Aviation Safety Investigation Report 199703380

Cessna Aircraft Company Super Skymaster

13 October 1997

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Occurrence Number: 199703380 **Occurrence Type:** Accident
Location: Kalgoorlie/Boulder, Aerodrome
State: WA **Inv Category:** 4
Date: Monday 13 October 1997
Time: 1115 hours **Time Zone** WST
Highest Injury Level: None

Aircraft Manufacturer: Cessna Aircraft Company
Aircraft Model: 337A
Aircraft Registration: VH-MRZ **Serial Number:** 337-0446
Type of Operation: Instructional Dual
Damage to Aircraft: Substantial
Departure Point: Kalgoorlie WA
Departure Time: 1115 WST
Destination: Kalgoorlie WA

Crew Details:

Role	Class of Licence	Hours on Type	Hours Total
Pilot-In-Command	ATPL	28.0	2586
Other Pilot	Commercial	1.4	480

Approved for Release: Tuesday, May 26, 1998

The Cessna 337A (C 337A) was being used to conduct the final endorsement training flight of a company pilot. The instructor reported that he did not conduct a formal pre-flight brief with the student.He had presumed the student had adequate knowledge of the aircraft systems, although the student was not subject to a written systems examination and the instructor did not orally check the extent of the student's systems knowledge.

The student's previous training flight had been with another pilot in a G model of the Cessna 337, which used an electrical mechanism for raising and lowering the landing gear, whereas the C 337A used a hydraulic pump driven by the front engine to power the landing gear mechanism. The instructor's previous flight was also in the Cessna 337G.

During the third circuit of the endorsement flight, the instructor simulated a front engine failure by leaning the mixture of that engine. The instructor reported that he talked through and assisted with the engine shutdown checks as the student had limited multi-engine experience and was slow in responding to the simulated failure. The instructor also reported that he retarded the front engine's throttle following the engine shutdown but did not recall hearing the gear warning horn. The gear warning horn is normally actuated when either throttle is retarded below a point approximating 13 inches of manifold pressure while the landing gear is not down and locked. Landing gear extension had been intentionally omitted from the downwind pre-landing checks as the pilots had intended to lower the landing gear when the aircraft was settled on the correct final approach path. With the front engine shutdown, there was no hydraulic power available to lower the landing gear, so when the student selected the landing gear down during the final approach, it did not move. Neither pilot noticed the lack of a safe indication and neither looked outside to visually check the landing gear position.

Although neither pilot recalled hearing the horn sound, even during rear engine throttle retardation in the landing flare, the horn was later found to be operational. However, during a subsequent flight, it was discovered that the gear warning horn operated intermittently and that a microswitch required replacement.

Finals checks, including the checking of the landing gear position, were reported by the instructor as not being conducted due to the high workload during the final approach.

The pilots did not realise that the landing gear was not down until the belly-mounted cargo-pod hit the ground during the landing flare. The aircraft maintained a level attitude during the landing retardation whilst the instructor shut-down the rear engine. As the aircraft came to a stop, it rocked back on to the tail and the rear engine propeller struck stones at low RPM. The pilots then vacated the aircraft without further incident.

The instructor knew the student pilot both at work and socially, which probably influenced him to approach the training in an informal manner. Because both pilots had conducted their previous flying in a different model of the Cessna 337, the lack of formal pre-flight and systems briefings probably contributed to the accident.

Local Safety Action

The company has undertaken to introduce formal briefing requirements for all training programs and a training syllabus. An amendment to the theory examination on the Cessna 337, which is used by the company for endorsement purposes, has been incorporated. This amendment reflects the different landing gear operating requirements of the Cessna 337G and the Cessna 337A. As the two models are available to company pilots, the A model landing gear hydraulic requirements are to be placarded as a measure to reduce any future confusion.