

Preliminary Report on the Derailment of train number AK 1 (Abuja-Kaduna) with locomotive number CDD5c2 2701, operated by Nigerian Railway Corporation which occurred at Km 49 Kubwa-Asham section, Kagarko Local Government Area, Kaduna State, on 26 August 2025.

Train operator:	Nigerian Railway Corporation
Track operator:	Nigerian Railway Corporation
District:	Abuja Kaduna Train Service (AKTS)
Occurrence category:	Train derailment
Location:	Asham Train Station, Abuja–Kaduna rail line, Coordinate 9°25'04"N, 7°21'36"E
Train number:	AK 1
Service route:	Abuja – Kaduna (AK1)
Type of operations:	Passenger
Departure station:	Idu Station, Abuja
Destination station:	Rigasa Station, Kaduna
Persons on board:	618
Crew on Board:	Driver, assistant driver, conductors/guards, security, service staff
Injuries:	21
Date and Time:	26 August 2025 at 11: 09 h.
Front Locomotive number:	CDD5c2 2701
Rear Locomotive number:	CDD5c1 W0004
Passenger Coaches:	Eight coaches



INTRODUCTION

The Nigerian Safety Investigation Bureau (NSIB) became aware of the occurrence through social media reports on 26 August 2025. Investigators were immediately dispatched and arrived at the accident site the same day. A post-occurrence assessment commenced without delay in accordance with the provisions of the NSIB (Establishment) Act, 2022.

The Bureau is conducting this investigation with the sole objective of advancing transportation safety. It is not the function of the NSIB to apportion blame, assign fault, or determine civil or criminal liability. Accordingly, this report is not intended for use in legal, disciplinary, or other proceedings.

The purpose of this report is to provide details of initial facts, discussions and findings surrounding the occurrence; it includes information gathered from witness statements, the site of the occurrence and inspection of the train.

This report presents the current status of the notification's processing. Its content may still change and does not necessarily bind the conclusions published in the investigation's Final Report.

The investigation is ongoing.

1.0 FACTUAL INFORMATION

1.1 The Event

On 26 August 2025, a passenger train operated by the Nigerian Railway Corporation (NRC) with registration CDD5c2 2701 was scheduled to operate the Abuja–Kaduna service (AK1). The train consisted of eight passenger coaches and two locomotives, one positioned at the front and the other at the rear. AK 1 departed Idu Station, Abuja, at 09:45 h on the northbound service and made a scheduled stop at Kubwa Station at 10:04 h where it picked up more passengers and awaited the arrival of the southbound Kaduna–Abuja train.

At 10:45 h, AK 1 departed Kubwa station with 618 persons including 15 NRC crew members, one medical personnel, eight cleaners and 11 catering staff.

