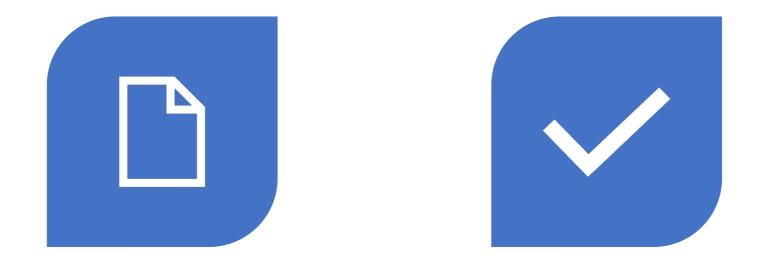


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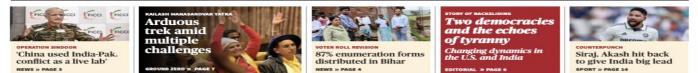
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"Sleep is the best meditation." — Dalai Lama







Modi hails 35 million diaspora as India's pride

PM refers to close cultural link between Girmitiya

community in the Caribbean nation and India

INSIDE

Chargest & Compative to Recentar



SEBI bans U.S. firm for market manipulation

MUMBAI

MUMBAI The Securities and Exchange Board of India (SEBI) has banned U.S.-based investmer firm Jane Street from Indian securities markets for manipulating index. » PAGE 11

Air India crash victims' kin get interim payout

Kyiv struck by the

largest Russian

KYIV

aerial assault vet

Waves of drone and missile

attacks targeted Kyiv overnight into Friday in the largest aerial assault since Russia's invasion

of Ukraine began more than three years ago, officials said, amid a renewed Russian push

to capture more of its neighbour's land. » PAGE 12

Russia recognises Taliban regime in Afghanistan

MOSCOW Russia on Thursday became the first country to formally recognise the Taliban's

government in Afghanistan since it seized power in 2021,

group from its list of outlawed

after Moscow removed the

organisations. » PAGE 12

Abdul Latheef Naha

Nipah virus has returned to Kerala, sparking fresh fear in the State. An 18-year-old girl who suc-sumbed to neutre anombel

cumbed to acute encephal-itis syndrome (AES) in Koz-hikode two days ago and a

38-year-old woman from Thachanattukara in Palak-

dergoing treatment at a

private hospital at Perin-

halmanna in Malappuram

district have tested positive for the virus. The National Institute of

Virology (NIV), Pune, on Friday confirmed Nipah in-

kad district currently un

NEW DELHI will receive the Ow Air India has paid an interin insation of ₹25 lakh each compensation of ₹25 lakh each to the families of 47 victims of the June 12 plane crash. This is part of airlines' minimum liability for death or injury on international flights. » PAGE 5

dian diaspora is our pride. As I have often said, each — an ambassador of India's values, culture and herri-age," said Mr. Modi, high-lighting the religious con-ywith India and the Maha Kumbh that took place in progaraj earlier this year. Program earlier this year. vernment of India was working to strengthen ties with the Girmitiyas – the ers who were taken from Kallol Bhattacheriee hirty-five million members of the in-speed accession of the in-speed accession of the in-prime Minister Narendra Modi at an event of the pe-ople of indian origin in Tri-nidad and Tobago on Fri-nada and Tobago on Fri-nada and Tobago on Fri-nida and Tobago on Fri-to and Fri-to and Frito and Frito and Frito Accession of the Fr financial measures that In-dia is undertaking to ers who were taken from strengthen links between the homeland and the dias-poric Indians and an-India during the colonial period to Indo-Pacific is-lands such as Mauritius, Fi-

Sixth generation Indian-origin citizens of Trinidad

and Tobago will receive the OCI card soon, says PM

Citizens of India (OCI) card "We deeply value the

Golden mist

private hospital at Perin-thalmanna in the first week of May. She is still

Fecovering. Following the 18-year-old girl's death, a post-mor-tem examination was con-ducted at the Government Medical College Hospital, Kozhikode.

Staff quarantined As her test result came pos-

itive for the Nipah virus,

the doctors and the health-

care personnel who treat-ed her as well as those who

conducted her post-mor-tem examination have

tem examination been guarantined.

Virology (NIV), Pune, on Friday confirmed Nipahin fection in the 38-year-old surfaced in the State two months after the previous case. A 42-year-old woman from Valanchery in Malap puram district tested pos-tive and was printered to a the additional state. Head the state two months after the previous case.

"We deeply value the strength and support of our diaspora. With over 35 million people spread across the world, the In-

nounced that sixth genera-tion Indian-origin citizens of Trinidad and Tobago ji, southern Africa and the Caribbeans.

"Mapping the past" The Prime Minister re-ferred to the close cultural connection between the strong Girmitiya communi-ty of Trinidad and Tobago and India, especially with Bihar, which is recognised

Festival revived: Turmeric powder fills the air as Gokak's Sri Laxmi Devi Jatra returns to Kamataka's Belagavi district after a decade

Nipah virus resurfaces in Kerala, two new cases reported

The latest Nipah case has surfaced in Kerala two months after a

42-year-old woman in Malappuram tested positive. FILE PHOTO/PTL

They have begun trac

ing the contacts of the vi-rus-infected persons and started implementing qua-

measures. Earlier, the Health Mi-nister said Nipah protocols have been implemented in the State even before re-ceiving final confirmation from NVV, Pune. As part of the protocol, 26 commit-

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The Health department had initiated all control measures in Palakkad even

before the official confor-mation of the disease came. The route map of the Ni-pah-positive person in Pa-lakkad has now been re-leased and Palakkad, Malappuram and Kozhi-kode districts have been put on alert. before the official confor

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Indian diaspora in the Ca-ribbeans, southern Africa and in the Pacific islands of Fiji and Indian Ocean is-

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help in transfer of finance between the two sides. Sich generation Indian discontinue of the second second and Tobago will receive the Overseas Citizens of India (OCD) card, the Prime Mi-devent in capital Port of Spain. The announcement is the first such outreach nation which is marking the 180° anniversary of the output of the Girmityss -in 2008. "We are actively work-ing on creating a compre-hensive database of the Girmitiya community. Doc-umenting the villages and cities in India from which their ancestors migrated, identifying the places where they have settled, in 2025. where they have settled, studying and preserving the legacy of the Girmitiya ancestors, and working to organise World Girmitiya "Today, I am happy to

reiterated that a number of initiatives were launched during the Pravasi Bharati-ya Divas to "honour and connect with the Girmitya community across the world". "We are actively work-

We are actively work-

India may levy | SC to examine T.N.'s +

Krishnadas Rajagopal NEW DELHI

The Supreme Court on Fri-

He hails the country for being the first to

adopt India's UPI system in the Caribbean

help in transfer of finance between the two sides.

State vs UGC Nine Acts empowered T.N. to pick V-Cs for State varsities

What T.N. says: Our appeal

Today, I am happy to announce that OCI cards will now be given to the sixth generation of the In-dian diaspora in Trinidad and Tobago. You are not just connected by blood or surname. You are connect Conferences regularly," aid Mr. Modi. documentsaid Mr. Modi, document-ing the various works be-ing undertaken to connect India with the diaspora. He congratulated Trinidad and Tobago for being the first country in the Carib-bean to adopt India's UPI (Unified Payments Inter-face) system that would surname. You are connect-ed by belonging," said Mr. Modi. "India embraces" the people of Trinidad and Tobago whose ancestors were brought from India during the colonial era, he said.

plea against HC stay

on university laws

Cattack p Patna



tees were formed across Malappuram, Kozhikode and Palakkad districts to coordinate measures and prevent the spread of the virus.

