

But even if Wexler had proper grounds to file a lawsuit, Miller's 10-page ruling states, Florida law "does not clearly require a voter-verified paper ballot," which Wexler wants. For a judge to step in and order paper ballots would violate the Florida Constitution's separation of legislative, executive and judicial

powers, Miller ruled.

Wexler -- who concedes there is little chance Florida legislators will pass a law requiring a paper trail -- vowed late Wednesday to continue pursuing the issue in court. He mentioned the possibility of appealing Miller's ruling or going to federal court.

"I don't see this as my case being dismissed. I see this as the judge dismissing Florida voters," Wexler said. "I'm going to continue this fight. I'm not going to rest. There are other options that I'm going to pursue aggressively."

Wexler's lawsuit named Florida Secretary of State Glenda Hood and Palm Beach County Elections Supervisor Theresa LePore as defendants. It claimed the paperless voting systems used by 15 Florida counties are illegal because they do not produce tangible ballots and therefore do not allow a "manual recount" that state law requires in close elections.

Wexler and other foes of paperless voting also say electronic machines are susceptible to errors and tampering and need a paper trail as a backup.

"This court is not commenting on the integrity of the existing voting systems or any of the suggested system modifications," Miller's ruling states.

LePore said she was pleased with Miller's decision, but added, "I'm sure the issue's not over.... I'm happy it's at least on hold so I can continue doing my job and getting ready for the next elections."

LePore argued she did not belong in the suit because legislators and Hood's office decide what types of voting systems are legal in Florida.

Hood said she was "very pleased" with the ruling. "I continue to have the highest level of confidence in the equipment," she said, and added that the question of requiring a paper trail is up to the state legislature.

A spokesman for House Speaker Johnnie Byrd, R-Plant City, said the issue is "not on our radar screen.... We've had our supervisors of elections in full force saying they believe this is a reliable system."

Palm Beach County commissioners have called for ballot printers and voted last week to buy them as soon as they are certified by Hood's office. Sequoia Voting Systems plans to submit a ballot printer for certification later this year, but says it probably will not be available in time for the November presidential election.

Hood raised doubts Wednesday about whether the county could decide on its own to use printers.

"It's not a choice that one county can make.... That's my understanding -- that one county alone cannot do that," said Hood, who said she believed legislators would have to vote to require printers statewide before one county could use them.

"I hope the Florida Legislature will act, but I do not have any confidence that they will," Wexler said. He said he is not trying to use the courts to create new law because existing Florida law contemplates a "manual recount."

The possibility of Wexler continuing to pursue the matter through the courts rather than legislation drew criticism from LePore's attorney, Michael Burman.

For your information

"Enough's enough. He lost. He ought to go through the correct procedure, which is through the legislature or dealing with the secretary of state's office," Burman said. "I assume that a United States congressman would believe in the separation of powers."

## Opinion

*(Published: February 8, 2004)*

Paper trail

Integrity of Alaskans' votes at risk

Here's a bill in the Legislature that should see speedy passage. SB 296, from Sen. Johnny Ellis, D-Anchorage, would help prevent vote fraud by requiring electronic voting machines to produce a paper record of the votes that are cast.

The state's main electronic vote counting machines, Accu-vote optical scanners, aren't a problem. They use paper ballots that are read and tabulated electronically. But the state recently bought 55 touchscreen electronic voting machines that leave no paper trail whatsoever. The paperless machines are meant to accommodate voters who are physically unable to handle or mark a paper ballot. Eventually the state plans to have at least one touchscreen voting machine in each of Alaska's 446 precincts.

That's a helpful accommodation for disabled voters. But where there is no paper trail, there is huge potential for voting fraud. According to The New York Times, "When the State of Maryland hired a computer security firm to test its new (paperless electronic voting) machines, these paid hackers had little trouble casting multiple votes and taking over the machines' vote-recording mechanisms." With no paper trail, there is no way to cross-check the vote count.

In an editorial, The Times concluded: "The Maryland study shows convincingly that more security is needed for electronic voting, starting with voter-verified paper trails." That's what Sen. Ellis aims to do with SB 296.

Alaska has a statewide primary and a statewide general election this year. Alaskans must have confidence their votes will be counted securely and accurately. The protections outlined in Sen. Ellis' bill should be put into place as soon as possible.

**BOTTOM LINE:** Alaska law should require electronic voting machines to produce a paper record of each vote.

---

## Executive Summary

At the request of the State of Maryland, RABA Technology's Innovative Solution Cell (RiSC) performed a review of the DIEBOLD touch-screen electronic voting system. A team of security experts reviewed the SAIC report commissioned by Maryland and went on to hold a "Red Team" exercise to discover vulnerabilities in the actual voting system as it will be deployed for the March 2004 primary.

The key findings of this effort are two-fold. The State of Maryland election system (comprising technical, operational, and procedural components), as configured at the time of this report, contains considerable security risks that can cause moderate to severe disruption in an election. However, each of these vulnerabilities has a mitigating recommendation that can be implemented in time for the March 2004 primary. *With all these near-term recommendations in place, we feel for this primary, that the system will accurately render the election and is worthy of voter trust. However, between the March and November elections we strongly feel that additional actions must be taken to mitigate increasing risks incumbent on a system that will receive broad scrutiny. Ultimately we feel there will be a need for paper receipts, at least in a limited fashion.*

## Introduction

On November 10, 2003 the Department of Legislative Services, Maryland General Assembly of the State of Maryland (DLS) entered into an agreement with RABA Technologies, LLC to perform a "trusted agent" evaluation of certain aspects of the State Board of Elections plan to use touch-pad "Direct Recording Electronic" (DRE) devices for upcoming elections. The trusted agent role implies that RABA will provide *independent* assessments and will *not seek to profit* from its recommendations. RABA Technologies wishes to thank the State of Maryland for the opportunity to participate in this important project.

The specific requirements of the agreement were:

1. Examine and critique the study conducted by Aviel D. Rubin, known as the Hopkins study.
2. Examine and critique the methodology and practices used by SAIC in its review of the Diebold equipment and the Rubin report.
3. Examine and critique the conclusions reached by SAIC regarding the integrity of the Diebold voting machines and the overall security of Maryland's election procedures.
4. Examine and critique the IT Security Certification and Accreditation Guidelines as issued by the Maryland Department of Budget and Management.
5. Assist DLS in comparing existing SBE practices and procedures to those of the counterparts in other states.

To carry out the work, DLS provided RABA with copies of:

1. *Risk Assessment Report, Diebold AccuVote-TS System and Processes* (unredacted) dated September 2, 2003. This is SAIC-6099-2003-261.



