A Report by

Fairfax County Republican Committee

"Operation Ballot Integrity"

EXECUTIVE SUMMARY

On November 3, 2003, Fairfax County used, for the first time in a full Election, Direct Recording Equipment (DRE). The DRE - lap top computer voting devices – were purchased by the County in anticipation of the federal Helping Americans Vote Act, a law to enhance voting opportunities for the disabled, and upgrade voting equipment nationally. The Fairfax experience was a bitter disappointment – at best.

On Election Day, the Electoral Board and Fairfax County Republican Committee (FCRC), among others, received many complaints and criticisms of the new system. When several failed machines were removed from their polling places by the Electoral Board - and then returned - FCRC filed and was granted a court injunction to prevent irreparable harm should the failed machines contain compromised votes. The Court Ordered a public investigation of the machines' data and the procedures used to address the problems. The good news: the number of votes cast prior to the machines failing was the same number of votes that appeared in the memory of the machines at the public meeting. The bad news: the failure of these machines and the questionable decision to remove the machines was the proverbial tip of a very troubling iceberg.

FCRC, while litigating the "Ten Voting Machines" matter, initiated an investigation into the processes, procedures employed on Election Day and voter complaints about the machine hardware and software and prepared "Operating Ballot Integrity" and FCRC Report. In the Report FCRC has compiled a list of conclusions and Recommendations, proposed questions that must be answered before the voters of Fairfax County should ever feel confident in the vote, and 12 proposed solutions. FCRC's main conclusion: neither the Fairfax County Electoral Board, nor the new voting machines, was ready for Election Day. Technical failures of the machines ranged from machines which were <u>never</u> available, to machines that failed during the day (causing further complications and delays in the polling places), to at least one machine that *subtracted* one vote for every 100 cast in favor of a candidate for the Fairfax School Board. These problems were compounded when it was learned that the voting machines do not have a voter verified paper ballot backup, among other technical failings. Procedural problems included the removal of voting machines to inadequate training of Election Officers. In the category of 'unintended consequences' – voters complained that the machines failed to offer privacy in casting their vote and were not user friendly.

Based on its investigation, FCRC is offering recommendations and solutions to restore confidence in the vote. The primary recommendation: establish a local or state independent study – open to the public - to review software, hardware and failings associated with Fairfax County voting machines. Further, FCRC recommends that the Virginia General Assembly enact statutes that require: (1) a voter verified paper audit trail incorporated into all state-certified voting systems; (2) that the voter verified paper ballots be compared – in a select number of polling places – to the vote totals recorded on the DRE; and (3) that the law be amended to prevent the removal of voting machines from polling places on Election Day. Essentially, FCRC is challenging our elected and appointed officials to pro-actively return confidence in the vote.

A REPORT BY:
FAIRFAX COUNTY REPUBLICAN COMMITTEE
Operation Ballot Integrity:
ELECTION 2003 Voting Machine Failures and Beyond

I. Background/Introduction.

After the 2000 Presidential election and the ensuing Florida recount, it was clear that ballot integrity – especially confidence in voting equipment – was lacking and had to be restored in the mind's eye of the American voting public. Further, according to a 2001 US General Accounting Office study, Federal Election Commission (FEC) voting machine standards did not address security or user friendliness.

In response, Congress passed the 2002 Helping Americans Vote Act (HAVA) and made $3.8 billion available to upgrade voting systems nationwide. Under HAVA, a four member Executive Branch bipartisan commission (two Republican and two Democrat) called the Election Assistance Commission (EAC) would be nominated by the President and Confirmed by the Senate. The EAC will serve as a national clearinghouse and resource for the compilation of information and review of procedures with respect to the administration of Federal elections. HAVA also establishes a 14-member Technical Guidelines Development Committee and a 110-member Standards Board to provide guidelines for 'testing, certification, decertification, and recertification of voting system hardware and software by accredited laboratories." On December 9, 2003 the four-member HAVA Commission was confirmed by the US Senate, allowing the Commission to study this matter in detail and establish guidelines.

In 2003 Rep. Rush Holt (D-NJ) introduced H.R. 2239 (Rep. Tom Davis is a co-Sponsor) the Voter Confidence and Increased Accessibility Act of 2003. H.R. 2239, introduced to correct perceived problems with HAVA, requires (1) that each new electronic voting machine have a voter verified paper audit trail, (2) that a 'surprise' re-count be held in .5% of all election precincts to compare the paper audit trail with the electronic results, and (3) that the software source code used in all electronic voting machines be made public (with appropriate protections) for review and analysis.

At the state level, New York and Illinois are considering legislation to require new stringent technical guidelines for voting machines, including a voter verified paper audit trail. The Wisconsin Election Board decertified its "self-auditing" machines, while the Ohio Secretary of State said that, due to concerns with touch-screen voting system security, the state will not meet HAVA's requirement that new machines be in place by November, 2004. In California, the State *requires* a voter verified paper audit trail[1]. But problems persist with Direct Recording Equipment (electronic voting machines, including touch-screen machines) nationwide.

[1] Interestingly, Advanced Voting Systems, the Fairfax County vendor, supplies voter verified paper audit trail-equipped machines in California with its partner, Hewlet-Packard.

In November, 2002, the Fairfax Electoral Board (Electoral Board) tested two touch screen voting machines – one by Advanced Voting Solutions[2] (AVS) and one by Election Systems & Software. In January, 2003, the Virginia State Board of Elections (SBE) certified both machines and Fairfax County purchased almost 1,000 AVS touch-screen machines known as WINvote® for $3.5 million. The Electoral Board pressed the machines into service for Election Day, 2003.

The new touch screen machines were a technological and procedural failure on Election Day 2003. When ten voting machines (Voting Machines) failed and could not be repaired at their respective polling places, the Electoral Board ordered their employees, technicians and representatives of AVS to remove the machines and deliver them to the Fairfax County Government Center (Government Center) for repairs – an action not permitted under current state and federally certified election procedures, and likely a violation of Virginia election law requiring that ballots be kept in the plain view of the Election Officers. When the Fairfax County Republican Committee (FCRC) learned of the Voting Machine removal, they filed and won an emergency injunction - ten minutes prior to the close of the election. The Court directed the Electoral Board to segregate the 10 Voting Machines and tally the votes contained on those machines separately.[3] There followed a court-ordered public review of the issues surrounding the Voting Machines and the data within the machines. While that litigation has been completed (see attached final Order), it is now apparent that the problems associated with the Voting Machines are the proverbial 'tip of the iceberg.'

In the time since Election Day, 2003, FCRC and a multi-partisan group of witnesses, experts and others, have gathered a remarkable amount of quantitative and qualitative data concerning the ten machines and other Election Day failures. This Report, which documents FCRC's findings, draws from three primary data sets: (1) discoveries learned during the lawsuit; (2) complaints and other information discovered through FCRC and non-FCRC witnesses; and (3) information gathered through media reports, letters and Memoranda prepared by the Fairfax County Board of Supervisors (BOS) and Electoral Board. FCRC concludes this Report by posing several areas of inquiry for the Electoral Board and recommends an independent investigation, among other actions. That investigation should include high technology experts and experts in voting procedures who are given the opportunity to test a sample of the machines and investigate the software, hardware and procedures employed on Election Day, 2003.

