SC Upholds EVM and VVPAT System

Source: IE

Why in News?

Recently, the **Supreme Court (SC)** dismissed a PIL which sought re-introduction of **ballot papers** in place of **Electronic Voting Machines (EVMs)** and **Voter verifiable paper audit trail (VVPAT).**

- SC emphasized that **EVMs** are often **questioned only** in the wake of **electoral losses,** reaffirming confidence in their mechanism and the safeguards in place.

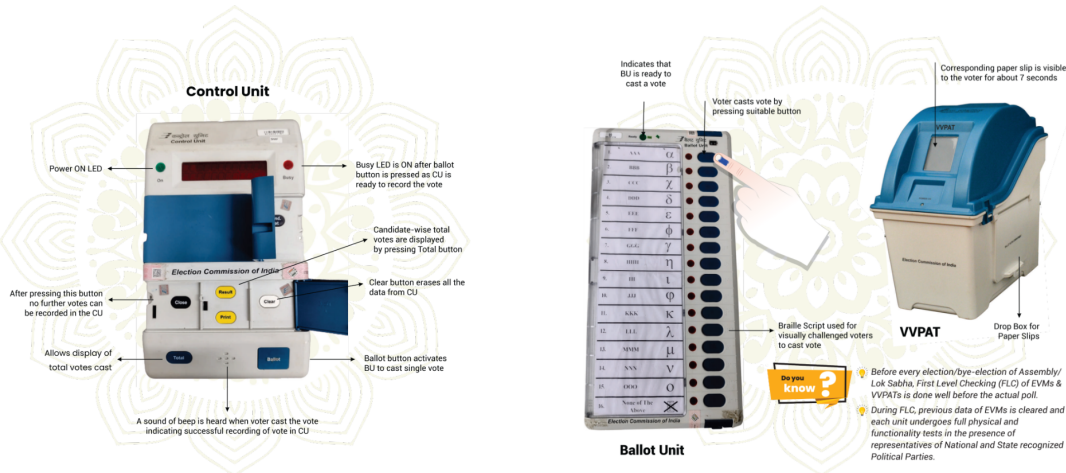## What is the Controversy Regarding EVMs?

- **Controversy:** Some political parties have claimed **EVM tampering** before elections, especially **after losing,** raising doubts about their **reliability.**
  - In **2009**, the losing party in the **2009 General elections** raised concerns about the **reliability of EVMs.**
  - Following the conclusion of voting in the **2019 Lok Sabha elections**, the **opposition parties** have again **raised** the issue of integrity **of EVMs.**
  - In **2020,** the controversy **resurfaced** after assembly elections in **five states.**
- **Election Commission's Response**: The Election Commission has consistently **defended the reliability** of EVMs citing studies by technical experts to assert that the machines **cannot be hacked or tampered** with.
- **Supreme Court Response:** SC held that a number of **technical safeguards and administrative protocols** with **stringent checks** have been put in place to **prevent EVM tampering** and rejected the plea for a return to **ballot papers as unsound.**

What are EVMs and VVPATs?

- **About EVMs:** EVMs are **portable** instruments for the purpose of **conducting elections** to the **parliament**, **state legislature** and local bodies like **panchayats and municipalities.**
  - It is a **microcontroller-based instrument** and is designed for a **single post and a single vote.**
- **Components of EVMs:** An EVM is designed with **two units** i.e., the **control unit and the ballot unit.** These units are joined together by a **cable**. It ensures that the polling officer **verifies your identity.**

