National Transport Investigation Bureau

SERIOUS INCIDENT
PRELIMINARY REPORT

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Location:	Bor aerodrome (Republic of South Sudan)	**Investigation number:**	46/2025
Date and time:	23.10.2025, 11:18 UTC	**Aircraft registration:**	UR-CEP
Aircraft type:	An-26	**Fatalities:**	None
		Injuries:	None
Flight type:	Cargo flight under UN WFP	**Flight phase:**	Landing
Report issuance date:	28.11.2025	**Translation issuance date:**	04.12.2025

Introduction

In accordance with paragraph nine of item 2 of the Rules and Procedures for the technical investigation of aviation accidents and incidents in civil aviation, approved by resolution of the Cabinet of Ministers of Ukraine dated 20.05.2022 № 610 (RAI), and Annex 13 to the Convention on International Civil Aviation (Chicago Convention), the purpose of this report is to disseminate information on the progress of the investigation of the An-26 UR-CEP serious incident, occurred on 23.10.2025 at Bor aerodrome (Republic of South Sudan).

This report does not contain analysis or formal conclusions regarding the causes of the occurrence, as it will be presented in detail in the Final Report.

The sole purpose of this report and the investigation is the prevention of aviation accidents and incidents in the future.

In accordance with part five of Article 119 of the Air Code of Ukraine, this report may not be used by administrative, official, prosecutorial, judicial authorities, or insurers to apportion blame or liability.

This report may not be used for disciplinary, civil, administrative, or criminal proceedings involving operational personnel.

This investigation has international status and is being conducted in accordance with the procedures of Annex 13 to the Chicago Convention and the RAI.

Organization of investigation

On 25.10.2025 at 16:57 Kyiv time, the NTIB received a notification from PJSC "Constanta Airline" regarding a serious incident involving an An-26 aircraft, occurred on 23.10.2025 at Bor aerodrome (Republic of South Sudan). The notification was submitted via the dedicated form on the NTIB website (https://nbaai.gov.ua/report/).

On 27.10.2025, the NTIB submitted a formal request the Aviation Accident and Incident Investigation Department of the Ministry of Transport of the Republic of South Sudan (AAIID) for delegation of the investigation.

In accordance with Chapter 5, items 5.1.1 and 5.1.2 of Annex 13 to the Chicago Convention, by letter from the AAIID dated 28.10.2025 № RSS/MoT/AAIID/04-24, the investigation of the serious incident was delegated to the NTIB by mutual agreement and consent.

For the purpose of conducting the investigation, the NTIB, by Order dated 28.10.2025 № 46, appointed an investigator-in-charge and launched the investigation.

The head of AAIID participates in the investigation in the capacity of the State of Occurrence representative, providing assistance to the NTIB in information collection and advisory support regarding the circumstances of the incident.

To collect information and physical evidence at Bor aerodrome, the NTIB established contact with the senior aviation transport officer of the WFP Mission in South Sudan. Through the WFP Mission, the NTIB received information concerning the organization of flight operations at Bor aerodrome.

Representatives of the operator are included in the investigation team.

At the NTIB's request, the State Aviation Administration of Ukraine (SAAU) appointed its representative to participate in the investigation in the capacity of advisor to the investigator-in-charge and provided information related to the operator's activities.

Note: This report is a translation of the Ukrainian original investigation report. The text in Ukrainian shall prevail in the interpretation of the report.

Synopsis

On Thursday morning, 23rd of October 2025, the crew of An-26 UR-CEP, operated by PJSC "Constanta Airline", consisting of the PIC, co-pilot, and flight engineer, was conducting a cargo flight en-route Rubkona–Bor (Republic of South Sudan).

The flight was conducted on behalf of the United Nations World Food Programme (WFP) Mission in South Sudan. This was the crew's third flight of the day. Prior to this flight, the crew completed two flights en-routes Juba–Malakal and Malakal–Rubkona.

For the operator, this was the first flight to Bor aerodrome. Previously, none of the airline's pilots had flown to this aerodrome.

In addition to the flight crew, two airline's aviation technicians were on board.

For the operation of the flight, the operator filed FPL. According to the FPL, the entire flight was planned under IFR.

Departure from Rubkona aerodrome was scheduled for 09:00 UTC.

The flight was planned to be conducted at a speed of 214 knots (397 km/h) at flight level FL110.