This Report is not intended to be a *scientific* critique of the problems emerging on Election Day, 2003, but rather a layman's review of these matters. The Report is not intended to 'bash' high technology voting machines and, without further investigation, does not address whether Election laws, rules, regulations or other guidelines were

[2] AVS, based in Frisco, Texas, is led by President and CEO, Howard Van Pelt. AVS is certified in California, Mississippi and Pennsylvania.
[3] The Electoral Board failed to follow this provision and never segregated the votes.

violated in Fairfax County on Election Day, 2003.[4] Such a conclusion – which may some day be appropriate – is not the point. Rather, this Report highlights a vast amount of data that raises a fundamental question: Can Fairfax County voters be confident that their voting machines and procedures protect ballot integrity and security – in other words, can we be confident in the vote? Ballot integrity and confidence in the vote are, by far, the most important virtues in elective politics. No voter interested in the American form of democracy - which we dearly embrace - should ever allow a single discrepancy, violation or system failure pass without challenge.

II. Information Learned from the Law Suit

Much of this Report concerns information gathered in connection with *Fairfax County Republican Committee, et al., v. Fairfax County Electoral Board* (Fairfax Circuit Court Chancery No. 186843, November 4, 2003). In Court, on November 5, 2003, the Electoral Board alleged that: (1) only Electoral Board employees removed the Voting Machines, (2) the State Board of Elections directed the Electoral Board to return the Machines to their Precincts, and (3) the machines are "reliable."

Under a Court Order, representatives of FCRC, the Electoral Board, the Democrat Party, the vendor (AVS), and others audited the data contained in the ten machines, as well as information revealed by Electoral Board personnel and in documentation required for each polling place (Statement of Results and Chief Election Officer's Notes). The following is a summary of findings and discoveries which emerged from the meeting of the Electoral Board and recorded by witnesses representing FCRC, including Special Systems, Inc., FCRC's technical consultant.

The Electoral Board employed the following procedure:

i. Compare the data on the Voting Machines (accessing such data with the Precinct-Specific Location Smartcard for the precinct from which the Voting Machine was located) against data contained in the Statement of Results and Chief Officer's Notes;

ii. Compare the public count on the *unit close report* to the count contained in the Chief Officer's Notes;

iii. Verify seal numbers in the Voting Machines;

iv. Activate the machines and conduct a diagnostic system test;

v. Using the Election Administrator Smartcard, check the time and date accuracy, the ballot cast log (from master hard drive), identify

[4] As mentioned, in connection with the review of the Voting Machine data, it was determined that the ten machines were removed from the plain view of the election officials at the polling places where the machines originated – likely violations of Virginia law.

Election Day sessions under the audit log, and print three copies of the data.

At the public meeting, the parties learned that:

1. When it became apparent that ten (10) voting machines (Voting Machines) in nine (9) precincts failed, election officials in the nine precincts telephoned the Fairfax County Electoral Board (Electoral Board) to notify the Electoral Board of the problem.

2. The Electoral Board dispatched "Rovers" and/or "Technicians" to the precincts to examine the Voting Machines and try to resolve the problems.[5]

3. The Electoral Board has no written procedure to handle the failure of electronic voting machines which cannot be repaired in the polling place on Election Day.

4. Nine of the ten Voting Machines were used by registered voters to cast and record ballots before the machines failed.

5. The Voting Machines recorded a total of 243 ballots before they failed, as follows:

Machine #	Precinct	# of Votes
1226	Reston 1	27
1791	Floris	38
1823	Dulles	4
1361	Kilmer	10
1498	Freedom Hill	94
1984	Kenmore	0
1872	Rosehill	28
1282	Rosehill	0
1109	Waynewood	36
1287	Parklawn	5

6. The vote totals on the Voting Machines at the time that they failed were noted by an Election Officer in the polling place from which the Voting Machine was removed and recorded on a sworn Statement of Results, and in many cases in the notes of the precinct's Chief Election Officer (Chief's Notes).[6]

[5] Rovers are part-time employees of the Electoral Board who are supervised by an Electoral Board staff assistant. For each election, Rovers are sworn in as officers of election to uphold the law. Technicians may or may not be Electoral Board employees.

[6] The Statement of Results and Chief' Election Officer's notes are required by state law and local procedure, respectively.

7. With the use of a precinct-specific Location Smartcard provided to the Chief Election Officer, Voting Machines can be electronically sealed to prevent ballots from being cast. There is only one Location Smartcard per precinct.

8. None of the Voting Machines were electronically sealed against further balloting by the Chief Election Officer before being removed from the precincts.

9. The Secretary of the Electoral Board instructed Rovers and/or Technicians to remove the Voting Machines from the polling places and to take them to the Electoral Board at the Fairfax County Government Center (Government Center).

10. None of the Chief's Notes indicated whether a precinct official or partisan poll watcher accompanied the Voting Machines from the time that they were removed from the precincts to the time that they arrived at the Government Center. The Chief Notes did indicate, however, that the following individuals removed the Voting Machines from the polling places:

Machine #	Precinct	Removed By	Capacity
1226	Reston 1	Bill Sudwick	Rover
1791	Floris	George H.	Rover
1823	Dulles	Larry Kunkle	Rover
1361	Kilmer	Charles Collins	Rover
1498	Freedom Hill	Not Listed	Rover
1984	Kenmore	Kimberly Shoup[7]	Vendor Employee
1872	Rosehill	DeJesus	Rover
1282	Rosehill	DeJesus	Rover
1109	Waynewood	James Singsank	Rover
1287	Parklawn	Maggie Luca	Electoral Board
		and Howard Van Pelt	Vendor Employee

11. On Election Day, for an unknown and unrecorded period of time, the Voting Machines were in Rover or Technician vehicles while being delivered to the Electoral Board.

12. The Electoral Board Manager (Judy Flaig) maintains control over one of two administrative pass cards (Election Administrator Smartcards) which allow the card holder to seal a machine against further balloting; the second Election Administrator Smartcard is locked in a secure location at the Electoral Board.

[7] Under Virginia law, Kimberly Shoup, an AVS employee, should have only limited access to voting Machines in a precinct. In the case of Van Pelt – also an AVS employee, the Chief notes indicated that he worked with Electoral Board secretary Margaret Luca in removing the machine at Parklawn precinct.

13. After their delivery to the Electoral Board Offices at the Government Center, the Voting Machines were activated and examined by technical employees of the Electoral Board and/or AVS, who attempted to determine the nature of the problem(s) with each machine. No precinct election officials or poll watchers were present at that time.

14. The digital memory of Machine No. 1984 (Kenmore Precinct) was "wiped" or "erased" on Election Day by an Electoral Board employee, after the employee cast the vote in a test. The ballot on that machine was erased. No witnesses were present and no record was made of this event. Machine No. 1984 was not returned to the Kenmore Precinct after its digital memory was erased.[8]

15. Nine of the ten Voting Machines were returned to the precincts between 4:00 p.m. and 7:15 p.m., November 4, 2003, by employees of the Electoral Board or AVS.

16. The nine Voting Machines were sealed with plastic seals when they were returned to the polls.

17. The nine Voting Machines contained 242 recorded ballots within their digital memories at the time they were returned to the precincts – the same number of recorded ballots that they contained when they left the precincts.

18. In 8 of the 9 precincts (not Parklawn), Election Officers did not receive word of the Order from the Electoral Board in time to comply with the Order. The Election Officers therefore did not segregate the Voting Machines, and tallied the votes together with the other machines.

