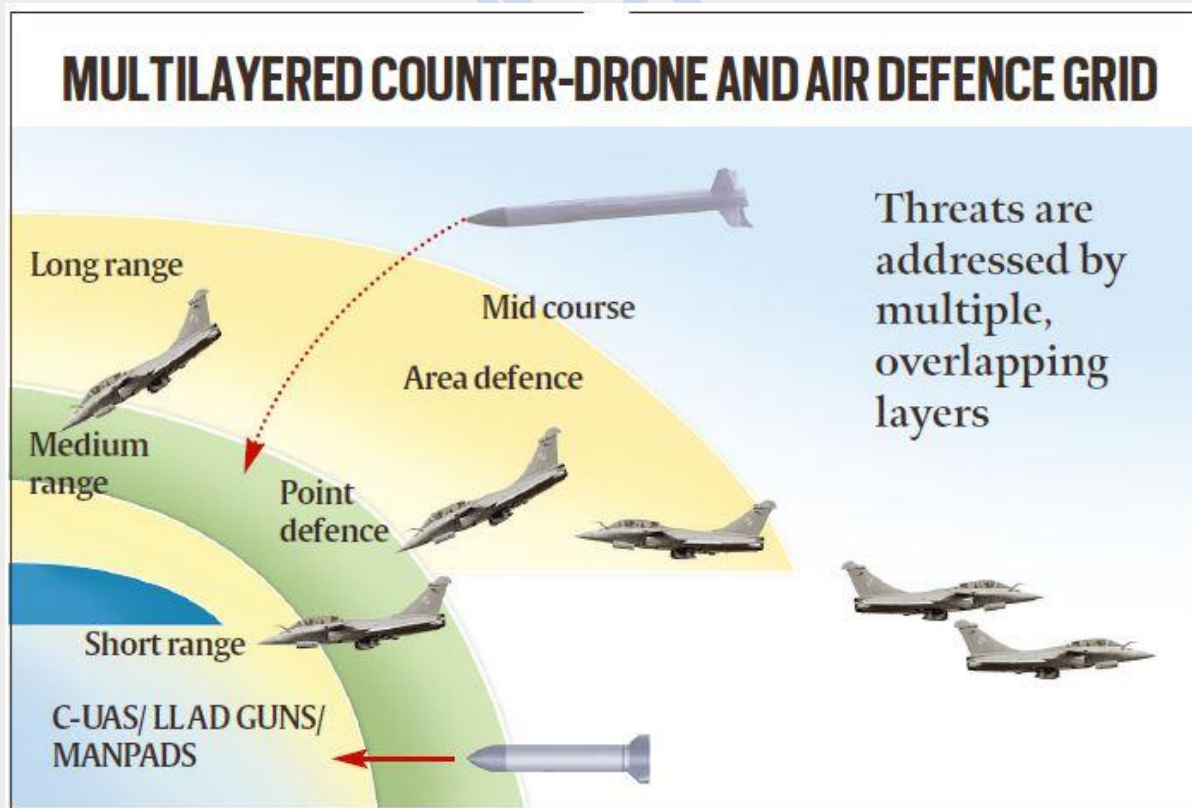


1. Operation Sindoor: India's air defence shield explained**Why in News?**

At the media briefing on Operation Sindoor, military officers displayed a picture of the Integrated Air Command and Control System (IACCS) node of the Indian Air Force (IAF).

India's Air Defence Shield Explained**1. Integrated Air Command and Control System (IACCS) – Indian Air Force's System**

- Developed by: Bharat Electronics Limited (BEL)
- Function: Automated command and control system for air defence.
- Components Integrated: Ground radar, airborne sensors, civilian radar, communication nodes, and IAF command centres.
- Benefits:
 - Real-time situational awareness.
 - Faster threat detection and response.
 - Centralised control with decentralised execution.
 - Effective airspace management due to overlapping radar coverage.