Figure 1 – The aircraft at the apron of Bor aerodrome.

The estimated flight time from Rubkona aerodrome to Bor aerodrome was 1 hour and 2 minutes. The alternate aerodrome selected by the PIC was the departure aerodrome – Rubkona.

The cargo mass on board was 3,152 kg. The aircraft's actual takeoff mass was 21951 kg. At the time of arrival at Bor aerodrome, the landing mass was 20950 kg.

Prior to departure, the aircraft was fueled for 2 hours and 42 minutes of flight.

Takeoff and climb were completed without any remarks, system deviations, or crew reports of malfunctions.

The approach and landing were conducted under VFR. Active piloting was performed by the PIC.

During the landing on RWY01, at 11:18 UTC, the aircraft's left main landing gear wheels contacted the ground approximately 60 meters before the threshold of RWY01.

According to FDR data, at the moment of contact, the aircraft experienced a vertical load factor of 3.08G.

As a result of the occurrence, the crew sustained no injuries.

Figure 2 – The drainage ditch in front of RWY01.

Figure 3 – RWY01 threshold

Photographs taken in the area of the threshold and end of RWY01 show a drainage ditch approximately 1 meter deep, along the perimeter of the runway, intended to divert water from the runway surface and the landing area. The ditch has soft, eroded edges. To prevent soil collapse and erosion, the ditch walls are sloped and reinforced with grass. Along the outer side of the drainage ditch, small earthen mounds up to approximately 50 cm in height are visible, that are a natural result of ditch clearing rather than artificially created embankments.

The approach to RWY01 features an open, flat terrain. Photographs and video recordings show no artificially constructed embankments. The runway surface consists of compacted soil (murram).

Note: Murram is a type of red soil commonly used for road and runway construction in Africa.

Photographs taken immediately after the serious incident indicate that the soil was visually dry. The thresholds and surface of RWY01/19 are flat, with uniform color and texture, and no holes. According to a photograph provided by the WFP office, the runway surface softens after rain. In one photograph (Fig. 3), a visible track is not the result of aircraft landing, but of a vehicle turning on the wet runway. Based on the photographs, the runway width, including tracks, is approximately 30 meters, and the

length is significant. Wheel marks from previous aircraft landings on RWY01 are even and shallow, suggesting adequate surface compaction for the types of aircraft that have previously operated there.

According to AAIID, the distance from the runway threshold to the inner edge of the drainage ditch is approximately 55 meters. On the outer side of the drainage ditch (Fig. 2), a faint mark is visible, likely from the left main landing gear wheels of An-26 UR-CEP. The distance from the probable point of contact of the left main landing gear with the ground to the runway threshold is approximately 60 meters.

Information from the photographs indicates a short landing before RWY01 (ADREP category: USOS).

Crew data

PIC, 49-year-old male, Ukrainian citizen, graduated from the State Flight Academy of Ukraine in 1998 as a navigator-engineer. Total flight time: 8712 hours 13 minutes, including 3852 hours 15 minutes as navigator and 4859 hours 58 minutes as pilot. On An-26: 3918 hours 31 minutes, including 1906 hours as co-pilot and 2970 hours as PIC. Did not fly between 1998 and 2009. Resumed navigator license in 2009. In 2014, retrained as a pilot at the State Flight Academy. Since 2022, has accumulated continuous PIC experience of landings on unprepared, unpaved runways at African continent in Somalia, DRC, and South Sudan.

Co-pilot, 52-year-old male, Ukrainian citizen, graduated from the State Flight Academy of Ukraine in 1998 as a navigator-engineer. In 2010, retrained as a pilot at the State Flight Academy. Total flight time: 9120 hours 08 minutes, including 4526 hours as navigator and 4594 hours 08 minutes as pilot. On An-26 as co-pilot: 4471 hours 41 minutes.

Flight Engineer, 62-year-old male, Ukrainian citizen, graduated from Kirsanov Aviation Technical School in 1983 as an aircraft technician. Total flight time on An-26: 7756 hours 54 minutes.

Aircraft information

An-26, registration UR-CEP, serial number 22-08, manufactured 31.05.1974 at the Kyiv State Aviation Plant (Ukraine). Registration certificate No. RP 3353, issued by the SAAU on 19.08.2025. Owner: “Expedition Aviation (FZC)”, UAE. Lessee and operator: PJSC “Constanta Airline”.

