LIMITED OCCURRENCE INVESTIGATION REPORT – FINAL

Reference Number	CA18/3/2/1495								
Classification	Serious Incident		**Date**	12 August 2025		**Time**	0915Z		
Type of Operation	Commercial (ZS-ZWX Part 121 and ZS-ALL Part 121)								
Location									
Place of Departure	ZS-ZWX: Cape Town International Airport (FACT), Western Cape Province ZS-ALL: Kruger Mpumalanga International Airport (FAKN), Mpumalanga Province		Place of Intended Landing		ZS-ZWX: Kruger Mpumalanga International Airport (FAKN), Mpumalanga Province ZS-ALL: O.R. Tambo International Airport (FAOR), Gauteng Province				
Place of Occurrence	Runway 05 at Kruger Mpumalanga International Airport (FAKN), Mpumalanga Province								
GPS Co-ordinates	Latitude	S25°23'.49"	Longitude	E31°5'.96"	Elevation	2 829 feet			
Aircraft Information									
Registration	ZS-ZWX and ZS-ALL								
Make; Model; S/N	ZS-ZWX: Boeing; 737-800 (Serial Number: 39877)								
Make; Model; S/N	ZS-ALL: Embraer; ERJ-135 (Serial Number: 538)								
Damage to Aircraft	None		Total Aircraft Hours		ZS-ZWX: 19 172.19 ZS-ALL: 43 404.18				
Pilot-in-command									
Licence Type	ZS-ZWX: Airline Transport Pilot Licence (ATPL)		Gender	Male	Age	43			
Licence Type	ZS-ALL: Airline Transport Pilot Licence (ATPL)		Gender	Male	Age	35			
Licence Valid	ZS-ZWX: Yes	Total Hours	10 874.9	Total Hours on Type	4 277				
Licence Valid	ZS-ALL: Yes	Total Hours	6 018.8	Total Hours on Type	1 549.9				
Total Hours Past 30 Days	ZS-ZWX: 49		Total Hours on Type Past 90 Days	177.5					
Total Hours Past 30 Days	ZS-ALL: 36		Total Hours on Type Past 90 Days	213.8					
People On-board	ZS-ZWX: 2 + 2 + 179	**Injuries**	0	**Fatalities**	0	**Other (on ground)**	0		
People On-board	ZS-ALL: 2 + 2 + 37	**Injuries**	0	**Fatalities**	0	**Other (on ground)**	0		
What Happened									
On Tuesday morning, 12 August 2025, a Boeing 737-800 aircraft with registration ZS-ZWX and operating as SFR670 took off on a scheduled commercial flight from Cape Town International Airport									

(FACT) in Western Cape province with the intention to land at Kruger Mpumalanga International Airport (FAKN) in Mpumalanga province. Meanwhile, an Embraer ERJ-135 aircraft with registration ZS-ALL. Visual meteorological conditions (VMC) by day prevailed at the time of the flights which were conducted under the provisions of Part 121 of the Civil Aviation Regulations (CAR) 2011 as amended.

The air traffic control officer (ATCO) who was on duty at FAKN tower stated that he directed a visual flight rules (VFR) traffic, a Piper Cherokee PA-32 aircraft, to taxi to Runway 05 holding point and to hold after the pilot had confirmed that he would be able to execute an early left turn after rotation. At the same time the ATCO directed ZS-ALL to line up behind the Piper Cherokee PA-32 aircraft on Runway 05 abeam the precision approach path indicator (PAPIS) whilst waiting for ZS-ALO (LNK829D) that had landed on Runway 05 to exit the runway. *During the interview, the ATCO informed the investigator-in-charge (IIC) that prioritising VFR traffic was not a normal practise, and that he opted to use the gap he had at the time to expedite traffic*. Around this time, ZS-ZWX reported inbound, approximately 12 nautical miles (nm) (22.2 kilometres [km]) from the threshold of Runway 05. (*The ZS-ALO) had vacated Runway 05 at this stage*). A few minutes later, ZS-ZWX reported 7nm (12.9km) and the Piper Cherokee PA-32 aircraft that was holding in front of ZS-ALL was issued the take-off clearance.

