

PRELIMINARY SERIOUS INCIDENT REPORT

Accident and Incident Investigations Division

Serious Incident
- Preliminary Report -
AIID Ref No: CA18/3/2/1368



Figure 1: Piper PA-28R-200, ZS-PTV.



Figure 2: Boeing 737-400, ZS-JRE.

Description:

On Wednesday morning, 25 August 2021 at 0721Z, a Piper PA-28R-200 (Prima 285) aircraft with registration ZS-PTV and a Boeing 737-400 (Safair 142) aircraft with registration ZS-JRE were both approaching East London Aerodrome (FAEL) at about the same time. The FAEL aerodrome control instructed Prima 285 (ZS-PTV) to make a right turn to allow Safair 142 (ZS-JRE) to land after air traffic control (ATC) cleared it for landing on Runway 11 at FAEL; however, the pilot of Prima 285

(ZS-PTV) deviated from ATC's instruction and turned left instead. The deviation from instructions led to loss of separation between the aircraft. Later, Safair 142 (ZS-JRE) landed safely and, thereafter, vacated the runway. Prima 285 (ZS-PTV) conducted one touch-and-go landing, reported safely airborne and, thereafter, routed outbound via Keyser's Beach. No injuries resulted from this serious incident and neither aircraft sustained damage.

Introduction

Reference Number : CA18/3/2/1368
Name of Owner/Operator : 43 Air School
FlySafair
Manufacturer : Piper Aircraft Company
Boeing Aircraft Company
Model : PA-28R-200
B737-400
Nationality : South African
South African
Registration Marks : ZS-PTV
ZS-JRE
Place : East London Aerodrome (FAEL), Eastern Cape Province
Date : 25 August 2021
Time : 0725Z

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 of the Investigation:

*In terms of Regulation 12.03.1 of the Civil Aviation Regulations (CAR) 2011, 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 to apportion blame or liability.***

Any person who has information concerning this accident should contact the AIID on AIIDinbox@caa.co.za.

Investigation Process

The Accident and Incident Investigations Division (AIID) of the SACAA was informed about an aircraft serious incident involving a Piper PA-28R-200 and a Boeing 737-400 which occurred at East London Aerodrome on 25 August 2021. The occurrence was notified to the AIID via the ASQS IQSMS Air Safety Report System on 26 August 2021 at 0904Z via e-mail.

The AIID appointed an investigator-in-charge to conduct a desktop investigation. Notifications were sent to the State of Registry, State of Operator and the South African Civil Aviation Authority. The AIID will lead the investigation and issue the final report.

The information contained in this Preliminary Report is derived from the information gathered during the on-going investigation into the occurrence. Later, an interim report or the final report may contain altered information in case new evidence is found during the on-going investigation that requires changes to the information depicted in this report.

The AIID reports are made available to the public at:

<http://www.caa.co.za/Pages/Accidents%20and%20Incidents/Aircraft-accident-reports.aspx>

Notes:

1. *Whenever the following words are mentioned in this report, they shall mean the following:*
 - *Incident — this investigated serious incident*
 - *Aircraft — the Piper PA-28R-200 and Boeing 737-400 involved in this serious incident*
 - *Investigation — the investigation into the circumstances of this serious incident*
 - *Pilot — the pilots involved in this serious incident*
 - *Report — this serious incident report*

2. *Photos and figures used in this report were taken from different sources and may have been adjusted from the original for the sole purpose of improving clarity of the report. Modifications to images used in this report were limited to cropping, magnification, file compression; or enhancement of colour, brightness, contrast; or addition of text boxes, arrows, or lines.*

Disclaimer:

