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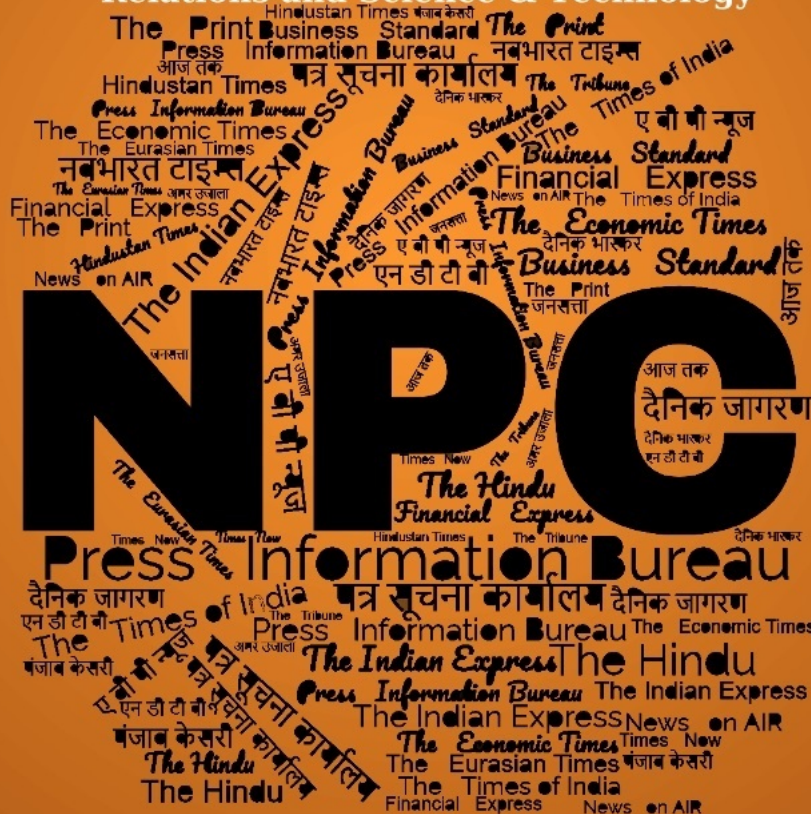
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समाचार पत्रों से चयनित अंश Newspapers Clippings

डीआरडीओ समुदाय को डीआरडीओ प्रौद्योगिकियों, रक्षा प्रौद्योगिकियों, रक्षा नीतियों, अंतर्राष्ट्रीय संबंधों और विज्ञान एवं प्रौद्योगिकी की नूतन जानकारी से अवगत कराने हेतु दैनिक सेवा

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Defence News

'अब घंटे और सेकंड में मापा जा सकता है युद्ध'

Source: Dainik Jagran, Dt. 30 Sep 2025

नई दिल्ली, प्रेटर : रक्षा मंत्री राजनाथ सिंह ने सोमवार को कहा कि युद्ध अब महीनों में नहीं, घंटों और सेकंडों में मापा जाता है। उपग्रह, ड्रोन और सेंसर संघर्ष की प्रकृति को नए सिरे से परिभाषित कर रहे हैं। रक्षा मंत्री ने भारतीय तटरक्षक बल (आईसीजी) से भविष्य की चुनौतियों से निपटने के लिए रोडमैप विकसित करने का आह्वान किया। आईसीजी के कमांडरों के सम्मेलन के 42वें सत्र में राजनाथ ने यह भी कहा कि साइबर और इलेक्ट्रॉनिक युद्ध अब “काल्पनिक खतरों” के रूप में नहीं हैं, बल्कि वास्तविकताएं हैं।

रक्षा मंत्री ने कहा कि भारत की 7,500 किलोमीटर लंबी तटरेखा “भारी चुनौतियां” पेश करती है, जिसके लिए उन्नत प्रौद्योगिकी, अच्छी तरह से प्रशिक्षित कर्मियों और चौबीसों घंटे निगरानी की आवश्यकता है।



