

INCIDENT

Aircraft Type and Registration:	BAE Systems Jetstream 4100, G-MAJI	
No & Type of Engines:	2 Garrett Airesearch turboprop engines	
Year of Manufacture:	1993	
Date & Time (UTC):	26 February 2007 at 0705 hrs	
Location:	Durham Tees Valley Airport, County Durham	
Type of Flight:	Commercial Air Transport (Passenger)	
Persons on Board:	Crew - 3	Passengers - 29
Injuries:	Crew - None	Passengers - None
Nature of Damage:	None	
Commander's Licence:	Air Transport Pilot's Licence	
Commander's Age:	59 years	
Commander's Flying Experience:	11,300 hours (of which 278 were on type) Last 90 days - 94 hours Last 28 days - 46 hours	
Information Source:	Aircraft Accident Report Form submitted by the pilot and additional AAIB enquiries	

Synopsis

Prior to taking off, when conducting the 'full and free' flight control checks, a restriction was felt in the elevator circuit. Examination revealed that there was a lack of appropriate lubrication of the gust lock mechanism associated with an elevator circuit. As a result of this finding, the operator now applies lubrication on an annual basis, instead of once every four years, and the manufacturer is amending the Maintenance Schedule to increase the frequency of lubrication of the flight controls gust lock system.

History of the flight

Whilst waiting to enter Runway 23 for takeoff at Durham Tees Valley Airport, the manually operated flight controls were unlocked by the co-pilot by means of moving the

gust lock lever on the flight deck pedestal. He then checked for free movement of the ailerons and elevator, while the commander checked the rudder. The co-pilot reported that there was a restriction in the control column movement aft of neutral. He checked that the gust lock lever was fully down, but the restriction remained. The commander then checked the controls a number of times and confirmed that the control column always came up against an apparent obstruction, approximately three inches aft of neutral.

The aircraft was taxied back to the stand where it was handed over to the operator's engineering department.

Examination of the aircraft

Operation of the gust lock control lever, with respect to the elevator circuit, causes a lock pin to engage in a slot cut into a cable quadrant located in the rear fuselage, Figure 1.

In this case, an apparent lack of lubrication was causing the pin to 'hang up' in the slot, thus keeping the elevators in a locked condition. When the operating lever on the flight deck was moved to the unlocked position, the 'lost motion' was taken up by the compression of a spring within the locking mechanism. The operator, who has a fleet of 25 Jetstream 41 aircraft, has stated that they have experienced 19 similar occurrences involving the gust lock system, although many of these were the result of

the locks failing to engage and, therefore, were not the subject of any mandatory reporting action. The operator also stated that all their pilot reports are routinely sent to the manufacturer for reliability analysis.

The Maintenance Schedule required that the gust lock system components be lubricated every 6,000 flight hours which, with this operator, occurred approximately every four years. Since this incident the operator has adopted a policy of applying lubrication every year. Also, the aircraft manufacturer is in the process of changing the Maintenance Schedule to increase the frequency of gust lock system lubrication. Since this will take some time, they are considering raising the matter in an All Operators Message (AOM) to be published in the shorter term.

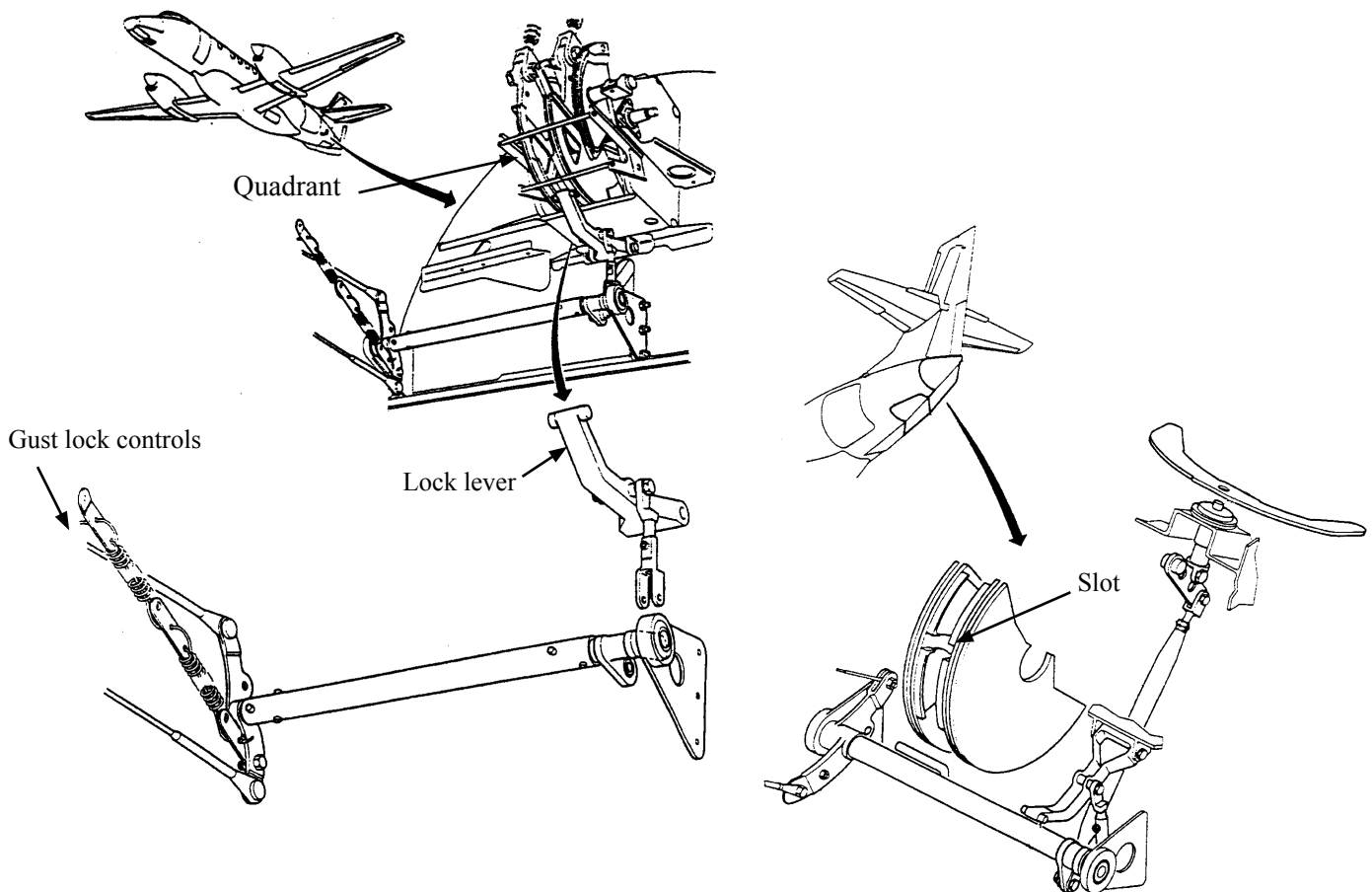


Figure 1

Details of elevator gust lock controls in rear of fuselage