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ABBREVIATION	DESCRIPTION
°	Degrees
°C	Degrees Celsius
ACAS	Advisory, Conciliation and Arbitration Service
AIID	Accident and Incident Investigations Division
AIRPROX	(Aircraft Proximity) Near Collision
AOC	Air Operating Certificate
ATC	Air Traffic Control
ATO	Aviation Training Organisation
ATPL	Airline Transport Pilot Licence
CAR	Civil Aviation Regulations
C of A	Certificate of Airworthiness
C of R	Certificate of Registration
CVR	Cockpit Voice Recorder
DME	Digital Elevation Model
DVOR	Doppler Very High Frequency Omni Range
FACT	Cape Town International Aerodrome
FAEL	East London Aerodrome
FAPA	Port Alfred Aerodrome
FDR	Flight Data Recorder
FO	First Officer
ft	Feet
GPS	Global Positioning System
hPa	Hecto Pascal
ICAO	International Civil Aviation Organisation
IFR	Instrument Flight Rules
ILS	Instrument Landing System
kts	Knots
m	Metres
MEL	Minimum Equipment List
METAR	Meteorological Routine Aerodrome Report
MHz	Megahertz
MPI	Mandatory Periodic Inspection
OpSpec	Operations Specifications
PAPI	Precision Approach Path Indicator
PIC	Pilot-in-command
QNH	Query Nautical Height (Barometric Pressure Adjusted to Sea Level)
RWY	Runway
SACAA	South African Civil Aviation Authority
SAWS	South African Weather Service
SP	Student Pilot
SPL	Student Pilot Licence
TA	Traffic Avoidance
UTC	Co-ordinated Universal Time
Z	Zulu (Term for Universal Co-ordinated Time - Zero Hours Greenwich)

1. FACTUAL INFORMATION

1.1. History of Flight

- 1.1.1. On Wednesday morning, 25 August 2021, a Boeing 737-400 aircraft with registration ZS-JRE was on a scheduled commercial flight from Cape Town International Aerodrome (FACT) to East London Aerodrome (FAEL). On-board the aircraft were two flight crew, four cabin crew and 158 passengers. The flight was operated under the call sign Safair 142.
- 1.1.2. On the same morning, a Piper PA-28R-200 aircraft with registration ZS-PTV was on a scheduled training flight from Port Alfred Aerodrome (FAPA) to FAEL. A student pilot (SP) was on-board the aircraft conducting a solo navigational flight. The flight was operated under the call sign Prima 285.
- 1.1.3. Prima 285 (ZS-PTV) was in-bound from the north and requested to conduct two touch-and-go landings at FAEL. Air Traffic Control (ATC) at FAEL instructed the pilot to report field in sight, thereafter, to join and report on left downwind for Runway (RWY) 11. Prima 285 (ZS-PTV) was observed turning left downwind for RWY 11, close to the runway centreline. At 07:21:48Z, the pilot doing radio work on-board Safair 142 (ZS-JRE) informed ATC that they were establish on the Instrument Landing System (ILS) for Runway 11, whereupon ATC instructed them to continue with approach. Another aircraft, a Cessna 150F, ZS-EGX, had just taken off from RWY 11 and had not commenced with the turn for right downwind at that time.
- 1.1.4. At 07:22:10Z, Prima 285 (ZS-PTV) was instructed by ATC to turn right and to continue routing north of the aerodrome and to standby for further instructions; this was to keep the aircraft clear from the final approach path.
- 1.1.5. At 07:23:47Z, ATC instructed Prima 285 (ZS-PTV) to turn right and re-establish on the left downwind for Runway 11. However, the pilot of Prima 258 (ZS-PTV) did not read back the ATC instructions correctly; instead of turning right, he turned left towards final approach path of Runway 11.
- 1.1.6. At 07:24:28Z, ATC cleared Safair 142 (ZS-JRE) to land. At 07:25:12Z, Safair 142 (ZS-JRE) enquired from ATC if he was aware of traffic turning base leg for Runway 11 in front of them.



Figure 3: Safair142 and PIU285 at 07:25:08 hours, at which time the vertical separation was around 100ft and a lateral separation of around 0.2nm (370.4m).

- 1.1.7. At 07:25:27Z, ATC instructed the pilot of Prima 285 (ZS-PTV) to turn right and report final approach for Runway 11. At 07:25:35Z, ATC again instructed the pilot of Prima 285 (ZS-PTV) to turn right immediately, this time with a much more forceful tone. However, the pilot continued with the left turn.