नई दिल्ली में भारतीय तटरक्षक बल के कमांडरों के सम्मेलन को संबोधित करते रक्षा मंत्री राजनाथ सिंह • आइएनएस

राजनाथ ने कहा, समुद्री खतरे तेजी से प्रौद्योगिकी-संचालित और बहुआयामी होते जा रहे हैं। आतंकी संगठन साजिश रचने के लिए डिजिटल मैपिंग और खुफिया जानकारी जैसे आधुनिक उपकरणों का दुरुपयोग करते हैं। पारंपरिक तरीके अब पर्याप्त नहीं हैं, हमें आर्टिफिशियल इंटेलिजेंस, मशीन लर्निंग आधारित निगरानी, ड्रोन, साइबर रक्षा प्रणाली और

राष्ट्रीय धरोहर हैं पूर्व सैनिक : राजनाथ

नई दिल्ली, प्रेटर : रक्षा मंत्री राजनाथ सिंह ने पूर्व सैनिकों को “राष्ट्रीय धरोहर” बताया। मानेकशा सेंटर में भूतपूर्व सैनिक कल्याण विभाग द्वारा आयोजित ‘विकसित भारत और पूर्व सैनिक कल्याण’ विषय पर राष्ट्रीय सम्मेलन में सोमवार को रक्षा मंत्री ने ये बात कही।

स्वचालित प्रतिक्रिया तंत्र को अपने समुद्री सुरक्षा ढांचे में एकीकृत करके अपराधियों से आगे रहना होगा। रक्षा मंत्री ने कहा, आईसीजी ने भारत को लगातार सम्मान दिलाया है। एएनआई के अनुसार राजनाथ ने शरणार्थियों की बढ़ती संख्या और अवैध प्रवासियों को बंगाल की खाड़ी क्षेत्र में भारत की समुद्री सुरक्षा के लिए चुनौती बताया।

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Rajnath calls for AI and cyber defence in maritime security

Source: Hindustan Times, Dt. 30 Sep 2025

Rahul Singh

letters@hindustantimes.com

NEW DELHI: Defence minister Rajnath Singh on Monday said operational preparedness, adaptability and swift response must form the cornerstone of the Indian Coast Guard's vision as "warfare is now measured in hours and seconds, with satellites, drones, and sensors redefining the nature of conflict."

"What were once predictable patterns of smuggling or piracy have now evolved into sophisticated operations using GPS spoofing, remote-controlled boats, encrypted communications, drones, satellite phones, and even networks operating on the dark web," he said at a top three-day coast guard conference, stressing that maritime threats are becoming increasingly technology-driven and multidimensional.

The coast guard commanders' conference brings together the service's top brass to deliberate on strategic, operational, and administrative priorities against the backdrop of evolving maritime security challenges and the growing strategic significance of the vast Indian Ocean region where the challenges include China's carefully calculated power play for influence and defending the rules-based international order.

Terrorist organisations, Singh warned, exploit modern tools such as digital mapping and real-time intelligence to plan their activities.

"Traditional methods are no longer sufficient, we must be ahead of criminals and adversaries by integrating artificial intelligence, machine learning-based surveillance, drones, cyber defence systems, and automated response mechanisms into our maritime security framework."

Singh urged the coast guard to



Defence minister Rajnath Singh holds a meeting with Indian Coast Guard commanders in New Delhi on Monday.

PTI

develop a futuristic road map for 2047 that anticipates new challenges, integrates cutting-edge technologies, and continuously adapts strategies.

"A smuggling vessel may look like a fishing boat, a terrorist group may exploit the openness of the sea, and threats may emerge invisibly. Maritime security is far more complex and unpredictable than land borders and demands constant vigilance," he said.

Cyber and electronic warfare, he said, are no longer hypothetical threats but present-day realities. "A nation may attempt to paralyse our systems not with missiles, but through hacking, cyberattacks, and electronic jamming. The coast guard must continuously adapt, and upgrade its training and equipment to guard against such threats."

