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**1. Everything about Polaris Dawn mission, which will attempt first private spacewalk****Introduction**

A SpaceX Falcon 9 rocket lifted off from Florida recently, carrying American billionaire Jared Isaacman and three others into orbit to attempt the world's first private spacewalk.

The five-day mission, known as Polaris Dawn, is the first of three testing and development missions under the Polaris Program, which will be jointly executed by Isaacman and Elon Musk's SpaceX. The program aims to develop new technologies that could be used to send people to Mars some day.



satellites or their spacecraft during the walk.

**First, what exactly is a 'spacewalk'?**

A spacewalk or an "extravehicular activity (EVA)" is a period of activity spent outside a spacecraft by an astronaut in space.

The first-ever spacewalk was carried out on March 18, 1965, by the Soviet cosmonaut Alexei Leonov at the height of the Space Race — the 20th century competition between the US and USSR over who could conquer space exploration first — during the Cold War. Leonov's walk lasted 10 minutes.

Today, spacewalks are usually done outside the International Space Station (ISS) and can last between five and eight hours.

Spacewalks are done for several reasons, including to carry out science experiments. Astronauts can attach experiments to the outside of a spacecraft during their spacewalk, and observe how the space environment impacts different things. They can also test new equipment, and repair

To carry out a spacewalk, astronauts have to wear a spacesuit and use rope-like safety tethers to attach themselves to their spacecraft. "One end is attached to the spacewalker. The other end is connected to the vehicle. The safety tethers keep astronauts from floating away into space," according to NASA, the US space agency.

The other way is to wear a SAFER (Simplified Aid for EVA Rescue). It is put on like a backpack, and consists of small jet thrusters to help an astronaut move around in space. SAFER is controlled by astronauts with a small joystick.

### **Who is on board Polaris Dawn?**

At the helm of the Polaris Dawn mission is Isaacman, who is the founder of the electronic payment company Shift4. He has bankrolled the mission along with SpaceX, and is the commander of the crew.

This is Isaacman's second trip into space. In 2021, he went into low-Earth orbit for three days, and then splashed down off Florida.

Apart from Isaacman, the crew comprises Scott Poteet, a retired US Air Force lieutenant colonel; and two SpaceX employees, Anna Menon, a lead space operations engineer, and Sarah Gillis, an engineer who oversees astronaut training.

### **What are the mission's objectives?**

The crew, who are travelling in SpaceX's Dragon capsule, will first aim to get a maximum of about 1,400 km from Earth. This will be farther away from the 1,372 km altitude that NASA's Gemini XI mission reached in 1966, the record for any crewed mission that was not headed to the Moon.

That height means that the Polaris Dawn mission will be well into the inner band of the Van Allen radiation belts — regions in space that encircle the Earth and are highly radioactive — which begins at around 1,000 km altitude. The crew will use this opportunity to "conduct research with the aim of better understanding the effects of spaceflight and space radiation on human health".

Subsequently, the capsule would drop to a lower orbit for the rest of the mission, which includes a spacewalk. The spacewalk is scheduled for the third day of the mission.

For the spacewalk, all crew members will put on spacesuits and then, all of the air will be let out of the capsule. The hatch will then be opened and the inside of the spacecraft will become part of the vacuum of outer space.

Only two crew members — Isaacman and Gillis — will leave the capsule for the spacewalk. Poteet and Menon will stay inside to manage the safety tethers and observe readings to ensure that nothing goes awry.

The spacewalk's main aim is to test the spacesuits, developed by SpaceX for this mission. Known as EVA spacesuits, they are equipped with cameras and heads-up displays that display

to the astronauts information about the status of their suits outside their vehicle, according to a report by Euro News. The suits also feature an “improved thermal management”.

Once Isaacman and Gillis return inside, the hatch will be closed and the capsule will be repressurised.

During the mission, the crew will conduct 40 scientific experiments. This includes trying to obtain X-ray images without an X-ray machine, with the help of natural showers of radiation in space.

The crew will also test laser-based communication provided by SpaceX’s Starlink satellite network. This technique allows communication among satellites without relying on ground infrastructure to send signals.

Relevance: GS Prelims; Science & Technology

Source: Indian Express

## 2. Strengthening Defense Ties Between Vietnam and the Philippines

### Introduction

In late August, Vietnam and the Philippines agreed to enhance defense cooperation, focusing on maritime security. This development came after Vietnam’s Defense Minister Phan Van Giang met with his Philippine counterpart, Gilberto Teodoro, in Manila. Both ministers signed letters of intent to boost maritime and disaster response collaboration and committed to resolving disagreements peacefully under international law.