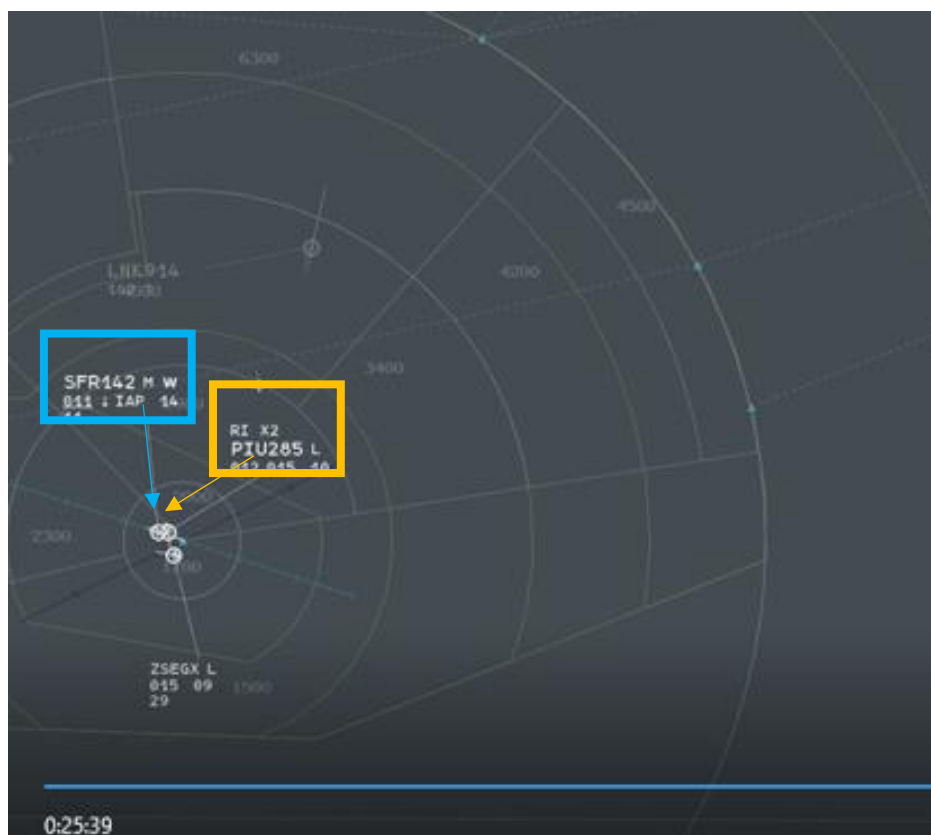


Figure 4: SFR142 and PIU285 at 07:25:39 hours, at which time the vertical separation was around 100ft and no lateral separation.

1.1.8. Safair 142 (ZS-JRE) was advised of the instructions issued to Prima 285 (ZS-PTV) and to continue to land as both aircraft were in sight and Prima 285 (ZS-PTV) was higher. Prima 285 (ZS-PTV) flew overhead Safair 142 (ZS-JRE) and the pilot was instructed to orbit and then to report established on final approach for Runway 11. At this time, Safair 142 (ZS-JRE) had landed and vacated the runway.

