Current Affairs
14th Oct, 2024

1. China, India and New Delhi's Quad dilemma
GS 2 (International Relations)

- **Why in News:** Prime Minister Narendra Modi attended a significant **Quad meeting** in the U.S. in September 2023, resulting in the **Wilmington Declaration** aimed at enhancing security cooperation among the **Quad nations (Australia, India, Japan, and the U.S.)** and signaling a collective approach towards countering China in the Indo-Pacific region.

China, India and New Delhi's Quad dilemma

In September this year, the Prime Minister Narendra Modi visited the United States to attend yet another meeting of the Quad nations (Australia, India, Japan and the U.S.). This turned out to be possibly the most significant meeting of the Quad to date, during which the quartet seemed to firm up what may be viewed as a security alliance.

The "Wilmington Declaration" did not mention any country, least of all China by name, but left nothing to the imagination that it was aimed at the containment of China across the entire Indo-Pacific. Despite the absence of any reference to a formal mutual defence declaration, it was obvious that the "four maritime democracies" had a single objective, viz., to checkmate China.

The state of India-China ties

The message from the Wilmington Declaration has certain overriding implications for India and India's security. India-China relations today are not merely stalemated but are also steadily deteriorating. In the northern border regions, the stalemate in the Galwan region continues despite some soothing statements by India's military and civilian leaders. Recently, India announced that it will maintain, if not increase, its vigilance in the border areas by inducting more forces despite the onset of winter. In the Depsang Plains and Demchok, there has been no breakthrough in negotiations regarding disengagement. In Ladakh alone, the number of 'friction points' has increased, with Indian forces unable to access several 'patrolling points' that they were previously accustomed to.

The military is currently in the process of further augmenting its fighting capabilities across the entire length of the China-India border. It is inducting new long-range firearms and heavy artillery, and has begun to deploy howitzers, missiles, rocket systems and 'loitering munitions'. While the Indian Army Chief has characterised the current situation along the Line of Actual Control as 'stable and sensitive', he has also stated that the Indian armed forces "are operational and fully prepared to deal with any contingency". While strengthening its border capabilities, China appears unfazed by India's moves, confident that given its defence budget (which dwarfs that of India), it can thwart any new Indian initiative.

China's arrogance, misplaced or otherwise, is legendary. It is again true that China greatly depends on the element of surprise to achieve the best results for itself. Hence, while it may look unfazed at this time by talk by India acquiring 'new alliance partners' from the West, China is unlikely to take such a situation lightly. Dealing with China is never a 'zero sum game', and India's leaders need to be wary and watchful of how China reacts to the developing situation. What is again worrying is that China under Xi Jinping seems increasingly willing in most situations to test the waters vis-à-vis its neighbours, including India.

M.K. Narayanan
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It would be prudent for India to proceed with care in its dealings with China on the one hand and with its Quad partners on the other

An aggressive nationalism

It may, thus, be prudent for India to proceed with care in its dealings with China on the one hand, and with its Quad partners on the other. In the short term, it may be expedient not to be seen to align with countries that have openly declared their hostility to China, for Xi Jinping's China is almost certain to treat this as a provocation, compelling it to 'walk the talk'. In this context, it is worth recalling that as far back as 2017, Mr. Xi had ominously declared that 'China under Xi was different from China under Deng'. In 2021, the centenary year of the Chinese Communist Party (CPC), Mr. Xi had again made a series of pronouncements which included a stern warning to all external forces "seeking to bully, oppress or subjugate China". In 2022, in the course of the 20th National Congress of the CPC, statements made by China's leaders appeared to reveal an increasingly aggressive brand of Chinese nationalism. Rationality is not something to be expected of China in any situation. India must not overlook this aspect, and should 'read the tea leaves' correctly in its dealings with China.

Over the years, India's strategic experts had sought to differentiate between what in the Chinese mind constitutes a 'real' threat as distinct from peripheral dangers that haunt the Chinese psyche. From China's postures it can be inferred that the border issue with India in the Himalayas does not represent a real threat to China's sovereignty and to its future. This is notwithstanding that from the early 1950s, China has made territorial claims on several thousand square kilometres of Indian territory, in Ladakh and in Arunachal Pradesh. China is well aware that its claims here were based on maps that were at best 'non-official', created during predecessors' regimes. China itself tends to doubt their sanctity though it is not willing to give up its claims.

The situation existing as far as China's eastern seaboard is concerned, as also its claims in the Pacific to its east, fall into an entirely different category. Here, any attempt to tamper with what China believes is its territory, constitutes in its mind a real threat to China's very existence. Understanding the difference is important as far as the Chinese psyche is concerned.

India's strategic community has understood this for a long time and has dealt with China's quirky behaviour in a nuanced manner over the years. Lately, however, India does seem to have shifted its stance to an extent and it is possible that the Chinese read this as an outcome of India's growing alignment with the West, specifically with the U.S. Recent overtures by China, including statements of the Chinese Defence Ministry that China and India have been able to 'reduce differences and build some consensus' on disengaging troops from friction points to end the stand-off in eastern Ladakh, and have also agreed to a dialogue to reach a resolution acceptable to both sides, could well signal a shift in China's approach, but India does not seem to take this seriously.

Beijing's view

All this serves as a backdrop to China's increasing concerns over India's association with the Quad – seen by it as a U.S. sponsored 'coalition of the willing'. Rumblings from China have grown stronger of late. To the fevered Chinese mind of today, India's membership of the Quad represents a far more serious threat to it than the occasional skirmishes on the Himalayan heights. The Wilmington Declaration, having given up any pretence that the Quad is not a defence alliance, could well be seen by China as an indication of a grand design by the U.S. and its enemies to encircle and contain China. With this, China's understanding of the threat posed by India will increase significantly.

India must take due care not to send out any wrong signals, as the consequences of this could be serious. Any resort to confrontational politics, in substance and as well as in style, can have adverse repercussions in the India-China context. History may not repeat itself, but as Mark Twain is reported to have said, 'it rhymes' enough to make one uneasy. India must not, and need not, subscribe to Mr. Xi's notion of a 'community of shared future of mankind' (first mentioned almost a decade ago), but India must not also be seen to subscribe to the West's entrenched belief that China's rise is inimical to the future of mankind, and that nations across the globe should join together to post a challenge to it.

