

## BULLETIN

### AIRCRAFT ACCIDENT INVESTIGATION BOARD/NORWAY (TRANSLATED FROM NORWEGIAN)

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#### Aircraft

-type and reg.: B 757/G-BIKZ, Beech 200/LN-AAH  
Radio call sign: BAW 761, SOR 24  
Date and time: 29 June 1995, at 08.13 hours  
Location: Oslo Airport, Fornebu  
Type of occurrence: Aircraft incident  
Type of flight: Scheduled flight  
Weather cond.: METAR Fornebu at 08.20 hours: Wind: 130° 5 knots, CAVOK,  
temperature +18°C, dewpoint +9°C, QNH 1012, NOSIG  
Flight cond.: VMC  
Flight plan: IFR  
Information sources: Report from the Pilot-in-Command of BAW 761, air traffic  
control, and the AAIB/N's own investigations.

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All times given in this report are local times if not otherwise stated.

#### SUMMARY

At 08.02 hours BAW 761 called ground control (GND) at Fornebu from parking area 38 (see map), and requested clearance to taxi out for a flight to London. BAW 761 was given permission to start taxiing out. The crew were at the same time informed that there would be a change in runway, and that they were to use runway 06 instead of runway 24.

At 08.06 hours SOR 24 called Fornebu GND from the GA ("general aviation") terminal and requested clearance to start for a flight to Stord, departing from runway 19.

At 08.10 hours SOR 24 received its en-route clearance for the flight to Stord, and was at the same time instructed to taxi to holding point and then contact Fornebu control tower (TWR). Immediately after this the BAW 761 crew requested taxiing instructions, whereupon they were instructed to cross runway 01 and taxi to holding point runway 06. The TWR air traffic controller on duty states in his report that when SOR 24 lined up on runway 19 ready for departure, the GND air traffic controller was informed of this. SOR 24

was cleared for take-off at 08.12 hours. The GND air traffic controller tried twice to contact the BAW 761 crew to instruct them to cross runway 01/19 behind SOR 24, which was then in the process of taking off, but received no answer.

The BAW 761 crew then called Fornebu GND and asked if the last transmission from the GND air traffic controller had been meant for them. The air traffic controller replied in the affirmative and said that the aircraft (SOR 24) had now taken off and that they could just carry on crossing runway 01/19. Both the TWR and the GND air traffic controllers state in their reports that the conflict was monitored visually and that it had been decided that it was unnecessary to cancel SOR 24's clearance for take-off because of the distance BAW 761 still had to taxi prior to crossing the runway. The TWR and the GND air traffic controllers also state in their report that SOR 24 was in the air and was passing over taxiway E as BAW 761 was going past position No. 47, approximately 125 m. from the stop line and approximately 185 m. from the edge of runway 01/19.

BAW 761's Pilot-in-Command states in his report that just before crossing runway 01/19 they saw a twin-engine aircraft coming into view behind and to the right of them and pass in front of them approximately 40-50 m. away. The aircraft passed by just as they were checking whether the runway was clear for crossing. Air traffic control claimed that they had called them, but neither the Pilot-in-Command nor the co-pilot had heard it. The Pilot-in-Command states finally that the air traffic controller had a strong accent, and that could have been the reason why they did not understand that the transmissions were meant for them.

The chief air traffic controller at Fornebu TWR states in his report that the crossing of runway 01/19 with respect to departures from runway 06 and landings on runway 24 is an area in which the number of conflicts is at the highest at Fornebu. There are approximately 200 crossings per day made at this point, so air traffic controllers are very aware of this problem, and have devised a good operational routine between them to deal with the situation. To reduce the volume of radiotelephony (RT), which is usually quite considerable at Fornebu, the decision is often made to give aircraft permission to cross the runway as early as the time at which clearance is given to taxi. This is also related to the fact that traffic which is due to take off from runway 19 has to be slotted in with the traffic flow on main runway 06/24, and it is usually the case that a decision as to when this traffic is to take off is not made a long time in advance. It is thus assumed that aircraft which have already received clearance to cross the runway will be given a revised clearance, either to stop before they reach runway 01/19 or to cross behind the aircraft taking off, as was what happened in this case. What was regrettable on this occasion was that BAW 761 did not adequately monitor the frequency and therefore did not comprehend the revised clearance. SOR 24 was allowed to continue the take off anyway, as the air traffic controllers on duty considered that the safety margins were adequate for SOR 24 to be able to pass the crossing point between taxiway E and runway 19 before BAW 761 could have possibly reached the crossing point.

