



Pager, Walkie-Talkie Blasts in Lebanon

For Prelims: Pagers, Walkie-Talkie, Lebanon, Hezbollah, Middle East, [Israel](#), [Palestine](#), [Middle-East](#), [Arab World](#).

For Mains: Use of Electronic Devices and Modern Warfare Systems in Wars, Its Implications, Impact of Israel-Palestine Conflict on India and International geopolitical scenario.

[Source: HT](#)

Why in News?

Recently, several people were killed and hundreds **injured in Lebanon following explosions** of hand-held radios like **walkie-talkies** and **pagers** used by Hezbollah at multiple locations.

- These pagers, chosen by Hezbollah **to evade detection through cell phones**, were covertly **modified with Pentaerythritol tetranitrate (PETN)**.

What are Walkie-Talkies?

- **About:**
 - It is also known as a **handheld two-way radio** with a **microphone and speaker**.
 - These are **portable communication devices** that utilize **radio waves** to **transmit and receive messages** on **specific frequency bands**.
- **History and Invention:**
 - These were **first used by the military in the 1930s** and played an important role in wars of the 20th century.
 - **Its invention is attributed to Don Hings in 1937**, initially created for **pilots** and known as wireless sets, pack sets, and **two-way field radios**.
- **Components and Operation:**
 - It comprises a **transmitter-receiver unit**, an **antenna**, a **loudspeaker-microphone** combination, and a **push-to-talk button**.
 - The device operates on a **single frequency band**, allowing it to transmit and receive signals.
 - To communicate, users press the push-to-talk button, converting their **voice into radio waves** that are transmitted and received by other devices on the **same channel**.
- **Applications:**
 - Walkie-talkies are extensively used in **emergency services, security, military operations**, and various industries like **construction and hospitality**.
 - Their ability to **function without a mobile network** makes them invaluable in areas with poor signal reception.
 - Modern-day walkie-talkies are much more advanced and now include features such as **flashlights, hands-free technology, SOS signals**, and **weather alerts**, in addition to basic communication.
- **Limitations:**

- Common issues with walkie-talkies include **losing coverage due to battery depletion, excessive background noise, privacy concerns, and static during transmission.**

Transmission Types:

- **Simplex:** Communication is **unidirectional**; only one party can transmit at a time. Example: Computer to printers, **Pagers**.
- **Half Duplex:** Communication is **bidirectional but not simultaneous**; only one party can talk at a time. Example: **Walkie talkies.**
- **Full Duplex:** Communication is **bidirectional and simultaneous**; both parties can talk and listen at the same time. Example: Telephones.



What are Pagers?

- **About:**
 - Pagers, also known as **beepers**, are **wireless devices that receive and display messages.**
 - They were widely used in the 1980s but are still relied upon by specific groups like healthcare and emergency services due to their reliability in low-signal areas.
- **Working:**
 - Pagers operate using **radio signals** transmitted by **towers** that can **penetrate areas where cellular signals may be weak.**
- **Types of Pager:**
 - **One-way pagers:** Receive messages from a central transmitter but cannot reply. They alert users through beeps or vibrations.
 - **Two-way pagers:** Allow users to send and receive messages, though they are still less functional than smartphones.
- **Pagers Application in Covert Operations:**
 - **Low Susceptibility to Surveillance:** Their **lack of Global Positioning System(GPS)**

- and internet** connectivity reduces the risk of location tracking.
- **Difficult to Intercept:** The use of radio frequencies makes them harder to monitor than cellular or internet-based devices.
 - **Modifiable for Covert Use:** Pagers can be modified to trigger signals for **remote detonation** or alerts without drawing attention.
 - Remote detonators, including pagers and other consumer electronics, have been used in various conflicts.
 - Armed groups have utilized **Radio Controlled Improvised Explosive Devices (RCIEDs)** to target police stations and government buildings, employing devices that emit weak signals to avoid detection.
 - RCIED is **explosive material integrated with a wireless radio or device** that triggers upon receipt of a signal from a second wireless handheld device.



