

BULLETIN ADDENDUM

AAIB File:	EW/C92/3/6
Aircraft Type and Registration:	BAe 146-300 G-UKHP
Date & Time (UTC):	31 March 1992 at 1130 hrs
Location:	Aberdeen Airport
Type of Investigation:	AAIB Formal Investigation

Synopsis (refer to AAIB Bulletin 10/92)

During a landing at Aberdeen Airport on runway 34 in gusting conditions (surface wind 070°/19 kt, variable between 040° and 110°, gusting between 12 and 30 kt) and in rain with wet runway conditions, the aircraft was observed to bounce on its landing gear several times before all 3 landing gears settled onto the runway. The aircraft then began to decelerate under the application of wheel and air brakes. However the aircraft did not decelerate sufficiently within the available runway distance to prevent it overrunning the end of the runway, by some 146 metres. The aircraft was not damaged, however, and no injuries occurred.

Subsequent investigations showed that the spoilers were not deployed at any time during the landing roll. This contributed to the inability of the pilot to bring the aircraft to a stop on the runway. Immediately after the incident, examination and testing of all the aircraft systems affecting spoiler deployment showed there to be no physical reason for the spoilers not to have deployed normally, if they had been selected. However, the LIFT SPOILER warning captions on the glareshield edge were inoperative.

Lift Spoiler Warning Provision

This warning was offered as a modification (HCM 00913 {*A & B as retrofit, or C as installed at manufacture*}) to the original design in order 'to reduce the likelihood of the crew failing to deploy the spoilers on touchdown'.

The system is scheduled to be functionally tested, during routine maintenance, at 6000 flight intervals. The aircraft involved in this incident at Aberdeen was on a progressive maintenance check cycle and the LIFT SPOILER warning system had last been checked in July 1990. At the current rate of utilisation, it would next have been checked in December 1992.

A review of the pre-flight and maintenance checks revealed that, if the aircraft is operated correctly, this warning will never be seen by aircrew. A 'Dim and Test' modification (HCM 00913 D) is offered (though not fitted to this aircraft), but this modification can only test the integrity of the warning light filaments; the logic and driving circuits are untested by this means.

Even without this modification (D) fitted, it would appear that a simple procedure which checks the lift spoiler caption bulbs and the driving circuitry (though not the logic and time delays) may be carried out on the ground when electrical power is available, but hydraulic power has not been selected

Safety Recommendations

As a result of these findings, the following Safety Recommendations have been made to the CAA:

92-46 In view of the marked effect of lift spoiler non-deployment upon the runway braking performance of the BAe 146 aircraft, the CAA should require the mandatory embodiment of BAe modification HCM00913 on all BAe 146 aircraft not so equipped in order to provide flight crew with warnings of lift spoiler non-deployment on landing.

92-49 In view of the importance of lift spoiler deployment to the runway braking performance of the BAe 146 aircraft, the CAA should require the manufacturer of the BAe146 aircraft to introduce a pre-flight test procedure into the Operations Manual to enable flight crew to check the serviceability of the lift spoiler warning lights and associated driving circuits, before each flight.