



An Analysis of the “Voter Confidence and Increased Accessibility Act” (H.R. 811)

U.S. House Resolution 811, The Voter Confidence and Increased Accessibility Act” is being considered in the U.S. House. HR811 was recently revised to accommodate the demands of disability advocacy groups for voting equipment that handles more disabilities. Copies of its July 27 draft showing the changesⁱ are posted at http://election-reform.org/Bills2007/HR811_july.html and http://verifiedvoting.org/downloads/MANAG_01A_xml4.pdf

H.R. 811 Voting System Requirements in a Nutshell

By 2008 – HR811 requires random hand counts of 3% to 10% of the voter-verified paper ballots in all Federal races, depending on the margin between leading candidates. The only exception is landslide races (those in which the winner received more than 80% of the votes), in which case audits are allowed but not required. The manual audits shall be conducted prior to certifying election results and the paper ballot shall be used as the official ballot for purposes of any recount or audit.ⁱⁱ

By 2010 - HR811 requires pre-printed paper ballots to be offered to all eligible voters at the polls. The pre-printed ballot may be marked by hand and shall not be produced by a direct recording electronic voting machine. At each polling place a notice shall be displayed prominently which describes the obligation of the official to offer individuals the opportunity to cast votes using a pre-printed paper ballot.

By 2012 - HR811 requires durable, scan-ableⁱⁱⁱ, individual paper ballots with every voting system.

By 2012 - HR811 requires non-visual and enhanced visual paper ballot verification for voters with disabilities.

By 2012 – HR811 requires mechanisms that do not require a voter to manually handle the paper ballots for voters with disabilities.

Analysis – What Do H.R. 811’s Requirements Mean?

By 2008 – HR811 requires random hand counts of 3% to 10% of the voter-verified paper ballots in all Federal races, depending on the margin between leading candidates.

HR811 requires independent, publicly verifiable manual audits of precinct vote counts and provides incentive and opportunity for states to conduct audits of greater percentages than the 3%, 5%, and 10% audits, to produce whatever confidence level the jurisdiction seeks (provided it is at least as high as that required by the bill). The 3%, 5%, and 10% audits have a very high probability of exposing and correcting any outcome-altering vote miscount in all U.S. presidential elections and in almost all U.S. senate and house races.^{iv}

The audit requirement means that all paperless touch-screen direct recording electronic (DRE) voting systems must be upgraded or replaced by November 2008. The paperless DRE voting machines in many jurisdictions will have to be entirely replaced because their paperless DREs are not built in such a way that printers can be added.^v Combined with the requirement for pre-printed paper ballots by 2010 (see below), fiscally responsible election officials would replace paperless DREs with op-scan paper ballot systems.

There are 13 months from October 2007 through October 2008 - plenty of time to replace paperless DREs with paper ballot optical scan voting systems and with ballot marking devices for voters with disabilities. Historical data shows that it takes States from 4 to 12 months to replace voting systems.^{vi}

The bill requires that at each polling place election officials shall place a notice advising voters that the paper ballots representing their votes shall serve as the vote of record in all audits and recounts in elections for Federal office, and that they should not leave the voting booth until confirming that such paper ballots accurately record their vote. This notice shall be placed in a prominent location which is clearly visible from the voting booths, in large font print accessible to the visually impaired.

For those who have valid concerns that paper ballot records printed by DREs may not be an accurate record of voter intent^{vii}, keep in mind that

1. Even if ballot records printed by DREs are not always an accurate reflection of voter intent, valid independent audits in 2008 *will* reveal problems with DRE vote counts.^{viii} Plus alert voters can reveal and record inaccuracies of DRE-printed ballot records; and
2. It is not politically feasible or practically possible to replace all DRE voting machines in time for the 2008 election because there are powerful groups such as The Association of Assistive Technology Act Programs and The National Association of Counties who are advocating for the continued use of paper-roll DRE voting machines, at least for now, and who may be unaware of the extensive research showing the expense, vulnerabilities, and problems caused by using DRE voting machines; and
3. HR811's requirements for verifiably accurate election results and for voting systems which protect ballot privacy and for pre-printed paper ballots which are not vulnerable to electronic failures, power outages, and Denial of Service attacks on Election Day, rightly encourage jurisdictions to purchase less costly, more reliable paper ballot optical scan voting systems and ballot marking devices for voters with disabilities.