Guidelines issued She said the help of the police was also sought to

trace the contacts. There will be helplines at State and district levels and con-tainment zones at the dis-

tors of Palakkad, Malappuram and Kozhi-

kode will follow up the measures to be adopted to

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trict level. District Collec

ime when India and the

U.S. are in advanced stages of finalising an initial mini-trade deal. PAGE 3

titioner in the High Court, advocate K. Venkatachalaanvocate k. venkatachala-pathy; the Union govern-ment; the University Grants Commission (UGC); the office of the Tamil Na-du Governor; and the Hu-

Senior advocates A.M., Singhvi, Rakesh Dwivedi and P. Wilson appeared for Tamil Nadu. Solicitor General Tushar Mehta, appearing for the UGC, said the Acts were completely rememant. to

completely repugnant to the UGC Regulations of 2018. The State has argued that there was a strong presumption of constitu

Transfer petition Tagging the petition with the transfer plea, Justice Narasimha said the parties could approach the Chief Justice of India for an early hearing. The court may hearing. The court pre-ferred to wait for the respondents' response to a plea by the State for an in-terim relief of stay of the



stitutionality of pro and against the strong pro-sumption of constitutional ity. The High Court passed

an interim order directing stay of operation of provi-sions which take away sions which take away power of appointment of Vice Chancellor from the hands of the Chancellor and vest the same in the government," the State's petition submitted.

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- mil: 3 6 Bills were granted 'deemed assent' by Governor R.N. Ravi. The State govern-

Ravi. The State govern-ment had notified the pro-posed laws following the judgment. Senior advocates A.M.

The Bench observed that a transfer petition filed by the State to shift the case from the Madras High Court to the top court was already pending and sche-duled to be listed soon af-ter the summer vacations in mid tok.

"Courts should be slow in passing interim orders in matters challenging con-

du Governor; and the Hu-man Resources and Deve-lopment Ministry arraigned as respondents in the special leave petition filed by the State of Tamil Nadu. The Bench observed

ity against laws passed by the legislature.



tals and other health-care institutions and to ensure that none are missed when preparing the contact lists. Both patients in Malap-puram and Palakkad be-gan showing symptoms from home 3rd and 3rd from June 25 and 26. Health workers will start collecting local field information from the three weeks preceding this pe-riod. Efforts will be to find if

there have been any pneu-monia or encephalitis deaths in the localities. The Health department has established State and district control rooms in connection with the Nipah

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Modi hails 35 million diaspora as India's pride

Sixth generation Indian-origin citizens of Trinidad and Tobago will receive the OCI card soon, says PM PM refers to close cultural link between Girmitiya community in the Caribbean nation and India

Kallol Bhattacherjee NEW DELHI

hirty-five million members of the Indian diaspora spread across the world are India's "pride", said Prime Minister Narendra Modi at an event of the people of Indian origin in Trinidad and Tobago on Friday. Addressing the event, Mr. Modi outlined various cultural, educational and financial measures that India is undertaking to strengthen links between the homeland and the diasporic Indians and announced that sixth generation Indian-origin citizens of Trinidad and Tobago will receive the Overseas Citizens of India (OCI) card soon.

"We deeply value the strength and support of our diaspora. With over 35 million people spread across the world, the Indian diaspora is our pride. As I have often said, each one of you is a *Rashtradoot* – an ambassador of India's values, culture and heritage," said Mr. Modi, highlighting the religious connection of the community with India and the Maha Kumbh that took place in Prayagraj earlier this year.

Mr. Modi said the Government of India was working to strengthen ties with the Girmitiyas – the former indentured labourers who were taken from India during the colonial period to Indo-Pacific islands such as Mauritius, Fiji, southern Africa and the Caribbeans.

'Mapping the past'

The Prime Minister referred to the close cultural connection between the strong Girmitiya community of Trinidad and Tobago and India, especially with Bihar, which is recognised



Warm welcome: Prime Minister Narendra Modi is welcomed by the Indian diaspora at the airport in Port of Spain on Thursday. Trinidad and Tobago Prime Minister Kamla Persad-Bissessar is also seen. DPR PMO

along with eastern Uttar
 Pradesh – as the homeland
 of much of the Bhojpurispeaking members of the

Indian diaspora in the Caribbeans, southern Africa and in the Pacific islands of Fiji and Indian Ocean islands like Mauritius. Mr. Modi announced that the Government of India was "mapping the past" and He hails the country for being the first to adopt India's UPI system in the Caribbean

reiterated that a number of initiatives were launched during the Pravasi Bharatiya Divas to "honour and connect with the Girmitiya community across the world".

"We are actively working on creating a comprehensive database of the Girmitiya community. Documenting the villages and cities in India from which their ancestors migrated, identifying the places where they have settled, studying and preserving the legacy of the Girmitiya ancestors, and working to organise World Girmitiya Conferences regularly," said Mr. Modi, documenting the various works being undertaken to connect India with the diaspora. He congratulated Trinidad and Tobago for being the first country in the Caribbean to adopt India's UPI (Unified Payments Interface) system that would

help in transfer of finance between the two sides.

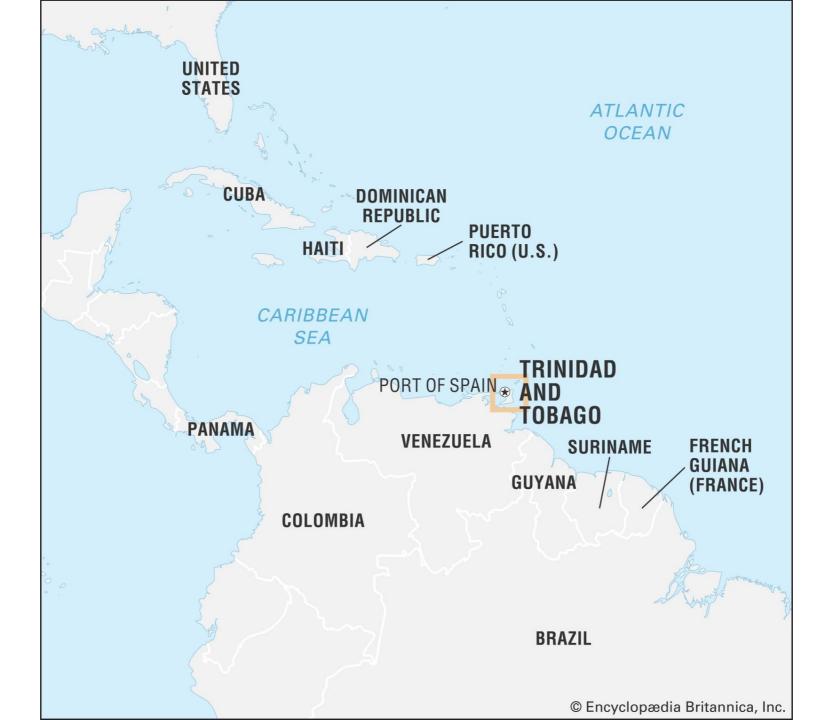
Sixth generation Indianorigin citizens of Trinidad and Tobago will receive the Overseas Citizens of India (OCI) card, the Prime Minister said at the public event in capital Port of Spain. The announcement is the first such outreach by India to the Caribbean nation which is marking the 180th anniversary of the arrival of the Girmitiyas – in 2025.

"Today, I am happy to announce that OCI cards will now be given to the sixth generation of the Indian diaspora in Trinidad and Tobago. You are not just connected by blood or surname. You are connected by belonging," said Mr. Modi. "India embraces" the people of Trinidad and Tobago whose ancestors were brought from India during the colonial era, he said.

- PM Narendra Modi addressed Indian-origin people in Trinidad and Tobago.
- Announced that 6th generation Indian-origin citizens of Trinidad and Tobago will be eligible for the Overseas Citizen of India (OCI) Card).
- This marks India's first high-level outreach to the Caribbean region in 2025.