Aircraft category: Transport

Configuration: Cargo

Cockpit layout: 3 crew members

Airworthiness certificate № 0686, issued by the SAAU on 29.12.2016, confirms the aircraft is airworthy. Certificate valid until 17.08.2026.

Aircraft damage

According to FDR data, during abnormal contact with the ground, the aircraft experienced a vertical load factor of 3.08G, resulting in damage of varying severity.

Between 26.10.2025 and 13.11.2025, the operator performed special technical maintenance of the aircraft following a hard landing, in accordance with sections 7.01.00 and 7.01.20 of the An-26 AMM, and an aircraft condition assessment report was compiled. The inspection revealed: deformation (corrugation) of the fuselage skin between frames 17–20 on the left side, measuring 1000x610 mm; deformation of the nose of the left-wing center-section, frames 4–5, 200x370 mm; deformation (corrugation) of the center-section, frames 2–3 and 15–16, left side, 300x250 mm; crack in metal skin, 50 mm long and other damage.

Figure 4 – External damages

Figure 5 – External damages

Meteorological information

During pre-flight preparation, the crew received actual weather information for Bor aerodrome in the form of a METAR report at 05:24 UTC:

wind: 210° at 5 knots,
meteorological visibility: over 10 km,
broken clouds at 1950 meters,
air temperature: +23°C,
dew point: +22°C,
pressure, QNH: 1017 hPa,
no hazardous meteorological phenomena were observed.

16 minutes before landing, the Bor aerodrome ATC informed the crew of the local weather conditions:

air temperature: +32°C,
pressure, QNH: 1013 hPa.

2 minutes prior to touchdown, the ATC reported the wind on RWY01 as 180° at 3 knots (tailwind).

Aerodrome information

Bor Aerodrome (ICAO code: HJBR) is located 3 km southeast of Bor city, Jonglei State, Republic of South Sudan.

Figure 6 – Bor aerodrome (AIP data)

According to information published in the Aeronautical Information Publication (AIP) of the Republic of South Sudan, the aerodrome elevation is 1335 ft (407 m). of ARP coordinates are 06°11’28”N 031°36’01”E. The aerodrome is administered by the South Sudan Civil Aviation Authority.

All details regarding aerodrome characteristics (runway length and width, soil compaction, markings, presence of safety strips, obstacles, rescue and firefighting services, etc.) are absent from the AIP.

According to information on page AD 2.HJBR-1 of the AIP, data for Bor aerodrome are unverified, potentially inaccurate, and outdated.

Bor aerodrome has a single unpaved runway, RWY01/19, with magnetic headings 009°/189°.

In the AIP, the runway is depicted only via a satellite image; no charts or layouts are provided.

Information on Bor aerodrome is absent in the Jeppesen database.

According to AAIID and the WFP Mission, a drainage ditch runs along the runway perimeter. The distance from the RWY01 threshold to the drainage ditch is approximately 55 meters. Between the ditch and the runway threshold is a turning area 50 meters in length, starting from the threshold and ending 5 meters before the drainage ditch.

There are no commercial flights operations to Bor aerodrome. The only flights operating are UN peacekeeping mission, UNHAS and the ICRC.

Based on measurements performed by the WFP Mission (Fig. 7) at the request of the NTIB, the coordinates of the RWY01 threshold are N06.183931 E031.598840, with a threshold elevation of 423 m. The runway surface consists of dry, compacted murram. No data on surface compaction or equivalent characteristics are available. UNHAS is not aware of any risk assessments conducted by Bor aerodrome services.

Figure 7 – Threshold coordinates RWY01

According to UNHAS information as of 10.11.2025, Bor aerodrome has a runway length of 1300 meters and a width of 30 meters.

UNHAS identified the following hazards at Bor aerodrome, which were communicated to the operator:

1. Runway Incursions
2. Bird activity
3. Poor apron and runway surface condition (water patches on runway after rain, apron can be soft when wet)
4. FOD
5. Limited airfield security services
6. Lack of navigation aids
7. Limited access to accurate weather
8. No runway and apron marking.
9. No airfield perimeter fence
10. Dusty and sandy
11. Strong gusty crosswinds during dry season
12. Taxiway is narrow for medium type aircraft, crew to exercise caution when taxiing.
13. Masts 50-80m height towards edge of RWY 19.

