FINAL REPORT

of civil aviation safety investigation

CLASSIFICATION

Serious Incident

Operator
Şcoala Superioară de Aviație Civilă (S.S.Av.C.)

Manufacturer
Piper Aircraft, SUA

Aircraft Type
Seneca Piper PA-34-220T

Registration country
Romania

Registration
YR - MDE

Location
South side of Băneasa Bucharest Airport runway, at almost 750 m from threshold 07

Date and time
18.06.2012 / 11:09 LT (08:09 UTC)
AKNOWLEDGEMENT

This REPORT presents data, analysis, conclusions and recommendations on civil aviation safety, of the Civil Aviation Safety Investigation Commission appointed by the General Director of AIAS.


The sole objective of civil aviation safety investigation is preventing the occurrence of accidents and incidents, by effective determination of causes and circumstances that led to this occurrence and establishing the necessary recommendations for civil aviation safety.

Civil aviation safety investigation does not establish guilty, individual or collective responsibilities.

As a consequence, the use of this REPORT for other purposes than preventing the occurrence of civil aviation accidents and incidents might generate misinterpretations.
Aircraft | Piper Seneca PA34 – 220T / YR-MDE  
---|---
Date and time | 18.06.2012 / 11:09 LT (08:09 UTC)  
Operator | Romanian Aviation Academy (RAA.)  
Flight type | School flight  
Persons onboard | Pilot instructor + 2 student pilots  
Pilot | RO/ATPL/xxxxxx/A  
Damages | Tire and main right landing gear completely destroyed; engine no.2 propeller’s blades bended  
Location | South side of Băneasa Bucharest Airport runway, at almost 750 m from threshold 07

1. HISTORY OF OCCURRENCE

On 18.06.2012, a Piper Seneca PA34 – 220T aircraft, registered YR-MDE, was scheduled to perform a training flight on the route: Băneasa Bucharest Airport (LRBS) – Craiova Airport (LRCV) (area) and back, as part of the RAA students training process.

On board the aircraft was a crew consisting of an instructor pilot and two student pilots, one of them occupying the left seat of the cockpit and the other one occupying one of the seats in the aft section of the cabin.

Upon the aircraft arrived in the LRCV area, the crew performed VOR approach procedures and touch-and-go runway laps.

According to the ASR issued by the air traffic controller in Craiova TWR, at the last touch-and-go on runway 09, the tire of the right main landing gear burst, but the aircraft continued to take-off and enrolled on LRCV – LRBS return route.

According to the crew statements, after extending the landing gear for landing on LRBS rwy, the student occupying the seat in the back of the aircraft, noticed „a problem at the main right landing gear wheel” and informed the flight instructor.

The crew informed the BBU TWR (Băneasa Tower) that they have a malfunction on the main right hand landing gear and, as a result of this notification, the intervention forces (The Fire brigade and the Medical Office) have been alerted so as to be prepared to monitor and assist the landing.
The aircraft touched down on runway 07 at 11:09 LT, did run for approximately 500 m and then deviated 90° to the right, leaving the concrete runway across the southern side, into the grassy area. Upon entering the grassy area, the right engine propeller blades hit the cover of a canal used for rainwater evacuation system and runway drainage.

After the engines’ shutdown, the crew left the aircraft safely.

The runway was closed by NOTAM for one hour (08:15-09:15 UTC).

The aircraft was extracted from the grassy area and transported to the platform of RAA.

2. ADDITIONAL INFORMATION

2.1 Crew information

The crew Captain had a RO/ATPL/xxxxxx/A license since December 1993. On 11.11.2011 he was granted the MEP (land) class qualification as Captain pilot with IR (instrumental rules) valid until 01.11.2012.

On 11.04.2012 he was also granted the FI(A) – MEP (land) qualification valid until 02.04.2015, thereby qualifying him as a flight instructor on the aircraft in this class.
2.2 Aircraft information

![PA-34-220T aircraft](image)

Aircraft type: Seneca Piper PA-34-220T  
Registration: YR-MDE  
Manufacturer, type and model: Piper Aircraft, USA  
Aircraft series: 3449197  
Engines number and type: 2 x Teledyne Continental TSIO-360-RB  
Propeller: 2 x Hartzell  
Owner/Operator: RAA.

2.3 Airport information

2.3.1 Craiova International Airport

Craiova International Airport (ICAO code - LRCV, IATA code - CRA) is located in the eastern part of Craiova city, with a 191-meter elevation. It has a 2500 m long and 45 m wide runway with the magnetic headings 090/270.

According to the ASR (Air Safety Report) issued by Craiova Airport, "on 18.06.2018, at 06:58 UTC, the YR-MDE aircraft belonging to RAA, in the take-off sequence from Craiova Airport’s runaway experienced an explosion/burst of the right main landing gear’s tire. The pilot did not announce the incident at the moment of its occurrence."

According to the incident’s description, Craiova TWR informed the ground staff of the possibility of a wheel failure at YR-MDE aircraft during take-off. Following the runway checking, rubber scraps were found in the middle of it, at approximately 22 m south from the runway axis (fig. 3).
2.3.2 “Aurel Vlaicu” Bucharest – Băneasa International Airport (LRBS)

“Aurel Vlaicu” Bucharest – Băneasa International Airport (ICAO code - LRBS, IATA code - BBU) is located in the north area of Bucharest, with a 90-meter elevation. It has a 3200 m long and 60 m wide runway, with the magnetic headings 070/250.

