



United Arab Emirates



الهيئة العامة للطيران المدني
GENERAL CIVIL AVIATION AUTHORITY

Air Accident Investigation Sector

Accident

- Preliminary Report -

AAIS Case File AIFN/0014/2014

Landing Gear Separation after Touchdown

Operator: Fujairah Aviation Academy

Type: Cessna 172S

Registration: A6-FAA

Location: Fujairah International Airport

State of Occurrence: United Arab Emirates

Date of Occurrence: 11 August 2014



Contents

Investigation Objective	iii
Investigation Process	iii
1. Factual Information	1
1.1 History of the Flight	1
1.2 Injuries to Persons	2
1.3 Damage to the Aircraft	2
1.4 Other Damage	2
1.5 Personnel Information	2
1.6 Aircraft Information	2
1.7 Meteorological Information	3
1.8 Aids to Navigation	3
1.9 Communications	3
1.10 Aerodrome Information	3
1.11 Flight Recorders	3
1.12 Wreckage and Impact Information	3
1.13 Medical and Pathological Information	3
1.14 Fire	3
1.15 Survival Aspects	3
1.16 Test and Research	4
1.17 Organizational and Management Information	4
1.18 Additional Information	4
1.19 Useful or Effective Investigation Techniques	4
2. On-going Investigation Activities	5
3. Safety Concerns and Actions	5



Investigation Objective

This Investigation is performed pursuant to the UAE Federal Act No. 20 of 1991, promulgating the Civil Aviation Law, Chapter VII, Aircraft Accidents, Article 48; in compliance with the UAE Civil Aviation Regulations, Part VI, Chapter 3; in conformity with Annex 13 to the Convention on International Civil Aviation; and in adherence to the Air Accidents and Incidents Investigation Manual.

The sole objective of this Investigation is to prevent aircraft accidents and incidents. It is not the purpose of this activity to apportion blame or liability.

Investigation Process

The Accident was notified to the General Civil Aviation Authority (GCAA), Air Accident Investigation Sector (AAIS) Duty Investigator (DI), Hotline +971 50 641 4667, on 11 August 2014 at 11:45 UTC.

The DI departed to the Accident site at Fujairah International Airport and took the necessary on-site documentation and handed over to the Investigator-in-Charge (IIC) who was nominated by the Director of Air Accident Investigation on the day of the Accident.

The IIC notified the State of Manufacture and State of Design and the International Civil Aviation Organization (ICAO).

Time References

International civil aviation convention for occurrence reporting uses Greenwich Mean Time (GMT), also referred to as Coordinated Universal Time (UTC)

To convert to Gulf Standard Time add plus 4 hours to the UTC time.

$$\text{UTC} + 4 = \text{GST}$$

1. Factual Information

The information contained in this preliminary report is derived from the factual information gathered during the ongoing investigation of the occurrence. Later interim reports or final report may contain altered information in case new evidences appear during the ongoing investigation that requires changes to the information depicted in this Report.

1.1 History of the Flight

On 11 August 2014, at 0845 UTC, Fujairah Aviation Academy flight FUJ012, operated by a Cessna 172S aircraft, registration A6-FAA, was performing a training flight. The instructor requested the student to perform a short field take-off from runway (RWY) 11.

The student performed the takeoff uneventfully. After takeoff, at approximately 300 feet (ft) above ground level (AGL), climbing on RWY 11 heading, the instructor gave an 'engine failure' exercise to the student. In a simulation of engine failure, the student lowered the nose and applied 30° flaps. On final approach to the runway, the student performed a go-around.

While climbing for the second time, and about 300 ft, AGL the instructor gave another engine failure exercise to the student who lowered the nose and aligned with the runway until reaching the flare phase, the instructor felt that the rate of descent was high, he took the controls and initiated a go-around, the Aircraft touched down on its right hand main landing gear (RH MLG) and bounced. The RH MLG separated from the Aircraft.

The instructor realised that the RH MLG had detached and remained on the runway heading. The instructor continued to climb. The instructor pilot declared a Mayday and prepared for an emergency landing and the tower cleared the Aircraft to land.