Describing the coast guard as a vital pillar of national security, Singh said it had the unique mandate of operating at the intersection of external and internal security. While the armed forces focus on defending external threats and other agencies handle internal security, the coast guard seamlessly straddles both spheres, he stressed, hailing the coast guard as "a true force multiplier".

"By patrolling the exclusive economic zone (EEZ), the coast

Veterans bring strategic thinking to society: Singh

NEW DELHI: Ex-servicemen are a national asset and bring decades of experience, leadership, discipline and strategic thinking to society, defence minister Rajnath Singh said on Monday. "Their continued engagement in social and economic initiatives strengthens communities and the nation as a whole. Veterans play a pivotal role in fostering trust, unity and collaboration within societies," Singh said at a conclave organised by the defence ministry's department of ex-servicemen welfare.

HTC

guard not only deters external threats but also addresses illegal fishing, drug and arms trafficking, smuggling, human trafficking, marine pollution, and irregular maritime activities."

Every coastal country's EEZ extends to 200 nautical miles from its shores, and it has exclusive rights to all resources in those waters, including oil, natural gas and fish.

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Army incorporates lessons from Op Sindoor to strengthen its drone warfare capabilities

Source: The Tribune, Dt. 30 Sep 2025

Incorporating lessons learnt during Operation Sindoor, the brief military exchange between India and Pakistan in May that saw intense use of drones and missiles, the Army on Monday validated its operational concepts in the tactical employment of unmanned aerial systems (UAS) in future war scenarios.

As part of a five-day drill, 'Exercise Vayu Samanvay', held at the Naraingarh Field Firing Ranges near Ambala, formations from the Western Command and South-Western Command carried out offensive as well as defensive manoeuvres with various types of drones and counter-drone systems.

"Drones have been integrated into every arm and service of the Army, including delivery of supplies in high altitude areas. Operation Sindoor threw up several lessons pertaining to drone operations and these are being implemented and fine-tuned for a tactical environment. Now there is a lot of focus on the development and fabrication of drones and training of troops in handling such equipment," Lt Gen Manoj Kumar Katiyar, General Officer Commanding-in-Chief, Western Command said.

Pointing out that some of these systems were used in Operation Sindoor, where Pakistani drones were destroyed, he said that a great deal of emphasis is being laid on drone warfare and strengthening training, because if the next such confrontation happens, the punishment that would be inflicted on the enemy would be much more severe.



Formations from the Western Command and the South-Western Command carried out offensive as well as defensive manoeuvres with various types of drones and counter-drone systems during 'Exercise Vayu Samanvay', held at the Naraingarh Field Firing Ranges near Ambala

The drones used in this exercise were tactical drones fabricated by different units and the local industry, having a range of up to five km and a payload capacity of 5 kg that would be employed by units in the immediate battle space for precision strikes and surveillance.

Stating that the Army also has high-end drones with longer range and higher payload capacity, Lt Gen Katiyar said that the Army would be requiring thousands of drones in the coming years to meet its operational and logistics requirement. The ammunition that these drones would be using is also being fabricated locally.

The Army also employed drones in rescue operations during the recent floods in many parts of North-west India, where they were used instead of helicopters for observation as well as delivering relief material to places that were cut-off.

Officers participating in the exercise said that the two basic aims of the exercise in the light of experiences during Operation Sindoor were how to counter enemy UAS and how to enhance our own offence capability.



The drones used in 'Exercise Vayu Samanvay' were tactical ones fabricated by different units and the local industry, having a range of up to 5 km

Stating that besides the Armed Forces, drones are being used in many other fields, the Army Commander referred to the "drone didi" scheme, where women in rural areas are being trained to use drones in agriculture and said that they would launch a training programme for such women shortly.

