Neeraj emerges the king of the javelin

The Indian great hurls to a distance of 88.17m to clinch the gold ahead of Pakistan's Nadeem; Indian men finish fifth in the 4x400m relay

ATHLETICS WORLDS

Jonathan Selvaraj
BUDAPEST

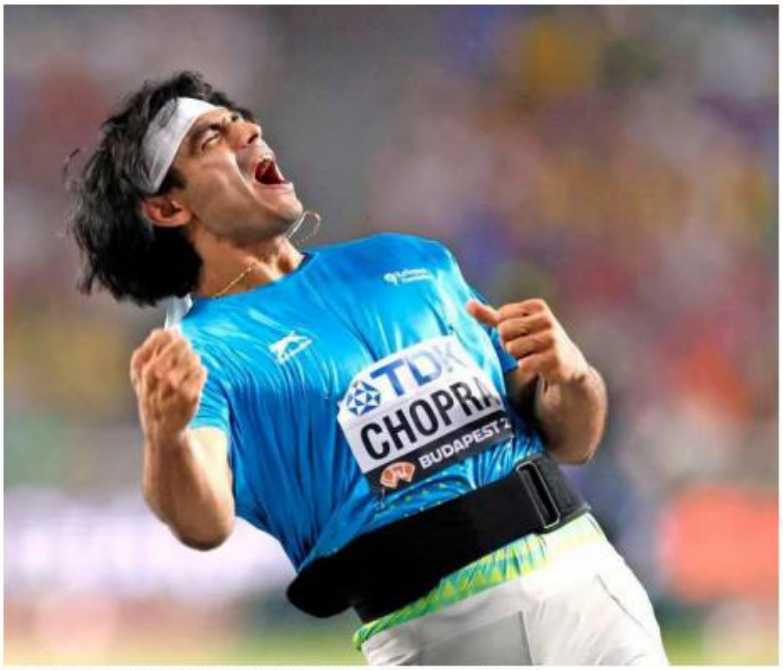
Neeraj Chopra roars as the javelin is expelled from his right arm. The eight-foot long steel tipped aluminium Nordic Valhalla screams skyward. Torqued by the Indian's arm, it's fluorescent green tail wiggles angrily like a hissing viper. For a moment it's trajectory takes it high enough that disappears into the black sky above the Nemzeti Atletikai Kozpont in Budapest. Then you see it again as it begins it's descent.

It sails over the dotted white arc that mark 80 meters from where the Indian stands.

There's no arc that marks immortality. That's where it lands. 88.17m.

The Indian is still roaring. He turns around to the stands where the people are screaming. Others are crying. The 25-year-old has a wide grin. He holds his arms aloft as he waits for the digital scoreboard to tell him what he already know. The measurement comes in but it's just a detail at this point.

The throw is more than enough. It ticks that final box in his staggering list of accomplishments. Neeraj Chopra is now World Champion. It's not that he needed the affirmation.



Victory cry: Neeraj exults after his massive second throw which assured him the big prize. REUTERS

The 25-year-old from Haryana is already an Olympic champion. He's already the Asian Games and Commonwealth Games. He had already become the first Indian man to win a world medal when he took silver at the Eugene World Championships behind Grenada's Anderson Peters last year. He is already arguably the greatest Indian athlete of all time.

What's a world title but just an underline for emphasis at this point. It's a treasure trove that anyone would be grateful for.

Not the Indian. He doesn't have the slightest bit of impurity in his treasure cabinet now. It's all 24 carat.

The Indian is perfect. He's needed to be.

Coming into Budapest, he was undefeated this season. But he's only competed twice after suffering a groin injury after the first time. Two other throwers – Jakub Vadlejch and Julian Weber have thrown better. Oliver Helander with an 89.93m personal best is here too. Pakistan's Arshad Nadeem – a freak of a natural talent is here too. He won the Commonwealth title last year with a throw of 90.18m – beating the Indian he admitted admiring to the magical 90m mark. Here in Budapest, Arshad had made a statement of intent with an effortless throw of 86.79m in qualifying.