2. Historical Facts

- Girmitiya Community:
 - Descendants of Indian indentured laborers taken to colonies during the British Raj.
 - The term "Girmitiya" comes from the word 'Agreement' under which these laborers were sent.
 - Large-scale migration happened to:
 - Trinidad and Tobago, Mauritius, Fiji, South Africa, Caribbean islands, Indian Ocean islands like Réunion.
 - Majority of these laborers were from **Bihar** and **Eastern Uttar Pradesh**.
- The 180th Anniversary of Indian arrival in Trinidad & Tobago is being observed in 2025.





- Indian Prime Minister's Visit: Prime Minister Narendra Modi visited Trinidad and Tobago on July 4, 2025, and held discussions with Prime Minister Kamla Persad-Bissessar, leading to the signing of six agreements to boost cooperation in infrastructure and pharmaceuticals. Modi stated that Trinidad and Tobago will be a priority nation for India.
- OCI Cards for Indian Diaspora: Modi announced that the sixth generation of Indianorigin citizens in Trinidad and Tobago will be eligible for Overseas Citizen of India (OCI) cards.
- UPI Adoption: Trinidad and Tobago became the first Caribbean nation to adopt India's Unified Payments Interface (UPI).
- Current Prime Minister: Kamla Persad-Bissessar was sworn in as Prime Minister on May 1, 2025, following the 2025 general election.

- Strengthening India-Caribbean Relations.
- Promotion of **soft power** through cultural diplomacy.
- Trinidad & Tobago is the first Caribbean nation to adopt India's UPI (Unified Payments Interface) system, aiding digital financial cooperation.
- Creation of a Girmitiya community database to document:
 - Migration history.
 - Settlement patterns.
 - Contribution of the diaspora.
- Enhancing India's global image and influence through its diaspora.

7. India's Global Diaspora at a Glance (Data for Prelims/Mains)

Aspect	Data/Facts	ð
Global Diaspora	35 million people of Indian origin globally	
Largest Diaspora	UAE, USA, Saudi Arabia, Malaysia, UK	
Caribbean Diaspora	Trinidad & Tobago, Mauritius, Fiji	
Economic Impact	Top source of remittances (\$100+ billion)	

- Consider the following statements regarding India's diaspora and its global outreach:
- The Girmitiya community refers to indentured laborers of Indian origin who were primarily settled in the Caribbean, Pacific Islands, and South Africa.
- Trinidad and Tobago is the first Caribbean country to adopt India's Unified Payments Interface (UPI) system.
- The term "Girmitiya" originated from a treaty signed between India and the British colonies.
- Which of the above statements is/are correct?
- A) 1 and 2 only
 B) 2 and 3 only
 C) 1 and 3 only
 D) 1, 2 and 3

Nipah virus resurfaces in Kerala, two new cases reported

Abdul Latheef Naha

MALAPPURAM

Nipah virus has returned to Kerala, sparking fresh fear in the State. An 18year-old girl who succumbed to acute encephalitis syndrome (AES) in Kozhikode two days ago and a 38-year-old woman from Thachanattukara in Palakkad district currently undergoing treatment at a private hospital at Perinthalmanna in Malappuram district have tested positive for the virus.

The National Institute of Virology (NIV), Pune, on Friday confirmed Nipah infection in the 38-year-old woman. The scare has resurfaced in the State two months after the previous case.

A 42-year-old woman from Valanchery in Malappuram district tested positive and was admitted to a

014

private hospital at Perinthalmanna in the first week of May. She is still recovering.

Following the 18-yearold girl's death, a post-mortem examination was conducted at the Government Medical College Hospital, Kozhikode.

Staff quarantined

As her test result came positive for the Nipah virus, the doctors and the healthcare personnel who treated her as well as those who conducted her post-mortem examination have been quarantined.

A total of 345 people have been put on the Nipah contact list in the State, Health Minister Veena George said in a statement after a high-level meeting on Friday. They include 211 people in Malappuram, 91 in Palakkad, and 43 in Kozhikode.



The latest Nipah case has surfaced in Kerala two months after a 42-year-old woman in Malappuram tested positive. FILE PHOTO/PTI

The Health department had initiated all control measures in Palakkad even before the official conformation of the disease came.

The route map of the Nipah-positive person in Palakkad has now been released and Palakkad, Malappuram and Kozhikode districts have been put on alert. They have begun tracing the contacts of the virus-infected persons and started implementing quarantine and surveillance measures.

Earlier, the Health Minister said Nipah protocols have been implemented in the State even before receiving final confirmation from NIV, Pune. As part of the protocol, 26 committees were formed across Malappuram, Kozhikode and Palakkad districts to coordinate measures and prevent the spread of the virus.

Guidelines issued

She said the help of the police was also sought to trace the contacts. There will be helplines at State and district levels and containment zones at the district level. District Collectors of Palakkad, Malappuram and Kozhikode will follow up the measures to be adopted to prevent the spread of the virus, she said.

Meanwhile, experts cautioned people that roosting bats should not be disturbed by bursting crackers or by any other means. The department directed the affected districts to strengthen contact tracing by focusing around hospitals and other health-care institutions and to ensure that none are missed when preparing the contact lists.

Both patients in Malappuram and Palakkad began showing symptoms from June 25 and 26. Health workers will start collecting local field information from the three weeks preceding this period.

Efforts will be to find if there have been any pneumonia or encephalitis deaths in the localities.

The Health department has established State and district control rooms in connection with the Nipah outbreaks.

The Collectors have declared containment zones in Palakkad and Malappuram. People here should necessarily wear masks in public places.

(With inputs from Thiruvananthapuram bureau)

1. Recent Developments

- Two new Nipah virus cases reported in Kerala:
 - An 18-year-old girl from Kozhikode succumbed to Acute Encephalitis Syndrome (AES).
 - A 38-year-old woman from Palakkad is undergoing treatment after testing positive.
- A 42-year-old woman from Malappuram had earlier tested positive in May 2025.
- National Institute of Virology (NIV), Pune confirmed the latest infections.

2. Health Response & Containment Measures

- Total 345 people identified as contacts:
 - 211 in Malappuram
 - 91 in Palakkad
 - 43 in Kozhikode
- Healthcare staff who treated infected persons and conducted postmortems have been quarantined.
- Control rooms established at State and district levels.
- **Containment zones** declared in Malappuram and Palakkad.
- Route map of infected individuals released for contact tracing.
- Advisory issued to avoid disturbing **roosting bats**, the natural reservoir of the virus.

3. Historical & Scientific Background

- Nipah virus first identified in **1998-99** during an outbreak in **Malaysia**.
- India experienced outbreaks in West Bengal (2001, 2007) and Kerala (2018, 2021, 2023, 2025).
- Transmitted by:
 - Fruit bats (Pteropus genus) primary reservoir
 - Human-to-human via close contact
 - Contaminated food or surfaces

4. Geographical Significance

- Kerala's tropical climate and **dense bat populations** make it vulnerable.
- High population density in Malappuram, Kozhikode, Palakkad increases risk of community spread.

