



PRELIMINARY INVESTIGATION REPORT

**ACCIDENT OF Mi-8-MTV-1 PANH HELICOPTERS
FLIGHT NO PNH9537 / REG. NO RA-24537
CRASHED AT SHEWA NEAR BANNU, KPK PAKISTAN ON 28-09-2024**

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ACKNOWLEDGEMENT

1. Interstate Aviation Committee (IAC) Russian Federation and its ACCREP / Advisors involvement on-site evidence collections, technical assistance during wreckage recovery, Flight recorders read out and recovery of Navigation equipment data in the investigation process.
2. Support of IAC, General Civil Aviation Authority (GCAA) and Pakistan Customs is also acknowledged for security and custom clearance of the Flight recorders and Navigation equipment at Moscow, Dubai and Islamabad International Airports respectively.
3. Maintenance & Personnel support provided by Pakistan Air Force (PAF) for timely positioning of technical manpower and equipment to assist the BASIP investigation team for wreckage recovery.
4. Administrative support provided by M/s Princely Jets, M/s MMT&T & M/s Mari Petroleum Company Limited (MPCL) for facilitating investigation team and ACCREPs for onsite visits, accommodation, security cover, airlift, wreckage recovery & transportation. Moreover, facilitating investigation team visit to Moscow for Flight Data Recorder (FDR) read out.
5. Provision of security cover to the investigation team by Ministry of Defence, Ministry of Interior, KPK & Punjab Government, 11 Corps Pak Army and Frontier Corps at Shewa crash site and during transportation of wreckage.
6. Pakistan Civil Aviation Authority (PCAA) and Pakistan Airports Authority (PAA) for provision of all out support to BASIP investigation during the course of investigation.

SCOPE OF INVESTIGATION

This safety investigation is being conducted by Bureau of Aircraft Safety Investigation Pakistan (BASIP) in accordance with Annex-13 to the ICAO Convention, and Pakistan Air Safety Investigation Act 2023. The sole objective of this safety investigation is the prevention of accidents and incidents of similar nature without apportioning blame or liability. Accordingly, it is inappropriate to use BASIP preliminary investigation report to assign fault or blame or determine liability, since neither the investigation nor the reporting process has been undertaken for that purpose. This information is published for aviation industry and the public about the general circumstances of this event. It is in line with ICAO Annex-13 para 7.1 and 7.5. Extracts of this preliminary report may not be further published without permission from BASIP.

PRELIMINARY REPORT

MI-8-MTV-1 HELICOPTER CRASH AT SHEWA, KPK, PAKISTAN dated 28-09-24 OPERATED BY PRINCELY JETS, FLIGHT NO PNH9537 PANH HELICOPTERS REG. NO RA-24537

Brief Description

1. On 28 September, 2024 at 1128 Mi-8-MTV-1 helicopter, Registration Number RA-24537, took-off from Islamabad International Airport (IIAP), Islamabad to Shewa Helipad located at MPCL Complex, Shewa, North Waziristan to transport MPCL personnel. The manifest included three (03) Flight Crew members (Russian Nationals), one (01) Safety Pilot (Pakistan National) and 12 passengers (Pakistan Nationals MPCL Employees). The flight remained uneventful till landing at Shewa.

2. Helicopter landed safely at Shewa Helipad. During the running engine with both engines operative, 07 passengers off-loaded and 06 passengers boarded, thus a total 15 souls were onboard including Flight Crew and Safety Pilot for next flight (Bannu Helipad). Helicopter lift-off for next destination from Shewa. Approximate 2.69 Nautical Miles (NM) from Shewa Helipad, left engine went into uncommand "In-Flight Shut Down (IFSD)". Helicopter made a circling Approach back to Shewa Helipad. Short of Helipad, helicopter discontinued the Approach and turned left to attempt a running landing on a nearby level field (natural gas rig of MPCL). During Landing Roll after travelling 63 meters (m) from the touchdown point in the direction of landing, the main rotor blades collided with the light pole (10m high) on left side. After hitting the light pole, helicopter turned right around approximate 75° - 85°, followed it direction of landing and travelled another 73m and hit another obstacle (concrete structure underground bunker wall) and rested with it.

