

### **3 Conclusions**

#### **(a) Findings**

1. The flight crew were properly licensed and qualified to conduct the flight.
2. The flight crew were suitably rested and held valid medical certificates.
3. The aircraft was calculated to be 2,945 kg below the maximum authorised landing weight for Runway 27 and was loaded correctly.
4. The Landing Distance Required of 1,052 metres was within the Landing Distance Available of 1,453 metres.
5. The surface wind and visibility conditions were suitable for the aircraft to make an approach to land.
6. The commander, a Type Rating Examiner and Instrument Rating Examiner on the HS 748, did not brief the Standard Operating Procedure ‘challenge and response’ crew calls for a Category I ILS during his approach brief to the co-pilot.
7. The flight crew did not comply with the Standard Operating Procedures for a Category I ILS approach.
8. The co-pilot did not challenge the use of non-standard operating procedures.
9. The decision to land or go around was delayed significantly beyond the intersection of the Decision Altitude and the ILS glideslope.
10. The aircraft’s rate of descent was arrested, or it may have ballooned, while manoeuvring to land.
11. The aircraft landed significantly beyond the touchdown zone.
12. Friction testing of the runway showed that the runway surface condition was not a factor in the aircraft over-running the runway.

13. Contrary to the Standard Operating Procedures, the flight fine pitch stops were not withdrawn after landing, thereby preventing the propeller blades from moving to the ground fine pitch stops, and reducing the braking effect of the propellers.
14. The commander was not aware that the flight fine pitch stops had not been withdrawn.
15. The aircraft's wheel braking and propeller pitch control systems were functioning correctly at the time of the incident.
16. The aircraft required at least 400 metres of runway within which to stop with maximum braking and flight fine pitch selected on both propellers.
17. Although the touchdown on Runway 27 was made with 400 to 550 metres of runway remaining, the aircraft did not stop and overran the runway by 145 metres onto wet grass.
18. The commander did not immediately appreciate how far down the runway he had landed and delayed applying maximum braking until he saw the end of the runway.
19. The commander cycled the brakes when he realised that the aircraft was not decelerating as fast as he expected it to.
20. The No 4 tyre probably aquaplaned for a short distance on the concrete surface at the Runway 09 threshold.
21. The operator had a history of non-conformities being raised during CAA audits and had been closely monitored for at least two years. Concerns included the operator's management structure and competencies, and its ability to maintain standards of safety.
22. A CAA audit of the operator's flight crew training, across all their fleets, revealed that the Type Rating Examiners lacked knowledge of the operator's Standard Operating Procedures.

**(b) Causal factors**

The investigation identified the following causal factors:

- (i) The flight crew did not comply with the Standard Operating Procedures for a Category I ILS.
- (ii) The commander's decision to land or go around was delayed significantly beyond the intersection of the Decision Altitude and the ILS glideslope.
- (iii) After landing, the crew did not immediately apply maximum braking or withdraw the flight fine pitch stops, as advised in the Operations Manual.
- (iv) The operator's training staff lacked knowledge of the Standard Operating Procedures.

**(c) Contributory factors**

- (i) Close monitoring by the CAA had not revealed the depth of the lack of knowledge of Standard Operating Procedures within the operator's flight operations department until after this incident.