Formations and units from the two Commands played the role of opposing forces from two countries, designated as 'Suryadesh' and 'Chandradesh', during the drill and demonstrated a simulated drone attack and counter-drone measures using swarms. Drones were used to drop different types of live ordnance including artillery shells and mortar bombs.

The exercise showcased seamless synergy across two major operational theatres and integrated drones, counter-drone systems and unmanned platforms in live conditions, validating our cutting-edge technologies and tactics for future warfare, an official statement said.

It highlights the Indian Army's ability to adapt, innovate and operate at speed in a dynamic battlespace and reaffirms high standards of training, technological innovation and commitment to safeguarding the nation's frontiers, it added.

<https://www.tribuneindia.com/news/defence/army-incorporates-lessons-from-op-sindoor-to-strengthen-its-drone-warfare-capabilities/>

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Bilateral Defence Cooperation Strengthened as Kenya Navy Commander Visits South Block

Source: The Statesman, Dt. 30 Sep 2025

Kenyan Navy Commander, Major General Paul Owuor Otieno met the Chief of the Army Staff General Upendra Dwivedi at South Block, here on Monday. The duo spoke about advancing the bilateral defence cooperation between the two maritime neighbours.

In a post on X, the ADGPI wrote, "Defence Cooperation- Major General Paul Owuor Otieno, Commander of the Kenya Navy, called on General Upendra Dwivedi, COAS, today. The interaction highlighted the enduring friendship between #India and Kenya, with discussions focused on advancing bilateral Defence Cooperation and enhancing regional security.

"Both leaders also deliberated on the prevailing geostrategic environment in the Indian Ocean Region and reaffirmed their shared commitment to peace & stability."

In a statement issued here, the Naval spokesperson said that Major General Otieno was received by Admiral Dinesh K. Tripathi, Chief of the Naval Staff, at South Block Lawns, where he was accorded a ceremonial Guard of Honour.

Discussions during the meeting covered a wide range of issues relating to maritime cooperation, including operational, training, and hydrographic engagements, the conduct of multilateral Exercise AIKEYME, and consolidation of the partnership under the India–Kenya 'BAHARI' Maritime Vision. Major General Otieno also paid homage to the fallen soldiers by laying a wreath at the National War Memorial.



Major General Otieno is scheduled to visit the Information Fusion Centre for the Indian Ocean Region (IFC-IOR) at Gurugram, as well as training establishments of the Indian Navy's Southern Naval Command in Kochi, with a view to enhancing training cooperation.

The Kenya Navy remains a valued maritime partner in the Indian Ocean Region, with active participation in multilateral Exercise AIKEYME, the Indian Ocean Naval Symposium (IONS), the Goa Maritime Conclave, and the Djibouti Code of Conduct – Jeddah Amendment (DCoC-JA), the statement read.

Highlighting the ongoing partnership, ships of the Indian Navy's First Training Squadron – INS Tir, INS Sujata, INS Shardul, and ICGS Sarathi – recently made a port call at Mombasa, Kenya, as part of their long-range training deployment to the South West Indian Ocean. The visit included a series of professional and social interactions, further deepening bilateral maritime engagement.

<https://www.thestatesman.com/india/bilateral-defence-cooperation-strengthened-as-kenya-navy-commander-visits-south-block-1503493229.html/amp>

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Punishment inflicted on enemy will be greater than before, says Western Army commander Lt Gen Katiyar on drone warfare

Source: The Indian Express, Dt. 30 Sep 2025

Lt Gen Manoj Kumar Katiyar, General Officer Commanding-in-Chief, Western Command, said on Monday that after absorbing lessons in drone operations in Operation Sindoor, the training of Indian Army soldiers in drone warfare had intensified. "Our training is much heavier than before because this time the punishment which we have to inflict on the enemy will be more than before," said Lt Gen Katiyar.

Drone teams of various Army units — Western and South Western Commands of the Indian Army — concluded an exercise using unmanned aerial systems for surveillance, targeting, and precision strikes in a tactical operational environment. The concluding day of the exercise at the field firing range near Naraingarh in Haryana was witnessed by Lt Gen Manoj Kumar Katiyar along with senior officers of 2 Corps.