Aspect	Details
Virus Type	Zoonotic virus, RNA virus of Henipavirus genus
Fatality Rate	High (can exceed 70% in some outbreaks)
Treatment	No specific cure; only supportive care available
WHO Classification	Listed as a Priority Disease requiring urgent research
Related SDG Targets	SDG 3 (Good Health & Well-being)

- Consider the following statements regarding the Nipah virus outbreak in Kerala:
- Fruit bats are the natural reservoir of the Nipah virus.
- The National Institute of Virology (NIV), Pune is the nodal agency for confirmation of Nipah cases in India.
- Nipah virus can only be transmitted through consumption of contaminated food and cannot spread via human-to-human contact.
- Which of the above statements is/are correct?
- A) 1 and 2 only
 B) 2 and 3 only
 C) 1 and 3 only
 D) 1, 2 and 3

12

THE HINDU World

LONDON

Saturday, July 5, 2025

BERLIN

Germany considering buying U.S. air defence systems for Ukraine



Germany was exploring the possibility of purchasing more Patriot air defence systems from the U.S. for Ukraine, a government spokesman said on Friday. Media reports previously stated that German Chancellor Friedrich Merz had raised the issue in a



Seven dead, eight injured after

KARACHI

dential building collapsed in Pakistan's port city A muin-storey residential building cotapsed in Painstan's port city of Karachi on Friday, killing at least seven persons and wounding eight others. The five-storey building — built in 1974 — was on the list of dilapidated buildings in the old areas of Karachi. Officials sa more people are feared to be trapped under the debris. Pti

Jeremy Corbyn, former Labour Michael Madsen, Reservoir Dogs leader, in talks to start new party and Kill Bill actor, dies at 67

LOS ANGELES



ner leader of Britain's Labour Party, Jeremy Corbyn, ann Former leader of Britain's Labour Party, Jeremy Corbyn, ann he was in talks to start a new political party because Keir Sta government had "refused to deliver the change" voters expe He was expelled from the party over how complaints about anti-semitism were handled under his leadership. Ruttes

U.S. actor Michael Madsen - best known for his frequen collaborations with director Quentin Tarantino including Reser Dogs and Kill Bill — died on Thursday at age 67 after suffering cardiac arrest, his management team said. The actor was found

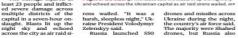
Kyiv struck by Russia's largest aerial Russia becomes first nation to recognise Taliban regime assault since the start of Ukraine war

Moscow launches 550 drones and 11 missiles, injuring 23 people and inflicting severe damage across multiple districts of the capital in a seven-hour onslaught. Trump holds telephone conversation with Putin but no progress in terms of ceasefire

any C

Associated Press

aves of drone and missile at-tacks targeted Kyiv overnight into Friday in the largest aerial assault since Russia's invasion of Ukraine began more than three years ago, officials caid amid a renoved Rus. said, amid a renewed Rus sian push to capture more of its neighbour's land. The barrage injured at Plight of the elderly: Witnesses said the blasts lit up the night sky



rens walled. "It was a drones and missiles across rens waled. It was a harsh, sleepless night, Uk-raine President Volodymyr Zelenskyy said. Russia launched 550

launched 11 missiles in the volved. Mr. Zelenskyy said launched II missiles in the attack. The attack on Kylv be-gan the same day a phone call took place between U.S. President Donald Trump and Russian Presi-dent Vladimir Putin. Mr. Zelenskyy called the tim-ing of the strikes a deliber-ate signal that Moscow has not intention of ending the volved. Mr. Zelenskyy said most of the Ukrainians had been in Russian captivity since 2022. The Ukrainian soldiers were classified as "wounded and seriously ill."

Trump and Russian Presi-dent Vladimir Putin. M. Zelensky called the tim-ate signal that Moscow has at signal that Moscow has at signal that Moscow has at signal that Moscow has war. Trump said war. Trump said war. Trump said on Friday. Urrainian officials and the Russian Officials and the Russian Officials and because I down't think here said because I down the said because I down the said because I down because I down the said because I down the said because I down because I down the said because I down the said because I down because I down the said because I down the said because I down because I down the said b on Friday. Ukrainian officials and the Russian Defence Minis-

try said another prisoner swap took place on Friday, though neither side said how many soldiers were inthere. I don't think he's looking to stop (the fight-ing), and that's too bad," Mr. Trump said.

Russia on Thursday be-came the first country to formally recognise the Tali-ban's government in Af-ghanistan since it selzed power in 2021, after Mos-cow removed the group from its list of outlawed oreanisations. The Russian Foreign Mi-nistry announced that it had received credentials Fo

from Afghanistan's newly appointed Ambassador Gul Hassan Hassan. The official recognition of the Af-ghan government will fos-ter "productive bilateral cooperation," the Ministry

associated Press

cooperation," the ministry said in a statement. Afghanistan's Foreign Ministry called it a historic step, and quoted Tallban Foreign Minister Amir



Signs of legitimacy: An official stands near the flag of the Islami Emirate of Afghanistan at the Afghan embassy in Moscow. AFP

Khan Muttagi as welcomthe Chinese side has al ways believed that Afghan-istan should not be exclud-ed from the international ing the decision as "a good example for countries." other community," foreign mi-nistry spokeswoman Mao Chinese nod

Chinese nod Meanwhile, China said on Friday it welcomed Rus-sia's decision. "As a traditional friendly neighbour of Afghanistan, nistry spokeswoman may Ning said. China does not officially recognise the government but hosts a Taliban Ambas-sador in Beijing.

₊ China imposes anti-dumping duties on European brandy

Associated Press BEIJING

The tariffs will range from 27.7% to 34.9% and will be in place for five years and not China on Friday imposed anti-dumping duties on European brandy, most applied retroactively notably cognac produced in France, as trade ten-sions between Beijing and United States allies contities are the result of United States allies conti-nue to rise. The tariffs, effective on Saturday, will range from 27.7% to 34.9%, China's Commerce Ministry said. They are to be in place for five years and will not be smplied tetraactively.

ties are the result of a probe China launched last year into European cog-nac, after the European Union undertook a probe des subsidies. Besides cognac, China also launched probes into European pork and dairy products. The brandy products. The brandy probe was the finand iai-ers of comac and similar applied retroactively. The announcement came during a European visit by Chinese Foreign Minister Wang Yi aimed at ers of cognac and similar spirits such as Armagnac. Mr. Wang was set to ironing out trade differenc-es. Mr. Wang was set to visit Paris after stops in Brus- meet his French cou



is and Bertin. part, Jean-Noëll Barrot, la-the ant-dumping du-the ter Friday in Paris.

'More than 600 killings near aid sites, humanitarian convoys in Gaza'

Associated Press

sels and Berlin

distribution sites. "Information keeps coming in," she added. "This is ongoing and it is unacceptable." Ms. Shamdeooni origi The UN human rights of-fice says it has recorded 613 Ms. Shamdasani origi-nally told the UN briefing that the killings were re-corded both at GHF sites killings in Gaza near hu manitarian convoys and as Palestinians try to reach aid at distribution points run by an Israeli-backed and near humanitarian convoys. She later clarified that the killings in the vi-American organisation since it first began operations in late May. Spokeswoman Ravina cinity of GHF distribution points were "at or near their distribution sites." ndasani said the rights office was not able to airri-butter responsibility for the killings. But she said i't ici tary has shelled and shot at the distribution points' operated by the Gaza Hu-manitarian Foundation. Ms. Shamdasani said edit manitarian Foundation Millings were 'GHFredat ed', 'meaning at or nearis office was not able to attr The count from the

SM (1999)



Targeted approach: The UN says it has recorded 509 killings near the Israeli-backed U.S.-run Gaza Humanitarian Foundation. APP

aid. At least three Palesti-nians were killed near aid nians were killed near aid sites in Raffa, which is wasi arcs where many dis-differ. Another 17 were killed wating for trucks to pabeleting in tests. Killed wating for trucks to pabeleting in tests. Solving into the re-transfactor in tests. Solving into the re-solving into the re-solving into the re-solving into the re-strars¹ military aid is killed wating into the re-strars¹ military aid is killed wating into the re-strars¹ military aid is killed in Friday's atrikes, eight were women and one bat in the north of Gaza

-

and it was investigating. Over 860 Israeli soldiers have been killed since the war began, including more than 400 during the fight-ing in Com ing in Gaza. The recent killings took place as efforts to halt the 21-month war appeared to be moving forward.

