

## AIRCRAFT ACCIDENT REPORT No. 6/92

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### REPORT ON THE ACCIDENT TO BAe ATP, G-BTPE ON 23 DECEMBER 1991 AT SUMBURGH AIRPORT, SHETLAND ISLES

#### SUMMARY

The aircraft was engaged on a scheduled passenger flight from Sumburgh to Aberdeen; the accident occurred on take-off in unusually harsh wind conditions. At the end of the take-off ground run the aircraft began to roll to the right. The handling pilot immediately applied full left control wheel but this was insufficient to stop the roll to the right. Left rudder was then applied by the pilot to augment the left control wheel input but the aircraft continued to roll to the right and the right wing tip and aileron struck the ground to the north of the runway. The wing tip received minor damage but the outer section of the right aileron partially failed outboard of the outer hinge and bent downwards during the impact. Roll control was regained after ground impact although directional control was not re-established until several seconds afterwards. The aircraft initially adopted a non-standard departure track towards high ground but safe terrain clearance was achieved by turning further to the right and climbing. The flight crew were advised by Air Traffic control that the wing tip had struck the ground on take-off and, in view of the prevailing wind conditions at Sumburgh, the commander diverted to the mainland. The diversion was flown initially towards Aberdeen and later to RAF Kinloss where the wind conditions were more favourable for an emergency landing. En-route the crew assessed the damage to the right aileron which was visible from the passenger cabin. The passengers were seated and briefed for an emergency landing which was carried out at a higher speed than for a normal landing without undue difficulty. No-one was hurt during the flight.

The report identified the following causal factors:

- (i) Operation of the aircraft in excessive tailwinds which damaged the right aileron whilst the aircraft was on the ground at Sumburgh.
- (ii) Omission of the side and tail-wind maximum recommended speeds from the ATP Flight Manual.
- (iii) Failure of British Airways to heed the advice contained in section 9 of the manufacturer's Operations Manual.

The following Safety Recommendations were made during the course of the investigation

- 1 British Aerospace should review the design of the ATP aileron control system with a view to increasing the stiffness of the right wing circuit to, at least, that of the left wing circuit, but preferably to that of the HS 748.
- 2 The CAA should consider a requirement to factor the parking/picketing/ taxiing wind limits to take account of exposure to localised gusts of greater strength than that recorded at the anemometer.
- 3 The CAA should review the validity of JAR 25.415 (2) relating to the ability of control systems to withstand forces generated by ground gusts and consider the need for JARs to require the maximum wind speeds for parking and taxiing to be given in Flight Manuals.
- 4 Notwithstanding the outcome of recommendation 3, the CAA should require appropriate parking and taxiing wind limitations to be included in the ATP Flight Manual.
- 5 British Airways should review their procedures for incorporating manufacturer's technical amendments into their Operations Manuals.
- 6 The CAA should instruct all UK operators to include in their Operations Manuals upper wind limits for operating a revenue service.
- 7 Sumburgh airport should be equipped with additional windsocks located close to the threshold of each runway.
- 8 The CAA should, with the assistance of the Meteorological Office:
  - a. Sponsor practical trials to assess the combinations of strong wind, topography and convective instability which may combine to create a significant windshear hazard.
  - b. Increase the number of airfields provided with a windshear alerting service to encompass those airfields most at risk to windshear.

c. Review the list of airfields at Appendix B of CAP 573 with a view to including UK airports which support domestic scheduled air services and which are prone to hazardous wind conditions.

9 That the CAA should advise all operators of the desirability of conducting landing configuration checks (where required) at a suitable safe height, and not below the chosen approach speed, that would allow control of the aircraft to be recovered, if necessary, prior to the final approach and landing.