



ILLINOIS BALLOT INTEGRITY PROJECT

www.ballot-integrity.org

DIEBOLD VOTING SYSTEMS
SHOULD NOT BE CERTIFIED BY
THE ILLINOIS STATE BOARD OF
ELECTIONS

***Diebold Optical Scanners, Touch Screen Voting Machines.
Internal Printers and GEMS Software do not comply with
the Illinois State Election Code***

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For further information concerning this document, please contact:

Laurence J. Quick
Chairperson
Illinois Ballot Integrity Project
PMB 191 – 2112 Galena Blvd
Aurora IL 60506
(630) 460-0857
quickinfo@qnc.us

Robert A. Wilson
Chairperson, Suburban Cook County Chapter
Illinois Ballot Integrity Project
635 Chicago Ave – Suite 127
Evanston IL 60202
(847) 644-2654
bob@protectthevote.us

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DIEBOLD SYTEMS SHOULD NOT BE CERTIFIED BY THE ILLINOIS STATE BOARD OF ELECTIONS

Introduction

On December 20, 2005, the Illinois State Board of Elections will meet to consider (among other matters) the granting of interim certification of various electronic voting system components manufactured and/or marketed by Diebold Election Systems, Inc., (Diebold) including the AccuVote-TSX™ direct record entry (DRE) terminal, AccuView™ printer, AccuVote-OS™ optical scan device and GEMS® (Global Election Management System).

The Illinois Ballot Integrity Project (IBIP) strongly opposes interim certification of any and all of the above Diebold components as well as the entire "system" submitted by Diebold for certification by the Illinois State Board of Elections (IL-SBOE).

This document will examine a number of significant issues relevant to certification of Diebold hardware, software, operating systems, communications protocols and peripheral devices, as well as certain issues involving the structure and operations of Diebold Election Systems, Inc. and its parent company, Diebold, Incorporated (NYSE: DBD).

We will also present a brief summary of Federal requirements as set forth in the Help America Vote Act of 2002 (HAVA), FEC, NASED or EAC (Election Assistance Commission) Voting System Standards, EAC Advisories and interpretations. In addition we will examine the effect of the 2005 revisions to the Illinois Election Code (10 ILCS 5/1, *et seq*) as embodied in HB1968 and enacted by the Illinois General Assembly.

Throughout this report we will make extensive use of resources and research developed by independent computer experts who have examined Diebold equipment and software, official state and Federal reports and voluminous press coverage in both print and online media which document the many and varied problems with electronic voting systems. The most significant of these documents will be attached as appendices hereto.

The Illinois Ballot Integrity Project believes that the preponderance of evidence will show that:

- The state of development of electronic voting systems in general is such that there are serious concerns regarding the accuracy, reliability and security of such systems, and that Diebold hardware and software can accurately be characterized as amongst the least reliable and secure. This is perhaps best expressed on the summarized findings of the U.S. General Accountability Office in their September 2005 Report, released on 21 Oct 2005 ("ELECTIONS, Federal Efforts to Improve Security and Reliability of Electronic Voting Systems Are Under Way, but Key Activities Need to Be Completed" GAO 05-096):

"While electronic voting systems hold promise for a more accurate and efficient election process, numerous entities have raised concerns about their security and reliability, citing instances of weak security controls, system design flaws, inadequate system version control, inadequate security testing, incorrect system configuration, poor security management, and vague or incomplete voting system standards, among other issues."

In its key findings, the GAO listed some examples of voting system problems and vulnerabilities:

- Cast ballots, ballot definition files, and audit logs could be modified.
- Supervisor functions were protected with weak or easily-guessed passwords.
- Systems had easily picked locks and power switches that were exposed and unprotected.
- Local jurisdictions misconfigured electronic voting systems, leading to election day problems.

- Voting systems experienced operational failures during elections.
- Vendors installed uncertified electronic voting systems.

In addition to identifying potential vulnerabilities, GAO identified a number of cases of operational failures in real elections. These examples included:

- In California, a county presented voters with an incorrect electronic ballot, meaning they could not vote in certain races.
 - In Pennsylvania, a county made a ballot error on an electronic voting system that resulted in the county's undervote percentage reaching 80% in some precincts.
 - In North Carolina, electronic voting machines continued to accept votes after their memories were full, causing over 4,000 votes to be lost.
 - In Florida, a county reported that touch screens took up to an hour to activate and had to be activated sequentially, resulting in long delays.
- Diebold systems are particularly susceptible to security intrusion and provide some of the more egregious examples of hardware and software failure.
 - Vague, contradictory and incomplete testing standards, combined with a lack of truly Independent Testing Authorities (ITAs) has contributed to faulty certifications of devices and software from which Diebold has particularly benefited.
 - Significant misconceptions regarding provisions of the Help America Vote Act (HAVA) have led to a widespread belief that direct recording electronic (DRE) devices are required to comply with Section 301(a) of the Act relating to handicapped accessibility despite advisories and directives from the U.S. Election Assistance Commission (EAC) to the contrary. For example, EAC Advisory 2005-004 states in pertinent part, "This advisory should not be read to preclude the innovation and use of accessible voting systems other than DREs for purposes of meeting this requirement."
 - The Diebold the AccuVote-TSX™ direct record entry (DRE) terminal has received significant criticism from the disabled sector for its lack of user-friendly interfaces, difficult selection review and other factors which make this device an inappropriate solution for handicapped access.
 - The Diebold AccuView™ printer does not produce a Voter Verified Paper Audit Trail (VVPAT) compliant with the Illinois Election Code which requires a conveniently verifiable paper record of the voter's choice(s), and this is required of all ballots so that they can be "easily reviewed by the voter for completeness and accuracy." (10 ILCS 24/C-2)
 - The Diebold AccuView™ printer does not produce an "Audit trail" immediately after a ballot is cast that includes "a permanent paper record of each ballot cast that shall be available as an official record for any recount, redundant count, or verification or re-tabulation of the vote count conducted with respect to any election in which the voting system is used," (10 ILCS 24/C-2) in that the AccuView™ printer uses a continuous roll of degradable thermal imaging paper retained within the device.
 - Diebold source code for device firmware and tabulation systems is not available in uncompiled format for inspection by independent experts to determine its functionality and/or security. Diebold was recently unsuccessful in receiving an exemption from North Carolina requirements for escrowing such code and has chosen to withdraw from consideration as a vendor for election systems in that state.
 - Diebold has a significant history of legal and ethical violations and has received substantial civil penalties for because of its conduct, including a \$2.6 million such penalty for installing uncertified software in election machines in California.

For these and other important reasons set forth below, the Illinois Ballot Integrity Project believes that certification by the Illinois State Board of Elections of any Diebold Voting Systems hardware, software, operating systems, communications protocols or peripheral devices is contraindicated under existing Federal and State Statutes, Rules, Regulations and Policies and would constitute a significant disservice to the citizens and taxpayers of Illinois.

Diebold in the News – A Partial List of Documented Failures

A list, compiled by Voters Unite (<http://www.votersunite.org>) runs to some 22 pages and is available here: <http://www.votersunite.org/info/Dieboldinthenews.pdf> This list of more than three dozen news articles concerning failures specifically related to Diebold systems is attached as Appendix A and includes some of the following documented failures:

November 2000 - AccuVote OS Volusia County, Florida. Internal Diebold memos (leaked in 2003) show that the company officials knew about the 16,022 Gore votes that were subtracted, and they still don't have an explanation for why the votes were lost. Tampering may have been the cause. ¹

November 2002 - AccuVote OS Robeson County, North Carolina. Ballot tabulating machines failed to work properly in 31 of 41 precincts. Local election officials said the problem was the result of a software glitch, and ballots had to be recounted.

April 2003 AccuVote TS Johnson County, Kansas. An unexplained software error caused the voting computers to miscount the votes. Diebold investigated the problem and said in a news release issued at the time that a software error had led to the election night problem. ²

December 2003 - AccuVote OS and TS California. Secretary of State discovers that Diebold installed uncertified software throughout California before the recall election, without informing county officials. "An audit of Diebold Election Systems voting machines in California has revealed that the company installed uncertified software in all 17 counties that use its electronic voting equipment. Diebold admitted wrongdoing Tuesday at a meeting of the state's Voting Systems Panel." ³

December 2003 Diebold Seattle, Washington. Investigative journalist Bev Harris announced her discovery that a Diebold programmer had been convicted of stealing money by tampering with computer records. At least five convicted felons secured management positions at a subsidiary of Diebold, and included a cocaine trafficker, a man who conducted fraudulent stock transactions and a programmer jailed for falsifying computer records. The programmer, Jeffrey Dean, wrote and maintained proprietary code used to count hundreds of thousands of votes as senior vice president of Global Election Systems, or GES. Diebold purchased GES in January 2002. According to a public court document, Dean served time in a Washington state correctional facility for stealing money and tampering with computer files ⁴

March, 2004 - GEMS San Diego County, California. The tabulation software switched 2,747 Democratic presidential primary votes for U.S. Sen. John Kerry to U.S. Rep. Dick Gephardt. ⁵

¹ **[Tulare] County votes for machines.** By Roger Phelps, The Porterville Recorder; June 10, 2004. http://myopr.com/articles/2004/06/10/news/local_state/news01.txt

² **New voting technology is questioned: Computer systems can be tampered with, critics say.** The Kansas City Star; September 21, 2003. By Finn Bullers; <http://www.kansascity.com/mld/kansascity/news/6821316.htm>

³ **E-Voting Undermined by Sloppiness.** Wired News. December 17, 2003. By Kim Zetter http://www.wired.com/news/evote/0,2645,61637,00.html?tw=wn_tophead_2

⁴ **Con Job at Diebold Subsidiary.** Wired News. December 17, 2003. by AP. http://www.wired.com/news/evote/0,2645,61640,00.html?tw=wn_tophead_3

⁵ **Diebold reports multiple problems: Registrar wants reason for e-voting.** TriValley Herald. April 13, 2004. By Ian Hoffman, Staff Writer. <http://www.votersunite.org/article.asp?id=2390>

April 2004 Diebold California. Secretary of State Kevin Shelley called on the Attorney General to bring criminal charges against voting-machine-maker Diebold Election Systems for fraud. Prior to and during the hearing [of November 10, 2003], Diebold representatives either claimed to have obtained federal qualification for the TSx system or that federal approval was imminent. Diebold subsequently failed to obtain federal qualification for the entire TSx system or even to pursue federal qualification of the firmware. Diebold not only failed to obtain federal qualification for the TSx system, but failed even to pursue federal qualification of the firmware versions the VSPP Diebold was authorized to install in the wake of the discovery that uncertified software had been installed.⁶

April 2004 - AccuVote TS and TSx California. Secretary of State Kevin Shelley decertified all electronic touch-screen voting machines in the state due to security concerns, primarily caused by Diebold.⁷

September 2004 - AccuVote TS and modems Prince George County, Maryland. The modem at the central facility malfunctioned, and voters in one precinct weren't able to vote the Democratic ticket on the paperless machines, so they wrote their choices on pieces of paper.⁸

November 2004 – AccuVote TS Maryland. On election day, TrueVoteMD registered 383 reports involving 531 incidents of problems encountered by voters. Many voters reported votes switching on the screens.⁹

March 2005 - AccuVote Touch screen Montgomery County, Maryland. The IT report to the County Elections Board reveals widespread problems with the electronic voting machines on election day. From Help Desk tickets and GEMS reports, 189 voting units (7%) of units deployed failed on Election Day. An additional 122 voting units (or 5%) were suspect based on number of votes captured.¹⁰

July 2005 - AccuVote TSx with vvpac printer California. After testing 96 touch screen machines and finding a 10% error rate, Secretary of State Bruce McPherson rejected Diebold's application to certify the AccuVote TSx touch screen with AccuView printer module. After possibly the most extensive testing ever on a voting system, California has rejected Diebold's flagship electronic voting machine because of printer jams and screen freezes, sending local elections officials scrambling for other means of voting.

"There was a failure rate of about 10 percent, and that's not good enough for the voters of California and not good enough for me," Secretary of State Bruce McPherson said. "We certainly can't take any kind of risk like that with this kind of device on California voters," McPherson said.¹¹

While the above examples are by no means an extensive categorization of Diebold failures, they do point up that the company's voting system products, from touch screen terminals, to printers, optical scan devices and tabulating software have failed in multiple jurisdictions throughout the U.S.

⁶ **California Bans E-Vote Machines.** Wired News. April 30, 2004. By Kim Zetter. <http://www.wired.com/news/evote/0,2645,63298,00.html>

⁷ **Ibid and Staff Report On the Investigation of Diebold Election Systems, Inc.** April 20, 2004. Presented to Secretary of State Kevin Shelley and the Voting Systems and Procedures Panel.

⁸ **Johnson Aide Wins Democratic Primary.** Washington Post. September 15, 2004. By Ovetta Wiggins, staff writer. <http://www.washingtonpost.com/wpdyn/articles/A22014-2004Sep14.html>

⁹ **When the Right to Vote Goes Wrong.** TrueVoteMD. November, 2004. http://www.truevotemd.org/Election_Report.pdf

¹⁰ **IT Report to the Montgomery County Election Board.** Page 11. http://www.truevotemd.org/Resources/Lessons_Learned.pdf

¹¹ **E-voting machines rejected: State says Diebold failures in massive mock election could translate to problems at polls.** Inside Bay Area. July 29, 2005. By Ian Hoffman, STAFF WRITER. http://www.insidebayarea.com/oaklandtribune/localnews/ci_2898224/ci_2898234. Archive at: <http://www.votersunite.org/article.asp?id=5774>

Diebold Software and Source Code – Security and Other Issues

In a classic case of “if we don’t play my way I’m taking my toys and going home,” electronic voting machine manufacturer Diebold has announced that it will no longer do business in North Carolina because the state refused to grant an exception that would let Diebold keep its source code secret.

The requirement is part of the minimum voting equipment standards approved by state lawmakers earlier this year following the loss of more than 4,400 electronic ballots in Carteret County during the November 2004 election. The lost votes threw at least one close statewide race into uncertainty for more than two months. The North Carolina statute requires e-voting vendors to place their source codes in escrow as a precaution against future irregularities, meaning that the state is not even asking Diebold to reveal its code publicly. Nonetheless, Diebold claims that because their machines contain some Microsoft software, they don’t have to right to release the code.

"We will obviously have no alternative but withdraw from the [certification] process," said Doug Hanna, a Raleigh-based lawyer representing North Canton, Ohio-based Diebold.

However, when Diebold’s source code was found on an Internet FTP (File Transfer Protocol) site, it was examined by a team of computer scientists who characterized it as “full of holes.” One such expert said that if one of his students had submitted this code as a project, “he would receive an F.” We suggest this is a more plausible reason for Diebold’s reluctance.