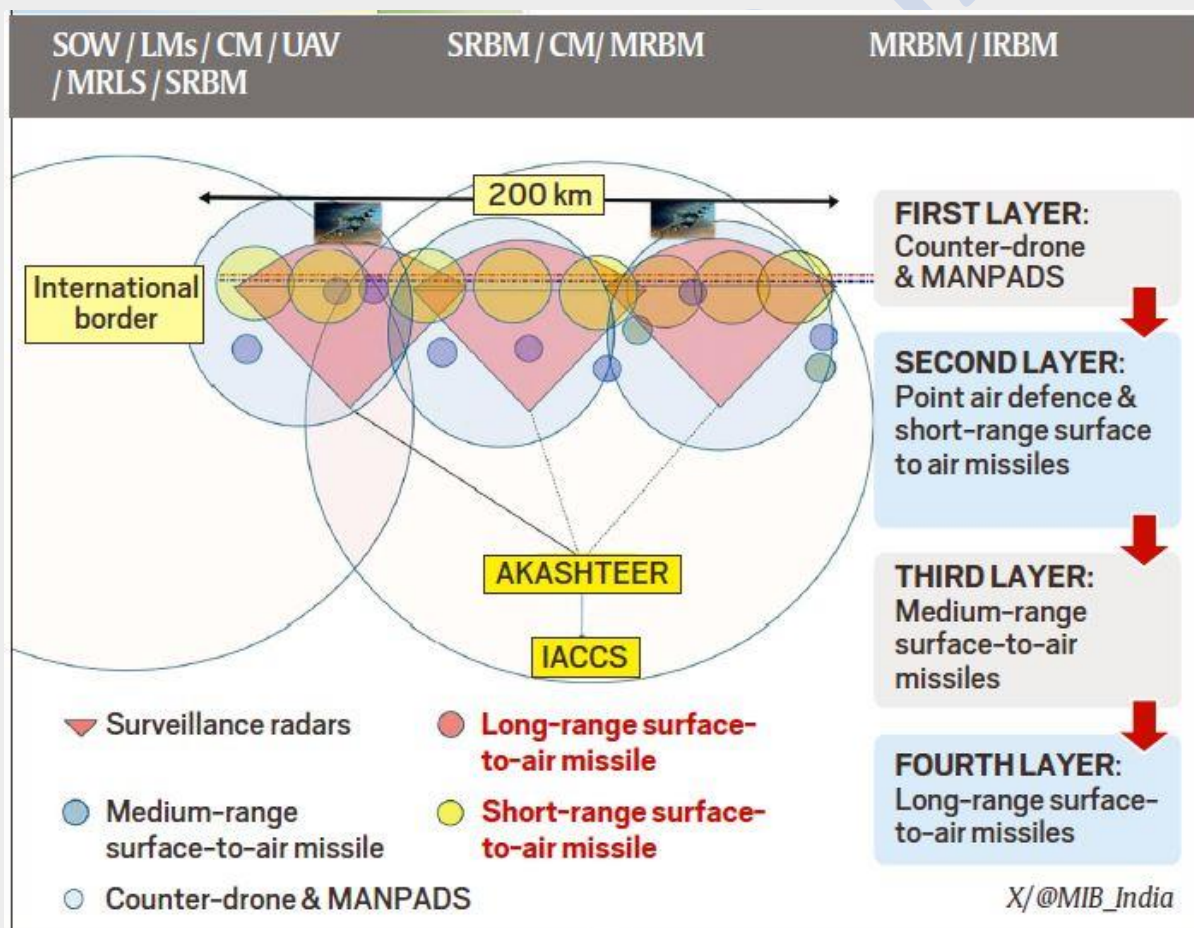
**2. Akashteer – Indian Army's Air Defence System**

- Also developed by: BEL

- Purpose: Air defence control and reporting for Army units.
- Features:
 - Monitors low-level airspace over battle zones.
 - Controls ground-based air defence weapons.
- Scale: Smaller than IACCS; currently being integrated with it for better coordination between Army and Air Force.

3. India's Multilayered Air Defence Umbrella

- Structure:
 - First Layer: Counter-drone systems and MANPADS (shoulder-fired weapons). MANPADS stands for Man-Portable Air Defense Systems.
 - Second Layer: Point air defence systems and short range surface to air missiles
 - Third Layer: Medium-range surface-to-air missiles.
 - Fourth Layer: Long-range surface-to-air missiles.
- Surveillance: Network of ground-based and airborne radars like AWACS and AEW&C systems.
- Objective: Detection, identification, interception, and destruction of hostile threats.



4. Future of IACCS

- Improvements Made: Expanded radar and missile system integration at sensitive bases.
- Role in Modern Warfare:
 - Enables joint coordination among Army, Navy, and Air Force.

