INCIDENT

Aircraft Type and Registration:	Cessna 560XL Citation XLS, G-OROO
No & Type of Engines:	2 Pratt & Whitney Canada PW545B turbofan engines
Year of Manufacture:	2007
Date & Time (UTC):	29 June 2008 at 1815 hrs
Location:	En route from Bournemouth, Dorset, to Biggin Hill, Kent
Type of Flight:	Unknown
Persons on Board:	Crew - 2 Passengers - None
Injuries:	Crew - None Passengers - N/A
Nature of Damage:	Cowling and rudder
Commander's Licence:	Airline Transport Pilot's Licence
Commander's Age:	Unknown
Commander's Flying Experience:	N/K hours Last 90 days - N/K hours Last 28 days - N/K hours
Information Source:	AAIB Field Investigation

Synopsis

During a post-maintenance ferry flight from Bournemouth to Biggin Hill, approximately 75% of the left engine upper cowling detached, damaging the leading edge of the fin and left elevator. Inspection of the aircraft showed that a number of the leading edge cowling fasteners had not been secured.

History of the flight

The aircraft was being ferried to Biggin Hill after maintenance at Bournemouth. Whilst in the climb from FL070 to FL080 at 230 kt, the flight crew heard a rumble and felt a slight 'thud' in the rear of the aircraft. Due to a vibration in the control column, the autopilot was disconnected and a check of the flight controls was carried out; no abnormalities were noted. During the descent, passing through 3,000 ft and at 180 kt, another rumble was heard together with a thud at the rear of the aircraft. Another check of the flight controls was carried out and once again no abnormalities were noted. No further problems were encountered and the aircraft carried out a normal approach and landing. After shutdown, an inspection of the aircraft revealed that approximately 75% of the left engine upper cowling had separated from the aircraft damaging the leading edge of the fin and the left elevator.

Investigation

Examination of the aircraft revealed that a section of the upper cowling remained attached to the airframe by the latches securing it to the lower engine cowling, the

leading and trailing edge fasteners having been pulled through the cowl structure. All of the trailing edge, and three of the outboard leading edge, cowl fasteners remained secured to the nacelle structure. There was no evidence of damage or deformation to the cowling securing points on the engine nacelle.

An investigation of the event carried out by the maintenance organisation revealed that the mechanic tasked with the reinstallation of the upper left engine cowling had been interrupted for several minutes whilst carrying out the task. This caused him to descend from the engine, but he had no recollection of climbing back up to the engine to secure the inboard fasteners. A further 'panel re-fitment inspection' and a 'post maintenance safety check' failed to identify that the inboard leading edge cowling fasteners had not been secured.

Safety Action

As a result of the investigation, the maintenance organisation has introduced several changes to minimise the possibility of this type of incident happening again. These include: relocation of the hangar management staff to provide more effective support of day-to-day operations, an increase in the number of administration staff, and a detailed briefing for inspectors, to identify those areas that require a more detailed inspection after maintenance tasks have been completed.

As a result of the actions taken by the maintenance organisation, it is thought that no further safety action should be recommended at this time.