Daily News Juice

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1. Russia honours Biju Patnaik: What did he do during Battle of Stalingrad?

Why in News?



Former Odisha Chief Minister Naveen Patnaik and Russian Ambassador Denis Alipov inaugurated a memorial plaque dedicated to the late Biju Patnaik at the Russian Embassy in New Delhi.

The plaque is meant to honour Biju Patnaik's role in the Battle of Stalingrad, one of the most decisive Allied victories over Nazi

Germany in World War II. Patnaik, who at the time was flying for the Royal Indian Air Force, had made multiple sorties dropping off supplies to the besieged Red Army in Stalingrad.

Operation Barbarossa

On June 22, 1941, the Wehrmacht (unified armed forces of Nazi Germany), at the time in control of almost all of western Europe, launched a massive invasion of the Soviet Union — Operation Barbarossa. By the spring of 1942, much of what is now Belaruss and Ukraine were under Nazi control.

After the Red Army managed to rebuff German advances toward Moscow, the Wehrmacht looked southwards. And the city of Stalingrad was chosen as a major objective.

Stalingrad

Stalingrad was a major industrial centre on the river Volga, and home to the Red Army's artillery production centre. The River Volga itself made up one of the USSR's most important shipping routes, connecting western Russia to the Caspian Sea and the country's vast eastward expanse. More importantly, given that the city bore the name of Josef Stalin, the leader of the Soviet Union, it was also a target of great symbolic significance.

The 6th Army of the Wehrmacht, under Gen Friedrich Paulus began the assault on Stalingrad on August 23, 1942. The fighting got very bloody, very quickly. The Red Army, suffering massive losses, slowed down the German advance into the city. But it could not stop it.

By the fall of 1942, constant artillery shelling and bombing had turned Stalingrad into a pile of ruins. And the Germans controlled almost 90% of the city. But the Russians kept fighting, even as Stalin instructed his forces to take "not one step back".

Tables turned

The tide of the battle turned in November, when the Soviets launched a counterattack called Operation Uranus. Gathering all available troops in the region, the Red Army effectively formed a defensive cordon around the city, trapping the nearly 300,000 Axis troops. And then the Russian winter set in.

With supply lines cut off and unprepared for a protracted winter war, the Germans were slowly pounded into submission by Red Army forces surrounding them. And even though they "controlled" most of the city, Russian resistance within Stalingrad continued to inflict heavy losses.

Gen Paulus surrendered on January 30, 1943. By February, the Red Army had retaken Stalingrad, capturing nearly 100,000 German troops in the process. The defeat in Stalingrad all but turned the tide for the Allies in World War II. The Wehrmacht lost all of its momentum, and never set a foot further in the east.

The Red Army, on the other hand, was galvanised. Over the two-and-a-half years, it fought its way towards Germany, ultimately arriving in Berlin on May 2, 1945. The Germans formally surrendered on May 9, which is till date observed as Victory Day in Russia.

The bravery of Biju



"Flying is my first love and though it has dimmed with age, it still remains so," Biju Patnaik had once reminisced during an interview. Born in Cuttack in 1916, the man who would later become the Chief Minister of Orissa, had always been fascinated with aviation.

Patnaik joined the Royal Indian Air Force in 1936, mostly flying supply and transport planes such as the Douglas C-47 Skytrain, more commonly known as 'Dakota'.

As World War II heated up and Imperial Japan advanced through Southeast Asia, Biju flew numerous sorties rescuing British officials and their families. He was integral in the evacuation of British officials from Rangoon. Patnaik also flew supply missions to assist China's Chiang Kai-Shek.

He would do the same in Stalingrad. The Russian Ambassador Denis Alipov wrote to Naveen Patnaik, "Among the heroes who we pay tribute to is your late father, Honourable Shri Biju Patnaik ji, a towering personality and a valiant pilot of the Indian National Airways, who had participated in the Stalingrad Operation, supplying weapons to the besieged Red Army."