- Will integrate emerging technologies like AI for advanced threat analysis.

Relevance: GS Prelims & Mains Paper III; Science & Technology

Source: Indian Express

2. NOAA slashes its weather balloon launches: Why is this significant?

Introduction

In the wake of budget cuts by the Trump administration, a Silicon Valley startup will soon start to replace the National Oceanic and Atmospheric Administration's (NOAA's) weather balloons with AI-powered alternatives, which are supposed to be much cheaper.



Weather agencies across the world use weather balloons to make upper air observations that are crucial for forecasts. Upper air refers to the Earth's atmosphere above about 5,000 feet, and it is from here that the planet gets its rain and drought, wind and calm, and heat and cold at the surface.

The India Meteorological Department (IMD) also uses weather balloons to measure meteorological variables.

Enduring significance

Currently, twice a day, about 900 weather stations around the world launch weather balloons in a coordinated international programme to measure conditions in the upper atmosphere. The launch takes place at 0000 UTC (Coordinated Universal Time) and 1200 UTC. This corresponds to 5.30 AM and 5.30 PM Indian Standard Time (IST).

The balloons are launched at the same time so that meteorologists can create a comprehensive picture of atmospheric conditions, which is essential for accurate weather forecasting.


Typically, today's weather balloons, made of latex and filled with helium, can reach an altitude of 1,15,000 feet (35 km) in a journey lasting up to two hours. The radiosonde is suspended 66 feet below the balloon. The radiosonde is a small instrument package that is suspended below balloon filled with either hydrogen or helium. As the radiosonde is carried aloft, it measures pressure, temperature, and relative humidity.

Concerns

NOAA's slashing of its weather balloon launches has made experts across the world concerned. They believe the move will severely impact weather forecasts.

When Russia tried to cut its radiosonde launches in half, between January 2015 and April 2015, European forecasters saw a decline in their model's forecast quality.

3. India asserts J&K stand after U.S. claims

Clearing the air India rebuts Trump's statements against the backdrop of Operation Sindoor, the understanding between India and Pakistan		
	Trump/Rubio statements	MEA response
	■ U.S. brokered India-Pakistan ceasefire	■ Agreement directly via DGMOs; it was requested by Pak. due to 'effective' IAF strikes
	■ Averted nuclear conflict	■ Military action in conventional domain only
	■ Threatened to stop trade	■ No discussion on trade with U.S. during Operation Sindoor
	■ Will mediate on Kashmir	■ Talks will be bilateral, and topic will be PoK's return
	■ Hyphenated India and Pakistan	■ No hyphenation; international community stands with India on terrorism
	■ India and Pakistan to talk at neutral venue	■ No such discussion planned

India's Stand

Responding to U.S. President Donald Trump's remarks on the Kashmir issue, India reiterated its "long-standing national position" that regards Jammu and Kashmir as a "bilateral" issue to be addressed within the framework of India-Pakistan ties.

External Affairs Ministry spokesperson Randhir Jaiswal said the only subject India wished to raise was Pakistan-occupied Kashmir (PoK) and that the matter of India-U.S. trade did not figure in the telephone conversations the leadership of India and the U.S. held against the backdrop of Operation Sindoor.

Claim by Trump

Mr. Trump has been speaking on his behind-the-scene role in bringing the hostilities between India and Pakistan to a pause.

Shortly before India announced the "understanding" to pause firing and military action, Mr. Trump had said in a post on Truth Social on May 10 that the U.S. had mediated between India and Pakistan, leading to a "full and immediate ceasefire". The announcements from the Indian side were made by Foreign Secretary Vikram Misri and External Affairs Minister S. Jaishankar thereafter. Pakistan's Foreign Minister Ishaq Dar announced the "ceasefire with immediate effect" the same evening.

On 12th, Mr. Trump elaborated on his earlier statements while interacting with reporters at the White House. "I said [to the Indian and Pakistani leadership], let's stop it. If you stop it, we're doing trade. If you don't stop it, we're not going to do any trade," Mr. Trump said. "I think it could have been a bad nuclear war. Millions of people could have been killed. So I'm very proud of that," he added.

Relevance: GS Prelims & Mains Paper II; Bilateral Relations
Source: The Hindu

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