

Cessna 152, G-SACF

AAIB Bulletin No: 7/97 Ref: EW/G97/03/17 Category: 1.3

Aircraft Type and Registration:	Cessna 152, G-SACF
No & Type of Engines:	1 Lycoming O-235-L2C piston engine
Year of Manufacture:	1979
Date & Time (UTC):	21 March 1997 at 1210 hrs
Location:	East of Derby Airfield, Derby
Type of Flight:	Private (Training)
Persons on Board:	Crew - 2 - Passengers - None
Injuries:	Crew - 1 Minor - Passengers - N/A
Nature of Damage:	Aircraft destroyed
Commander's Licence:	Basic Commercial Pilot's Licence with FI Rating
Commander's Age:	72 years
Commander's Flying Experience:	5,798 hours (of which 2,000 were on type) Last 90 days - 34 hours Last 28 days - 16 hours
Information Source:	Aircraft Accident Report Form submitted by the pilot and subsequent enquiries

The student pilot arrived at Derby Airfield intending to take his General Flying Test (GFT). He was advised that the aircraft he would be using was G-SACF and a club instructor told him that the aircraft currently contained 14 gallons of fuel. He sat down and calculated the weight and balance figures which indicated to him that, with a combined crew weight of 382 lb, the aircraft would be slightly overweight with respect to the Maximum Take-Off Weight Authorised (MTOWA). His examiner suggested that he fly solo circuits in the aircraft for half an hour or so in order to burn-off enough fuel to bring the take-off weight within limits.

The student dipped the tanks using a calibrated wooden dipstick before his solo sortie and states that he found that the tanks contained a total of 14.5 imperial gallons. The solo sortie was uneventful and he landed after 35 minutes, having flown three circuits. He dipped the tanks again and found that both tanks contained about two gallons less each side and informed the examiner of the fuel state, which was now satisfactory. Having done another full pre-flight check, including another check of

the fuel contents she and the examiner boarded the aircraft, and they took off for the GFT. Upon returning to the airfield after about 1 hour 20 minutes' flying, the examiner told the student to perform a go-around from an approach, intending to test him with a practice engine-failure-after-take-off.

However, as the aircraft reached a height of about 200 feet, climbing away on full power after the go-around, the engine stopped abruptly without warning and the instructor took control, turning the aircraft slightly to the left towards the only viable landing area. Before the landing area could be reached, the aircraft had to cross a single carriageway road, bordered by substantial hedgerows on both sides, at an angle of about 45°. The aircraft just clipped the top of the near hedge before running into the far hedge with its right wing, yawing it violently to the right before halting it abruptly. The combination of the rapid deceleration and the yaw broke the fuselage aft of the cabin but there was no fire. The student evacuated the aircraft via the left door and the examiner through the broken windscreen. After a check-up in hospital, the instructor was pronounced uninjured with the student suffering possible minor whiplash injuries but not being detained in hospital.

The first emergency vehicle to attend was the airfield fire-and-rescue vehicle which was manned by the co-owner and maintainer of the aircraft, who was also a director of the flying club. After attending to the occupants, he looked in both tanks and found an almost complete absence of fuel. He estimated this to be about five minutes after the accident and could not detect any significant leakage of fuel, noting that the drooped aspect of the damaged wings was such that any residual fuel would have collected in the outboard half of each tank, away from the feed lines which may have been ruptured in the accident. Upon consulting the fuelling records for the aircraft, he found that the last recorded fuel state was a total of 20 imperial gallons the day before the accident. At the time of the accident it had flown a total of 4 hours and 5 minutes since then. He advised that the club uses a figure of 5.4 gallons per hour as a nominal consumption figure across their Cessna 152 fleet, but said that this figure can increase sharply if much upper air work or manoeuvring is undertaken such that actual consumption can vary between 4 and 8 gallons.

Both the examiner and the student are at a loss to reconcile the discrepancy in the observed fuel contents with the lack of fuel found after the accident. When asked whether the gauges reflected the low fuel quantity, the examiner said that he expected them to record a very low reading, but he felt comfortable in the knowledge that the student had dipped the tanks and physically confirmed the amount on board. It would appear that he had not double-checked the student's reading of the contents.

The owner of the aircraft has also recently advised that the engine from G-SACF has subsequently run for a considerable period of time without fault in a different airframe.