Neeraj had done better with 88.77m but he might have felt Nadeem breathing down his neck.

He would have felt the heat on Sunday night too. He starts with a foul. It's about 75m. Not enough for his standard and he steps over the foul line. The next one is good. 88.17m

On Sunday night, Neeraj breaks free of them all. Peters, the champion from last year, is left behind in qualification. The rest will bend the knee in the final. Vadlejch finishes with 86.67m. Weber with 85.79m. Nadeem the closest with 87.82

They try their best. They are good. Neeraj, his Nordic Valhalla flying where he wills, is great. He's better than great. In Nordic mythology Valhalla is home of the Gods. At Budapest the Indian is one too.

In the men's 4x400m relay, India finished fifth with a timing of 2:59.92s. USA Claimed the gold with 2:57.31 ahead of France (2:58.45) and Great Britain (2:58.71).

IAF holds study to identify transport fleet requirement

The Air Force has sought information from manufacturers on an aircraft with load-carrying capacity between 18 tonnes and 30 tonnes; the study may take six months to finish, says source; so far, the force has received RFI from three companies

Dinakar Peri
NEW DELHI

The Indian Air Force (IAF), which is looking to procure medium transport aircraft (MTA), is carrying out a comprehensive study to identify the current and future payload-carrying requirements of the force.

It has already issued a Request For Information (RFI) to global manufacturers for an aircraft with load-carrying capacity between 18 tonnes and 30 tonnes.

The 2020 stand-off with China in eastern Ladakh has changed the nature of airlift and support for the Army required in high-altitude areas, two officials independently stated.

The first C-295 transport aircraft manufactured for the Indian Air Force at the Airbus facility in Seville, Spain. It is scheduled to be delivered in September. DINAKAR PERI

Talks with vendors

"There is a need to identify the current payload-carrying capacity. IAF is also in discussions with vendors. The study is ongoing and should take about six months to be completed," an official source said.

This comes as several of the legacy transport fleets are in need of replacement. The exact requirements of the MTA would be finalised based on the outcome of the study, the source stated.

The RFI for a MTA was issued in December 2022 and the deadline to respond was extended till March 31, 2023. There are three responses to the RFI, officials confirmed.

These include Airbus A-400M, Lockheed Martin C-130, and Embraer C-390. Among them, the A-400M has a maximum carrying capacity of 37 tonnes, the C-130 close to 20 tonnes, and the C-390 up to 26 tonnes.

The MTA could become a potential replacement for a part of the much-smaller AN-32s in service and could also replace the larger IL-76, which is also being looked into.

For instance, from the experiences of the stand-off, the Army is looking to procure a light tank weighing up to 25 tonnes for deployment in the mountains especially in eastern Ladakh. So, the IAF needs a sizeable number of aircraft to airlift them and the MTA with the requisite load capacity can cater to that, several officials noted. There is a huge gap in carrying capacities at the moment with the current aircraft which needs to be adjusted, one of the officials said.

An earlier project to jointly co-develop and produce an MTA of 20 tonnes with Russia to replace the An-32s was scrapped a few years ago after initial design discussions, as reported by *The Hindu* earlier.

The transport fleet of the IAF currently consists of over 100 AN-32s, Avros, IL-76 heavy transporters, IL-78 mid-air refuelling tankers from Russia, as well as 12 C-130J Super Hercules and 11 C-17 Globemaster strategic airlift aircraft from the U.S. Of these, the IL-76 has a capacity to lift 45-50 tonnes and the C-17 up to 70 tonnes.

In September 2021, the Defence Ministry signed a ₹21,935-crore contract with Airbus and Space S.A., Spain, for procurement of 56 C-295MW transport aircraft to replace the Avro aircraft in service which is being executed in partnership with Tata Advanced Systems Ltd. and a Final Assembly Line is being set up in Vadodara, Gujarat, as part of the deal. The first C-295 aircraft is scheduled to be delivered to the IAF in September.