19. In Parklawn Precinct, machine 1287 was delivered to the polls by Bryan Finney, Government Affairs representative of AVS (accompanied by poll watchers), after the voting tally had begun. Machine 1287 was not included in the machine tally at Parklawn precinct; however, the votes on the machine 1287 were included in the Parklawn Statement of Results.

Additional Technical Findings

1. The Audit log (internal auditing system) files did not show a complete history of the system activity on Election Day. On one machine, the system logs were cleared by the system administrator and one vote deleted (see note 6).

[8] During the meeting, the Electoral Board explained that ONLY the Administrator Smartcard can 'erase' data from a machine. The only person with access to this card is a designated Electoral Board staff member, Judy Flaig. However, there is no protocol for tracking the use of this card. Further, there is no tracking or auditing system to determine whether a user of the card has erased several votes on a machine and then cast the same number of votes on another machine so the poll book totals would match. That Smartcard should never be out of the administrator's hands.

2. Audit log files did not include an identification number for any users.

3. The USB hard drive (which contains the memory) can be removed with ease. Such USB hard Drives should be secured by a serial number tie wrap and should never be removed while the polls are open.

4. Audit Log Files are not stored on redundant devices. If the master hard drive fails, Log files would be lost.

5. At least one Voting Machine was 'wiped clean' of all activity after the polls were opened through a re-initialization.

6. The time of day on each machine was off by up to 2.25 hours; therefore the time on the election official logs and the machines logs do not match.

7. The audit logs themselves were in different files, making it hard to retrieve.

III. Witness Data

A. Overview

In this Section, FCRC presents a summary of reports concerning Election Day discrepancies and issues raised concerning voting machines. Most of these reports deal with voting machine technology, but in some instances the witness reported a procedural concern. Every report referenced in this section was documented by FCRC; however, we have removed names and identifying information for privacy purposes. Although these reports are not in affidavit form, these reports are credible in that they confirm other reports and experiences documented in the Chief Election Officer's written notes on Election Day, 2003, as well as media reports (see Section IV).

The first series of reports come directly from e-mail received by FCRC; the final series are transcribed from telephone messages received by FCRC. For purposes of this Report, we have not included reports received concerning illegal assistance in polls, electioneering in polls, disputed credentials, intimidation, and illegal layout at polls or other reported irregularities. Reported problems fall into nine categories:

1. Removal of Ballots and/or Voting Machines from Polling Places

2. Machine Malfunctions

3. Touch Screen Irregularities
   a. Pressed Button - Wrong Name Highlighted
   b. 'Rita Thompson' Issues

4. Audit Concerns
    a. Villages Precinct One Vote Short
    b. Popes Head Precinct Short on Votes
    c. Democrat Precinct Captain Touched Machines
    d. No Ballot Security
    e. No Paper Ballot Trail

5. Wireless Interface Failure: Voting Machines Would Not Synch

6. Results Dial-up Failure
    a. Stratford Landing Precinct- Failure
    b. Popes Head Upload Failure
    c. Marshall Precinct - Late Results
    d. Mt. Vernon Precinct – Late Results
    e. Must Dial "9"
    f. Newington Precinct could not Upload Results

7. Inadequate Election Chief Training

8. Voter Privacy
    a. Marshall Precinct No Privacy
    b. Mt Vernon Precinct Voter Privacy

9. Miscellaneous
    a. Video in Lobby
    b. Audio Prompts Incomprehensible
    c. Lack of Technical Supervision
    d. The Effect of Magnets
    e. No Party Affiliation for local races

B. e-Mail Reports

WESTBRIAR PRECINCT (WESTBRIAR ES): One machine (of five) failed at Westbriar Precinct on 4 Nov2003. It's my impression that it didn't come up in the morning, and wasn't used until after it was successfully rebooted later in the day. (I did not see this happen, but don't believe it left the polling place). Also, the automatic upload of election results to the Board of Elections failed; the chief election officer called in the numbers (from the printed tape) on a voice line. In the evening, election officials attributed the long lines in the morning to the unavailability of one machine (of five) in the precinct. I have no evidence that this affected the results.
XXXXXX XXXXX - PRECINCT CAPTAIN

HUNTERS WOODS PRECINCT (HUNTERS WOODS ES):
Two of the Hunters Woods machines did not work when turned on in the morning. A repairperson came after lunch and gave the precinct another machine and took the two

broken ones with him.[9] To my knowledge, both of these machines were not used for any votes.
XXX XXXXXXXX - PRECINCT CAPTAIN

Hunters Woods Precinct, Hunter Mill District, had two machines that were not working at the beginning of the day (of five total). Sometime after noon they were taken away by a repairperson and one working machine was left ***(See Footnote No.9).*** Long lines did occur almost all day, as the process of voting seemed to take longer than normal. I cannot say any problems with the machines had an impact on the outcomes, but some people did leave without voting (promising to return) when they found it would take between 20 and 30 minutes to vote. This was more prevalent in the early morning as some tried to vote on the way to work and changed their mind.

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There were no irregularities observed at Stratford Landing precinct with the voting machines, other than the inability for the Judge to upload the results via modem because the county lines were busy.

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I pressed a name I did not want to vote for intending to try the change your vote feature. The machine accepted my vote. I read the instructions on how to change it ... "press the spot again." So I pressed again. No change. Again, no change. After about 4 tries, I asked the election official how to do a change ... she said just press the spot again. So I tried about 5 times more. Eventually, I hit the right combination of time and pressure, and the erroneous vote was removed, leaving me free to make a correct vote.

I was told that someone was running their finger down the list of names for school board, and the machine accepted one of the names as a vote. She had a little difficulty removing the erroneous vote, and making her proper choice.

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In Villages the count came up one vote short. The election officials said that a woman pressed, "vote," said thank you and left, whereupon the official discovered the machine had died. It was the second time that particular machine died, and at that point it was taken out of service. The rest of the votes registered but that one did not. (I did not see this happen but it was explained during the vote count.) I don't know who is handling the issue of the failed machines but you can pass this along if you think it appropriate.

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I'm on the Fairfax Rep. Committee (Springfield Dist.) and I also happened to work as an election officer last Tuesday. I was the Assistant Chief at the XXXXX XXXX precinct. I can give you facts on what I observed. The electoral board had delivered 5 machines to our polling place. One machine "froze" after accepting 4 votes, was rebooted about 1PM,

[9] Apparently machines were NOT taken.

accepted 2 more votes and then froze again. We were told to take it out of service for the rest of the day. The tech rep that was sent to look at the machine did not physically remove it. He did bring another machine for us to use- it would not work either. From a management perspective I was not too pleased with the performance of the machines. We had VERY long lines from 7AM-2PM and then again from 4PM-7PM. I know some people did not vote because the wait was too long.

As for the performance of the actual machines themselves, I have some comments to pass on. I have read about the situations where a voter chose Rita Thompson and the machine didn't take it. We had many problems with people complaining that their votes were not "staying lit" after they pressed them. I worked with many voters personally. It seems that a very light touch is needed on those machines. Those people who tried to press HARD were not getting their choices registered (kind of like when you turn a TV on and off because you press the button twice). Of course the more frustrated a voter became, the harder they tended to be pushing on the screen. This happened on any/all issues on the ballot, not just on the Rita Thompson piece of the ballot.

I also found that the summary page at the end of the ballot confused voters. The ballot issues were in large bold type, and the person's choices were in a much smaller type, often not noticed by the voter. I heard people say that they were at the summary page and the machine had "lost" all their choices. In some of those cases, the voter simply couldn't read the screen well. In other cases, they claimed they had selected things that were not on the summary page, and I would help them walk back through the ballot screens to correct what they were calling "errors."