3. As a result of collision of main rotor with the light pole, the light pole broke into six (06) pieces whereas main rotor blade(s) also broke. Subsequently, the helicopter collided with concrete structure, the tail boom got separated and laid close to main fuselage. The right engine and main rotor kept running for the following next eight (08) minutes (min) with no tail rotor caused severe oscillations and heavy vibrations. Moreover, multiple collisions of the main fuselage with the concrete structure resulted into breakage of fuselage in two pieces from center. Due to breakage of main fuselage from center, the front portion of helicopter tilted upward and the main rotor blade struck the top portion of cockpit and cut the cockpit area. The main rotor stopped after approximate three (03) rotations. MPCL/Orient Petroleum Inc. (OPI) & Frontier Corps rescue team reached the crash site immediately. However, rescue operation commenced once main rotor had completely stopped.

4. Due to accident, three (03) Russian Nationals (Flight Crew Members) and three (03) passengers (Pakistan Nationals) were fatally injured at the crash site. The remaining nine (09) injured passengers were given first aid initially at MI Room MPCL Complex and were immediately transferred to Combined Military Hospital (CMH) Thall. One (01) injured passenger expired at CMH Thall whereas remaining eight (08) were further transferred to CMH Peshawar. One (01) injured passenger & one (01) Safety Pilot bodies were burnt due to spillage of aircraft hot oil as a result of ruptured oil tank during breakage of fuselage. One (01) injured passenger was further transferred to Burn Center at CMH Kharian. However, could not survive and expired on 03 October, 2024. The remaining five (05) passengers & one (01) Safety Pilot were medically treated and discharged.

Helicopter Operations

5. The helicopter is owned by PANH Helicopter, Russia vended by MMT&T Associate on wet leased. M/s MPCL (gas exploration company) chartered helicopter for transportation of MPCL/OPI personnel to various gas exploration sights. As MMT&T Associate is non Air Operating Certificate (AOC) holder, hence MMT&T made an agreement with M/s Princely Jets (AOC holder) to conduct helicopter operations on “wet leased” under the AOC of M/s Princely Jets.

Timeline for Accident (PST)

6. 112800. Helicopter took-off from IIAP to MPCL, Shewa helipad. The flight remained uneventful till landing at Shewa.

7. 123900. Helicopter landed safe at Shewa Helipad. During running engine with both engines operative seven (07) passengers were off-loaded and six (06) passengers boarded.

8. 124420. Helicopter lift-off for next destination (Bannu Helipad) from Shewa.

9. 124520. 2.69 NM from Shewa, left engine went into uncommand IFSD. Helicopter made a circling Approach back to Shewa helipad.

10. 124743. Short of the Helipad, Approach was discontinued and turned left towards level field near natural gas rig of MPCL Complex.

11. 124900. Helicopter touchdown in level field and attempted a Running Landing in level field (natural gas rig of MPCL)

12. 124903. Helicopter main rotor blades collided with the light pole (10m high) on left side (63m from touchdown point)

13. 124907. After hitting the pole, helicopter turned right around approximate 75° - 85°, followed it direction of landing and travelled another 73m and hit another obstacle (concrete structure underground bunker wall) and rested with it (133m from touchdown point)

Accident Site

14. Accident site is located 623.4m NW of the Helipad. Helicopter main wreckage lie at position 33°12'42.70" N 70°28'55.41" E within the boundary of MPCL complex. Aircraft parts were spread out in an area of 91,197.14 m² in the perimeter of 1,246.15 m. Figure 1 to 11 below indicating the crash site.