# NEWS RELEASE

CALIFORNIA SECRETARY OF STATE **KEVIN SHELLEY**

KS03:106

FOR IMMEDIATE RELEASE  
Friday, November 21, 2003

Contact: Terri M. Carbaugh  
Doug Stone  
916-653-6575

## **Secretary of State Kevin Shelley Announces Directives To Ensure Voter Confidence in Electronic Systems**

*Beginning July 1, 2005, All Touch Screen Systems Purchased Must Have a Paper Audit Trail*

SAN FRANCISCO --- Secretary of State Kevin Shelley today announced that beginning July 1, 2005, no county or city may purchase a touch screen voting system that does not include an accessible voter verified paper audit trail (VVPAT). As of July 2006, all touch screen voting systems used in California, regardless of when they were purchased, must have a VVPAT that can be used by all voters, including the visually impaired, to verify that their preferences are accurately recorded.

In making the announcement, Secretary of State Shelley said that a transition period is necessary in order to assure the fair and efficient conduct of elections in California.

"The schedule I have set forth for implementing a VVPAT will ensure that there is adequate time for new voting systems to be properly certified. This also allows time to train elections officials and poll workers and to educate voters," he said.

To further enhance voter confidence in new technologies, Secretary Shelley is adopting voting system reforms and new electronic certification procedures. Shelley will also call upon the federal government to substantially improve its testing process.

"As the state progresses with new technology, all Californians must have confidence that every vote cast is a vote counted," said Secretary of State Kevin Shelley. "These new requirements will provide this confidence."

In addition to providing for a VVPAT, Shelley's reforms call for additional requirements for software testing and auditing, new security protocols for manufacturers, random field testing on Election Day to ensure proper performance of individual voting machines, and the creation of a state Technical Oversight Committee.

In February 2003, Shelley convened an Ad Hoc Touch Screen Task Force composed of computer experts, members of the public, and representatives of the disabled community and election officials to make recommendations to increase the security of voting equipment software. The task force issued a series of recommendations for Shelley's consideration.

A complete copy of Secretary Shelley's directives and the recommendations of the Ad Hoc Touch Screen Task Force are available on the Secretary of State's website, at <http://www.ss.ca.gov/elections/touchscreen.htm>.



## Understanding The Problem

"Imagine, it's Election Day 2004. You enter your polling place and go to cast your vote on a brand new 'touch screen' voting machine. The screen says your vote has been counted. As you exit the voting booth, however, you begin to wonder. How do I know if the machine actually recorded my vote? The fact is, you don't."

~ [Representative Rush Holt](#) (NJ).

The problem is simple: A touch screen voting machine records your vote in the memory of the machine, where you can't see it. How do you know your vote for candidate A wasn't recorded as a vote for candidate B? You don't!

Many states and communities are planning to buy massive numbers of so-called "Direct Recording Electronic" (DRE) machines (paperless touch screen are DREs, but there are other kinds of DREs that use dials or switches instead of touch screens). Some are already using them.

Unfortunately, these machines are dangerous for democracy. With the computer technology they are using, there is always a risk that a program flaw or, worse, tampering with the software could change votes and even change the outcome of elections. And these changes might not be detected! Since ballots are secret, once the voter leaves the booth there is no one who can detect or correct any errors that the machine made in recording the votes. If the election results are obviously absurd, as happens occasionally with other kinds of vote-counting equipment, the only options will be to accept an obviously wrong election result or hold a new election.

The solution is simple: require there to be a "voter verifiable audit trail" with all voting equipment. A voter verifiable audit trail is a permanent record of each vote that the voter can check to ensure that it represents their intent. These votes are deposited in a secure ballot box. If there is a manual recount, we can be sure that the votes being counted are what the voters wanted to cast.

Without this requirement, we can never again have confidence that our elections reflect the will of the voters, as opposed to a random error or the will of someone who tampered with the voting machines.

### **HAVA: The Reason Behind The Rush To Install New Voting Equipment**

HAVA, the Help America Vote Act, was passed by congress in October of 2002. The purpose of the Act is:

*To establish a program to provide funds to States to replace punch card voting systems, to establish the Election Assistance Commission to assist in the administration of Federal elections and to otherwise provide assistance with the administration of certain Federal election laws and programs, to establish minimum election administration standards for States and units of local government with responsibility for the administration of Federal elections, and for other purposes. <<NOTE: Oct. 29, 2002 - [H.R. 3295]>>*

It is this Act, with specific dates, that require the States to update old voting equipment so that a similar situation (as what occurred in Florida) will not occur again.

In the rush to pass this new Act some key elements were left out, such as a "voter verifiable paper receipt". The newest Act, introduced by Representative Rush Holt, hopes to update the original

### **ADDITIONAL RESOURCE**

Here are links to b statements and su the problem.

#### ▶ **Johns Hopkin Study**

A major electroni machine maker, has its "leaked" s code evaluated b computer scientis: [BAD NEWS for DI](#)

#### ▶ **FAQ**

If you only read ( thing on this topi should probably r Questions and Ar page to address l questions that co regularly.

#### ▶ **PPT Presenta**

Here is an abbrev presentation Day gave: (Powerpoir gives a good ove the problem as o 6, 2003.

#### ▶ **Recorded Into**

A story produced Speech Radio Ne which includes in with Rebecca Mei and David Dill.

#### ▶ **A statement f**

Rebecca Mercu

#### ▶ **An essay by K**

Alexander of th California Vote Foundation.

#### ▶ **Letter from th**

USACM to the H Science Commi

HAVA Act with specific solutions to the question of voter verified paper receipts and other obvious discrepancies.

[More on HAVA](#)

[More on HAVA Deadlines](#)

[How I Can Help?](#)

► [Peter Neuman catalog of receiving machine problems.](#)

► [An interview with Peter Neuman and Rebecca M...](#)

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<http://www.sunspot.net/news/local/bal-te.md.machine30jan30,0,4050694.story?coll=bal-local-headlines>

## Md. computer testers cast a vote: Election boxes easy to mess with

### In Annapolis, tales of trickery, vote rigging

By Stephanie Desmon  
Sun Staff

January 30, 2004

For a week, the computer whizzes laid abuse - both high- and low-tech - on the six new briefcase-sized electronic voting machines sent over by the state.

One guy picked the locks protecting the internal printers and memory cards. Another figured out how to vote more than once - and get away with it. Still another launched a dial-up attack, using his modem to slither through an electronic hole in the State Board of Elections software. Once inside, he could easily change vote totals that come in on Election Day.

"My guess is we've only scratched the surface," said Michael A. Wertheimer, who spent 21 years as a cryptologic mathematician at the National Security Agency.

He is now a director at RABA Technologies in Columbia, the firm that the state hired for about \$75,000 to look at Maryland's new touch-screen voting machines scheduled to be unveiled in nearly every precinct in Maryland for the March 2 primary.

The state has no choice but to use its \$55 million worth of AccuVote-TS machines made by Diebold Election Systems for the primary. The old optical scanners are gone.

Yesterday, Wertheimer calmly presented his eight-member team's findings to committees in the House and Senate, explaining the weaknesses they discovered and a plan for how to plug many of the cracks, at least in the short run.

### Giddy geek speak

Yet on a recent morning at his offices, Wertheimer's computer programmers were practically giddy as they invented new ways to muck up an election. Some were simple - like the lock-picking or just yanking the cords out of a machine's monitor, disabling it for the rest of the day.

