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IAF Rises to the Occasion: Silkyara Tunnel Rescue in Uttarakhand

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On November 12, 2023, a 60-meter section on the Silkyara side of the under-construction tunnel, connecting Silkyara and Barkot, collapsed due to sudden debris falling in at a rapid rate¹. Forty-one labourers got trapped inside this under-construction tunnel on the Brahmkhal-Yamunotri highway. The district administration, without any delay, initiated rescue operations and made provisions to use air-compressed pipes to provide the stranded labourers with food, electricity, and oxygen.² Several organisations, including the NDRF (National Disaster Response Force), SDRF (State Disaster response Force), BRO (Border Roads Organisation), ITBP (Indo Tibetan Border Police), joined the rescue effort of project executing agency NHIDCL (National Highways & Infrastructure Development Corporation Limited). The initial effort of establishing contact with trapped workers through the narrow pipe for oxygen supply was successful on the first day itself. However, the continuous loose rubble falling from the top created a debris wall of about 30 meters to 60 meters spreads, which complicated the rescue mission. In the next 72 hours, dissatisfied with the progress of the rescue operation and the continuous accumulation of falling debris, to expedite the process, NHIDCL requested for multiple drilling equipment, including Advanced Auger Machine (AAM), which was to be airlifted from various locations to Dehradun and then further airlifted to Dharasu Advanced Landing Ground (ALG), located at Chinyalisaur, located about 30 KM from the tunnel site.

Critical Role of IAF

The Indian Air Force (IAF), in addition to guarding the sovereign airspace of our country, both during peace and war, has always moved in swiftly to the service of the nation during crisis situations, be it for Humanitarian Assistance Disaster Relief (HADR) missions, Aerial Diplomacy, or evacuating own countrymen from critical locations like Ukraine. IAF transport and helicopter fleet today is world class with assets like C-17, C-130J, Chinook, Mi-17 versions and induction of the latest in the series C-295. IAF, in recent years, has time and again proved its capability as the primary HADR support provider in the neighbourhood. In the recent rescue mission of 41 workers stranded inside the tunnel, the IAF resources being pressed in service for expeditious airlift of drilling equipment, experts, and essential support equipment was no different. By the third day of debris-clearing operations, it became evident that heavy advanced machinery, experts and other materials had to be brought in quickly to safely evacuate the trapped labourers, and time criticality was the most important factor.

On the first call from the PMO officials supervising the rescue operations at the site, the IAF quickly launched its fleet of Heavy lift aircraft, C-17 Globemaster, to Indore, Bangalore and Delhi,

while C-130J Hercules was tasked to airlift equipment from Dehradun to Dharasu ALG, located at Chinyalisaur near the tunnel site. Mi-17s and Chinook heavy-lift helicopters were also pressed into service for ferrying loads as well as to standby to airlift rescued workers to the nearest hospital.

The major airlift tasks undertaken by the IAF included: -

- (a) **November 15:** The heavy drilling equipment, weighing almost 7 tonnes, was airlifted by the IAF's C-130 J aircraft to Maa Ganga airport near the rescue operation site. In the meantime, another aircraft was dispatched from Delhi to Uttarakhand with close to 12 tonnes of vital equipment.³
- (b) **November 16:** Two IAF C-17s transported almost 22 tonnes each of vital equipment from Delhi and Indore to Dehradun, which included parts of the Augur Machine as well. It was further airlifted to Dharasu ALG, located at Chinyalisaur, by two C-130 J aircraft.
- (c) **November 20:** On November 20, the Indian Air Force continued to provide support by airlifting 36 tonnes of vital equipment to Uttarakhand using two C-130 J aircraft and a C-17 aircraft.
- (d) **November 21:** On November 21, the IAF flew 18 tonnes of essential equipment from Rourkela to Dehradun. Moreover, supplies were airlifted from Bengaluru to Dehradun for the rescue effort.
- (e) **November 22 to November 28:** The IAF Chinook helicopters remained on high alert 'hot Stand/by' for the immediate evacuation of 41 labourers to AIIMS, Rishikesh. The breakthrough and final rescue took place at about 7 PM on November 27, 2023. While initial treatment was carried out at the local makeshift hospital, the rescued workers were finally airlifted to AIIMS on November 28, 2023.⁴

Challenges Faced and Overcome by the IAF

The successful air operations carried out by brave pilots of the IAF were not without challenges, as such large-scale operations by multiple types of aircraft airlifting massive and heavy equipment in mountainous terrain had never been carried out before. The major challenge was airlifting about 27 tonnes of vital rescue equipment to a gravel airstrip high in the Uttarakhand mountains under extremely difficult circumstances. Delivering the equipment as close to the rescue location as possible was imperative due to the time-sensitive nature of the mission. In order to

complete the mission, the IAF decided quickly to launch its special operation platform, C-130J - Super Hercules, which was the most suitable aircraft to operate from a short and narrow airstrip of 3,600 ft situated at an elevation of 3,000 ft Above Mean Sea Level (AMSL).⁵ An 'integrated approach handshake' with civil administration and the BRO was employed by the IAF to quickly get the short landing strip at Dharasu ready for C-130 operation. Before the C-130 mission, an IAF helicopter was launched with a C-130 pilot onboard to determine whether the operations could go forward safely. After multiple approaches, keeping a fine balance between the national objective and safety, a final call was taken to undertake the mission. The mission was carried out successfully, despite the difficulties of low visibility on approach, a landing on a short, narrow airstrip, and offloading in a confined area.

The Success Story

The IAF once again, rightfully, rose to the occasion with a display of a very high degree of professionalism, a high degree of readiness, swiftness, and safety consciousness with a well-calculated risk-taking appetite, and above all, commitment to the nation under all odds. The timely airlift of multiple types of equipment, material and associated support material closest to the rescue site paved the way for speedy recovery operations under constantly challenging situations emerging one after another. The safe recovery of 41 Indian citizens highlighted the 'whole of nation' approach with great team efforts under demonstrative leadership at all levels. Surely, there would be many lessons to learn, but the unprecedented rescue operation has once again put India on a very high pedestal on the world map.

NOTES:

¹ Ministry of Road Transport & Highways, "Uttarkashi Tunnel Rescue Operation Media Brief", November 27, 2023, <https://pib.gov.in/PressReleaseIframePage.aspx?PRID=1980171>. Accessed on November 30, 2023.

² "Uttarkashi tunnel collapse", PTI, November 27, 2023 <https://www.cnbctv18.com/india/uttarkashi-uttarakhand-tunnel-collapse-timeline-disaster-rescue-operations-18409501.htm>. Accessed on November 30, 2023.

³ "Uttarakhand Tunnel Collapse: How Indian Air Force and Railways came together for speedy rescue of trapped workers", November 23, 2023, News 9, [Uttarakhand Tunnel Collapse: How Indian Air Force and Railways came together for speedy rescue of trapped workers | India News - News9live](https://www.news9live.com/uttarakhand-tunnel-collapse-how-indian-air-force-and-railways-came-together-for-speedy-rescue-of-trapped-workers/). Accessed on November 30, 2023.

⁴ ibid

⁵ "Uttarakhand tunnel rescue: IAF deploys C-17 to airlift critical equipment from Indore to Dehradun", *Deccan Herald*, November 18, 2023, <https://www.deccanherald.com/india/uttarakhand/uttarakhand-tunnel-rescue-iaf-deploys-c-17-to-airlift-critical-equipment-from-indore-to-dehradun-2775775>. Accessed on November 30, 2023.