

## INCIDENT

<b>Aircraft Type and Registration:</b>	Cessna 152, G-BMXA	
<b>No &amp; Type of Engines:</b>	1 Lycoming O-235-L2C piston engine	
<b>Year of Manufacture:</b>	1977 (Serial no: 152-80125)	
<b>Date &amp; Time (UTC):</b>	3 October 2019 at 1445 hrs	
<b>Location:</b>	Bridge of Earn, Perthshire	
<b>Type of Flight:</b>	Training	
<b>Persons on Board:</b>	Crew - 2	Passengers - None
<b>Injuries:</b>	Crew - None	Passengers - N/A
<b>Nature of Damage:</b>	None	
<b>Commander's Licence:</b>	Private Pilot's Licence	
<b>Commander's Age:</b>	25 years	
<b>Commander's Flying Experience:</b>	388 hours (of which 59 were on type) Last 90 days - 78 hours Last 28 days - 31 hours	
<b>Information Source:</b>	Aircraft Accident Report Form submitted by the pilot	

## Synopsis

While en route to Edinburgh during a training flight, thick white smoke began to enter the cabin through the heating vents. The instructor followed the aircraft checklist drills and made a successful forced landing near Bridge of Earn. Both occupants were uninjured, and the aircraft suffered no damage but an engine oil leak was found that had led to the smoke entering the cabin.

## History of the flight

The aircraft departed Perth on a training flight and the plan was to route to Edinburgh and then return to Perth. Approximately 15 minutes after takeoff, thick white smoke began to enter the cabin through the heating vents. The instructor took control from the student and began the checklist drills for an engine fire. He retarded the fuel mixture lever to IDLE CUT OFF and accelerated to  $V_{NE}$ . However, he quickly realised that there were no signs of flames, only smoke. He therefore re-advanced the fuel mixture to fully RICH to keep the engine running. He made a MAYDAY call to Perth Radio, appraised them of the situation and informed them of his intention to make a precautionary forced landing.

The instructor then told the student to liaise with ATC. The student entered the emergency code, 7700, on the transponder and kept ATC updated on the aircraft's position. The instructor selected a field for landing and positioned the aircraft for the forced landing. At approximately 400 ft agl, when sure of reaching the chosen field and of its suitability,

the instructor selected FULL FLAP and shut down the engine. The aircraft landed in a field of recently planted crops, and the crew vacated and moved upwind taking the fire extinguisher with them. Neither crewmember was injured, and the aircraft suffered no damage.

After vacating the aircraft, the crew could see that there was oil streaking down the left side of the aircraft and dripping to the ground from beneath the engine cowling. A subsequent examination of the engine revealed a crack in the engine crankcase.

### **Analysis**

The crack in the engine crankcase caused a significant oil leak and this was the source of the smoke entering the cockpit. The instructor recognised there were no flames and decided to keep the engine running until he was certain of achieving a landing in his chosen field. Given the scale of the leak it is unlikely the engine would have kept running sufficiently long for the aircraft to reach an airfield. The field landing was an appropriate choice and was well executed.