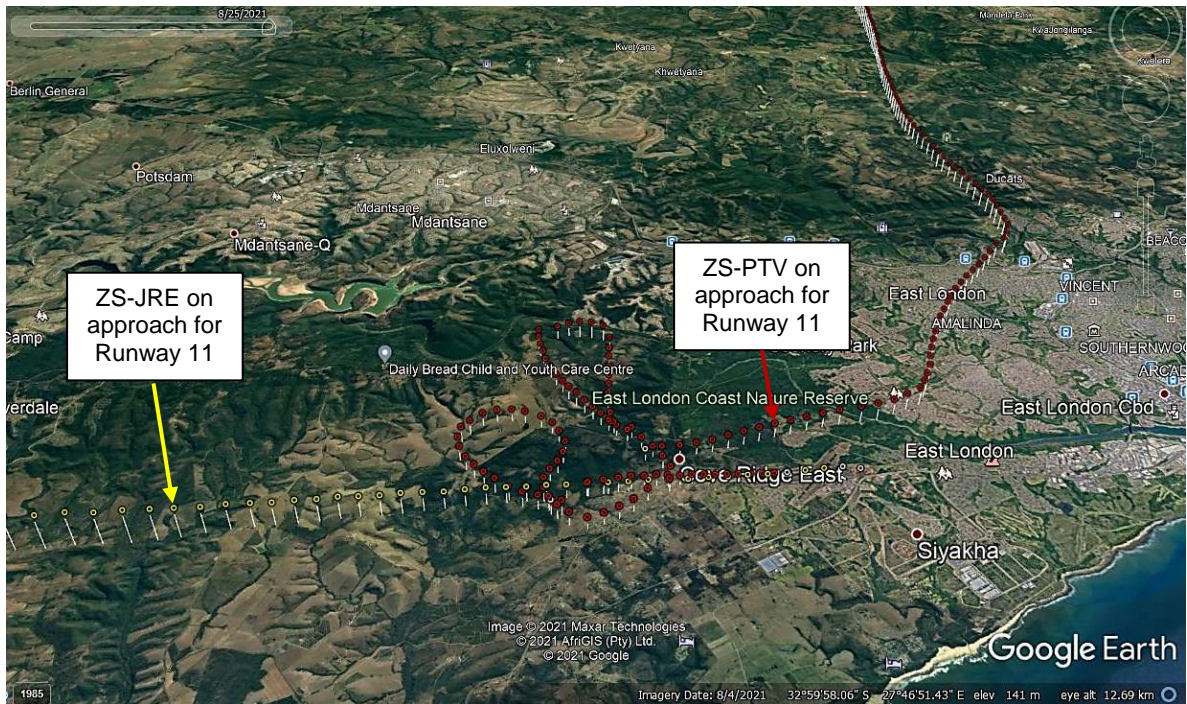


Figure 5: The radar tracks flown by ZS-PTV and ZS-JRE, respectively.

1.1.9. Prima 285 (ZS-PTV) did one touch-and-go, reported safely airborne and, thereafter, routed outbound via Keyser’s Beach.

1.1.10. No injuries resulted from this serious incident and neither of the two aircraft sustained damage.

1.1.11. Following the flight, the pilot-in-command (PIC) of FlySafair (Safair 142) submitted an Near Collision (AIRPROX – air proximity) report.

1.1.12. The serious incident occurred during daylight at FAEL in the Eastern Cape province at Global Positioning System (GPS) co-ordinates determined to be 33°2’13.80” South, 027°48’43.20” East, at an elevation of 435 feet (ft).

1.2. Injuries to Persons

1.2.1. Persons on-board ZS-PTV:

Injuries	Pilot	Crew	Pass.	Other	Total
Fatal	-	-	-	-	-
Serious	-	-	-	-	-
Minor	-	-	-	-	-
None	1	-	-	-	1
Total	1	-	-	-	1

Note: Other means people on ground.

1.2.2. Persons on-board ZS-JRE:

Injuries	Pilot	Crew	Pass.	Other	Total
Fatal	-	-	-	-	-
Serious	-	-	-	-	-
Minor	-	-	-	-	-
None	2	4	158	-	164
Total	2	4	158	-	164

Note: Other means people on ground.

1.3. Damage to Aircraft

1.3.1. Neither aircraft sustained damage.

1.4. Other Damage

1.4.1. None.

1.5. Personnel Information

1.5.1. ZS-PTV (Prima 258) Student Pilot:

Nationality	Ghanaian	Gender	Male	Age	33
Licence Type	Student Pilot Licence (Integrated Course)				
Licence Valid	Yes	Type Endorsed	Yes		
Ratings	Night Rating, Language Proficiency 6				
Medical Class & Expiry Date	Class 2; 8 October 2025				
Restrictions	None				
Previous Incidents	None				

Note: Previous accidents refer to past accidents the pilot was involved in, when relevant to this incident.