According to the Inspection Summary Sheet and to the ASR issued by LRBS, at 10:50 LT the airport’s deputy commander was informed by BBU TWR that the Piper aircraft registered YR-MDE performing a training flight from Craiova, claimed a fault at the right hand main landing gear. Following this notification, the intervention forces (Fire brigade and the Medical Office) were alerted, assumed intervention positions and waited for the aircraft to land.

The aircraft landed at 11:09 LT (08:09 UTC). After runway touchdown, the aircraft performed a landing run of about 500 m and turned to the right into the grassy area off the runway, south side. After shutting down the engines, the crew left the aircraft safely, without requiring the intervention of the medical staff.

Following this occurrence, the aircraft’s main right landing gear and the number 2 engine propeller’s blades were destroyed.
Fig. 4 Right hand main landing gear

Fig. 5 Right engine propeller blades
The runway was closed by NOTAM for one hour (08:15 – 09:15 UTC), while the aircraft was serviced and towed to the RAA platform.

![YR-MDE aircraft during towing](image)

The runway has been inspected for potential FOD (Foreign Object Damage), cleaned and vacuumed.

2.4 Meteorological information

LRCV

According to the METAR issued for LRCV, at the time when the tire was broken (06:58 UTC), the weather conditions were as follows:

- Wind direction: 050°;
- Wind intensity: 4KT (2 m/s);
- Visibility: 6000 m;
- Cloud coverage: SKT (3-5/8): 400 FT (121 m);
  BKN (4-6/8): 600 FT (182 m);
- Temperature: 18° C;
- Atmospheric pressure: 1014 hPa

SA 18/06/2014 07:00-> METAR LRCV 180700Z 05004KT 6000 SCT004 BKN006 18/16 Q1014=
According to the METAR issued for LRBS, at the time of the serious incident’s occurrence (08:09 UTC), the weather conditions were as follows:

- Wind direction: 080° (variable 040° - 130°);
- Wind intensity: 4KT (2 m/s);
- CAVOK;
- Visibility: > 10 km;
- Cloud coverage: > 1500 m and without CB (Cumulonimbus) clouds;
- Temperature: 32° C;
- Atmospheric pressure: 1015 hPa;
- NOSIG: there are no significant changes in weather conditions over the next 2 hours;

3. ANALYSIS

In the instructor-pilot statement it is mentioned that at Craiova airport have been performed VOR procedures and runway laps and "...during touch-and-go maneuvers, the aircraft has deviated few times from the runway axis due to side wind ......... In the lateral area of the runway on heading 09, the joints between the concrete slabs of the runway are full of herbs or wild vegetation that makes the runway run to be accompanied by vibrations. These vibrations are intense enough to prevent you in noticing a possible problem to one of the tires."

The chart below shows the wind components from POH (Pilot’s Operational Handbook) PA-34220T, SENECA V, Section 5 Performance.
By analyzing fig.7, it can be noticed that at a take-off on a runway oriented on heading 090°, with a wind intensity of 4 kt from heading 050°, wind components are:

- Front wind = 3 kt (1.5 m/s);
- Side wind = 2.7 kt (1.3 m/s).

In the opinion of the investigation commission, the 1.3 m/s side wind factor, evoked by the pilot instructor, did not influence the breakage of the main right wheel’s tire during touch-and-go from Craiova Airport.

Favoring factors that might have led to the tire’s breakage:

- during the last touch-and-go – a skidded or tougher contact of the main right wheel with the joints between the runway’s concrete slabs full of herbs or wild vegetation;
- the accidental operation of the landing brake;
- possible existence of FOD on the runway;
- tire’s wear.
4. CONCLUSIONS

4.1 Findings

1. YR-MDE aircraft was scheduled to perform a training flight on LRBS – LRCV (area) – LRBS route, in the process of training of the RAA students;

2. On board the aircraft it was a crew consisting of an instructor pilot and two student pilots, one of them occupying the left seat of the cockpit and the other one occupying one of the seats in the back;

3. According to the ASR issued by the air traffic controller in Craiova TWR, at the last touch-and-go on runway 09, the tire of the main right wheel burst, but the aircraft continued to take-off and enrolled on LRCV – LRBS return route;

4. According to the crew statements, after extending the landing gear in order to land on LRBS, the student pilot occupying the seat in the back of the aircraft, noticed a problem at the main right landing gear wheel and informed the flight instructor;

5. The crew informed the BBU TWR that they have a malfunction on the main right landing gear; as a result of this notification, the intervention forces (Fire brigade and the Medical Office) have been alerted;

6. After the aircraft landed on runway 07, it performed a run of about 500 m and then turned 90° to the right, leaving the concrete runway, into the grassy area, from the south side of the runway lane;

7. Upon entering the grassy area, the right engine propeller blades hit the cover of a canal for the rainwater evacuation system and runway drainage;

8. Following this serious incident, the aircraft’s right hand main landing gear and the No.2 engine propeller’s blades were destroyed.

4.2 Cause of serious incident

The cause of the serious incident is the aircraft’s loss of direction after touchdown, due to absence of the right main landing gear tire.

5. SAFETY RECOMMENDATIONS

After this serious incident, the investigation commission makes no safety recommendations.

Note: This report was elaborated based on the information available in the investigation file on the date when this investigation commission was appointed.

Observation: The documents and analysis objects used for the issuance of the flight safety investigation Report are confidential and are archived at the Civil Aviation Safety Investigation and Analysis Authority, according to legal provisions.