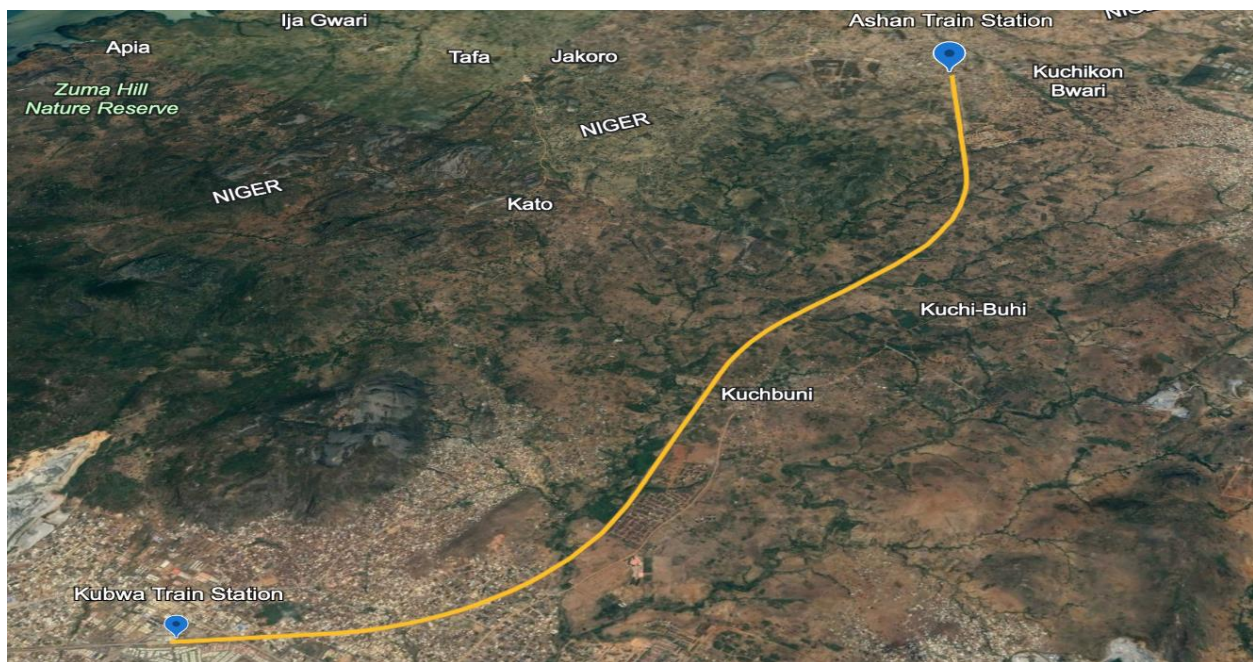


Figure 1: The aerial view showing Kubwa and Asham Train Station

Train derailment at Km 49 Kuwa-Asham section

According to the train driver, prior to arrival at Asham Station, the shunter authorized passage through Line One, at which point the train's speed was reduced to approximately 40 km/h. As the forward locomotive and adjoining two coaches moved past the switch point, abnormal vibrations were felt. The train driver then applied the brakes firmly, after which a loud noise was heard.

At approximately 11:09 h, the train derailed with the forward locomotive and two adjoining coaches overturned, the last coach and the rear locomotive remained on the track. The derailment caused significant damage to the track infrastructure, including rails, sleepers, and the switching mechanism.



Figure 2: The Accident site view from the plan

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**Figure 3:** The side view from the Accident site

The NRC emergency team, stationed military personnel, onboard security personnel, Federal Ministry of Health, NEMA and other security agencies, safely evacuated all passengers and secured the site. The remaining passengers were evacuated to Kubwa and Idu train stations.

Official records confirmed 21 passengers sustained minor to major injuries, some passengers were evacuated without recourse to local health facilities. The injured received first aid treatment and were subsequently transported to medical facilities for further examination. No fatalities were recorded.

1.2 Personnel information

1.2.1 Main driver

Certificate of Competency:	Valid till 4 September 2025
Duties:	Driver's duties
Station:	Abuja Kaduna Train Service Idu
Endorsement:	Standard Gauge main line duty

1.2.2 Co-driver

Certificate of Competency:	Valid till 2 December 2025
Duties:	Driver's duties
Station:	Abuja Kaduna Train Service Idu
Endorsement:	Standard Gauge main line duty

1.2.3 Rear driver

Certificate of Competency:	Valid till 27 October 2025
Duties:	Driver's duties
Station:	Abuja Kaduna Train Service Idu
Endorsement:	Standard Gauge main line duty

1.2.4 Main guard

Certificate of Competency:	Valid till 14 May 2025
Duties:	Guards duties
Station:	Abuja Kaduna Train Service Idu
Endorsement:	Head guard

1.2.5 Shunter

Certificate of Competency:	Valid till 19 June 2026
Duties:	Shunter's duties
Station:	Abuja Kaduna Train Service Asham
Endorsement:	Assistant yard supervisor

1.3 Train information

1.3.1 Front Locomotive information:

Main technical features of the PASSENGER LOCOMOTIVE

The passenger locomotive operates in single or double-heading mode, using an AC/DC power transmission system with microcomputer control. It features truss-type car body with driver's cabs at both ends, two co-axle bogies, and wheel-to-hollow shaft traction motor suspension. The locomotive is equipped with JZ-7G airbrake, end power supply (normal and standby), and automatic cooling fan regulation. It weighs about 138 t,

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measures 22,050 mm in length, and has a 6,000 L fuel tank, plus capacities for grease, water, and sand.