The Western Army commander emphasised that certain pointers had emerged from the drone engagements with Pakistan during Operation Sindoor and that these were being addressed by holding exercises such as this. The exercise was conducted simulating offensive and defensive drone operations which included first-person-view (FPV) drones, Kamikaze drones, mule drones, and swarm drones.

"In Operation Sindoor, certain lessons were learnt regarding drone operations and these are being perfected in a tactical environment where close contact with the enemy within a range of 5 km was simulated," said Lt Gen Manoj Kumar Katiyar.

What The Exercise Involved

In-house drones fabricated by the Western Command and the South Western Command were used in an offensive setting simulating battle between two imaginary adversaries — Suryadesh and Chandradesh. In a demonstration held at the firing range, various kinds of ammunition were

dropped by drones, including 155 mm shells, 81 mm shells, and 51 mm mortars, attacking targets on the ground.

The participants in the exercise were from all arms and services including infantry battalions, armoured regiments, artillery regiments, engineer regiments, air defence, corps of electronics and mechanical engineers, and ordnance corps.

In-house developed shape charges and ammunition was also used and 84 mm rockets were dropped by drones in attack mode. A senior officer said that easily sourced low-cost ammunition were used along with 3D printed ammunition. The saturation of the battlefield with drones was also demonstrated with several dozen drones taking to the air at one time.

Speaking to reporters, Lt Gen Manoj Kumar Katiyar said that thousands of drones would be required for the next war and that the requirement was being met with indigenously developed drones. Answering a query on the all arms and services drone operations, Lt Gen Manoj Kumar Katiyar said drones needed to be operated by everyone—be it mechanised infantry, EME, or ASC and that this was the way forward.

“We have used drones in high-altitude areas for supplies. In recent floods in Punjab, we have used drones to send in relief materials, and soon we will reach a stage where the material sent by helicopters will be sent by drones,” he said, referring to the various uses that drones have apart from the battlefield application.

Lt Gen Katiyar further said the Army would also be training the Drone Didis to help them work in the fields and in their villages and that the programme would soon commence.

“This demonstration was for tactical drones in contact battle. The higher-category drones are being researched and developed. What we have understood is that we can use drones more and so after Operation Sindoor, we have spent a lot of effort on drone acquisition and training. A jawan must know how to operate a drone,” said Lt Gen Manoj Kumar Katiyar.

Lt Gen Manoj Kumar Katiyar said that in Operation Sindoor, Army units destroyed most drones sent by Pakistan. “In the next war, whatever drones come from Pakistan, we will destroy them with our counter drone systems and air defence guns,” he said.

<https://indianexpress.com/article/cities/chandigarh/manoj-kumar-katiyar-on-drone-warfare-10278086/>

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Standardised gear, shared logistics, joint training to boost Army, Navy, Air Force integration before theatre command

Source: The Indian Express, Dt. 30 Sep 2025

Standardisation of equipment, common supply chains for logistics and procurement, combined training at all levels, more cross-postings, exposure to other services and even greater social interaction among personnel — these are among the steps being pushed to increase jointness and integration among the Army, Navy and Air Force, ahead of the creation of theatre commands, The Indian Express has learned.

Some of these measures were discussed at the Combined Commanders Conference in Kolkata earlier this month, which was also attended by the Prime Minister.

According to sources, the Armed Forces are working to deepen their understanding of each other's capabilities and challenges so that tri-service requirements can be built into operational plans from the outset, as part of wider measures to increase jointness and integration before any major reform such as theatre commands is implemented. The three services, however, are yet to reach consensus on the creation of theatre commands. The push follows decisions announced at the Combined Commanders Conference in Kolkata last week, including the formation of a single tri-services Education Corps and the establishment of three joint military stations, in Thiruvananthapuram, Visakhapatnam and Gandhinagar, in the first phase.