Other fiddling inspired round after round of excited geek speak, true gibberish to the untrained ear, to explain a host of attacks that could be launched up close or by modem.

One thing was clear: There are many ways to fool with Diebold's machines, some of which could lead to an Election Day disaster. At the same time, some scenarios were far-fetched and too difficult to pull off

undetected, team members acknowledged.

But the fact that they could happen makes it impossible to have full confidence in the system, they said.

In the short term, they said, enough fixes can be done to ensure a secure election in March. But much more will need to be done to see that future elections on the machines can also be relied upon.

Diebold officials say many of the problems that were found have been fixed.

"They threw out theoretical things that could happen," spokesman David Bear said of the testing team. "But the polling places are much different."

The team was asked to answer two major questions, Wertheimer said: Do the machines count votes accurately? And do they need paper receipts?

If left alone, Wertheimer said, the machines will count quite accurately - more so than any past voting method.

But he has made a good living off the fact that there are plenty of people out there looking to wreak havoc when they can.

Web sites abound with all kinds of speculation about how easily the voting machines can be hacked into and outcomes manipulated.

Prominent computer scientists have studied the Diebold code - some of which was found unprotected on the Internet - and found hole after hole in its security.

Theories have run rampant as to how to best clean up what critics call a mess.

## Paper receipts

Wertheimer said he thinks there will be a need for some type of paper receipt, what some call a voter-verified paper trail - basically a printout of each vote as it is cast for the voter to check before leaving the polling place. Without a paper ballot, many say, a proper recount is impossible.

Wertheimer said it would take nearly a complete rewrite of the computer code to fix the machines' flaws.

"For a guy who just wants the vote to be accurate, I'd rather dumb down the software and add receipts," he said.

Diebold "basically had no interest in putting actual security in this system," said Paul Franceus, one of the consultants. "It's not like they did it wrong. It's like they didn't bother."

Mark McLarnon had something up his sleeve as he approached one of the voting machines. A close look revealed the cord of a portable keyboard. He had learned that he could quickly pick a lock on the side of the machine, plug in his keyboard and wreak havoc on the results stored inside - all while likely going undetected by poll judges.

Using a low-tech solution, such as tape that reveals tampering, could keep people like McLarnon at bay, at least as a temporary fix, the consultants said.

Low-tech hacking is also a possibility, though.

Someone bent on causing trouble could call a polling place and tell workers that the state's modem is down and results should be called in on a new phone number. Then the troublemaker could simply change the results before sending them onto the state.

While results can now be encrypted - after criticism that they weren't being - something called authentication is missing. Authentication tells the main computer that the person sending in results is the one who is actually permitted to do so.

### **Sneaking in, via modem**

Meanwhile, William A. Arbaugh, an assistant computer science professor at the University of Maryland, College Park and part of the team, easily sneaked his way into the state's computers by way of his modem. Once in, he had access to change votes from actual precincts - because he knew how to exploit holes in the Microsoft software.

Those holes should have been patched through regular updates sent to customers, patches that haven't been installed on the elections equipment since November.

"There's no security that's going to be 100 percent effective. But the level of effort [needed to get into the system] was pretty low," Arbaugh said. "A high school kid could do this. Right now, the bar is maybe 8th grade. You want to raise the bar to a well-funded adversary."

"Every system is vulnerable somehow," said Karl Aro, director of the state's Department of Legislative Services, who commissioned the study for the legislature. "The system's not bad but it needs some work."

No system is completely secure. In fact, the more elections the state holds, the more opportunities there will be for hackers to see how it works and launch new attacks, experts said.

"If you had the time and the money, the sky's the limit on what you could do to make a secure system," McLarnon said.

"You just need to raise the level of effort needed to exploit it so it's not feasible to do," said fellow consultant John Ormonde.

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108TH CONGRESS  
1ST SESSION

# H. R. 2239

To amend the Help America Vote Act of 2002 to require a voter-verified permanent record or hardcopy under title III of such Act, and for other purposes.

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## IN THE HOUSE OF REPRESENTATIVES

MAY 22, 2003

Mr. HOLT introduced the following bill; which was referred to the Committee on House Administration

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## A BILL

To amend the Help America Vote Act of 2002 to require a voter-verified permanent record or hardcopy under title III of such Act, and for other purposes.

1 *Be it enacted by the Senate and House of Representa-*  
2 *tives of the United States of America in Congress assembled,*

3 **SECTION 1. SHORT TITLE.**

4 This Act may be cited as the "Voter Confidence and  
5 Increased Accessibility Act of 2003".

6 **SEC. 2. EXTENSION OF TIME PROVIDED FOR STATES TO RE-**

7 **QUEST PAYMENTS UNDER TITLE I.**

8 (a) **PAYMENTS FOR ACTIVITIES TO IMPROVE ADMIN-**  
9 **ISTRATION OF ELECTIONS.**—Section 101(a) of the Help

1 America Vote Act of 2002 (42 U.S.C. 15301(a)) is amend-  
2 ed by striking “not later than 6 months after the date  
3 of the enactment of this Act” and inserting “not later than  
4 the Tuesday next after the first Monday in November  
5 2003”.

6 (b) PAYMENTS FOR REPLACEMENT OF PUNCH CARD  
7 OR LEVER VOTING MACHINES.—Section 102(b)(1) of  
8 such Act (42 U.S.C. 15301(b)(1)) is amended by striking  
9 “not later than the date that is 6 months after the date  
10 of the enactment of this Act” and inserting “not later than  
11 the Tuesday next after the first Monday in November  
12 2003”.

13 (c) EXTENSION OF PERIOD OF AUTHORIZATION OF  
14 APPROPRIATIONS.—

15 (1) IN GENERAL.—Section 104(a) of such Act  
16 (42 U.S.C. 15304(a)) is amended by striking  
17 “\$650,000,000” and inserting “an aggregate  
18 amount of \$650,000,000 for fiscal years 2003 and  
19 2004”.

20 (2) DATE FOR TRANSFER TO ELECTION ASSIST-  
21 ANCE COMMISSION OF UNOBLIGATED FUNDS.—Sec-  
22 tion 104(c)(2)(B) of such Act (42 U.S.C.  
23 15304(c)(2)(B)) is amended by striking “September  
24 1, 2003” and inserting “January 1, 2004”.

1 (d) REQUIREMENT TO DEPLOY INTERIM MEASURE  
2 IF WAIVER REQUESTED.—Section 102(a)(3)(B) of such  
3 Act (42 U.S.C. 15301(a)(3)(B)) is amended by striking  
4 the period at the end and inserting the following: “, except  
5 that any State requesting any such waiver shall accept and  
6 implement a paper system for use on an interim basis as  
7 provided in section 5(b) of the Voter Confidence and In-  
8 creased Accessibility Act of 2003 in time for use in the  
9 November 2004 general election.”.

