

# PRESENTATION TO THE U.S. ELECTION ASSISTANCE COMMISSION

HEARING ON THE USE, SECURITY AND RELIABILITY  
OF ELECTRONIC VOTING SYSTEMS

May 5, 2004

Conny B. McCormack  
Los Angeles County Registrar-Recorder/County Clerk

Thank you for the privilege of addressing the U.S. Election Assistance Commission (EAC) at your first public hearing on the foremost elections topic today: the security and reliability of electronic voting equipment and the challenge facing our country as a result of the current major transition from paper-based and mechanical (lever) voting systems to electronic voting equipment.

I appreciate the opportunity to offer the perspective of someone who has held the positions of Registrar of Voters and/or Elections Administrator for the past 22 years in three of the largest urban areas of the U.S. - Dallas, Texas, San Diego, California and, for the last eight years, in Los Angeles County, California. Los Angeles County is the most populous election jurisdiction in the U.S. with four million active and one million inactive registered voters on file and up to 5,000 voting precincts on election day. Over the past two decades I have overseen the conduct of elections on four types of equipment: lever machines, punch cards, optical scan and direct record electronic (DRE) systems. My experience also encompasses international elections consulting and electoral observation in six foreign countries, all using manually counted paper ballots.

I also have first-hand experience – three times - of what a monumental endeavor it is for an election jurisdiction to introduce a new voting system to voters and to pollworkers. My experience includes 1) the personal pain when unexpected system implementation problems arose in 1982 during conversion from lever machines to punch cards in Dallas County, Texas, and the crushing personal blow of disappointing voters as well as the resulting negative headlines; 2) the elation of successfully implementing electronic voting for the first time in Los Angeles (L.A.) County, California by offering touchscreen “early voting” to any L.A. County voter in advance of election day in conjunction with the November 2000 election, which required complex software capable of displaying thousands of separate ballot combinations in seven languages on each DRE unit; and 3) the relief of overseeing a successful new system transition during a statewide election in March 2004 when converting from punch cards to optical scan equipment in 4,571 voting precincts in L.A. County. I can definitively state that there is no more difficult task for a local elections administrator and staff than converting to a new voting system. It involves facing the unknown and changing virtually every process and procedure from what was formerly familiar to the elections staff, pollworkers and the voting public.

Now, in the short timeframe of the next two years, the majority of election jurisdictions across the U.S. simultaneously face the dilemma of evaluating and acquiring new voting equipment to comply with sweeping new system requirements under the Help America Vote Act (HAVA). I believe the most critical challenge facing your Commission is to help thousands of jurisdictions in successfully navigating the turbulent waters to accomplish this major paradigm shift. By compiling and disseminating concise and clear Best Practices Papers, this Commission can be of invaluable assistance in recommending the Do's and

Don'ts and describing lessons learned from both successful and problem-ridden new system implementations<sup>1</sup>.

Election administrators welcome what you are doing today to bring together divergent viewpoints on the hot button issue of the security of electronic voting equipment. Your dispassionate, reasoned assessment of the pros and cons of the various options that have surfaced in the raging DRE "voter verified paper audit trail" (VVPAT) debate are eagerly awaited by election officials nationwide.

The crux of the issue is whether or not a VVPAT concept is necessary or advisable as add-on equipment to DRE voting equipment that has been in use in this country for more than 15 years without evidence of vote tally inaccuracy and without previously generating the current controversy. The focus on this issue at this point in time appears to revolve around two major factors: 1) the imminent acquisition of so much new voting equipment throughout the nation due to aforementioned HAVA requirements including the provision of significant federal funding for new system purchases; and 2) the residual angst lingering from the results of the closely contested November 2000 Presidential contest and the possibility that the November 2004 Presidential race may also result in a close margin of victory.