In defense of the electoral board, they really did try to get people familiar with the new machines and the procedures. I know they had a constant-loop video going in the lobby of our polling place (and supposedly most others). This video showed people how to use the machines, what the screens would look like, how the summary page would look and how to press the final "vote" button. For whatever reason, no one seemed to take the two minutes to watch the video. Many people commented that they didn't even notice it when they entered. It became "white noise" which was ignored.

The only other info I can give you about how the election went from my view is that the modem upload of data at the end of the day simply did not work. The system was supposed to allow the election officers to gather the data from all machines and upload it to the electoral board over a phone line. After trying for more than 30 minutes to transfer the data, the chief and I finally decided to tally manually and call the data in (how it's "always" been done before).

I would be happy to help you in any way I might.

I believe we had a discrepancy of 5 votes at the end of the day between the poll book and the machine count (the poll book was higher). We had to write down that we believe 5 voters may have checked in, received their blue machine entrance card and then walked

out because the line to the machines was too long.

Just some personal observations while closing Price precinct last week.

- 3 voting machines were used. Chief activated the master machine to do wireless polling of the other two in order to tabulate results.
- Only one machine could be polled. Tried moving the machines around, re-started a few times, but no connection with the 3rd machine.
- Consulted the manual, which showed screens and options that did not agree with the prompts on the machines. (i.e. manuals don't match the software)
- Manual described work-around step of taking the removable disk from non-communicating machine and inserting it into the master. We could not find any removable disks. Chief remarked that removing disks was not part of any training.
- Tried letting another machine be the master. Same result.
- Went back to the original master and polled again. Picked-up one.
- Chief took the master to another room to attempt modem dial-in to county HQ to communicate results, but could not get an answer.
- Chief brought the master back into the room and proceeded to print the tapes on the master machine. The tape contained totals for two machines.
- Chief went to the non-communicating machine and did solo tabulation and tape printing.
- I personally observed the tapes being printed and recorded results.
- Election officials laid tapes on the table and added them manually.

At Marshall precinct the voting machines were not adequately protected for privacy of your vote -- people stood with their backs to the line formed waiting to vote but that meant people on line could easily identify what sample ballot people might be referring to -- not a huge deal but could be intimidating in districts and precincts like this with an obvious Democrat advantage and wouldn't want it to contribute at all -- although I think voters will know who's running for President next year without referring to a colored sample sheet so may be of more relevance to those down the ticket.

In any event, it was raised to our attention out front by a Republican voter who said it was unsettling to know that anyone waiting after you could tell how you voted if you referred to the sheets. There were privacy shields on three sides of the new machines so they simply should have set the machines so they faced the line and voters could consult the sample ballot privately.

In the Newington Precinct there appeared to be a 2-vote count discrepancy between the book total (from a 3-book split) and the machine total: 995 – book total; 997

- machine total.

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Election official Earl Flanagan had difficulty phoning in the vote tabulations for the Whitman Precinct from the phone in the Riverside Elementary School cafeteria, the site of the voting machines. As a backup, we were finally able to convey vote totals over the phone in the school gym which was the original site of the voting machines.

Our vote totals from the machines matched the number of voters who passed through.

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No irregularities to report, per se, but I spent the entire day working at Parkway and Silver brook/Fountainhead. I received a number of complaints from voters about the flashing screen that one gets if one doesn't vote for the maximum allowable number of candidates. While the printed instruction card (displayed well away from the machines) explains that this isn't a problem, a number of (mainly older) voters told me they were under the impression that they had to go back and vote for additional candidates (e.g., for school board at-large and for soil & water conservation board).

We also encountered some long waits as older folks and those with a limited command of English struggled to figure out how to use the new machines. None of these problems is insurmountable, but the county would be well advised to educate and inform people well in advance of the next general election.

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My name is XXX and I am the Republican precinct captain for the Shouse Village precinct. Although I am not aware of the details I do know that 2 of our 4 voting machines malfunctioned on Election Day. A technician was sent to the Andrew Chapel polling site and eventually 2 different machines were brought in. Grace Fox - (703) 938-1531 - was the election official who handled all of the details and she would know more of the particulars. Thank you. XXX

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I organized two precincts, Belle Haven at West Potomac High School and Marlan at Martha Washington Library. No irregularities at either location, though there were complaints about the new machines being more confusing to operate and less private.

One problem that delayed the final processing/tabulation at Belle Haven, however, was related to setting up the machines in the first place. West Potomac, like most schools, has its own central office PBX telephone system; to get an outside line one must dial "9." This function was NOT programmed into the master machine, so that at the closing when the machine was plugged into the designated phone jack for transmission of data and the Board of Elections number dialed, there was always a busy signal. The election officials, very conscientious, wasted about an hour trying to figure out how best to proceed. I certainly hope this can be taken care of in the future.

Another issue, though more a matter of convenience than a problem, was the reporting of election results to those of us on hand at the closing who wanted to get the news out to XXX, XXXX and others. A paper roll is generated by each voting machine and the totals are tabulated rather quickly, but in the case of Belle Haven precinct we had to wait about two and a half hours to be given the results. Since it would take just a few minutes to read those results off the master paper roll, I don't see why we can't get this information earlier. This would involve a change in the instructions concerning closing procedures, which it seemed to me were unnecessarily cumbersome.

Thanks for anything you can do to help.
Sincerely, XXXX XXXX

Also, has anyone checked to see what a strong magnet brought in someone's pocket could do? Could a couple of mischief makers come into a strong Republican precinct say about 6:45 pm and erase or garble all votes cast on their assigned voting machines?

If I can think of such problems, I am sure other scary ideas are also out there!

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While at Belleview (about 6:30 p.m.) I was speaking to the election official and while we were talking, one of the machines went down mid-vote. It continued to power-down. The official plugged and unplugged several times, then canceled that vote. Anyway, I had the machine watched and called Rick Neil (sic) right away.

At Woodlawn as well as Belleview, there is some concern about the privacy issue. With poll workers standing near by there is no privacy at all. One can also see their neighbors vote if they just "lean" slightly.

XXXXX, I personally have great concern not just over procedure, but also about storing data locally on magnetic media. Anyone can change the data pretty quickly if given the opportunity. Also, the privacy issue is of great concern. I know I felt uncomfortable with the lack of privacy.

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Several times during the day machines malfunctioned and voters were then put on another machine. I am not sure what happened to the malfunctioning machines. I don't know how they captured the votes. This was several machines.

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. . . As for voting, I know I had to tap the Dave Hunt button 3 times before the light went on. I finally used my thumb and that did it. I figured it was because of lack of strength in my hands. There is no way to know if others had a similar experience and did not catch it. (My husband just read this over and said that he, too, had trouble with the machine responding to his touch--he is not at all weak. He added that since you did not know what the machine was going to do when you pushed the button, you were not

expecting a light until you went to the second office. Many of the elderly, who were already being challenged by the new machines, might not have even realized the light did not go on after they entered their first ballot. If you chose to "single bullet" or not completely vote for the full number of candidates you would have the flashing lights. I believe this could be confusing for many when their whole slate was brought before them for reconfirmation. They just wanted to get out of there).