In the context of China, it would, hence, be prudent for India not to be seen to be increasing its security congruence with the U.S. and the West. Clearly, India has no intention of being part of any pincer movement directed at China and its future ambitions, but it is equally important that China understands this – and the world recognises this as well – and has no reason to doubt where India stands in terms of Asian and world security. Any impression that India has become part of the U.S. bandwagon, engaged in checkmating China's ambitions is best avoided. India's future is hardly dependent on checkmating China's ambitions or in aiding any U.S. attempts to prevent this from becoming a reality.

- **India-China Relations**
  - **Stalemate and Deterioration**: India-China relations are marked by a deteriorating stalemate, particularly in the **Galwan region**, with increasing friction points along the border that impede Indian patrols.
  - **Military Augmentation**: India is enhancing its military capabilities along the **China-India border** by deploying new artillery and missiles, with the Indian Army maintaining a posture of preparedness despite the challenges posed by China.
  - **Chinese Confidence**: China remains confident in its military dominance, as evidenced by its significantly larger defense budget, which allows it to downplay India's military upgrades and ongoing tensions.
- **Strategic Considerations**
  - **Chinese Nationalism**: Under Xi Jinping, China exhibits an increasingly aggressive nationalism, interpreting any alignment by India with the West as a provocation that could lead to escalated confrontations.
  - **Differentiating Threats**: India's strategic community recognizes that China perceives territorial claims in the Himalayas as less critical compared to its eastern seaboard interests, requiring nuanced diplomatic engagement from India.
  - **Quad Dynamics**: China views India's participation in the Quad as a serious threat, interpreting the Wilmington Declaration as evidence of a U.S.-led strategy aimed at encircling and containing it, thus escalating its concerns over India's alignment with Western powers.
- **Diplomatic Maneuvering**
  - **Cautious Engagement**: India must engage carefully with both China and Quad partners, avoiding overt alignments that could provoke China while maintaining its sovereignty and security interests.
  - **Avoiding Misinterpretation**: It is crucial for India to prevent any misinterpretation of its security partnerships, ensuring that it does not appear to be part of a strategy aimed at undermining China's ambitions.
  - **Broader Implications**: India's future security framework should not be perceived as merely a counter to China but rather focus on maintaining a balanced and independent foreign policy that does not exacerbate regional tensions.

2. Scuttling people's right to information
GS 2 (Governance)

- **Why in News:** The **Right to Information (RTI) Act, 2005**, is facing significant challenges as it enters its 20th year, with mounting evidence of government actions undermining its effectiveness. Reports indicate a backlog of cases, vacant positions in information commissions, and regressive amendments, raising concerns about transparency and accountability in governance.

Scuttling people's right to information

The Right to Information (RTI) Act, 2005, has been one of the most empowering laws for Indians. From exposing corruption in the delivery of basic rights to bringing to light the truth behind the opaque electoral bonds scheme, the law has been used by citizens to hold power to account. Therefore, it is no surprise that there is a severe backlash against both the legislation, which has just entered its 20th year, and those who use it.

Vacant posts

Governments are scuttling the RTI Act by not appointing information commissioners and allowing the commissions to crumble under the weight of mounting backlogs. A 2023-24 report of the Satark Nagrik Sangathan, a citizens group that campaigns for transparency in government functioning, shows that seven out of 29 information commissions were defunct for varying periods of time last year. The commission of Jharkhand has not been functional for over four years, while those of Tripura and Telangana have been defunct for three years and one and a half years, respectively.

Many information commissions were found to be functioning without an adequate number of commissioners, despite large backlogs. The information commission of Maharashtra, with a backlog more than 1 lakh appeals and complaints, is headless. Six out of 11 posts of commissioners are lying vacant. Since May 2015, not a single information commissioner has been appointed to the Central Information Commission by the Central government without citizens having to approach courts. Despite repeated directions by the Supreme Court, eight out of 11 posts are vacant in the Central Information Commission.

Under the RTI Act, information commissions are the final appellate authority and are mandated to safeguard and facilitate people's right to information. They have wide-ranging powers, including the power of direct disclosure of information which the government finds inconvenient. It is because adequate information commissioners have not been appointed that more than 4 lakh appeals and complaints are pending in information commissions across India. The report shows that it would take more than a year for an appeal or complaint to be disposed in 14 commissions. A fresh appeal filed in Chhattisgarh or Bihar would be disposed only in 2029. While hearing a petition regarding vacancies in information commissions across India, in 2023, the Supreme Court noted that the failure to fill vacancies is leading to a situation where "the right to information which is recognised under an Act of Parliament becomes a dead letter."

Even when appointments are made, a majority of the appointees are either retired government officials or people who enjoy political patronage. They are often reluctant to act against violations of the transparency law. The report shows that commissions did not impose penalties in 95% of the cases where penalties could be imposed. This failure sends a signal that violating the law will not invite serious consequences. This destroys the basic framework of incentives and disincentives built into the RTI Act, promotes a culture of impunity, and exasperates applicants who seek information at a high cost and often against great odds. The laxity in enforcing accountability allows information officers to take liberties with the RTI Act, leading to many unanswered applications and an equal number of delayed or illegitimately refused ones.

Regressive amendments

In the last five years, there have also been regressive amendments to the RTI Act. In 2019, despite strong objections from civil society and Opposition parties, the government brought amendments which dealt a blow to the autonomy of information commissions by empowering the Central government to determine the tenure, salaries, pensions and post-retirement entitlements of all information commissioners.

The Digital Personal Data Protection (DPDP) Act, 2023, included an explicit provision to amend the RTI law to exempt all personal information from disclosure. The RTI Act of 2005 provided for protection of the privacy of individuals through section 8(1)(j). In order to invoke this section to deny personal information, at least one of the following grounds had to be proven: information sought had no relationship to any public activity or public interest; or information sought was such that it would cause unwarranted invasion of privacy, and the information officer was satisfied that there is no larger public interest that justified disclosure. The DPDP Act amended section 8(1)(j) to expand its purview and exempt all personal information from the ambit of the RTI Act. It also deleted a key provision in the law, which gave citizens a right to information at par with Members of Parliament and Members of Legislative Assemblies.

