Electronic Voting Machine and Voter-Verifiable Paper Audit Trail

(This editorial is based on the article ['Technology and the unhurried mind'](#) which appeared in 'The Hindu' on 10th April, 2019. The article talks about the recent controversy surrounding the tampering of Electronic Voting Machines (EVM). The article tries to examine the root of the problem.)

The recent order of the Supreme Court on increasing the existing Voter-Verifiable Paper Audit Trail (VVPAT) verification rate from one to five random Electronic Voting Machines (EVMs) per Assembly constituency or segment, tries to reassure those sceptical about the integrity of counting by means of EVMs.

VVPAT slip verification reassures the voters that the EVM is indeed foolproof, over and above the technical and administrative safeguards that are already in place to prevent any tampering.

However the cynicism continues to remain, regarding the fallibility of EVMs the thus necessitates an in depth scrutiny to allay any apprehensions regarding the most important feature of a democratic polity- Elections.

EVMs: As we know

The Commission in December, 1977 mooted the idea of EVM to overcome certain problems associated with use of ballot papers and taking advantage of development of technology so that voters cast their votes correctly without any resultant ambiguity and removing the possibilities of invalid votes totally.

MB Haneefa invented the first Indian voting machine in 1980. It was first used in 1981 in the by-election to North Paravur Assembly Constituency of Kerala in 50 polling stations. The EVMs were commissioned in 1989 by Election Commission of India in collaboration with Bharat Electronics Limited and Electronics Corporation of India Limited.

The law was amended by the Parliament in December, 1988 and a new section 61A was inserted in the Representation of the People Act, 1951 empowering the Commission to use voting machines. The amended provision came into force with effect from 15th March, 1989.

From Ballot to Machine

Electronic Voting Machine was introduced in India **to solve the problem of Ballot Box capturing and casting of false vote,** which was a common scenario in India while using the Ballot Paper.

Another constraint of the pre-EVM era was the **high proportion of invalid votes**. Many people found it difficult to put the stamp in the allocated space.

In addition, **the cost of paper ballots and the prolonged drudgery of the polling staff** was an additional burden.

Hence, the Indian Parliament decided to use Electronic Voting Machine by Election Commission of India to Conduct General and State elections in India.

EVMs in India consists of a Ballot Unit, buttons in front of the name of respective Candidates or Political Parties, for the voters and a Control Unit which is operated by the booth officer.

Studies have been conducted which have shown that EVMs have reduced electoral fraud and re-polling due to electoral rigging, and made elections a safe affair, thereby enhancing voter turnout.

The Controversy

Electronic Voting Machines in the recent times in India have become the topic of debate. As there have been various reports on EVM came up, that **it can be tampered easily** and the votes of one political party or candidate can be easily transferred to another.

Many incidents have aroused which has made the public doubt the authenticity of EVMs such as **technical glitches** where EVMs have stopped responding and multiple people claiming that the system is **hackable**.

Countries like Germany, Ireland, U.S.A. and Italy which are more technologically sound than India have also have doubted the transparency of EVM machines from time to time and have even banned the use of these machines in there elections.

However, the Election Commission of India has repeatedly denied from time to time the possibility of tampering of EVMs and also have given reports on EVM can't be tampered and has also challenged publicly to temper the EVM for a prize.

Measures to secure EVMs

Functional check: The machines are cleaned and earlier results are cleared. Switches, buttons, cables and latches are inspected for damage.

Random check: A mock poll is conducted on 5% of the total number of EVMs to be used for a poll. About 1,000 votes are polled and the result printouts are shared with representatives of various political parties.

Throwing the dice: EVMs are randomly placed in the constituencies and booths and it is difficult to know which machine is kept where. During the first, EVMs are allocated at random to a constituency. In the second round, they are randomised and allocated to a polling booth.

A dry run: Before the start of the actual poll, a mock poll is conducted with at least 50 votes in the presence of candidates or their agents. The mock poll is then closed and the results are displayed. On poll day, various checks are conducted by polling agents, observers and central paramilitary forces.

Safe and secure: EVMs are placed in their carrying cases and sealed. The machines are transported back to the reception centres under armed escort and kept in the strong room.

Reclaiming the Faith

Rather than throwing the baby out with the bathwater, a couple of procedural changes will bring in credibility to the voting process.

The EC has already operationalised the voter-verifiable paper audit trail (VVPAT) with an attached printer that provides a paper trail for those who have cast their votes.

At present, after casting the vote in EVMs, the printed paper is directly dropped in the box (the voter only has seven seconds to see this). Instead, the paper should be given to the voter who should then drop it in the ballot box. This was the procedure before the introduction of EVMs.

In the current system, to ask for a counting of ballots from the VVPAT, one has to move the courts. Instead, the ECI should introduce a new procedure wherein the manual counting of the printed ballots has to be done before announcing the result if the difference between the winner and the loser is less than, say, 10%, and the loser demands a recount.

Way Forward

In a democracy, there is perhaps nothing more important than the credibility of the electoral process therefore in a democracy, elections should not only be fair but should be seen to be fair. By shoring up its image and bringing in some more transparent reforms, the EC can restore faith in elections.

Voter Verified Paper Audit Trail

- VVPAT is an **independent verification printer machine** and is attached to electronic voting machines. It allows voters to verify if their vote has gone to the **intended candidate**.
- When a voter presses a button in the EVM, a paper slip is **printed through the VVPAT**. The slip contains the **poll symbol** and **name of the candidate**. It allows the voter to verify his/her choice.
- After being visible to the voter from a glass case in the **VVPAT for seven seconds,** the ballot slip will be cut and dropped into the **drop box in the VVPAT** machine and a beep will be heard.
- VVPAT machines can be **accessed by polling officers only**.

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