I would heartily recommend that before the next election, that each machine be tested before use.
I would also recommend that the machines be set up at shopping malls, etc., so that anyone who planned to vote could have the opportunity to be familiarized them.
(emphasis in the original)

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I stopped at the Elections Board for a couple hours last Thursday. Among "off the record" tidbits I picked up:

1) you may want to request to listen to the audio version. I did not hear it myself, but I was told at least one name, Jeanmarie Devolites, was incomprehensible.

2) I talked with the fellow who picked up a machine from Dulles precinct then drove to Clifton precinct and LEFT THE MACHINE UNATTENDED IN HIS BACK SEAT during the election while he went in to address the Clifton problem. He seemed to view the machine as a mere computer, not as a ballot box, and perceived no problem in leaving it unattended during the election because no one stole it or appeared to have touched it.

3) I asked to see the tapes for Mantua precinct (at Kena Temple) and found one machine had only 15 votes. I asked why and the handwritten record stated the machine (unit 1977) failed while Gerry Connolly himself was voting. How ironic! Wasn't the press there? Why has no one mentioned this interesting piece of trivia? The Election Board was surprised (and perhaps a bit embarrassed) by my discovery.

4) A worker admitted that occasionally the touch screens have certain spots that fail to record votes. Can we insist on paper copies that are deposited in a real ballot box as a backup?

_____

Biggest problem that I saw was many of the machines broke down during the day and I am not sure what happened to those votes....

_____

We had a couple of problems in the McLean Precinct Lewinsville Center

1st at least 2 of the 4 machines went down at various points throughout the day. From

what I gathered, they never left the site, rather someone was sent to repair them. I don't know if this affected the vote totals in the machines memory.

More troubling were the problems after the polls closed. The machines would not synch up with each other, nor would they transmit their results electronically. As a result, the vote tallies needed to be printed out. While this was going on the election marshals were huddled around the coffee machine, fighting over pizza, cleaning up, and generally doing anything but watching the machines. They allowed the democrat precinct captain to wander around and touch the machines prior to printing out the tallies. At one point, the printer on the first machine became stuck (or otherwise misfed the paper) and the Democrat precinct captain began poking the machine, shaking it, and trying to retrieve the paper printout. This went on for about a minute until the election marshal finally stopped her and asked her to step back from the machines.

I don't know if she did anything (I doubt she had the ability to at that point) but it is still an irregularity that ought to be reported.

According to my daughter, several Wakefield parents told their children that the name "Hurley" did not appear on their ballot. This is certainly not a validated report, but is their any way to check this out?

I was quite surprised when I entered the voting booth on Tuesday evening only to find that party affiliations were not included on the ballot line designated for Fairfax County Sheriff candidates. [10] Undoubtedly, this omission left many party line voters scrambling to remember which candidate was the Republican and hoping that they didn't vote for a Democrat, my wife and myself included.
I've lived and voted successfully in 4 states over the past 4 years -- including Broward County, Florida in 2000 -- and have never encountered a ballot that solely listed candidates for this elected position and neglected to indicate their party affiliations.

. . . one machine (of five) failed at Westbriar Pct 0219 . . . It's my impression that it didn't come up in the morning, and wasn't used until after it was successfully rebooted later in the day.

Also, the automatic upload of election results to the Board of Elections failed; the chief election officer called in the numbers (from the tape) on a voice line.

I don't believe this to be material the results in the polling place.

Dear Mrs. [Rita] Thompson,

[10] Voter was not aware that Party ID was only for statewide offices. Voter was contacted.

This morning at about 0720 I voted at Lynbrook Elementary School in North Springfield, using the new electronic touch-screen voting machine #W001741. When I got to the part on page 2 for School Board candidates, I touched x's against candidates Hunt and Hurley, and then touched your name to place the third *x*.

Before moving on to the third page, I scanned all my votes on the screen and noticed that the highlighting and x was now missing from your name. So I touched the selection key by your name again, but after a second or so the x and highlighting again disappeared. This happened four or five more times before the highlighting and *x* finally stuck, and on the review page I ensured that your name was included before hitting the Vote key.

I reported this irregularity to the assistant voting official, and she said she would test out your key on the touch-screen after I left. However, it later occurred to me that if this problem was not the result of a malfunctioning key, it might be due instead to a machine that was not properly programmed to accept three names under a particular category; or to some other reason. Whatever the case, I felt you should be aware of this matter.

C. Telephone Reports

An FCRC volunteer in Wayneswood precinct confirmed the failure of the Voting Machine listed in Section II above.

An FCRC volunteer in Ridgelea precinct reported that a voting machine battery malfunctioned but was later replaced.

An FCRC volunteer in Masonville reported that two machines were “down” and that the election officials were distributing paper ballots.

An FCRC volunteer in North Point precinct reported that two machines failed.

An FCRC volunteer in Longfellow reported that “uncontested candidate buttons didn’t work.”

An FCRC volunteer in Oak Hill precinct reported that a voting machine “wasn’t registering.”

An FCRC volunteer in Dunston precinct reported that a voting machine “would not take (State Senate Candidate Chris) Braunlich [and] kept changing the vote to (Toddy) Puller.”

An FCRC volunteer in Bren Mar precinct reported that voters could not figure out how to use the voting machines, and that an election officer was "standing close by . . . privacy lost w/these machines. . ."[11]

An FCRC volunteer at Herndon Elementary School reported that the voting machine "was flashing, they flashed the whole time."

IV. Media Reports and Fairfax County Memoranda

The final data set included in this report includes quoted material emerging from "Media Reports." The national, as well as local media, started reporting on this issue in Fairfax well before Election Day, 2003. These reports are useful because they capture, in real time, the thoughts and proclamations of key players in this matter. Some members of the press diligently recorded thoughts, impressions and other information *prior to* Election Day, as well as documenting the fallout once the problems emerged. In this section, we recap reported stories, including quotes and other material presented in newsprint – with citation dates and publications for reference.

In August, 2003, *Government Technology* magazine did a feature entitled, "A Vote for the Future." The report quoted Judy Flaig of the Electoral Board as confirming that Fairfax County sought to purchase the new machines prior to 2000, and that they were purchased because the existing machines were "getting old." Margaret Luca, Secretary of the Electoral Board, confirmed that the WINvote machines most closely met criteria set by the Electoral Board. The most important features, according to Flaig and Luca, were that the machines were not dependant on a single point in each precinct (i.e., given their wireless features, if one machine failed not all machines failed) and that they were light weight. According to the article, the weight "makes it much easier for election workers to carry and store" the machines. The article indicted that the time savings in man-hours to program the machines, set them up and take them down was a great enticement.

According to the article, AVS officials hoped at the time that Fairfax County would be "the first jurisdiction to successfully test, certify and deploy wireless technology across the whole jurisdiction." AVS Government Affairs coordinator Bryan Finney promoted the fact that the wireless ballot activation would retain the integrity of a stand alone system (each machine can talk to each other to tabulate the results), while at the same time, allow the system to "call in" the vote via modem. Finney said it is "virtually impossible" for a hacker to do damage while the system was calling in the results, and assured the reporter that a paper audit trail existed. That is, that each

[11] Several witnesses reported a certain degree of uneasiness when they had to ask an election officer to assist them with a malfunction and/or a question about the machine in that the election officer had to actually look at the ballot (the touch screen machine) and, in some cases, ask permission to touch the ballot in order the remedy the malfunction or answer the question.

machine could print out the results retained in the software. Finney never suggested that there is a voter verified paper trail – because there is none.