- **Control Unit:** The control unit of the EVM is kept with the **presiding officer or the polling officer.**
- **Ballot Unit:** The balloting unit is kept within the **voting compartment for electors** to cast their votes.
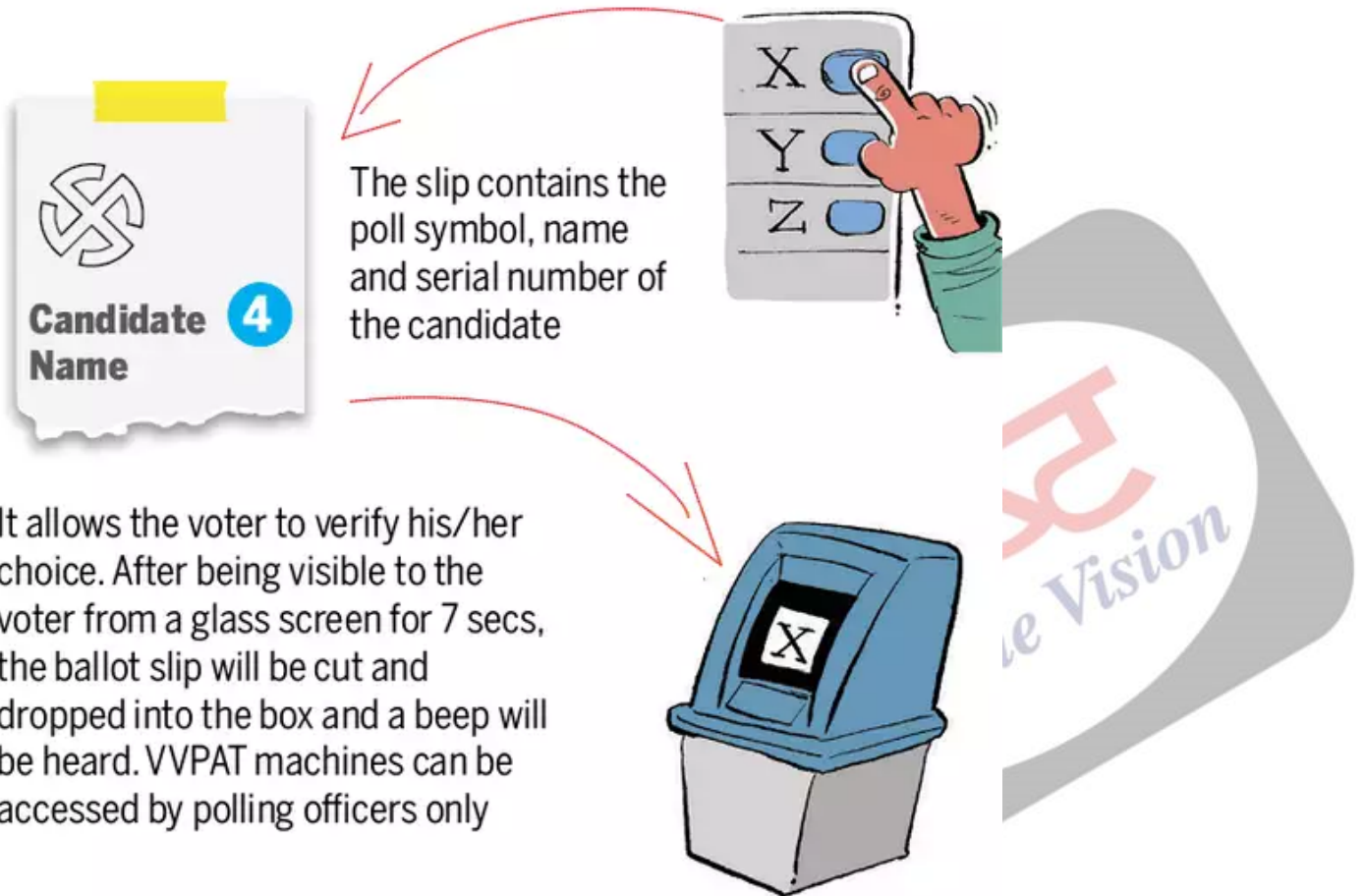
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- **Evolution of EVMs in India:**

Year	Event
1977	Concept of EVM **conceived.**
1979	**Prototype developed** by ECIL, Hyderabad.
1980	EVMs **demonstrate**d by the Election Commission in August ; directives issued under **Article 324.**
1982	EVMs used in **Kerala's Parur by-elections**; legality challenged by the SC.
1988	**Representation of People Act amended (Section 61A)** to empower ECI to use EVMs.
1990	**The Dinesh Goswami Committee** recommended EVMs as technically sound and secure.
1998	EVMs used in 16 Assembly elections**.**
1999-2000	Expanded use in **46 parliamentary seats (1999)** and Haryana Assembly polls (2000).
2001	Full use in Tamil Nadu, Kerala, Puducherry, and West Bengal Assembly elections.
2004	EVMs used **nationwide in Lok Sabha elections.**
2013	VVPAT was introduced via amendment to the **Conduct of Election Rules**; first used in **Nagaland by-election.**
2019	**First Lok Sabha election fully backed by VVPAT.**

- **About VVPAT:** VVPAT enables voters to **confirm** that their votes are **recorded as intended.**
    - When a vote is cast, a slip showing the **serial number, candidate's name, and symbol** is printed.
    - It is visible through a transparent window for **7 seconds** before being **automatically cut and stored** in a sealed box.

