

FINAL REPORT

AAIU Synoptic Report No: 2005-028

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In accordance with the provisions of SI 205 of 1997, the Chief Inspector of Accidents, on 23/05/2004, appointed Mr. John Hughes as the Investigator-in-Charge to carry out a Field Investigation into this occurrence and prepare a Synoptic Report.

Aircraft Type and Registration:	Cessna 172, EI-CFP	
No. and Type of Engines:	1 x Lycoming O-320-O2J	
Aircraft Serial Number:	172-74428	
Year of Manufacture:	1980	
Date and Time (UTC):	23 May 2004 @ 13.30 hrs	
Location:	Weston Airport	
Type of Flight:	Training Flight	
Persons on Board:	Crew - One	Passengers - One
Injuries:	Crew - Nil	Passengers - Nil
Nature of Damage:	Cracked engine cylinder head	
Commander's Licence:	Commercial Pilots Licence	
Commander's Details:	Male, aged 23 years	
Commander's Flying Experience:	980 hours, of which 300 were on type	
Information Source:	Weston Park Residence Association and Airport Management	

SYNOPSIS

The aircraft took off from Weston Airport on a training flight. At about 300 ft above ground level the engine began to loose power. The instructor decided to return to the field and landed on the same runway, coming to rest on the runway extension.

1. FACTUAL INFORMATION

1.1 History of the Flight

The flight took off on this training flight from Runway (RWY) 25 at Weston Airport. After take-off the aircraft climbed straight ahead on the runway heading to 300 ft above ground level. The instructor then banked the aircraft right for noise abatement procedures, flying over the reservoir at Leixlip. On rolling the wings level after making the turn the engine lost power and started vibrating. The pilot decided to abort the climb out. He then executed a precautionary

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landing on RWY 25. The pilot said that he touched down at the end of RWY 25, applied maximum braking and brought the aircraft to a complete stop at the runway stopway/clearway. There were no injuries reported and no damage caused during the landing. The instructor and pupil exited the aircraft in the normal way. The emergency services arrived within two minutes and the aircraft was removed to a nearby hangar.

1.2. Aircraft Information

The investigation examined the aircraft in the hangar on 25 May 2004. No.2 cylinder head was found cracked from one of the spark plugs to the adjacent exhaust valve which necessitated the removal of the cylinder head from the engine. A 50 hour aircraft inspection had been conducted during the previous week, during which the spark plugs were removed. The subject spark plug was found loose in its threads.

2. ANALYSIS

On this type of aircraft, particularly when used frequently for training, the engine can be allowed to cool too rapidly during aircraft descent. This causes a high differential temperature in the body of the cylinder head, which will eventually lead to progressive cracking of the head material. Proper handling of the aircraft and management of the engine during its life helps to eliminate excessive differential temperature during flight.

3. CONCLUSIONS

(a) Findings

The instructor carried out a precautionary landing on RWY 25 and stopped on the hard surface of the runway extension.

(b) Cause

No.2 cylinder head found cracked from exhaust valve to adjacent spark plug.

4. SAFETY RECOMMENDATIONS

This report does not sustain any Safety Recommendations.