The importance of access to source code is emphasized in a technical review commissioned by California Secretary of State McPherson concerning the AVVPAT printer module added to the TSx machines. The Report, titled ***Analysis of Volume Testing of the AccuVote TSx/AccuView*** is available at http://ss.ca.gov/elections/voting_systems/vstaab_volume_test_report.pdf.

In this Report it states: “The fundamental barrier to analysis of these software errors is the **lack of access to source code** ... we have no way to perform such an independent evaluation. This is a very unsatisfying position to be in.”

“We believe these failures constitute one of the strongest arguments for the State of California to take possession of, or otherwise arrange for unfettered access to, the full source code and binary executables for all electronic voting machines.” ... **there is no way to know whether the defects have been fixed satisfactorily (as opposed to just hidden)**, or whether they represent symptoms of more serious architectural flaws, without access to the source.”

Diebold AccuVote-TS – Security and Other Issues

A technical analysis of the source code used in the Diebold system was performed in 2003 by computer scientists at Johns Hopkins University and Rice University. Below are excerpts from the abstract submitted by these researchers (***Analysis of Electronic Voting***, February 27, 2004)

“We discovered significant and wide-reaching security vulnerabilities in the version of the AccuVote-TS voting terminal. Most notably, **voters can easily program their own smartcards** to simulate the behavior of valid smartcards used in the election. With such homebrew cards, a voter can cast multiple ballots without leaving any trace. A voter can also perform actions that normally require administrative privileges, including viewing partial results and terminating the election early.”

“Similar **undesirable modifications could be made by malevolent poll workers (or janitorial staff) with access to the voting terminals before the start of an election**. Furthermore, the protocols used when the voting terminals communicate with their home base, both to fetch election configuration information and to report final election results, do **not** use cryptographic techniques to authenticate either end of the connection nor do they check the integrity of the data in transit. Given that these voting terminals could potentially communicate over insecure phone lines or even wireless Internet connections, **even unsophisticated attackers can perform untraceable ‘man-in-the-middle’ attacks.**”

“Our analysis shows that this system is far below even the most minimal security standards applicable in other contexts. . we demonstrate that the insider threat is also quite considerable, showing that not only can an insider, such as a poll worker, modify the votes, but that insiders can also violate voter privacy and match votes with the voters who cast them.“

“We conclude that this system is unsuitable for use in a general election. Any electronic voting system might suffer similar flaws, despite any “certification” it could have otherwise received.“

This paper appears in IEEE Symposium on Security and Privacy 2004. IEEE Computer Society Press, May 2004. This paper also appeared as the Johns Hopkins University Information Security Institute Report TR-2003-19, July 23, 2003. Aviel Rubin, one the Johns Hopkins researchers has posted the technical analysis at this link: <http://avirubin.com/vote.pdf>

Diebold Optical Scan Hardware – Security Issues

More recently, on July 4, 2005, Black Box Voting (www.blackboxvoting.org) issued a “Security Alert.” ***Critical Security Issues with Diebold Optical Scan Design.*** Here are some excerpts from the Executive Summary:

“The findings of this study indicate that the architecture of the Diebold Precinct-Based Optical Scan 1.94w voting system inherently supports the alteration of its basic functionality, and thus the alteration of the produced results each time an election is prepared.”

“The fundamental design of the Diebold Precinct-Based Optical Scan 1.94w system (AV OS) includes the optical scan machine, with an embedded system containing firmware, and the removable media (memory card), which should contain only the ballot box, the ballot design and the race definitions, but also contains a living thing – an executable program which acts on the vote data. . . .The system won’t work without this program on the memory card.”

“With this architecture, every time an election is conducted it is necessary to reinstall part of the functionality into the Optical Scan system via memory card, making it possible to introduce program functions (either authorized or unauthorized), either wholesale or in a targeted manner, with no way to verify that the certified or even standard functionality is maintained from one voting machine to the next.”

In the author’s opinion the greatest problem in the system under review is the very design and architecture itself. Incorporated into the foundation of the Diebold Precinct-Based Optical Scan 1.94w system is the mother of security holes, and no apparent cure will produce infertility, or system safety.

This design would not appropriately be characterized as “a house with the door open.” The design of the Diebold Precinct-Based Optical Scan 1.94w system is, in the author’s own view, more akin to “a house with an unlockable revolving door.”

The Diebold “GEMS Defect”

Reported by Bev Harris and Dr. Herbert Thompson, and independently confirmed by the security consultant firm Compuware on commission from the state of Ohio, the GEMS Defect concerns the central vote tabulating database that accumulates all the precinct and absentee votes for all Diebold optical scan and touch-screen voting systems. The GEMS Defect allows VBA (visual basic script) to rewrite the access database containing the vote count without a trace

Despite assurances by Diebold, records obtained by Black Box Voting show that this issue has not been resolved in either California or Ohio, or apparently any of the other 1,200 jurisdictions that use Diebold. A critical set of Compuware documents confirming this was suppressed by Ohio Secretary of State Ken Blackwell.

Votergate the Movie, previously furnished to the Board and available for free download at (<http://www.votergate.tv>) contains footage from a national TV broadcast of Bev Harris instructing Howard Dean how to hack GEMS and untraceably alter vote tallies in under two minutes. Additional vulnerabilities have since been found and publicized at <http://www.blackboxvoting.org>.

Subsequently, Diebold has published a "rebuttal" to certain types of security breach protocols that had been previously outlined. (<http://www.diebold.com/dieboldes/pdf/rebuttal.pdf>). This rebuttal relies primarily on the so-called "perimeter defense" which requires that election officials maintain perfect control of all passwords and access to GEMS. Unfortunately, this is not always possible and Diebold itself has admitted to several instances, one specifically in Volusia County Florida, in which security may well have been breached with "a second memory card."¹²

David Jefferson, a computer scientist at Lawrence Livermore National Laboratory and a member of the California secretary of state's voting systems panel, agreed with Diebold that election procedures could help prevent or detect changes in votes, but said that election officials and poll workers do not always follow procedures. Therefore, election observers need to know about the vulnerabilities so they can help reduce the risk that someone could use them to rig an election.

Jefferson added that he doesn't believe that the vulnerabilities show deliberate malice on Diebold's part to aid fraud, as Harris has sometimes contended in public statements. But the vulnerabilities do show incompetence and indicate that Diebold programmers simply don't know how to design a secure system.

On Oct. 17 2005, an ordinary citizen in Cleveland, Mr. Wright, asked what may turn out be the most important question of the year. What is Diebold's explanation, he wanted to know, for the VBA Script hack of the GEMS central tabulator performed by Dr. Herbert Thompson?

This leads to the crucial question: If Diebold knew, and if Ken Blackwell knew, why wasn't the U.S. Election Assistance Commission told, why were no other secretaries of state told, why didn't Blackwell tell the Ohio election officials using GEMS, and why weren't the fixes deemed necessary by CompuWare ever implemented?

The GEMS defect has been proven. The risks are significant. Mail-in votes are at exceptional risk because they are counted on a system that lacks protective features found on polling place machines. While the precinct-based optical scan machines made by Diebold produce a results tape, the same machines, when counting mail-in ballots, use a different program and do not store vote tallies on a memory card, nor do they produce an independent results tape. Therefore the defective GEMS program holds the only record for absentee vote totals.

The GEMS program is run on an ordinary PC, using the Windows operating system. Vote totals from each precinct, along with mail-in votes, are uploaded to the GEMS computer. GEMS tallies all votes and produces final election results.

According to the Aug. 18, 2004 report by CompuWare Corp., an independent evaluation commissioned by the Ohio secretary of state: "... an unauthorized person with access to the GEMS server can access the database and change ballot definition files and election results."

The ability to selectively change ballot definition files with mail-in votes can achieve vote swapping from one candidate to another. In GEMS, each candidate is assigned a number.

Sims: #413
Irons: #200
Lange: #522

¹² **[Tulare] County votes for machines.** By Roger Phelps, The Porterville Recorder; June 10, 2004.
http://myopr.com/articles/2004/06/10/news/local_state/news01.txt

In GEMS, you can selectively change the candidate identifier number for mail-in votes, like this:

Sims: #200
Irons: #413
Lange: #522

This will cause the mail-in results to give Sims votes to Irons, and vice versa, a very dangerous vulnerability for close elections. (You can also change the votes themselves in GEMS, but that requires adjustments in several GEMS database tables.)

Changing the candidate identifier number in GEMS provides one-step adjustment that takes only seconds, and can be implemented any time during the absentee vote-counting process to flip results. As demonstrated in the Leon County, Florida elections office on May 2, 2005 by Dr. Herbert Thompson and Black Box Voting, this kind of GEMS manipulation does not require opening the GEMS program, does not require a GEMS password, and does not show up in any audit log.

The standard safeguard for this known risk is to compare results reports from voting machines with GEMS results reports. However, Black Box Voting has learned that Diebold's mail-in vote-counting system does not produce a voting machine report. In November, 2005, Jim March of Black Box Voting examined the Diebold voting system in San Joaquin County, Calif. and learned that the voting machine results tape -- the telltale sign and the key safeguard for GEMS tabulator hacking -- *does not exist for mail-in votes.*

You don't need to be a computer scientist to understand plain English: Both the 1990 and 2002 Federal Election Commission (FEC) standards prohibit "interpreted code." The Diebold memory card architecture relies on interpreted code, executing logic on the memory card by passing memory card code through the interpreter.

You also don't need to be a computer expert to understand that another item forbidden in the FEC standards, "nonstandard computer language" is being used. Diebold decided to make up its own language, calling it "AccuBasic." Only Diebold uses it, no one else in the world. Apologists for the ITAs explain that the AccuBasic language is similar but different to the C++ computer language. That's like saying German is English because the languages are "similar."

But the FEC standards are deficient in some areas. Here's something that doesn't take a statistician to figure out: The FEC standards set a failure tolerance so low that 8 percent of the voting machines are allowed to fail on the first day of use. Would you buy a TV set if you knew there was an 8 percent chance it would stop working the first day? Would you consider this a good use of taxpayer money?

In summary, Diebold systems have shown to be both unreliable and insecure throughout. Security breaches pervade the touch screen devices, optical scan units, printers and tabulation software. When examining this question, the serious documenter is faced much more with the question, "When to stop?" rather than "Where to begin?"

Certification

The Illinois Board of Elections' Director of the Division of Voting Systems and Standards, Dianne Felts, has said, "I'm telling you that I don't always trust the ITA. That I don't trust the ITA, because, truthfully . . . I have found errors from the ITA . . ." We believe this statement reflects a well-placed skepticism on her part, and one that the Board should share as The Illinois Ballot Integrity Project most assuredly does.

Three labs were authorized as ITAs, but vendors chose to use only the Huntsville brand – Nichols, PSInet, Metamore and Ciber, a series of companies that repeatedly passed the hot potato to a tester named Shawn Southworth, and gave another portion of the testing to Wyle Labs' Jim Dearman.

These labs were supposed to do source code and functionality reviews, but here's the catch: They are paid by the vendors. While the testing labs are called "ITAs" for "Independent Testing Authorities" there is nothing independent about them. According to Shawn Southworth, in a taped interview conducted by Black Box Voting, the labs don't like to write anything negative in the reports because the vendors don't like it . . . and they're paying for it.

In early December, a "summit" of election officials and public interest groups was held in Sacramento, California. The state of ITAs and their work was a hot topic.

Carnegie Mellon University computer expert Michael Shamos, a state voting-systems certification official for Pennsylvania, is one of the staunchest advocates for new, fully computerized electronic voting systems. Shamos doesn't like what he has seen emerge from these secretive, private ITAs and approved by the National Association of State Elections Directors. Shamos said, "There's stuff in there that's so horrible, I can't understand it."¹³

"I have good reason to believe that 10 percent of systems are failing on Election Day. That's an unbelievable number," Shamos told an assemblage of voting-system makers, elections officials and scientists.

Slocum found a quarter of the voting systems presented to Pennsylvania unsuitable for elections, with such glaring failures as an inability to tally votes correctly. A recent study led by the University of Maryland showed all of six voting systems tested did not record 3 to 4 percent of the vote. What does pass state muster often can break down.

"Things are getting through the certification process that really shouldn't," said software architect Eric Lazarus of DecisionSmith, a voting-systems consultant for the Brennan Center for Justice at New York University.¹⁴

The U.S. Elections Assistance Commission is working on new standards for voting systems, with more and tighter rules on wireless communications, ease of use and backup paper records for electronic voting machines. The commission and another federal agency also will be taking over approval of voting systems from the national election-officials group, as well as choosing labs to perform the testing.

But most of those changes will take 12 to 18 months. And commission director Tom Wilkey, who had a hand in setting up the current method of voting-systems testing and approval, suggested recently that testing labs will be chosen in much the same way as they have been.

Given typical delays in approval and purchase of new voting systems, that means the next Congress and president will be chosen in 2006 and 2008 on voting equipment tested and approved under the current national system or something very like it.

States such as California are moving toward more rigorous testing, perhaps in league with other states. To explore those ideas, California's Secretary of State Bruce McPherson hosted a conference on voting systems testing that was the largest West Coast gathering of major players in the debate on voting technology in at least two years.

"California needs to assert leadership in this," said Stanford computer-science professor and VerifiedVoting.org founder David Dill. "I think we need to move more quickly than the federal government in this area." We agree. There very well may be some economies of scale as well as increased resources available to a consortium of state election commissions. The Illinois Ballot Integrity Project believes that this is a fruitful area for the Illinois State Board of Elections to pursue.

¹³ **Reliability of E-Voting In Doubt – Expert estimates 10 percent of machines could fail** by Ian Hoffman, Staff Writer, Tri County Herald – 5 Dec 2005 http://www.insidebayarea.com/trivalleyherald/localnews/ci_3279940

¹⁴ *Ibid*

The Diebold AccuVote TSX and Voters With Disabilities

A significant marketing talk point used by manufacturers of touch screen voting devices is their supposed ability to provide election officials with an easily implemented means of complying with HAVA requirements. However, as we have noted previously, Title III of HAVA, entitled "Uniform and Nondiscriminatory Technology and Administration Requirements" [Section 301(a)] sets forth the standards that voting systems must meet after January 1, 2006. While certain touch screen (DRE) devices may indeed meet such standards, they are by no means the only way that local election jurisdictions may choose to comply.

Diebold is no exception. When extolling the virtues of the AccuVote-TSX, they state on their web site (http://www.diebold.com/dieboldes/accuvote_tsx.htm):

"Every AccuVote-TSX voting station offers voice guidance capability enabling blind voters to navigate through the entire ballot without assistance and in complete privacy. A voter makes candidate selections and casts their ballot all on one unit, providing an increased voting process integrity." As we have previously noted, U.S. Election Assistance Commission Advisory 2005-004 states: "This advisory should not be read to preclude the innovation and use of accessible voting systems other than DREs for purposes of meeting this requirement."