According to Transparency International India data, nearly 100 people have been killed for using the RTI Act, and thousands have been assaulted, threatened, and slapped with false cases. Though the Whistleblowers Protection Act was passed in 2014, it remains confined to the statute books as the Central government has failed to formulate rules to operationalise it. Every year, some 6 million information applications are filed in India. Evidence shows that the RTI law has initiated the vital task of redistributing power in a democratic framework and transforming the relationship between the government and citizens. An erosion of this fundamental right is an erosion of democracy.

Anjali Bhardwaj

Transparency activist associated with the Satark Nagrik Sangathan and the National Campaign for the Peoples' Right to Information

Amrita Johri

Transparency activist associated with the Satark Nagrik Sangathan and the National Campaign for the Peoples' Right to Information

There is a severe backlash against the RTI Act, which has just entered its 20th year, and those who use it

- **Ineffective Enforcement**
  - **Vacant Positions**: Many information commissions across India are operating with a high number of vacancies, with the Central Information Commission having eight out of eleven posts unfilled, severely hampering its functionality.
  - **Backlog of Appeals**: Over 4 lakh appeals and complaints are pending due to insufficient commissioners, leading to excessive delays; for instance, appeals in Chhattisgarh and Bihar may not be resolved until 2029.
  - **Supreme Court Observations**: The Supreme Court has highlighted that the failure to fill vacancies is rendering the RTI Act ineffective, indicating that citizens' right to information is becoming a "dead letter."
- **Ineffective Enforcement**
  - **Lack of Accountability**: Despite the powers granted to information commissions, penalties are rarely imposed, with 95% of potential penalties not acted upon, leading to a culture of impunity among information officers.
  - **Government Appointees**: Most information commissioners are former government officials or politically connected individuals, often hesitant to take action against government violations of the RTI Act
  - **Impact on Applicants**: This lack of accountability and enforcement frustrates RTI applicants, who face high costs and significant obstacles in their pursuit of information, undermining the law's intended purpose.
- **Legislative Backsliding**
  - **Regressive Amendments**: Amendments to the **RTI Act in 2019** have compromised the autonomy of information commissions, allowing the Central government to control commissioners' tenures and salaries, thus eroding independence.
  - **Personal Data Exemption**: The recent **Digital Personal Data Protection Act, 2023,** further restricts access to personal information under the RTI Act, exempting all personal data from disclosure and undermining citizens' rights to information.
  - **Threats to Whistleblowers**: Despite the **Whistleblowers Protection Act of 2014**, operational rules remain unformulated, leaving RTI users vulnerable; nearly 100 individuals have been killed for utilizing the RTI Act, showcasing the dangers involved.

3. Wayanad's new X-band radar
GS 3 (Science and tech)

- **Why in News:** Following severe floods and landslides in Kerala's Wayanad district, the **Union Ministry of Earth Sciences** has approved the installation of an **X-band radar** in the region. This **advanced radar technology** aims to enhance monitoring and forecasting capabilities, thereby improving disaster preparedness.


What is Wayanad's new X-band radar?

What is a Doppler radar and how does it work? Why does Wayanad need an X-band radar? Where and when was the first indigenously designed and manufactured X-band installed? Is India increasing the procurement and instalment of radars?

EXPLAINER

Privadi Prakash

The story so far:

After devastating floods and landslides killed more than 200 people in Kerala's Wayanad district in July 2024, the Union Ministry of Earth Sciences approved an X-band radar to be installed in the district. A torrential downpour triggered the landslide in the valley above Puncherimattom, near the Mundakkai region; its effects were compounded by a massive debris flow triggered by the rains.

How do radars work?

Radar is short for 'radio detection and ranging'. The device uses radio waves to determine the distance, velocity, and physical characteristics of objects around the device. A transmitter emits a signal aimed at an object whose characteristics are to be ascertained (in meteorology, this could be a cloud). A part of the emitted signal is echoed by the object back to the device, where a receiver tracks and analyses it.

Weather radar, also known as a Doppler radar, is a common application of this device. The Doppler effect is the change in frequency of sound waves as their source moves towards and away from a listener. In meteorology, Doppler radars can reveal how fast a cloud is moving and in which direction based on how the cloud's relative motion changes the frequency of the radiation striking it.

A pulse-Doppler radar can measure the intensity of, say, rainfall by emitting radiation in pulses and tracking how often they're reflected to the receiver.

This way, modern Doppler radars can monitor weather conditions and anticipate new wind patterns, the formation of storms, etc.

What is an X-band radar?

Doppler radar relies on Rayleigh scattering, when the scatterer is much smaller than the wavelength of the radiation. A radar trying to 'see' smaller particles like rain droplets or fog will need to use radiation of lower wavelengths, like in the X-band. An X-band radar is radar that emits radiation in the X-band of the electromagnetic spectrum: 8-12 GHz, corresponding to wavelengths of around 2-4 cm (this is in the microwave part of the spectrum.)

The smaller wavelengths allow the radar to produce images of higher resolution. However, the greater the frequency of some radiation, the faster it will be attenuated. So X-band radars have a relatively shorter range.

In Wayanad, the new radar is expected to be able to monitor the movements of particles, such as soil, to inform landslide warnings. The device will also perform high-temporal sampling, that is, rapidly sample its environs, allowing it to spot particle movements happening in shorter spans of time.

How many radars does India have?

The India Meteorological Department (IMD) started using radar for weather applications in the early 1950s. The first indigenously designed and manufactured X-band storm detection radar was installed in 1970 in New Delhi. In 1996, IMD replaced 10 outdated X-band radars with digital X-band radars.

In its X-band radar network, India has both wind-finding and storm-detecting radars, and some with dual-capabilities. The country also uses S-band radars (2-4 GHz) for long-range detection. The first S-band cyclone detection radar was installed in Visakhapatnam in 1979 and the first locally made variant was commissioned in Mumbai in 1980.

In September 2024, the Ministry of Earth Sciences said India is set to have 86 additional Doppler radars in a few years. On September 18, the Union Cabinet cleared the ₹2,000-crore 'Mission Mausam' to upgrade meteorological infrastructure in the country. This includes installing up to 60 meteorological radars until 2026 under the Mausam's first phase.