14. RWY is sloped along the edges for Drainage.

15. Congested airspace

16. Parking area small and confined due high traffic. People crossing runway during lineup.

17. Caution of Military Heli if parked on the helipad.

18. Main road is raised above runway level for runway 19.

Operations at the aerodrome are conducted under VFR only.

According to the WFP Mission, the accuracy of the data is not guaranteed, as it is sourced from flight crews and operator personnel. For safety reasons, the operator and crew must independently verify all information prior to flight.

Per internal procedures approved by the SAAU, on 03.06.2025, the operator put Bor aerodrome into "B" category and established a maximum landing mass limitation of 19300 kg.

Flight recorders

The An-26 UR-CEP is equipped with a protected FDR BUR-4-1 with BR-4T and CVR ORT.

Data from the recorders were downloaded by the operator's technical personnel. At the request of the NTIB, the operator provided the investigator-in-charge with the flight parameter file and the voice recording file. The files are in good condition, and the recording quality is high.

The FDR, with a solid-state memory unit, has a capacity of 25 hours 00 minutes.

The number of analog parameters recorded is 12:

1-IKM1 – Left engine torque meter oil pressure
2-EL – Right aileron
3-RN – Rudder
4-RH – Elevator
5-IKM2 – Right engine torque meter oil pressure
6-KR – Roll angle
7-KK – Heading angle
8-V – Indicated airspeed
9-H – Barometric altitude
10-RA – Left engine throttle lever (RPM/Thrust)
11-NY – Vertical load factor
12-RB – Right engine throttle lever (RPM/Thrust)

During the flight under investigation, the analog parameter "Radio Altitude" was not recorded.