The Piper Cherokee PA-32 pilot commenced with the take-off roll; the aircraft rotated after approximately 200 metres (m) and executed an early left turn. Whilst the Piper Cherokee PA-32 was rolling on the runway, the ZS-ALL crew was asked if they were ready to depart, and they stated that the Piper Cherokee PA-32 had not yet cleared the take-off path. The ATCO maintained that he had the Piper Cherokee PA-32 in sight which had already executed an early left turn and was approaching the hangars of taxiway “Golf” (G). As soon as the ZS-ALL crew reported that they were ready to depart, the ATCO issued them the take-off clearance. Around that time, the crew of ZS-ZWX broadcasted that they were approximately 3nm (5.5km) from the threshold of Runway 05. The ATCO directed them (ZS-ZWX) to continue with the approach and to expect late landing clearance. The approach speed was estimated to be 250 knots (kts). According to the ATCO, at that time, ZS-ALL was still rolling on the runway, travelling at a ground speed of approximately 240 kts; whilst the ZS-ZWX was approaching the threshold of Runway 05 (approximately 100 metres [m] / 400 feet above ground level [AGL]) and fully configured for landing. Meanwhile, the ATCO heard a broadcast from the ZS-ZWX crew stating that they will be executing a go-around (aborting the landing). The ATCO instructed the ZS-ZWX crew to execute a right turn during the go-around. During this time, the ATCO overheard the ZS-ZWX and ZS-ALL crew communicating. The ZS-ZWX later executed a right turn whilst climbing to 8 000 feet. A few minutes later, the ZS-ZWX received vectors from the approach controller and later landed safely on Runway 05. The ZS-ZWX vacated the runway and taxied to the parking bay where the passengers disembarked safely from the aircraft.

The ZS-ALL captain stated that they had parked on the parking bay (apron) at FAKN onboarding passengers. They later started the engines during which the first officer (FO) called the ATCO on frequency 119.2-Megahertz (MHz) to request taxi clearance. The ATCO instructed them to turn around

in the bay and face east, as well as enquired how much time they would need to be ready. The ZS-ALL crew responded that they needed approximately 2 minutes. The ATCO then cleared ZS-ALL to holding-point A for Runway 05. Before reaching holding point A, they spotted a Piper Cherokee PA-32 which was also routing to holding point A. The ZS-ALL crew then stopped next to the heliport.

After a few minutes, the ZS-ALL crew stated that they were directed to continue with taxi and to line up behind the Piper Cherokee PA-32 at holding point A. Once lined up, the ZS-ZWX crew called the tower and advised that they were approaching MASHO (a dimensionless quantity representing the ratio of an aircraft speed to the speed of sound). The ATCO directed ZS-ZWX to continue with the approach. The ATCO then enquired from the Piper Cherokee PA-32 pilot if he was ready to depart, to which he replied “yes”. The ZS-ALL crew asked the ATCO if he was aware they had lined up. The ATCO replied that VFR traffic would execute an early left turn after rotation.

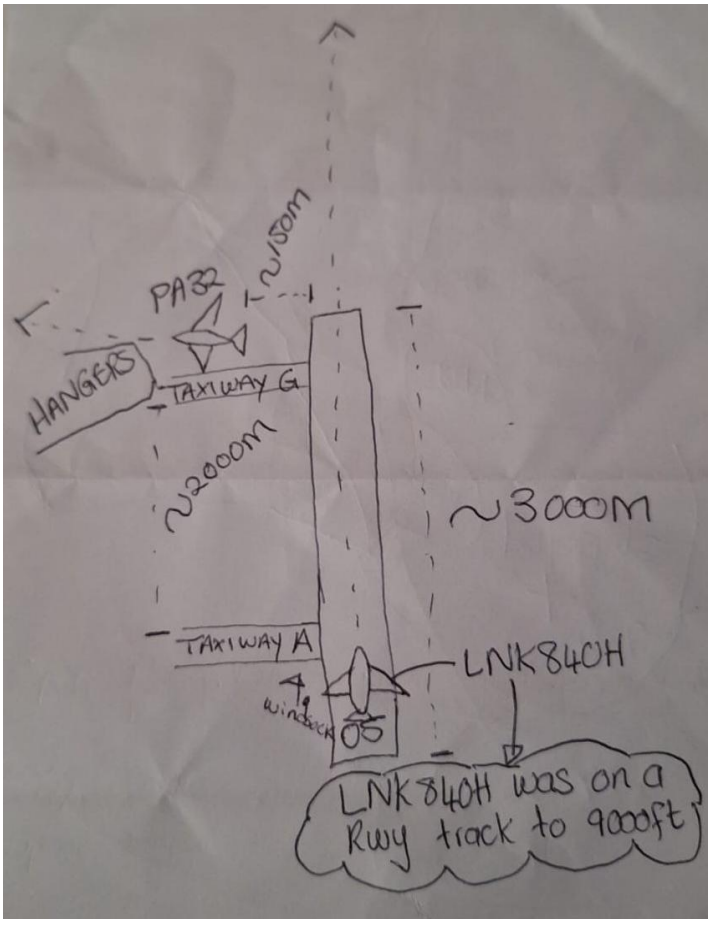

Illustration 1: The position of the Piper Cherokee PA-32 that executed a left turn after rotation and ZS-ALL on the threshold of Runway 05. (Source: ATCO)

