WHAT IS THE INDIAN OCEAN NAVAL SYMPOSIUM (IONS)?

- It is a **voluntary initiative** that seeks to increase **maritime cooperation among navies** of the **littoral states of the Indian Ocean Region** by providing an **open and inclusive forum** for discussion of regionally relevant maritime issues.

It promotes maritime cooperation, mutual understanding, and collaboration on issues such as **maritime security and humanitarian assistance and disaster relief (HADR).**

- In the process, it endeavours to generate a **flow of information between naval professionals** that would lead to common understanding and possibly cooperative solutions on the way ahead.
- IONS is structured around a **rotating chairmanship, biennial conclaves of chiefs, and working groups.**

There are 36 littoral in the Indian Ocean, which have been geographically **grouped into the following four sub-regions:**

- **South Asian Littorals: Bangladesh, India, Maldives**, **Pakistan, Seychelles, Sri Lanka, and United Kingdom** (British Indian Ocean Territory)
- **West Asian Littorals: Iran**, Oman, Saudi Arabia, and the United Arab Emirates
- **East African Littorals:** France (Reunion), Kenya, Mauritius, Mozambique, South Africa, and Tanzania.
- **South East Asian and Australian Littorals:** Australia, Indonesia, Malaysia, Myanmar, Singapore, Thailand, and Timor-Leste.
- **Observers: China**, **Germany**, Italy, **Japan,** Madagascar, the Netherlands, **Russia, and** Spain**.**

STRATEGIC ASSET ALLOCATION AND RISK GOVERNANCE (SAARG) COMMITTEE

The PFRDA recently constituted a committee of Investment Experts for Strategic Asset Allocation and Risk Governance (SAARG) to review, recommend and modernize the investment framework under the NPS.

- It is a high-level committee of **investment experts** to **review, recommend, and modernise** the **investment framework under the National Pension System (NPS).**
- It was **constituted by the Pension Fund Regulatory and Development Authority (PFRDA).**
- **Objective**: **Strengthening** the **long-term investment architecture of NPS** by **improving diversification**, **enhancing risk management practices,** and **expanding investment choices** available to subscribers.
- SAARG has been tasked with undertaking a comprehensive **review of existing NPS** investment **guidelines for both government and non-government sectors.**
    - The review will include benchmarking India's pension investment framework with leading global pension systems as well as the evolving domestic investment ecosystem.
- The committee will **examine** a wide **range of issues,** including **strategic asset allocation** frameworks, introduction and **review of asset classes,** performance measurement systems, **accountability mechanisms**, **asset-liability management (ALM) practices**, valuation standards for alternative investments, portfolio stability and liquidity optimisation.
    - **Governance structures**, intermediary architecture, and integration of sustainability considerations into investment decision-making will also fall within its scope.

CHATERGALA PASS

- **Location:** It is situated in the **Bhaderwah–Chatergala axis** in Jammu region of **Union Territory of Jammu and Kashmir.**
- It is a **high mountain pass** that connects Bani in the Kathua district to Bhaderwah in the Doda district.
- It is tucked in the **Chamba-doda ranges** of the **greater Himalayas.**
- **Terrain:** It is surrounded by alpine meadows, snow-covered peaks, and dense forest
- **Fauna:** Himalayan monals, ibex, and musk deer are found here.

Key Facts about Border Roads Organisation:

- It is a **road construction executive force in India** that provides support to the Indian Armed Forces.
- BRO was entirely brought under **the Ministry of Defence in 2015.**

Establishment: It was formed on 7 May 1960 to secure India's borders and develop infrastructure in remote areas of the north and northeastern states of the country.

Function: It **develops and maintains road networks** in India's border areas and friendly neighboring countries.

- The executive head of the **BRO is the Director General of Border Roads** (DGBR), who holds the rank of Lieutenant General.
- Officers and personnel from the General Reserve Engineer Force (GREF) form the parent cadre of the BRO.
- It is also **staffed by officers** and troops drawn from the **Indian Army's Corps** of Engineers on extra-regimental employment (on deputation).
- **Motto:** Shramena Sarvam Sadhyam (everything is achievable through hard work).

JEEVAN RAKSHA PADAK AWARDS

Recently, the President of India has conferred the Jeevan Raksha Padak Series of Awards-2025 to 30 persons.