Minister of State for Earth Sciences Jitendra Pradhan said in August in Parliament that the government has started the process to procure and install 10 XBand Doppler radars to improve weather forecasting in the northeast States and in Himachal Pradesh's Lahaul and Spiti district.

The initiative to install an X-band radar in Wayanad included installing a C-band radar (4-8 GHz) with an observational range of 245 km in Mangaluru.

What is NISAR?

NASA and the Indian Space Research Organisation (ISRO) are currently developing a satellite called NISAR, short for 'NASA-ISRO Synthetic Aperture Radar'. It will use radar imaging to produce a high-resolution map of the earth's landmasses.

Its payload consists of an L-band radar (1.25 GHz, 24 cm) built by NASA and an S-band radar (3.2 GHz, 9.3 cm) built by ISRO. Together they will track and record changes in the earth's various natural processes.

It is currently expected to be launched onboard an ISRO GSLV Mk II rocket in 2025, at a total cost of $1.5 billion, the bulk of it borne by NASA.

THE GIST

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- **What is a Radar?**
  - Radar stands for **"Radio Detection and Ranging."** It is a technology that utilizes radio waves to detect the distance, speed, and physical characteristics of objects in its vicinity.
- **How It Works**
  - A **transmitter** emits radio signals towards an object (e.g., clouds in meteorology).
  - The signal reflects off the object and returns to the radar device.
  - A **receiver** then analyzes the echoed signal to extract information about the object's properties.
- **Applications:** Weather radar, also known as a **Doppler radar,** is a common application of this device. The Doppler effect is the change in frequency of sound waves as their source moves towards and away from a listener. In meteorology, Doppler radars can reveal how fast a cloud is moving and in which direction based on how the cloud's relative motion changes the frequency of the radiation striking it
- **Pulse-Doppler Radar** A pulse-Doppler radar can measure the intensity of, say, rainfall by emitting radiation in pulses and tracking how often they're reflected to the receiver.
- **What is an X-Band Radar?**
  - Doppler radar relies on **Rayleigh scattering**, when the scatterer is much smaller than the wavelength of the radiation.
  - A radar trying to 'see' smaller particles like rain droplets or fog will need to use radiation of lower wavelengths, like in the X-band.
  - An X-band radar is radar that emits radiation in the X-band of the electromagnetic spectrum: **8-12 GHz,** corresponding to wavelengths of around 2-4 cm (this is in the microwave part of the spectrum.)
  - The smaller wavelengths allow the radar to produce images of higher resolution. However, the greater the frequency of some radiation, the faster it will be attenuated. So X-band radars have a relatively shorter range.
- **Functionality in Wayanad:** In Wayanad, the X-band radar is expected to monitor particle movements, particularly soil, to provide early warnings for landslides. Its ability for high temporal sampling allows for rapid monitoring, crucial in detecting changes over short time frames.
- **Current Radar Infrastructure in India**
  - **Historical Context:** The India Meteorological Department (IMD) began utilizing radar technology in the 1950s, with the first indigenous X-band radar installed in 1970.
  - **Current Capabilities:** India operates a network of X-band radars for storm detection and wind-finding, complemented by S-band radars for long-range observations.
  - **Future Expansion:** As of September 2024, plans are in place to add 56 additional Doppler radars under the 'Mission Mausam' initiative, which aims to enhance meteorological infrastructure with an investment of ?2,000 crore.
  - **NISAR:** NISAR (NASA-ISRO Synthetic Aperture Radar) is a joint project between NASA and ISRO, set to produce high-resolution Earth maps using radar imaging. The satellite is slated for launch in 2025, with total costs estimated at $1.5 billion, largely funded by NASA.

- **Technical Composition**
  - **L-band Radar:** Built by NASA (1.25 GHz, 24 cm).
  - **S-band Radar:** Developed by ISRO (3.2 GHz, 9.3 cm).

4. PM Gati Shakti Initiative
GS 2 (Governance)

- **Why in News:** The 'PM Gati Shakti' initiative has completed three years.
- **About**
  - **Launched in:** 2021
  - The **PM GatiShakti initiative** was launched to transform India's infrastructure landscape by enhancing multi-modal connectivity and promoting integrated infrastructure development.
  - It aims to streamline logistics costs and boost investments across various sectors, which is vital for the country's economic growth and efficiency.
  - The initiative leverages advanced geospatial data to create a **National Master Plan (NMP)**, enabling efficient project planning and execution.
  - **Current Status of Progress**
    - **Large-Scale Projects Identified**: The initiative has identified 208 infrastructure projects valued at Rs 15.39 lakh crore, focusing on critical sectors such as roads, railways, urban development, and oil and gas. This includes 101 projects for road development and 73 for railway infrastructure.

Modi lauds PM GatiShakti for driving faster development

Prime Minister Narendra Modi on Sunday said the PM GatiShakti National Master Plan (PMGS-NMP) has emerged as a transformative initiative aimed at revolutionising India's infrastructure and is driving faster and more efficient development across sectors. He also made a surprise visit to the PM GatiShakti Anubhuti Kendra at Bharat Mandapam in New Delhi on the third anniversary of PMGS-NMP. The Anubhuti Kendra showcases key features and milestones of PMGS-NMP which was launched on in 2021, to provide multi-modal connectivity infrastructure to various economic zones. PTI

    - **Network Planning Group (NPG) Oversight**: The NPG, an **inter-ministerial body**, evaluates these projects every two weeks to ensure transparency and rigorous scrutiny. Projects exceeding Rs 500 crore undergo a thorough review before reaching the Public Investment Board for final approval.
    - **International Interest and Expansion Plans**: The initiative has attracted international attention, with countries like Nepal and Sri Lanka expressing interest in adopting the **GatiShakti model**. Plans to expand the initiative to the district level within the next two months aim to ensure local economies benefit from integrated infrastructure development.
    - **Key Challenges:** Complex integration of land records, bureaucratic hurdles.