If U.S. election results are subjected to valid independent manual audits for the first time in U.S. history, this would ensure that voters, rather than corrupt staffers of vendors or election offices, primarily determine who controls the US Congress and President's Office in 2009, thus providing another opportunity to amend the Help America Vote Act to more quickly implement reliable, accurate, secure voting systems.

By 2010 - HR811 requires pre-printed paper ballots to be offered to all eligible voters at the polls. The pre-printed ballot may be marked by hand and may not be produced by a direct recording electronic voting machine. At each polling place a notice shall be displayed prominently which describes the obligation of the official to offer individuals the opportunity to cast votes using a pre-printed paper ballot.

The pre-printed paper ballot requirement will make it fiscally and administratively burdensome for jurisdictions to continue to use DRE touch-screen voting machines and will encourage the use of optical scan paper ballot systems, unless jurisdictions run two parallel voting systems (optical-scan pre-printed paper ballots *and* expensive new DREs that print durable, individual ballots and verify paper ballots).

By 2012 - HR811 requires durable, scan-able, individual paper ballots with every voting system.

Although HR811 allows the individual paper ballots to be printed by DREs, when this requirement is combined with the requirement for pre-printed paper ballots at the polls and with the requirement for paper ballot verification for voters with disabilities, jurisdictions would have to take on increased financial and administrative burdens to maintain two parallel voting systems in order to continue to use DRE voting systems, so HR811 would be likely to reduce the use of DREs by 2012.

By 2012 - HR811 requires non-visual and enhanced visual paper ballot verification for voters with disabilities.

Ballot marking devices already meet this requirement. DRE voting machines do not.

By 2012 – HR811 requires mechanisms that do not require a voter to manually handle the paper ballots for voters with disabilities.

For the avoidance of doubt, the bill makes it clear how ballot marking devices may meet that requirement: Acceptable ballot marking devices include “mechanisms that provide voters with the option of automatically placing the ballot into a secure container for subsequent counting”^x.

With current ballot marking devices, there is no need to violate the privacy of voters with disabilities by carrying their ballots to a PBOS -- privacy sleeves cover the ballot and are already used in many jurisdictions by all voters. AutoMARK’s existing BMDs would only require a firmware upgrade that would “automatically [place] the ballot into a secure container for subsequent counting” (for example, a self-sealing ballot privacy envelope). Another method for preserving privacy is to use the "blank" ballot option -- the AutoMARK makes the marks on the page, they are read by the scanner, but the other text (names of candidates) is not there, so it is hard, if not impossible, for someone to tell who you voted for by glancing at your ballot. However, it is the fact that a voter with dexterity/mobility issues needs assistance in getting the ballot from point (a) to point (b), i.e. can't do it independently; that issue has been addressed by the added language.

It is noteworthy that some voters with disabilities cannot use existing generation DREs independently either. For instance, a voter with low mobility due to a stroke can't get the iVotronic touch-screen to respond well, and cannot reach the "cast ballot" button at the top of the screen from her wheelchair, but could vote privately and independently on paper.^x

HR811 Updates & Issues to be Aware Of

1. The revised HR811 may require increased funding because voting equipment for voters with disabilities will have to be upgraded or replaced in every polling location by 2012 whereas the prior version of HR811 allowed existing ballot marking devices (BMDs) to be used as is.^{xi} The Manager's Amendment will require a modest modification to ballot marking devices by 2012.

HR811 authorizes \$1 Billion in funding in Fiscal Year 2008 for upgrading or replacing all existing noncompliant DRE systems and for upgrading or replacing existing BMDs. To address the possibility that \$1 billion may not cover the cost of all upgrades due by 2012, the Manager's Amendment added an authorization of "such sums as may be necessary" in FY 2009 to cover the cost of additional upgrades to meet the standards -- including the modest modification to enable voters with mobility disabilities to have their ballots automatically deposited into secure containers -- due by 2012. It should be noted that this will be vastly less expensive and less complicated than the modifications required to make DRE printers produce durable, scan-able paper ballots that disabled voters will be able to verify privately and independently.