While the troops encircling the city were well-supplied, those inside were in the same boat as their German counterparts, cut-off from the rest of the world. And like their German counterparts, the Russian civilians and troops inside the city were completely dependent on aerial supplies to continue their war efforts.

Note that this is not the first time the Russians have recognised Biju Patnaik's contribution. In 1995, on the 50th anniversary of the War's end, the Russian Embassy in New Delhi had

honoured the then Chief Minister of Orissa. After his passing in 1997, his coffin was wrapped in the national flags of three different countries: India, Indonesia (whose Independence effort he had aided), and Russia.

Relevance: GS Prelims; Miscellaneous Source: Indian Express

2. New Pope: Robert Prevost

Why Now?

Robert Francis Prevost has been elected as the 267th pope of the Roman Catholic Church. He has chosen the name Pope Leo XIV and is the first American pope in history.

How a New Pope is Elected

Role of the College of Cardinals

When a pope dies or resigns, the leadership of the Catholic Church temporarily shifts to the College of Cardinals. These cardinals, chosen by the pope, come from around the world and wear distinctive red robes.

They hold general meetings (called general congregations) at the Vatican to discuss Church matters and prepare for the election of the next pope.

The Conclave Process

- Only cardinals under age 80 (called cardinal electors) can vote.
- The election takes place in the Sistine Chapel, where the electors take an oath of secrecy.
- Voting is done by secret ballot. Each day, up to four rounds of voting are held.
- To be elected pope, a cardinal must receive two-thirds of the votes.

• If no candidate wins, the ballots are burned with chemicals to create black smoke, signaling no decision.

Announcing the New Pope

Once a cardinal is elected:

- 1. He is asked if he accepts.
- 2. He chooses a papal name.
- 3. He is dressed in papal robes.

4. The final ballots are burned with chemicals to produce white smoke, signaling a new pope has been chosen.

The senior cardinal then announces to the public: "Habemus Papam" ("We have a pope"). The new pope then steps out onto the balcony of St. Peter's Basilica to give his first blessing to the world.

VATICAN CITY

How is the pope selected?

When the pope dies or resigns, the new leader of the Catholic Church is chosen through a papal conclave - a secretive meeting of the College of Cardinals, which is made up of senior church officials from around the world.



Relevance: GS Prelims; International Relations Source: Al Jazeera

3. How Air Defence Systems work

Objective

The primary objective of an air defence system is to take out threats from the skies — be it enemy fighter aircraft, unmanned drones, or missiles.

An air defence system can be sub-categorised into three interlinked operations.



DETECTION: Key to the success of any air defence system is its ability to detect threats in the first place. This is typically done by radar, although satellites may be used in certain circumstances — such as an enemy launching an Intercontinental Ballistic Missile (ICBM).

Radar send out beams of electromagnetic radio waves through a transmitter. These waves are reflected by the objects that they hit — such as an enemy aircraft. A

receiver then collects the returning radio waves — based on which it makes inferences such as the distance of the threat, its speed, and its specific nature (what kind of aircraft/ missile).

TRACKING: The efficiency of an air defence system is also determined by its ability to constantly and accurately track — and not merely detect — an aerial threat. This is typically done using a combination of radar and other sensors such as infrared cameras or laser rangefinders.

More often than not, an air defence system is not just dealing with a single threat — it has to identify and track multiple, fast-moving threats in complex and cluttered environments, which may also include friendly aircraft.

The accuracy of tracking is crucial for effectively neutralising the enemy without targeting false threats.

INTERCEPTION: Once the threat has been detected and tracked, it must be neutralised. Here, the specifics of the threat — its range, type (what kind of missile/ aircraft), speed, etc. — determine the ways in which air defences work.

All these three aspects of an air defence system have to work together as a cogent whole. This requires what in military parlance is called "C3" or a "command, control and communication" system.

Beyond the technical capabilities of detecting, tracking, and intercepting aerial threats, superior communication and decision-making capabilities are crucial for an effective air defence.