Hamas holds talks Hamas said on Friday that it was holding discussions with leaders of other Palestinian factions to discuss a

ed to it by Egyptian and Qa-tari mediators. was a child, the hospital said. The strikes hit the Matari mediators. Mr. Trump said on Tues-day that Israel had agreed on terms for a 60-day cea-sefire in Gaza and urged Hamas to accept the deal before conditions worsen. Hamas will give its final remones to mediators af

concluded the stater concluded, the statement said. The Health Ministry in Gaza said the number of Palestinians killed in the territory has passed 57,000. The ministry says more than half of the dead are women and children. The, war, beem, other

dia to its east for backing was the deadliest in a decade. The war began when Hamas-led militants at-tacked southern Israel, kill-

tacked southern Israei, kill-ing 1,200 people and tak-ing roughly 250 hostages. According to Palestinian witnesses and Gaza's Health Ministry, several hundred people have been killed or wounded by Israekilled or wounded by israe-li troops when trying to reach the aid sites since they opened in May. The military has repeatedly said it's fired only warning shots, denies deliberately firing towards civilians, and says it's looking into reports of civilian barn.

reports of civilian harm.

Afghanistan border Agence France-Presse ISLAMABAD Both neighbours denv Both neighbours deny any involvement. Nuclear-armed India and Pakistan in May traded the worst violence in de-cades during a four-day conflict that killed 70 peo-Pakistan's Army said on Friday it had killed 30 militants attempting to cross the border from Afghanis-

the border from Afghanis-tan over the last three days, after a suicide attack killed 16 soldiers in the same region. The militants belonged to the Pakistan Taliban or halmfluese groups, the manual subscripts, the maccusing India of backing them. ple on both sides. It was triggered by New Delhi's accusation that Isla-Delly's accusation that Isla-mabad supported gummen killing 26 people on April 22, the worst attack on civi-hild the second second mir region in years. Islamabad has denied any involvement. Since their di nulle, In-dia and Pakistan have fre-quently fought over Kashmir, a divided region sides.

"The security forces de-monstrated exceptional professionalism, vigilance preparedness, and prevented a potential catas-trophe," it said. "A large quantity of weapons, amsides. Pakistan's Prime Minis

quantity of weapons, am-munition and explosives was also recovered," the statement added. The killings took place in the border district of North Waziristan, where last week a faction of the ter Shehbaz Sharif on Fri-day lauded the security forces for "thwarting an inforces for "thwarting an in-filtration attempt". "We are determined to completely eliminate all forms of terrorism from the country," his office said. The Prime Minister's statement also accused

last week a faction of the Pakistan Taliban claimed a suicide blast on the suicide blast on the suitary. Blasmed has routinely blamed its western neigh-blamed its western neigh-new function of the suitary of the su



The Pakistan Taliban, a separate group from the Afghan Taliban, active around the northwest border with Afghanistan. AP ANX



Russia becomes first nation to recognise Taliban regime

Associated Press MOSCOW

Russia on Thursday became the first country to formally recognise the Taliban's government in Afghanistan since it seized power in 2021, after Moscow removed the group from its list of outlawed organisations.

The Russian Foreign Ministry announced that it had received credentials from Afghanistan's newly appointed Ambassador Gul Hassan Hassan. The official recognition of the Afghan government will foster "productive bilateral cooperation," the Ministry said in a statement.

Afghanistan's Foreign Ministry called it a historic step, and quoted Taliban Foreign Minister Amir



Signs of legitimacy: An official stands near the flag of the Islamic Emirate of Afghanistan at the Afghan embassy in Moscow. AFP

Khan Muttaqi as welcoming the decision as "a good example for other countries."

Chinese nod

Meanwhile, China said on Friday it welcomed Russia's decision.

"As a traditional friendly neighbour of Afghanistan,

the Chinese side has always believed that Afghanistan should not be excluded from the international community," foreign ministry spokeswoman Mao Ning said.

China does not officially recognise the government but hosts a Taliban Ambassador in Beijing.

1. Recent Development

- Russia formally recognised the Taliban-led government in Afghanistan.
- Removed the Taliban from its list of outlawed organisations (since 2021 Taliban takeover).
- Russia received official credentials from Afghanistan's newly appointed Ambassador Gul Hassan Hassan.
- Russia aims to promote **productive bilateral cooperation** with Afghanistan.

2. Historical Context

- The Taliban first ruled Afghanistan from **1996 to 2001**, imposing strict Islamic rule.
- The US-led invasion in 2001 ousted the Taliban.
- Taliban regained power in August 2021, after the withdrawal of US troops.
- Global recognition has remained a contentious issue since the Taliban's return.

3. Geopolitical Significance

- Russia becomes the **first country** to formally recognise the Taliban regime.
- Russia maintains strategic interests in **Central Asia**, Afghanistan's stability directly impacts its security.
- China welcomed Russia's move but has not officially recognised the Taliban.
- China, however, hosts a Taliban Ambassador in **Beijing**, signalling diplomatic engagement.
- Russia's move is likely to influence neighbouring countries like Iran, Pakistan, and Central Asian republics.

4. Economic & Strategic Implications

- Afghanistan holds significant **mineral resources**, estimated at \$1-3 trillion, including lithium, rare earths, etc.
- Recognition may open avenues for:
 - Trade and investment
 - Energy cooperation
 - Counterterrorism collaboration (to contain $\sqrt{3}$ -K)

5. India's Perspective

India has not recognised the Taliban regime.

India maintains a humanitarian and security-centric engagement.

Strategic concerns include:

- Rise of extremist groups impacting Kashmir security.
- Influence of Pakistan in Afghanistan.
- Protection of Indian investments and infrastructure projects in Afghanistan.

- Consider the following statements regarding recent developments in Afghanistan:
- Russia is the first country to formally recognise the Taliban-led government after its 2021 takeover.
- China has granted formal recognition to the Taliban regime and established full diplomatic relations.
- India has completely ceased all humanitarian assistance to Afghanistan following the Taliban's return.
- Which of the above statements is/are correct?
- A) 1 only
 B) 1 and 3 only
 C) 2 and 3 only
 D) 1, 2 and 3

US' 1% tax on remittance to have limited impact on India

SIDDHARTH UPASANI NEW DELHI, JULY 4

SENDING MONEY back home for Indians and other expatriates working in the US will possibly get a little more expensive after American lawmakers in the Senate on Tuesday and the House of Representatives on Thursday narrowly passed President Donald Trump's 'big, beautiful' spending bill containing a proposal to impose a new 1 per cent tax on remittances.

The 1 per cent tax on remittances in the One Big Beautiful Bill Act (OBBBA) will come into effect from January 1, 2026. Originally proposed as a 5 per cent tax on non-commercial overseas money transfers, the rate was cut to 3.5 per cent and finally to 1 per cent.

Crucially, the version passed by the Senate made some important exclusions which can soothe the pain. For one, the tax only applies to remittances sent using cash, money orders, cashier's checks, or where the sender provides "any other similar physical instrument" to service providers. This means, the tax -which will only apply to transfers of more than \$15 - will not be levied on transfers made through bank accounts or US-issued debit and credit cards. The tax will also not apply if the sender can prove US citizenship. According to Gaura Sen

Gupta, Chief Economist at IDFC

India (RBI) last week, personal transfers from abroad in 2024-25 were up 16 per cent from the previous year at \$124.31 billion on a net basis. In gross terms, they were up 14 per cent at \$132.07 billion.

