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IIT-Madras And BEL Develop Precision 80mm Rocket

- Researchers at the Indian Institute of Technology Madras (IIT-Madras), in collaboration with Bharat Electronics Limited (BEL), have unveiled a ground breaking 80mm rocket system designed specifically for helicopter deployment.
- This indigenous innovation promises a range of 10 to 12 kilometres, marking a significant leap in India's aerial munitions capabilities. The project aligns seamlessly with the nation's push towards self-reliance in defence manufacturing under the Atmanirbhar Bharat initiative.
- The rocket, engineered for unguided yet highly precise strikes, integrates advanced propulsion and guidance technologies. Developed over several years at IIT-Madras's Sudha Murty Centre for Electronic Systems and Instrumentation, it leverages cutting-edge research in aerodynamics and materials science.
- BEL, a stalwart in India's defence electronics sector, has handled the production scaling and integration aspects, ensuring compatibility with existing helicopter platforms.
- Helicopters such as the HAL Dhruv and indigenous Light Combat Helicopter (LCH) Prachand stand to benefit immensely from this munition. The 80mm calibre strikes an optimal balance between payload capacity and launch pod compatibility, allowing for salvo fire without compromising aircraft stability.
- Trials conducted at the Aeronautical Test Range in Chitradurga have validated the rocket's performance, with impacts achieving sub-10-metre accuracy under simulated combat conditions.

Project KUSHA Hits Key Milestone With M1 Trials

- India is advancing its indigenous air defence ambitions with a new focus on a long-range, multi-layered surface-to-air missile system that could parallel or exceed the capabilities of the Russian S-400 Triumf. Defence Secretary Rajesh Kumar Singh indicated that work is well underway on an Indian variant of a long-range air defence system.
- He noted that early trials have yielded encouraging results, which effectively constitutes one of the first official recognitions of substantive progress on this frontier. The disclosure underscores a concentrative drive to strengthen national defence autonomy through homegrown technical solutions rather than relying predominantly on imported capabilities.
- The project in question is linked to Project Kusha, a major DRDO-driven initiative aimed at delivering a robust, multi-layered long-range surface-to-air missile (LR-SAM) system.
- Project KUSHA is conceived as a multi-layered air defence system, broadly structured into three interceptor classes:
- M1 Interceptor: ~150 km range
- M2 Interceptor: ~250 km range
- M3 Interceptor: ~350 km range
- These interceptors are designed to counter a wide spectrum of aerial threats, including:

- Fighter and support aircraft
- Cruise missiles
- High-Speed and Manoeuvring Targets
- Project KUSHA is structured as a multi-layered system featuring three distinct interceptor classes. The M1 variant offers an engagement range of approximately 150 km, while the M2 extends to around 250 km. The M3, the most advanced, reaches up to 350 km, providing comprehensive coverage against diverse threats.

Russia Launches Nuclear Submarine Khabarovsk

- Russia has launched its latest nuclear-powered submarine, Khabarovsk, marking a significant advancement in its naval capabilities. The vessel, part of **Project 09851**, is specifically engineered to deploy the Poseidon underwater nuclear drone, a weapon system frequently dubbed the "**doomsday drone**" in international discourse due to its apocalyptic potential.
- The launch took place at the Sevmash shipyard in Severodvinsk, amid heightened global tensions over nuclear proliferation. Khabarovsk represents Russia's push to modernise its strategic submarine fleet, integrating cutting-edge technology for undersea operations that could alter maritime power dynamics.
- Poseidon, officially known as Status-6, is an autonomous, nuclear-armed underwater vehicle capable of travelling at speeds exceeding 100 knots. Powered by a compact nuclear reactor, it boasts an operational range of over

10,000 kilometres and can dive to depths beyond 1,000 metres, evading conventional detection and defence systems.

- Khabarovsk itself displaces around 20,000 tonnes when submerged and measures approximately 120 metres in length. It features a strengthened hull for deep-water operations and advanced stealth technologies, including reduced acoustic signatures, making it one of the quietest submarines in Russia's arsenal.

GRSE & HSL Sign Pact For Shipbuilding Programme

- Defence PSUs Garden Reach Shipbuilders and Engineers and Hindustan Shipyard Limited signed an agreement to form a consortium aimed at undertaking a large-scale, strategically significant national shipbuilding programme, an official said.
- The partnership envisages the construction of advanced maritime platforms and is expected to contribute to the enhancement of the country's maritime infrastructure, technological self-reliance, and long-term operational capabilities, the GRSE official said in a statement.
- "This collaboration is expected to leverage the complementary strengths of both shipyards and further reinforce the national vision of enhancing indigenous maritime capability and self-reliance in shipbuilding," the official said.