Efforts to integrate the Army, Navy and Air Force have gathered pace in recent years, as the military works to prepare for theaterisation. The services have already undertaken cross-postings, created joint logistics nodes, and brought in greater coordination in procurement, training and staffing.

The Indian Express has learned that there will now be a sharper focus on inter-services training at all levels, to ensure personnel are familiar with each other's equipment and capabilities for optimal use. "This knowledge will play a key role in operational planning, incorporating tri-service requirements and capabilities right from the beginning," a source said.

Unified structure

The theaterisation plan seeks to integrate the Army, Navy, Air Force, and their resources, into specific 'theatre' commands for deployment under a single, unified command structure. CDS General Anil Chauhan has pledged to address differences within the military leadership over its structure.

Vacancies and syllabi of select courses are being reworked so that personnel of all three services can train together, contribute and learn from one another. The tri-service communication network, which currently exists at a limited level, is also planned to be expanded for seamless communication and data-sharing.

Sources said some service-specific customs and traditions are being phased out or harmonised, and there will be greater scope for social interactions among personnel to build understanding of each other's culture and ethos.

Inter-service postings are set to increase at all levels. Alongside, efforts are underway to standardise equipment and platforms to ensure interoperability, streamline supply chains and spares management. According to sources, changes are also being considered in the format of annual confidential reports, so that they reflect both service-specific and tri-service requirements.

<https://indianexpress.com/article/india/common-supplies-to-joint-training-armed-forces-look-at-steps-ahead-of-theatrisation-10279276/>

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BSF unveils centre armed with AI, GIS for Pak, B'desh borders

Source: *The Asian Age*, Dt. 30 Sep 2025

AGE CORRESPONDENT
NEW DELHI, SEPT. 29

Aiming to improve capability in safeguarding the country's borders with Pakistan and Bangladesh, the Border Security Force on Monday launched a new command and control system aided by artificial intelligence and geographic information system facilities.

The Centre, inaugurated by the force's DG Daljit Singh Chawdhary, is named Decision Support System and it will "enhance" the decision-making capability of commanders at all levels.

"Harnessing the technological solutions, BSF will be able to meet emerging threats of border security," the force said in a statement.

"The DSS will enable commanders to plan and

THE DSS will be integrated with electronic border solutions, other command centres of the BSF and also with the GIS platforms of other security forces and organisations

execute operations based on an informed decision-making process through role-based access of the system via custom-designed dashboards," the statement said.

The DSS will integrate the GIS platform with legacy operations, the incident database and sensor feeds from the border, forming a complete operating picture (COP) for the force commanders based at the headquarters here.

It will operationally benefit the BSF with facilities of monitoring and predictive trend analysis for

effective border management and the new system would be capable of performing AI and machine learning-based operations on GIS and using the legacy data for predicting smuggling hotspots, infiltration routes etc. For better resource allocation and operational planning and execution, the statement further said.

The DSS will be integrated with electronic border solutions, other command centres of the BSF and also with the GIS platforms of other security forces and organisations.

In its next phase, the DSS will be integrated with other data sources like OSINT (open source intelligence), large data sets (big data) and information sourced from the India Meteorological Department (IMD), according to the statement.

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Science & Technology News

वैज्ञानिकों ने नई प्रक्रिया विकसित की: खरे पानी को आसानी से बना सकते हैं पीने लायक

Source: Punjab Kesari, Dt. 30 Sep 2025

भारतीय विज्ञान संस्थान के शोधार्थियों ने नई साइफन आधारित तापीय विलवणीकरण के जरिए खारे समुद्री जल को स्वच्छ पेयजल में बदलने के लिए नई प्रणाली विकसित की है। इस प्रणाली की खासियत है कि पानी में अगर 20 फीसद नमक की मौजूदगी हो, उसे भी पेयजल में तब्दील किया जा सकता है। सूर्य की रोशनी में एक वर्ग मीटर में हर घंटे, छह लीटर से अधिक पानी को स्वच्छ पेयजल के तौर पर इस्तेमाल किया जा सकता है। यह खासतौर पर आपदा क्षेत्रों और शुष्क तटीय क्षेत्रों के लिए बेहद कारगर साबित हो सकती है।