Of course, not all of India's remittances come from the US. However, it is the biggest source, accounting for 27.7 per cent of remittances India received in 2023-24, as per the RBI's latest remittances survey. Given that the gross personal transfers in 2023-24 stood at \$115.55 billion, India got roughly \$32 billion from the US that year.

What is worth noting here is not so much the amount of remittances from the US but the fact that a larger and larger share of the money India gets from abroad is coming from the US. Back in 2016-17, the US' share of remittances into India was 22.9 per cent.

FULL REPORT ON www.indianexpress.com

2016-17 (All figures in %) 2023-24 27.7 26.9 22.9 19.2 10.8 11.6 5.5 6.6 6.7 3.0 US Singapore UAE UK Saudi Arabia Source: RBI

FIRST Bank, the impact of the tax on money sent to India is likely to be distributional in 2025-26, with remittances "frontloaded and more concentrated" in the first three quarters of the fiscal given that the tax will only come into effect in January 2026. "But the fact that it's a much lower rate than what was proposed earlier means the impact should

a big headache for India given

that it is the top recipient coun-

try. According to the latest data

released by the Reserve Bank of

made some imsions which can h. For one, the tax remittances sent money orders, ks, or where the s"any other simstrument" to servhis means, the tax nly apply to transan \$15 - will not transfers made accounts or US-isleredit cards. The

RISING SHARE OF US IN INDIA'S REMITTANCES

1. Recent Development

- The US Senate and House passed the One Big Beautiful Bill Act (OBBBA) introducing a 1% tax on certain remittances.
- Effective from January 1, 2026.
- Originally proposed as 5%, reduced to 1%.

2. Applicability of Tax

- Applies to remittances using:
 - Cash
 - Money orders
 - Cashier's checks
 - Similar physical instruments

- Applies only to transfers over **\$15**.
- Does **not** apply to:
 - Bank account transfers
 - US-issued debit/credit card transactions
 - If sender proves US citizenship

3. Economic Significance for India

- India is the largest recipient of global remittances.
- US is the **biggest source** of remittances for India:
 - 27.7% share in 2023-24 (up from 22.9% in 2016-17).
- Total personal transfers to India (2023-24):
 - Gross: \$115.5 billion
 - Net remittances from US: Approx. \$32 billion

4. Estimated Impact

- Centre for Global Development: India could lose under **\$500 million** due to this tax.
- Mexico likely to lose **\$1.5 billion**, highest globally.
- Majority of remittances likely unaffected due to exemptions (bank transfers, card payments).
- Most impact will be in cash-based remittance channels.

5. Broader Context

- US remittance tax seen as part of measures to boost domestic revenue.
- India's growing share of remittances from the US reflects:
 - Rising Indian diaspora in the US
 - Economic success of NRIs

Consider the following statements regarding recent developments in remittance flows to India:

- 1. The United States currently accounts for over one-fourth of India's total remittance inflows.
- 2. The recently passed US remittance tax applies to all forms of remittances irrespective of the transaction method.
- Remittance flows from the United Arab Emirates to India have increased significantly in the last decade.

Which of the above statements is/are correct?

- A) 1 only
- B) 1 and 2 only
- C) 1 and 3 only
- D) 1, 2 and 3



Delhi's fuel ban for old vehicles: What does the law say?

SOPHIYA MATHEW NEW DELHI, JULY 4

TWO DAYS after fuel pumps in Delhi began refusing petrol and diesel to vehicles older than their mandated lives, the state Environment Minister urged the air quality watchdog for the National Capital Region (NCR) to pause the implementation of the policy, citing "operational and infrastructural challenges".

The directive from the Commission for Air Quality Management (CAQM), intended to force end-of-life vehicles (ELVs), a major source of vehicular pollution, off the roads, is grounded in long-standing court orders and strong environmental concerns.

What is Delhi's 'fuel ban' for old vehicles?

As of July 1, diesel vehicles older than 10 years and petrol vehicles older than 15 years cannot legally get fuel in Delhi's fuel stations.

In April, the CAQM directed a phased denial of fuel to ELVs at fuel stations in the NCR — in Delhi from July 1, in high-density NCR districts from November 1, and in the rest of the NCR from April 1, 2026. Delhi has installed Automatic Number Plate Recognition (ANPR) cameras at 498 fuel stations — 382 petrol/dissel and 116 CNG filling stations — and three inter-state bus terminuses (ISBTs) to scan vehicle number plates and check them against the VAHAN database, India's national vehicle registry, in real time.

An audio alert plays when the scan detects an ELV at the fuel pump. The overage vehicle is denied fuel, and may be impounded and sent for scrapping unless valid exemptions or required documents are presented.

Teams comprising personnel from the Delhi government's Transport Department, Delhi Traffic Police, and civic bodies have been put together to enforce the CAQM directive.

However, enforcement has been slack. On July 1, 80 vehicles were seized, but this number fell to seven on July 2. No vehicles were impounded on Thursday and Friday.

What is the reason for the Delhi government's lack of enthusiasm?

In a letter written to the CAQM on Thursday, Delhi Environment Minister Manjinder Singh Sirsa said "immediate implementation" of the directive "may be premature and potentially counterproductive".

There were problems with the ANPRbased enforcement system, including "technological glitches, camera placement, sensors not working, [and] speakers not functioning", Sirsa said. Also, "the system is unable to identify EOL (end-of-life) vehicles where there are issues related to HSRPs (the new high-security registration plates)."

The lack of integration with the vehicle data of NCR states may encourage "vehicle owners procuring fuel from

adjacent districts...thereby circumventing the ban", Sirsa said. These "technological inconsistencies" were leading to "public dis-

content and outcry", the Minister said

How many vehicles are affected by the watchdog's directive?

According to the VAHAN database, there are nearly 62 lakh ELVs in Delhi – 41 lakh two-wheelers, 18 lakh four-wheelers, and the rest comprising goods carriers and commercial vehicles. The NCR districts in Haryana account for 27.5 lakh ELVs, those in

Uttar Pradesh for 12.4 lakh, and those in Rajasthan for 6.1 lakh.

What is the problem with older vehicles, if owners keep them in good condition?

Authorities argue that pre-BS-VI (Bharat Stage VI) vehicles are disproportionately responsible for vehicular emissions. BS-IV vehicles, for instance, emit 4.5 to 5.5 times more particulate matter than BS-VI vehicles. BS-VI emission norms were mandated from April

1, 2020 onward.

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According to the CAQM, the transport sector's contribution to air pollution in Delhi "needs no emphasis".

Although legal mandates have existed since 2015, officials say enforcement was delayed due to the absence of necessary technological infrastructure.

"The liquidation of such (overage) vehicles can only be done by adopting strict steps like denying fuel. These measures will help improve air quality," Dr Virender Sharma, Member-Technical at CAQM, has said.

What is the legal mandate for the CAQM's fuel ban?

In 2015, the National Green Tribunal (NGT)directed: "All diesel vehicles (heavy or light) which are more than 10 years old will not be permitted on the roads of Delhi NCR."

Also, "Petrol vehicles which are more than 15 years old and diesel vehicles that are more than 10 years old shall not be registered in the NCR, Delhi," the NGT said.

The NGT's directive was upheld and reinforced by the Supreme Court in 2018. It said that vehicles violating the order should be impounded.

Last year, Delhi framed guidelines under the Motor Vehicles Act and the Registered Vehicle Scrapping Facilities (RVSF) Rules. Most recently, the Environment Protection (End-of-Life Vehicles) Rules, 2025, effective April 1, made scrapping mandatory within 180 days of the expiry of the vehicle's registration.

Age caps are not a new idea. The Motor Vehicles Act, 1988, says the registration certificate for any motor vehicle other than a transport vehicle "shall...be valid only for a period of fifteen years from the date of issue and shall be renewable".