"The ten pound voting tablet, with 15 inch screen, can be easily used to facilitate curbside and nursing home voting, eliminating the need for a paper ballot for these applications." However, it seems unlikely that this feature could be implemented in Illinois as removing the "tablet" disconnects the unit from the AccuView printer, thus failing to provide the VVPAT required by the Illinois Election Code.

Just how well the AccuVote-TSX works for voters with disabilities compared to other devices might be inferred from this article, "Spencer Lane Report on Voting Technology Accessibility," posted online at (<http://www.verifiedvotingfoundation.org/article.php?id=6135>). On June 7, 2005, Lane visited the Annual Conference of the Florida State Association of Supervisors of Elections at which voting machines were on display. The only three being represented as handicapped-friendly models were the Diebold Accuvote TSX system, The ES&S Automark and the AccuPoll AVS1000.

Lane says, "The first machine we evaluated was the Diebold Accuvote TSX assisted by Wes Krivanek who, most generously, gave us several hours of his time, and later Mark Earley. Two machines were used. S/N 202010, contained Georgia software and a disabled voter interface. After several unsuccessful attempts to boot the system, the disabled interface was moved to the 2nd machine, S/N 201267 which we were told was programmed with Florida Certified Software." (Does this sound suspiciously like a 50% failure rate?)

"My wife and I then "voted" on 202010 (sans interface) while Paton, voted on the disabled configured machine, 201267. With the screen blanked off, a synthesized voice led her through the ballot. My wife had a problem that it took 5-7 screen "pushes" before any of her actions registered. Wes observed that and postulated that perhaps her nails (which were slightly longer than mine) may be causing the problem. Even with her repeated pushes, her vote took just over three minutes. I had no problems and my fat fingers got a response on each touch, completing my ballot in just under three (3) minutes."

"Paton's vote using the handicapped audio interface to outline the ballot through headphones took 31 minutes, much longer than I had thought it would.. The handicap interface was a "telephone keypad" style with 12 keys to be selected than pressed. To select the appropriate key number required sightless touch-counting of the keys to locate the correct one before it could be pressed. (Think of placing a call on a telephone in the dark)"

Another disadvantage pointed out was: "In the audio review of her ballot after it was cast on the Diebold TSX Touchscreen unit with Florida approved software, the synthesized voice says, "Your choice has been selected" without specifying just what that choice was. Without audible verification in her headset she had no way of knowing if the votes she cast were recorded correctly."

"Paton Axelrod also tested the ES&S Automark system for handicapped voters, S/N ENG 023) as our seriously sight-impaired voter. With the screen darkened (as was the Diebold) and going through a similar audio interface, Paton listened to the complete ballot and voted on all the choices. The voting took only 9 minutes, less than one third the 31 minutes the Diebold required. The through-put of 6 sight-impaired voters per hour on the AutoMark vs only 2 per hour on the Diebold seems extremely advantageous."

"The sight-impaired AutoMark interface consisted of a large round central button surrounded by four large triangular arrow shaped buttons at the 12:00, 3:00, 6:00 and 9:00 positions. The points of the triangles pointed Up, Right, Down and Left respectively in a manner similar to many TV remote controls. Paton reported she found the AutoMark Control interface easier to use and more intuitive than the Diebold as it had larger and fewer buttons and did not require searching the keypad for specific numbers."

"The AutoMark is also an optical scan unit. In contrast with the Diebold unit, It produces a voter-verifiable ballot identical to the present ballot now in use. After voter verification of the ballot, it is placed in the existing optical scanner for tabulation."

While the "testing" of a few persons in a marketing environment is hardly definitive (as Lane himself points out) the concerns voiced ought to give the Board reason to carefully consider whether-or-not to offer interim certification to a device that even in the highly-controlled vendor environment performs significantly less effectively than a the type of device already approved by the Board last September. It would appear that the ballot-marking device is both easier to use and more cost-effective than the Diebold AccuVote-TSX, an important consideration when considering that the AccuVote-TSX is being considered primarily for providing Section 301(a) access for disabled voters.

When confronted with the extensive list of DRE malfunctions, vendors routinely assure election officials that the problems are being fixed, that the "glitches" are being taken care of and that all will be well in the next election. That, however, has not proven to be the case as the malfunctions experienced in 2000 and 2002 were present in even greater numbers in the 2004 election.

With the approval of available of reliable and cost-effective tactile ballot technology and ballot marking devices, no bona fide reason exists to introduce expensive, unreliable and insecure touch-screen computerized-voting equipment in Illinois. HAVA doesn't require DREs, and Illinois voters don't need them!

The Diebold AccuVote-TSX DRE Paper Record Is Not Compliant With The Illinois Election Code

The Illinois Election Code requires a conveniently verifiable paper record of the voter's choice(s), and this is required of all ballots so that they can be "easily reviewed by the voter for completeness and accuracy." The paper record that is printed by the Diebold AccuVote-TSX touch-screen system includes a barcode which theoretically represents the voter's choices.

However, the barcode cannot be "easily reviewed by the voter for completeness and accuracy," thus the current Diebold AccuVote-TSX configuration fails to comply with the Illinois Election Code (10 ILCS 24/C-2) as A barcode cannot be "easily reviewed by the voter for completeness and accuracy." In fact, it is extremely difficult, and impractical, for the voter to review a barcode for completeness and accuracy.

Further, as the Diebold AccuVote-TSX does not produce a distinct individual paper ballot or record, but rather relies on continuous-roll thermal paper that is retained within the Diebold AccuVote-TSX unit, this record cannot be "easily reviewed by the voter for completeness and accuracy."

And, the set of software modules that produces the barcode is not identical to that which produces the voter-verifiable data. Hence, the accuracy of one does not ensure the accuracy of the other.

In addition, the continuous paper roll provided may not be compliant with the required aspects of secrecy in that it may be possible to identify individual voters by examining the voter sign-in order and determining which votes have made use of the DRE.

For these reasons alone, the Diebold AccuVote-TSX DREb and AccuView printer ought not to be granted interim certification.

Diebold's Fraudulent Practices

In April, 2004 California Secretary of State Kevin Shelley called on the State's Attorney General to bring criminal charges against voting-machine-maker Diebold Election Systems for fraud. Prior to and during the hearing [of November 10, 2003], Diebold representatives either claimed to have obtained federal qualification for the TSx system or that federal approval was imminent. Diebold subsequently failed to obtain federal qualification for the entire TSx system or even to pursue federal qualification of the firmware. Diebold not only failed to obtain federal qualification for the TSx system, but failed even to pursue federal qualification of the firmware versions the VSPP Diebold was authorized to install in the wake of the discovery that uncertified software had been installed

In September 2004, California Attorney General Bill Lockyer dropped the state's criminal investigation of Diebold and joined with Alameda County and two voting integrity activists, Bev Harris and Jim March, suing the company in a False Claims Act.

Their False Claims Act suit, filed under seal and in the name of state and local taxpayers, alleged that Diebold sold a nearly \$13 million touch-screen system to Alameda County by misrepresenting its accuracy, security and government approval. As state and county attorneys weighed the case, state and local elections officials found that Diebold had installed unapproved software in Alameda County's touch-screens, that its system was vulnerable to hacking and that its central vote-tabulating program gave thousands of absentee votes to the wrong candidates.

"We received assurances when they sold a voting system to us, and those assurances have not been met," said Alameda County Counsel Richard Winnie.

Secretary of State Kevin Shelley blasted Diebold for what he called a "culture of deceit" and referred the company to the state attorney general for criminal investigation.

Lowell Finley, an Oakland-based elections lawyer who filed the original suit on behalf of Harris and March, said his clients will watch to ensure the state and county to pursue the case with vigor. "Now that the state's attorney general has waded into this controversial issue, it is going to be important for him and the people of the state that he delivers something substantial, either in terms of a verdict or a very favorable settlement for California taxpayers," Finley said. "I don't think he would have made the decision to intervene if he didn't think that was possible."

In November, 2004, Diebold agreed to pay \$2.6 million to settle the lawsuit alleging that the electronic voting machine company sold the state and several counties shoddy voting equipment.

"There is no more fundamental right in our democracy than the right to vote and have your vote counted," California Attorney General Bill Lockyer said in a statement. "In making false claims about its equipment, Diebold treated that right, and the taxpayers who bought its machines, cavalierly."

Just how cavalier Diebold might be can be deduced from this exchange between a local Diebold representative and Ken Clark, Diebold senior engineer:

Nel Finberg September 25, 2002: "What will be run in Texas will depend on the outcome of the Texas certification decision, won't it?"

From: Ken Clark 25 Sep 2002: "Hard to say. ***It never has in the past.***"

Tari Runyan, July 15, 2002: "This bug affects Co [Colorado] - primary Aug 13 and Ga [Georgia] Primary Aug 20 are we proposing to upgrade again this close to an election?"

From Ken Clark - "That would be up to you."

A Diebold executive said the settlement would allow the company to spend more money on improving software and avoid "the distraction and cost of prolonged litigation." Diebold earnings plunged 5 cents per share in the third quarter because of the California litigation.

But Diebold's troubles on the litigation side apparently are just beginning. In October, 2005, Scott & Scott LLC, which represents investors in securities class action lawsuits, issued a press release in which the firm mentions that it is "litigating and/or investigating" Diebold:

"Scott+Scott, LLC ... currently is litigating major securities, antitrust and employee retirement plan actions throughout the United States. The firm represents pension funds, charities, foundations, individuals and other entities worldwide. Current cases the firm is litigating and/or investigating include: ... Diebold...among others."

At the time, Diebold stock was hovering between \$34 and \$35 per share, down from over \$57 just a few months previously. The problems appear to stem from Diebold's core business (ATM and security systems). Voting systems, though they provide nearly all of Diebold's bad press, represent only a tiny percentage of overall sales. However, Diebold's highly public ethical blunders with voting machines have damaged its brand name, and call into question the wisdom of its management.

Recent stories indicate that the Diebold stockholder lawsuit is imminent. When a stock drops significantly and cannot rebound for approximately two months, a stockholder lawsuit can result. Diebold's first "hit" was in late June this year, when the company admitted to mis-stating ATM sales revenues in a stockholder conference call. Diebold's stock dropped again in late September upon the release of a poor sales forecast based on additional problems with its ATM division. In all, Diebold has fallen from a high of \$57.82 in April to its close on December 9, 2005 at \$37.62, off slightly more than \$20 or about 35%. It is expected that the stockholders' suit will center around the issues of due diligence failure on the Global Election Systems (Now Diebold Election Systems, Inc.) acquisition in January, 2002, harm to the Diebold brand name and persistent violations of the public trust.

Somehow Diebold let the prison record (<http://bbvdocs.org/dean.pdf>) of programmer and primary stockholder Jeffrey Dean get by them, and also forgot to look at the record of John Elder who they put in charge of their ballot printing facility. Their "diligence" managed to miss some of the shoddiest voting software on the market.

Jeffrey Dean was convicted on 23 counts of felony embezzlement by rigging a computer system to steal. He later became the programmer for Diebold who created the 1.96 optical scan system. John Elder ran the Diebold ballot printing plant until shortly before the Nov. 2004 election. He is a convicted narcotics trafficker. Here are his prison records: <http://www.bbvdocs.org/elder.pdf>

Neither Dean nor Elder are currently employed by Diebold, but their legacy may live on. The simple question we might pose to the Illinois State Board of Elections: Is this a company the taxpayers of Illinois want to or should do business with?"

Summary

- Diebold Voting System components have a long and well-documented history of hardware, software and communications failures.
- Diebold Voting System components, particularly the AccuView printed output, fail to conform to the statutory requirements of the Illinois Election Code.

- The GEMS[®] (Global Election Management System) and the AccuVote-TSX[™] DRE pose significant security concerns and have been demonstrated to be susceptible to “hacking.”
- The Diebold AccuVote-TSX[™] DRE compares unfavorably with other technology available to assist disabled voters which could be used to comply with Section 301(a) of Title III of HAVA.
- Diebold Election Systems, Inc. (DESI) has demonstrated a history of fraudulent activities in installing uncertified software in multiple jurisdictions and has made false claims about certification of equipment and systems.
- The Diebold AccuVote-TSX[™] direct record entry (DRE) terminal, AccuView[™] printer, AccuVote-OS[™] optical scan device and GEMS[®] (Global Election Management System) do not meet the criteria set forth in the Illinois Election Code requiring reliable and secure voting systems.

For these reasons, as more fully explicated above, the Illinois Board of Elections should, in the public interest, deny interim and/or permanent certification of any and all Diebold Voting Systems components.

Marking Devices and Paper Ballots - A Potential Solution

On September 13, 2005, the Illinois State Board of Elections certified a ballot marking device which meets the requirements of Section 301(a) of HAVA. This ballot marking system provides privacy and accessibility to voters who are blind, vision-impaired, or have a disability or condition that would make it difficult or impossible to mark a ballot in the usual way. In addition, it provides language assistance to voters who are more comfortable speaking an alternative language or who have reading difficulties. The ballot marking device voter assist terminal has been developed with input from election authorities and disability organizations, and meets all the requirements of HAVA.

Voters insert their standard optically scanned ballot-punch-card width or standard page width-into the slot, and the threads the ballot style. There's no need for a special ballot. Voters can use the touch screen to scroll through the options and make their selections. Then the ballot marking device prints the selections onto the ballot, and the ballot is returned to the voter to be cast in the regular fashion. These features of the ballot marking device make it ideal to integrate with the current plans to purchase optical scan equipment for each precinct:

Accessibility for Voters with Disabilities

Disabilities which might prevent a voter from marking a ballot range from blindness or impaired vision, to an age-related condition such as arthritis or Parkinson's disease. In addition, a temporary condition such as a broken arm could make it difficult for a person to mark his or her vote. The terminal displays each race on screen in a variety of magnifications, and the voter uses the touch screen to make a selection. Blind voters or those with impaired vision can choose to listen to the choices through headphones.

Alternative Language Accessibility

Assuring that all citizens in a diverse population can exercise their privilege to vote, visual and audible ballots in multiple languages can be stored on a single machine.

Audit Capability

The ballot marking device does not tally or store votes; it simply marks a conventional paper ballot which is then cast by the voter. The paper ballot can be audited in the same manner as hand marked ballots.

Protects Legacy Systems.

The ballot marking device works with and enhances all major optical scan/mark sense voting systems currently in use. It is expected that the vast majority of voters will continue to manually mark paper ballots

during the election process. Voters with disabilities or a personal preference will be able to use the ballot marking device by inserting the same paper ballot used by other voters. After all decisions have been made by the voter, the ballot marking device prints those selections on the paper ballot which is then cast by the voter in a manner identical to all other voters, using existing optical scanner hardware/software solutions.