India – Seychelles Joint Vision

- At the invitation of Prime Minister Narendra Modi, the President of the Republic of Seychelles Dr. Patrick Herminie is on a State Visit to India from 5 to 10 February 2026.
- The State Visit has added significance as it coincides with the 50th year of Independence of Seychelles, and the **50th year** of establishment of diplomatic relations between the two countries.
- The leaders acknowledged that Seychelles-India ties are people-centric and reinforce security and stability in the Western Indian Ocean Region. The leaders also reaffirmed Seychelles' role as an important pillar in India's Vision MAHASAGAR (**Mutual and Holistic Advancement for Security and Growth Across Regions**).
- Recalling the rich and historic people-to-people ties connecting India and Seychelles, both leaders emphasized the need for closer engagement on national development priorities to enhance security, prosperity and well-being of the peoples of Seychelles and India.
- India announced a '**Special Economic Package**' of USD 175 million, which will include a blended financial assistance of USD 125 million in Rupee-denominated Line of Credit and USD 50 million in Grant assistance for development cooperation projects, capacity building for civilians and defence officials, maritime security, etc.
- **Both leaders agreed to:**
- Implement training programmes and exchange visits in the area of mental health through institutional linkages.

- Support recruitment and deputation of medical specialists, nurses, paramedics and technicians from India to meet the needs of Seychelles.
- Strengthen bilateral cooperation in public health through exchange of visits and institutional linkages.
- Implement the customised training programme for Seychellois civil servants in India through the National Centre for Good Governance (NCGG).
- Strengthen capacity building, cooperation and exchanges in the areas of cybersecurity and financial intelligence.
- Cooperate and collaborate for promotion of Micro, Small and Medium Enterprises (SMEs).
- Customise training programs according to the needs of Seychelles in collaboration with Sushma Swaraj Institute of Foreign Service.

REVIEW QUESTIONS

Q1. The 80 mm helicopter-launched rocket system was jointly developed by which institutions?
A. DRDO and HAL
B. IIT Bombay and BDL
C. IIT Madras and Bharat Electronics Limited
D. ISRO and BEL

Answer: C

Q2. The newly developed 80 mm rocket has an operational range of approximately:
A. 3–5 km
B. 6–8 km
C. 10–12 km
D. 15–20 km

Answer: C

Q3. The research work on the 80 mm rocket at IIT Madras was carried out at:
A. National Aerospace Laboratories
B. Sudha Murty Centre for Electronic Systems and Instrumentation
C. Vikram Sarabhai Space Centre
D. Defence Research Complex

Answer: B

Q4. Which helicopters are expected to deploy the indigenous 80 mm rocket?
A. Apache and Chinook
B. Mi-17 and Kamov
C. HAL Dhruv and LCH Prachand
D. Tejas and Jaguar

Answer: C

Q5. Project KUSHA is primarily aimed at developing:
A. Ballistic missiles

B. Long-range surface-to-air missile system
C. Anti-submarine warfare platforms
D. Hypersonic cruise missiles

Answer: B

Q6. Under Project KUSHA, the interceptor with an engagement range of about 150 km is:
A. M3
B. M2
C. M1
D. LRSAM

Answer: C

Q7. Which of the following threats is Project KUSHA designed to counter?
A. Only ballistic missiles
B. Only drones
C. Aircraft, cruise missiles and manoeuvring targets
D. Naval warships

Answer: C

Q8. Russia's nuclear-powered submarine *Khabarovsk* is designed to deploy which weapon system?
A. Kalibr cruise missiles
B. Zircon hypersonic missile
C. Poseidon nuclear underwater drone
D. Sarmat ICBM

Answer: C

Q9. Garden Reach Shipbuilders and Engineers (GRSE) partnered with which PSU for a major shipbuilding programme?
A. Mazagon Dock Shipbuilders Limited
B. Cochin Shipyard Limited
C. Hindustan Shipyard Limited
D. Goa Shipyard Limited

Answer: C

Q10. India announced a Special Economic Package of USD 175 million for which country?

A. Maldives
B. Mauritius
C. Seychelles
D. Sri Lanka

Answer: C