The Central Motor Vehicles Rules, 1999, say after the "period of validity entered in the certificate of registration" expires, the vehicle "shall not be deemed to be validly registered".

Can measures such as these resolve Delhi's bad air problem?

No single strategy is sufficient, experts have said. The solution lies in coordinated planning and action on multiple fronts, involving a wide range of stakeholders.

On Thursday, the prominent environment policy think tank Centre for Science and Environment (CSE) said placing an age cap is "not a scalable strategy for the entire country". It pointed out that "grossly polluting vehicles can also fall under different or newer age brackets due to inherent technical problems and lack of maintenance".

CSE has pushed for the "improvement of fuel and emission standards", a "stringent Pollution-under-Control regime", and a "massive augmentation of public transport".



1. Recent Development

- From July 1, 2024, petrol and diesel stations in Delhi stopped providing fuel to vehicles older than their mandated life.
- Ban applies to:
 - Diesel vehicles older than 10 years
 - Petrol vehicles older than 15 years
- NCR Phase-wise implementation:
 - High-density NCR districts: From Nov 1, 2024
 - Entire NCR: From April 1, 2026

2. Background & Legal Framework

- Ban issued by Commission for Air Quality Management (CAQM).
- Based on long-standing court orders:
 - National Green Tribunal (NGT) 2015: Prohibited ELVs (End-of-Life Vehicles) on Delhi NCR roads.
 - Supreme Court 2018: Upheld NGT order, allowed vehicle impounding.
 - Motor Vehicles Act, 1988 & Central Motor Vehicle Rules, 1999:
 - Registration validity: 15 years for private vehicles, renewable subject to conditions.

3. Environmental Rationale

- Older vehicles, especially pre-BS-VI (Bharat Stage VI) models:
 - Emit significantly more pollutants:
 - PM2.5
 - Sulphur Dioxide (SO2)
 - Nitrogen Oxides (NOx)
 - **BS-VI norms** mandatory from April 1, 2020.
- Transport sector contributes:
 - 28% of PM2.5, 41% SO2, 78% NOx emissions in Delhi NCR.

4. Implementation Challenges

- Technical issues with Automatic Number Plate Recognition (ANPR) cameras:
 - Non-functional sensors
 - Speaker malfunctions
 - Inability to detect High-Security Registration Plate (HSRP) issues
- Lack of NCR-wide data integration encourages circumvention.
- Enforcement inconsistent due to logistical challenges.
- Political and public opposition citing inconvenience.

5. Scale of the Problem

- Approximate ELVs (End-of-Life Vehicles) affected:
 - Delhi: 62 lakh (41 lakh two-wheelers, 18 lakh four-wheelers)
 - Haryana NCR: 27.5 lakh
 - UP NCR: 12.4 lakh
 - Rajasthan NCR: 6.1 lakh

6. Can it Solve Delhi's Air Pollution Problem?

- Experts: No single measure is sufficient.
- Recommendations:
 - Comprehensive public transport augmentation
 - Stricter emission standards
 - Better Pollution Under Control (PUC) enforcement
 - Integrated urban planning

Consider the following statements regarding Delhi's Fuel Ban for Old Vehicles:

- 1. The ban on providing fuel applies to petrol vehicles older than 10 years.
- 2. The Commission for Air Quality Management (CAQM) is responsible for implementing the fuel ban.
- 3. Transport sector emissions account for less than 10% of Delhi NCR's PM2.5 pollution.

Which of the above statements is/are correct?

A) 2 only

B) 1 and 2 only

C) 2 and 3 only

D) 1, 2 and 3



- This Word Means -

HAM RADIO

A licensed radio service used for personal, recreational, and emergency communication, including in space

ANJALIMARAR

BENGALURU, JULY 4

INDIAN ASTRONAUT Shubhanshu Shukla, currently aboard the International Space Station (ISS), interacted with students using a ham radio on Friday. The event was organised by U R Rao Satellite Centre (URSC), which is the Indian Space Research Organisation's (ISRO's) centre in Bangalore for the design, development, and construction of Indian satellites.



Ham radio, also known as amateur radio, is a licensed radio service that relies on radio waves for personal, recreational, and emergency communication. Using a dedicated frequency, a transceiver and an antenna, the service can be set up between two licensed ham radios by trained ham operators.

The communication can be hyper-local, global, and in space. In India, any individual above the age of 12 is permitted to operate a ham radio. The Ministry of Electronics and Information Technology issues licences for ham radio.

The term "ham" was initially used as a pejorative by landline telegraphers in the early 20th Century to describe an operator "who lacks ability" or who had poor or "ham-fisted" skills. With the advent of radio, professional radio operators began to use the term to describe amateur radio operators who would jam operations in an area.

Subsequently, the amateur radio community began to call itself ham, with the term losing its pejorative connotations by the mid-20th Century.

How is ham radio used in space?

Crew members on NASA's space shuttle Columbia first used an amateur radio to communicate with Earth in 1983.

In October 2000, amateur radio equipment was launched to the ISS along



Amateur radio equipment, Seattle, 1957. Wikimedia Commons

with its first crew members. Known as the Amateur Radio on the International Space Station (ARISS), the space station's ham radio is used by astronauts to not only make calls around the world but also to interact with students.

"It[the interaction] provides the opportunity for educators and ham operators to encourage and inspire their students with STEM topics culminating in a real-time conversation with astronauts living and working on the space station," NASA astronaut Kjell Lindgren had said in 2023.

Typically, there is a nine-minute window to make contact with the ISS while it revolves around the planet.

Why use ham radio?

Even though technology to establish communications has advanced, the radio service remains one of the most reliable and stable modes of communication.

It has often come to the rescue when traditional communication lines have broken down, either due to man-made scenarios (like wars) or natural disasters such as earthquakes, cyclones, and floods.

In India, ham radio was used for making emergency communications during the Bhuj earthquake (2001), the Indian Ocean tsunami (2004), the floods of Uttarakhand (2013), and other such calamities.

1. Definition

- Also known as Amateur Radio.
- Licensed radio service using radio waves for:
 - Personal communication
 - Recreational use
 - Emergency communication
 - Space communication

2. Key Features

- Uses dedicated frequency, transceiver, and antenna.
- Operated between licensed ham operators.
- Communications possible at:
 - Local level
 - Global level
 - Space level



3. HAM Radio in India

- Regulated by Ministry of Electronics & Information Technology.
- Any individual aged **12 years and above** can apply for a license.

4. Historical Background

- Term "ham" originated in early 20th century as a pejorative term by professional telegraph operators.
- Amateur radio community eventually adopted the term positively.

5. HAM Radio in Space

- First used by NASA's Space Shuttle Columbia in 1983.
- Since 2000, Amateur Radio on the International Space Station (ARISS) operational:
 - Enables astronauts to communicate globally.
 - Facilitates interaction with students for STEM education.
 - Typical 9-minute window to connect with ISS as it orbits Earth.

6. Use in Emergency Situations

- HAM Radio is vital when conventional communication fails, e.g.:
 - Wars
 - Natural Disasters:
 - Bhuj Earthquake (2001)
 - Indian Ocean Tsunami (2004)
 - Uttarakhand Floods (2013)

Consider the following statements regarding HAM Radio:

- 1. It is an unlicensed radio service primarily meant for recreational communication.
- 2. In India, individuals below the age of 18 cannot operate HAM Radio even with a valid license.
- **3.** HAM Radio has been used from the International Space Station for communication and educational outreach.

Which of the above statements is/are correct?

