

**SERIOUS INCIDENT**

<b>Aircraft Type and Registration:</b>	Sikorsky S-76C, G-CGOU
<b>No &amp; Type of Engines:</b>	2 Turbomeca Arriel 2S2 turboshaft engines
<b>Year of Manufacture:</b>	2010 (Serial no: 760780)
<b>Date &amp; Time (UTC):</b>	26 September 2012 at 0825 hrs
<b>Location:</b>	19 nm east-north-east of Humberside Airport
<b>Type of Flight:</b>	Commercial Air Transport (Passenger)
<b>Persons on Board:</b>	Crew - 2                      Passengers - 8
<b>Injuries:</b>	Crew - None                      Passengers - None
<b>Nature of Damage:</b>	None
<b>Commander's Licence:</b>	Airline Transport Pilot's Licence
<b>Commander's Age:</b>	47 years
<b>Commander's Flying Experience:</b>	3,750 hours (of which 1,700 were on type) Last 90 days - 113 hours Last 28 days - 36 hours
<b>Information Source:</b>	Aircraft Accident Report Form submitted by the pilot

**Synopsis**

There was a smell of smoke in the cockpit and cabin during flight, together with an unusual and uncommanded flying motion. A precautionary landing was made, and a subsequent investigation identified that an electrical short had occurred in a wiring loom.

**History of the flight**

The helicopter was flying from Humberside Airport to a platform in the Ravenspurn Gas Field when the incident occurred. During a short cruise climb, the helicopter began to pitch nose up and roll to the right, so the commander disengaged the autopilot and established straight and level flight. The co-pilot remarked that he could smell smoke and suggested a return to Humberside. As the commander turned the helicopter, he noticed it

was in STABILITY AUGMENTATION SYSTEM mode and was yawing in an uncommanded "fishtailing" motion. The crew transmitted a 'PAN PAN' call and informed ATC of the situation. Although there was no visible smoke, a strong smell persisted. The commander decided to make a precautionary landing at a private coastal airfield less than two miles away. The eight passengers were briefed for the precautionary landing, which was completed safely. After landing, some of the passengers reported that they too had smelt smoke in the cabin and been aware of the fishtailing motion.

After landing, circuit breakers for the number 2 cyclic control trim and the collective control trim were found tripped. An engineering investigation established

that electrical shorting had occurred in a wiring loom situated above the forward left cabin area. The operating company issued a fleet-wide technical directive to inspect the wiring loom for signs of damage and to take corrective action where appropriate.

A temporary repair to the helicopter was carried out in accordance with manufacturer's procedures and the aircraft was flown to a maintenance base where a permanent repair was made. Following appropriate tests and checks the helicopter was returned to service.

The manufacturer has been in contact with the operator, and considers that in this case the wiring bundles were probably disturbed during a customer option installation. However, the manufacturer also recognizes that the area is potentially susceptible to chafing and is currently studying several methods of product improvement that would reduce this susceptibility for both future and delivered aircraft.