Write-in Candidates

The ballot marking device also allows for write-in candidates where appropriate. Voters can spell their candidate's name using a touch-screen keyboard. Blind voters can use audio prompts to navigate through and select letters one at a time. After all selections are made and the answers have been confirmed by the voter, the ballot marking device prints the name of the designated write-in candidates in the appropriate locations on the ballot.

No Special Ballot Required

The ballot marking device does not require a special ballot. Voters with disabilities and those requiring language assistance use the same ballot as any other voter. The ballot marking device scans the ballot to determine the appropriate ballot style, and presents the choices for each race in sequence. Once the voter has made his or her selections, the ballot marking device fills in the ovals or squares and prints the write-ins as entered by the voter. The voter then takes the marked ballot to the tabulation equipment, just like any other voter. There is no need to print special ballots, and voters with disabilities get the same privacy and confidentiality as other voters.

Over-Voting/Under-Voting Protections

Over-voting cannot occur when a voter uses the ballot marking device to mark his or her ballot. The ballot marking device software has been developed to ensure that no more than the proper number of candidates can be chosen for each race. The ballot marking device minimizes under-voting by providing voters with a summary page of their selections. Voters will be able to notice any skipped races and are free to change their selections prior to printing.

Advantages of Paper Ballots with Optical Scanners

- **All voters use an identical ballot and the same system.** Absentee, disabled, military, and provisional voters use the same ballot; and the voter can immediately verify that the right ballot has been issued.
- **Paper ballots are easily understood by voters and are inherently voter verified.** All of us have had experience with pencils & paper; most of us have taken tests or filled out lottery tickets to be read by an optical scanner.
- **Paper ballots allow each voter to vote only once.** Each voter is given a single ballot when signing in at the polling place. Some DREs require "smart cards" to be inserted in the computer to allow voting. These could be compromised and used to vote several times.
- **Precinct-based optical scanners allow voters to correct mistakes and detect over-votes and under-votes.** Incorrectly completed ballots (e.g., over-voted ballots, smudged ballots, etc.) will be rejected by the scanner. Voters can then exchange the spoiled ballot for a new blank ballot and correct their mistakes. In the case of under-votes, they have the option of completing the same ballot or having the scanner accept it as is.
- **The paper ballot is the official record of the vote.** Since the vote is recorded by the voter on the paper rather than electronically, the scanner only counts the votes into memory and then deposits the ballot into a locked ballot box. The paper ballot marked by each voter is the official record of the vote and is used in recounts.

- **Paper ballots for optical scanners are easy to recount by hand.** Lay-out is clear and on quality paper, whereas DRE paper records are light, quickly-fading print on thermal, ATM-type paper; recounts are difficult.
- **Paper ballot systems easily accommodate additional voters at low cost.** If a precinct has an unexpectedly large turn-out, only additional privacy booths must be provided, since a single scanner can handle voters from multiple privacy booths and election districts.
- **Voters can continue to vote on paper ballots in the event of equipment failure.** Both DREs and optical scanners have back-up batteries; but in the event of a prolonged power failure or other type of equipment failure, voting can continue on paper ballots that later are either fed into the scanner or handcounted.
- **Voting will take less time and lines will move fast with paper ballots.** Some people, particularly the elderly, find computers unfamiliar and will find the marking of a paper ballot more comfortable than using DREs. Separate ballot marking devices will enable other voters to continue voting even when it takes longer for a disabled person, an elderly person, or someone needing to use the multi-lingual features of the marking device to vote. Optical scanners take just seconds to read and verify a ballot, and no problems with lines are experienced in states using precinct based scanners.
- **Only one optical scanner and one small marking-device per precinct will require storage between elections.** Optical scanners and ballot markers are much smaller than DREs and can be stacked in storage, requiring far less storage space and cost during the year than DRE systems. They are also small, and easy to transport to and from polling places during elections and do not require professional movers to handle them.
- **The scanner only counts votes;** therefore, it is much less complex and will require much less maintenance and upgrading over the years than DREs which are a newer, unproven technology.
- **Optical scanners are a reliable, mature technology that has been used successfully in U.S. elections for 20 years.** About 30% of precincts in the United States use paper ballots and precinct based optical scan systems. Many states are now adopting PBOS systems to meet HAVA compliance.

Conclusion

The Illinois State Board of Elections has already given interim certification to a ballot marking device and optical scan devices. An appropriate and feasible system for accommodating voters with disabilities currently exists obviating the need for additional complex, expensive, fragile, unreliable and insecure electronic devices such as touch-screen terminals. The people of Illinois expect and deserve voting systems which inspire confidence that every vote counts and that every vote will be counted. The Illinois Ballot Integrity Project urges the Illinois State Board of Elections to adopt this more reasonable approach to guaranteeing the integrity of the vote for Illinois citizens.

Diebold in the News – A Partial List of Documented Failures

"A common practice for local election officials is to let election companies run their election – make up their ballot, set up their machines, and even count their tallies. This is a dangerous practice." ~ *Ted Selker, Cal Tech/MIT Voting Technology Project.* ¹

Date	Subject	Place/Description
1998	AccuVote OS	Pima County, Arizona. For the third time in as many elections, Pima County, Arizona, found errors in the tally. The computers recorded no votes for 24 precincts in the 1998 general election, but voter rolls showed thousands had voted at those polling places. Pima was using Global Election Systems machines, which now are sold under the Diebold company name. ²
November 2000	AccuVote Optical Scan	Bernalillo County, New Mexico. Election officials in the state's most populous county found that a flaw in the ballot programming caused 67,000 absentee and early-voting ballots to be incorrectly counted following the Nov. 7 presidential election. ³ The tabulation system and software worked correctly, but a county technical employee failed to set up an element of the system properly, said Frank Kaplan, Global's Western regional manager. New Mexico's ballots are designed for voting by party, but voters can choose candidates from other parties. A programmer did not link the candidates' names to their respective parties. "The problem took 22 minutes for us to fix," he said. "It was just a matter of clicking on the correct link."

¹ **Touch to Vote: More Americans to Vote on Electronic, Touch-Screen Systems in November.** ABC News. July 18, 2004. http://www.abcnnews.go.com/sections/WNT/Politics/e-voting_040718-2.html

² **Computer fails to record 9,675 Pima County votes.** The Arizona Daily Star, 11 Nov. 1998. Referenced in *Black Box Voting*, by Bev Harris. Chapter 2.

³ **Human error is cause of N.M. election glitch.** Government Computer News, November 20, 2000; Vol. 19 No. 33, By Donna Young http://www.gcn.com/vol19_no33/news/3307-1.html

Diebold in the News – A Partial List of Documented Failures

Date	Subject	Place/Description
November 2000	AccuVote OS	<p>Volusia County, Florida. Internal Diebold memos (leaked in 2003) show that the company officials knew about the 16,022 Gore votes that were subtracted, and they still don't have an explanation for why the votes were lost. Tampering may have been the cause.</p> <p>The memos show that more than a year ago, Diebold knew of a problem with the Florida 2000 election - where a memory card inexplicably subtracted 16,022 votes from a total previously recorded for Vice President Al Gore.</p> <p>Tampering was one of four possible causes Diebold couldn't rule out at the time, the memos show. A year later, Diebold's latest official position on Florida's Volusia County vote count still does not rule out tampering. Company spokesman Bear said recently only that he was not familiar with the aberrant vote count in Volusia County.</p> <p>"The problem precinct had two memory cards uploaded," wrote Diebold tech Tab Iredale in one of the memos among Diebold employees. "There is always the possibility that 'the second memory card' came from an unauthorized source."</p> <p>Allen said, "The e-mails confirmed what we suspected - Diebold upper management knew of the problem." ⁴</p>
August 2002	Central count optical scan	<p>Clay County, Kansas. The machine showed that the challenger (Jennings) had won, but a hand recount showed that the incumbent commissioner (Mayo) won by a landslide — 540 votes to 175. In one ward, which Mayo carried 242-78, the computer had mistakenly reversed the totals. ⁵</p> <p>This statement suggests that the computer in the "one ward" had the candidates mis-mapped to the table that holds the voting results.</p>
November 2002	AccuVote TS	<p>Maryland. When voters voted for the Republican candidate for governor, an 'X' appeared beside the name of the Democratic candidate.</p> <p>"I pushed a Republican ticket for governor and his name disappeared," said Kevin West of Upper Marlboro. "Then the Democrat's name got an 'X' put in it." ⁶</p> <p>Other voters saw a banner announcing "Democrat" at the top of their screen regardless of their choice.</p>

⁴ [Tulare] County votes for machines. By Roger Phelps, The Porterville Recorder; June 10, 2004. http://myopr.com/articles/2004/06/10/news/local_state/news01.txt

⁵ Aug. 6 ballot problems alleged: Clay, Barton county candidates seek review of races. Lawrence Journal-World. August 22, 2002. The Associated Press. <http://www.jlworld.com/section/election02/story/103526>

⁶ Glitches cited at some polls. The Washington Times, 6 November 2002; Referenced in *Black Box Voting*, by Bev Harris. Chapter 2.

Diebold in the News – A Partial List of Documented Failures

Date	Subject	Place/Description
November 2002	AccuVote OS	<p>Robeson County, North Carolina.⁷ Ballot tabulating machines failed to work properly in 31 of 41 precincts. Local election officials said the problem was the result of a software glitch, and ballots had to be recounted.</p> <p>In a January 2004 interview with Dinah in the office of the Robeson County Director of Elections, she said that there had been a problem in the programming of the memory cards and all the ballots had been recounted by hand.</p>
April 2003	AccuVote TS	<p>Johnson County, Kansas. An unexplained software error caused the voting computers to miscount the votes.</p> <p>In the April 2002 municipal elections, some modems used to transmit results from polling places to the central election office failed. The county no longer transmits results from polling places to the central election office via modem; cartridges that record results are hand-delivered to the office.</p> <p>Also, results were misreported in six races. The system miscounted hundreds of votes, and a re-count was ordered.</p> <p>... Diebold investigated the problem and said in a news release issued at the time that a software error had led to the election night problem.⁸</p>
October 2003	GEMS - Election Management Systems	<p>Alameda County, California. Tally software suddenly began to malfunction during processing and began giving one candidate's votes to a different candidate in the recall election.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>...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.⁹</p>

⁷ **Voter turnout surprises officials.** Sun News. September 12, 2002. <http://www.myrtlebeachonline.com/mld/sunnews/news/local/4056664.htm>

⁸ **New voting technology is questioned: Computer systems can be tampered with, critics say.** The Kansas City Star. September 21, 2003. By Finn Bullers; <http://www.kansascity.com/mld/kansascity/news/6821316.htm>

Diebold in the News – A Partial List of Documented Failures

Date	Subject	Place/Description
October 2003	AccuVote OS and TS	<p>California. In a notable aberration in the 2003 California recall-election vote totals in the 17 California counties that used Diebold, several minor candidates recorded widely disproportionate vote totals.</p> <p>In Tulare County, major candidates Arnold Schwarzenegger, Cruz Bustamante and Tom McClintock each received 1.1 percent or less of their vote totals. But Randall Sprague got 38 percent of his state total in Tulare. Ronald Palmieri got 29 percent of his total in Tulare county. Jerry Kunzman got 35 percent of his total in Tulare County.</p> <p>For all Diebold-machine counties taken together, disparities for those three were even wider - a full 91 percent of Kunzman's statewide votes came in just the 17 Diebold counties out of the 56 counties around the state.</p> <p>Some researchers, including New York University Professor of Media Studies David Crispin Miller, wondered about a conspiracy, theorizing Diebold machines could have shifted votes cast for Bustamante to Kunzman, Palmieri and Sprague in order to favor Schwarzenegger.¹⁰</p>
October 2003	GEMS	<p>Alameda County, California. A bug in the election management system caused tally errors when the election results from multiple machines were merged.</p> <p>... the cause is a problem with the GEMS 1.18.18 program.¹¹</p> <p>The only solution is to use a new version of the software, version 1.18.19, if and when it is certified.</p>
December 2003	AccuVote OS and TS	<p>California. Secretary of State discovers that Diebold installed uncertified software throughout California before the recall election, without informing county officials.</p> <p>"An audit of Diebold Election Systems voting machines in California has revealed that the company installed uncertified software in all 17 counties that use its electronic voting equipment. ... Diebold admitted wrongdoing Tuesday at a meeting of the state's Voting Systems Panel."¹²</p>

⁹ **Electronic voting's hidden perils.** Mercury News. February 1, 2004. By Elise Ackerman. http://www.mercurynews.com/mld/mercurynews/news/special_packages/election2004/7849090.htm

¹⁰ **Tulare County votes for machines.** By Roger Phelps, The Porterville Recorder; June 10, 2004 http://myopr.com/articles/2004/06/10/news/local_state/news01.txt

¹¹ **Report of Assurances to Alameda County.** April 26, 2004. By Diebold Election Systems, Inc. Pages 5.6. http://www.truevotemd.org/ebold_rpt_alameda.pdf.

¹² **E-Voting Undermined by Sloppiness.** Wired News. December 17, 2003. By Kim Zetter http://www.wired.com/news/evote/0,2645,61637,00.html?tw=wn_tophead_2

Diebold in the News – A Partial List of Documented Failures

Date	Subject	Place/Description
December 2003	Diebold	<p>Seattle, Washington. Investigative journalist Bev Harris announced her discovery that a Diebold programmer had been convicted of stealing money by tampering with computer records.</p> <p>At least five convicted felons secured management positions at a manufacturer of electronic voting machines, according to critics demanding more stringent background checks for people responsible for voting machine software.</p> <p>Voter advocate Bev Harris alleged Tuesday that managers of a subsidiary of Diebold, one of the country's largest voting equipment vendors, included a cocaine trafficker, a man who conducted fraudulent stock transactions and a programmer jailed for falsifying computer records.</p> <p>The programmer, Jeffrey Dean, wrote and maintained proprietary code used to count hundreds of thousands of votes as senior vice president of Global Election Systems, or GES. Diebold purchased GES in January 2002.</p> <p>According to a public court document released before GES hired him, Dean served time in a Washington state correctional facility for stealing money and tampering with computer files in a scheme that "involved a high degree of sophistication and planning."¹³</p>
March 2004	GEMS	<p>Maryland. In its report to assure Alameda County, Diebold announced that in the Maryland primary, they had used a version of GEMS that had not yet received federal qualification.</p> <p>As a point of information, the State of Maryland successfully utilized GEMS 1.18.19 in their March Primary Election in their 22-county roll-out of touchscreens.</p> <p>The GEMS version is expected to be federally qualified in May 2004.</p>
March 2004	AccuVote TS	<p>Alameda County, California. A bug in the firmware, caught during pre-election testing, prevented votes from being cast when certain race combinations were selected using the write-in functionality. The County must use a workaround.</p> <p>To address this anomaly, the County opted to reprogram the elections database so that all races, including the crossover races, were treated as regular races.</p> <p>This subsequently required the County to manually calculate results for the two races where crossover combined results were required.¹⁴</p>
March, 2004	GEMS	<p>San Diego County, California. The tabulation software switched 2,747 Democratic presidential primary votes for U.S. Sen. John Kerry to U.S. Rep. Dick Gephardt.¹⁵</p>

¹³ **Con Job at Diebold Subsidiary.** Wired News. December 17, 2003. by AP. http://www.wired.com/news/evote/0,2645,61640,00.html?tw=wn_tophead_3

¹⁴ **Report of Assurances to Alameda County.** April 26, 2004. By Diebold Election Systems, Inc. Page 2. http://www.truevotemd.org/ebold_rpt_alameda.pdf.

