Aviation Safety Investigation Report 199800593

Lockheed Georgia Co
Hercules
A.V. Roe & Co Ltd
Avro 146-RJ70

26 February 1998

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Aviation Safety Investigation Report

199800593

Occurrence Number:	199800593	**Occurrence Type:**	Incident
Location:	PEPPA		
State:	WA	**Inv Category:**	4
Date:	Thursday 26 February 1998		
Time:	1625 hours	**Time Zone**	WST
Highest Injury Level:	None		

Aircraft Manufacturer:	A.V. Roe & Co Ltd		
Aircraft Model:	Avro 146-RJ70		
Aircraft Registration:	VH-NJT	**Serial Number:**	E1228
Type of Operation:	Air Transport Domestic High Capacity Passenger Scheduled		
Damage to Aircraft:	Nil		
Departure Point:	Perth WA		
Departure Time:	1452 WST		
Destination:	Telfer WA		

Aircraft Manufacturer:	Lockheed Georgia Co		
Aircraft Model:	C-130		
Aircraft Registration:		**Serial Number:**	
Type of Operation:	Non-commercial Other (including military)		
Damage to Aircraft:	Nil		
Departure Point:	Edinburgh SA		
Departure Time:	0234 WST		
Destination:	Pearce WA		

Approved for Release: Tuesday, May 26, 1998

The military Lockheed C-130 aircraft was tracking to Pearce from Edinburgh via reporting points BADJA and PEPPA, whilst an Avro RJ-70 was tracking from Perth to Telfa via CLIFY and PEPPA.

The pilot of the C-130 had been cleared to descend to 8,000 ft by Perth ATC and the RJ-70 was on climb to FL290. However, the C-130 was observed on radar to drift south of track and then turn left prior to PEPPA. As a result of the early turn, the C-130 passed approximately 3 NM south of PEPPA. The C-130 crew could not recall why the aircraft had drifted south or turned early. However, it was reported that it was possible that the C-130's inertial navigation system (INS) may have experienced some drift. It was also reported that because the INS calculates an intercept to the next leg based on the aircraft's expected turn radius, it may have commanded a turn earlier than ATC expected.

Perth ATC directed the pilot of the RJ-70 to turn the aircraft right to pass behind the crossing C-130. Just after the RJ-70 pilot gave his read-back to the instruction, he advised Perth ATC that he had received a TCAS alert. Perth ATC passed traffic and the two aircraft passed abeam each other at 4 NM with no vertical separation. There was a breakdown in separation as the required standard was 5 NM.

Perth ATC reported that just prior to the incident, Pearce Control had experienced a radar failure. As a result, the Perth "Inner" air traffic controller, who was under training and being supervised at the time, experienced a substantial workload increase requiring him to scan a larger area than normal, thus changing his radar scan parameters. He also had 12 aircraft on frequency. The trainee air traffic controller's workload, whilst heavy, was not considered excessive because he had completed 4 weeks of the 6 week training course and was already an experienced procedural controller.

Perth ATC reported that at 15 NM inbound to PEPPA, the C-130 had a groundspeed of 330 kts and the trainee controller assessed that the separation between the aircraft would be adequate. However, abeam PEPPA, the C-130's groundspeed unexpectedly reduced to 220 kts before increasing again to 255 kts. The speed changes may have been associated with the aircraft accelerating in the descent and then slowing following the level off. The C-130's unexpected speed changes and early turn near PEPPA adversely affected the trainee controller's planned separation between the two aircraft.

The trainee had issued frequency transfer instructions to the pilot of the C-130 just before the impending breakdown in separation was noticed. Although the training officer assumed control of the position as the separation breakdown developed, he could only issue instructions to the pilot of the RJ-70. This limited the options available to the training officer when he was attempting to correct and avoid the separation breakdown.

It is probable that the workload increase caused by the non-operative Pearce radar associated with the C-130's unexpected deviation from the air route and groundspeed changes, were factors in allowing the breakdown in separation to develop. When the training officer noticed the developing separation breakdown, his options in ensuring the required separation were limited by the C-130 being on another frequency.