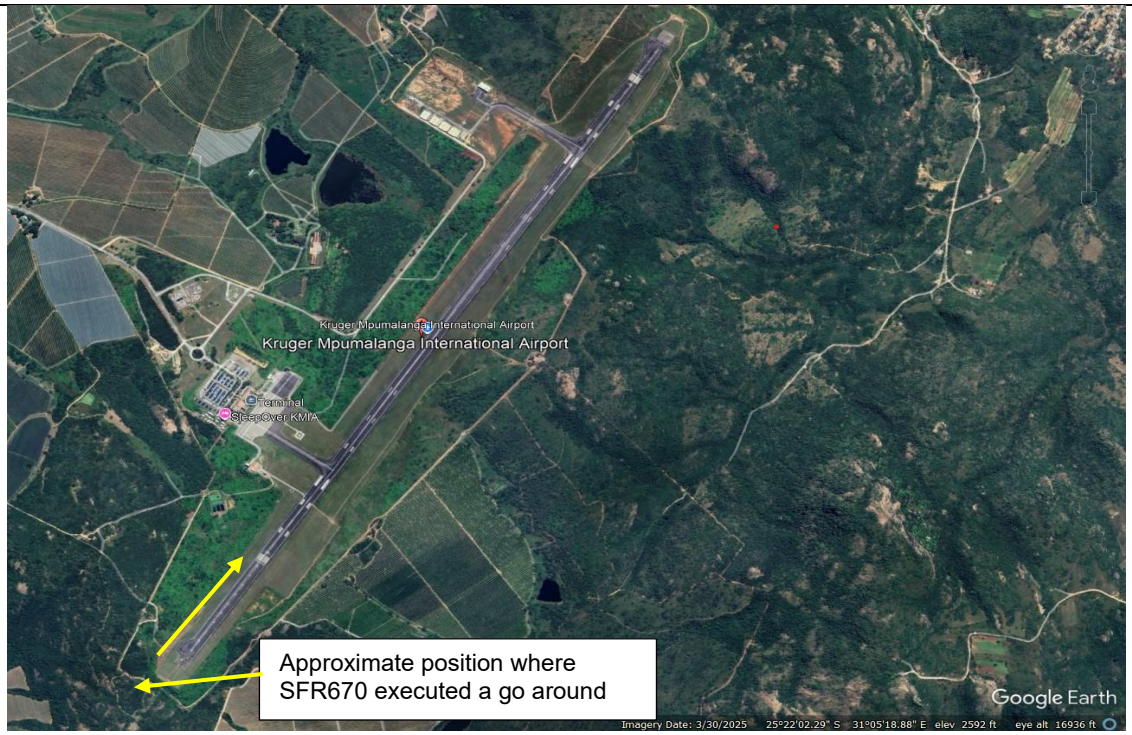

Figure 1: An aerial view of FAKN, the take-off and landing direction around the time of the serious incident. (Source: Google Earth)

Figure 2: A file copy of the ZS-ZWX aircraft. (Source: https://www.flightradar24.com/data/aircraft/zs-zwx)

Boeing 737-800 Description (Source: Boeing 737-800 Flight Manual)

The Boeing 737-800 is a single-aisle, narrow-body commercial jet airliner developed and produced by Boeing Commercial Airplanes. It is powered by two CFM International CFM56-7B high-bypass turbofan engines. Each engine produces a take-off thrust range of 19 500 pounds (lbs) to 27 300 pound force (lbf).

Figure 3: A file copy of the ZS-ALL aircraft. (Source: https://www.airhistory.net/photo/270760/ZS-ALL)

Embraer ERJ-135 Description (Source: Embraer ERJ-135 Flight Manual)

The Embraer ERJ-135 is a twin-engine, medium-range jet designed for regional and commuter airline operations. It is powered by two General Electric CF34-8C5 turbofan engines. Each engine produces 14 500lbf of thrust.