Diebold in the News – A Partial List of Documented Failures

Date	Subject	Place/Description
March 2004	AccuVote OS	<p>Alameda County, California. A bug in the software caused the machines to count absentee ballots inaccurately. The County must use a workaround.</p> <p>The problem resided with the (unique) internal precinct ID numbers exceeding the largest number that is possible to print on the optical scan ballot.</p> <p>... The high number of the database imports inadvertently caused the precinct ID number to exceed the largest number that it is possible to print correctly on the optical scan ballot.</p> <p>... For future elections, should a required change be found late in the database proofing process, DESI [Diebold] recommends the County not re-import their election set up file into the same database and instead build a new database. ¹⁶</p>
March 2004	AccuVote TS	<p>San Diego County, California. Ten votes were inexplicably lost at one polling place.</p> <p>John Pilch, a retired insurance agent who worked as a polling place inspector in San Carlos, said that when polls closed at 8 p.m. Tuesday, the number of people who signed the voter log differed from the number of ballots counted by computers.</p> <p>"We lost 10 votes, and the Diebold technician who was there had no explanation," said Pilch, who registered complaints with elections officials, his county supervisor and several others. "She kept looking at the tapes." ¹⁷</p>
March 2004	AccuVote TS	<p>San Diego County, California. Multiple problems occurred,¹⁸ among them:</p> <p>Poll workers saw unfamiliar Windows screens, frozen screens, strange error messages and login boxes none of which they'd been trained to expect.</p> <p>A report released Monday by Diebold Election Systems shows that 186 of 763 devices known as voter-card encoders failed on election day because of hardware or software problems or both, with only a minority of problems attributable to poll worker training.</p> <p>Diebold's post-mortem of the March 2 election said it was "disappointed" in the encoder failures and that it values its ties to local elections officials. But the McKinney, Texas-based firm offered no fundamental explanation of how and why the company delivered faulty voting equipment to Alameda and San Diego counties its two largest West Coast customers on the eve of the 2004 presidential primary.</p>

¹⁵ **Diebold reports multiple problems: Registrar wants reason for e-voting.** TriValley Herald. April 13, 2004. By Ian Hoffman, Staff Writer. <http://www.votersunite.org/article.asp?id=2390>

¹⁶ **Report of Assurances to Alameda County.** April 26, 2004. By Diebold Election Systems, Inc. Pages 2-3. http://www.truevotemend.org/ebold_rpt_alameda.pdf

¹⁷ **Poll workers, voters cite tied-up hotline, poor training, confusion.** Union Tribune; March 7, 2004; By Jeff McDonald and Luis Montegudo Jr. <http://www.signonsandiego.com/news/politics/20040307-9999-1n7vote.html>

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Date	Subject	Place/Description
March 2004	AccuVote OS	<p>San Diego County, California. Out of 208,446 ballots, the machines miscounted 2,821 votes in the Democratic presidential race and the Republican U.S. Senate seat. ¹⁹</p> <p>Most of the absentee miscounts occurred in the Democratic presidential race, in which 2,747 votes cast for John Kerry were incorrectly credited to Rep. Dick Gephardt. In the Senate race, in which Bill Jones won, 68 votes cast for Barry L. Hatch were credited to candidate Tim Stoen, and six votes cast for James Stewart were credited to Stoen. ²⁰</p> <p>The miscounts occurred because multiple scanners simultaneously fed the absentee ballot data into the computer tabulation system. The large number of ballots and candidates on them overwhelmed the system. ...</p> <p>"These performance failures are unacceptable," [County Chief Administrative Officer Walt] Ekard wrote [to Diebold]. "Having a reliable and trouble-free voting system is absolutely essential to the county. Your failure to provide such a system in the March election was extremely troubling and any issues that remain must be fully resolved long before the November election."</p>
April, 2004	AccuVote OS	<p>Uxbridge, Massachusetts. The machine failed to read 171 ballots because they were completed with the wrong kind of lead. Recount of the selectman race overturned the election. Because other candidates did not file for a recount in time, the other races cannot legally be recounted. Thus the other races remain in question. ²¹</p> <p>The final decision was reached seven weeks after the election, after two hand recounts.</p>

¹⁸ **Diebold reports multiple problems: Registrar wants reason for e-voting.** Tri-Valley Herald; April 13, 2004; By Ian Hoffman, Staff Writer. <http://www.votersunite.org/article.asp?id=2390>

¹⁹ **New electronic scanners miscounted some county votes.** NC Times April 7, 2004; By: Gig Conaughton - Staff Writer; http://www.ncimes.com/articles/2004/04/08/news/top_stories/22_27_394_7_04.txt

²⁰ **Some votes miscounted in primary, officials say.** Union-Tribune. April 8, 2004. By Luis Montegundo Jr. and Helen Gao, staff writers. <http://www.signonsandiego.com/news/politics/20040408-9999-1m8vote.html>

²¹ **Town slated to hold second recount.** Milford Daily News; Wednesday, June 2, 2004; By Sara Withee, News Staff Writer <http://www.milforddailynews.com/localRegional/view.bg?articleid=49152>

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Date	Subject	Place/Description
April 2004	Diebold	<p>California. Secretary of State Kevin Shelley called on the Attorney General to bring criminal charges against voting-machine-maker Diebold Election Systems for fraud. ²²</p> <p>The reasons are explained in the staff report of the California Voting Systems and Procedures Panel.²³ Here are some excerpts:</p> <p>Prior to and during the hearing [of November 10, 2003], Diebold representatives either claimed to have obtained federal qualification for the TSx system or that federal approval was imminent.</p> <p>...Diebold subsequently failed to obtain federal qualification for the entire TSx system or even to pursue federal qualification of the firmware (software that is used to operate the precinct voting machines). Indeed, Diebold not only failed to obtain federal qualification for the TSx system, but failed even to pursue federal qualification of the firmware versions the VSPF authorized Diebold to install in the wake of the discovery that uncertified software had been installed.</p> <p>... Less than a month before the March Primary, after repeated assurances to the contrary, this office learned that Diebold was no longer pursuing federal ITA approval of the software and firmware installed on California voting machines. Rather, Diebold had instructed the ITA to test a newer version of both software and firmware. It also became clear that the federal ITA could not approve the newer software and firmware before the March Primary.</p> <p>Shortly before the March Primary, Diebold finally obtained from the federal ITAs a very limited approval to use the TSx system installed on California voting machines, with certain "patches," on a one-time basis. Shortly before the election, Diebold engaged in a crash project to install the patches on its California voting machines. [Footnote: "In a letter dated April 14, 2004, Diebold now admits that, in its haste, it failed to install these patches on at least 34 voting machines, requiring partial recounts."]</p> <p>... In sum, Diebold:</p> <ol style="list-style-type: none"> 1. marketed and sold the TSx system before it was fully functional, and before it was federally qualified; 2. misrepresented the status of the TSx system in federal testing in order to obtain state certification; 3. failed to obtain federal qualification of the TSx system despite assurances that it would; <p style="text-align: center;"><i>continued</i></p>

²² **California Bans E-Vote Machines.** Wired News. April 30, 2004. By Kim Zetter. <http://www.wired.com/news/evote/0,2645,63298,00.html>

²³ **Staff Report On the Investigation of Diebold Election Systems, Inc.** April 20, 2004. Presented to Secretary of State Kevin Shelley and the Voting Systems and Procedures Panel.

Diebold in the News – A Partial List of Documented Failures

Date	Subject	Place/Description
April 2004	AccuVote TS and TSx	<p>4. failed even to pursue testing of the firmware installed on its TSx machines in California until only weeks before the election, choosing instead to pursue testing of newer firmware that was even further behind in the ITA testing process and that, in some cases, required the use of other software that also was not approved in California;</p> <p>5. installed uncertified software on election machines in 17 counties;</p> <p>6. sought last-minute certification of allegedly essential hardware, software and firmware that had not completed federal testing; and</p> <p>7. in doing so, jeopardized the conduct of the March Primary.</p> <p>California. Secretary of State Kevin Shelley decertified all electronic touch-screen voting machines in the state due to security concerns, primarily caused by Diebold.</p> <p>Shelley said the ban on touch-screen machines would stay in effect unless and until specific security measures could be put in place to safeguard the November vote.</p> <p>...Additionally, Shelley declared that no county or vendor would be able to make last-minute changes to voting systems. Such changes caused problems in at least two counties in the March primary where a malfunctioning Diebold device prevented hundreds of polling places from opening on time.²⁴</p>
May 2004	AccuVote OS	<p>Marblehead, Massachusetts. Machine count showed 1834 to 1836. Manual recount showed 1831 to 1830, overturning the election outcome.²⁵</p> <p>[Town Clerk Thomas] McNulty said new precinct totals would be available today. He said he was warned by the company that made the voting machines that, "When it's that close anything can happen."</p> <p>(Final decision reached three weeks after the election, after a hand recount.)</p>

²⁴ California Bans E-Vote Machines. Wired News. April 30, 2004. By Kim Zetter. <http://www.wired.com/news/evote/0,2645,63298,00.html>

²⁵ Recount overturns result of Marblehead selection election. The Daily Item; Wednesday, June 2, 2004; By Jack Butterworth. <http://www.thedailyitemoflynn.com/news/view.bg?articleid=6313>

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Date	Subject	Place/Description
July 2004	Company	<p>Clayton County, Georgia. In violation of Georgia state law, Diebold delayed absentee voting by failing to deliver ballots to the county within the required time. The laws says:</p> <p style="padding-left: 40px;">The superintendent shall, as soon as practicable prior to each primary or election, but at least 45 days prior to any primary or general election other than a municipal primary or election, ... prepare, obtain, and deliver an adequate supply of official absentee ballots to the board of registrars or absentee ballot clerk for use in the primary or election.²⁶</p> <p>Because of redistricting, the time was shortened to 30 days, but still Diebold was late sending the ballots. On July 2, absentee voting still had not begun for the July 20 election. Diebold was supposed to deliver them on June 25; on July 1, they sent out a "partial shipment" with a promise to send the rest on July 5.</p> <p>Clayton County Board of Elections and Registration Member Bob Bolia said the ballots were supposed to be delivered June 25, then Monday and now this coming Monday.</p> <p>Other counties also experienced delays in receiving absentee ballots, but 18 days before the election, Clayton County still had not received any.</p> <p>Those who don't get their votes in "would have recourse with the county," said Cara Hodgson, a public information officer with the Georgia Secretary of State's office.</p> <p>... The delay will primarily affect overseas voters, Hodgson said. Clayton County is home to Fort Gillem, and Fort McPherson is only a few miles away, and the county has many soldiers overseas.</p> <p>Diebold spokesman, David Bear, didn't know the cause of the delay, nor the day the ballots were supposed to ship, yet he said:</p> <p style="padding-left: 40px;">"I don't think it's a matter of anyone's fault."²⁷</p>

²⁶ Georgia Code. Chapter 21. Section 2-384. http://www.legis.state.ga.us/cgi-bin/gl_codes_detail.pl?code=21-2-384

²⁷ Delay could impact election. News-Daily.com. July 2, 2004. By Greg Galpi. <http://www.news-daily.com/articles/2004/07/02/news/news1.txt>

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Date	Subject	Place/Description
July, 2004	AccuVote TS	<p>Dekalb and Chatham Counties, Georgia. In what Georgia Secretary of State Cathy Cox called "a very ordinary primary election day," voting problems ranged from incorrect summary pages ...²⁸</p> <p>Ziyadah Sabir said she's concerned the touch-screen machine didn't properly record her vote. The summary page, which allows voters to review their choices before casting their ballots, failed to show some of her choices and showed incorrect choices for others, Sabir said. Poll workers could not fix the problem, she said.</p> <p>"That's not very reassuring," said Sabir of DeKalb County, who was voting for the first time on the machines.</p> <p>... to incorrect ballots ...²⁹</p> <p>Voting problems seemed widespread enough in Tuesday's primary election to prompt the two candidates in the District 1 Chatham County Commission race to pledge a challenge if the vote were close.</p> <p>Colin McRae said he asked for the Democratic ballot because he wanted to be sure to vote in the 12th Congressional District race. He double-checked with the poll worker, asking if the computer card really activated the Democratic slate.</p> <p>When the poll worker said it did, he put the card in the machine. But it only showed the nonpartisan judicial candidates.</p> <p>The poll workers called a technician and held up the line until the problem was solved - 45 minutes later.</p> <p>... to lost ballots.</p> <p>Craig Kidd of Buckhead said he voted last week as part of the state's advance voting program, which allows people to cast ballots during a five-day period before an election.</p> <p>Kidd said on Tuesday he went to his precinct to make sure his vote had been recorded. Poll workers said they had no record of his vote and advised him to cast another ballot, Kidd said.</p> <p>"I find that a little distressing," said Kidd. "I like the concept of advance voting, but if this is a common thing, you could have hundreds or thousands of people who think they voted but they actually haven't."</p>

²⁸ **Few snags seen at polls: Technical problems small, but unsettling.** Atlanta Journal Constitution. July 20, 2004. By Carlos Campos. <http://www.ajc.com/news/content/news/election/0704georgia/21voting.html>

²⁹ **Problems plague primary: From incorrect addresses to improper instructions and confusing ballots, many found it difficult to cast their ballots Tuesday.** Savannah Morning News, July 21, 2004. By Bret Bell. <http://www.savannahnow.com/stories/072004/2315676.shtml>

