Logic and Accuracy Testing Protocols

YOUR COUNTY ★ BOARD OF ELECTIONS

Pre-Election Ballot and Equipment Testing

Before every election, bipartisan teams perform tests to ensure that ballots are free of errors and that all voting equipment is working properly. Election officials call this procedure “Logic and Accuracy” testing or “L&A” for short. Members of the public are welcome to watch.

Why is it called “Logic and Accuracy” testing?

The name is a holdover from our voting past. When lever-style voting machines were introduced in the late 19th century, officials tested them for *accuracy*: The levers pulled in the voting booth had to accurately reflect voters’ choices. In the 1960s, when computer-based voting systems arrived, officials added tests to verify the computer *logic* or, in other words, to verify that the computer hardware and software were operating as expected: The votes tabulated by the computer-based system had to accurately reflect voters' choices. Today, “Logic and Accuracy” and “L&A” are old school terms that election officials use to describe pre-election ballot and equipment testing.

How does pre-election ballot and equipment testing work?

Before the ballots and voting equipment are tested, ballots are proofed or carefully reviewed using best practices to check candidate names, political party affiliations, jurisdictions, ballot styles and language. Once ballots are proofed, they are ready for testing along with every single piece of voting equipment to ensure that voters’ selections are recorded accurately. Every device has its own testing requirements and will not be used for the election unless it passes the test.

Examples

BALLOT MARKING DEVICES: Where voters use touchscreen displays or other ballot marking devices to cast ballots, pre-election testing ensures that their printed ballot accurately reflects the choices they make. To test ballot marking devices, officials load ballots so they appear on the screen and check that all races and candidates are listed correctly. Individuals testing the devices make choices on screen that were determined before testing began. Once testers submit their ballots, they are printed and compared to the on-screen choices. Testers repeat this process until a set of test ballots is created, which are later used to test the ballot scanners for that polling place as well as the tabulation system. If choices made on-screen match the choices on the printed ballot, the ballot marking device passes its pre-election equipment test.

BALLOT SCANNERS: Scanners located at polling places for each precinct and central count scanners are tested for accuracy before every election. Testers insert the test ballots created during the ballot marking device or touchscreen testing into the scanners. Testing ensures that the ballot paper is the correct size and thickness. It also ensures that every ballot style available to voters in a precinct can be counted by the scanner. Any test ballots with errors, such as smudges, marks in the margins, tear and overvoted races, are removed from the stack and set aside for review and replication by officials to ensure all ballots are counted. If the results collected and totaled using the scanners match the choices on the paper ballots scanned, the scanners pass their pre-election equipment test.

TABULATION SYSTEM: This system tallies votes marked on paper ballots and scanned using different scanners. It is tested by collecting and adding together results from each scanner. Each scanner has a removable media, such as a flash drive, that is used to load the results into the central tabulation system. The tabulation system adds the results from all the other scanners together. The tabulation system results are compared combined with the expected results. If the totals match, the tabulation system passes its pre-election equipment test.

ELECTION NIGHT REPORTING SYSTEM: While it is not part of the voting system, this system is part of pre-election testing because it is used to display election results to the public on the internet. Officials use this system to show vote totals as precincts report them throughout the night; results are not official until the election is certified. To test the reporting system, officials transfer results data from the tabulation system on a secure memory device, then load it onto a separate computer. If the results displayed match the expected results from the tabulation system, the election night reporting system passes its pre-election test.

Vocabulary

OVERVOTE: If a voter marks more than the allowed number of choices on their ballot for a particular race, it is an overvote. Overvoting is not permitted, so the choices in that race are not counted, but all other choices on the ballot that are not overvotes are counted. Example: A voter who votes for two candidates in a race when the instructions permit only one vote has overvoted, and that ballot cannot be counted for the overvoted race.

RACE OR CONTEST: These terms are used to describe a section of the ballot where individual candidates are listed together because they are running for the same office or seat. Example: The candidates running against each other for president are listed together on the ballot as part of that race or contest.

OUTSTACK: When a ballot is outstacked, it is removed from the stack of ballots and reviewed by officials. A ballot may be outstacked if it is torn, smudged or has marks in the margins, which could affect scanning. To ensure the votes are counted, bipartisan officials copy the choices made on the outstacked ballot onto a blank ballot and then return it to the stack of ballots to be scanned. This ensures that the votes cast on that ballot are counted.