10 **SEC. 3. REPEAL OF EXEMPTION OF ELECTION ASSISTANCE**  
11 **COMMISSION FROM CERTAIN GOVERNMENT**  
12 **CONTRACTING REQUIREMENTS.**

13 (a) IN GENERAL.—Section 205 of the Help America  
14 Vote Act of 2002 (42 U.S.C. 15325) is amended by strik-  
15 ing subsection (e).

16 (b) EFFECTIVE DATE.—The amendment made by  
17 subsection (a) shall apply with respect to contracts entered  
18 into by the Election Assistance Commission on or after  
19 the date of the enactment of this Act.

20 **SEC. 4. PROMOTING ACCURACY, INTEGRITY, AND SECUR-**  
21 **ITY THROUGH VOTER-VERIFIED PERMA-**  
22 **NENT RECORD OR HARD COPY.**

23 (a) IN GENERAL.—Section 301(a)(2) of the Help  
24 America Vote Act of 2002 (42 U.S.C. 15481(a)(2)) is  
25 amended to read as follows:

1           “(2) VOTER-VERIFICATION AND AUDIT CAPAC-  
2           ITY.—

3           “(A) VOTER-VERIFICATION IN GENERAL.—

4           The voting system shall produce a voter-verified  
5           paper record suitable for a manual audit equiv-  
6           alent or superior to that of a paper ballot box  
7           system, as further specified in subparagraph  
8           (B).

9           “(B) MANUAL AUDIT CAPACITY.—

10           “(i) The voting system shall produce a  
11           permanent paper record, each individual  
12           paper record of which shall be made avail-  
13           able for inspection and verification by the  
14           voter at the time the vote is cast, and pre-  
15           served within the polling place in the man-  
16           ner in which all other paper ballots are  
17           preserved within the polling place on Elec-  
18           tion Day for later use in any manual audit.

19           “(ii) The voting system shall provide  
20           the voter with an opportunity to correct  
21           any error made by the system before the  
22           permanent record is preserved for use in  
23           any manual audit.

24           “(iii) The voter verified paper record  
25           produced under subparagraph (A) and this

1           subparagraph shall be available as an offi-  
2           cial record and shall be the official record  
3           used for any recount conducted with re-  
4           spect to any election in which the system  
5           is used.

6           “(C) SOFTWARE AND MODEMS.—

7                   “(i) No voting system shall at any  
8                   time contain or use undisclosed software.  
9                   Any voting system containing or using  
10                  software shall disclose the source code of  
11                  that software to the Commission, and the  
12                  Commission shall make that source code  
13                  available for inspection upon request to  
14                  any citizen.

15                  “(ii) No voting system shall contain  
16                  any wireless communication device at all.

17                  “(iii) All software and hardware used  
18                  in any electronic voting system shall be  
19                  certified by laboratories accredited by the  
20                  Commission as meeting the requirements  
21                  of clauses (i) and (ii).”.

22           (b) VOTER VERIFICATION OF RESULTS FOR INDIVID-  
23           UALS WITH DISABILITIES.—Section 301(a)(3) of such  
24           Act (42 U.S.C. 15481(a)(3) is amended—

1           (1) in the heading, by inserting "AND VOTER-  
2           VERIFICATION OF RESULTS" after "ACCESSIBILITY";

3           (2) in subparagraph (B), by striking "; and"  
4           and inserting the following: ", and such voting sys-  
5           tem shall provide a mechanism for voter-verification  
6           of results which separates the function of vote gen-  
7           eration from the function of vote casting in a man-  
8           ner analogous to that described in section 4 with re-  
9           spect to the separation of paper ballot generation  
10          and paper ballot verification and preservation, but  
11          does not require the use of paper.";

12          (3) by amending subparagraph (C) to read as  
13          follows:

14                 “(C) The equipment deployed in accord-  
15                 ance with subparagraph (B) shall meet the vot-  
16                 ing system standards for disability access and  
17                 voter-verification of results as outlined in this  
18                 paragraph in accordance with the deadline set  
19                 forth in section 5(a), provided that if it does  
20                 not and an interim paper system is deployed in  
21                 accordance with section 5(b), disabled voters  
22                 shall have the option of using the interim paper  
23                 system with the assistance of an aide of the vot-  
24                 er’s personal selection or using the voting sys-  
25                 tem otherwise put in place for use by disabled

1 voters at the time in question in accordance  
2 with the Help America Vote Act of 2002, as in  
3 effect prior to the enactment of this Act, except  
4 that the deadline set forth in section  
5 301(a)(3)(C) of such Act (42 U.S.C.  
6 15481(a)(3)(C)) is moved forward from Janu-  
7 ary 1, 2007, to January 1, 2006.”; and

8 (4) by adding at the end the following new sub-  
9 paragraph:

10 “(D) Election officials shall be instructed  
11 in the rights of the disabled to vote with the as-  
12 sistance of an aide of their selection under the  
13 Voting Rights Act of 1965.”.

14 (c) SPECIFIC, DELINEATED REQUIREMENT OF  
15 STUDY, TESTING, AND DEVELOPMENT OF BEST PRAC-  
16 TICES.—In addition to any other requirements under the  
17 Help America Vote Act of 2002, the Election Assistance  
18 Commission shall study, test, and develop best practices  
19 to enhance accessibility and voter-verification mechanisms  
20 for disabled voters.

21 **SEC. 5. CHANGE IN DEADLINE FOR COMPLIANCE WITH**  
22 **STANDARDS.**

23 (a) IN GENERAL.—Section 301(d) of the Help Amer-  
24 ica Vote Act of 2002 (42 U.S.C. 15481(d)) is amended  
25 by striking “on and after January 1, 2006” and inserting

1 “in time for elections for Federal office beginning with the  
2 regularly scheduled general election to be held in Novem-  
3 ber 2004”.

4 (b) INTERIM PAPER SYSTEM.—Each State and juris-  
5 diction that certifies in the manner described in section  
6 102(a)(3)(B) that it shall be unable to comply with the  
7 requirements of section 301 in time for the regularly  
8 scheduled general election for Federal office to be held in  
9 November 2004 shall receive a paper voting system, based  
10 on paper systems in use in the jurisdiction, if any, at the  
11 expense of the Commission that shall be deemed compliant  
12 with section 301 by the Commission for use in the Novem-  
13 ber 2004 general elections.

14 **SEC. 6. REQUIREMENT FOR FEDERAL CERTIFICATION OF**  
15 **TECHNOLOGICAL SECURITY OF VOTER REG-**  
16 **ISTRATION LISTS.**

17 Section 303(a)(3) of the Help America Vote Act of  
18 2002 (42 U.S.C. 15483(a)(3)) is amended by striking the  
19 period at the end and inserting the following: “, as cer-  
20 tified by the Commission.”.