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Date	Subject	Place/Description
July, 2004	AccuVote TS	<p>Dekalb County, Georgia. Over 150 Georgia citizens volunteered as poll watchers in the primary. They observed machine malfunctions and irregularities. Excerpts from one observer's report:³⁰</p> <p>When the polls opened ...</p> <p>We had a poll watcher in every precinct, informed and trained with the things to look for and how to address the problems the moment they cropped up. We insured the law was followed to the letter. The calls from the poll watchers began promptly at 7:00 AM with every irregularity, improper behavior and machine malfunction they saw reported to the attorneys.</p> <p>One precinct reported almost upon opening of the polls that all machines (10) were failing. Voters inserted the access card and the card was immediately ejected. The pollwatcher reported that voters were offered provisional paper ballots, but they were prepared with only 25 of these ballots and ran out within 10 minutes. It took almost 2 hours to rectify the situation even though our HQ personnel reported it to the County office immediately.</p> <p>When the machines overheated at the polls ...</p> <p>At 4:15 we received a call from one of the precincts. The poll manager had announced to the pollworkers that all the DREs were malfunctioning because the polling place was unairconditioned and unventilated.</p> <p>We arrived at the polling place and asked to speak to the Poll Manager who explained that they were experiencing some problems but they had a technician on the way. Our Pollwatcher had asked the technician to note the problems on his forms. He signed his name, wrote in the time (1:00 PM) and noted "All machines running hot."</p> <p>We spoke with the technician and he explained that the machines were behaving erratically. Because of the heat, when a voter placed their hand on the touchscreen, their chosen candidate would change (the red X would jump all over the screen) and voters would have great difficulty casting their vote for the candidate of their choosing. He informed us the problem began occurring at 12:15 and was getting progressively worse as the environment in the polling place was heating up with the daytime heating. Voting continued on the overheated machines until the polls closed at 7:00 PM.</p> <p>Talking to the Elections Director ...</p> <p>One of the questions we asked involved the 13 overheating machines and she repeated the "human failure" response saying it was the humans who overheated and overreacted. She went on to explain that the Diebold DREs were "certified to operate to 200 degrees" and the humans weren't.</p>

³⁰ **Wish us Luck! Poll Watching in Georgia.** National Ballot Integrity Project Discussion Forum. Posts by Roxanne Jekot, July 20-22, 2004. http://www.ballotintegrity.org/cgi-bin/dcforum/dcboard.cgi?az=show_thread&om=61&forum=DCForumID1&omn=0&viewmode=threaded

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Date	Subject	Place/Description
July 2004	AccuVote TS	<p>Fulton County, Georgia. A procedural error in advance voting revealed that Georgia citizens' Constitutional³¹ right to ballot secrecy is violated when they voting early on the touch screens.³²</p> <p>Craig Kidd cast a ballot ahead of the July 20 Republican primary during the five-day period for advance voting. A designated Republican poll watcher and campaign worker for a GOP state Senate candidate, Kidd showed up at his Buckhead polling place on Election Day to make sure his advance vote had been recorded. Kidd claims a poll worker told him there was no record of his vote and advised him to vote again to be sure his vote would be tallied.</p> <p>Later in the day, Kidd contacted The Atlanta Journal-Constitution to tell a reporter he was alarmed that he was allowed to cast two ballots. Kidd said he was concerned that the ballots of some early voters would not be counted or that some people could vote twice.</p> <p>... Fulton election officials have acknowledged that a breakdown in procedures allowed Kidd to vote twice. When a voter casts an early ballot, a notation of that vote should be made on a master voter registration list that is later sent to precincts prior to Election Day. Poll workers then will cross the advance voters off the list of people eligible to vote at their polling place.</p> <p>... Fulton officials later disqualified Kidd's early vote, which has a unique identifying number allowing election officials to know who cast it.</p>
July 2004	AccuVote TS	<p>Georgia. Touch screen voting machines reported U.S. Senate votes from only six out of seven Democratic voters. While the machines reported 14.5% Democratic undervotes for U.S. Senate, they reported only 3.2% Republican undervotes.³³</p> <p>In the next few days, Secretary of State Cathy Cox will release numbers showing that on July 20 voters requested more Democratic ballots (731,111) than Republican ones (671,961). The numbers are based on ballot counts slowly being assembled from the 159 counties.</p> <p>... On the Democratic side of the U.S. Senate race, 625,115 votes were cast. That means nearly 106,000 Democrats — 14 percent of the total — took a look at the eight-candidate field. And passed.</p>

³¹ Constitution of Georgia. Article II. Section I. Paragraph I. <http://www.cviog.uga.edu/Projects/gainfo/conart2.htm>

³² **Officials urged to follow rules to prevent any double-voting.** The Atlanta Journal-Constitution. October 24, 2004. By Carlos Campos. <http://www.ajc.com/news/content/news/election/1004georgia/25votetwice.html>

³³ **So Democrats ran No. 1 after all. But one in six voters couldn't take the U.S. Senate candidates seriously.** Atlanta Journal-Constitution. October 27, 2004. By Tom Baxter and Jim Galloway. <http://www.ajc.com/metro/content/metro/insider/index.html>

Percentages are based on total ballots reported in the above article and total votes reported on the Georgia elections results site for Democrats (http://www.sos.state.ga.us/elections/election_results/2004_0720/0000110.htm) and Republicans (http://www.sos.state.ga.us/elections/election_results/2004_0720/0000120.htm)

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Date	Subject	Place/Description
July, 2004	AccuVote OS AccuVote TS	<p>Putnam County, Georgia.³⁴ The optical scanner failed to read nine ballots.</p> <p>For Tuesday's election, the absentee and early voter ballots were counted through the optical scan system the county has used for its past elections. This also delayed vote counting because there were nine ballots that the optical reading machine could not read.</p> <p>These had to be read and certified by an official ballot divining board made up of one Republican, one Democrat and one non-partisan.</p> <p>Several precincts had trouble getting the touch-screen votes accumulated onto one machine. In one precinct, the accumulation problem was never resolved.</p> <p>"There were a couple of precincts that had problems with what they call 'accumulating,'" Howard said [Pat Howard, Putnam County probate judge and election superintendent]. "But all of them worked through it, but one."</p> <p>Howard said each machine is closed out by a poll worker at the end of voting, then a paper readout of the number of votes is printed. These numbers are checked against the number of voters who used the machine.</p> <p>Then, she said the PC cards, which look like a large version of a memory card from a Sony PlayStation, are taken out of each machine and inserted into one machine. All the votes are then accumulated in that one machine and transferred to the courthouse to be accumulated with the votes from other precincts.</p> <p>At precinct 4C, there was a problem with this process and eventually all the PC cards had to taken to the courthouse and accumulated there. This delayed the tallying on non-absentee votes until 10 p.m.</p> <p>Clayton County, Georgia. A month after delaying absentee voting in the July primary, Diebold delays the August run-off election by failing to deliver the printed ballots in time.</p> <p>Clayton County officials are still waiting for the ballots to come from the printers, but hope to open early voting today for the Aug. 10 primary run-off.³⁵</p>
Aug, 2004	Diebold printery	<p>Clayton County, Georgia. A month after delaying absentee voting in the July primary, Diebold delays the August run-off election by failing to deliver the printed ballots in time.</p> <p>Clayton County officials are still waiting for the ballots to come from the printers, but hope to open early voting today for the Aug. 10 primary run-off.³⁵</p>

³⁴ **Putnam County voting officials report few glitches on election night.** The Union-Recorder. July 22, 2004. <http://www.unionrecorder.com/articles/2004/07/22/news/news04.txt>

³⁵ **Early absentee voting opens for runoff.** News-Daily. August 2, 2004. By Bob Paslay and Ed Brock <http://www.news-daily.com/articles/2004/08/02/news/news1.txt>

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Date	Subject	Place/Description
September 2004	Company	<p>California. Attorney General Bill Lockyer dropped the state's criminal investigation of Diebold and joined with Alameda County and two voting integrity activists, Bev Harris and Jim March, suing the company in a False Claims Act. ³⁶</p> <p>Their False Claims Act suit, filed under seal and in the name of state and local taxpayers, alleged that Diebold sold a nearly \$13 million touch-screen system to Alameda County by misrepresenting its accuracy, security and government approval. As state and county attorneys weighed the case, state and local elections officials found that Diebold had installed unapproved software in Alameda County's touch-screens, that its system was vulnerable to hacking and that its central vote-tabulating program gave thousands of absentee votes to the wrong candidates.</p> <p>"We received assurances when they sold a voting system to us, and those assurances have not been met," said Alameda County Counsel Richard Winnie.</p> <p>Secretary of State Kevin Shelley blasted Diebold for what he called a "culture of deceit" and referred the company to the state attorney general for criminal investigation.</p> <p>Lowell Finley, an Oakland-based elections lawyer who filed the original suit on behalf of Harris and March, said his clients will watch to ensure the state and county to pursue the case with vigor.</p> <p>"Now that the state's attorney general has waded into this controversial issue, it is going to be important for him and the people of the state that he delivers something substantial, either in terms of a verdict or a very favorable settlement for California taxpayers," Finley said. "I don't think he would have made the decision to intervene if he didn't think that was possible."</p>
September 2004	Accuvote TS	<p>Rockville, Maryland. The sensitive touch screen registered U.S. Senator Mikulski's vote incorrectly during a demonstration at a local festival. ³⁷</p> <p>Mikulski got a firsthand look at possible voting mistakes when she tried out an AccuVote TS touch screen machine Sunday at a folk festival in Takoma Park. But as Mikulski voted on a mock referendum question, her hand inadvertently grazed the screen and cast a "yes" vote for another mock question, according to Morrill, who stood next to her as she tested the machine.</p> <p>Mikulski, who had planned to vote "no" on the question, tried to push the "no" button to change her vote, but the machine didn't make the change. She eventually was able to correct the ballot.</p> <p>[Mikulski's aide Michael Morrill] said ... the example reinforces her belief that a voter moving quickly through a ballot could inadvertently cast the wrong vote.</p>

³⁶ **State joins lawsuit against Diebold.** Tri-Valley Herald, September 8, 2004. By Ian Hoffman, Staff Writer. <http://www.trivalleyherald.com/Stories/0,1413,86~10671~2387400,00.html>

³⁷ **Senator backs voting machine bill after firsthand experience with glitch.** SFGate, September 13, 2004. By Stephen Manning. <http://www.sfgate.com/cgi-bin/article.cgi?f=/news/archive/2004/09/13/politics1858EDT0674.DTL>

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Date	Subject	Place/Description
September 2004	Accuvote TS	<p>Rockville, Maryland. The Montgomery County election board allowed Stan Boyd, a local election judge, to use a Diebold Accuvote TS for demo purposes at a Rockville festival. But after the machine registered Senator Barbara Mikulski's vote inaccurately, Mr. Boyd decided to keep the machine long enough to have an expert test the machine to diagnose the problem. County officials have filed a court order to force Mr. Boyd to return the machine. ³⁸</p> <p>Boyd, a 63-year-old retired high school teacher from White Oak, said he wasn't trying to hold the machine hostage. He said his purpose was to search out any problems with the voting system that Maryland residents will use in the upcoming election.</p> <p>"The whole purpose is to find out what things can be fixed -- and before the elections -- so they are trustworthy," he said after the hearing. ...</p> <p>After news reports Monday of Mikulski's problem, Boyd said county elections officials contacted him and he agreed to return the machine that day. But after CBS asked him if it could test the machine, he told the county he planned to keep the machine until Thursday, as originally planned.</p> <p>County officials said they then contacted Boyd at least nine times by phone in an effort to get him to return the machine; Boyd said they even showed up at his house.</p>

³⁸ **Board seeks to force return of voting machine.** Baltimore Sun. September 14, 2004. By Stephen Manning. <http://www.baltimoresun.com/news/elections/bal-voting0914.1.4731302.story?coll=bal-local-headlines>

Diebold in the News – A Partial List of Documented Failures

Date	Subject	Place/Description
September 2004	Accuvote OS	<p>King County, Washington. Although the optical scan software revisions intended to handle a new style of ballot were not qualified by an ITA, the state assigned provisional certification to the software after completing what the Secretary of State's office claimed was "extensive" testing. For example, in a letter to VotersUnite!, State Director of Elections Nick Handy defended the state testing process by stating that it included:</p> <p style="padding-left: 40px;">Functional tests of each system to ensure that the variety of ways that a voter might mark a primary consolidated ballot will be counted in accordance with the new Washington State law.</p> <p>However, the functional tests didn't catch a major software design error that caused the machines to reject valid ballots. Ballots without a party choice selected were rejected by the precinct-optical scanners, even if the voter intended not to vote in partisan races.³⁹</p> <p>Among the disgruntled in King County was attorney Rhys Sterling, who learned the ballot box wouldn't accept his ballot because he voted only on nonpartisan races and issues.</p> <p>After the machine returned his ballot, a poll supervisor at Hobart Community Church asked whether he had chosen a political party (he had not) and whether he had deliberately not chosen a party. His ballot was accepted only after the supervisor opened the machine and pressed a button overriding its programming.</p> <p>"So much for secret ballots," said Sterling, who claims that yesterday's voting procedures violate the state constitution's guarantee of "absolute secrecy" in preparing and depositing ballots.</p> <p>The problems could easily have been avoided if the revised software had been adequately designed. It simply had to accept nonpartisan ballots and reject ballots with votes in party races but no party choice marked.</p>

³⁹ **Nonpartisan voters baffle ballot machines.** Seattle Times, September 15, 2004. By Keith Ervin, Seattle Times staff reporter. http://seattletimes.nwsource.com/html/localnews/2002036002_primary15m.html

Diebold in the News – A Partial List of Documented Failures

Date	Subject	Place/Description
September 2004	AccuVote TS and modems	<p>Prince George County, Maryland. The modem at the central facility malfunctioned, and voters in one precinct weren't able to vote the Democratic ticket on the paperless machines, so they wrote their choices on pieces of paper.⁴⁰</p> <p>The Board of Elections had technical difficulties last night compiling results. Election workers said the main modem to receive results from the polls had malfunctioned.</p> <p>Election officials said there were no major problems at polls throughout the day.</p> <p>The only known glitch was at Mount Rainier Elementary School. When polls opened yesterday, nearly a dozen voters were told the machines were not pulling up the Democratic slate.</p> <p>Linda Couch, a Mount Rainier resident, said poll workers told the voters that because the machines weren't operating properly, they could write down their choice on a piece of paper. Couch said some voters left, saying they would try to come back. Others, like her, wrote their selections down on the paper.</p>
November 2004	Central Count Optical Scanner	<p>Crittenden County, Arkansas. More than 11% of the ballots failed to register a vote for president.⁴¹</p> <p>1,853 of the county's 17,284 voters had selected more than one presidential candidate. Another 131 ballots were counted as having no checkmarks for president.</p> <p>About one in every eight ballots cast in Crittenden County failed to register a choice for president.</p> <p>Unusual ballot design elements and ballot programming errors may have contributed to the problems, but Secretary of State Charlie Daniels refused to allow a manual recount of the ballots.</p> <p>Regardless of the cause of overvotes in Crittenden County, there was no justification for conducting a recount, according to Tim Humphries, staff counsel to Arkansas Secretary of State Charlie Daniels.</p> <p>"There is no authority under the Arkansas Code for a recount after the election has been certified," Humphries said. "The law says if there is to be a recount, it must happen before then."</p>