- It is awarded to a **person for meritorious act** of human nature **in saving the life of a person.**
- The award is given in three categories, namely,
    - **Sarvottam Jeevan Raksha Padak:** It is awarded for **conspicuous courage** in saving life under circumstances of very great danger to the life of the rescuer.
    - **Uttam Jeevan Raksha Padam:** It is awarded for courage and promptitude in saving life under **circumstances of great danger** to the life of the rescuer.
    - **Jeevan Raksha Padak**: It is awarded for courage and promptitude in saving life under circumstances of grave **bodily injury to the rescuer.**
- **Eligibility:** Persons of all walks of life are eligible for these awards. The award can **also be conferred posthumously.**
- It is presented to the awardees by the respective Union Ministries/Organizations/State Government to which the awardee belongs.
- **Features of Jeevan Raksha Padak Awards:**
    - Its nominations are **invited annually** from States/UTs and Union Ministries.
    - The recommendations of the award are considered by the Awards Committee within a period of **two calendar years from the date of performance of the**
    - Its final approval is given by the Prime Minister and the President of India.
    - **Award:** The decoration of the award consists of a **Medal, Certificate**, along with a one-time monetary allowance: **Sarvottam Jeevan Raksha Padak** (₹2 lakh), **Uttam Jeevan Raksha Padam** (₹1.5 lakh) and Jeevan Raksha (₹1 lakh).
    - **No other facility/benefit** in terms of any concession in Railways, Airfare etc. is provided by the Government.

REMOUNT AND VETERINARY CORPS

Recently, during the Republic Day Parade more animals were represented the Indian Army's Remount and Veterinary Corps.

- It is a **specialised Corps of the Indian Army** responsible for the **breeding, rearing, and training of Army animals**, including horses, mules and Army dogs.
- It ensures the operational readiness of these animals for **combat, reconnaissance, and logistics** and also providing veterinary care and **supporting counter-terrorism operations.**
- **Headquarters:** Meerut
- **Historical Background of Remount and Veterinary Corps:**
    - The RVC is one of **the oldest branches of the Indian Army,** tracing its foundation to the Stud Department **established in Bengal in 1779.**
    - It was reorganised — from **Army Veterinary Corps** (India) in 1920 to **Indian Remount and Veterinary Corps** in 1950.
    - It was formally established **as the Remount and Veterinary Corps in 1960.**
- **Motto:** 'Pashu Seva Asmakam Dharma (Service to animals is our duty)'.
- **Achievements of Remount and Veterinary Corps:**
    - It has played a **vital role in all conflicts** before and after Independence, including the First and Second World Wars.
    - In 1989, it was awarded the President's Flag for its meritorious service.
    - It is also involved in **strengthening military diplomacy** by providing horse riding training under the NCC, veterinary assistance in remote areas, **participation in United Nations missions** and providing **trained animals to friendly countries.**

DRDO'S HYPERSONIC GLIDE MISSILE

At the 77th Republic Day Parade on Kartavya Path, the Defence Research and Development Organisation (DRDO) unveiled the **Long Range Anti-Ship Hypersonic Missile** (LR-AShM) for the first time.

This draws attention to other hypersonic missile programmes under development, signalling India's growing focus on next-generation strategic and tactical weaponry.

LR-AShM: India's Hypersonic Glide Missile

- The DRDO showcased the Long Range Anti-Ship Hypersonic Missile (LR-AShM) along with its launcher.
- The system is tailored to meet the Indian Navy's coastal battery requirements and can engage both static and moving targets at ranges of up to 1,500 km, carrying multiple payload options.
- **Quasi-Ballistic, Hypersonic Flight Profile**
    - The LR-AShM follows a quasi-ballistic trajectory, beginning like a ballistic missile but flying at lower altitudes and manoeuvring mid-course.
    - It reaches hypersonic speeds of **Mach 10** initially and sustains average speeds of Mach 5, using multiple atmospheric skips to evade interception.
- **Low Detectability and High Survivability**
    - Flying at low altitude with extreme speed and manoeuvrability, the missile remains largely undetectable to enemy ground- and ship-based radars.
    - Its flight profile significantly reduces reaction time for adversary air-defence systems.
- **Two-Stage Propulsion and Glide Phase**
    - The missile uses a **two-stage** solid rocket motor.
    - Stage I boosts the missile to hypersonic velocity and then separates.
    - After Stage II burnout, the vehicle enters an unpowered hypersonic glide phase, executing controlled manoeuvres within the atmosphere before striking the target.

- **High Aerodynamic Efficiency**
  - According to DRDO scientists, the LR-AShM has high aerodynamic efficiency, enabling it to generate effective lift with minimal drag.
  - This allows the missile to travel farther, faster, and more accurately using the same energy, enhancing its operational effectiveness.

