

Expert Opinions on Electronic Ballot Marking Devices (BMD) Security

1. [Lt. Col. Anthony Shaffer- Intelligence Analyst, Trump 2020 Campaign Advisor](#)

“While seventy percent of Americans use a printed paper ballot and pen to cast their votes —because of unscrupulous lobbying efforts from the companies that sell electronic voting systems—Georgia may purchase an insecure, non-verifiable, computerized system called a Ballot Marking Device (BMD)—a vulnerable touch screen voting machine that prints a paper "summary" of a real ballot, but has a bar code which is used for auditing, a code that voters cannot read. This is a false solution: As a cyber operations expert who worked for 30 years in the intelligence field, I can state without reservation that these BMD electronic systems can be easily hacked, just as was the case with the insecure, paperless DREs Georgia used before. Legislators should realize that HB 316 would lock in this costly and insecure approach. “

2. [Dr. Wenke Lee – SAFE Voting Commission Cybersecurity Expert](#)

“In the context of election and voting systems, a ballot-marking device needs to be loaded with ballot data using a voting system memory card. The ballot data is formulated on another computer system, which is based on original data/documents, e.g., voter registration files and ballot programming files, that at some point came from an Internet-facing system. Therefore, even though a BMD or voting machine is not directly connected to the Internet, it still is under the threat of cyberattacks from the Internet or by individuals who have direct access to the computers.”

“However, as long as a computer accepts input data from another device (software or hardware) that is or has been part of an Internet-connected network, it can still be hacked via the Internet”

“Instead, once again, I recommend that we use the most accurate, safest, and most secure approach, which is to require a voter to hand mark his/her paper ballot, scan it, and drop it in a safe box. This is the most accurate method for voting because with hand-marked paper ballots, a voter both casts and verifies as they mark; it happens naturally and therefore human discipline and short-term memory play no role. This is the safest and most secure record for an audit because hand-marked paper ballots in a safe box have not been processed by any cyber system and would not be vulnerable to any possible cyberattack.”

3. [Verified Voting Letter to SAFE Commission](#)

“A hand-marked paper ballot is the only kind of record not vulnerable to software errors, configuration errors, or hacking. With hand-marked paper ballots, voters are responsible only for their own errors, while with a BMD, voters are responsible for catching and correcting errors or alterations made by the BMD.”

4. [National Academies of Sciences Report](#)

“There is no realistic mechanism to fully secure vote casting and tabulation computer systems from cyber threats.”

5. [A Quantitative Analysis of Voters’ Memories of their Ballot - Prof. Richard Demillo, et al.](#)

“The principle reason for preferring paper for ballots of record, is the difficulty of systematic, malicious attack on a stack of paper, and the creation of a permanent audit trail for verification of results.”