5. Terminal High Altitude Area Defense (THAAD)
GS 2 (International Relations)

- **Why in News:** The United States is reportedly sending its advanced anti-missile system, the **Terminal High Altitude Area Defense (THAAD),** to Israel, along with US troops to operate it.
- **What is THAAD?**
  - THAAD is a **US-developed missile defense system** designed to intercept incoming ballistic missiles at high altitudes.
  - It can neutralize **short-, medium-, and limited intermediate-range missile threats**, making it a versatile part of missile defense.
  - THAAD can cover a wide area, engaging targets at distances between 150-200 kilometers (93-124 miles).
  - It complements other defense systems, like the **Patriot**

U.S. to send missile defence system and troops to Israel

The delivery of THAAD battery risks further inflaming the conflict in West Asia; Pentagon spokesperson says the deployment underscores United States' commitment to defence of Israel

Associated Press
WASHINGTON

The United States will send a Terminal High Altitude Area Defence (THAAD) battery to Israel, along with the troops needed to operate it, the Pentagon said on Sunday, even as Iran warned Washington to keep American military forces out of Israel.

Maj. Gen. Pat Ryder, Pentagon spokesperson, said in a statement that Defence Secretary Lloyd Austin authorised the deployment of the THAAD battery at the direction of President Joe Biden. He said the system will help bolster Israel's air defences following Iran's ballistic missile attacks on Israel in April and October.

The delivery of the sophisticated missile defence system risks further inflaming the conflict in the West Asia despite widespread diplomatic efforts to avoid an all-out war. The Iranian warning came in a post on X long associated with Foreign Minister Abbas Araghchi, who noted the earlier reports that the United States was considering the deployment.


Added armour: A Terminal High Altitude Area Defence interceptor being launched during a successful intercept test. REUTERS

Israeli forces and Hezbollah fighters in Lebanon have been clashing since October 8, 2023, when the Lebanese militant group began firing rockets over the border in support of its ally Hamas in Gaza. Late last month, Israel launched a ground invasion into Lebanon.

Military response

Israel is widely believed to be preparing a military response to Iran's October 1 attack when it fired roughly 180 missiles into Israel.

In a brief exchange with pressperson before leaving Florida on Sunday, Mr. Biden said he agreed to deploy the THAAD battery "to defend Israel".

Mr. Biden spoke at MacDill Air Force Base in Tampa after making a quick visit to to see the damage caused by Hurricane Milton and meet with first responders, residents and local leaders.

Mr. Ryder, in his statement, said the deployment "underscores the United States' ironclad commitment to the defence of Israel, and to defend Americans in Israel, from any further ballistic missile attacks by Iran".

It was not immediately clear where the THAAD battery was coming from or when it will arrive. Lt. Col. Nadav Shoshani, an Israeli Army spokesperson, declined to provide any timeline for its arrival, but thanked the U.S. for its support.

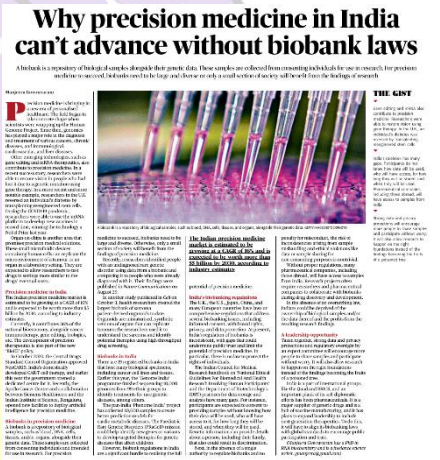
The THAAD is considered a complementary system to the Patriot, but it can defend a wider area. It can hit targets at ranges of 150 to 200 kilometres.

system, which Israel recently retired.

- Each THAAD battery typically includes six truck-mounted launchers, interceptors, radar, and requires 95 soldiers to operate.
- The THAAD system adds another layer of protection, reinforcing Israel's air defense capabilities.
- The U.S. Army currently operates seven THAAD batteries.
- Each battery comprises six truck-mounted launchers, 48 interceptors, radar equipment, and requires 95 personnel to operate.
- This system is a critical part of the U.S. military's missile defense strategy, especially in volatile regions where the threat of ballistic missile attacks is high.

6. Precision Medicine
GS 3 (Science and Tech)

- **Why in News:** Precision medicine is gaining traction as advancements in genomics and biotechnology pave the way for personalized healthcare solutions. Recent breakthroughs, such as India's approval of **NexCAR19,** a **CAR-T cell therapy,** and the establishment of AI-focused facilities in collaboration with institutions like the Indian Institute of Science, highlight the growing significance of this field.


Why precision medicine in India can't advance without biobank laws

A biobank is a repository of biological samples alongside their genetic data. These samples are collected from consenting individuals for use in research, for precision medicine to succeed, biobanks need to be large and diverse so only a small section of society will benefit from the findings of research

THE GIST

- **What is Precision Medicine?**
  - Precision medicine refers to a tailored approach to healthcare that considers individual differences in genetics, environment, and lifestyle.
  - By leveraging genomic data and emerging technologies such as gene editing, mRNA therapeutics, and organ-on-a-chip models, precision medicine aims to deliver more effective and personalized treatment plans for diseases, particularly in oncology, chronic diseases, and genetic disorders.
  - **Technological Contributions**: Key technologies driving precision medicine include:
    - **Gene Editing**: Techniques like **CRISPR** enable targeted modifications to DNA, which can correct genetic mutations.
    - **mRNA Therapeutics**: This technology gained prominence during the COVID-19 pandemic, exemplified by rapid vaccine development.
    - **Organ-on-a-Chip**: These microfluidic devices allow researchers to model human organ systems for drug testing, mimicking the microenvironment of diseases.
  - The Indian precision medicine market is anticipated to surpass $5 billion by 2030, contributing 36% to the national bioeconomy. Initiatives like the **Genome India programme** and the **Phenome India project** are crucial for identifying treatments for rare diseases and enhancing predictive models for common ailments.
- **Challenges in India**
  - India faces significant hurdles in establishing a robust framework for precision medicine:
    - **Inconsistent Biobanking Regulations**: Unlike countries like the U.S. and U.K., India lacks comprehensive laws governing biobanks, leading to gaps in consent processes and data protection. Current guidelines do not adequately inform participants about how their samples and data will be used, raising ethical concerns.
    - **Absence of a Central Authority**: The lack of a singular regulatory body overseeing biobanks leads to inconsistencies and ethical violations, jeopardizing public trust and participation in research initiatives.
    - **Public Awareness and Participation**: There is a need for improved public engagement to encourage participation in biobanking and research. Concerns about data privacy and potential misuse of genetic information deter individuals from sharing their samples.
    - **Infrastructure and Investment**: While the precision medicine market in India is projected to grow at a CAGR of 16%, significant investments are required in biobanks, genomics research, and healthcare infrastructure to keep pace with advancements globally.