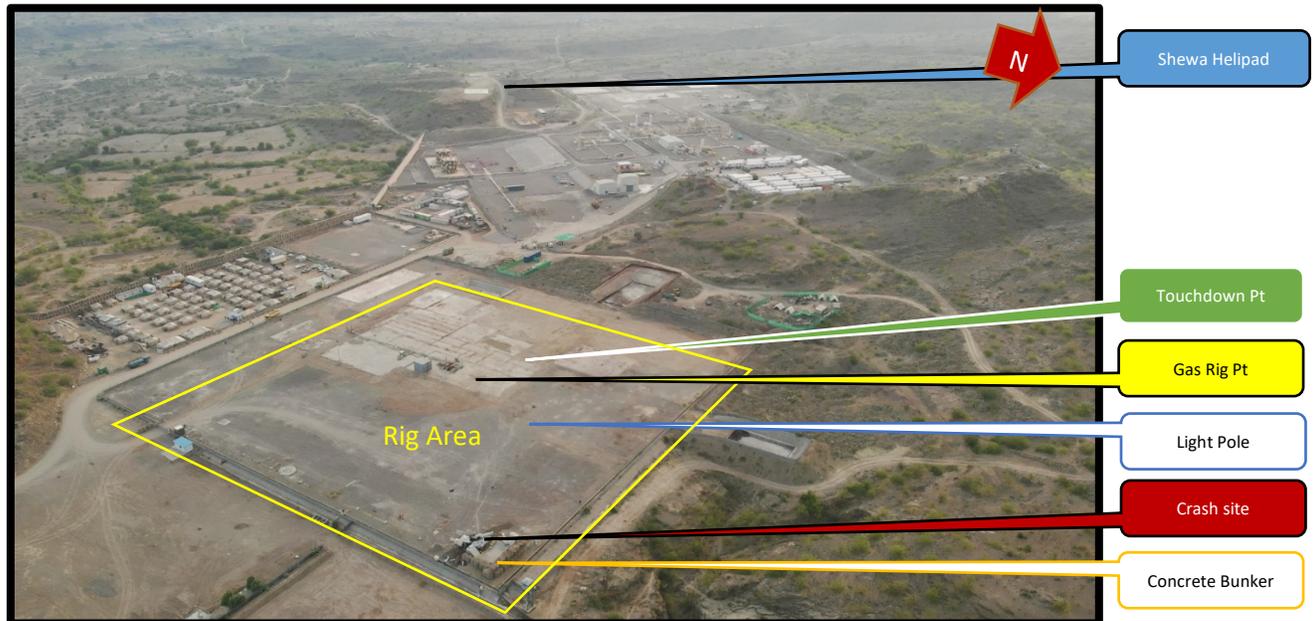


Figure 1 Aerial view (North East to South West)



Figure 2 Aerial view (South West to North East)