HOW THEY INTERCEPT

Depending on the challenges they foresee, nations utilise a wide assortment of weapons to neutralise aerial threats. These include the following.

FIGHTER AIRCRAFT: Interceptors are fighters that take on attacking enemy aircraft, especially bombers. These agile aircraft can be scrambled at a moment's notice, and they climb quickly to altitude and neutralise an enemy aircraft before it deploys its weapons.

India can deploy any of its Sukhoi Su-35s, MiG-29s, HAL Tejas, Mig-21 Bisons, and Dassault Rafales for interceptor missions.

SURFACE-TO-AIR MISSILES (SAMS): Today, SAMs are the bread-and-butter of most air defence systems. This is because they are more effective than anti-aircraft artillery (AAA), and do not put pilots in danger like interceptors.

SAMs can be used to target enemy fighters, helicopters, and missiles. They are generally radar, infrared-, or laser-guided. In addition to being operated from the ground, SAMs can also be launched from ships.

The three, oft-used but unofficial classes of SAMs are:

- * Heavy long-range systems which are fixed or semi-mobile;
- * Medium-range vehicle-mounted systems that can fire on the move;
- * Short-range man-portable air-defense systems (or MANPADS).

Each SAM class has a different function.

The heaviest SAMs, such as the Russian-made S-400 system used by India, take on enemy ballistic missiles or aircraft at long range, as much as a few hundred kilometres. Medium range SAMs have the capability to hit targets in the 50-100 km range but are more mobile, and can be launched in next-to-no time.

MANPADS are used for low-lying targets such as hovering helicopters or drones, or fixed-wing aircraft engaged in ground attack roles. These are far more cost-effective than the other classes, and have been used extensively not only by militaries but also non-state actors in unconventional warfare.

India's arsenal of SAMs include the indigenously-developed medium-range Akash missiles, the medium-to-long range Barak missiles, and the long-range S-400 missiles.

ANTI-AIRCRAFT ARTILLERY (AAA): Once the cornerstone of ground-based air defence systems, the development of SAMs and capabilities of modern fighter jets have greatly reduced the salience of AAA. But augmented with automated fire-control systems, they remain crucial last-ditch defences, and are also used for specialised anti-unmanned aerial vehicle (UAV) roles.

AAA fire shells rapidly, at rates of over 1,000 rounds per minute. AAA shells are designed to explode at predetermined altitudes so as to disperse shrapnel over a wide area. This makes an AAA battery effective even if it does not achieve a direct hit.

ELECTRONIC WARFARE (EW): It is not necessary to actually shoot down an enemy aerial threat in order to neutralise it. EW systems are designed to disrupt, deceive, or destroy threats using the power of the electromagnetic spectrum.

In the context of air defence, EW is most often used to jam enemy radar and targeting systems, so as to impede its ability to accurately and effectively deploy its weapon. EW can confuse attack drones or prevent enemy air-to-surface missiles from homing in on targets.

Several highly sophisticated EW systems are in use today. These can operate from both land and air, including from specialised EW aircraft, such as the US Navy's Boeing EA-18G Growler, the EW version of the F/A-18 Super Hornet.

TAKING DOWN ADs

Establishing air superiority allows an Air Force to operate with a degree of impunity, and without fear of attrition in bombing, tactical air support, paratroop insertion, or supply-drop missions.

To establish air superiority over enemy territory, the enemy's air defence systems have to be neutralised. Suppression of Enemy Air Defences (SEAD) operations target enemy air defences with missiles, EW, bombs, UAVs or even ground attacks. An analysis published in 2005 found that a quarter of American combat sorties in (then) recent conflicts had been SEAD missions (Christopher Bolkcom, 'Military Suppression of Enemy Air Defenses (SEAD): Assessing Future Needs').

Given the role of air superiority in providing a protective umbrella for ground forces, taking down enemy air defences also lays the ground for deeper ground attacks into enemy territory.

Relevance: GS Prelims & Mains Paper III; Science & Technology Source: Indian Express

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