Kruger Mpumalanga International Airport (FAKN)

FAKN is a licensed Category 7 airport in accordance with (IAW) Part 139 of the CAR 2011 as amended. The airport is located 27 kilometres (km) north-east of Mbombela in Mpumalanga province. The licence was reissued by the Regulator (SACAA) on 31 October 2024 with a validity of 1 November 2024 to 31 October 2025. The airport has air traffic control (ATC) services; it also has a single asphalt runway orientated 05/23 that is 3 100 metres (m) long and 45m wide with an elevation of 2 829ft.

Air Traffic Control Officer (ATCO)

Nationality	South African	Gender	Male	Age	35
Licence Valid	Yes	Licence Type	ATS		
Ratings	Aerodrome Control (AD) Approach Control (APP) Instructor Grade 2				

The ATCO's last proficiency checks for aerodrome control (AD) and approach control (APP) were conducted on 28 February 2025. The ATCO's last performance assessment (check) was conducted on 2 March 2023 and he was assessed as competent. The Air Traffic and Navigation System (ATNS) had employed the ATCO at FAKN control tower on 2 December 2024. His medical certificate was issued on 14 November 2021 with an expiry date of 30 November 2025 with no waivers.

Reduced Separation: (Source: CAA Standards & Procedures (ATCIs) Manual dated 8 February 2013)

Standard separation may be reduced when authorised by the Civil Aviation Authority and published in the station standing instruction manual.

1. *In the vicinity of aerodromes, the standard separation minima may be reduced if:*
   a) Adequate separation can be provided by the aerodrome controller when each aircraft is continuously visible to this controller;
   b) Each aircraft is continuously visible to flight crews of the other aircraft concerned and the pilots thereof report that they can maintain their own separation;
   c) In the case of one aircraft following another, the flight crew of the succeeding aircraft reports that the other aircraft is in sight and separation can be maintained.

Reduced Separation: (Source: CAA Standards & Procedures (ATCIs) Manual dated 8 February 2013)

Chapter 5: Aerodrome Traffic Separation:

2. *Separation of Landing Aircraft and Preceding Landing and Departing Aircraft Using the Same Runway.*

2.1 A landing aircraft will not be permitted to cross the beginning of the runway on its final approach until the preceding departing aircraft has crossed the end of the runway-in-use or has started a turn and all preceding landing aircraft are clear of the runway-in-use. To reduce the potential for misunderstanding, the landing clearance shall include the designator of the landing runway; however, during daylight hours and when visual meteorological conditions (VMC) conditions prevail, a landing aircraft may be permitted to cross the beginning of the runway on its final approach when the preceding departing aircraft is seen to be safely airborne.

Post-occurrence Investigation

The investigation was unable to accurately determine the distance between the two aircraft because FAKN is a non-radar airport or a procedural airport. In such airports, Air Traffic Services (ATS) relies on standard operating procedures (SOP's) and radio communication for traffic management, rather than radar surveillance, to maintain separation between aircraft. The information gathered indicated that the ZS-ZWX crew (Boeing 737-800) which was on final approach and fully configured for landing executed a go-around approximately 100m from the threshold of Runway 05. Around the same time, ZS-ALL (Embraer ERJ-135) was still rolling on the same runway. The exact position of ZS-ALL at the time the ZS-ZWX crew initiated a go-around could not be determined in the absence of the ground surface radar.

The investigation revealed that Runway 05 was 3 100m in length and the Boeing 737-800 (ZS-ZWX) required 1 600m to execute a safe landing. The ATCO had both aircraft in sight; however, due to the delayed departure of the Piper Cherokee PA-32 (VFR), the ZS-ALL aircraft remained on the runway when the ZS-ZWX aircraft was 100m from the threshold of Runway 05. As no landing clearance was issued to ZS-ZWX, the crew initiated a go-around to avoid a possible runway incursion.

Findings

1. Personnel Information (ZS-ZWX)

1.1 The ZS-ZWX captain had an Airline Transport Pilot Licence (ATPL) that was initially issued by the Regulator on 18 May 2012. The licence was reissued on 25 February 2025 with an expiry date of 31 March 2026. The captain had flown a total of 10 874.9 hours of which 4 277 hours were on the aircraft type.

1.2 The captain had a Class 1 aviation medical certificate that was issued on 25 July 2025 with an expiry date of 31 July 2026.

1.3 The captain had the aircraft type endorsed on his licence.

1.4 The captain's last proficiency check, provided by the operator on Boeing 737-800, was conducted on 13 February 2025, valid until 31 July 2025; the captain was assessed as competent in all aspects.

1.5 The captain's latest crew resource management (CRM) training, provided by the operator, was conducted on 27 March 2025 and was valid until 31 August 2025.