21 **SEC. 7. REQUIREMENT FOR MANDATORY RECOUNTS.**

22 The Election Assistance Commission shall conduct  
23 manual mandatory surprise recounts of the voter-verified  
24 records of each election for Federal office (and, at the op-  
25 tion of the State or jurisdiction involved, of elections for

1 State and local office) in .5 percent of the jurisdictions  
2 in each State and .5 percent of the overseas jurisdictions  
3 in which voter-verified records are preserved in accordance  
4 with this section immediately following each general elec-  
5 tion for Federal office, and shall promptly publish the re-  
6 sults of those recounts. The treatment of the results of  
7 the recount shall be governed by applicable Federal, State,  
8 or local law, except that any individual who is a citizen  
9 of the jurisdiction involved may file an appeal with the  
10 Commission if the individual believes that such law does  
11 not provide a fair remedy.

12 **SEC. 8. EFFECTIVE DATE.**

13       Except as provided in section 3(b), the amendments  
14 made by this Act shall take effect as if included in the  
15 enactment of the Help America Vote Act of 2002.

○

S 1980 IS

108th CONGRESS

1st Session

S. 1980

To amend the Help America Vote Act of 2002 to require a voter-verified permanent record or hardcopy under title III of such Act, and for other purposes.

IN THE SENATE OF THE UNITED STATES

December 9, 2003

Mr. GRAHAM of Florida introduced the following bill; which was read twice and referred to the Committee on Rules and Administration

---

A BILL

To amend the Help America Vote Act of 2002 to require a voter-verified permanent record or hardcopy under title III of such Act, and for other purposes.

*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,*

This Act may be cited as the 'Voter Confidence and Increased Accessibility Act of 2003'.

**SEC. 2. EXTENSION OF TIME PROVIDED FOR STATES TO REQUEST PAYMENTS UNDER TITLE I.**

(a) PAYMENTS FOR ACTIVITIES TO IMPROVE ADMINISTRATION OF ELECTIONS- Section 101(a) of the Help America Vote Act of 2002 (42 U.S.C. 15301(a)) is amended by striking 'not later than 6 months after the date of the enactment of this Act' and inserting 'not later than the Tuesday next after the first Monday in November 2003'.

(b) PAYMENTS FOR REPLACEMENT OF PUNCH CARD OR LEVER VOTING MACHINES- Section 102(b)(1) of such Act (42 U.S.C. 15301(b)(1)) is amended by striking 'not later than the date that is 6 months after the date of the enactment of this Act' and inserting 'not later than the Tuesday next after the first Monday in November 2003'.

(c) EXTENSION OF PERIOD OF AUTHORIZATION OF APPROPRIATIONS-

(1) IN GENERAL- Section 104(a) of such Act (42 U.S.C. 15304(a)) is amended by striking '\$650,000,000' and inserting 'an aggregate amount of \$650,000,000 for fiscal years 2003 and 2004'.

(2) DATE FOR TRANSFER TO ELECTION ASSISTANCE COMMISSION OF UNOBLIGATED FUNDS- Section 104(c)(2)(B) of such Act (42 U.S.C. 15304(c)(2)(B)) is amended by striking 'September 1, 2003' and inserting 'January 1, 2004'.

(d) REQUIREMENT TO DEPLOY INTERIM MEASURE IF WAIVER REQUESTED- Section 102(a)(3)(B) of such Act (42 U.S.C. 15301(a)(3)(B)) is amended by striking the period at the end and inserting the following: ', except that any State requesting any such waiver shall accept and implement a paper system for use on an interim basis as provided in section 5(b) of the Voter Confidence and Increased Accessibility Act of 2003 in time for use in the November 2004 general election.'

### SEC. 3. REPEAL OF EXEMPTION OF ELECTION ASSISTANCE COMMISSION FROM CERTAIN GOVERNMENT CONTRACTING REQUIREMENTS.

(a) IN GENERAL- Section 205 of the Help America Vote Act of 2002 (42 U.S.C. 15325) is amended by striking subsection (e).

(b) EFFECTIVE DATE- The amendment made by subsection (a) shall apply with respect to contracts entered into by the Election Assistance Commission on or after the date of the enactment of this Act.

### SEC. 4. PROMOTING ACCURACY, INTEGRITY, AND SECURITY THROUGH VOTER-VERIFIED PERMANENT RECORD OR HARD COPY.

(a) IN GENERAL- Section 301(a)(2) of the Help America Vote Act of 2002 (42 U.S.C. 15481(a)(2)) is amended to read as follows:

#### (2) VOTER-VERIFICATION AND AUDIT CAPACITY-

(A) VOTER-VERIFICATION IN GENERAL- The voting system shall produce a voter-verified paper record suitable for a manual audit equivalent or superior to that of a paper ballot box system, as further specified in subparagraph (B).

#### (B) MANUAL AUDIT CAPACITY-

(i) The voting system shall produce a permanent paper record, each individual paper record of which shall be made available for inspection and verification by the voter at the time the vote is cast, and preserved within the polling place in the manner in which all other paper ballots are preserved within the polling place on Election Day for later use in any manual audit.

(ii) The voting system shall provide the voter with an opportunity to correct any error made by the system before the permanent record is preserved for use in any manual audit.

(iii) The voter verified paper record produced under subparagraph (A) and this subparagraph shall be available as an official record and shall be the official record used for any recount conducted with respect to any election in which the system is used.

^(C) SOFTWARE AND MODEMS-

^(i) No voting system shall at any time contain or use undisclosed software. Any voting system containing or using software shall disclose the source code of that software to the Commission, and the Commission shall make that source code available for inspection upon request to any citizen.

^(ii) No voting system shall contain any wireless communication device at all.

^(iii) All software and hardware used in any electronic voting system shall be certified by laboratories accredited by the

Commission as meeting the requirements of clauses (i) and (ii).'

(b) VOTER VERIFICATION OF RESULTS FOR INDIVIDUALS WITH DISABILITIES-  
Section 301(a)(3) of such Act (42 U.S.C. 15481(a)(3) is amended--

(1) in the heading, by inserting 'AND VOTER-VERIFICATION OF RESULTS' after 'ACCESSIBILITY';

(2) in subparagraph (B), by striking '; and' and inserting the following: ', and such voting system shall provide a mechanism for voter-verification of results which separates the function of vote generation from the function of vote casting in a manner analogous to that described in section 4 with respect to the separation of paper ballot generation and paper ballot verification and preservation, but does not require the use of paper.';

(3) by amending subparagraph (C) to read as follows:

^(C) The equipment deployed in accordance with subparagraph (B) shall meet the voting system standards for disability access and voter-verification of results as outlined in this paragraph in accordance with the deadline set forth in section 5(a), provided that if it does not and an interim paper system is deployed in accordance with section 5(b), disabled voters shall have the option of using the interim paper system with the assistance of an aide of the voter's personal selection or using the voting system otherwise put in place for use by disabled voters at the time in question in accordance with the Help America Vote Act of 2002, as in effect prior to the enactment of this Act, except that the deadline set forth in section 301(a)(3)(C) of such Act (42 U.S.C. 15481(a)(3)(C)) is moved forward from January 1, 2007, to January 1, 2006.'; and

(4) by adding at the end the following new subparagraph:

^(D) Election officials shall be instructed in the rights of the disabled to vote with the assistance of an aide of their selection under the Voting Rights Act of 1965.'