In an August 11, 2003 *Washington Post* article, reporter Brigid Shulte reported that the Virginia State Board of Elections was very concerned with a recent Johns Hopkins University report which concluded that electronic voting equipment was vulnerable to breakdowns. The article documented instances in Georgia where a voter cast his vote for one candidate and that candidate's opponent's name was registered, and in Alabama where a 7,000 vote "glitch" delayed the final Governor's vote tally by two weeks. While these examples did not occur on WINvote machines, they describe the potential problems inherent in any electronic machine.

In an October 12, 2003 *Washington Post* article, reporter David Cho reported that an anonymous Fairfax County technology manager acknowledged that the County did not have the expertise to test the electronic equipment, and that "You would definitely need to hire a high tech company" to test the machines. Cho further reported that the expert hired by Virginia to test the WINvote machines "did not study their vulnerability to hackers, nor was he required to do so." Indeed, Flaig stated that, "security wasn't really the deciding factor," and suggested that voters "have to trust the system at some point" (emphasis added). From this report, it seemed that the Electoral Board seemed to be more impressed with cost savings and time savings than security.

In a November 5, 2003 *Washington Post* election day wrap-up article, Mr. Cho reported the Voting Machine story cited in Section II above, and went on to report that "telephone modems failed" to get the vote totals from the precincts to the Government Center, as promised, in a timely and efficient manner. Although Luca stated that "I thought we had it covered. We tested all week in the County," she conceded that there were "unanticipated problems" with the ten Voting Machines. Luca then stated that, in her view, the "whole idea behind these machines," was that they could be moved from place to place.

In a November 6, 2003 *Fairfax Journal* article, Michael Neibauer reported that the County Attorney, in Court, suggested that all of the ten Voting Machines were "watched at all times" by an election official. [We now know that, in fact, a vendor employee was responsible for moving at least one machine.] The article then reported that Flaig admitted that moving the machines was a "tactical error."

In a November 6, 2003 *Connection Newspapers* article, David Harrison reported that some voters on election day, such as one Florence Stone, felt "a bit more vulnerable" without a curtain around the voting machine. The article reported that two machines failed, but were later pressed back into service at Kena Temple, according to Election Chief David MacClary, and for Election Officer Randy Causey in Reston, one machine was being "a little flaky."

In a November 6, 2003 *Washington Times* article, Jim McEllhatten reported that Chairman-Elect Gerald Connolly's biggest concern was "to make sure that all votes cast are recorded."

That same day, Cho of the *Washington Post* reported the most startling quote of Election Day: Ms Luca stated that in about "one out of a hundred tries" a voting machine subtracted a vote from School Board Member Rita Thompson. (emphasis added). She went on to say that the machines rated an "A-plus," but "it's the plan to collect the votes that failed." Cho revisited previous promises by the Electoral Board that the voting machines were well tested a week prior to the election, and that they would "greatly speed the reporting of results," and reported that most precincts could not report for hours due to the modem traffic. Two precincts did not report until 4:30 the next day and 19 were sealed when the election officials mistakenly believed that they transmitted their data. Under Virginia law, those machines could not be accessed until the Electoral Board gathered the next day.

In an *Observer News* story written on November 7, 2003, Jason Hornick reported that, in Ms. Luca's view, "the goal was to fix the machines and take them back to the polling place," and that only a "very few votes" were involved – "not enough votes to blink your eye in a contest." She concluded that "The day was pretty much perfect as far as voter appreciation for the new machine."

In a *Times-Community Newspapers* article written by Dominic Bonaiuto on November 11, 2003, after the machines had been inspected by the parties to the law suit, Ms. Luca re-affirmed that she was pleased with the performance of most of the machines. In a November 12, 2003 *Connection Newspapers* article by Harrison, Ms. Flaig was quoted as saying "the machines did exactly what they were supposed to do." She went on to confidently state that "not one of those votes was lost even though the machines shut themselves down." Harrison quoted Fairfax County Democratic Committee chairwoman, Jan Reeves, apparently stating the Democrat position: that the GOP's reaction was over the top. [Challenging failed voter machines and their removal is] "like taking a ball-peen hammer to a gnat." Reportedly, Ms. Luca then promised to "see if we can put our finger on where the disconnect actually was."

Eventually, in a *Northern Virginia Journal* editorial on November 12, 2003, the paper cited several reasons why FCRC's actions were important: because these machine are self-auditing, and there is no voter verified paper audit trail, "There is simply no way for voters to know for sure whether their votes are being recorded, and no way election officials can honestly guarantee they are not being changed."

Unfortunately, we learned in a *Sun Gazette* article written by Brian Trompeter on November 14, 2003 that Ms. Luca believed that election officer training (one of many criticisms heard on election day) would likely not be changed. Reeves expanded on the Democrat party's position: "Security was never breached, no law was broken."

Also on November 14, 2003, Ms. Luca prepared a Memorandum for dissemination at the Fairfax Board of Supervisors Public Hearing on November 17, 2003. In her Memoranda, Ms. Luca proclaimed that "Overall, the new voting machines worked well . . . only ten [Voting Machines] posed a problem." While she enthusiastically endorsed the new "option of repairing problem machines by bringing them to a central site, making the fixes, and returning the machines to the precinct," she conceded that "For future elections, we have decided that faulty machines will not be removed from the precincts."

Conceding additional Election Day failures, Ms. Luca went on to promise that the Electoral Board would enhance the preparation of precinct workers, improve coordination, procedures and election night contingency planning, and implement a corrective action plan with the AVS to prevent further problems before the Democrat presidential primary of February, 2004. Such corrective actions include "resolving machine issues" by early January, 2004, resolve "reporting issues" by early January, 2004, conduct a first mock election of 20 machines in 20 precincts, and a second "volume stress test using [a] mock February 10 ballot", and conducting a third mock election, as needed.

On November 18, 2003, Mr. Cho reported in the *Washington Post* that, two weeks after election day, the Board of Supervisors decided to look into this matter. The Board called Ms. Luca to task when she insisted that, "Overall, the new voting machines worked well," arguing that 10 machine failures out of 1000 is a pretty good record. Chairman-elect Connolly lambasted Ms. Luca as being "cavalier" in her assessment, and said her assertion "is simply not correct." Connolly confirmed, as this Report has stated, that the machine he voted on failed. In the wake of Rita Thompson's request that the Electoral Board test every machine, Mr. Cho reports that Ms. Luca promised to take Ms. Thompson's request "under serious consideration." Luca also promised to "answer every question as soon as I possibly can in the proper fashion." Although Chairman-elect Connolly directed the County Executive to conduct an investigation and report back to the Board of Supervisors at the next public board session, the County Executive did not issue a report at the December 8, 2003 meeting (the last public session of the 2000-2003 Board of Supervisors).

On November 19, 2003, Chairman-elect Connolly forwarded a Memorandum to the Electoral Board reiterating his deep concern "about issues which arose on Election Day," and asked the Electoral Board to include complaints received *prior to Election Day* from precinct election officials in their report to the Board of Supervisors.

On November 24, 2003 Justin Bergman of the Associated Press, reporting in the *Washington Times*, quoted AVS president Howard Van Pelt as saying, "We asked every voter we could see [in Fairfax] and every poll worker [about the new machines], and they all loved it." Mr. Van Pelt, according to the article, went on to proclaim that he believed that Rita Thompson did not lose any votes, while at the same time pledging to determine what caused a machine to "intermittently" subtract votes from the touch screen.