7. The Problem with the Right to Free Food
GS 2 (Governance)


The problem with free food

Regime of highly ineffective food and fertiliser subsidies must be reformed. Government needs to summon the courage to bite the bullet, ensure enough lead time to prepare for proper implementation

FROM PLATE TO PLOUGH

BY ASHOK GULATI

- **Why in News: World Food Day**, observed on **October 16**, emphasizes global efforts towards food security and nutritional access. As food insecurity remains a pressing issue, this year's theme**—"Right to Foods for a Better Life and a Better Future"**—raises critical questions about India's food subsidy policies and the effectiveness of its **National Food Security Act (NFSA)** since its enactment in 2013.
- **Background of Food Security in India**
  - **Progress in Food Production**: India has made significant strides in food production through improved agricultural practices, such as better seeds, irrigation, and mechanization. These advancements were facilitated by government incentives, including subsidies and favorable pricing for farmers.
  - **National Food Security Act (NFSA)**: The NFSA was established to provide subsidized grains to about two-thirds of the population, yet its implementation has drawn scrutiny over the economic rationale of distributing free food to such a large segment amid ongoing poverty debates.
  - **Critique of Current Policies**: Previous reforms under the Vajpayee government aimed to target food subsidies more effectively. Critics argue that the current approach of providing free food to over 800 million people is economically unsustainable and serves primarily as a political strategy.
- **Measuring Poverty and Subsidy Effectiveness**
  - **Changing Poverty Metrics**: The **NITI Aayog's Multi-dimensional Poverty Index** suggests a decline in the poverty ratio, from 29.13% in 2013-14 to 11.28% in 2022-23. This raises questions about the need for extensive free food distribution if poverty levels have indeed decreased.
  - **Economic Implications of Subsidies**: The vast food subsidy constitutes the largest part of the Union budget, diverting funds away from crucial investments in agricultural research, education, and health, which could be more effective in ensuring food security.
  - **Corruption and Inefficiency**: Research indicates that 25-30% of food and fertilizer subsidies fail to reach their intended beneficiaries, with overall inefficiencies leading to losses of up to 40-50%. This inefficiency undermines the objectives of the Right to Food initiative.
- **Proposed Reforms and Future Directions**
  - **Need for Reform**: The current system of food and fertilizer subsidies is viewed as ineffective and susceptible to corruption. A call for reform emphasizes the need for targeted assistance rather than blanket subsidies, suggesting that only a small percentage of the population should receive free food.
  - **Role of Digitization**: Digitizing the agri-food system could enhance efficiency and accountability in the distribution of resources, aiding in the achievement of the Zero Hunger goal by 2030.
  - **Political Will for Change**: For successful reform, the government must demonstrate commitment and prepare for implementation within a short timeframe. Engagement with dedicated experts—while avoiding opportunistic consultants—will be crucial for developing a rational subsidy framework.

8. Rupee Falls Below 84 Per US Dollar Mark
GS 3 (Economy)

- **Why in News:**
  - On October 11, 2024, the Indian rupee ended above the 84 per US dollar mark for the first time, closing at 84.07 after touching 84.10 during the day. A day before, the rupee had closed at 83.98.
  - The fall came amid outflows from foreign institutional investors, concerns over rising oil prices, and higher demand for the US dollar from foreign banks.

Rupee hits record low of 84 against USD: factors leading to the fall and the outlook

HITESH VYAS
MUMBAI, OCTOBER 13

THE RUPEE ended above the 84 per US dollar mark for the first time on Friday, closing at 84.07. The fall in the rupee came amid outflows from foreign institutional investors, concerns over surge in oil prices and higher demand for the greenback from foreign banks.

How much did the rupee fall?

The domestic currency ended at 84.07 against the US dollar on Friday before dropping to 84.10 during the day. On Thursday, the rupee closed at 83.98 per dollar. Analysts said the rupee has not fallen below 84 as the RBI has been protecting the level for the last two months. On September 12, the local currency had fallen to a record low 83.99 against the US dollar.

What triggered the slide?

The slide in the rupee was mainly on account of concerns over the rise in crude oil prices, outflows from foreign funds to China and an increase in demand for the US currency from foreign banks.

"Indian Rupee fell below the 84 per US Dollar mark for the first time on demand from foreign banks amid FII outflows and elevated crude oil prices. Weak domestic markets also weighed on the Rupee," said Anuj Choudhary, Research Analyst, Sharekhan by BNP Paribas.

However, the overnight softening of the US Dollar index prevented a sharp fall in the rupee. The dollar fell on higher than expected weekly unemployment claims data from the US which overshadowed a hotter-than-expected inflation. US inflation rose 0.2 per cent month-on-month versus forecast of 0.1 per cent and core CPI rose 0.3 per cent versus forecast of 0.2 per cent. Annual inflation also rose more than forecast. Recovery in the domestic equity markets supported the rupee at lower levels, said Rahul Kalantri, Vice President (Commodities), Mehta Equities. However, aggressive selling by foreign investors in the domestic equity markets and higher crude oil prices restricted gains in the rupee.

Why are foreign investors selling?

Foreign portfolio investors (FPIs) have been following a strategy of 'Sell India, Buy China' after the Chinese authorities announced monetary and fiscal measures to stimulate the slowing economy.

"FPI money has been moving to Chinese stocks, which are cheap even now," said V K Vijayakumar, Chief Investment Strategist, Geojit Financial Services. In the current month (till October 11), FPIs have offloaded Rs 58,711 crore worth of equities and Rs 1,635 crore of debt. The selling in equities from FPIs comes after four consecutive months of buying of local shares. Between June and September, foreign investors bought Rs 1.24 lakh crore of equities, according to the National Securities Depository Ltd (NSDL) data.

What is the outlook on the rupee?

Analysts expect the rupee to remain volatile due to uncertainty over crude oil prices and fluctuation in the dollar index.

"We expect the Rupee to trade with a negative bias on selling pressure from FPIs and geopolitical uncertainty amid the ongoing tensions in the Middle East. Overall strength in the US Dollar may further pressurise the rupee," said Choudhary. However, the overall decline in crude oil prices may support the Rupee at lower levels, he said.