### Symbolic Move or Strategic Shift?

Experts believe that, for now, this move is more symbolic than a major shift in defense relations. Nguyen Khac Giang, a fellow at the Vietnam Studies Program in Singapore, suggested the cooperation may become significant if Southeast Asian nations unite against China's maritime

actions. Zachary Abuza, a professor at the National War College in Washington, noted that although Vietnam and the Philippines' naval capabilities differ, the agreement still promotes more bilateral military engagement.



### The South China Sea Dispute

The South China Sea is a strategic and resource-rich area, with China claiming nearly the entire region. Several nations, including Vietnam, Brunei, Malaysia, the Philippines, and Taiwan, dispute China’s territorial claims. In 2016, the Permanent Court of Arbitration ruled against China’s expansive claims, but Beijing rejected the ruling.

Tensions between China and the Philippines have escalated, with recent confrontations over disputed shoals leading to naval clashes. Despite efforts to improve relations, these incidents have fueled distrust.

### **ASEAN's Fragmented Approach**

The US has pledged to defend the Philippines in case of any attack in the South China Sea, under a defense treaty dating back to 1951. Meanwhile, China has sought to weaken ASEAN's unified response by dividing the bloc. Abuza pointed out that this has led to a "minilateralism" approach, where smaller groups of nations collaborate based on shared interests.

### **Vietnam's Strategic Approach**

While Vietnam has its own long-standing disputes with China over the South China Sea, it has managed the issue diplomatically since 2011. However, tensions can flare up, as seen in previous incidents like the 2014 oil rig crisis. Vietnam has been fortifying its presence in the South China Sea by building and reinforcing islands. Despite China's discontent, it has not interfered with Vietnam's activities as aggressively as it has with the Philippines.

### **Conclusion**

Vietnam and the Philippines' growing defense ties may be a symbolic gesture for now, but could signal a shift in regional dynamics, especially as tensions with China continue to simmer in the South China Sea.

Relevance: GS Prelims & Mains Paper II; International Issues

Source: Indian Express

## **3. Bail Granted to MP Engineer Rashid**

### **Introduction**

A Delhi court has granted interim bail to Lok Sabha MP Sheikh Abdul Rashid (Engineer Rashid) until October 2, allowing him to campaign for the Jammu and Kashmir Assembly elections. Rashid, who has been in Tihar Jail since 2019 in connection with a terror funding case, won the Baramulla Lok Sabha seat as an Independent candidate.

### **Allegations Against Engineer Rashid**

The National Investigation Agency (NIA) arrested Rashid on August 9, 2019, in a case involving alleged terror funding. Rashid was accused of using public platforms to promote separatism and having ties with militant organizations. The NIA claimed that he had received funds through hawala channels and was associated with terror groups like the Hizb-ul-Mujahideen and the Jammu Kashmir Liberation Front (JKLF).

### **NIA's Case**

The NIA registered the case in 2017 under the Unlawful Activities (Prevention) Act (UAPA) and IPC Section 120B, implicating Rashid in terror funding alongside other separatist leaders. The NIA's charges are based on witness testimonies, an email allegedly linking Rashid to terror activities, and a Facebook post where Rashid allegedly defended Hafiz Saeed, founder of Lashkar-e-Taiba. Rashid's ties to hawala dealer Zahoor Ahmad Shah Watali were also cited as evidence.



## Delhi Court Grants Interim Bail To Engineer Rashid

A Delhi court on Tuesday granted interim bail till October 2 to Lok Sabha MP Engineer Rashid in a terror funding case. Rashid has been in jail since 2019 after he was arrested by the National Investigation Agency (NIA) under the Unlawful Activities (Prevention) Act in the 2017 terror funding case

### Rashid's Defense

Rashid has contested the allegations, arguing that the evidence presented against him, including the Facebook post and witness statements, is insufficient. He claims he has already been discharged from certain charges under the UAPA and disputes the NIA's interpretation of key evidence, including the email. He has also pointed to procedural issues, such as not being provided with written grounds for his arrest.

### Legal Proceedings

Rashid's first bail plea was dismissed in 2020, and charges were framed against him in March 2022. Despite the slow progress in the case, with only 20 out of 375 witnesses examined, Rashid continues to fight the charges while on interim bail.

Relevance: GS Prelims; Governance

Source: The Hindu