⁴⁰ **Johnson Aide Wins Democratic Primary.** Washington Post September 15, 2004. By Ovetta Wiggins, staff writer. <http://www.washingtonpost.com/wp-dyn/articles/A22014-2004Sep14.html>

⁴¹ **Election study finds widespread ballot-counting problems.** Scripps Howard News Service. December 20, 2004. By THOMAS HARGROVE. <http://www.knoxstudio.com/shns/story.cfm?pk=MISCOUNT-ELECT-12-20-04&cat=AN>

Diebold in the News – A Partial List of Documented Failures

Date	Subject	Place/Description
November 2004	AccuVote TS	<p>Maryland. On election day, TrueVoteMD registered 383 reports involving 531 incidents of problems encountered by voters. Many voters reported votes switching on the screens.⁴²</p> <p>These problems ranged in severity from moderate inconvenience to outright voter disenfranchisement. The significance of these complaints increases dramatically, however, when one considers that Maryland had a total of 1,787 precincts this year, and TrueVoteMD was only able to cover a fraction of these — some 6% . . .</p> <p>Most incidents that were reported to TrueVoteMD fell into the following categories:</p> <ul style="list-style-type: none"> ◆ Lost votes due to incomplete ballots that were missing candidates or entire races ◆ Lost votes due to machines crashing or freezing before the voter cast a ballot ◆ Lost votes due to “smart card” and encoder failures ◆ Lost votes due to delayed poll openings because of machine boot-up failures ◆ Lost votes due to voter abandonment because of unacceptably long waits ◆ Lost votes resulting from touch screen failures that included vote switching, review screen malfunctions, unintended selections and submission of ballots before voters had made selections, hypersensitivity to touch that caused voters to complain that “it was out of control and I have no idea who my votes were cast for,” screens going blank ◆ Lost votes from unreadable voting machine hard drives (PCM/GIA cards) ◆ Lack of privacy because machines were oriented so that the screens were visible by those waiting on line to vote ◆ Discrepancies between electronic vote tallies and manual vote tallies ◆ No offer of provisional ballot or wrongful denial of provisional ballot ◆ Disenfranchised voters due to failures in the Motor Vehicle Administration registration process. ◆ Inadequate staffing and insufficient training of election judges

⁴² **When the Right to Vote Goes Wrong.** TrueVoteMD. November, 2004. http://www.truevotemd.org/Election_Report.pdf

Diebold in the News – A Partial List of Documented Failures

Date	Subject	Place/Description
March 2005	AccuVote Touch screen	<p>Montgomery County, Maryland. The IT report to the County Elections Board reveals widespread problems with the electronic voting machines on election day. Here are some excerpts:⁴³</p> <p style="text-align: center;">Information Technology - Election Day Review</p> <p style="text-align: center;">Election Day Equipment Review</p> <p>For Election Day, 2,597 voting units were deployed. An additional 80 voting units were sent to about 65 polling places on Election Day to replace malfunctioning units. A few were sent out to accommodate long lines at polling places.</p> <p>From Help Desk tickets and GEMS reports, 189 voting units (7%) of units deployed failed on Election Day. An additional 122 voting units (or 5%) were suspect based on number of votes captured.</p> <p>Of the 189 voting units that failed:</p> <ol style="list-style-type: none"> 1. On Election morning, 58 voting units failed to boot up, showing a Ballot Exception Error. These units were unusable and were immediately taken out of service. No votes were captured on these units. 2. 106 voting units experienced screen freezes. In staff opinion this is the most serious of errors. Election judges and technical staff reported that many of these units froze when the voter pressed the Cast Ballot button. This leads to great confusion for judges and voters. The voter leaves the polling place with little or no confidence that their vote was counted. In many cases, the election judges are unable to provide substantial confirmation that the vote was, in fact, counted. 3. 25 voting units failed due to a variety of problems including card readers, printers, and power problems. 4. The additional 122 suspect voting units were identified because few votes were captured compared to other units in the same polling place. A unit was considered suspect if it had 25-50 votes captured when all other units in the polling place had over 150 votes. 5. Of the 1,245 encoders deployed, approximately 30 failed and were replaced on Election Day. Preliminary tests indicate that the failures are a result of little or no battery power. 6. Prior election day, we prepared approximately 95 voting units using new touch screen units and new PC memory cards. Of these, 5 failed; 4 with screen freezes and 1 with a ballot exception error. Another 4 units were in the suspect category. <p>As of February 16, 2005, Diebold in Maryland was unable to diagnose the problems and was shipping the systems out of state for testing. ⁴⁴</p>

⁴³ IT Report to the Montgomery County Election Board. Page 11. http://www.truevotemnd.org/Resources/Lessons_Learned.pdf

⁴⁴ Diebold Memo. <http://www.truevotemnd.org/Resources/DieboldMemo2-16-05.jpg>

Diebold in the News – A Partial List of Documented Failures

Date	Subject	Place/Description
July 2005	AccuVote TSx with vvpap printer	<p>California. After testing 96 touch screen machines and finding a 10% error rate, Secretary of State Bruce McPherson rejected Diebold's application to certify the AccuVote TSx touch screen with AccuView printer module.⁴⁵</p> <p>After possibly the most extensive testing ever on a voting system, California has rejected Diebold's flagship electronic voting machine because of printer jams and screen freezes, sending local elections officials scrambling for other means of voting.</p> <p>"There was a failure rate of about 10 percent, and that's not good enough for the voters of California and not good enough for me," Secretary of State Bruce McPherson said.</p> <p>If the machines had been used in an election, the result could have been frustration for poll workers and long lines for thousands of voters, elections officials and voter advocates said Thursday.</p> <p>"We certainly can't take any kind of risk like that with this kind of device on California voters," McPherson said.</p> <p>Kim Alexander, president of the Davis-based California Voter Foundation, said McPherson deserves credit for ordering rigorous testing.</p> <p>For years, voters have reported frozen screens and other glitches in the polling place.</p> <p>"It's always been the voters' word against election officials' and the vendors'," Alexander said. "Now we have real proof right before the eyes of state elections officials."</p>

⁴⁵ **E-voting machines rejected: State says Diebold failures in massive mock election could translate to problems at polls.** Inside Bay Area. July 29, 2005. By Ian Hoffman, STAFF WRITER. http://www.insidebayarea.com/oaklandtribune/localnews/ci_2898224/ci_2898234.
 Archive at: <http://www.votersunite.org/article.asp?id=5774>

Diebold in the News – A Partial List of Documented Failures

Date	Subject	Place/Description
September 2005	AccuVote TS	<p>Cobb County, Georgia. New “upgraded” software caused technical problems during the modern transmission of vote data. ⁴⁶</p> <p>New computer software and problems transmitting precinct results to the central Cobb Board of Elections offices in Marietta delayed results from Tuesday's Special Purpose Local Option Sales Tax referendum, election officials said.</p> <p>... At precincts with the worst problems, poll workers had to drive to the central elections office and hand deliver the results, Ms. Dunn [director of the Cobb Board of Elections and Registration] said.</p> <p>Then, the final tally showed that 285 ballot were completely blank, and the margin of victory was only 117 votes. ⁴⁷</p> <p>About 285 voters showed up at the polls on Sept. 20 for Cobb's Special Purpose Local Option Sales Tax referendum but never cast a vote.</p> <p>The number of these “nonvotes,” where a registered voter received a ballot but left without voting either yes or no, was more than twice SPLOST's 114-vote victory.</p> <p>While election officials and political observers say the nonvoters likely would not have swayed the election in the other direction, some say they indicate continued problem's with Georgia's electronic voting system.</p> <p>The reasons put forth by officials boggle the mind. For example:</p> <p>Dr. Carol Pierannunzi, director of the A.L. Burruss Institute of Public Service at Kennesaw State University, said there are a number of reasons voters show up to the polls but never cast a vote.</p> <p>“There are people who are in the habit of voting,” she said. “Civic duty and whatever else compels them to go to the polls, but they don't know enough about the matter to vote.”</p> <p>And the official response is equally disturbing:</p> <p>Cobb election officials described the number of nonvotes in the SPLOST referendum - less than 300 out of almost 40,000 ballots cast - as “irrelevant.”</p>

⁴⁶ **Officials: New software delayed SPLOST results.** Marietta Daily Journal Online. September 22, 2005. By Kimberly Starks. <http://www.mdjonline.com/articles/2005/09/22/89/10195956.txt>.

⁴⁷ **About 285 SPLOST voters showed up but never cast ballot.** Marietta Daily Journal Online. September 29, 2005. By Kimberly Starks. <http://www.mdjonline.com/articles/2005/09/29/89/10196623.txt>.



U.S. ELECTION ASSISTANCE COMMISSION
1225 New York Ave. NW – Suite 1100
Washington, DC 20005

July 20, 2005

EAC Advisory 2005-004: How to determine if a voting system is compliant with Section 301(a) – a gap analysis between 2002 Voting System Standards and the requirements of Section 301(a)

The United States Election Assistance Commission (EAC) has received a number of inquiries from several states as to whether one or more particular voting systems comply with Section 301(a) of the Help America Vote Act of 2002 (HAVA). In addition, in one of its recent public meetings, EAC was asked to conduct an analysis to identify the gaps between the 2002 Voting System Standards adopted by the Federal Election Commission (FEC) and the requirements for voting systems under Section 301(a) of HAVA. EAC is not required by HAVA to preclear or approve voting systems purchased by states and local election jurisdictions. Furthermore, EAC does not believe that it was the intention of Congress or HAVA for EAC to assume this role. However, it is evident that states and local election jurisdictions as well as testing laboratories are in need of information that will help in determining whether a voting system meets the threshold requirements of Section 301(a). Thus, EAC offers the following analysis of Section 301(a) in light of the 2002 Voting System Standards.

Title III of HAVA, entitled “Uniform and Nondiscriminatory Election Technology and Administration Requirements,” imposes certain requirements upon states and local jurisdictions conducting federal elections. Section 301(a) sets forth the standards that voting systems must meet after January 1, 2006. Those requirements include functions and features that, among other things: (1) allow the voter to review his or her selections privately and independently prior to casting a ballot; (2) allow the voter to change his or her selections privately and independently prior to casting a ballot; (3) notify the voter when he or she has made more selections in a single race than are permitted (overvote); (4) provide for the production of a permanent paper record suitable to be used in a manual recount; (5) provide voters with disabilities, including visual disabilities, the same opportunity for access and participation (including privacy and independence) as for other voters; (6) provide accessibility in minority languages for voters with limited English proficiency as required by the Voting Rights Act of 1965; and (7) provide for

an error rate in operating the voting system that is no greater than the error rate set forth in Section 2.3.1 of the 2002 Voting System Standards adopted by the Federal Election Commission (FEC).

Although the 2002 Voting System Standards set forth measurable standards that predict compliance with some of the Section 301(a) requirements, those standards do not provide sufficient and adequate guidance as to what is required to meet the accessibility requirements of Section 301(a)(3); do not prescribe testable measures for language accessibility required by Section 301(a)(4) of HAVA; and do not prescribe standards that adequately explain the requirements for overvote notification required by Section 301(a)(1) of HAVA. As such, EAC issues the following policy statement to identify the gaps between the 2002 Voting System Standards and the requirements set forth under Section 301(a) of HAVA and to explain what is needed to meet the requirements of Section 301(a) above and beyond the testing requirements established in the 2002 Voting System Standards.

Section 301(a)(1):

The requirements of Section 301(a)(1) of HAVA are met if the voting system (1) conforms and complies with Section 2.4.3.3 of the 2002 Voting System Standards and (2) notifies the voter through a visual and/or audio message prior to casting the ballot when the voter makes more selections than are legally allowed in a single race or contest (overvote):

- (a) that an overvote has occurred and
- (b) the effect of overvoting.

Following that notification, the voting system must allow the voter to change his or her selection(s), if so desired. Voting systems that preclude and prohibit overvoting meet this requirement. Notwithstanding the above, certain paper ballot voting systems may meet the overvote requirements of Section 301(a)(1)(A)(iii) of HAVA by meeting the requirements set forth in Section 301(a)(1)(B).

Section 301(a)(2):

The requirements of Section 301(a)(2) of HAVA are met if the voting system conforms and complies with Sections 2.2.5.2.1 and 2.5.3.1 of the 2002 Voting System Standards.

Section 301(a)(3):

Section 301(a)(3) of HAVA requires that by January 1, 2006, at least one voting system in each polling place be accessible to persons with disabilities such that the voting system allows an individual with a disability the same access and opportunity to vote privately and independently as is afforded a non-disabled voter.

Compliance with Section 301(a)(3) requires that the voting system is accessible to persons with disabilities as defined by the Americans with Disabilities Act, including physical, visual, and cognitive disabilities, such that the disabled individual can privately and independently receive instruction, make selections, and cast a ballot. However, accessibility involves more than the technical features of the voting system. The accessible voting system also must be used in a manner that is consistent with providing access for disabled voters (e.g., the accessible voting system must be set up for use in a space that is accessible to a disabled voter who uses a wheelchair).

Conformance with Section 301(a)(3) is a complex matter, which must take into account the disability of the voter, the advancement of technology and its availability, and the efforts of the elections officials to make the voting process accessible to disabled voters in a private and independent manner. The following are some factors that must be considered in determining accessibility in conformance with Section 301(a)(3) of HAVA:

- (1) Section 2.2.7 of the 2002 Voting System Standards;
- (2) Section 2.4.3.1 (a) of the 2002 Voting System Standards;
- (3) Section 3.4.9 (a-e) of the 2002 Voting System Standards;
- (4) The voting system must afford a disabled voter the ability to perform the same functions (e.g., receiving and reading the ballot, making selections, reviewing selections, changing selections, and casting the final ballot) as are afforded to a non-disabled voter. These functions may be provided to the disabled voter through features of the voting system that are different than those used by non-disabled voters. The disabled voter need not and in many cases cannot have an identical voting experience as a non-disabled voter (e.g., a voter with a visual disability is afforded the same access to reading the ballot as a sighted voter when the ballot is read to the visually disabled voter using an audio component of the voting system).
- (5) Accessibility of the voting system to the voter includes accessibility to all equipment needed to cast and count ballots. Many jurisdictions use a paper ballot voting system that requires the voter to submit his or her own ballot after casting for purposes of ballot counting. Where such voting systems are in use, such jurisdictions must to the extent reasonably and technologically possible afford a disabled voter the same ability to submit his or her own ballot, in a private and independent manner, as is afforded a non-disabled voter. In this example, visually disabled voters must be allowed to submit the ballot independently, as the disability is one that is capable of being accommodated, and technology and practice provide a means that can be used to allow the visually disabled voter to submit a ballot with the same degree of privacy and independence afforded to a sighted voter (e.g., a privacy sleeve).