Engine information

S/N	ITEMS	CONTENT
1	Manufacturer	Caterpillar, China
2	Model	12V280ZJ Four stroke, direct injection combustion chambers, exhaust gas turbocharged, pressured air intermediate cooling.
3	Number of cylinder and arrangement type	12 cylinders, V- shaped arrangement of 50-degree angle
4	Maximum service output power	2760 Kw
5	Cylinder diameter	280 mm
6	Piston stroke	285 mm
7	Rated speed	1000 r/min
8	Maximum working speed	560 r/min
9	Crankshaft rotation direction	Clockwise (towards the output end)
10	Starting method	Motor starter
11	Diesel engine dimensions (Length x width x height)	3957.5 mm x 1725 mm x 2895 mm

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**Figure 4:** The Passenger Locomotive**1.3.2 Rear Locomotive information:****Main technical features of the Diesel Multiple Unit (DMU)**

The DMU uses a push-pull traction mode with AC/DC power transmission, four DC traction motors, and microcomputer control. It features truss-type car body with driver's cab at the front, A1A axle bogies, and wheel-to-hollow shaft traction motor suspension. The system includes JZ-7G airbrake, first-order field weakening for traction motors, and automatic fan speed regulation for cooling. It weighs about 126 t, measures 20,990 mm in length, and has a 5,500 L fuel tank plus grease, water, and sand capacities.

Engine information

S/N	ITEMS	CONTENT
1	Manufacturer	Caterpillar, China
2	Model	12V280ZJ Four stroke, direct injection combustion chambers, exhaust gas turbocharged, pressured air intermediate cooling.

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3	Number of cylinder and arrangement type	12 cylinders, V- shaped arrangement of 50 degree-angle
4	Maximum service output power	2760 Kw
5	Cylinder diameter	280 mm
6	Piston stroke	285 mm
7	Rated speed	1000 r/min
8	Maximum working speed	400 r/min
9	Crankshaft rotation direction	Clockwise (towards the output end)
10	Starting method	Motor starter
11	Diesel engine dimensions (Length x width x height)	3957.5 mm x 1725 mm x 2895 mm



Figure 5: The Diesel Multiple Unit (DMU)

The rear locomotive was not configured as a pusher; it was only used to supply electricity to the coaches.

1.3.3 Coaches information

The AK 1 consist of five 88 seater economy class coaches, two 56 and 53-seater business class coach, and one 24 seater executive class coach with the following classification:

The coach is equipped with a Passenger Information System, a video system, an axle temperature alarm system, an anti-skid system, and a fire alarm system. The saloon is equipped with a luggage rack and a hidden source light belt. The business types are furnished with bar area. The window consists of a movable window and fixed window. All the coaches have 2 air conditioning units. The coaches weighs 56.4 t each. The total weight and length of the train AK 1 are 705.5 t and 68.54 m respectively.

1.4 Damage to Rolling stock and track material

Shortly after passing the track switch at Asham Station, the train derailed, resulting in the following:

1. The forward locomotive (CDD5c2 2701) and two adjoining coaches (SC 0002T and SC 0004T) derailed and overturned
2. Five coaches (SC 0006T, SC 0008T, SC 00010T, E 0002S, and EB 0002S) derailed and remained standing
3. The switch and turnout mechanism (point clip) broke
4. Coach SC 0008T, which derailed while standing, sustained damage to the battery box and brake disk.
5. Coach SC 0002T, which overturned, sustained damage to the coupler.
6. The locomotive, which also overturned, sustained damage to the tank, traction motor cover, and dampers.
7. On Line 1, a total of 300 concrete sleepers and 1,200 fasteners were damaged.
8. On Line 2, 140 concrete sleepers and 560 fasteners were damaged.

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9. At the point and crossing, 165 crossing concrete sleepers, together with various fasteners, bolts, and nuts, were damaged, along with the edge of the switch rail and two signal lights.

The rear locomotive (CDD5c1 W0004) and the last coach (SE00 2S) remained on the rail track.



Figure 4: The overturned forward Locomotive

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Figure 5: The overturned coaches.



Figure 6: The point at which the Train derailed

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Figure 7: Damaged railway track, sleepers and displaced ballast after the Accident



Figure 8: The overturned coach laying across the railway track after the Accident

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Figure 9: The change point at Asham Station



Figure 10: Broken point clip

1.5 Train event Recorders:

The train is not fitted with an On-train Data Recorder (OTDR) or any other recorder.