Finally, as recently as January 3, 2004, Margaret Luca is quoted in a CBSNEWS.com print story stating that, "Everybody who tried [the voting machines] thought [they were] terrific. These latter two media reports are particularly troublesome, given the data presented in this Report and elsewhere.

V. Conclusions, Recommendations, Questions and Solutions

FCRC does not assert in this Report that it has identified all the problems associated with the WINvote electronic voting machines used in Fairfax County on Election Day.[12] Nor does FCRC pretend to have all of the solutions. But to provide a good government service to this crucial public policy debate, FCRC offers in this section Conclusions based on its investigation and research, reasonable Recommendations for further independent investigation, proposed Questions to be addressed in an independent investigation, and proposed Solutions which should be pursued locally and in the General Assembly and Executive Branch of Virginia government before the 2004 General Presidential Election and 2005 General Election.

A. CONCLUSIONS.

Based on the information gathered during this investigation, FCRC has arrived at a several conclusions. First, even in the face of the failure of the new voting machines, and lack of procedures to deal with those failures, the Fairfax County Electoral Board refuses to admit the breadth and depth of the voting machine problem. Whether its refusal to face reality is due to pride or inexperience in the first test of the new Board, it is troubling that this Board was not prepared to handle these problems, and refuses to acknowledge the problems even at this late date (See Ms. Lucas remarks of January 3, 2004 above).

Prior to Election Day, media reports and trained election officers alerted the Electoral Board to potential problems. On Election Day, once it had learned of the Voting Machine failures and the Electoral Board considered moving the machines out of their polling place, FCRC demanded that the Electoral Board resist its inclination to move the machines. Instead, without justification or pre-clearance by the State Board of Elections, the Electoral Board moved ten Voting Machines. If that decision was never made, it is unlikely that the myriad problems that emerged in the wake of Election Day would have come to light.

FCRC's second general conclusion is that, because it is unwilling to acknowledge the failures of Election Day, the Electoral Board may not be ready or willing to correct the problems identified in this report. Early on, under legal, media and interest group

[12] Attached to this report is a report by Raoul East Drapeau, a high-technology executive, a graduate-degreed engineer and manager, and a Fairfax County Election Officer who presided at a Fairfax County polling place on November 4, 2003. This report is attached as is, without editorial comment. Mr. Drapeau is not affiliated with the Fairfax County Republican Party. Indeed, it is our understanding that he was appointed to his post by the Democrat Party of Fairfax.

pressure, the Electoral Board agreed to conduct a public review of the data on the ten Voting Machines. In mid-November, the Board of Supervisors criticized the Electoral Board for the failures that occurred and directed both the Board and the County Executive to investigate the problems; the Electoral Board agreed to make several changes prior to the February Democrat Primary (see the attached Ms. Luca's memorandum dated November 14, 2003). FCRC, in its recommendations below, asks the leadership of the Board of Supervisors to ensure that the Fairfax Electoral Board make good on its promises.

The WINvote machines failed. The software failed (machines crashed throughout, voters reported difficulty in getting their choices to record), the hardware failed (some machines required new batteries, some needed to be "jiggled" back into operation, modems failed to transmit data) and the procedures for handling Election Day problems were non-existent (machines were removed by non-Electoral Board employees, and they were taken from the plain view of the election officers). FCRC understand that no voter could demand 100% perfection, but the sheer volume of problems and unresolved questions after Election Day, 2003 is mind-boggling; especially in a community where, in the past, such problems were few and far between.

To be clear, FCRC offers the following specific conclusions based on the entire body of data reviewed and included in this Report.

1. The Federal Election Commission (FEC) is charged with publishing comprehensive regulations regarding operational standards for voting machines purchased with federal money.

2. The National Association of State Election Directors (NASED) provides a vendor qualification process for the pre-qualification of vendors.

3. Under the federal Helping American Vote Act (HAVA), FEC is required to create a 14-member Technical Guidelines Development Committee and a 110-member Standards Board, and create rules for testing, certification, decertification, and recertification of voting system hardware and software by accredited laboratories." As of January 1, 2004, no HAVA guidelines have been adopted.

4. The Virginia State Board of Elections (SBE) approved four models of electronic voting machines for purchase by localities, including the WINvote model.

5. Under the current scheme, vendors self-certify that their equipment meets the published standards.

6. Independent testing authorities (ITA's) tested and passed the WINvote model before Fairfax County purchased the machines.

7. Despite these steps, an undetermined number of WINvote machines failed during an election with very light turnout (32.8%); in the 2004 presidential election, the projected turn out could be double the 2003 figure.

8. Election Day testing on one machine, confirmed by the Electoral Board, revealed that one vote for every 100 votes cast for incumbent school-board candidate Rita Thompson was subtracted for a 2% reduction in her vote. Ms. Thompson lost by 1,600 votes county wide out of over 77,000 votes cast for her. Two percent of Ms. Thompson's vote total is 1,540.

9. Several voters using the touch screens reported that the machines failed to register their vote or registered the wrong candidate. It appears that the tough screens only register if the voter touching the screen *only touches* inside a designated area, and the vote only registers when his or her finger is removed from the designated area on the screen.

10. Ten machines materially failed on Election Day, could not be repaired in the polling place, and were removed from the polling place. These machines were the subject of a court-ordered review.

11. The court-ordered review of the 10 failed voting machines revealed that the paper audit trail required under federal law on the WINvote machine is easily deleted (and in one case was deleted) from the machine's digital memory.

12. The paper audit is not voter verified at the time of the vote – but rather, it is "self-audited". If the voter cannot verify the actual audit record in the voting booth, meaningful recounts are impossible since the recount would be an identical re-tabulation of the original count stored in electronic form on the machine.

13. Although the WINvote machine is capable of recording an audit trail in three memory locations, only one easily deleted location is used.

14. The WINvote audit trail does not record a name or identification number of any person making changes in the machine.

15. The WINvote memory chip and the hard drive are easily accessed and easily replaced in minutes, and were not sealed against such changes even when they were delivered to the polls for use on Election Day.

16. If a WINvote machine freezes during boot-up, the vendor has suggested that the election official "Try rebooting by pressing the red power button and holding it until the screen goes blank. Wait about 15 seconds, and press the button again to re-start." [see Arlington WINvote Troubleshooting Tips, 10/03].

B. RECOMMENDATIONS

With the release of this Report, FCRC recommends that every level of Virginia government play a role in preventing further erosion of voter confidence in the vote in Virginia. Time is of the essence: Virginia is ten months from a presidential election and has scheduled two primaries – one in February and one in June, 2004.

FCRC recommends that the Fairfax County Board of Supervisors, together with the Fairfax Electoral Board, charter an independent commission to review all Election Day procedures, voting machine technical requirements, election officer training, and conduct a detailed technical investigation of the hardware and software that make up the WINvote machine.[13] The investigation must be open to observation by representatives of both major political parties and a representative of the non-aligned voting public, must include an independent open review of the computer source code and should be conducted in conjunction with the promises made by the Electoral Board to the Board of Supervisors in their November 14, 2003 Memorandum, authored by Electoral Board Secretary Margaret Luca (see memorandum attached). The investigation should specifically determine the extent to which "a voting machine subtracted a vote from School Board Member Rita Thompson" – as stated by Ms. Luca of the Electoral Board, and should include a report addressing the reliability and integrity of the vote count on the machines.