How do VVPAT machines work?

When a voter presses a button in the EVM, a paper slip is printed through the VVPAT

Candidate Name **4**

The slip contains the poll symbol, name and serial number of the candidate

It allows the voter to verify his/her choice. After being visible to the voter from a glass screen for 7 secs, the ballot slip will be cut and dropped into the box and a beep will be heard. VVPAT machines can be accessed by polling officers only

What are the Various Safeguards to Ensure EVM Integrity?

- **Technical Safeguards:**
  - **Functionality**: EVMs consist of a **Control Unit (CU), Ballot Unit (BU), and VVPAT.**
    - VVPAT allows visual verification by printing a slip with the candidate's **name, symbol, and serial number.**
  - **Microcontroller Security**: The microcontrollers are **One-Time Programmable (OTP)** and cannot be altered after manufacturing.
    - **Any physical attempt** to access the microcontroller **disables the machine** permanently.
  - **Manufacturing:** Only trusted Public-Sector Undertakings (PSUs) like **Bharat Electronics Limited (BEL) and Electronics Corporation of India Limited (ECIL)** manufacture EVMs.
  - **Standalone Operation**: EVMs operate **without wired or wireless connectivity**, eliminating remote manipulation risks.
  - **Advanced M3 EVMs (Post-2013)**: It features **tamper detection** to disable the machine if accessed unauthorizedly, and **mutual authentication** to block unauthorized devices.
  - **EVM Management System (EMS 2.0)**: It tracks and manages EVM movements, ensuring security during **transportation and storage.**
- **Administrative Protocols:**

- **First-Level Check (FLC)**: Visual **inspection, cleaning, and functionality tests** are conducted by engineers from BEL/ECIL.
    - **Dummy symbols** are loaded for **mock polls** to verify performance.
- **Randomised EVM Allocation**: EVMs are **randomly allocated t**o assembly constituencies and polling stations to **avoid predetermined assignments.**
    - Randomisation is done using the **EMS 2.0 system** in the presence of **Election Commission** observers.
- **Candidate Setting:** Candidate details in EVMs, called **'Commissioning'**, are loaded only after the final candidate list is available.
    - **Mock Polls** are conducted at multiple stages, including before polling day, to ensure accuracy.
- **Counting Day Procedures**: EVMs are brought to counting tables under **CCTV surveillance.**
    - Random **cross-verification of VVPAT slips from 5 polling stations per assembly** constituency is conducted.
- **EVM Storage Protocols**: Stored in strongrooms with **single entry/exit points,** under CCTV and armed police surveillance.
    - **Double-lock systems** are employed, with keys held by separate officials, and **GPS-tracked vehicles** are used to transport EVMs after polling.
- **Periodic Inspections**: District Election Officers conduct **monthly inspections** of EVM warehouses to ensure secure storage conditions.

What are Advantages of the EVM-VVPAT Over Ballot Papers?

- **No External Input**: EVMs run on **batteries or power packs**, making them operational in **remote areas**, unlike paper ballots, which require lighting and other facilities for manual counting.
- **Elimination of Invalid Votes**: Voting on EVMs is done by pressing a button, ensuring **no invalid votes,** a problem often associated with incorrectly marked or torn ballot papers.
- **Prevention of Booth Capturing**: EVMs are programmed to allow **only four votes per minute,** making rapid fraudulent voting in **booth-capturing** scenarios **highly unlikely.**
    - Once the **'Close' button** on the control unit is pressed, **no further votes can be cast**.
- **Accurate Counting and Voter Verification**: EVMs facilitate **fast and error-free counting of votes, eliminating** the manual **errors and delays**.
    - Voters get **instant feedback** via a beep and can verify their vote through the VVPAT slip.
- **Transparency in Vote Count**: The Control Unit's **'Total' button** displays the number of votes cast without revealing candidate-wise results, ensuring **transparency** while maintaining the secrecy of votes.
- **Prevention of Pre-Programming Manipulation**: The EVM's original program, which is neutral to political parties and candidates, is embedded in the **microcontroller** during manufacturing, long before elections.
    - The **inability** to know candidate **serial numbers in advance** makes it **impossible** to **pre-program** EVMs for spurious purposes.