(c) SPECIFIC, DELINEATED REQUIREMENT OF STUDY, TESTING, AND DEVELOPMENT OF BEST PRACTICES- In addition to any other requirements under the Help America Vote Act of 2002, the Election Assistance Commission shall study, test, and develop best practices to enhance accessibility and voter-verification mechanisms for disabled voters.

**SEC. 5. CHANGE IN DEADLINE FOR COMPLIANCE WITH STANDARDS.**

(a) IN GENERAL- Section 301(d) of the Help America Vote Act of 2002 (42 U.S.C. 15481(d)) is amended by striking 'on and after January 1, 2006' and inserting 'in time for elections for Federal office beginning with the regularly scheduled general election to be held in November 2004'.

(b) INTERIM PAPER SYSTEM- Each State and jurisdiction that certifies in the manner described in section 102(a)(3)(B) that it shall be unable to comply with the requirements of section 301 in time for the regularly scheduled general election for Federal office to be held in November 2004 shall receive a paper voting system, based on paper systems in use in the jurisdiction, if any, at the expense of the Commission that shall be deemed compliant with section 301 by the Commission for use in the November 2004 general elections.

**SEC. 6. REQUIREMENT FOR FEDERAL CERTIFICATION OF TECHNOLOGICAL SECURITY OF VOTER REGISTRATION LISTS.**

Section 303(a)(3) of the Help America Vote Act of 2002 (42 U.S.C. 15483(a)(3)) is amended by striking the period at the end and inserting the following: ', as certified by the Commission.'

**SEC. 7. REQUIREMENT FOR MANDATORY RECOUNTS.**

The Election Assistance Commission shall conduct manual mandatory surprise recounts of the voter-verified records of each election for Federal office (and, at the option of the State or jurisdiction involved, of elections for State and local office) in .5 percent of the jurisdictions in each State and .5 percent of the overseas jurisdictions in which voter-verified records are preserved in accordance with this section immediately following each general election for Federal office, and shall promptly publish the results of those recounts. The treatment of the results of the recount shall be governed by applicable Federal, State, or local law, except that any individual who is a citizen of the jurisdiction involved may file an appeal with the Commission if the individual believes that such law does not provide a fair remedy.

**SEC. 8. EFFECTIVE DATE.**

Except as provided in section 3(b), the amendments made by this Act shall take effect as if included in the enactment of the Help America Vote Act of 2002.

*END*



Text Size: A A A A

## Voting Machine Leaves Paper Trail By Joanna Glasner

Story location: <http://www.wired.com/news/business/0,1367,58738,00.html>

02:00 AM May. 09, 2003 PT

Voting machines that print individual ballots -- an election accessory many computer scientists have clamored for -- are moving a step closer to widespread availability.

In response to concerns raised by election officials and security-minded techies, one of the largest makers of touch-screen voting machines has introduced a prototype capable of producing paper ballots.

Developed by Election Systems & Software of Omaha, Nebraska, the machine is currently in beta testing, with plans to make it commercially available by July.

"The idea is to provide a voter-verifiable ballot," said Lou Dedier, the ES&S vice president and general manager who built the original test model in his garage. Dedier said his mock-up was based on suggestions from elections administrators.

The planned rollout comes as a coalition of computer scientists, led by David Dill, a Stanford computer science professor, is lobbying election officials and voting machine manufacturers to fix security flaws in the current crop of touch-screen voting machines. The coalition believes the flaws are serious.

In particular, computing experts worry that hundreds of thousands of direct-recording electronic, or DRE, voting machines used in elections nationwide do not provide an auditable paper trail that records individual votes. In order to ensure that votes are not lost because of a computer malfunction or tampering, critics say DRE machines should be able to print and store individual ballots immediately after a vote is cast.

"I'm happy that some are trying to produce interesting solutions to the voter-verifiable audit-trail problem," said Dill. Although he does not endorse any particular voting machine vendor, he considers the ES&S prototype a

breakthrough for a major manufacturer.

As pressure mounts for paper receipts, ES&S is not the only one who may add on a ballot-printing feature.

Joe Richardson, a spokesman for Diebold Election Systems, one of ES&S's chief competitors, said the company would be willing to provide such a feature to U.S. customers if the demand is there. Richardson said the company included ballot-printing capability in more than 300,000 voting machines it sold to Brazil.

Avante International Technology, a developer of smart-card technology, recently introduced a machine called Vote-Trakker, which creates a paper ballot that voters can view and verify before exiting the polls.

Sequoia Voting Systems, another large maker of DRE machines, recently agreed to provide machines for Santa Clara County, California. Officials there plan to petition the secretary of state to approve a pilot project with paper records that voters can inspect starting in this November's election.

For ES&S, providing a ballot-printer capability isn't solely an altruistic move. Dedier said municipalities can expect to pay between \$400 and \$500 to add the ballot-printing feature to an existing machine.

The ballot-printing prototype by ES&S is quite similar to its standard DRE machine. In both cases, voters make their choices by touching the name of their preferred candidate or ballot proposition position on a computer screen.

The primary difference with the prototype model is that after votes are entered, a copy of a printed ballot appears behind a clear plastic screen. A voter can look at the printed ballot and press a button to submit it or to make changes. Submitted ballots get dropped in a box at the bottom of the machine for later counting.

Dedier said much of his original design was based on suggestions from Warren Slocum, chief elections officer for San Mateo County, California. Slocum, in turn, said his recommendations were influenced by security concerns raised by computer scientists.

"Part of my goal is to try to influence this public policy," said Slocum, who favors using printed ballots, rather than electronic records of votes, as the official ballot in case of a recount. Slocum said San Mateo, which primarily used optical-scan ballot machines, also made by ES&S, doesn't plan to use the printer-enabled machines this year, but may next year.

He believes touch-screen machines offer some advantages, such as the ability to provide voting in multiple languages without having to pre-print ballots for non-English speakers.

But the main purpose of adding ballot-printing capability, he said, is to ensure voters that in the event of a computer malfunction, their votes will still be accurately recorded on paper.



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Posted on Sun, Feb. 01, 2004

## ELECTRONIC VOTING'S HIDDEN PERILS

By Elise Ackerman  
Mercury News

Poll workers in Alameda County noticed something strange on election night in October. As a computer counted absentee ballots in the recall race, workers were stunned to see a big surge in support for a fringe candidate named John Burton.

Concerned that their new \$12.7 million Diebold electronic voting system had developed a glitch, election officials turned to a company representative who happened to be on hand.

Lucky he was there. For an unknown reason, the computerized tally program had begun to award votes for Lt. Gov. Cruz Bustamante to Burton, a socialist from Southern California.

Similar mishaps have occurred across the country since election officials embraced electronic voting in the wake of the Florida vote-counting debacle of 2000.

