

## What is the 'CALM' System?

Recently, the Indian Army has issued a Request for Information (RFI) for smart loiter munitions, known as Canister Launched Anti-Armour Loiter Munitions (CALM) Systems, which the Armed Forces intend to deploy in the plains and deserts along the western border, as well as high altitude areas up to 16,500 feet along the northern border. Previously, the Indian Army issued a request for information on the supply of Articulated All-Terrain Vehicles to be deployed in Ladakh and Kutch. Presently India uses the Israeli Harop loitering munition.

This topic falls under the GS Paper-III- Internal Security, of the UPSC Syllabus. A question can also be asked in the upcoming UPSC Prelims, as part of the current affair question.

This article will further elaborate on the CALM System within the context of the IAS Exam.

### About CALM System

- **Canister Launched Anti-Armour Loiter Ammunitions** (CALM) Systems consists of a pre-loaded canister with loiter ammunition or a drone.
- Once launched, it may **remain aloft for an extended amount of time** over the area of operation, and when a target is located, it can be directed down to kill the target with the explosive payload that it carries.
- Generally, loiter ammunitions have a **nose-mounted camera** that the operator may utilise to scan the area of action and choose targets.
- The loiter ammunition's **top-down strike potential** offers it a significant advantage over targets such as tanks, which are susceptible to any strike on the top where the armour protection is weak.
- These munitions even have **versions** that may be **retrieved and reused** if not used in an attack.
- These CALM Systems can be used against enemy tanks and other targets in **Western India's plains and deserts**, as well as **high altitude locations** in Ladakh's northern frontiers.

### What are Loitering Munitions?

- Loiter weapons combine the capabilities of a **surface-to-surface missile with a drone**.
- Loiter munitions can be **retrieved if a mission is cancelled** if there are no acceptable targets.
- They **operate like a missile** to destroy a target after it has been discovered and locked on. While a missile, once launched, flies directly to its target within a few minutes of flight, loiter munitions are released in a way similar to a drone and **hover aloft for a prolonged period of time**, monitoring a defined region and finding targets.
- Loitering munitions are useful to the Army's artillery because they can **detect and destroy static and moving targets** over a **wide range of terrain**, from mountains to deserts.
- They however are **smaller, cheaper and less complex** systems than combat or armed drones.

## Significance of CALM Systems

- The weapons systems are capable of **destroying radar stations, air defence systems, and communication centres**, as well as moving targets like enemy vehicles and personnel.
- The CALM system is intended to be deployed across the **plains and deserts along the western borders**, as well as **high altitude locations up to 16,500 feet** along the northern border.
- It will be used by the Army's Mechanised Infantry units for **real-time surveillance of beyond-line-of-sight targets** throughout the day and night, as well as **beyond-visual-range engagement** with enemy armoured fighting vehicles and other ground-based weapon systems across extended ranges.
- In the **plains and deserts**, the system is supposed to work at temperatures ranging from **zero to 45 degrees Celsius**, while **at high altitudes**, it ought to operate at temperatures ranging from **-15 to 40 degrees Celsius**.
- The **top-down attack capability** of loitering munitions offers it a significant advantage against targets like tanks, which are vulnerable to any strike on the top of the hill where armour protection is minimal.

## Earlier use of CALM System

The CALM System was first used in the **Armenian-Azerbaijan conflict in 2021** when Azerbaijani troops used Israeli weaponry extensively to wreak havoc on Armenian tanks, radar systems, and communication.

Recently, India has tested the newly designed Loitering Munitions (LM0, LM1, and Hexacopter) in the Nubra Valley area of Ladakh, in addition to the RFI of these CALM Systems. Deployment and testing of these 'Made in India' loitering bombs in Ladakh is a boost to the 'Aatmanirbhar Bharat' in the defence sector.