The C-295 has a capacity of nine tonnes and can carry up to 71 troops or 50 paratroopers. Part of the AN-32 fleet could be replaced with C-295s which are of a similar category, officials stated.

While the RFI did not specify the number of MTA required, vendors have been asked to provide "Rough Order of Magnitude [ROM] cost of aircraft and associated equipment" for a batch of 40, 60, and 80 aircraft.

Officials said the number required is being assessed and the study will specify it.

Women have handled key roles in space programme, says PM

Modi hails the the successful launch of the Chandrayaan-3 mission: 'When everyone's efforts converged, success was also achieved'; he says India has made G-20 a more inclusive space and the voice of Africa has reached the platform

The Hindu Bureau
NEW DELHI

Prime Minister Narendra Modi hailed the launch of the Chandrayaan-3 mission in the 104th episode of his monthly radio broadcast, *Mann Ki Baat*, on Sunday, noting the involvement of women scientists and engineers in the country's space programme. The women "have handled many important responsibilities, from project director to project manager of different systems", Mr. Modi said.

"When everyone's efforts converged, success was also achieved," he said on the moon mission.

Prime Minister Narendra Modi meets women scientists of the ISRO team involved in Chandrayaan-3 mission in Bengaluru on Saturday. ANI

Prepared for G-20

India is "fully prepared" for the G-20 Leaders' Summit to be held in New Delhi next month, Mr. Modi said.

"India has made G-20 a more inclusive space. It was at India's invitation that the African Union was also able to participate, and that the voice of the people of Africa has reached this important platform."

Mr. Modi congratulated young athletes who bagged medals at the Chengdu 2021 FISU World University Games held in China – the games had been postponed to 2023 due to the COVID-19 pandemic, and only concluded this month.

India won 26 gold medals, a record for the country.

Mr. Modi said that in all previous editions of the event since 1959, India only won 18 medals combined.

Young heroes

Mr. Modi interacted with and congratulated Abhidnya Ashok Patil, 24, who won a gold medal at the women's 10m air pistol competition with Yashaswini Singh Deswal and Manu Bhaker; Pragati, 19, who won a gold medal with Aman Saini in the compound mixed team archery event; Amlan Borgohain, 25, who took bronze at the men's 200-metre event; and Priyanka, 27, who took bronze in the women's 20-kilometre walk event with Pooja Kumawat, Mansi Negi, and Nikita Lamba.

Hailing the success of the *Har Ghar Tiranga Abhiyaan*, he said as many as 1.5 crore flags were purchased from 1.5 lakh post offices. "Last year till August 15, about 5 crore countrymen had posted a selfie with the Tricolour," Mr. Modi said. "This year, this number has also crossed 10 crore."

Mr. Modi spoke of the *Amrit Kalash* Yatra, in which "there will be a campaign to collect soil from every house in every village of the country" in September and "the holy soil of the country will be deposited in thousands of *Amrit Kalash* urns" in October.

He also lauded the progress in Sanskrit learning, noting that much knowledge of yoga, Ayurveda and philosophy had been preserved in the language.

Many universities were offering Sanskrit programmes, he said, with two Sanskrit deemed universities being upgraded to Central universities in 2020.

Gems of Indian culture

The Prime Minister conveyed his wishes for Telugu Language Day on August 29. "Many priceless gems of Indian culture are hidden in the literature and heritage of the Telugu language," Mr. Modi said.

"Many efforts are also being made to ensure that the whole country gets the benefit of this heritage of Telugu."

Mr. Modi highlighted the efforts of K. Dhanapal, a retired Bangalore Metropolitan Transport Corporation bus driver who was transferred to Bengaluru Darshini, and took up an interest in studying ancient inscriptions with ties to the city; and speleologist Brian Dermot Kharpran Daly of Meghalaya, whose exploration of several caves earned him the Tenzing Norgay National Award for Adventure in 2004.

