

The Vulnerability of Michigan's Voting Equipment to Hacking and Error

Testimony

for the Senate Committee on Campaigns and Elections

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President, Customer Grabers

Thank you, Madame Chair, and Members of the Committee, for this opportunity to discuss a problem of critical importance to our democracy. We must be able to count our votes accurately and transparently.

Unfortunately, Michigan's optical scan voting equipment is error prone and can be hacked in a few seconds. Michigan is relying on extremely vulnerable 1970s-era devices to count our votes, and to count them in secret.

Hacking

On October 30, 2006, a University of Connecticut team of researchers released a report which exposes the Diebold AccuVote Optical Scan (AV-OS) Voting Terminal as vulnerable to hacking. It can be unlocked by a paper clip, or opened with an Allen wrench, bypassing the unbroken security seal on the program memory. The study also found that these vote tabulators can be easily reprogrammed in seconds, using a laptop and the tabulator's connection port, and that no trace of the action can be detected.¹

Michigan uses the Diebold AV-OS in 1,244 precincts and the model serves 1,727,131 registered voters. The ES&S M100, an optical scan tabulator using identical technology, is also vulnerable. The M100 serves 4,130,618 million people in 2,961 precincts in Michigan.

The University of Connecticut report's bottom line recommendation is that we must conduct manual audit counts.¹

Fourteen states conducted hand count audits on Nov. 7, 2006.² Unfortunately, Michigan wasn't one of them.

Conducting hand count audits of electronic vote tabulators is the single most powerful action that an election administrator can take to demonstrate commitment to accuracy and security. We also must establish detailed security protocols that include standards for storage of tabulators and documentation of the chain of custody of all election materials, including blank, unvoted ballots and AutoMark test ballots.

Errors and Malfunctions

Citizen concern about electronic voting machines is not motivated solely by fear of hacking or tampering. There have also been dozens of press reports from around the country of ballot programming errors that have affected election results. Only two of Michigan's 83 counties have their ballots programmed in-house by sworn elections personnel.³ The rest depend on private contractors who may have no knowledge of Michigan Election Law and requirements, and little or no interest or motive to serve the public interest in fair elections.

In addition, studies have shown that optical scan tabulators have a predictable error rate. Research on the major methods of voting compared election counts to exit poll data and found that optical scan tabulators produce a 5.5% median rate of discrepancy, compared to lever machines at 10%, touch screens at 7%, and hand-counted paper ballots at less than 1%.⁴

From remarks by election administrators, we estimate that as many as 30% of optical scan tabulators malfunction in some way in a typical election. In May, 2006, Oakland County Clerk Ruth Johnson wrote a formal complaint to the Secretary of State, stating,

Even before the May election, we were working with local clerks who voiced concerns about the M100 machines, which were jamming during tests, requiring clerks to open locked ballot boxes to "pat down" ballots. Today, three days after the May 2 Election Day, it is clear that quality issues go much deeper than we even anticipated. Some of our local clerks, who are so conscientious and dedicated, have lost faith in the ability of machines to perform. One clerk had to have repairs on 22 – more than 60 percent – of her 36 M100 machines.⁵

Conducting a publicly-observed hand count of a meaningful percentage of paper records is a win-win proposition. If the audit shows that the electronic tallies were accurate, then voters are reassured. If the audit uncovers irregularities, then further audits can and should be undertaken, the cause of the irregularities determined, and the outcome of the vote resolved by appropriate recourse (including recounts and revotes). Either way, the public is assured that election results accurately reflect the intent of voters.

Legislation to authorize routine hand count audits will be necessary in light of the fact that the Secretary of State's Bureau of Elections has sought to block local clerks from conducting hand counts in Michigan.

On November 6, the day before the election, the Bureau issued a memo to election administrators that flatly denied local election officials' legal authority to conduct manual audits:

The Bureau of Elections has recently received a number of inquiries regarding the authority of local election officials to initiate a manual audit of the votes cast for one or more offices or proposals appearing on the November 7 general election ballot following the close of the polls. Please be advised that Michigan election law does not grant such authority to local election officials or boards of election inspectors.⁶

This blanket restriction contradicts Michigan law, which provides a reasonable and necessary option to hand count if the local clerk encounters possible tabulator malfunctions. This authority is very clearly expressed in **MCL 168.798b**, “Electronic tabulating equipment; unofficial and official returns; manual count:”

If it becomes impracticable to count all or a part of the ballots with tabulating equipment, the clerk may direct that they be counted manually, following as far as practicable the provisions governing the counting of paper ballots.

In recommending a legislative plan to this committee, the Michigan Election Reform Alliance has carefully studied how to construct samples and conduct audits. In our reform plan, we have incorporated two audit strategies—one for the detection of tabulator malfunctions, and one to detect fraud.⁷

We have also studied the potential cost of implementation of the recommended audits, and have determined that the incremental cost statewide for all 5,806 precincts is under \$300,000 per election. This is a small price to pay to guarantee accurate and impartial vote counting. Moreover, this investment may potentially save money when the real cost of preventable recounts and lawsuits is considered.

Footnotes

1. “Security Assessment of the Diebold Optical Scan Voting Terminal,” A. Kiayias, L. Michel, A. Russell, A. A. Shvartsman. UConn VoTeR Center and Department of Computer Science and Engineering, University of Connecticut. October 30, 2006. <http://voter.engr.uconn.edu/voter/Reports.html>

2. “Manual Audit Requirements and Pending Audit Legislation,” Pam Smith and Bob Kibrick. March 17, 2007 <http://www.verifiedvoting.org/article.php?id=5816>
For details see:
<http://www.verifiedvoting.org/downloads/StateManualAuditProvisions-03-07.pdf>

3. Remarks by Lawrence Kestenbaum, Washtenaw County Clerk, at Women Progressive Activists Forum, Ann Arbor, October, 2006.

4. "Evaluation of Edison/Mitofsky Election System 2004: Prepared by Edison Media Research and Mitofsky International for the National Election Pool (NEP)." January 19, 2005. P. 40.

<http://www.exit-polls.net/election-night/EvaluationJan192005.pdf>

5. Letter from Ruth Johnson, Oakland County Clerk, to Terry Lynn Land, Michigan Secretary of State. May 5, 2006.

http://www.michiganelectionreformalliance.org/Ruth_Johnson_letter.pdf

6. Memorandum from Chris Thomas, Director, Michigan Bureau of Election, e-mail to local clerks. November 5, 2006

7. MERA Legislative Plan, pp. 3,4.

[http://www.michiganelectionreformalliance.org/MERA_Legislative_Plan-3-04-07\(4\)endnotes.pdf](http://www.michiganelectionreformalliance.org/MERA_Legislative_Plan-3-04-07(4)endnotes.pdf)