A) 1 and 2 only
B) 3 only
C) 2 and 3 only
D) 1, 2 and 3

EXPLAINED SCIENCE

How astronauts feast on ISS

While having a meal in space is not a piece of cake, astronauts enjoy fairly appetising and nutritious packaged food. With missions becoming longer, scientists are now trying to grow food in space itself

AMITABH SINHA NEW DELHI, JULY 4

INDIAN ASTRONAUT Shubhanshu Shukla has been in space for more than a week, and would have had several meals during this period. On Friday. Shukla said he had shared the food he carried to the International Space Station(ISS) - gajar ka halwa, moong dal ka halwa and aamras - with other astronauts onboard.

Having a meal in space is not a piece of cake. It requires planning and organisation. But this does not mean that astronauts eat frugally or depend only on liquid diets. The food is also far from being bland or unappetising.

In fact, on the ISS, the permanent space laboratory where Shukla is currently staying, astronauts often enjoy elaborate meals. It is just that they eat packaged food, which is stored and prepared a little differently.

How astronauts eat in space

Due to zero-gravity conditions, food items, like everything else in space, tend to float around. This necessitates a level of organisation not required on Earth.

The spacecraft's safety could be compromised if small crumbs or loose pieces get stuck in some of its critical parts. These can also enter the mouths or nostrils of astronauts, leading to choking or creating breathing problems. As a result, food items are carefully chosen and properly packaged.

The act of eating itself, that is, food travelling inside the body's digestive tract, is not a problem. While gravity might help this process on Earth, it is not a necessity. Put simply, only management of food is an issue in space.

Astronauts consume packaged and processed food items, which are usually in dehydrated form. They inject hot water through a needle into the packages before eating the dishes. Shukla's gajar ka halwa and moong dal ka halwa - prepared and packed by the Indian Space Research Organisation (ISRO) and the Defence Research and Development Organisation (DRDO) - would also have been in this form.

Beverages such as tea, coffee or juices, and Shukla's aamras, are usually in powder form, which can be mixed with water before consumption. There is provision for heating the food on the ISS.



(Left to right) Astronauts Tibor Kapu, Shubhanshu Shukla and Peggy Whitson enjoying a meal aboard the ISS. Instagram/@astro_peggy

DEALING WITH BODY WASTE IN SPACE

While eating on the ISS is relatively easy, urinating and defecating is not. The lack of gravity becomes a big hurdle here.

In space, astronauts urinate into a specially-designed hose with a suction system. This hose, suited both for male and female anatomies, pulls the urine away from the astronaut's body and deposits it into specialised vessels. The stored urine is then purified and recycled aboard the ISS to create drinking water for astronauts. This is a must because liquids both consume space and take up weight - as such it is not viable to send enormous amounts of water required to sustain astronauts in space. Water must be used judiciously, and recycled wherever possible.

Before eating, they secure themselves with footholds to restrict movement. Every astronaut has a food tray with some utensils, including spoons and forks. The cutlery and food packets are fastened to the tray with velcro. Astronauts are advised to snip open only a small part of the package, and dip their spoons inside to pick the food out.

Seasonings such as salt and pepper are Astronauts on the space station usually available, but they are typically dissolved in have their breakfast and dinner together. water which can be added to the food

To defecate, astronauts sit on customised toilets which too are equipped with suction systems. These systems begin working the moment the toilet seat is lifted - this helps eliminate odour. Astronauts need to strap themselves firmly to the toilet seat to ensure they do not drift away while defecating. Faecal matter is directed to waste containers. All solid waste, including toilet paper, wipes and gloves, are loaded onto cargo spacecraft returning to Earth. Most of it is released when the spacecraft is entering the Earth's atmosphere: here it gets burnt due to friction. Occasionally, some samples

are sent to laboratories on Earth to

check on the health of the astronauts.

through droppers.

After their meals, waste such as food packets is deposited in waste chambers. while cutlery is cleaned with wipes. Utensils cannot be washed with water.

A variety of food choices are available, and astronauts can select their menu or favourite cuisine months ahead of their travel. Once they have made their selection, nutritionists also weigh in with their recommendations to ensure astronauts meet the dietary requirements in space. For instance, astronauts need more calcium, and less sodium and vitamin D to keep their bones healthy.

Such food arrangements for astronauts are relatively new. Early space travellers had to make do mostly with food paste, packaged in toothpaste-like tubes or bite-sized cubes. When confined to a spacecraft, like during the journey to the ISS, these forms of food are still useful due to space and storage constraints.

Why grow food in space

Despite technical advancements in packaging, storing, and preparing food items, scientists are now actively working on ideas for growing food in space. This is because, in recent years, astronauts have begun spending a lot more time in space.

For example, those going to the ISS typically spend a few months at a time. Due to this, all their food requirements are not transported on the same spacecraft that carries them. Cargo missions to the ISS fly at regular intervals, carrying food, apart from other requirements such as maintenance gear and scientific equipment.

Also, various space agencies and private companies are now planning even longer stays in space, including the possibility of creating a permanent settlement on the Moon. There are also plans to travel much further distances than ever before in space - on such missions, it might not be economical to supply food from Earth.

Space-grown plants, for example, can provide a sustainable food source for such missions. Scientists are currently studying different aspects of growing food in space, and exploring various methods to do so. For instance, they are examining the effects of microgravity on the growth of plants.

They are also making attempts to use LED lights to induce photosynthesis. Researchers are developing soilless systems in which plants can be grown in space, and selecting crops most suited to grow in these conditions.

Potatoes, soybean, wheat, spinach, tomatoes, and carrots are some crops that have shown promise for space cultivation.

ISRO is carrying out multiple experiments related to this subject during Shukla's stay at the ISS. At least six different varieties of crop seeds will be grown and studied. There is a separate experiment on the growth of microalgae as well. Besides food, these microalgae can be used as potential fuel or even used in life support systems.

Eating in space is complex due to **zero-gravity**.

Despite challenges, astronauts on the ISS enjoy elaborate, nutritious meals, mostly packaged food.

Scientists are working to **grow food in space** to reduce dependency on Earth supplies for long-duration missions.

2. How Astronauts Eat in Space

- Zero Gravity Impact:
 - Food items float, need careful storage and handling.
 - Small crumbs can damage equipment or enter airways.
- Meal Preparation:
 - Mostly ready-to-eat packaged food.
 - Heated in ovens or eaten as-is.
 - Requires less elaborate cooking compared to Earth.
- Typical Diet:
 - Breakfast and dinner usually together.
 - Meals stored carefully; utensils secured to avoid floating.

3. Nutritional Requirements in Space

- Increased calcium intake to maintain bone health.
- Reduced sodium to control blood pressure.
- Vitamin D essential due to lack of sunlight exposure.

4. Growing Food in Space

- Rationale:
 - Long-duration missions demand self-sufficiency.
 - Reduces need for frequent cargo supplies.
- Examples of Space-grown Food:
 - Lettuce, wheat, spinach, radishes grown on ISS.
- Research supported by space agencies like NASA, ISRO, ESA.

5. Dealing with Body Waste in Space

- Urination through vacuum suction system, liquid recycled as drinking water.
- Defecation managed through **customised suction toilets**, waste stored for disposal on Earth or incineration.
- Strict hygiene and recycling protocols followed.

6. Space Missions and Food Logistics

- For missions like to the Moon or Mars, food production onboard is critical.
- Growing food in space reduces dependency on Earth.
- Space farming experiments already underway.

Consider the following statements regarding food and water management on the International Space Station (ISS):

- 1. All food consumed by astronauts on the ISS is grown in space itself.
- 2. Recycled water obtained from astronaut urine is used as drinking water.
- 3. Scientific research is ongoing to grow vegetables like lettuce and spinach in space.

Which of the above statements is/are correct?

- A) 1 and 2 only
- B) 2 and 3 only
- C) 1 and 3 only
- D) 1, 2 and 3

"A day on Venus is longer than a year on Venus."





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