Success in dairy sector

Mr. Modi invoked the success of the dairy sector in reducing costs by relying on the Railways' truck-on-track facility, which he said halved the 30-hour transport duration for Banas Dairy in Gujarat.

"Due to this, whereas the pollution caused by fuel has stopped, the cost of fuel is also saved," he said. "Drivers of trucks have also benefited a lot from this, their life has become easier."

ISRO releases graph of temperature variation of topsoil in lunar South Pole

Press Trust of India
BENGALURU

The Indian Space Research Organisation (ISRO) on Sunday released a graph of the temperature variation on the lunar surface with an increase in depth measured by the ChaSTE payload aboard Chandrayaan-3's Vikram lander module.

According to the space agency, Chandra's Surface Thermophysical Experiment (ChaSTE) measured the temperature profile of the lunar topsoil around the South Pole, to understand the thermal behaviour of the moon's surface.

The payload has a temperature probe equipped with a controlled penetration mechanism capable of reaching a depth of 10 cm beneath the surface.

Soft touchdown: The Chandrayaan-3 lander, Vikram, landing on the lunar surface on Wednesday. ANI

"The probe is fitted with 10 individual temperature sensors. The presented graph illustrates the temperature variations of the lunar surface/near-surface at various depths, as recorded during the probe's penetration. This is the first such profile for the lunar South Pole. Detailed observations are underway," it said.

The payload was developed by a team led by the Space Physics Laboratory (SPL) of the ISRO's Vikram Sarabhai Space Centre (VSSC), in collaboration with the Physical Research Laboratory (PRL), Ahmedabad.

As Pragyan digs deep into moon, scientists at a VSSC lab turn their gaze to solar wind

Tiki Rajwi
THIRUVANANTHAPURAM

Scientists at the Space Physics Laboratory of the Vikram Sarabhai Space Centre (VSSC) here are getting ready to unravel the secrets of the solar wind as the Aditya-L1 mission, meant to study the sun, lifts off in September.

The Plasma Analyser Package for Aditya (PAPA) payload aboard Aditya-L1, one of seven scientific payloads aboard the challenging mission, was developed by the SPL to gain deeper insights into the phenomenon of solar wind, as the constant stream of charged particles from the sun is called.

S. Somanath, Chairman of Indian Space Research Organisation (ISRO), said on Saturday that the mission would lift off from Sriharikota in the first week of September.

Sun probe: The Aditya-L1 mission is getting ready for launch in September at the Satish Dhawan Space Centre in Sriharikota. ANI

The PAPA payload will study the composition of the solar wind, a senior ISRO official said.

"It will look at the energy of electrons and the energy and mass of protons and ions in it. The study will also cover the angular variations," the official said. For the lab, the Aditya-L1 mission is yet another big occasion, coming close on the heels of the Chandrayaan-3 lunar mission on which it had two important scientific payloads.

The ISRO describes Aditya-L1 as the "first space-based Indian mission to study the sun" from a halo orbit around the Lagrangian point 1 (L1) of the sun-earth system.

Weighing roughly 8 kg, the PAPA payload shares space on the Aditya-L1 spacecraft with six other payloads developed by sister ISRO units and other scientific establishments collaborating with the ISRO.

According to the ISRO, the payloads are designed "to study the chromosphere, the photosphere and the outermost layers of the sun using electromagnetic and particle detectors".

The ISRO will use an XL variant of the Polar Satellite Launch Vehicle (PSLV) to place the Aditya-L1 spacecraft in a low earth orbit. Mr. Somanath said here on Saturday that the spacecraft had been integrated with the launch vehicle at Sriharikota.

Once launched, it will take 125 days to travel to its destination at L1. Onboard the Chandrayaan-3 mission's Vikram lander which soft-landed on the moon on August 23, the SPL had two payloads: Chandra's Surface Thermophysical Experiment (ChaSTE) and Radio Anatomy of Moon Bound Hypersensitive Ionosphere and Atmosphere (RAMBHA).