Flying Experience:

Total Hours	104
Total Past 24 Hours	2.7
Total Past 7 Days	8
Total Past 90 Days	18.2
Total on Type Past 90 Days	18.2
Total on Type	27.8

1.5.1.1. According to the logbook, the SP did not log any flight hours between 11 October 2019 and 16 July 2021.

1.5.1.2. The SP was familiar with FAEL and had flown in the area previously (he had conducted circuits and touch-and-go exercises) on eight occasions prior to the day of the serious incident. The SP had also performed a touch-and-go exercise at FAEL on 23 August 2021, two days before the serious incident.

1.5.1.3. According to the licence records, the SP has an English language proficiency Level 6: Expert; as well as sufficient ability to read, speak and understand the English language.

1.5.2. **ZS-JRE (Safair 142) Crew:**

Pilot-in-command (PIC):

Nationality	South African	Gender	Male	Age	32
Licence Type	Airline Transport Pilot Licence (ATPL [A])				
Licence Valid	Yes	Type Endorsed	Yes		
Ratings	Night Rating, Instrument Rating, Instructor Grade 2				
Medical Class & Expiry Date	Class 1; 30 June 2022				
Restrictions	None				
Previous Incidents	None				

Note: Previous accidents refer to past accidents the pilot was involved in, when relevant to this incident.

Flying Experience:

Total Hours	6980.6
Total Past 24 Hours	TBD
Total Past 7 Days	TBD
Total Past 90 Days	101.9
Total on Type Past 90 Days	101.9
Total on Type	2875.8

First Officer (FO):

Nationality	South African	Gender	Male	Age	37
Licence Type	Airline Transport Pilot Licence (ATPL (A))				
Licence Valid	Yes	Type Endorsed	Yes		
Ratings	Night Rating, Instrument Rating, Instructor Grade 2				
Medical Class & Expiry Date	Class 1; 30 June 2022				
Restrictions	None				
Previous Incidents	None				

Note: Previous accidents refer to past accidents the pilot was involved in, when relevant to this incident.

Flying Experience:

Total Hours	7394.6
Total Past 24 Hours	4.2
Total Past 7 Days	19.4
Total Past 90 Days	123.7
Total on Type Past 90 Days	121.2
Total on Type	4135.9

1.5.3. FAEL Aerodrome Control:

Nationality	South African	Gender	Male	Age	30
Licence Type	Air Traffic Services				
Licence Issue & Expiry Date	29 November 2017		29 November 2021		
Licence Valid	Yes	Type Endorsed	Yes		
Ratings	Aerodrome/Tower Control				
Medical Class & Expiry Date	Class 3; 30 November 2022				
Restrictions	None				

1.6. Aircraft Information

1.6.1. ZS-PTV Aircraft Information:

Airframe:

Type	PA-28R-200	
Serial Number	28R-7635363	
Manufacturer	Piper Aircraft Company	
Year of Manufacture	1976	
Total Airframe Hours (At Time of Accident)	11032	
Last MPI (Date & Hours)	10 August 2021	11023
Hours Since Last MPI	9	
C of A (Original Date of Issue)	19 December 2008	
C of A Expiry Date	31 December 2021	
C of R (Issue Date) (Present Owner)	7 September 2018	
Type of Fuel Used in the Aircraft	AVGAS	
Previous Incidents	None	

Note: Previous incidents refer to past incidents the pilot was involved in, when relevant to this incident.

Engine:

Manufacturer/Model	LYCOMING / IO-360-C1C
Serial Number	L-10420-51A
Hours Since New	2795 Hours
Hours Since Overhaul	788 Hours

Propeller:

Manufacturer/Model	HARTZELL / HC-C2YK-1BF
Serial Number	CH39346B
Hours Since New	2144 Hours
Hours Since Overhaul	404 Hours

1.6.1.1. The investigation found no technical defects with the airframe or installed systems and components that were recorded in the logbook or defect reports which may have led to this serious incident.

