Aircraft Accident Investigation Board, Norway HSL

REPORT

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REP: 26/2002
Date: 9 July 2002

All times given in this report is local time (UTC + 2 hours), if not otherwise stated.

Aircraft -type & reg.:	Dassault Falcon 50, N544RA / Fokker 50, LN-RNC
Radio call sign:	N544RA / SAS 2337
Date and time:	14 June 2001, at 1945 hrs
Location:	10 NM south of Harstad/Narvik airport Evenes (ENEV)
Type of occurrence:	Air Traffic Incident, violation of clearance limit (Level bust)
Type of flight:	Commercial, scheduled service / commercial, charter
Weather cond.:	Both A/C were in clouds at the time of the incident
Light cond.:	Daylight
Flight cond.:	IMC / IMC
Flight plan:	IFR / IFR
No. of persons onb. :	Not reported
Injuries:	None
Aircraft damage:	None
Other damage:	None
Information sources:	Reports from both Commanders, report from Chief air traffic controller at ENEV TWR, report from controller on duty at the time of incident and AAIB/N's own investigations.

SUMMARY

N544RA, a Falcon 50 from TAG Aviation Management flying from Oslo airport Gardermoen to ENEV, was descending for an ILS-approach to runway 17 at ENEV. The crew had received a descent clearance to FL 100, due to opposite traffic. SAS 2337, a Fokker 50 from SAS Commuter flying from ENEV to Bodø airport, was climbing towards cleared level, FL 090. The clearance limit, FL 090, was issued due to opposite N544RA. As N544RA was approaching FL 100, SAS 2337 was climbing through FL 070, and the crew received traffic information about N544RA from the controller on duty at ENEV. As SAS 2337 approached FL 080, the crew observed N544RA 1 300 ft above, on their Traffic Collision Avoidance System (TCAS). N544RA had then penetrated the clearance limit of FL 100, and the crew had descended to FL 094-093. At this time the crew had become aware of the level bust, and quickly climbed back to FL 100. At the same time the controller on duty lost the Mode C-signal from the N544RA transponder on his radar. The signal was absent for about 30 seconds. As the Mode C-signal reappeared on the radar, it showed N544RA back in FL 100. As the two aircraft passed each other, the horizontal

distance between them was marginal but the vertical distance was 1 300 ft. Both Commanders and ATC reported the incident to AAIB/N, according to regulations.

COMMENTS FROM THE ACCIDENT BOARD

It is AAIB/N's opinion that there was no risk of collision in this incident. The incident did not result in any violation of separation minimum. The SAS 2337 crew observed N544RA on their TCAS, reduced their climb rate and temporarily levelled off at FL 080. The Commander on N544RA admits that they penetrated their clearance limit of FL 100, and regrets the incident. In his opinion, an important causal factor was an altitude alerter that became inoperative during descend towards ENEV. An altitude alerter is a part of the flight instrumentation that alerts the crew when the aircraft is approaching the selected altitude. It is also a part of the autopilot/flight management system that makes the aircraft automatically level off at the selected altitude when the autopilot is in use.

AAIB/N has received documentation from an authorized repair station, confirming that an inoperative altitude alerter was replaced on N544RA after the incident. It is most likely that the inoperative altitude alerter was a contributing causal factor to the incident. In addition AAIB/N will stress the importance for flight crews to closely monitor the flight instruments during flight, in order to avoid situations where technical malfunctions lead to violation of clearance limits, as in this incident.

AAIB/N has no confirmed information on why the Mode C-signals from the transponder disappeared for 30 seconds, but the Norwegian CAA writes in their comments to the draft report that the reason might be that the flight crew turned the Mode C-signal off themselves. The argument for this, is the fact that the transponder functioned normally both before and after the incident. The CAA states further:

> "As an aviation authority we have required the use of transponder and TCAS. These installations are very important for flight safety. The CAA does not find it acceptable for flight crews to turn off any part of the transpondersystem in situations where a commander discovers that the crew has deviated from clearances received from the ATC".