How do pagers work?

Pagers are small wireless communication devices that receive and display short messages or alerts via radio signals.



📶 Signal: rely on radio frequencies to receive messages

📍 Traceability: one-way pagers do not send signals making them hard to track

📶 Network: does not connect to the internet or cellular towers

👤 Popularity: commonly used in the 1980s and 90s before mobile phones

🛠 Usage: still used in certain industries such as hospitals and emergency services

🔋 Battery: can run up to a few weeks

What is Hezbollah?

- Hezbollah, meaning "**Party of God**," is a **Shia militia-cum-political party in Lebanon** and one of the world's **most heavily armed non-state actors**, according to the **Center for Strategic and International Studies (CSIS)**.
- It was formed during the **Lebanese Civil War (1975-1990)**, largely in response to **Israeli invasions of southern Lebanon** in 1978 and 1982.
- Inspired by **Iran's 1979 Islamic revolution**, it has received substantial support from Iran and the **Islamic Revolutionary Guard Corps (IRGC)**.
- It has been **designated as a terrorist organisation** by countries like the **US and Israel**.

Lebanon

- Lebanon is a country in the **Levant region** (a region in the eastern Mediterranean Basin) of West Asia.
- Its capital and largest city is **Beirut**.
- It is bordered by **Syria** to the north and east, by **Israel** to the south, and by the **Mediterranean Sea** to the west.
- Cyprus island lies a short distance away from the country's coastline.



Drishti Mains Question

Analyse how electronic devices, such as mobile phones and pagers, have been utilised in modern warfare. What are its implications and strategies to mitigate them?

UPSC Civil Services Examination, Previous Year Questions (PYQs)

Q. With reference to 'LiFi', recently in the news, which of the following statements is/are correct? (2016)

1. It uses light as the medium for high speed data transmission.
2. It is a wireless technology and is several times faster than 'WiFi'.

Select the correct answer using the code given below:

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

Ans: (c)

Q. What is the difference between Bluetooth and Wi-Fi devices? (2011)

(a) Bluetooth uses 2.4 GHz radio frequency band whereas Wi-Fi can use 2.4 GHz or 5 GHz frequency band

(b) Bluetooth is used for Wireless Local Area Networks (WLAN) only, whereas Wi-Fi is used for Wireless Wide Area Networks (WWAN) only

(c) When information is transmitted between two devices using Bluetooth technology, the devices have to be in the line of sight of each other, but when Wi-Fi technology is used the devices need not be in the line of sight of each other

(d) The statements (a) and (b) given above are correct in this context

Ans: (a)

Q. Consider the following: (2010)

1. Bluetooth device
2. Cordless phone
3. Microwave oven
4. Wi-Fi device

Q. Which of the above can operate between 2.4 and 2.5 GHz range of radio frequency band?

- (a) 1 and 2 only
- (b) 3 and 4 only
- (c) 1, 2 and 4 only
- (d) 1, 2, 3 and 4

Ans: (d)

Q. Mediterranean Sea is a border of which of the following countries? (2017)

1. Jordan
2. Iraq
3. Lebanon
4. Syria

Select the correct answer using the code given below:

- (a) 1, 2 and 3 only
- (b) 2 and 3 only
- (c) 3 and 4 only
- (d) 1, 3 and 4 only

Ans: (c)

Q. Which one of the following countries of South-West Asia does not open out to the Mediterranean Sea? (2015)

- (a) Syria
- (b) Jordan
- (c) Lebanon
- (d) Israel

Ans: (b)

Q. The term “two-state solution” is sometimes mentioned in the news in the context of the affairs of (2018)

- (a) China
- (b) Israel
- (c) Iraq
- (d) Yemen

Ans: (b)

Mains

Q. “India’s relations with Israel have, of late, acquired a depth and diversity, which cannot be rolled back.” Discuss. (2018)

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