1.6.2. ZS-JRE Aircraft Information:

Airframe:

Type	737-400	
Serial Number	26065	
Manufacturer	Boeing Aircraft Company	
Year of Manufacture	1992	
Total Airframe Hours (At Time of Accident)	64113.05	
Last Phased Inspection (Date & Hours)	13 August 2021	64040.12
Hours Since Last Phased Inspection	72.93	
C of A (Original Date of Issue)	2 October 2014	
C of A Expiry Date	31 October 2021	
C of R (Issue Date) (Present Owner)	12 September 2014	
Type of Fuel Used in the Aircraft	Jet-A1	
Previous Incidents	None	

Note: Previous incidents refer to past incidents the pilot was involved in, when relevant to this incident.

Engine:

	Engine 1	Engine 2
Manufacturer/Model	CFM International, S.A. – CFM56-3C1	
Serial Number	727435	857703
Hours Since New	55486.8	53108.97
Hours Since Overhaul	Modular	Modular

- 1.6.2.1. The investigation found no technical defects with the airframe or installed systems and components that were recorded in the logbook or defect reports which may have led to the serious incident.

Traffic Alert and Collision Avoidance System (TCAS) II System Details:

Manufacturer & Model	ACSS RT-910
Software Version	7.1 change
Part Number	40660101-914
Serial Number	97043047

- 1.6.2.2. The Advisory, Conciliation and Arbitration Service (ACAS) II version 7.1 fitted to ZS-JRE aircraft had the required TCAS II computer, antenna and Mode S Transponder which give both Traffic Avoidance (TA) as well as Resolution Advisory (RA) alerts. The aircraft systems were functional and serviceable, and operated as per design. At 07:25:44, PIU285 aircraft was seen flying over Safair 142 and a TCAS TA “Traffic, Traffic” alert activated on-board Safair 142.

1.7. Meteorological Information

- 1.7.1. The weather information below was obtained from the South African Weather Service (SAWS) website recorded at FAEL weather station on 25 August 2021 at 0700Z: METAR FAEL 250700Z 03004KT 350V060 CAVOK 19/08 Q1020=

Wind Direction	030°	Wind Speed	04kts	Visibility	9999m
Temperature	19°C	Cloud Cover	CAVOK	Cloud Base	None
Dew Point	08°C	QNH	1020hPa		

1.8. Aids to Navigation

1.8.1. Both aircraft were equipped with standard factory-fitted navigational equipment approved by the Regulator (SACAA). There were no recorded defects with these equipment prior to the flight, and no defects were reported during the flight. Both aircraft were under control of FAEL ATC.

1.9. Communication

1.9.1. Both aircraft were equipped with standard communication equipment as per the Minimum Equipment List (MEL) approved by the Regulator. Between 07:21:37Z and 07:32:39Z, ZS-PTV and ZS-JRE were both communicating with ATC ground on frequency 118.3 Megahertz (MHz).

1.9.2. The ATC recordings and radar files were made available for this investigation. Throughout communication between FAEL ATC and both aircraft, there were clear instructions from ATC and correct read back by the FO of Safair 142 (ZS-JRE). However, the pilot of Prima 258 (ZS-PTV) did not read back the ATC instructions correctly at some point during communication.

1.9.3. Both aircraft were fitted with transponders, Prima 285 (ZS-PTV) was issued squawk code 1520; and Safair 142 squawk code 1541.

1.10. Aerodrome Information

1.10.1. The serious incident occurred at FAEL.

Aerodrome Name	East London Aerodrome (FAEL)	
Aerodrome Location	Eastern Cape, South Africa	
Aerodrome Coordinates	S33°2'13.80" E027°48'43.20"	
Aerodrome Status	Licensed	
Aerodrome Elevation	435ft	
Runway Headings	11/29	06/24
Runway Dimensions	1939m x 45m	1585m x 45m
Runway Used	11	
Runway Surface	Asphalt	
Approach Facilities	Runway lights, PAPI, DVOR / DME, ILS	
Tower Frequency	118.3MHz	
Approach Frequency	120.1MHz	

1.11. Flight Recorders

1.11.1. ZS-PTV was not equipped with a flight data recorder (FDR) or a cockpit voice recorder (CVR), nor was it required by regulation to be fitted to the aircraft type.