Figure 3 Wreckage Spread Area



Figure 4 Aerial distance from Helipad to crash site

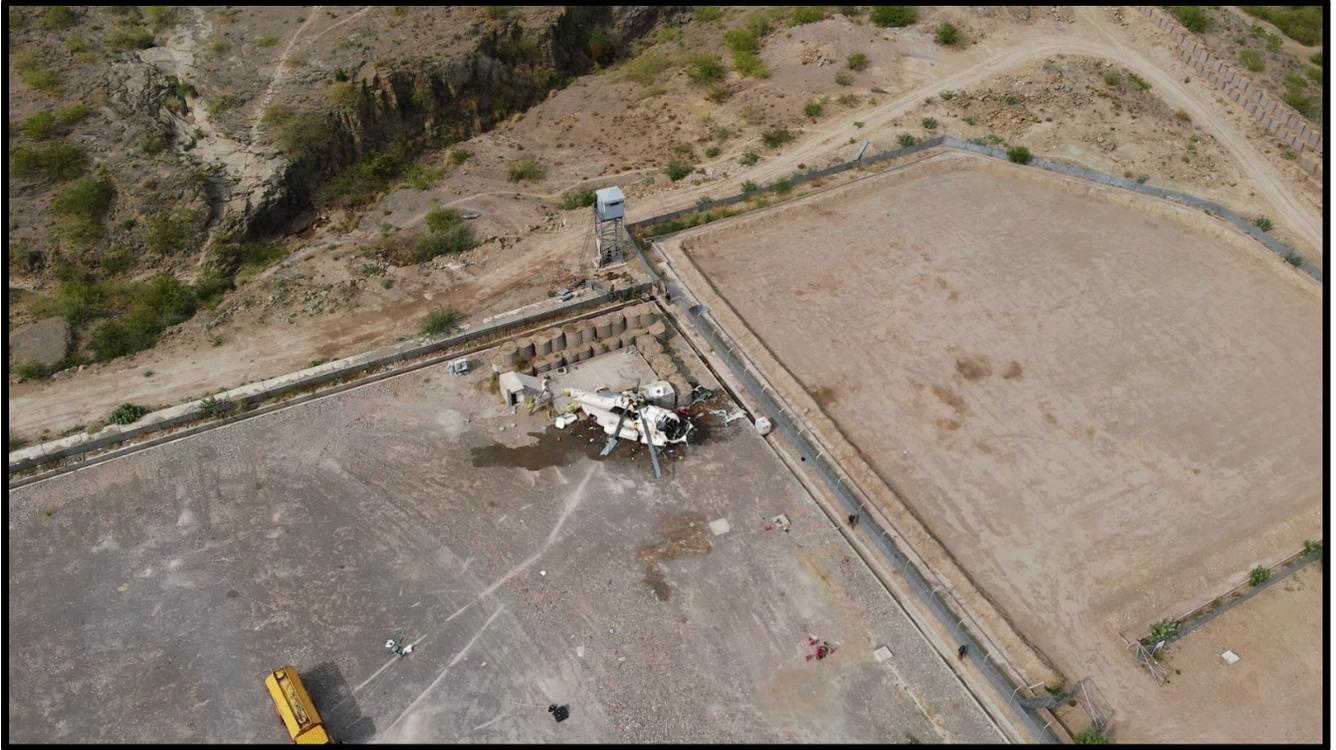


Figure 5 Aerial View of crash site



Figure 6 Aerial View of Helicopter



Figure 7 Main Fuselage breakage and Tail Boom

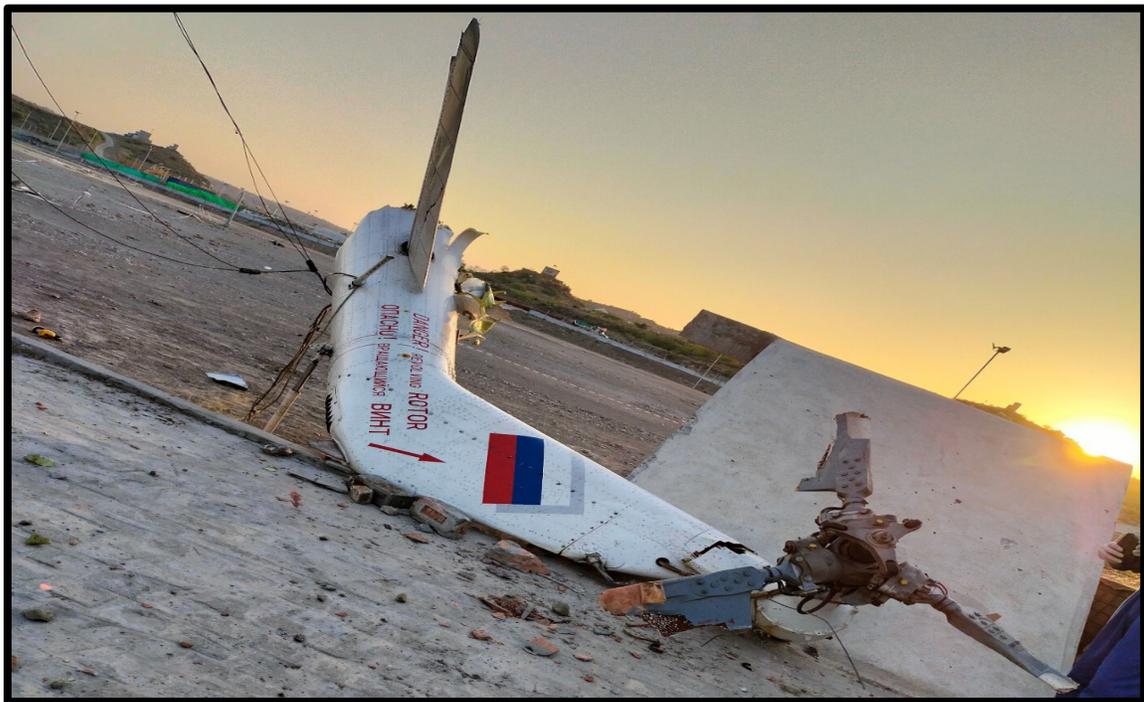


Figure 8 Tail Boom



Figure 9 Left side of Fuselage with concrete bunker

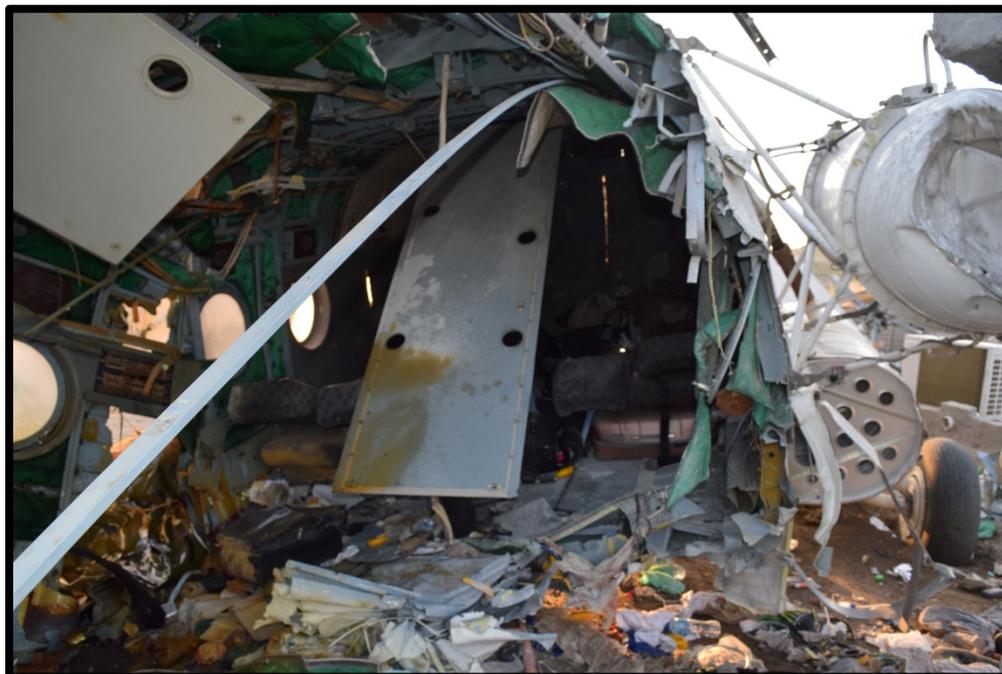


Figure 10 Left side of Fuselage rupture passenger door area



Figure 10 Right side of Fuselage breakage area



Figure 11 Cockpit

15. Following figures and video link describes the touchdown point, damaged light pole and the final resting point of helicopter main fuselage and tail section right beside concrete bunker. https://drive.google.com/file/d/1KJuglALgGvDAmcJdf_6wWh1YEs2tN04R/view?usp=sharing (video link)

