

A Damaging Paper Chase In Voting

di Timothy J. Ryan

When early jet aircraft crashed, Congress did not mandate that all planes remain propeller-driven. But this is the kind of reactionary thinking behind two bills that would require that all voting machines used in federal elections produce a voter-verifiable paper record. These bills--the Ballot Integrity Act (S. 1487), and the Voter Confidence and Increased Accessibility Act (H.R. 811)--are understandable backlashes to the myriad problems encountered in the implementation of electronic voting.

Paperless Direct Recording Electronic (DRE) machines, those where votes are entered into computers and stored only in computer memory banks, have encountered numerous failures and no longer inspire public trust. The response proposed in these Senate and House bills is for all such machines to produce paper receipts that voters can examine to ensure that their votes were correctly cast. The goal -- a double-check of the machine tally -- is worthy. Unfortunately, paper records are no panacea for the shortcomings of machines, and mandating paper removes the incentive for researchers to develop better electronic alternatives.

For proponents, the rationale for paper verification is simple: Voters have no way of knowing that a machine faithfully records their votes in its memory banks. If a machine were compromised by a hacker, for instance, its screen could be made to confirm the voter's intention to vote for "George Washington" while actually registering a vote for "Benedict Arnold." As such, machines must be made to produce paper records that voters can examine and election officials can retain. After an election, the votes in a machine's memory banks could be quickly tabulated, but they could also be compared with a tally of the paper ballots. Any discrepancy between the two could be an indication of tampering.

Paper verification looks good on, well, paper, but it is not the cure-all some of its proponents believe it to be. More than two centuries of U.S. elections have shown us that paper is at least as susceptible to chicanery as electronic records. Paper ballots can be modified, counterfeited or destroyed (PDF) with relative ease. It is not at all clear that they constitute a more reliable medium than electronic records.

Have we forgotten the days when ballot boxes could be discovered floating in nearby rivers shortly after an election?

These are not the only problems with paper records. Mandatory paper verification would be a disappointment for blind voters, who could not confirm that their votes were properly cast in the same way that others' were.

Also, the counting of paper ballots, if required by a close election, could prove an unwieldy task and take tens of thousands of hours of work. Further, the printers that produce paper ballots are especially susceptible to mechanical failure; as many as 20 percent fail on Election Day, according to Senate testimony (PDF) this summer by election expert Michael Shamos.

All of these drawbacks and more might be tolerable if a paper trail were the only way to double-check votes, but it is not. It is not even the best way.

A system called Prime III, developed by researchers at Auburn University, would employ a separate electronic "witness" in each voting booth. The witness, which would operate independently of the DRE machine, could more efficiently double-check the DRE's tallying of votes while safeguarding privacy and being more accessible to the disabled.

Another system, Punchscan, designed by a team at the University of Maryland, offers an exciting array of features: After casting their ballots, voters can go to a computer and use a receipt to view their individual ballots online. An exceptionally clever ballot format allows voters to see the marks they made on their ballots in such a way that they can recognize that the marks are in fact theirs, while still obscuring their specific candidate selections, as is necessary to prevent vote-buying. While a simple paper trail ensures that the voter's choices were accurate at one instant in time, the Punchscan system goes much further. Voters can confirm not only that their ballots were cast correctly but also that they were faithfully counted after the election.

Unfortunately, the language in the Ballot Integrity Act and the Voter Confidence and Increased Accessibility Act, the latter of which is likely to move to the floor before the end of the month, would prohibit the use of both Prime III and Punchscan -- Prime III because it does not produce a paper record and Punchscan because the paper record is not preserved by election officials. Given time and the right market incentives, alternatives such as these can be developed, perfected and implemented. On the other hand, mandating a paper record will commit American democracy to an antiquated alternative for the foreseeable future.