Aircraft Information (ZS-ZWX)

1.6 The last A Check inspection of the aircraft was certified on 5 July 2025 at 18 946 total airframe hours. The aircraft had accrued 22 619 hours since the said inspection.

1.7 The aircraft had a Certificate of Release to Service (CRS) that was issued on 5 July 2025 with an expiry date of 1 November 2025 or after 120 days in accordance with (IAW) the Boeing maintenance schedule, or whichever comes first.

1.8 The aircraft's Certificate of Registration (C of R) was issued to the present owner on 1 July 2023.

1.9 The aircraft had a Certificate of Airworthiness (C of A) that was initially issued by the Regulator on 7 February 2023 with an expiry date of 5 February 2026.

1.10 The aircraft maintenance organisation (AMO) which conducted the inspection prior to the serious incident flight had an approved AMO Certificate that was issued by the Regulator on 9 October 2024 with an expiry date of 31 October 2025.

1.11 The AMO had A, B, C, W and X ratings endorsed on the certificate.

1.12 The operator had an Air Operating Certificate (AOC) that was issued by the Regulator on 24 April 2025 with an expiry date of 30 April 2026.

2. Personnel Information (ZS-ALL)

2.1 The captain had an ATPL that was initially issued by the Regulator on 3 April 2019. The licence was reissued on 5 February 2025 with an expiry date of 31 January 2026. The captain had flown a total of 6 018.8 hours of which 1 549.9 hours were on the aircraft type.

2.2 The captain had a Class 1 aviation medical certificate that was issued on 22 April 2025 with an expiry date of 30 April 2026. The pilot was required to wear lenses for near-vision correction.

2.3 The captain had the aircraft type endorsed on his licence.

2.4 The captain's last proficiency check, provided by the operator on the Embraer ERJ-135 aircraft, was on 9 July 2025, valid until 31 January 2026; the captain was assessed as competent in all aspects.

2.5 The captain's latest CRM training was provided by the operator on 9 July 2025 with an expiry date of 31 July 2026.

Aircraft Information (ZS-ALL)

2.6 The last inspection of the aircraft was completed and certified on 21 July 2025 at 43 297.40 airframe hours. The aircraft had accrued 106.78 hours since the said inspection.

2.7 The aircraft had a CRS that was issued on 21 July 2025 with an expiry date of 6 January 2027 or at 43 797.40 airframe hours, whichever comes first.

2.8 The aircraft's C of R was issued to the present owner on 7 September 2017.

2.9 The aircraft had the C of A that was issued by the Regulator on 6 December 2024 with an expiry date of 31 December 2025.

2.10 The AMO which conducted the inspection of the aircraft prior to the serious incident had an approved AMO Certificate that was issued by the Regulator on 30 April 2025 with an expiry date of 30 April 2026.

2.11 The AMO had A, B, C, W and X ratings endorsed on the certificate.

2.12 The operator had an AOC which was issued by the Regulator on 21 April 2025 with an expiry date of 30 April 2026. The aircraft (ZS-ALL) was duly authorised to operate under the AOC.

Probable Cause

The ATCO cleared slow VFR traffic ahead of departing scheduled traffic on Runway 05; this resulted in reduced separation with the landing traffic which, in turn, initiated a go-around to avoid a runway incursion.

Contributing Factors

None.

Safety Message

None.

Safety Recommendation

None.

About this Report

The decision to conduct a limited investigation is based on factors including whether the cause is known and the evidence supporting the cause is clear, the level of safety benefit likely to be obtained from an investigation, and that will determine the scope of an investigation. For this occurrence, a limited investigation has been conducted, and the Accident and Incident Investigations Division (AIID) has relied on the information submitted by the affected person/s and organisation/s to compile this limited report. The report has been compiled using information supplied in the initial notification, as well as from follow-up desktop inquiries to bring awareness of potential safety issues to the industry in respect of this occurrence, as well as possible safety action/s that the industry might want to consider in preventing a recurrence of a similar occurrence.

All times given in this report are Co-ordinated Universal Time (UTC) and will be denoted by (Z). South African Standard Time is UTC plus 2 hours.
Purpose
In terms of Regulation 12.03.1 of the Civil Aviation Regulations (CAR) 2011 and ICAO Annex 13, this report was compiled in the interest of the promotion of aviation safety and the reduction of the risk of aviation accidents or incidents and not apportion blame or liability.
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This report is issued by:

Accident and Incident Investigations Division
South African Civil Aviation Authority
Republic of South Africa