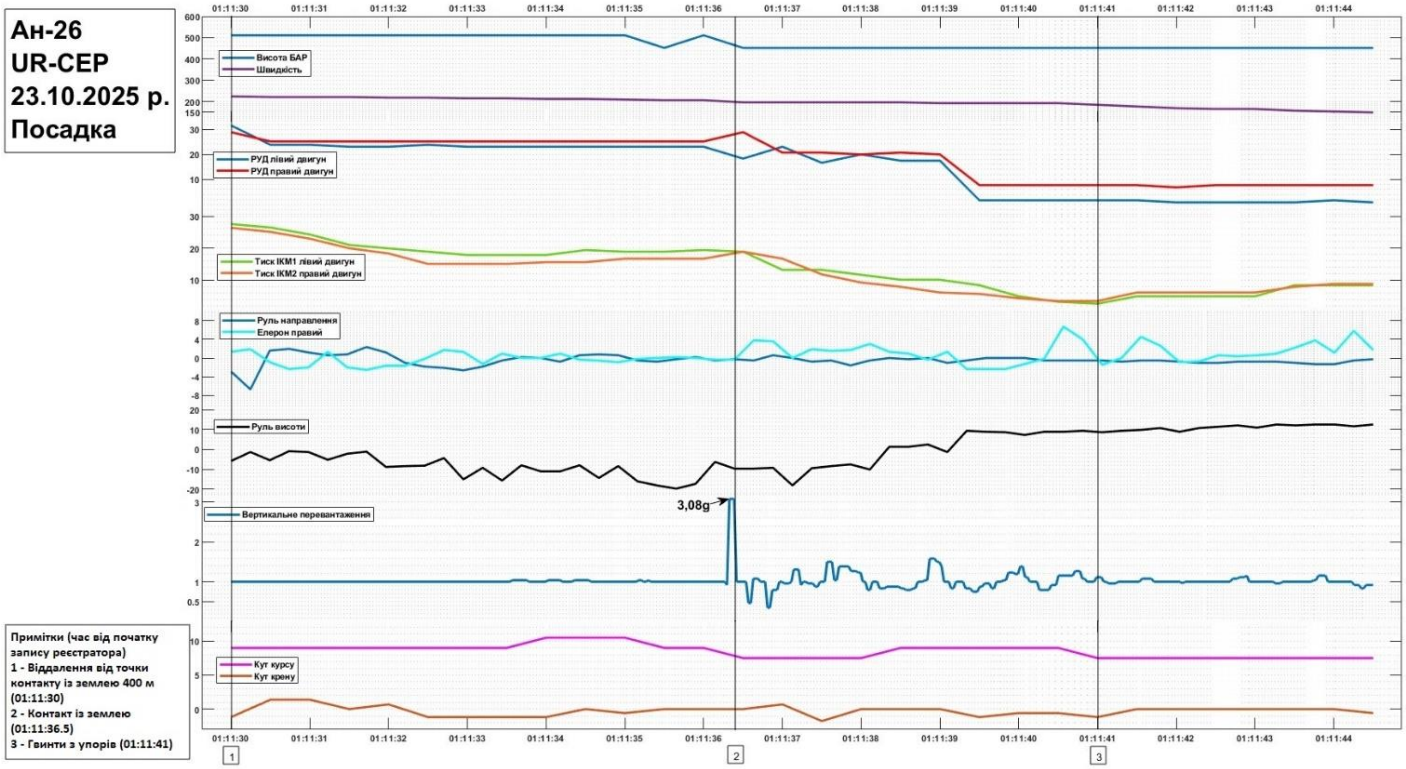

Figure 8 – Serious incident parameters line graph

The number of binary signals recorded is 12:

1-EGPW – “Ground Proximity Warning”
2-RGM – Hazardous depressurization
3-SVU – Propeller unfeathering
4-WD12 – Dangerous engine vibration
5-VFLD – Engine fuel pump activation
6-OTD2 – Engine 2 reverse thrust
7-OTD1 – Engine 1 reverse thrust
8-PJ – Aircraft fire
9-OBL – Aircraft icing
10-OAP – Autopilot engaged
11-ZU – Flaps retraction
12-ZW – Flaps extension

The CVR provides:

- recording of crew conversations, ambient cockpit sounds, and data transmission equipment information, synchronized with a time code;
- preservation of recorded information, including in the case of an accident.

The CVR has 4 recording channels:

- three channels from the crew headsets via the aircraft intercom system;
- one channel from a general cockpit microphone.

The storage capacity of the CVR is at least 16 hours.

Further investigation

The NTIB continues the collection and analysis of evidence and information related to the circumstances and causes of the serious incident.

Further investigation will include but no limited by:

- analysis of crew statements and interview protocols;
- review and evaluation of flight crew qualifications, experience, medical condition, and rest periods prior to the flight;
- analysis of aircraft fueling and center of gravity;
- examination and analysis of aircraft airworthiness and maintenance records;
- analysis of flight operations organization;
- review of crew actions during pre-flight preparation and flight execution;
- FDR/CVR data analysis:
  - reconstruction of the approach trajectory;
  - formation of the flight profile during the final phase;
  - analysis of CRM and “sterile cockpit” procedures;
- analysis of risk assessments for operations at Bor aerodrome;
- continued coordination with the SAAU to collect information on the circumstances of the occurrence;
- analysis of the SAAU oversight of the operator;
- final assessment of aircraft damage and restoration of airworthiness measures.

If critical safety issues will be identified during the investigation, the NTIB will immediately notify the responsible authorities and aviation entities to ensure timely and appropriate safety measures are implemented.

List of abbreviations

AAIID	Aviation Accident and Incident Investigation Department of the Ministry of Transport of the Republic of South Sudan;
ADREP	Accident/Incident Data Reporting System;
AIP	Aeronautical Information Publication;
AMM	Aircraft Maintenance Manual;
ATC	Air Traffic Controller;
Chicago Convention	Convention on International Civil Aviation of 1994 year;
CRM	Crew Resource Management;
CVR	Cockpit Voice Recorder;
FDR	Flight Data Recorder;
FPL	Flight Plan;
ICAO	International Civil Aviation Organization;
ICRC	International Committee of the Red Cross;
IFR	Instrument Flight Rules;
METAR	Meteorological Aerodrome Report;
NTIB	National Transport Investigation Bureau;
PIC	Pilot In Command;
PJSC	Private Joint Stock Company;
QNH	Q-code Nautical Height;
RAI	Rules and Procedures for the technical investigation of aviation accidents and incidents in civil aviation, approved by resolution of the Cabinet of Ministers of Ukraine dated 20.05.2022 № 610;
RWY	Runway;
SAAU	State Aviation Administration of Ukraine;
UN	United Nations;
UNHAS	United Nations Humanitarian Air Service;
USOS	Undershoot/Overshoot;
UTC	Universal Time Coordinated;
VFR	Visual Flight Rules;
WFP	World Food Programme.