Strategic Significance and Road Ahead of LR-AShM

- The hypersonic speed of the LR-AShM makes detection and interception extremely difficult.
- Travelling at such velocities, it can cover a **1,500 km range in about 15 minutes**, sharply reducing enemy reaction time.
  - Extended-range variants of up to **3,500 km** are already under development.
- **Boost to Sea Denial Capabilities**
  - The missile can neutralise all classes of warships.
  - Current and future variants are expected to become a critical asset for sea denial operations, especially in the strategically vital Indian Ocean Region, limiting an adversary's military and commercial use of maritime spaces.
- **Multi-Service and Multi-Platform Potential**
  - Beyond the Navy's coastal batteries, Army and Air Force versions are under consideration, along with ship-launched variants.
  - This versatility across platforms could firmly place India among a small group of nations with advanced hypersonic weapons capability.
- **Leveraging Proven Missile Technologies**
  - The LR-AShM draws on key technologies from India's existing missile programmes, including the **K-15** (Sagarika) from the K-missile family and the BrahMos Aerospace supersonic cruise missile.
  - This reflects a convergence of proven propulsion and guidance systems into a next-generation hypersonic platform.

VEHICLE-TO-VEHICLE (V2V) COMMUNICATION - A NEW FRONTIER IN ROAD SAFETY IN INDIA

- V2V is a **wireless** communication system that allows vehicles to **exchange real-time data** such as speed, location, acceleration, braking patterns.
- It is a sub-set of Vehicle-to-Everything (V2X) technology and falls under the Intelligent Transport System (**ITS**) framework.
- The system is inspired by **aviation safety technology**, where aircraft continuously broadcast their position and speed to nearby aircraft and ground stations.

Institutional and Policy Developments in India:

- 30 GHz radio frequency spectrum has been allocated by the Department of Telecommunications (**DoT**) under the National Frequency Allocation Plan.
- A Joint Task Force has been constituted between MoRTH and DoT.
- **Standards** are being developed in collaboration with Original Equipment Manufacturers (OEMs).
- V2V is identified as a key initiative under MoRTH's road safety programme.

Working of V2V:

- **On-board unit (OBU):** Vehicles will be fitted with an OBU costing approximately ₹5,000–₹7,000. OBUs enable wireless data exchange between nearby vehicles within a 300-metre range.
- **Functional benefits:**
    - Alerts drivers about sudden braking by vehicles ahead; black spots and accident-prone zones; fog, obstacles, or parked vehicles; potential collision risks.
    - **Example**: If a vehicle brakes suddenly, surrounding vehicles receive an early warning, helping prevent pile-ups and crashes.

Phased Rollout Strategy:

- **First phase**: Mandatory installation in new vehicles.
- **Second phase**: Retrofitting in older vehicles.

- **Spectrum cost**: It will be provided free of cost, reducing compliance burden on OEMs.
- **Targeted implementation:** Within the current year, post notification of standards.

Global Experience with V2V Systems:

- **United States**: Global leader in V2V research and regulation.
- **Europe**: Germany, France, UK integrating V2V in smart city and mobility projects.
- **Japan**: ITS Connect programme providing real-time traffic and emergency alerts.
- **China**: Major adopter with strong integration into smart mobility.
- **Pilot stages**: Like India, countries like the UAE, Saudi Arabia, Brazil, Mexico, etc., are in early pilot stages to roll out V2V communication systems.
- **Examples of V2V-enabled vehicles**: Volkswagen Golf 8, Cadillac models (USA).

Challenges and Concerns:

- **Technological limitations:** Frequency bands may not support all vehicle categories uniformly. Risk of miscommunication or signal failure, potentially causing accidents.
- **Data privacy and surveillance:** Large-scale collection of data related to vehicle movement, driver behaviour, location tracking. Raises concerns under data protection and privacy frameworks.
- **Cybersecurity risks:** Vulnerability to cyberattacks. Possibility of system hijacking leading to large-scale security threats.
- **Regulatory gaps:** Need for robust legal and regulatory framework; clear standards on data ownership, liability, and accountability.

Way Forward:

- **Comprehensive standards**: Formulation of comprehensive V2V standards aligned with global best practices.
- **Integration**: With India's Digital Public Infrastructure (DPI) and upcoming Data Protection laws.
- **Periodic audits**: To strengthen cybersecurity architecture.
- **Phased and inclusive adoption:** To cover commercial and private vehicles.
- **Capacity building:** Of enforcement agencies and public awareness campaigns.