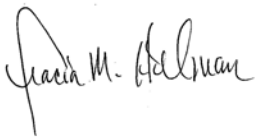
- (6) There may be certain disabled voters whose disabilities prevent them from voting independently (i.e., without assistance from a person of their choosing or a poll worker). While HAVA requires voting systems to allow independence and privacy, it does not preclude a disabled voter from requesting and obtaining the assistance of another person as provided in Section 208 of the Voting Rights Act of 1965.
- (7) Section 301(a)(3)(B) contemplates that an accessible voting system can include a direct recording electronic (DRE) voting system or other voting system equipped for individuals with disabilities. This advisory should not be read to preclude the innovation and use of accessible voting systems other than DREs for purposes of meeting this requirement.

Section 301(a)(4):

The minority language requirements of Section 301(a)(4) are met if the voting system complies with the minority language requirements of the Voting Rights Act of 1965 (contained in Section 203 as well as Section 4(f)(4)) and the implementing regulations found at 28 C.F.R. Part 55 and 67 F.R. 48871 (July 26, 2002). The voting system must provide all information, excluding the names of the candidates, that would otherwise be provided by the voting system in English (whether written or oral) in the language(s) that the voting jurisdiction is required to provide materials pursuant to the Voting Rights Act of 1965 and its regulations as referenced above.

Section 301(a)(5):

The requirements of Section 301(a)(5) are met if the voting system error rate does not exceed that established in Section 3.2.1 of the 2002 Voting System Standards.



Gracia Hillman, Chair



Paul DeGregorio, Vice Chairman



Ray Martinez III , Commissioner

1 Facts about The Help America Vote Act (HAVA)

HAVA¹, passed by Congress in the Fall 2002, was an attempt to prevent problems like those encountered in the 2000 Presidential election. It offered funding for counties to upgrade their voting systems. One of its few mandates was to require voting methods that would allow the disabled to vote independently. As states and localities rush to comply with HAVA, many decision-makers are operating on common misunderstandings of the law. The sections below provide facts that correct some of the major misconceptions.

HAVA Does Not Require the Use of DREs²

Section 301(a)(3) of HAVA requires that each polling place provide at least one voting method that allows disabled individuals to vote in privacy. Accessibility is required; DREs are not.

(3) Accessibility for individuals with disabilities.--The voting system shall—

(A) be accessible for individuals with disabilities, including nonvisual accessibility for the blind and visually impaired, in a manner that provides the same opportunity for access and participation (including privacy and independence) as for other voters;

(B) satisfy the requirement of subparagraph (A) through the use of at least one direct recording electronic voting system **or other voting system** equipped for individuals with disabilities at each polling place; and

Voting systems that record votes electronically (Direct Record Electronic – DRE) are only one of the many available voting systems that provide accessibility for disabled individuals. Alternative voting systems that allow the disabled to vote unassisted are available and cost a fraction of the price of DREs. For example:

- ◆ Electronic ballot-marking devices, such as the AutoMark by ES&S.³
- ◆ Ballot templates (tactile ballots) like those used in Europe and Rhode Island.⁴
- ◆ Free ballot-printing software offered by Open Voting Consortium to run on PC systems.⁵

HAVA Does Not Prohibit Punch Card and Lever Systems

A common misconception is that HAVA bans the use of old voting systems. This is not true, although old systems must be supplemented with ballots that allow disabled individuals to vote independently and they must provide a manual audit capacity. A state must replace old systems **only** if it accepts Title I funds to upgrade voting systems. Then, according to Section 102(a)(3), the deadlines for replacing the punch card and lever systems are:

- ◆ Before the first general federal election after January 1, 2004.
- ◆ Or, before the first general federal election after January 1, 2006, if the state filed a waiver by January 1, 2004. This applies to almost all states.

While state legislation, executive orders, or judicial orders require certain jurisdictions to replace their punch cards or lever systems, **HAVA does not make that requirement**. In fact, HAVA Section 301(a)(1)(B) specifically allows the use of punch card systems in conjunction with an educational program to help prevent over-voting and teach voters how to correct their ballots.

¹ http://www.fec.gov/hava/law_ext.txt

² Direct Recording Electronic voting machine. Votes are recorded on electronic media rather than paper.

³ <http://www.essvote.com/HTML/home.html>; see page 47 of this document

⁴ http://www.electionaccess.org/Bp/Ballot_Templates.htm; see page 47 of this document

⁵ <http://www.openvotingconsortium.org/>; see page 48 of this document

HAVA Preserves States' Right to Use Paper Ballots

Some election officials are under the impression that HAVA requires them to abandon paper-based systems. This is completely false. Not only does HAVA preserve the right to use paper ballots, it also requires paper for audits.

While HAVA does not specifically require a voter-verified paper trail, it does mandate that voting systems be able to produce a "permanent paper record with a manual audit capacity."

HAVA also explicitly preserves jurisdictions' rights to use paper ballots. Section 301(c)(2) specifically says that the term "verify" may not be construed to forbid the use of paper ballots. It states:

(2) Protection of paper ballot voting systems.--For purposes of subsection (a)(1)(A)(i), the term "verify" may not be defined in a manner that makes it impossible for a paper ballot voting system to meet the requirements of such subsection or to be modified to meet such requirements.

HAVA "Audit" Requirement is Not a Meaningful Recount

HAVA Section 301(a)(2) states the audit requirements for voting systems:

(2) Audit capacity.--

(A) In general.--The voting system shall produce a record with an audit capacity for such system.

(B) Manual audit capacity.--

(i) The voting system shall produce a permanent paper record with a manual audit capacity for such system.

(ii) The voting system shall provide the voter with an opportunity to change the ballot or correct any error before the permanent paper record is produced.

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

While HAVA requires that all voting systems produce a paper record in order to provide a manual audit capacity, the paper record of a DRE is interpreted by voting machine vendors and some election officials to refer to an end-of-day printout of either the totals or the ballot images. However, Darryl Wold, former chairman of the Federal Elections Commission, claims that a system audit requires an independent check on the accuracy of the system and that only paper records inspected and approved by voters provide the means for that independent check.⁶

Computer experts point out that if a DRE makes errors in recording or storing votes, its end-of-day printouts will be incorrect and no meaningful audit can be done. When a machine produces results a second time, it's merely a reprint, not a recount.

In fact, when a full hand recount of the 2004 gubernatorial race was conducted in Washington State, all parties realized the futility of printing and counting the ballot images and agreed to simply re-accumulate the electronic vote data.⁷

⁶ **The HAVA Requirement For a Voter Verified Paper Record.** Darryl R. Wold; July 23, 2003
http://www.verifiedvoting.org/resources/documents/HAVA_Requirement_for_VVP_Record.pdf

⁷ <http://www.co.snohomish.wa.us/documents/Departments/auditor/elections/results/general/DREAgreement.pdf>

HAVA Allows Partial Replacement of Old Systems

If the state does not meet the deadline for replacing punch card systems and lever systems, the state simply repays any replacement funds received for the **precincts** that did not meet the deadline. Section 102(d) states:

(d) Repayment of Funds for Failure To Meet Deadlines.--

(1) In general.--If a State receiving funds under the program under this section fails to meet the deadline applicable to the State under subsection (a)(3), the State shall pay to the Administrator an amount equal to the noncompliant precinct percentage of the amount of the funds provided to the State under the program.

(2) Noncompliant precinct percentage defined.--In this subsection, the term "noncompliant precinct percentage" means, with respect to a State, the amount (expressed as a percentage) equal to the quotient of--

- (A) the number of qualifying precincts within the State for which the State failed to meet the applicable deadline; and
- (B) the total number of qualifying precincts in the State.

HAVA Preserves States' Rights to Establish Voting Equipment Standards

While HAVA established the Election Assistance Commission (EAC) and charged it with developing guidelines and voting system standards, new standards have not yet been developed, so the standards developed by the Federal Election Commission in 2002 are still the current set. Furthermore, compliance with the EAC guidelines is not required in order to receive HAVA funds for voting equipment upgrades or purchases.

This means that **states retain control over whether or not they upgrade voting equipment to the FEC 2002 standards**, which at the time of this writing are the current standards. In fact, very few of the present systems meet these three-year old standards. Nearly all equipment only meets obsolete standards developed in 1990. Refer ahead to page 19 for a discussion of the inadequacy of the 2002 standards.

Section 221(b) says the voting system guidelines to be developed by the Technical Guidelines Development Committee to assist the states in purchasing new equipment are "voluntary."

Section 311(a) says the EAC guidelines are intended to assist the states in meeting the voting system requirements and specifically calls the guidelines "voluntary." And Section 251(d) says that compliance with the EAC standards is not a condition of receiving funds to meet the requirements:

Adoption of Commission Guidelines and Guidance Not Required To Receive Payment.-- Nothing in this part may be construed to require a State to implement any of the voluntary voting system guidelines or any of the voluntary guidance adopted by the Commission with respect to any matter as a condition for receiving a requirements payment.

NEWS RELEASE

For Immediate Release: October 21, 2005:

Davis, Waxman, Sensenbrenner, Conyers, Boehlert, and Gordon React To GAO Report on Security Problems With Electronic Voting Systems

Washington, D.C. - Government Reform Committee Chairman Tom Davis (R-VA) and Ranking Member Henry A. Waxman (D-CA), Judiciary Committee Chair F. James Sensenbrenner (R-WI) and Ranking Member John Conyers (D-MI), and Science Committee Chair Sherwood Boehlert (R-NY) and Ranking Member Bart Gordon (D-TN), issued the following statements upon today's release of the Government Accountability Office's report, "Federal Efforts to Improve Security and Reliability of Electronic Voting Systems Are Under Way, but Key Activities Need to Be Completed" (GAO-05-956):

"It is certainly disappointing that, despite the recommendations from federal organizations and non-governmental groups, many states still have not made progress to make sure their electronic voting systems are safe from fraud and can be relied on to accurately count votes," Chairman Davis said. "However, I am pleased that the EAC is continuing to push states to improve their voting systems and comply with the requirements of the Help Americans Vote Act (HAVA). American's voting system must be made to be world class, everywhere in the country, as soon as possible."

"The GAO report indicates that we need to get serious and act quickly to improve the security of electronic voting machines," said Rep. Waxman. "The report makes clear that there is a lack of transparency and accountability in electronic voting systems - from the day that contracts are signed with manufacturers to the counting of electronic votes on Election Day. State and local officials are spending a great deal of money on machines without concrete proof that they are secure and reliable. American voters deserve better."

Chairman Sensenbrenner said, "The Founders established the states as the entity primarily responsible for the administration of both federal and state elections. While Congress has provided direction through HAVA and federal grants to modernize state election systems, some states continue to drag their feet in preventing voting compilation errors and eliminating questionable voter registration and poll day procedures. In my home state of Wisconsin, the current Governor has done his best to block the legislature's efforts to implement voting reforms conforming with HAVA guidelines, despite evidence of widespread voter fraud in Milwaukee in recent elections. The EAC will have to push hard to overcome the resistance of those who rely on outmoded and unreliable voting practices to keep themselves in power."

"I am shocked at the extent and nature of problems GAO has identified in our electronic voting systems, and I fear that this may just be the tip of the iceberg," said Rep. Conyers. "It is totally unacceptable that in 21st century American we would allow faulty machines and systems to rob citizens of their voting rights. While GAO offers some modest recommendations for improvement, it is incumbent upon Congress to respond to this problem and to enact much-needed reforms such as a voter verified paper audit trail that protects all Americans' right to vote."

Chairman Boehlert said, "I wholeheartedly endorse the GAO recommendations, which underscore the need for the Election Assistance Commission and the National Institute of Standards and Technology to continue their work to establish standards and testing procedures for voting equipment. This work must move ahead on an ambitious schedule, and the Science Committee will continue to monitor its progress."

"The foundation of democracy rests upon the accuracy, integrity and security of our voting system," Rep. Gordon said. "The Science Committee gave the National Institute of Standards and Technology a pivotal role to ensure that our voting systems are trustworthy. However - as the GAO report highlights - much remains to be done before the next election cycle. Their report is a wake-up call for adequate funding for NIST's activities and makes clear that closer oversight by Congress is warranted."

Background / GAO Results Summary

All levels of government share responsibility in the U.S. election process. At the federal level, Congress has authority under the Constitution to regulate presidential and congressional elections. The Help America Vote Act of 2002 increased the federal role in state and local elections, in part by giving states the resources to improve the accessibility, security, and reliability of their voting systems. Under HAVA, nearly \$39 billion has been allocated to states to purchase electronic voting systems and improve the voting process.

Voting System Vulnerabilities Identified by GAO:

- Cast ballots, ballot definition files, memory cards, and audit logs could be modified.
- Supervisor functions were protected with weak or easily guessed passwords, and memory cards that allowed individuals access to voting machines were inadequately protected.
- Systems had easily picked locks and power switches that were exposed and unprotected.
- Voting machine vendors had weak security practices, including the failure to conduct background checks on programmers and system developers, and the failure to establish clear chain of custody procedures for handling software.

Voting System Failures Have Already Occurred During Elections

In addition to identifying potential vulnerabilities, GAO identified a number of cases of operational failures in real elections. These examples included:

- In California, a county presented voters with an incorrect electronic ballot, meaning they could not vote in certain races.
- In Pennsylvania, a county made a ballot error on an electronic voting system that resulted in the county's undervote percentage reaching 80% in some precincts.
- In North Carolina, electronic voting machines continued to accept votes after their memories were full, causing over 4,000 votes to be lost.
- In Florida, a county reported that touch screens took up to an hour to activate and had to be activated sequentially, resulting in long delays.

Problems With Implementation of Voluntary Standards, Testing, and Federal Efforts to Improve Voting System Security

GAO reported that voluntary standards for electronic voting adopted in 2002 by the Federal Election Commission contain vague and incomplete security provisions, inadequate provisions for commercial products and networks, and inadequate documentation requirements. GAO also found that tests currently performed by independent testing authorities and state and local election officials do not adequately assess electronic voting system security and reliability.

The GAO report indicated that national initiatives to improve voting system security and reliability of electronic voting systems either lack specific plans for implementation or are not expected to be completed until after the 2006 election. According to GAO, "Until these efforts are completed, there is a risk that many state and local jurisdictions will rely on voting systems that were not developed, acquired, tested, operated, or managed in accordance with rigorous security and reliability standards - potentially affecting the reliability of future elections and voter confidence in the accuracy of the vote count"

The Election Assistance Commission, which was created as part of the "Help American Vote Act" began operations in January 2004. To improve the security and reliability of electronic voting systems, GAO recommends that EAC establish tasks, processes, and time frames for improving the federal voluntary voting system standards, testing capabilities, and management support available to state and local election officials. EAC commissioners agreed with GAO recommendations and stated that actions on each are either under way or intended. The National Institute of Standards' (NIST) director also agreed with the report's conclusions.

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