Next, FCRC calls on Fairfax Democrats and others to join in its effort to engage the Northern Virginia General Assembly delegation in this issue. FCRC has asked members to patron legislation that will clarify the state code to prevent future local electoral officials from moving voting machines out of the plain view of the election officers in the polling place, and require a voter verified paper audit trail, together with a surprise/random re-count of some portion of all voting machines to compare the voter verified paper audit results to the electronic results. In addition, the General Assembly should consider directing the State Board of Elections to de-certify any voting machines that do not include a voter verified paper audit trail – allowing localities a reasonable time in which to retro-fit their current equipment or purchase new equipment.

The FCRC has also asked the House Government Reform Committee, chaired by Virginia Congressman Tom Davis, to exercise its oversight powers to investigate these voting machines. In FCRC's view, there are two points for Congress to consider: first, that the availability of federal funds for voting machines may increase the incentive for fraud due to the current lax FEC standards for voting machines. As such, vendors and local authorities must be required to work together to assure that such opportunities for vote fraud are eliminated.

[13] In Maryland, after several calls for an independent investigation, the state government commissioned a detailed technical investigation of their (Deibold) electronic touch screen machines by SAIC who found serious problems with the voting machines.

In Fairfax County, for example, the vendor and the Electoral Board assumed that the WINvote machines were a solution to the need for upgraded voting equipment, without applying stringent procedural controls to eliminate fraud opportunities created by the design of the machines.

Second, anti-fraud controls over approved voting machines and voting data are 100% subject to the integrity of the digital record retained *in the machines* - they are self auditing. In Fairfax, the court-ordered review of 10 machines demonstrated that the audit trail is stored in one location, the digital memory is easily destroyed and is not backed up. It was also seen that the storage media could easily be tampered with or removed even though the machines were certified as compliant with state and FEC standards.

C. QUESTIONS

Any investigation must answer several basic questions, including, for example:

1. Why is it that, while the WINvote machine is capable of recording an audit trail in three memory locations, it employs only one?

2. Were the failures that occurred on Election Day 2003 failures of the WINvote machine, or decision-making failures of the Electoral Board?

3. Why did Arlington, which also used WINvote machines, experience far fewer problems than Fairfax? How did Arlington's procedures differ from Fairfax's procedures?

4. What is the operating system upon which WINvote machines operate, and has that system been tested?

5. Can the software of the voting machine be altered by the vendor's programmers (or anyone coming into contact with the machine) after the machine has been delivered to the locality? What security measures are taken to prevent such tampering?

6. Are ballot-programmed WINvote machines locked and guarded 24 hours a day, seven days a week when they are not in use?

7. Given their documented security vulnerabilities, what precautions are taken to prevent tampering with the Wired Equivalent Privacy (WEP) protocol in the wireless local area of the WINvote machine?

8. What was the under vote (the total number of voters registering to vote less than total number of votes cast) in Fairfax County on Election Day? How did it compare to the under vote in 1999 (the comparable election year), or in nearby Counties which did not use the WINvote machines?

For an under vote to occur, a voter elects not to vote in one or more of the races on the ballot. It is expected that in every election, there will be an under vote, however, an unusually high under vote may indicate that votes were cast but not recorded.

9. Are there any ports on the WINvote machine kiosk that can reprogram the voting machine's firmware?

10. Does the WINvote machine touch screen allow a candidate position to be activated on any place other than the candidate's name? Is it possible to activate the wrong candidate's name? If no, then why?

12. What was the pre-election day precinct-by-precinct preparation to ensure that every polling place was equipped with proper telecommunications equipment to transfer results - especially in the case of equipment requiring a 'dial 9' to get a line out?

13. What is the track record of the WINvote voting machines in other jurisdictions? Did WINvote machines fail in Hinds County, Mississippi in September, 2003 and November, 2003? If so, what remedial actions were taken to prevent future failures of the WINvote machines in Mississippi?

14. Name the jurisdictions in which AVS sought certification of WINvote machines, including any jurisdictions in which the WINvote machines were not certified.

15. On Election Day, 2003, in Fairfax, did the WINvote machines meet the Federal Election Commission requirement that they operate at a minimum of 99% of available voting hours?[14]

D. SOLUTIONS

To coin a phrase, FCRC does not want to be part of the problem – but rather part of the solution. FCRC recognizes that it is impossible to create "bug-free" software. Worse yet, malicious code can be embedded into software that would go virtually undetected – even by the trained eye. FCRC further understands that computer-based systems can offer advantages (speed of vote tally, ease of set up and tear down, etc.) over pre-HAVA voting technology – and ultimately offer lower costs. As such, FCRC concludes this report with a brief series of proposed solutions.

FCRC does not claim expertise in the field of voting machine technology. Nor does FCRC ask federal, state and local officials to act simply based on the demands of the Fairfax Republican Committee. Officials must investigate this problem independently and search out solutions. However, FCRC could not, in good conscience,

[14] The total number of actual hours that all machines were in use on election day divided by the number of all available voting machines hours (935 machines multiplied by 13 total polling hours).

sit on the sidelines and watch voter confidence in the critical matter of ballot and vote integrity crumble. FCRC proposes that the Fairfax County Electoral Board:

1. Adopt a written policy that forbids the removal of voting machines that fail in a polling place on Election before all votes are tallied, and train Electoral Board employees and Election Officials to resist the same.

2. Adopt a written policy that requires all voting machines to remain in the plain view of the Chief Election Officer in the polling place that the voting machine is assigned.

3. Adopt a written policy that requires the Chief Election Officer in the polling place to seal and protect any voting machines taken out of service.

4. Adopt a written policy that prohibits employees of the Electoral Board from deleting the digital record of any ballot unless partisan witnesses are present (or given the reasonable opportunity to be present) and the entire statutory Election process is complete.

5. Adopt a written policy which standardizes the placement of the voting machine in the polling place to ensure that each vote is cast in complete privacy, and which prevents any other person in the polling from observing the voter cast his or her vote. In this case, a simple corrective action could be to orient the voting machine so that when he or she is voting, the voter faces the voters in line waiting to cast their vote (with the back flap of the voting machine blocking the other voters' view of the voting machine).

The General Assembly and State Board of Elections should adopt legislation and Rules that:

1. Require an audit trail that identifies the number of any Location Smartcard or Administrator Smartcard used to access or alter the digital memory of the machine at any time, and the identity of the user.

2. Require a duplicate digital copy of the Audit Log on each voting machine.

3. Clarify the state Election Code to prevent the removal of voting machines from a polling place until after the vote has been counted and the machines sealed for transport.

4. Clarify the state Election Code to require that, once a machine is delivered to a polling place, that it remain in the plain view of the Chief Election Officer at the polling place at all times.

5. Require the vendor of any Direct Recording Equipment make its source code publicly available – with appropriate intellectual property and trade secret protections and protection against voiding applicable warranties.

6. Require a voter verified paper audit trail of every vote cast, and that a 'surprise' re-count be held in .5% of all election precincts to compare the paper audit trail with the electronic results.

7. Require that new voting machines be equipped with curtains, as was the case with the previous (more traditional) Fairfax County voting machines, which allow only the voter visual access to the voting machine (to the exclusion of all other voters and Election officials).

ATTACHMENTS

Fairfax County Republican Committee, et al., v. Fairfax County Electoral Board (Fairfax Circuit Court Chancery No. 186843: Final Order.

Report of Raoul East Drapeau Dated January 10, 2004

Memorandum fro the Fairfax Electoral Board to the Fairfax Board of Supervisors, November 11, 2003