Taxiway E is not equipped with stop bar lights at the point where it crosses runway 01/19.

All radio messages transmitted during the period of time in which the incident took place were in English.

### **COMMENTS FROM THE ACCIDENT BOARD**

There is quite a large discrepancy between the explanations given by the air traffic controllers and the BAW 761 crew as regards the distance BAW 761 was from the crossing point between taxiway E and runway 01/19 when SOR 24 went past. There are a number of factors of uncertainty which need to be taken into consideration when assessing the extent of the adequacy of the safety margins, the speed at which BAW 761 was taxiing and its distance from the crossing point, how long SOR 24 remained in the take-off position before commencing take off, as well as the possibility of radio failure or blocking of the frequency. It is, therefore, difficult for the AAIB/N to assess to what extent the incident represented a hazard to flight safety. The AAIB/N is sympathetic to the chief air traffic controller's line of argument with regard to the flow of air traffic and the high volume of RT in relation to the crossing of runway 01/19. The correct procedure to be followed in the case of a taxiing aircraft being in danger of coming into conflict with another aircraft taking off from runway 01/19 is that take-off clearance would be withheld until the taxiing aircraft had read back an instruction to the effect that it should either wait or cross behind the aircraft on take-off. If this procedure leads to such a high volume of RT that the flow of air traffic is detrimentally affected, management should evaluate possible ways of alleviating the RT volume on the GND frequency by, for example, setting up "clearance delivery" during busy periods.

The chief air traffic controller at Fornebu TWR has stated that between 10 and 20 aircraft per day depart from runway 19, but that because of capacity problems to do with parking a number of short take-off and landing aircraft may gradually be moved over to the northern parking area. Should this happen, the number of departures from runway 01/19 may increase to 60-70 per day. A safety precaution which could be taken with regard to crossings on runway 01/19 would be to install a set of stop bar lights on taxiway E. A decision was made early in 1993 to install sets of stop bar lights at Fornebu, and the plan was for them to be in operation in October 1993. However, owing to technical problems they were not ready for final testing until Spring 1995. The section leader for electrotechnical services at Fornebu has explained that they had had problems with the reliability of the signal control for the lights when using high current cables for signal-control. In order to achieve the desired reliability new signal-control cables would have had to be laid out, and the financial restraints of the project did not allow for this. The operations management thus decided to install sets of clearance lights (continuous green lights) instead, which provided a satisfactory level of reliability. The AAIB/N recommended that the Norwegian Civil Aviation Administration, after an earlier incident at Oslo Airport, Fornebu (see BUL 07/95), evaluate the installation of light signals at airports where there is frequent crossing of vehicles

over runways. In a status report dated 30.06.95 from the Norwegian Civil Aviation Administration to the Ministry of Transport and Communications regarding certain recommendations, it was stated that 6 sets of clearance lights were being installed and that it was expected that they would be in operation by August. The purpose of the sets of clearance lights will be to remind ground traffic that they are not allowed to pass these lights until clearance is received. These lights will, however, not prevent similar incidents occurring in the future in a case where an aircraft which has previously received clearance to cross the runway does not answer to a new clearance. The AAIB/N is thus of the opinion that sets of stop bar lights are a better solution with regard to flight safety.

The BAW 761's Pilot-in-Command has alleged that the air traffic controller's accent was the reason why he did not hear the radio messages which were addressed to him. Oslo Airport Fornebu handles a considerable number of international flights each day. The air traffic controller in question has not previously received any complaints about his English pronunciation in the course of the 28 years he has been in service at Fornebu. The AAIB/N thus assumes it to be rather unlikely that the air traffic controller's pronunciation was the reason why the crew did not understand the radio messages.

## **RECOMMENDATIONS**

The Civil Aviation Administration should evaluate the installation of stop bar lights at Oslo Airport Fornebu.

The Civil Aviation Administration should evaluate a more extensive use of "clearance delivery" at Oslo Airport Fornebu during busy hours.