According to Jateen Trivedi, VP Research analyst, LKP Securities, the rupee may extend its weakness towards 84.25-84.35, especially if it holds below 84. It is expected to get support at 84.20-84.35 levels and resistance at around 83.70-83.80 levels.

- **Falling rupee**
  - **Meaning**
    - When it is reported that the rupee has fallen to a low of 80 dollars, it basically means that one needs Rs 80 to buy a single dollar.
    - This is important when buying not just American goods but also other goods and services (say crude oil).
    - In a free-market economy, the exchange rate is decided by the supply and demand for rupees and dollars.
    - If, in India, **demand for dollars is more in comparison to the demand for rupee, the exchange rate will fall or weaken for rupee** and rise or strengthen for dollar.
    - However, in India, the market does not fully determine the exchange rate. RBI occasionally intervenes in the foreign exchange (forex) market to ensure that the rupee's price does not fluctuate too much.
  - **Reasons for falling rupee**
    - **Rising Crude Oil Prices**: Increased oil prices have raised concerns about India's trade deficit and inflation.
      - The West Asia crisis has a bearing on the oil prices.
    - **FII Outflows**: Foreign investors are moving funds to China, following China's stimulus measures.
      - Foreign investors have been following a strategy of **'Sell India, Buy China'** after the Chinese authorities announced monetary and fiscal measures to stimulate the slowing economy.
    - **Increased Demand for the US Dollar**: Foreign banks are demanding more US dollars, further pressuring the rupee.
    - **Weak Domestic Markets**: Local stock market performance also contributed to the rupee's decline.
  - **Impact**
    - It could increase cost of imports, raise overseas education costs, make foreign loans costly for companies and has the potential to stoke inflation, which is already ruling at 7%.
    - **Impact on inflation management**
      - The most crucial impact would be on inflation as the country imports nearly 80% of its crude oil needs.
      - This would mean that imports would become costlier and travel through the value chain to raise input costs.
    - **Impact on current account deficit**
      - Since a large proportion of India's imports are dollar-denominated, these imports will get costlier.
      - Costlier imports, in turn, will widen the trade deficit as well as the current account deficit, which, in turn, will put pressure on the exchange rate.

- **Positive impact**
  - One positive impact could be that remittances from overseas could become attractive.
  - A fall in the rupee can also benefit India's exporters - unless they import raw materials, which would become more expensive.
- **Steps that could be taken to prevent the slide**
  - Sell large amounts of dollars to support rupee (by increasing the supply of dollar)
  - Raising interest rates to make Indian investment attractive
  - Removing reserve restrictions on dollar deposits with banks
  - Allowing traders to make settlements in rupee to reduce dollar dependence.

- **Outlook for the Rupee**
  - Analysts expect the rupee to remain volatile, driven by uncertainties in oil prices and fluctuations in the dollar index.
  - The rupee may face continued pressure from FPI selling and geopolitical uncertainty, particularly from tensions in the Middle East.

9. Improving Access to Orphan Drugs for Rare Diseases
GS 2 (Governance)

- **Why in News:** In a significant move, the **Delhi High Court** recently directed measures to enhance the availability of **orphan drugs—medications** specifically designed to treat **rare diseases**.
- **Current Landscape of Rare Diseases in India**
  - Despite the existence of therapies for some rare diseases, less than 5% of these conditions have effective treatments available. Consequently, fewer than 1 in 10 patients receive disease-specific care.
  - The high cost of existing treatments exacerbates the problem, prompting stakeholders to approach the court to address funding access challenges for patients.
- **Government Initiatives and Funding Policies**
  - **National Policy for Rare Diseases (NPRD)**: In response to the challenges faced by patients with rare diseases, the Indian government launched the **National Policy for Rare Diseases (NPRD)** in 2021. This policy provides financial assistance of up to Rs 50 lakh for treatments at **designated Centres of Excellence (CoEs)**, including prestigious institutions such as AIIMS and PGIMER.
  - **Digital Portal for Crowdfunding & Voluntary Donations:** To facilitate crowdfunding, the **Health Ministry** launched a digital portal where patients can present their treatment needs, costs, and banking details to potential donors.
    - As of August 2024, Rs 24 crore had been allocated to CoEs for treating rare disease patients, with significant disbursements in previous years (Rs 3.15 crore in 2021-22, ?34.99 crore in 2022-23, and Rs 74 crore in 2023-24).
  - **Legal Provisions:** Under the **Patents Act of 1970**, the government can allow third parties to manufacture orphan drugs if they are not made available by the patent holder. This approach includes negotiating with pharmaceutical companies to ensure drug availability and potentially acquiring patents to facilitate local production.
- **Challenges in the Availability of Orphan Drugs**
  - **High Cost of Orphan Drugs**: Many orphan drugs are patented, making them prohibitively expensive. The small market size and high development costs deter pharmaceutical companies from producing these medications profitably
  - **Regulatory and Customs Hurdles**: While patients importing orphan drugs are exempt from customs duty, pharmaceutical companies still face an 11% customs duty and a 12% GST when bringing these medications to India. The Delhi High Court has mandated that necessary exemptions for these drugs be processed within 30 days.
  - **Lack of Price Control**: In January 2019, the **Department of Pharmaceuticals** exempted orphan drugs from price controls. The Delhi High Court criticized this exemption, emphasizing that it creates barriers to access for patients.

- **Delayed Approvals**: The approval process for orphan drugs by the **Drug Controller General of India (DCGI)** often faces delays, affecting timely access to treatments.

- **Rare Disease**
  - Rare diseases are defined by the World Health Organization (WHO) as debilitating conditions affecting fewer than 1 in 1,000 individuals.
  - In India, around 55 medical conditions, including **Gaucher's disease** and various forms of **muscular dystrophy**, fall under this classification.
  - The **National Registry for Rare and Other Inherited Disorders (NRROID)** has documented **14,472 rare disease patients in the country,** revealing the urgent need for effective treatments.
  - **Classification of Rare Diseases**: Rare diseases in India are categorized into three groups based on treatment options:
    - **Group 1**: Diseases that can be treated with a one-time curative procedure.
    - **Group 2**: Conditions requiring long-term or lifelong treatment, which are less costly but necessitate regular check-ups.
    - **Group 3**: Diseases for which effective but expensive treatments are available and often require lifelong administration.