2. In order to receive the FY 2008 funding, states must simply identify their "non-compliant" and "partially non-compliant" jurisdictions within 90 days of passage, and then, "to the extent that the State is or will be in compliance with the" upgraded requirements, they can say that too.^{xii}

3. **HR811 must be passed by October 2007 to provide jurisdictions with paperless DRE voting machines sufficient time to replace them with auditable voting equipment in order to implement manual election audits for the November 2008 Federal election.^{xiii} The bill's 2008 deadlines must be preserved to protect the integrity of the 2008 Federal elections.**

4. A Federal right for the public to view election records during the canvass period is necessary for elections to be publicly verifiably accurate. Some States keep election records secret and do not post polling place totals upon poll closing on election night.^{xiv} It is only possible to judge electoral integrity and measure voter disenfranchisement levels if the public has access to view virtually all election records. HR811 does not handle this issue, so additional legislation will be needed to establish a public right to election oversight via access to election records.
5. Some states may want to change state statutes to allow for more or less time for their canvass periods. For instance Florida allows only 10 days between Election Day and the date that election results are made official -- a short time period to finish an election audit; whereas other states may allow so much time for the canvass period that they overrun HR811's December 7th deadline^{xv} for completing the election audit and certifying election results.

Conclusion and Recommendations

The National Election Data Archive is a strong supporter of "The Voter Confidence and Increased Accessibility Act (HR811). HR811 provides sufficient time (almost 5 years until 2012) to replace or upgrade voting systems for voters w/ disabilities - giving ample time for development and certification of better features for voters with disabilities and possible new open source voting systems.^{xvi} Yet HR811 still accomplishes the urgently needed independent manual checks of machine counts in November 2008.

HR811 is an excellent bill because HR811

1. Requires independent manual audits that will expose inaccurate vote counts, under-vote rates, and ballot programming errors beginning in November 2008; and provides incentive to replace flawed voting equipment by 2012; and
2. Authorizes funds to replace all existing touch-screen electronic ballot (DRE) voting machines and provides jurisdictions motivation and opportunity to purchase less expensive, more auditable and trustworthy optical scan paper ballot systems that preserve ballot secrecy and are less vulnerable to electronic failures, errors, and hacking; and
3. Provides incentive and opportunity for states to use election audits that would provide an even higher level of confidence to detect any outcome-altering vote miscount than is mandated in the bill.

The revised version of HR811 deserves strong support.

The National Election Data Archive urges the US House to vote “Yes” for House Resolution 811.

Additional Information on the Problems of Electronic-Ballot Voting Systems:

A short, nearly exhaustive list of problems caused by using touch-screen electronic-ballot DRE voting machines: <http://electionarchive.org/ucvInfo/US/NEDA-S1487-Testimony.pdf>

A list of DRE problems by John Hopkins University Computer Scientist Avi Rubin who is an expert in the security of electronic voting, the director of the National Science Foundation's project ACCURATE Center, and is also an election judge in Baltimore County.

<http://avi-rubin.blogspot.com/2007/08/why-nobody-wants-to-buy-diebold.html>

“Voters Have Reason to Worry – A Response to Election Officials and Others Who Urge Voters to Trust”

<http://utahcountvotes.org/UT/UtahCountVotes-ThadHall-Response.pdf>

E-Voting Ballots Not Secret; Vendors Don't See Problem, August 20th, 2007 by Princeton Computer Science Professor Ed Felten <http://www.freedom-to-tinker.com/?p=1189>

Cost Comparisons between Using Optical Scan versus DRE Voting Systems:
<http://electionmathematics.org> and select “Voting Systems”

Acknowledgements

Thanks to Jerry Berkman for creating the easy-to-read version of HR811’s revisions; and to Pam Smith of Verified Voting for contributing information on which paperless DREs are incapable of having printers added, and on how voting systems could meet HR811’s requirements for voters with disabilities.

This document is posted on-line at:

<http://electionarchive.org/ucvAnalysis/US/Analysis-HR811-Aug2007.pdf>

ⁱ To make the July changes in HR811 easy to see Jerry Berkman put new text in italics and deleted text is struck out and there is a little blue arrow (=>) in front of each added, deleted, or changed paragraph.

ⁱⁱ HR811 requires that in the event of any inconsistencies between any electronic vote tallies and the vote tallies determined by counting by hand the voter-verified paper ballots produced, the voter-verified paper ballots shall be the true and correct record of the votes cast. In the event that it is demonstrated that a sufficient number of the paper ballots have been so compromised that the result of the election could be changed, the determination of the appropriate remedy with respect to the election shall be made in accordance with applicable State law, except that the electronic tally shall not be used as the exclusive basis for determining the official certified vote tally.