When Californians go to the polls next month to choose a presidential candidate, many voters will cast a virtual ballot by pressing a computer touch screen that records their votes digitally. The only tangible proof that a citizen has voted -- and how he voted -- will be fingerprints left on the machine's screen.

Electronic voting removes the risk of election officials misinterpreting hanging chads. But it raises another electoral peril: that a digital ballot box might miscount votes without anyone noticing.

As the black box replaces the ballot box, concern is growing that local officials are becoming dependent on a handful of corporations to guarantee the integrity and accuracy of elections.

Counties, including Santa Clara County, rely on these voting-equipment companies to manage the software that runs digital voting machines and counts electronic votes -- and to fix things when they go wrong on election night. The companies, however, consider such software a trade secret, making independent confirmation of contested elections difficult, if not impossible.

To guard against error and fraud, the state requires that the companies only install approved software on electronic voting machines. But in California, one of the biggest voting-equipment companies, Diebold Election Systems, provided 17 counties with uncertified software that was used in recent elections.

### Review of practices

County election officers remain responsible for overseeing electronic voting systems, but a review of past elections and current practices raises questions about how closely they're monitoring voting-equipment companies.

"My biggest concern is the lack of accountability," said David Dill, a Stanford University computer-science professor and a leading expert on electronic voting.

Election officials and company representatives dismiss concerns about computerized voting as overblown, citing safeguards designed to ensure the reliability of computerized voting systems.

``We have the best system available on the market. It is secure and reliable and the voting public had a wonderful experience," said Jesse Durazo, the registrar of voters for Santa Clara County, which uses touch-screen machines from Sequoia Voting Systems.

Alameda County officials still don't know why the computer program failed on election night. In fact, they only discovered the malfunction because they could compare the paper absentee ballots the software was counting to the computer's tally. The rest of the county's voters cast electronic ballots. Nor were election workers aware at the time that their touch-screen machines were running unauthorized Diebold software in violation of California law, as a state investigation later discovered.

``There was something in the software," said Elaine Ginnold, assistant registrar of voters for Alameda County. Alameda County officials refused to allow the Mercury News to review the software code used to test its electronic voting system, saying it was a Diebold trade secret.

``At no time were incorrect vote totals released," Diebold spokesman David Bear wrote in an e-mail. ``The system is safe, secure and accurate." He attributed the malfunction to a computer-server error and the large number of candidates on the recall ballot.

``The counties are in over their heads," said Kim Alexander, founder of the California Voter Foundation, a Davis-based election watchdog group. ``People are left depending on the vendors to tell them who won the elections."

That is especially the case on election night, when mechanical mishaps and buggy computer code could create crises only company employees could resolve.

For instance, in Riverside County during the 2000 presidential election, a computer from Sequoia began dropping touch-screen ballots from the vote tally. A Sequoia salesman who was on hand intervened and fixed the problem.

### **Unnoticed error**

Two years later in Bernalillo County, N.M., neither local election officials nor a Sequoia representative noticed on election night that a programming error was causing a computer running Microsoft SQL server software to delete 25 percent of ballots cast by early voters. Three days later, a Democratic Party lawyer spotted a discrepancy between the number of voters who signed in at the polls and the number of digital ballots counted. Sequoia then managed to recover the lost votes.

``They messed up," said Mary Herrera, the Bernalillo County clerk, of Sequoia.

Responded Sequoia spokesman Alfie Charles: ``It was just a bug in Microsoft that required an additional step in converting data into the database format. There was a patch that was later applied by Microsoft."

Alexander of the California Voter Foundation worries that such incidents mean the machines could miscount ballots or fail to register votes without anyone realizing.

Critics are alarmed that touch-screen voting systems do not create a paper record that allows for a physical recount of ballots. Rather, the machines record votes on digital memory cartridges. When the polls close, the cartridges are removed from the touch-screen machines and plugged into a computer which downloads and tabulates the voting data.

In November, California Secretary of State Kevin Shelley ordered that by July 2006 all touch-screen machines must print paper receipts so an election can be independently audited. To meet that mandate, the voting-equipment companies must manufacture new state-approved hardware and software.

Computer scientists acknowledge a paper trail will help ensure the accountability of electronic voting systems. However, they say such a requirement does not resolve concerns over counties' dependence on voting-equipment companies and the security of computerized voting.

Until voting machines produce paper receipts, the only way a candidate can investigate questionable election results is by examining the voting systems' software code.

But there's a catch: Election companies consider such software a trade secret not open to public scrutiny -- or subject to challenge from losing candidates, as Emil Danciu found out.

Danciu ran for city council in Boca Raton, Fla., in March 2002. A popular former mayor of the seaside town in Palm Beach County, Danciu expected to win in a landslide but lost by 16 percentage points.

After some voters complained that Sequoia's touch-screen machines appeared to have recorded ballots cast for Danciu as votes for his opponents, Danciu sued to obtain the Sequoia software code.

But Palm Beach County didn't have the code. "All of this stuff that they are asking for are all proprietary items owned by the manufacturer," a county attorney told the judge hearing the case. The attorney argued that even if the county did have the documents, it would be a felony to disclose "trade secrets."

The judge denied Danciu's request for the software code.

### **U.S., state inspectors**

County election officers and voting-equipment company executives stress that voting machines and software are carefully examined by federal and state inspectors before receiving approval. Furthermore, they say, pre-election testing ensures ballots are counted correctly.

"There are checks and balances to ensure nothing has been compromised," said Charles, the Sequoia spokesman.

The goal of the government certification process is to make sure proprietary voting systems are accurate, reliable and secure. The certification process is crucial because it provides the only safeguard voters have that the machines are performing the way the election companies promise.

"Every single piece of hardware and software that is used in an election is certified by our office," state election official John Mott-Smith reassured the Santa Clara County Board of Supervisors last year. "Every modification to those systems has to come back for certification and testing if necessary."

Yet eight months later, a state audit revealed that voters in 17 California counties had cast ballots in recent elections on Diebold systems that were running software not approved by the state, according to a December 2003 report. The Diebold software is used to count both touch-screen electronic ballots and paper ballots read by an optical scanner. Three of the counties, including Los Angeles, the state's largest, were using Diebold software that had not been submitted for federal review.

### **Assurances by vendor**

The audit also found that county election officials had not independently verified they were using certified software, as the law requires, but relied on assurances by Diebold it was complying with state regulations.

Even tech-savvy counties like Santa Clara can have difficulty tracking exactly what their voting-equipment company is doing for them. Computer scientists argue that a failure to keep close tabs on modifications to the machines or their software opens the door to tampering or the introduction of errors that might show up on election night.

Following November's election in Santa Clara County, Sequoia sent over a group of blue-coated technicians to make adjustments to voting machines that experienced battery problems. For three weeks, the workers, employed by a Sequoia subcontractor, took apart the machines, removing their circuit boards and making adjustments.