1.11.2. ZS-JRE was equipped with a flight data recorder (FDR) and cockpit voice recorder (CVR). Neither of these units was downloaded as the aircraft continued with normal scheduled flights after the serious incident.

1.12. Wreckage and Impact Information

1.12.1. Not applicable.

1.13. Medical and Pathological Information

1.13.1. Not applicable.

1.14. Fire

1.14.1. There was no evidence of a pre- or post-impact fire.

1.15. Survival Aspects

1.15.1. Not applicable to this investigation as no injuries were reported.

1.16. Tests and Research

1.16.1. To be discussed in the final report.

1.17. Organisational and Management Information

43 Air School Information:

1.17.1. The ZS-PTV flight was conducted under the provisions of Part 141 of the South African Civil Aviation Regulations 2011 as amended.

1.17.2. The operator was in possession of an Aviation Training Organisation (ATO) certificate which was issued on 21 November 2019 by the SACAA with an expiry date of 30 November 2024. ZS-PTV aircraft was authorised to operate under the ATO and was included in the ATO's Operations Specifications (OpSpec) by the SACAA.

Safair Information:

1.17.3. The ZS-JRE flight was conducted under the provisions of Part 121 of the South African Civil Aviation Regulations 2011 as amended.

1.17.4. The Department of Transport had issued the operator a Class I Air Service Licence with an effective date of 26 March 2014 and a Class II Air Service Licence with an effective date of 17 August 2011 without any alteration or erasure.

1.17.5. The operator was in possession of a CAA-issued Air Operating Certificate (AOC) valid from 21 April 2021 to 30 April 2022. ZS-JRE was authorised to operate under the AOC and was included in the AOC's OpSpec by the SACAA.

1.18. Additional Information

1.18.1. To be discussed in the final report.

1.19. Useful or Effective Investigation Techniques

1.19.1. To be discussed in the final report.

2. FINDINGS

2.1. General

From the available evidence, the following preliminary findings were made with respect to this serious incident. These shall not be read as apportioning blame or liability to any particular organisation or individual.

To serve the objective of this investigation, the following sections are included in the conclusions heading:

- **Findings** — are statements of all significant conditions, events or circumstances in this serious incident. The findings are significant steps in this incident sequence, but they are not always causal or indicate deficiencies.

Pilot of ZS-PTV

2.1.1. The student pilot (SP) was in possession of a Student Pilot Licence (SPL) for an Integrated Course that was issued on 10 October 2020 with an expiry date of 17 October 2021. According to the pilot's logbook, he had flown a total of 104 hours, of which 27.8 hours were on the aircraft type.

2.1.2. The SP was issued a Class 2 aviation medical certificate on 8 October 2020 with an expiry date of 8 October 2025, with no restrictions or limitations.

2.1.3. The SP was appropriately licensed and qualified for the flight in accordance with International Civil Aviation Organisation (ICAO) and the provisions of Part 61 of the South African Civil Aviation Regulations 2011 as amended.

2.1.4. The SP was medically fit with a valid medical certificate to operate the flight in line with the provisions of Part 67 of the South African Civil Aviation Regulations 2011 as amended.

Crew of ZS-JRE

- 2.1.5. The pilot-in-command (PIC) was issued an Air Transport Pilot Licence (ATPL) on 11 March 2021 with his last skills test carried out on 8 January 2021, with an expiry date of 31 January 2022. The PIC had flown a total 6980.6 hours, of which 2875.8 hours were on the aircraft type. The PIC was issued a Class 1 aviation medical certificate on 3 June 2021 with an expiry date of 30 June 2022.
- 2.1.6. The first officer (FO) was issued an ATPL on 23 June 2021 with his last skills test carried out on 20 June 2021, with an expiry date of 30 June 2022. The FO had flown a total of 7394.6 hours, of which 4135.9 hours were on the aircraft type. The FO was issued a Class 1 aviation medical certificate on 17 June 2020 with an expiry date of 30 June 2022.
- 2.1.7. Both the PIC and the FO were appropriately licensed and qualified for the flight in accordance with ICAO and the provisions of Part 61 of the South African Civil Aviation Regulations 2011 as amended.
- 2.1.8. Both the PIC and FO were medically fit with valid medical certificates to operate the aircraft in line with the provisions of Part 67 of the South African Civil Aviation Regulations 2011 as amended.

