

AAIB Bulletin No: 2/94

Ref: EW/G93/10/14

Category: 1.2

Aircraft Type and Registration: Cessna 404, G-MIND

No & Type of Engines: 2 Continental GTSIO-520-M piston engines

Year of Manufacture: 1976

Date & Time (UTC): 20 October 1993 at 1849 hrs

Location: Coventry Airport

Type of Flight: Private

Persons on Board: Crew - 1 Passengers - 4

Injuries: Crew - None Passengers - None

Nature of Damage: Damage to the underside of the nose structure and propeller tips

Commander's Licence: Commercial Pilot's Licence with Instrument Rating

Commander's Age: 34 years

Commander's Flying Experience: 1,700 hours (of which 155 were on type)
Last 90 days - 189 hours
Last 28 days - 53 hours

Information Source: Aircraft Accident Report Form submitted by the pilot and enquiries made of the maintenance/repair agency

Following a short local flight, the pilot failed to obtain three green lights on selecting the hydraulically powered landing gear to down. After recycling, and using the emergency 'blow down' system, a fly-past of the control tower revealed that the nose gear was in the retracted position with the doors closed. The pilot flew around for a period of time to use up fuel and, once the emergency services were in position, made an approach. On initial touchdown, both engines were shut down and their propellers feathered such that neither were turning as their tips made contact with the runway when the nose contacted the surface. All occupants made their escape without incident through the main cabin door.

After the aircraft had been removed to a hangar on the airfield, an initial examination was carried out by maintenance personnel. At that time it was reported that a problem was thought to have occurred within the system selector valve, Part No 9910279-1, in that it appeared to have allowed hydraulic pressure into both the extend and retract lines of the nose gear actuator which held the nose gear rigidly, but clear of its uplock. After a new selector valve had been fitted the system worked correctly,

but it also functioned correctly when the original valve was refitted. An intermittent electrical fault or fluid contamination was then suspected, although the system filter was found to be clean. The landing gear operating system is designed such that a down pressure signal from the selector valve operates on all three uplocks and gear actuators. The low pressure return fluid from each actuator has to pass through the same selector valve before reaching the reservoir. It is believed by maintenance personnel that either a blockage occurred in this return line at the valve, or that the valve itself stuck, which then caused return fluid from the main gear actuators to effectively pressurise the retract side of the nose gear actuator, thus preventing its extension.

The aircraft has since returned to service with the new selector valve fitted. No further problems have been reported.