अब तक पारंपरिक सौर स्टिल को लंबे समय से साधारण जल शोधक के तौर पर प्रसारित किया गया, लेकिन उन्हें दो चुनौतियों का सामना करना पड़ता है, नमक का जमाव और वाष्पीकरण। सतह पर पपड़ी इकट्ठा होना, जिससे पानी के प्रवाह में मुश्किलें पेश आती हैं। भारतीय विज्ञान संस्थान (आइआइएससी) के अनुसंधान दल ने साइफनेज का इस्तेमाल कर, दोनों चुनौतियों का समाधान निकाला। इस प्रणाली के केंद्र में एक मिश्रित साइफन (एक कपड़े की बत्ती) जो एक नालीदार धातु की सतह से जुड़ी होती है। यह कपड़ा एक जलाशय से खारे पानी को खींचने के बाद गुरुत्वाकर्षण की बदौलत एक निर्बाध और निरंतर प्रवाह सुनिश्चित करता है।

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New siphon-powered desalination breakthrough turns saltwater into Sweetwater

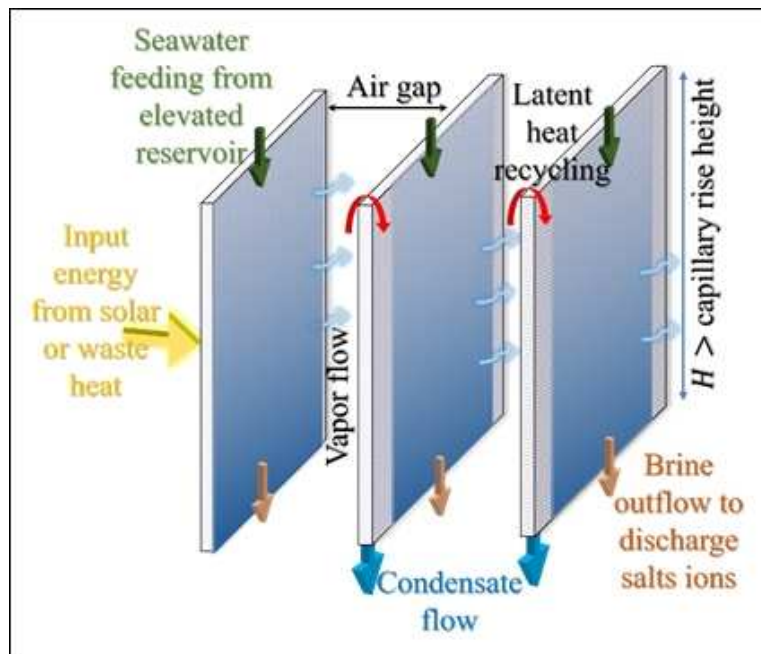
Source: Press Information Bureau, Dt. 29 Sep 2025

A new siphon-based thermal desalination system can now transform salty seawater into clean drinking water—faster, cheaper, and more reliably than existing methods.

Traditional solar stills, which mimic nature's water cycle, have long been promoted as simple water purifiers. However, they face two persistent challenges:

- Salt buildup, where crusts form on evaporator surfaces, blocking water flow.
- Scaling limits, as wicking materials can only lift water about 10–15 cm, restricting system size and output.

A research team from the Indian Institute of Science (IISc) has addressed both challenges using a deceptively simple principle—siphonage.