It is instructive to reflect back upon the last time when a major shift in the type of voting equipment occurred in this country. In the late 1960s and early 1970s many election jurisdictions converted from manual tabulation of paper ballots to the then-new computerized punch card voting system. An extensive news article in the *Los Angeles Times* on October 8, 1969 featured a headline that screamed *How Elections Can Be Rigged Via Computers*. Reading excerpts from this article is enlightening especially the following paragraph: "One IBM official stoutly denied it is technically possible to tamper with the vote-counting process. But this view is disputed by scores of experts in the field. Most agree that there is a growing number of computer experts knowledgeable enough to devise ways of modifying the program so as to alter the vote count. There are relatively few people who have sufficient access to the program to do anything about it<sup>2</sup>."

VVPAT proponents do not have a monopoly on wanting secure systems and the assurance that all votes are counted accurately. Both sides in this debate seek the same overriding goal for election administration – the accurate casting, tabulation and reporting of all votes in accordance with the voters' intentions. The fact is that DRE systems have the proven track record of doing the best job of all available voting systems in achieving that goal. This should come as no surprise. It is the very reason why our society continually and progressively relies less on manual processes and more on computers to manage our lives.

---

<sup>1</sup> An example of lessons to be learned from DRE implementation is found in my September 25, 2002 Report of On-Site Observation of Florida September 10, 2002 Primary Election enclosed at Attachment A.

<sup>2</sup> Article is enclosed at Attachment B.

While VVPB proponents argue for a verifiable ballot, election administrators want to assure a verifiable system. To lower the risk of failure or the triumph of unintended consequences, VVPAT pilot programs would need to be undertaken to verify that any VVPAT system will actually work as anticipated and doesn't inadvertently cause problems while attempting to "solve" hypothetical ones.

Although several election vendors have developed VVPAT prototypes, there are currently no standards in place for certifying these devices nor have any jurisdictions successfully implemented this concept to date. The small-scale experiments deploying prototype VVPAT systems in Sacramento County, California during the early voting period in conjunction with the November 2002 Election and in Wilton, Connecticut during the November 2003 Election do not bode well for successful large-scale deployment of VVPAT systems. Sacramento County's Registrar wrote a report assessing the experience which noted that a number of voters found the VVPAT confusing as they thought they could take the paper ballot replica with them. Additionally, there were frequent instances when the attached printers jammed requiring the machines to be taken out of service and "when the printed record stuck they had to be extracted with many creative tools that were on hand at the early voting site such as a windshield wiper or back scratcher." Similarly in Wilton, CT the deputy registrar reported that the voter interface issues were "appalling" and that this created "numerous problems for voters and placed great stress on the poll workers."

Election administrators anticipate the major obstacles of moving VVPAT from concept to reality, especially in jurisdictions with long, complex ballots in multiple languages. I have brought with me today an actual absentee/mail ballot from the November 2002 General Election in Alameda County (Oakland), California. This is an optical scan ballot printed on both sides to accommodate the large number of contests (including Kevin Shelley's first appearance on a General Election ballot for the position of California's Secretary of State). For election day voters using Alameda County's DRE system, reviewing his/her voting choices prior to hitting the Cast Ballot button was very user-friendly even for this extremely long ballot.

The selected choices appeared in one color on the DRE review screen while any races that were either intentionally or inadvertently skipped (undervoted) were highlighted in a contrasting color. The contrasting color alerts the voter in the event he/she wishes to go back to cast a vote on any skipped contest.

However, to reproduce this ballot in a VVPAT format would require a paper tape of approximately 37" in length to run under glass (hold it up to show it). This example is in small print and only in English and it is still 37" long. It clearly would have to scroll with some decision regarding the interval of time for the scrolling process which may prove too fast or too slow for different voters. Delays in the voting process while voters examine the VVPAT would be inevitable. Even a small failure rate of mechanical printers would add another

complexity that is not currently encountered by pollworkers and voters using DRE systems without a VVPAT component.