1.6 Nigerian Railway Corporation (NRC)

The Nigerian Railway System pioneered the rapid opening up of the geographical area. Nigerian Railway Corporation is 112 years old, and it runs a unilaterally designed track system of 1067mm cape gauge. Only 30km of its track distribution is in double track and that is within Lagos area. Nigerian Railway System commenced rail business activities with the construction of the first rail line from Lagos to Ibadan (193 km) between 1898 and 1901. By 1964 when the construction of 640 km kano – Maiduguri rail line, then known as Bornu extension, was completed, the present core of the railway network had been put in place. Its services include Passengers service, Freight services, Special train services & tourism.

The Abuja – Kaduna rail line is one of the first standard gauge railway modernisation projects (SGRMP) undertaken in Nigeria.

Abuja – Kaduna is a 186 km line with standard gauge line from Idu, Abuja to Rigasa in Kaduna. It has nine stations and features both passengers and cargo trains. The standard gauge line connects federal capital city Abuja with commercial city of Kaduna enabling faster movement of goods and people between the two cities.

The construction of Abuja–Kaduna rail line started in February 2011 and was completed in December 2014. The line was inaugurated for commercial services in July 2016.

1.7 Additional information

The following were found after the occurrence;

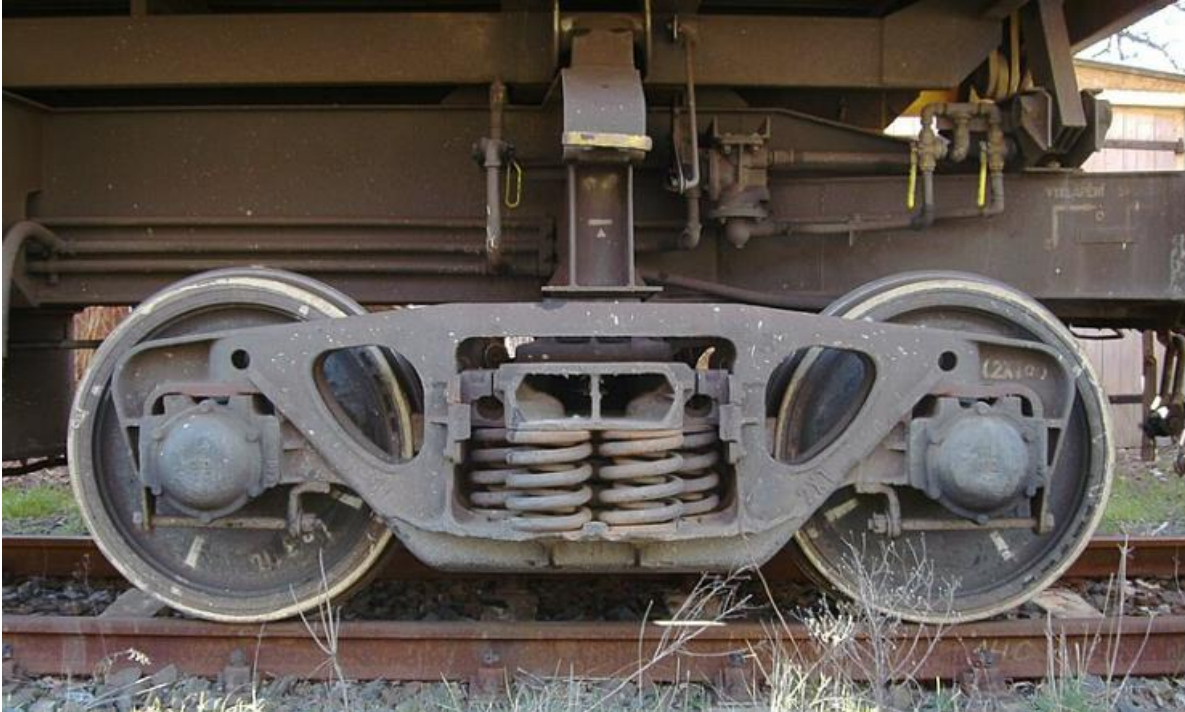
- The occurrence was the second derailment at Asham Station within 13 months.
- Some sleepers at Asham Station that had been damaged in the previous occurrence were only patched.
- Some instruments remained deferred and unserviceable, such as Closed-Circuit Television (CCTV) cameras and clocks.
- The point clip was broken at the time of the occurrence.
- NRC personnel had only initial training and no formal refresher training.
- Operational and maintenance equipment, including spare Operational Equipment Manufacturer (OEM) parts, were not readily accessible.

