Agusta A109A II, G-TBGL

AAIB BulletinNo: 6/2000 Ref:EW/G99/11/01 Category:2.2

INCIDENT

Aircraft Type and Registration:	Agusta A109A II, G-TBGL
No & Type of Engines:	2 Allison 250-C20B turboshaft engines
Year of Manufacture:	1988
Date & Time (UTC):	3 November 1999 at 0945 hrs
Location:	Field near A4133, near Droitwich
Type of Flight:	Private
Persons on Board:	Crew 1 - Passengers - 1
Injuries:	Crew None - Passengers - None
Nature of Damage:	Autopilot Control Unit wiring loom chafed
Commander's Licence:	Private Pilots Licence (helicopters)
Commander's Age:	52 years
Commander's Flying Experience:	1,020 hours (of which 125 were on type) Last 90 days 49 hours Last 28 days 18 hours
Information Source:	Aircraft Accident Report Form submitted by the pilot

On a VFR flight from a private location near Lyneham to HalfpennyGreen, when passing to the west of Gloucestershire Airfield, the pilot noticed thatthe Horizontal Situation Indicator (HSI) was indicating a heading failure. The autopilot was not in use at this stageand the pilot was therefore unconcerned. In the area of Malvern, the pilot engaged the autopilot and HeadingHold, however the helicopter would not maintain heading and so the autopilotwas disengaged and the pilot considered that the HSI was unserviceable. Approaching Droitwich the StabilityAugmentation System (SAS) 1 warning light illuminated and the SASauto-disconnected. Within the nextminute the Inverter 1 warning light illuminated indicating failure of theNo1 inverter. The pilot reduced speedand as he did so Inverter 2 warning illuminated. The pilot could then smell burning and so informed ATC atHalfpenny Green that he was making a precautionary landing. During the descent the passenger noticedsmoke appearing from below the instrument panel. The pilot switched the electrics master and battery switches toOFF and landed the helicopter in a field of stubble to the west ofDroitwich. The smoke dispersed and thesmell of burning reduced. The pilotshutdown the engine and informed Halfpenny Green that they had landed withoutdamage or injury.

The helicopter was later flown VFR with the autopilotand SAS systems disabled to the maintainers for investigation and repair. Investigation identified chafing of theinsulation on some of the conductors in a loom connecting to the AutopilotControl Unit, installed on the instrument panel. The loom had been in contact with a duct behind the instrumentpanel. The wiring was repaired andrerouted away from the ducting and a power supply rectifier was replaced, afterwhich the systems tested satisfactorily.