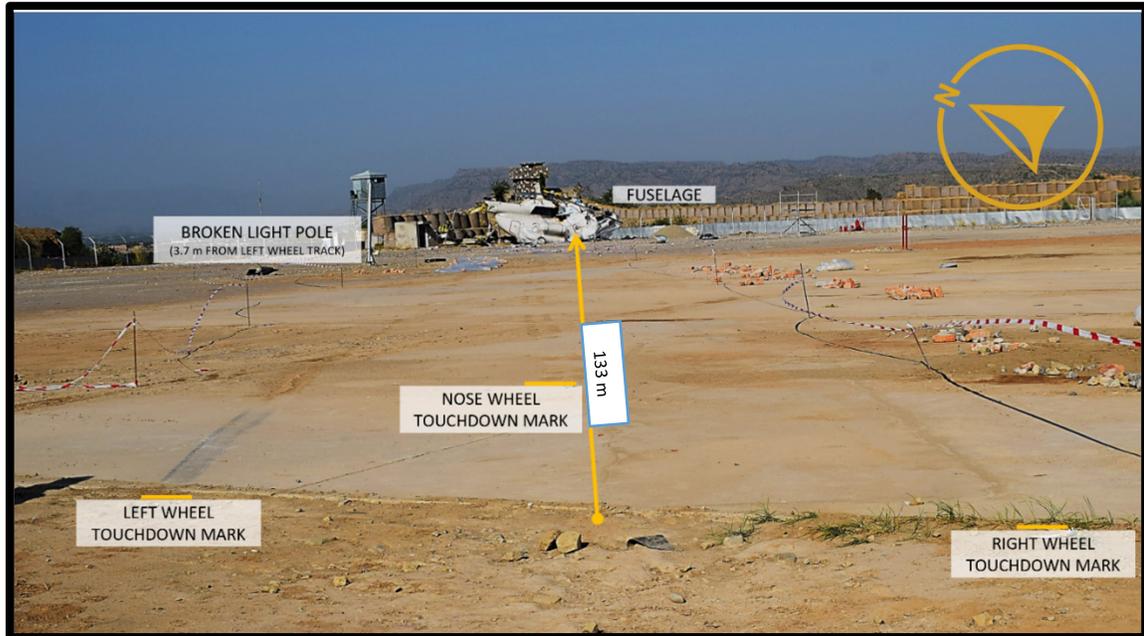


Figure 12 Touchdown point, Light pole and Main Fuselage

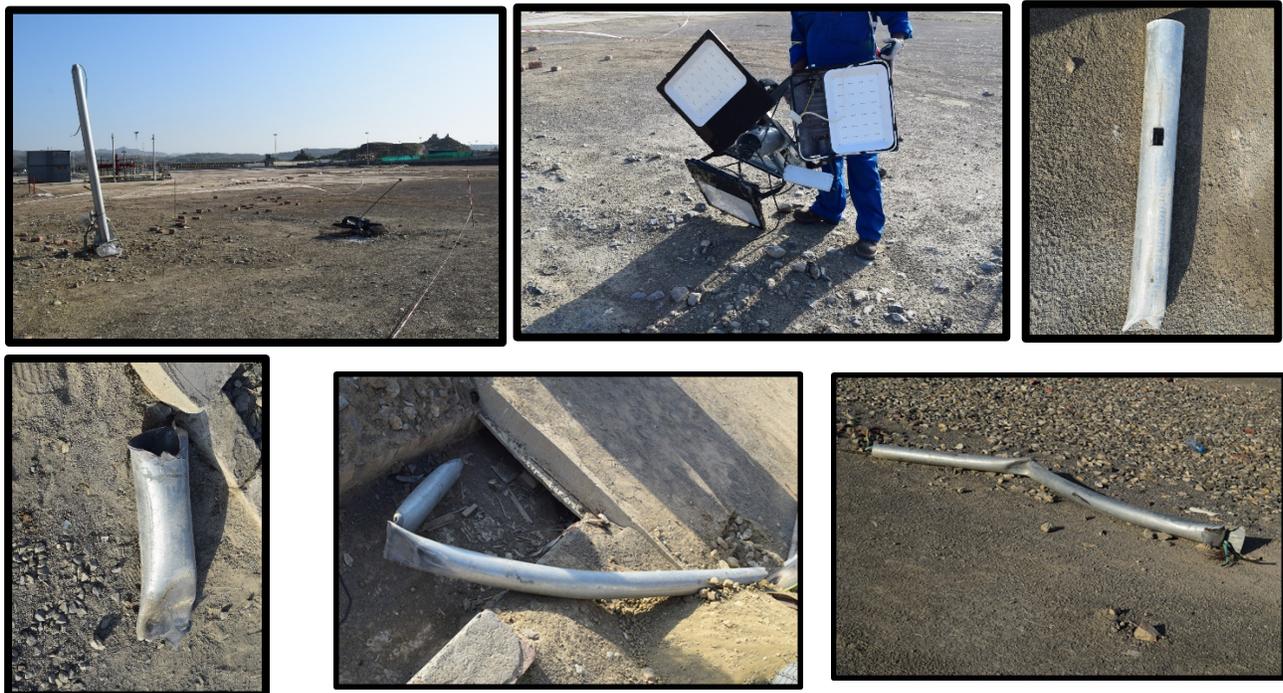


Figure 13 Broken Light Pole

Site Visits

16. A three (03) member BASIP investigation team reached the crash site on 30 September, 2024 after requisite security clearance. During the visit, the investigation team collected evidences and safeguarded the complete crash site with the support of available manpower of MPCL / OPI. The investigation team recovered back to Islamabad along with FDR, Cockpit Voice Recorder (CVR), Navigation equipment, Fuel and Hydraulic Oil samples on 03 October, 2024.

17. Subsequently after necessary coordination with IAC Russia, PAF, Ministry of Defence, Ministry of Interior, M/s Princely Jets, M/s MMT&T and M/s MPCL, an eighteen (18) member investigation team (04 BASIP, 07 IAC, 07 PAF personnel) visited the crash site for wreckage recovery from 15 – 26 October, 2024.

Wreckage Recovery

18. Helicopter fuselage was broken in two pieces (before frame 7). Both Engines and Auxiliary Power Unit (APU) were removed and centre fuselage was cut between frame 13-14 to enable road transportation on flat-bed vehicles, fulfilling the cargo heights clearance (max 16 feet to pass under the en-route overhead bridges). All cargo doors, landing gears, struts, main and auxiliary, fuel tanks were removed for easy transportation. Part of tail boom attached with the center fuselage was also separated from frame 17. Helicopter wreckage was transported by road from accident side to place of storage.