1.7.1 Train Bogies

Train bogies are the undercarriage assemblies that support the weight of a train and ensure its proper functioning during travel. It consists of a frame that houses two or more wheelsets, which are connected through a suspension system that allows movement, particularly in curves. Bogies are essential for reducing the forces on the track, improving the train's stability, and enabling a smooth ride for passengers or freight.

The primary purpose of a train bogie is to support and stabilise the vehicle while ensuring it remains connected to the tracks.

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**Figure 11: Train Bogies**

1.7.2 Track switch:

Mechanically trains change direction at switches also called points, which have a moveable piece of rail to direct the train in either direction.

These Moveable rails called, blades steer the train wheels to one or another direction. Points which lie between the running rails and are slightly narrower in gauge.

It has the ability to smoothly divert and guide a moving train from one track to another, making railroading possible.

A switch creates two tracks: The main track and a side track, turning either left or right.

When the switch points are moved, a gap is created alongside one of the running rails. This gap permits the wheel of the locomotive to go straight through the switch on the main track or into the turnout.

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Asham station has northern and southern switch point, and the track change at the station is manually operated for now, as the electrical switch was unserviceable as at the time of occurrence.

For manual changes, the normal procedure is the shunter/pilot man works with the train schedule to switch to desired track manually. After the switch, the pilot man raises a green or red flag for the train driver. A raised red flag by the pilot man indicates that the driver should stop the train due change point or any other challenge ahead.

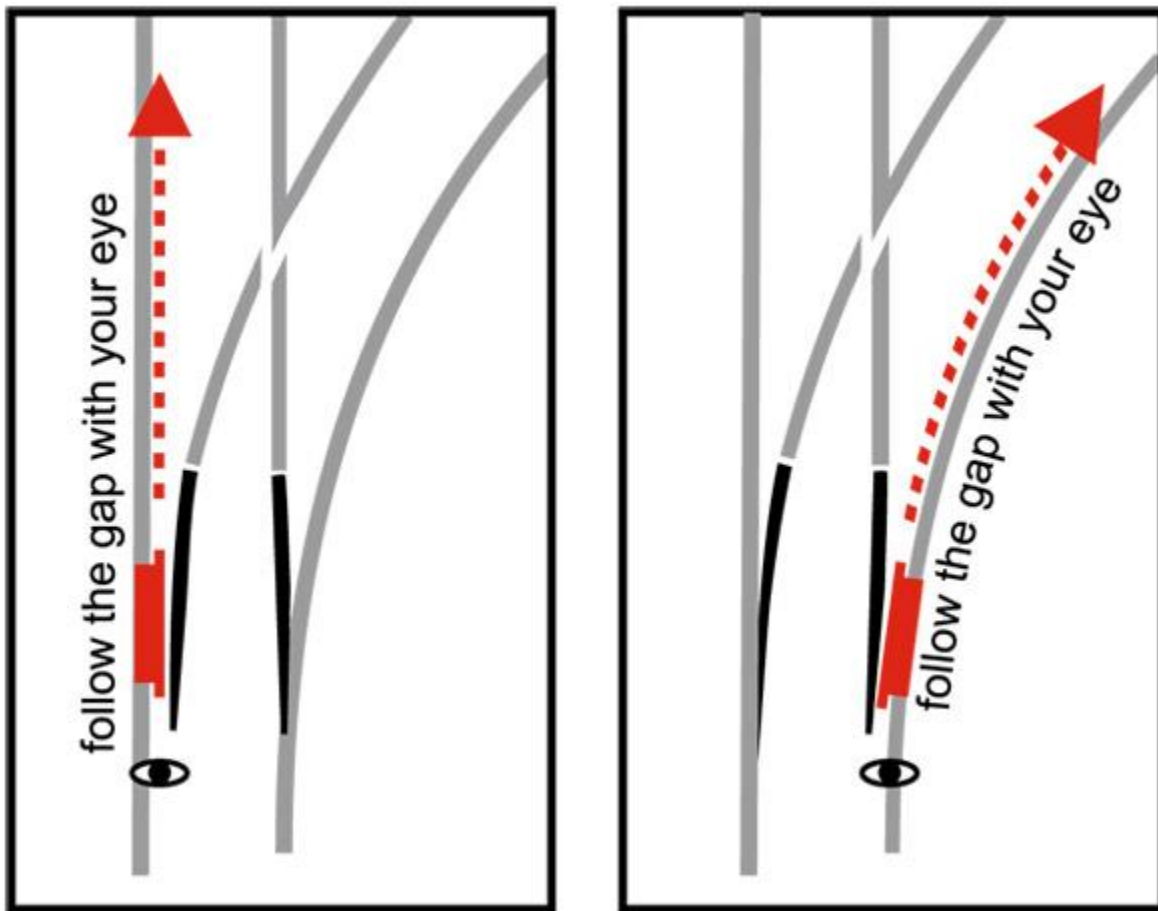
As the train approaches the stations, it is procedural for the driver to reduce its speed to less than 40km/hr, look out to ensure the rails/line, is correct and observe the colour of raised flag. A raised green flag by the pilot indicate that the driver should proceed on the scheduled track.

