

Sonobuoys

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The **Indian Navy** recently planned to equip the **MQ-9B Sea Guardian MALE** (medium altitude long-endurance) **drones** with **sonobuoys**.

- India had earlier, signed an **agreement** with the **US** to purchase **31 MQ-9 Sea and Sky Guardian drones** for its **three services**.



[ref-swarajya mag]

Significance of the move:

- The new drones will be equipped with **weapons**, including **air-to-ground missiles**, **bombs**, and **submarine detection kits** fitted with **sonobuoys**.
- The sonobuoys will enhance the ability of **MALE drones** to **detect** and track **Chinese submarines** present in the **Indian Ocean Region (IOR)**.
- The **sonobuoy management and control system** and **Sonobuoy Dispensing System (SDS)** are part of the agreement.
- The sonobuoy will help the **P-8I long-range anti-submarine warfare aircraft** to drop **torpedoes** with accuracy.

What is a Sonobuoy?

- Sonobuoy is a **small device** used for **underwater acoustic surveillance** via its **hydrophones** that detect **underwater sounds**, especially those made by submarines.
- It is an expendable sonar system that are deployed from **aircraft** or **ships** and transmit **real-time acoustic data**, helping to detect potential submarine threats with pin-point **accuracy**.
 - **Sonar** (sound navigation and ranging) is a technique that uses **sound propagation** to **navigate**, **measure distances** (ranging), **communicate** or **detect objects** on or **under** the **surface** of the water.
- **Categories:**
 - **Active:** Emits **sound** energy and listen the **returning echo** before transmitting information.
 - **Passive:** Emits **nothing** into the water, but rather listen, waits for sound waves to reach the **hydrophone** before transmitting information.
 - **Special purpose:** They are **not** designed for use in **submarine detection** or **localization**.

About the Sea Guardian drones:

- The Sea Guardian has **low maintenance**, **low operating cost** and can patrol the entire **Indian Ocean Region** in one go.
- It can **roam** over a designated area for a **long time** and deploy **sonobuoys** for locating the submarines.