

# Cessna 152, G-SACF

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

<b>Aircraft Type and Registration:</b>	Cessna 152, G-SACF
<b>No &amp; Type of Engines:</b>	1 Lycoming O-235-L2C piston engine
<b>Year of Manufacture:</b>	1979
<b>Date &amp; Time (UTC):</b>	21 March 1997 at 1210 hrs
<b>Location:</b>	East of Derby Airfield, Derby
<b>Type of Flight:</b>	Private (Training)
<b>Persons on Board:</b>	Crew - 2 - Passengers - None
<b>Injuries:</b>	Crew - 1 Minor - Passengers - N/A
<b>Nature of Damage:</b>	Aircraft destroyed
<b>Commander's Licence:</b>	Basic Commercial Pilot's Licence with FI Rating
<b>Commander's Age:</b>	72 years
<b>Commander's Flying Experience:</b>	5,798 hours (of which 2,000 were on type) Last 90 days - 34 hours Last 28 days - 16 hours
<b>Information Source:</b>	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 contentshe and the examiner boarded the aircraft, and they took off forthe GFT. Upon returning to the airfield after about 1 hour 20minutes' flying, the examiner told the student to perform a go-aroundfrom 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, climbingaway on full power after the go-around, the engine stopped abruptlywithout warning and the instructor took control, turning the aircraftslightly to the left towards the only viable landing area. Beforethe landing area could be reached, the aircraft had to cross asingle carriageway road, bordered by substantial hedgerows onboth sides, at an angle of about 45°. The aircraft just clippedthe top of the near hedge before running into the far hedge withits right wing, yawing it violently to the right before haltingit abruptly. The combination of the rapid deceleration and theyaw broke the fuselage aft of the cabin but there was no fire.The student evacuated the aircraft via the left door and the examinerthrough the broken windscreen, After a check-up in hospital, theinstructor was pronounced uninjured with the student sufferingpossible minor whiplash injuries but not being detained in hospital.

The first emergency vehicle to attend was the airfield fire-and-rescuevehicle which was manned by the co-owner and maintainer of theaircraft, who was also a director of the flying club. After attendingto the occupants, he looked in both tanks and found an almostcomplete absence of fuel. He estimated this to be about five minutesafter the accident and could not detect any significant leakageof fuel, noting that the drooped aspect of the damaged wings wassuch that any residual fuel would have collected in the outboardhalf of each tank, away from the feed lines which may have beenruptured in the accident. Upon consulting the fuelling recordsfor the aircraft, he found that the last recorded fuel state wasa total of 20 imperial gallons the day before the accident. Atthe time of the accident it had flown a total of 4 hours and 5minutes since then. He advised that the club uses a figure of5.4 gallons per hour as a nominal consumption figure across theirCessna 152 fleet, but said that this figure can increase sharplyif much upper air work or manoeuvring is undertaken such thatactual consumption can vary between 4 and 8 gallons.

Both the examiner and the student are at a loss to reconcile thediscrepancy in the observed fuel contents with the lack of fuelfound after the accident. When asked whether the gauges reflectedthe low fuel quantity, the examiner said that he expected themto record a very low reading, but he felt comfortable in the knowledgethat the student had dipped the tanks and physically confirmedthe amount on board. It would appear that he had not double-checkedthe student's reading of the contents.

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