The Aircraft ZS-PTV

- 2.1.9. The aircraft was originally issued a Certificate of Airworthiness (C of A) on 19 December 2008 with an expiry date of 31 December 2021.
- 2.1.10. The last Mandatory Periodic Inspection (MPI) carried out on the aircraft prior to the serious incident flight was on 10 August 2021 at 11023 airframe hours. The aircraft had accumulated a further 9 airframe hours since the said inspection.
- 2.1.11. The aircraft was certified, equipped and maintained in line with existing regulations and approved maintenance procedures.
- 2.1.12. The aircraft was issued a Certificate of Airworthiness (C of A) and was maintained in line with the regulations.
- 2.1.13. There were no reported damages to the aircraft and the pilot did not sustain any injuries because of this serious incident.
- 2.1.14. There was no evidence of any defect or malfunction in the aircraft that could have contributed to the serious incident.
- 2.1.15. The aircraft was not equipped with an FDR or a CVR; and neither was required by regulation.

The Aircraft ZS-JRE

- 2.1.16. The aircraft was authorised for commercial operation, Standard Part 121, and was originally issued a Certificate of Airworthiness (C of A) on 2 October 2014 with an expiry date of 31 October 2021.

- 2.1.17. The last phased maintenance inspection carried out on the aircraft prior to the serious incident flight was on 13 August 2021 at 64040.12 total airframe hours. The aircraft had accumulated a further 72.93 airframe hours since the said inspection.
- 2.1.18. The aircraft was certified, equipped and maintained in line with existing regulations and approved maintenance procedures.
- 2.1.19. The aircraft was issued a Certificate of Airworthiness (C of A) and was maintained in line with the regulations.
- 2.1.20. There were no reported damages to the aircraft and none of the occupants sustained injuries because of this serious incident.
- 2.1.21. There was no evidence of any defect or malfunction in the aircraft that could have contributed to the serious incident.

Flight Operations ZS-PTV

- 2.1.22. The flight was conducted in line with the procedures in the operator's operations manual.
- 2.1.23. The student pilot carried out normal radio communication with the relevant ATC at FAEL.
- 2.1.24. The student pilot misunderstood ATC's instructions and turned left instead of right during approach, which led to loss of separation and the resultant mid-air near-miss with ZS-JRE.
- 2.1.25. The student pilot had always maintained visual reference of ZS-JRE during incident.
- 2.1.26. The flight was conducted under VFR in daylight with fine weather conditions prevailing. The weather did not play a role in the serious incident.

Flight Operations ZS-JRE

- 2.1.27. The flight was conducted in line with the procedures in the operator's operations manual.
- 2.1.28. The FO carried out normal radio communication with the relevant ATC at FAEL.
- 2.1.29. The crew could see ZS-PTV when they received a TCAS "*Traffic, Traffic*" alert when loss of separation occurred.
- 2.1.30. The flight was conducted under Instrument Flight Rules (IFR) in daylight with fine weather conditions prevailing. The weather did not play a role in this serious incident.
- 2.1.31. There were no reported damages to the aircraft and none of the occupants sustained injuries.

Air Traffic Control

- 2.1.32. The ATC was issued an Air Traffic Service Licence on 29 November 2017 with an expiry date of 29 November 2021. The ATC was issued a Class 3 aviation medical certificate with an expiry date of 31 November 2022.

2.1.33. The ATC was properly licensed, medically fit and correctly rated to provide the service.

3. On-going Investigation

3.1 The AIID investigation is on-going and the investigator/s will be looking into other aspects of this occurrence which may or may not have safety implications.

This report is issued by:

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