10. Dragon Drones in the Russia-Ukraine War
GS 2 (International Relations)

- **Why in News:** In the ongoing conflict between Russia and Ukraine, a new and deadly weapon has emerged: the "dragon drone." This innovative use of drone technology has captured global attention due to its capability to deploy thermite, a highly incendiary substance, causing significant destruction on the battlefield.

WHAT ARE 'DRAGON DRONES', BEING USED IN RUSSIA-UKRAINE WAR?

A DEADLY new weapon has taken to the skies in the Russia-Ukraine war. Both sides have posted visuals of drones appearing to rain down fire — earning this weapon the moniker of "dragon drone".

What these drones are spewing, however, is a molten metal that burns at 2,427 degree Celsius.

What are 'dragon drones'?

Dragon drones essentially release a substance called thermite — a mixture of aluminium and iron oxide — which was developed a century ago to weld railroad tracks.

When ignited (usually with the help of an electrical fuse), thermite triggers a self-sustaining reaction that is quite difficult to extinguish. It can burn through almost anything, from clothes to trees to military-grade vehicles. It can even burn underwater. On humans, it causes severe, possibly fatal, burns and bone damage.

"Combining thermite with high-precision drones that can bypass traditional defences makes dragon drones 'highly effective' and 'dangerous'," *Al Jazeera* quoted the United Kingdom-based anti-war advocacy organisation Action on Armed Violence (AOAV) as saying.

Dragon drones are believed to have been first deployed in the Russia-Ukraine war around September. According to a report by *The New York Times*, Ukrainian forces used them to "ignite the vegetation that Russian troops use for cover and burn it out, exposing them and their equipment to direct attack." Soon, the Russians too began to produce and deploy their own dragon drones.

Has thermite been used in weapons before?

Yes. Thermite was used in both world wars. During World War I, German zeppelins dropped thermite-laden bombs which were considered an innovation at that time.

By World War II, thermite-laden high incendiary explosives became a part and parcel of both the Allies and Axis forces aerial bombing campaigns. According to some estimates, the Allies dropped some 30 million 4-pound thermite bombs on Germany and another 10 million on Japan during World War II. Thermite hand grenades were also used during the war to disable artillery pieces, without an explosion.

In modern conflict, thermite is most often used by espionage agents, or special operations teams due to its ability to burn intensely but without a bang.

Is it legal to use thermite in weapons?

The use of thermite in war is not prohibited under international law. However, the use of such incendiary weapons against civilian targets is barred under the Convention on Certain Conventional Weapons — Cold War-era guidance issued under the auspices of the United Nations.

"The problem with thermite is that it is rather indiscriminate," Marina Miron, a military expert from King's College London, told *DW*. "Therefore, while it is not banned per se, Protocol III of the Convention on Certain Conventional Weapons actually limits its use to strictly military targets, given the fact that this munition can produce severe burns and respiratory injuries." **ENS**

Ukrainians soldiers testing a drone in in May 2024. *NYT*

- **What Are Dragon Drones?**
  - Dragon drones are **unmanned aerial vehicles (UAVs)** specifically modified to carry and release
    - Thermite is a mixture of aluminum and iron oxide known for its extreme heat.
    - When ignited, thermite burns at a temperature of approximately 2,427 degrees Celsius, capable of melting through various materials, including military-grade vehicles and other structures.
    - These drones have been employed by both Ukrainian and Russian forces.
- **The Mechanics of Thermite**
  - **Chemical Properties:** Thermite is notable for its self-sustaining reaction once ignited, making it incredibly difficult to extinguish.
    - Its burning properties allow it to cause severe damage to not just equipment, but also human targets, resulting in potentially fatal burns and injuries.
  - **Historical Use:** Thermite has a long history of military application, dating back to **World War I,** where German zeppelins used thermite bombs. By **World War II**, both the Allies and Axis powers extensively employed thermite in their bombing campaigns, dropping millions of thermite bombs to incinerate enemy targets.
    - In modern warfare, its ability to burn intensely without an explosive blast has made it a tool for covert operations.
  - **International Law:** While the use of thermite in warfare is **not outright banned by international law**, its application raises significant ethical concerns.
    - The **Convention on Certain Conventional Weapons (CCW)** prohibits the use of incendiary weapons against civilian targets, reflecting the dangers these weapons pose.
    - **Protocol III of the CCW** limits the use of thermite to strictly military targets due to its indiscriminate nature and potential for causing severe burns and respiratory injuries.

MCQ Current Affairs
14th Oct, 2024

1. Kalleshwar Temple lies in which one of the following states?

a) Tamil Nadu
b) Madhya Pradesh
c) Odisha
d) Karnataka

2. Consider the following statements:

A. It is the largest tiger reserve in the country.
B. It is located in the Nallamala hill ranges of Andhra Pradesh.
C. The river Krishna traverses through this reserve.

The above statements correctly describe which one of the following Tiger Reserves?

a) Indravati Tiger Reserve
b) Simlipal Tiger Reserve
c) Nagarjunsagar-Srisailam Tiger Reserve
d) Amrabad Tiger Reserve

3. Consider the following statements regarding Rare disease:

A. It is a health condition of low prevalence that affects a small number of people compared with other diseases.
B. In India, under the National Policy for Rare Diseases (NPRD) financial assistance up to Rs 50 lakh is provided to patients.

Which of the statements given above is/are correct?

a) A only
b) B only
c) A and B
d) Neither of two

4. Consider the following statements regarding the X-band radar system:

A. It emits smaller wavelengths which allow the radar to produce images of higher resolution.
B. It is used for studies about cloud development and light precipitation.

Which of the statements given above is/are correct?

a) A only
b) B only
c) A and B
d) Neither of two

5. Consider the following statements regarding Dragon drones:

A. They release a substance called thermite which is a mixture of aluminium and iron oxide.
B. These thermite induced drones can only affect trees and military-grade vehicles.

Which of the statements given above is/are correct?

a) A only
b) B only
c) A and B
d) Neither of two

Answers Current Affairs
14th Oct, 2024

1. d
2. c
3. c
4. c
5. a