Conclusion

EVMs with VVPAT have **revolutionized** Indian elections, offering **efficiency, accuracy, and transparency** over traditional ballot papers. Despite scepticism, **stringent technical safeguards and administrative protocols** ensure their integrity. While concerns persist, the Supreme Court and Election Commission uphold EVMs as secure, reinforcing trust in India's democratic processes.

ELECTORAL REFORMS IN INDIA

ELECTORAL REFORMS ARE CHANGES MADE TO IMPROVE THE ELECTION PROCESS AND ENSURE FAIRNESS.

Electoral Reforms Before 1996

- **Model Code of Conduct (1969):** Guidelines to regulate political parties and candidates prior to elections
- **61st Constitutional Amendment Act (1988):** Lowering of the voting age from 21 to 18 years
- **Electronic Voting Machines (EVMs) (1989):** Switched from individual colored ballot boxes to ballot papers, and later to EVMs
- **Booth Capturing (1989):** Provision for adjournment of poll or countermanding of elections in such cases
- **Elector's Photo Identity card (EPIC) (1993):** Electoral roll is the basis to issue EPIC to registered electors
- **ECI- A Multi-member Body (1993):** Election commissioners were appointed in addition to CEC

Electoral Reforms of 1996

- **Time-limit for By-elections:** Elections must occur within 6 months of any vacancy in a legislative house
- **Listing of Names of Candidates:** Contesting candidates categorized into 3 groups for listing
  - Recognised & registered-unrecognised political parties
  - Other (independent)
- **Disqualification for Insulting the National Honour Act, 1971:** Leads to election disqualification for 6 years upon:
  - Insulting the National Flag, Constitution of India or preventing the singing of National Anthem

Electoral Reforms After 1996

- **Vote Through Proxy (2003):** Service voters in Armed Forces & forces under Army Act can vote by proxy
- **Allocation of Time on Electronic Media (2003):** Equitable sharing of time on electronic media during elections to address the public
- **Introduction of Braille Signage Features in EVMs (2004):** To facilitate the visually impaired voters to cast their votes without an attendant

Electoral Reforms Since 2010

- **Voting Rights to Indian Citizens Living Abroad (2010)**
- **Online Enrollment in Electoral Roll (2013)**
- **Introduction of NOTA option (2014)**
- **VVPAT Voter Verified Paper Audit Trail (2013):** Introduction of VVPAT with EVMs to conduct free and fair elections
- **Photos of Candidates on EVMs and Ballot Papers (2015):** To prevent confusion in constituencies with namesake candidates
- **Introduction of Electoral bonds (2017 Budget):** An alternative to cash donations for political parties
  - Declared as unconstitutional by SC (2024)
- **Launch of Electronic EPIC (2021)**
- **Home Voting for People with Disabilities & Those Above 85 years of Age (2024)**

IMPORTANT COMMITTEES/ COMMISSION

Committees/ Commission	Year	Purpose
▌Tarkunde Committee	1974	▌By Jaya Prakash Narayan (JP) during the "Total Revolution" movement.
▌Dinesh Goswami Committee	1990	▌Electoral Reforms
▌Vohra Committee	1993	▌On the Nexus between Crime and Politics
▌Indrajit Gupta Committee	1998	▌State Funding of Elections
▌Second Administrative Reforms Commission of India	2007	▌Report on Ethics in Governance (Headed by Veerappa Moily)
▌Tankha Committee (Core Committee)	2010	▌To look into the whole gamut of the election laws & electoral reforms.

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Drishti IAS

Drishti Mains Question:

Discuss the role of Electronic Voting Machines (EVMs) in ensuring free and fair elections in India. Highlight the technical and administrative safeguards in place to prevent tampering.

UPSC Civil Services Examination Previous Year Questions (PYQ)

Prelims

Q. Consider the following statements: (2017)

1. The Election Commission of India is a five-member body.
2. Union Ministry of Home Affairs decides the election schedule for the conduct of both general elections and bye-elections.
3. Election Commission resolves the disputes relating to splits/mergers of recognised political parties.

Which of the statements given above is/are correct?

(a) 1 and 2 only

(b) 2 only

(c) 2 and 3 only

(d) 3 only

Ans: (d)

Mains

Q. In the light of recent controversy regarding the use of Electronic Voting Machines(EVM), what are the challenges before the Election Commission of India to ensure the trustworthiness of elections in India? (2018)

Q. To enhance the quality of democracy in India the Election Commission of India has proposed electoral reforms in 2016. What are the suggested reforms and how far are they significant to make democracy successful? (2017)