How to read switch points;

Stand facing the switch points and look for the gap between the one point and its running rail.

Run your eye along that rail and follow it through the switch; this is the way the wheels will go.

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Trains don't know which track to choose at change point. It is the task of the ground staff to set the switches according to destination or line/track availability. It can be changed manually by winding the switch or electronically.

2.0 INITIAL FINDINGS

1. The train drivers were qualified to operate the train.
2. The train was operated by the Nigerian Railway Corporation (NRC).
3. The NRC also managed the track.
4. The service was part of the Abuja–Kaduna Train Service (AKTS).
5. The train consisted of eight passenger coaches and two locomotives, one positioned at the front and the other at the rear.
6. The train departed Idu Station, Abuja, at 09:45 h on a scheduled northbound service and made a scheduled stop at Kubwa Station at 10:04 h to pick up additional passengers.
7. At 10:45 h, the train departed Kubwa Station for Asham Station en route to Rigasa Station.
8. The train derailed shortly after passing the track switch point at Asham Station.
9. The forward locomotive and seven adjoining coaches derailed.
10. The occurrence was the second derailment at Asham Station within 13 months.
11. Some sleepers at Asham Station that had been damaged in the previous occurrence were only patched.
12. The Asham Station automatic crossing point switch mechanism was found unserviceable.
13. The switched point was manually operated and locked with the point clip
14. The point clip was broken.
15. NRC personnel had only initial training and no formal refresher training.
16. Operational and maintenance equipment, including spare OEM parts, were not readily accessible.
17. Some instruments remained deferred and unserviceable, such as CCTV cameras and clocks.

3.0 IMMEDIATE SAFETY RECOMMENDATION

3.1 Safety Recommendation 2025-001

The Nigerian Railway Corporation should ensure that all sleepers affected by derailments are replaced to guarantee track stability and prevent further derailments.

3.2 Safety Recommendation R-2025-002

The Nigerian Railway Corporation should consider replacing all point switches at Asham Station and along the Abuja–Kaduna route with Original Equipment Manufacturer (OEM) parts to ensure reliability and safety in switch operations, thereby reducing the risk of accidents.

3.3 Safety Recommendation R-2025-003

The Nigerian Railway Corporation should consider addressing all areas where cautionary advisories are issued to train drivers, in order to enhance operational safety and minimize the risk of accidents.

3.4 Safety Recommendation R-2025-004

The Nigerian Railway Corporation should provide formal refresher training for NRC personnel to ensure staff remain up to date with safety procedures and operational best practices.

3.5 Safety Recommendation R-2025-005

The Nigerian Railway Corporation should restore all defective equipment such as communication equipment, Closed-Circuit Television cameras, clocks, and other critical instruments, to Original Equipment Manufacturer standards, as they are vital for effective monitoring, safety, and operational efficiency.

Next Steps

- Technical inspection of the turnout/switch mechanism at Asham Station
- Examination of track alignment and infrastructure condition
- Inspection of locomotives and derailed coaches (brakes, wheels, bogies)
- Review of crew statements (driver, assistant driver, conductors, guards)
- Analysis of train operation records (speed logs, signal records, communications)
- Passenger and eyewitness accounts to be collected and reviewed
- Further analysis of the broken point clip