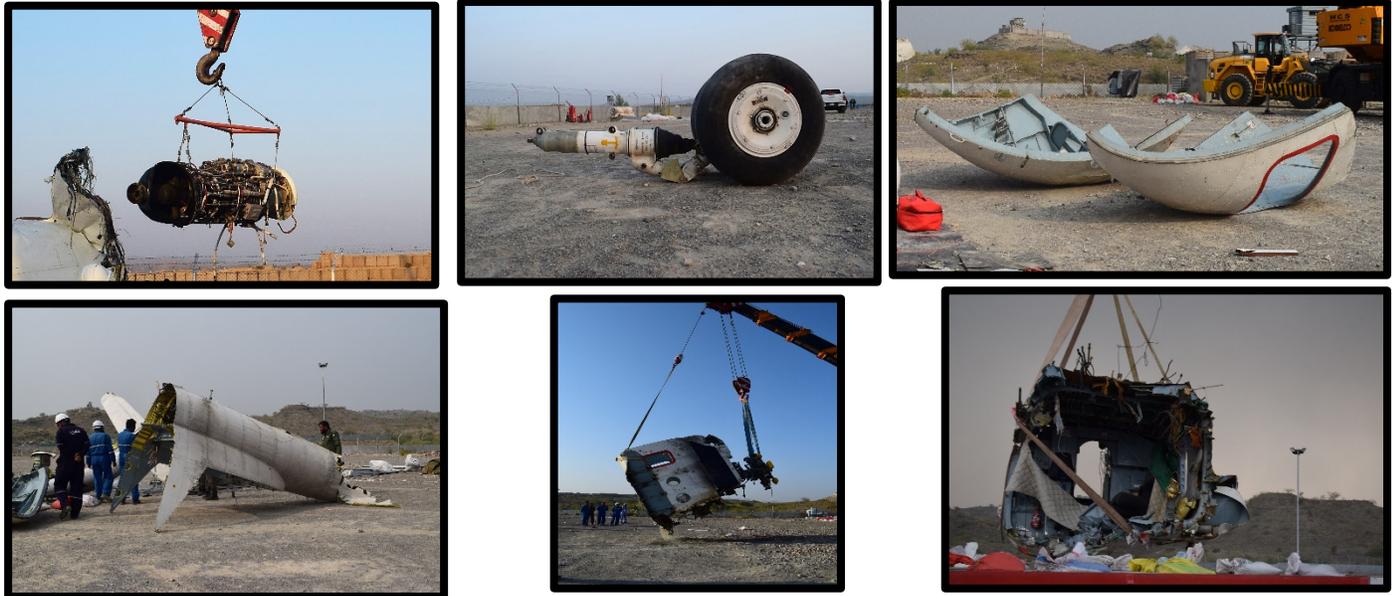


Figure 1 Wreckage recovery

Flight Recorders FDR / CVR Readout

19. FDR and CVR were retrieved from the accident site in damaged condition. Vital navigation equipment including Satellite Navigation Receiver (TSS) Terrain Awareness Warning System (TAWS). TTA-12h and Air Navigation multiple indication Garmin GTN750 were also recovered for analysis.

20. A three (03) member of BASIP investigation team along with (one) 01 representative of M/s Princely Jets visited IAC head office Moscow from 26 November, 2024 - 02 December, 2024 to participate in FDR readout. Flight recorders and vital navigation equipment were hand carried by the investigators. The recorded data from the flight recorders, TSS and TAWS was read out. Garmin 750 contained firmware version 5.0 which does not have the provision of flight data storage.

21. During the FDR readout it was revealed that **left engine has suddenly stopped (with in 2 sec)** whereas right engine was operating normal till landing. However, cause of left engine failure could not be established. In this regard, it was decided by IAC & BASIP investigation teams, that the left engine would be transported to OEM facility (Ural Works of Civil Aviation Ekaterinburg, Russia 620025) for tear down examination. Moreover, both assemblies would also be transported to OEM facility (Moskovskiy Aviatsionno Remontnyy ZA VOD DOSAAF Moscow Region 143921).



Figure 15
Flight Data Recorder



Figure 16
Cockpit Voice Recorder



Figure 17
Satellite Navigation
Receiver



Figure 18
Terrain Awareness
Warning System



Figure 2
GPS Garmin
GGTN750

Medical Examination

22. Autopsy of Flight Crew were conducted at Khyber Medical Institute, Peshawar. The medical examination reveals no evidence of poisoning and drug intoxication. However, sufficient evidences established that the cause of death was due to high energy force and blunt trauma impact to vital body organs and head injuries as supported by post mortem examination and relevant radiological scans.

Lab Testing

23. Fuel samples from airport and aircraft along with Hydraulic oil samples have been sent for lab testing and awaiting results, whereas no Engine oil sample could be collected due ruptured oil tank and all fluid from aircraft and pipelines have been drained out.

Way Forward

24. Further course of investigation includes **transportation of left engine and brake system to OEM facility for tear down engine and brake assembly examination**. Visit of investigation teams (BASIP & IAC) to participate during teardown examination / testing at OEM facilities in Russia. Thereafter, analysis of wreckage, flight recorders data, Fuel sample(s) testing, review of operational, maintenance records and interview of witness(s) for preparation of draft and subsequently final investigation report for public release.

Summary

25. This Preliminary Report is issued in accordance with ICAO Annex-13 para 7.1 and 7.5. This report provides facts which have been determined up to the time of publication. It will be followed by advanced analysis into the root causes and a draft final investigation report shall be compiled, which would be further disseminated to the ACCREPs in accordance with the relevant provisions of the ICAO Annex-13. After the comments by the ACCREPs the Final Report shall be released.



(AHSAN NOUMAN)

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Date: 10 March, 2025