Nevertheless, Santa Clara County officials didn't know the name of the subcontractor and hadn't verified the identities of the workers it hired when the Mercury News made an inquiry. They also hadn't documented the changes being made to the machines.

To find out such information, "you'd have to contact Sequoia," said Assistant Registrar of Voters Elaine Larson.

In interviews with the Mercury News, registrars defended their close relationship with the companies. The world of elections administration is a small one, and the revolving door between state, federal and county elections departments and the voting-equipment companies has spun for years.

"I have a hundred percent confidence in Sequoia -- in their integrity and honesty and their ability to keep us compliant with the law of California," said Cathy Darling, assistant registrar of Shasta County.

That attitude bothers Dill, the Stanford computer scientist and electronic-voting expert. "From a computer-security perspective, handing over control of an important part of the election, I think, is not a good idea," said Dill. "I'd prefer to see that kind of control in the hands of local officials who are accountable to elected representatives."

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## Fairfax Judge Orders Logs Of Voting Machines Inspected

By David Cho  
 Washington Post Staff Writer  
 Thursday, November 6, 2003; Page B01

It took more than 21 hours from the time polls closed Tuesday night for Fairfax County, the putative high-tech capital of the region, to get final election results from its new, computerized vote machines.

Widespread problems in the system, which the county paid \$3.5 million to install, also opened the door to possible election challenges by party leaders and candidates.

School Board member Rita S. Thompson (R), who lost a close race to retain her at-large seat, said yesterday that the new computers might have taken votes from her. Voters in three precincts reported that when they attempted to vote for her, the machines initially displayed an "x" next to her name but then, after a few seconds, the "x" disappeared.

In response to Thompson's complaints, county officials tested one of the machines in question yesterday and discovered that it seemed to subtract a vote for Thompson in about "one out of a hundred tries," said Margaret K. Luca, secretary of the county Board of Elections.

"It's hard not to think that I have been robbed," said Thompson, whose 77,796 recorded votes left her 1,662 shy of reelection. She is considering her next step, and said she was wary of challenging the election results: "I'm not sure the county as a whole is up for that. I'm not sure I'm up for that."

Meanwhile, attorneys for local Republicans and GOP candidate Mychele B. Brickner, who lost her bid to chair the Fairfax County Board of Supervisors, went before a circuit court judge yesterday morning, asking him to keep 10 voting machines under lock and key and not to include their tabulations in the results. The machines, from nine precincts scattered across the county, broke down about midday Tuesday and were brought to the county government center for repairs and then returned to the polls -- a violation of election law, Republicans argued.

The judge said the activity logs of all 10 machines will be inspected this week, with members of both major parties present.

"It's like Florida in many ways," said the Republicans' attorney, Christopher T. Craig, referring to that state's 2000 presidential ballot-counting controversy. "This is about ballot integrity. . . . A lot of people have been telling us they couldn't vote for someone. . . . I have been hearing that there are a lot of problems" with the county's new WINvote computer technology.

As more details emerged yesterday, county officials defended the system. Luca insisted that most of the problems had less to do with computer glitches than human error.

Read  
 Dr. William  
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 column at  
[proplan.com](http://proplan.com)



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"The new machines get an A-plus," she said. "It's the plan to collect the vote that gets the failing grade."

Fairfax purchased the 1,000 touch-screen vote machines this year from Advanced Voting Solutions of Frisco, Tex. The machines, which resemble laptop computers, were used countywide Tuesday for the first time, and the problems that resulted mirrored what occurred in Montgomery County last year when similar new technology was used. The equipment in Montgomery County was blamed for delayed results and confusion at the polls.

Fairfax officials had confidently promised that their machinery would work much better, citing a battery of tests conducted last week. They also predicted that the system would greatly speed the reporting of results.

Instead, it churned out one of the slowest vote counts in memory.

Much of the delay occurred at 7 p.m. when the polls closed. Most of the county's 223 precincts attempted to send in their computer tallies at once, overloading the system. Many poll officials ended up calling in their numbers, but some couldn't get through and instead drove their results to the county government center.

In at least 19 precincts, results were officially sealed in the mistaken assumption that they had been sent by computer modem, officials said yesterday. Sealed results cannot be opened unless all three election board members are present, which led to further delays.

In addition, software errors kept the results from two precincts from being posted until about 4:30 yesterday afternoon.

"Everyone seems to be aghast at how this could happen," Thompson said. "But this seems like something you could have had the foresight to see."

John Service, 50, of North Springfield said it took him four or five tries to register his vote for Thompson, and he wondered whether some voters were disenfranchised. "I am concerned about voters who might have been in a rush and didn't go back and check to make sure all the names [they intended to vote for] appeared on the final ballot," he said.

The glitches forced a handful of precincts to return to paper ballots. And even at polls where computer problems didn't arise, voter unfamiliarity with the technology created long lines.

Some voters gave up -- a thought that crossed Jeff Fisher's mind.

Fisher, 43, of Annandale said he almost walked out of his polling place when a woman in front of him spent 10 minutes getting through the ballot.

Others, though, wondered why so many people had problems with the machines. "I thought it was very easy to vote, and I'm not even that bright of a kid," Al Richards, 61, of Falls Church said.

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Priority: Normal

Senator Stevens  
Chairman of the Senate State Affairs Committee

I strongly favor the provisions in SB 296 and hope you will work to in early adoption.

Our current machines in which a paper ballot is scanned and retained u potential later audit should be the only form of voting machine permit

As a computer programmer and former member of the state election revie feel the opportunity for fraud is very great in many types of voting m currently on the market. Even with pre and post election testing, I co s. me of these machines to steal an election.

'Touch screen' systems are fatally flawed. This type of machine shoul (or bought). Fortunately the machines used in Alaska read an actual p and retain the ballot inside the machine for possible audit or recount statistical, public audit should be made after every election to verif paper ballots match the vote totals. Note that this does not have to comprehensive audit, but the selection of the sample boxes and races m random as explained by Demming. This is in addition to any recounts u

Pre and post election testing does not provide assurance that the vote counted correctly. However it is necessary to check that the code has specifically for this election.

If access can be had to the machines after the programming for an elec theoretically possible to add a patch that would be undetectable durin election testing and would not be detectable during a post election me Details of how to accomplish this would depend on studying the machine detail or having access to an employee of the manufacturer.

When I was on the State Election Board the only thing that gave me con result was careful testing plus knowing the absolute integrity of the wrote the code. With the current paper ballots (rather than the old p is possible to do a manual post election audit to provide any level of

confidence desired. As usual the manual procedures that accompany the potentially the weakest link, but also an excellent place for fraud de

There is one weakness in Alaska's current voting system that could be enabling legislation and appropriate procedures. That is the current machines to ignore undervotes. This leaves the voter unsure if all th made for candidates and issues on his ballot have been read since any equivalent to an undervote for that position. This could be improved candidate for each position "none of the above" and for each ballot is opinion". The machines could then be set to reject undervotes as well confirming that all positions have been voted. Of course the voter mu to correct the sheet.

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