Current model DREs already have multiple redundant internal backups. This is not the case when mechanical (lever) voting machines malfunction which often goes undetected by the voters and pollworkers. Yet lever voting systems have been in widespread use for many decades in this country. When using our DRE system we systematically test all ballot combinations (3,000+ in L.A. County) using scripted test vote patterns, including a simulated election day test as well. This is standard operating procedure for election jurisdictions using DRE systems. In L.A. County we cast thousands of such scripted ballots in these tests, all of which are open to the public both pre election day, election day and post election day. All documentation is reviewed and compared to the electronic test results. It is labor intensive and time consuming but election officials do it for every election to ensure accuracy. We do not simply trust the vendor's products, we enter our candidates and ballot propositions and run test after test and keep a log of all transactions. Our equipment is kept physically secure behind limited access card-key locked doors.

Additionally, this debate has myopically focused on technology, including blaming DREs for obvious management problems and oversights. A perfect example is the recent *Time Magazine* article during the week of April 26, 2004 entitled "The Vexations of Voting Machines"<sup>3</sup>. It begins by describing a voter strolling out of his polling place after voting in Maryland's Democratic Primary on March 2, 2004 and not remembering voting on the U.S. Senate race. After going back inside to talk to an election official he discovered that the Senate race wasn't displayed on the electronic ballot which gave rise to a suit last month to bar the use of electronic voting machines in November in Maryland. Election administrators know that such ballot proofing errors, examples of which have gone undetected until election day, have plagued elections on all types of voting systems. This proofing mistake was clearly not attributable to the DRE voting equipment.

As you are all aware, the VVPAT debate has reached an apex in California. More than a year ago California's Secretary of State Kevin Shelley convened an Ad Hoc Touchscreen Voting Task Force to study the VVPAT issue<sup>4</sup>. This Task Force issued recommendations late last year to strengthen electronic voting security. Notably, the Task Force did not recommend mandating the additional requirement of a VVPAT but instead recommended instituting a number of added security procedures including parallel monitoring (PM) at the instigation of computer specialists serving on the Task Force. PM involves taking a number of randomly selected DREs out of service on election day for test voting all day long in search of maliciously inserted code and to determine if the tabulation software is counting the votes accurately. On April 22, 2004 Secretary Shelley released

---

<sup>3</sup> Article found at Attachment C.

<sup>4</sup> My presentation to the California Secretary of State Ad Hoc Touchscreen Voting Task Force is found at Attachment D.

his report on the March 2, 2004 Election including the results of the PM exercise. The report found “the results of the reconciliation analysis indicate that the DRE equipment tested on March 2, 2004 recorded the votes as cast with 100% accuracy.” Yet Secretary Shelley, against the advice of the majority of his Task Force, made the decision to require all DRE systems in use in California by January 1, 2006 must be equipped with an as yet unspecified VVPAT. In his position paper Secretary Shelley wrote, “I support a VVPAT not because DRE voting systems are inherently insecure, they are not, but rather because people understandably feel more confident when they can verify that their votes are being recorded as intended.”

However, there exists a huge gulf between the reality versus the speculation about voter confidence in the accuracy and security of DRE systems. Overwhelmingly evidence, gathered from surveys of over 150,000 California voters, reveals voters enthusiastically support and have confidence in the change from paper-based to electronic voting systems. In San Bernardino County, California, for example, initial implementation of a DRE voting system at the March 2, 2004 Primary election revealed 92% of 113,000 voters surveyed expressed confidence that their votes were accurately recorded on the new equipment. Fully 97% said they preferred the electronic system to any system they had ever used before. Similar reports from other California counties and from counties across the U.S. have resulted in virtually identical findings of voter satisfaction and confidence. These surveys constitute empirical evidence that there is no crisis of voter confidence but rather a tiny vocal minority making false claims to the contrary.

In conclusion if I have learned anything in 22 years in this profession it is that elections are fragile. Under the best circumstances, election administration is a difficult endeavor. Adding an unnecessary requirement to DRE systems to become dual electronic and paper ballot systems would, in my opinion, create a number of administrative problems that could shatter the system and significantly erode public confidence. None of us want to see that happen.

Thank you for taking the time to listen to my thoughts on this matter.