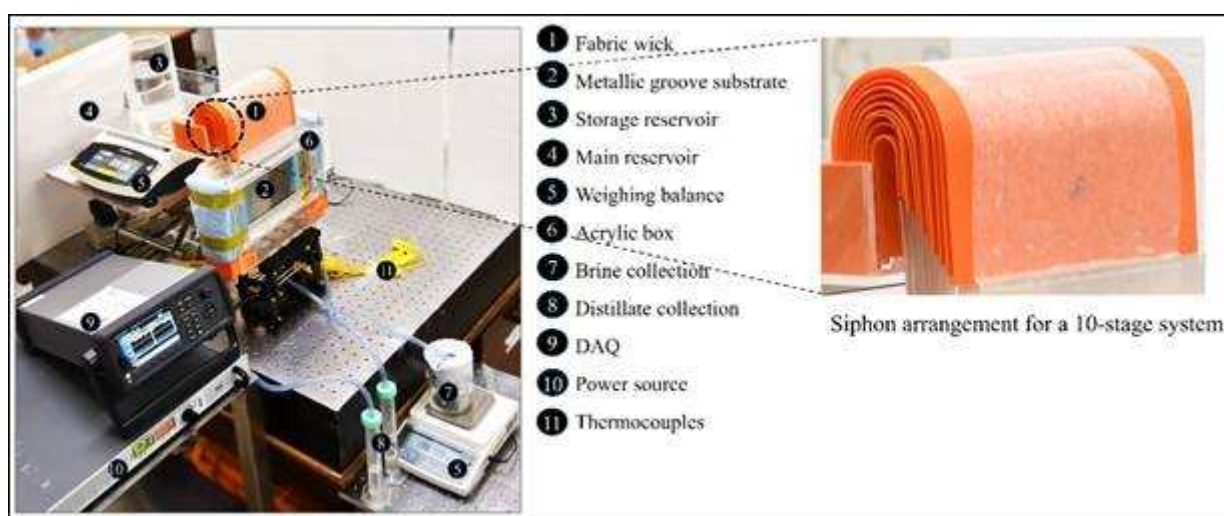
Schematic of a multistage siphon desalination system

At the heart of their system is a composite siphon: a fabric wick paired with a grooved metallic surface. The fabric draws salty water from a reservoir, while gravity ensures a smooth, continuous flow. Instead of allowing salt to crystallize, the siphon flushes it away before buildup occurs.

The water spreads as a thin film across the heated metal surface, evaporates, and then condenses just two millimeters away onto a cooler surface. This ultra-narrow air gap significantly enhances efficiency, producing more than six liters of clean water per square meter per hour under sunlight—several times higher than conventional solar stills.

By stacking multiple evaporator–condenser pairs, the device recycles heat repeatedly, squeezing maximum output from each ray of sunshine.

The desalination unit is low-cost, scalable, and sustainable, relying only on simple materials such as aluminum and fabric. It can run on solar energy or waste heat, making it suitable for off-grid communities, disaster zones, and arid coastal regions. Notably, it can also handle extremely salty water (up to 20% salt) without clogging—a major advance in brine treatment.



A multistage siphon desalination system tested in the laboratory.



A multistage siphon desalination system tested at the outdoor conditions.

This innovation, published in *Desalination* and supported by India's Department of Science and Technology (DST), could help secure safe drinking water for millions in water-stressed regions. From small villages to island nations, the siphon-powered desalination system may finally make the ocean a dependable source of fresh drinking water.

In the researchers' words, it is about "scalability, salt resistance, and simplicity"—a winning trio for a thirsty world.

<https://www.pib.gov.in/PressReleasePage.aspx?PRID=2172767>

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Agnikul unveils plans to build fully-reusable rockets

Source: The Pioneer, Dt. 30 Sep 2025

Space start-up Agnikul Cosmos announced on Monday that the rockets it plans to build will be fully reusable, allowing it to offer satellite-launch services at globally-competitive prices. Agnikul carried out its maiden sub-orbital test flight of its 3D-printed rocket, Agnibaan SOrTeD, last year and plans to carry out its orbital launch soon.



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The Tribune
The Statesman
ਪੰਜਾਬ ਕੇਸਰੀ ਜਨਸਤਾ
The Hindu
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