After two attempts to land and consequent go-arounds, the Aircraft touched down on the LH MLG and the instructor pilot performed a go-around for the fifth time. In his final attempt to land, the instructor pilot commanded left wheel touch down followed by nose landing gear (NLG), the student shut down the engine and the Aircraft continued deceleration with gradual lowering of the right wing and horizontal stabilizer towards the runway surface and as the Aircraft drifted to right. The wing and the horizontal stabilizer contacted the runway surface while the instructor pilot applied left brakes until the Aircraft came to rest just off the runway shoulder (Figure 1).

The two pilots evacuated the Aircraft without injury.



Figure 1. Runway excursion and RH Landing Gear Strut and Wheel Assembly

1.2 Injuries to Persons

Table 1. Injuries to persons							
Injuries	Flight Crew	Cabin Crew	Other Crew On-board	Passengers	Total On-board	Others	
Fatal	0	0	0	0	0	0	
Serious	0	0	0	0	0	0	
Minor	0	0	0	0	0	0	
None	2	0	0	2	0	0	
TOTAL	2	0	0	0	2	0	

1.3 Damage to the Aircraft

The aircraft lost the RH MLG, sustained damage to the lower right side of the undercarriage and bending of the R/H horizontal stabilizer upper and lower surfaces.

The control surfaces were slightly deformed due to touching the runway.
The fuel tanks and habitable living space in the cockpit remained intact.

1.4 Other Damage

There was no other damage to property and/or the environment.

1.5 Personnel Information

The Final Report will contain the relevant information.

1.6 Aircraft Information

Type:	Cessna 172S
Registration:	A6-FAA
State of Registry	United Arab Emirates
Certificate of Registration:	Number 1845, issued on 21 October 2011
Certificate of Airworthiness:	Number FAC/06, valid until 25 May 2015
First Flight:	17 March 2000
Engine:	S/N: L-30656-51E
MSN:	172S8146
MTOW:	2200 lbs

1.7 Meteorological Information

The prevailing meteorological conditions were not a factor in the occurrence.

1.8 Aids to Navigation

Ground-based navigation aids, onboard navigation aids, aerodrome visual ground aids and their serviceability were not a factor in this occurrence.

1.9 Communications

All communications between ATS and the crew were recorded by ground based automatic voice recording equipment for the duration of the flight. The quality of the aircraft's recorded transmissions was good.

1.10 Aerodrome Information

The Fujairah International Airport is certified under the UAE Civil Aviation (CAR), Part IX- *Aerodromes*.

This investigation will also address any aerodrome safety concerns.

1.11 Flight Recorders

The aircraft was not fitted with a flight data recorder or cockpit voice recorder. Neither recorder is required by current UAE Civil Aviation Regulations.

1.12 Wreckage and Impact Information

Three witness marks were observed on the runway having been caused as the Aircraft drifted, due to the contact of the right wing, right horizontal stabilizer and Aircraft belly with the runway surface.

The RH MLG detached and was found on the runway.

1.13 Medical and Pathological Information

No medical or pathological investigations were conducted as a result of this occurrence, nor were they required.

1.14 Fire

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

1.15 Survival Aspects

The instructor and the student were transported to the hospital for observation.



1.16 Test and Research

Ongoing.

1.17 Organizational and Management Information

Under Investigation.

1.18 Additional Information

Will be addressed during the course of the investigation.

1.19 Useful or Effective Investigation Techniques

To be determined.

2. On-going Investigation Activities

- (a) Laboratory forensic examinations on broken landing gear.
- (b) The Aircraft records will be collected and reviewed thoroughly.
- (c) Similar accidents and incidents will be researched and reviewed.
- (d) The Pilot's history will be reviewed from a human factors perspective.
- (e) The GCAA, in accordance with ICAO Annex 13, will issue an Accident Investigation Final Report within twelve months of the accident occurrence date.

3. Safety Concerns and Actions

The AAIS has issued the following Prompt Safety Recommendation (PSR) to the GCAA:

PSR 29/2014: *Although it is not yet verified whether the fracture was due to overload (sudden failure) or fatigue/corrosion (age-related failure), the AAIS recommends to the GCAA:*

- (a) *Request the operator to perform detailed inspection, using visual and other methods, on similar areas of the Cessna 172 MLGs (both L/H and R/H) spring assembly (PN: 0541198) to determine serviceability.*
- (b) *This information and the required inspection should also be shared with other UAE Operators of C172 Aircraft.*
- (c) *Issue a Safety Alert to all A6- Registered Cessna 172 operators to inspect the landing gear for damage before the next inspection cycle.*