ⁱⁱⁱ see HR811 page 22, lines 3-11, esp. line 10

^{iv} Dopp, "Federal Election Audit Proposals – Which is Best?" evaluates HR811's audit using 2002 and 2004 Congressional election results: <http://electionarchive.org/ucvAnalysis/US/paper-audits/ComparisonFederalElectionAuditProposals.pdf>

^v According to research by Pam Smith of Verified Voting, Delaware, Georgia, Maryland, Tennessee, and some counties in Kentucky and Virginia use DRE machines that cannot be retrofitted with printers and would need to be entirely replaced. "The Danahers and the Microvote systems and the older Diebold TS system (in GA and MD) cannot be retrofitted. Nor the AVS Winvote (Virginia) and Unilect Patriot (also VA)." and "Delaware uses Danaher DREs. Tennessee also has Danahers and Kentucky has a combination of different DREs."

^{vi} South Carolina actually replaced all its voting systems in 4 months. Verified Voting's "How Long Does it Take to Change a Voting System?" <http://electionmathematics.org/em-voting-systems/VotingSystemChange.pdf> and "New report gives paper ballot system high marks" shows "that states can transition to paper ballots in less than a year and conduct accurate and transparent elections". <http://www.bizjournals.com/albuquerque/stories/2007/08/20/daily19.html?t=printable>

^{vii} Paper ballot records printed by electronic voting machines as opposed to being created manually by voters have been found to be easily manipulated to match erroneous electronic counts in several ways by The Brennan Center, by researchers hired by the State of New Jersey, and by the California Secretary of State's Top-to-bottom Review which also found that there are undetectable ways to make DRE paper roll ballot records unusable for any election audits. Part of the problem is that studies have shown that from 70% to 100% of voters do not take the time to verify their paper ballot records, and those who do verify miss inaccuracies and omissions on the paper ballot records.

^{viii} The only known valid independent audits of DRE machines conducted in Ohio found that roughly 40% of randomly selected DRE touch-screens were not accurately recording votes; and found that inaccuracies on the central tabulators resulted in an inability to accurately determine within 100 to 200 votes for any audited race. See Cuyahoga County, Ohio's Collaborative Audit of the 2006 election, and the Montgomery County, Ohio audit of touch-screens, and also the Election Science Institute's audit of Cuyahoga County, Ohio.

^{ix} See HR811 page 8, lines 14-18.

^x Noel Runyan "IMPROVING ACCESS TO VOTING - A Report on the Technology for Accessible Voting Systems" http://www.voteraction.org/reports/improving_access.pdf and the disability access review from the CA Secretary of State study:

http://www.sos.ca.gov/elections/voting_systems/ttbr/accessibility_review_report_california_ttbr_absolute_final_version16.pdf and Verified Voting's chart showing that AutoMark ballot marking device (BMD) has more mobility access features than most DRE voting machines: <http://www.verifiedvotingfoundation.org/article.php?id=6028>

^{xi} AutoMARK's existing BMDs would only require a firmware upgrade and self-sealing ballot privacy envelopes.

^{xii} See HR811 pp 40, line 19, through 42, line 6. In order receive the FY 2009 payment the State has to say, at any time after the funds are appropriated, that that it found equipment that will meet whatever requirements they have left to meet. [See page 42, line 7 thru p 43 line 22].

^{xiii} Ibid footnote v.

^{xiv} Utah and Hawaii are two examples of states which currently do not post any polling place totals. Utah keeps virtually all its election records secret, including summary records of vote counts and ballots cast on each voting machine and requires destroying the election records without opening them after 22 months. The only way to obtain access to election records necessary to judge the accuracy of manual election audits and vote counts in Utah or to evaluate voter disenfranchisement levels would be to obtain a court order during an election contest. Yet by prohibiting access to election records no information is available to candidates to intelligently judge whether or not to bring a contest. The February 14, 2007 Decision and Order of the Utah State Records Committee which denies access to election records under Utah's open records laws is posted here: <http://utahcountvotes.org/UT/UT-Election-Records-07-02DoppOrder.pdf>

^{xv} Election contests could still be on-going after this date.

^{xvi} "Open source" or publicly disclosed source voting systems (per se) is not required by HR811. Software disclosure, to the extent required by HR811, is due immediately.