BULLETIN

AIRCRAFT ACCIDENT INVESTIGATION BOARD/NORWAY
(TRANSLATED FROM NORWEGIAN)

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BUL 41/96
Date 20 December 1996

Aircraft	
- type & reg.:	MDC MD-83, TC-INB/Boeing B-737, LN-BRJ
- year of man.:	1996 / 1991
Radio call sign:	Intersun (SWW) 1351/Braathens (BRA) 374
Date and time:	22 July 1996 at 2052 hrs
Location:	Stavanger Airport Sola
Type of occurance:	Air incident, separation between aircraft below minima
Type of flight:	Commercial; charter/scheduled operation
Weather cond.:	METAR: 140/13, CAVOK, temp. 20/08°C, 1016 hPa
Flight cond.:	VMC
Flight plan:	IFR both flights
No. of persons onb.:	180/40
Injury:	None
Aircraft damage:	None
Other damage:	None
Pilot in Command:	SWW-1351
- age:	53
- licence:	ATPL
- fl.experience:	17 000 hrs, as PiC 7 000 hrs
Information sources:	Reports from the Air Traffic Services, reports from both Pilots in Command and AAIB/Norway investigation.

All times given in this report is local time, if not otherwise stated.

SUMMARY

During a visual approach for landing on runway (RWY) 18, the actual separation between an approaching and a departing aircraft became below standard minimum as stipulated in rules of the air. According to the report from the duty coordinator in the Control Tower, the Pilot in Command (PiC) of SWW 1351 probably misunderstood

details regarding the tower's instructions about a visual approach. SWW 1351 was a charter flight from Antalya (LTAI) in Turkey, and was originally cleared direct from Svensheia (SVA) VOR/DME to Sola (SOL) VOR/DME for an ILS-approach to RWY 18.

The Sola ATIS (Automatic Terminal Information Service) at 1820 UTC was:

> "Sola information charlie, one eight two zero, expect ils runway one eight, runway one eight in use, runway one one for helicopters, transition level five zero, parachute jumping in progress, wind one five zero twelve knots, cavok, temperature plus two one, dew point plus zero eight, qnh one zero one six, nosig."

According to the PiC's report, he received the following clearence after checking in with the Approach Control: "vectoring runway 18, visual approach". According to the report, it is this airline's policy to perform instrument approaches also under VMC. The PiC said he therefore read back the clearance as "cleared ILS approach runway 18". The clearance was then repeated by the Approach Controller by saying: "I say again, vectoring visual approach for runway 18." The flight then received clearence for lower altitudes and continued towards SOL VOR-DME, "initially 4 000 ft, later 3 000 ft and finally 2 000 ft." When the flight came closer, it was communicationwise transferred to Sola Tower (TWR). The TWR Controller informed about the traffic departing from runway 18 (BRA 374). The flight crew observed the departing aircraft and the PiC said in his report that he asked for a "left side final approach, after turning right". His understanding was that the TWR cleared his flight to "plan landing left or right hand side, cleared to land runway 18". After this, the flight turned right, towards north-east for a down wind and base leg for runway18 and landed normally. The PiC recalled the distance to SOL to be appr. 1,5 NM when he turned right.

The company Flight Operations Manual (FOM) states that visual (contact) approaches may be performed to save time and to suit the traffic situation, but the navigational aids available should be utilized to eliminate the inexcusable mistake of landing on a wrong runway or aerodrome.

The sound tape recorded from the radio correspondance between TWR and SWW 1351 reveals the exact wording. The clearence from the APP controller was:

> "....(unreadable) 1351 radar contact, descend flight level five zero, inbound vor, expect visual approach to one eight, information charlie, one zero one six." SWW 1351 answered: "descending five zero, expect ils runway one eight, one zero one six, information charlie, confirm, Intersun 1351." APP: "Intersun 1351 expect a visual approach if you like, otherwise I can give you vectoring later for an ils." SWW 1351 answered: "Expect visual approach run way one eight, Intersun 1351."

As the flight approached Sola, it was cleared to 3 000 ft at which altitude the crew informed that they had the runway in sight. They were then cleared to 2 000 ft and instructed to contact Sola TWR. This was done with the following call: "Intersun 1351

approaching, visual approach runway one eight." However, the flight continued towards SOL VOR/DME, at 2 000 ft and received the following clearence from TWR. "Sunwing 1351, wind is one five zero at one two, cleared to land runway one eight." Half a minute thereafter, TWR inquired: "1351, you joining down wind for one eight, correct?" This was confirmed by SWW 1351.

Because the flight continued direct towards the airport and the VOR station, the duty controller in Sola TWR got the impression that the PiC was uncertain about which way he should fly to perform a visual approach to runway 18. He had expected the flight to turn right earlier to proceed direct for a left base for runway 18. He therefore instructed the flight to "turn northbound, check the departure on runway one eight." The answer came from SWW 1351: "Proceeding - eh - right downwind (voice in the background: right hand - eh - downwind)." The Air Traffic Controller understood this as a question whether the flight should execute a right or left hand landing circuit. In the opinion of the Air Traffic Controller, this turn to the downwind leg was performed very late. The flight made a normal turn, with about 15° bank and flew in over the eastern part of the aerodrome before it proceeded northeastbound. The Air Traffic Controller observed that the landing gear was extended as the aircraft proceeded on the "downwind" leg. His further instructions were straight forward: "Just keep an eye on the departure." The message was acknowledged by SWW 1351, and shortly thereafter the crew reported the other aircraft in sight. The next call from SWW 1351 was a question about performing a right or left landing circuit: "Tower, Intersun 1351, landing right hand or left hand?" The answer was that it did not matter and that SWW 1351 was again cleared to land on runway 18. Departing traffic had earlier been instructed by the Approach Controller on the APP frequency to discontinue its climb. The departing flight had leveled off at approximately 1 400 ft.

The report from the PiC of the departing flight refers to his departure on runway 18, with the clearence "departure route STONE 1A." This route goes initially to Varhaug (NDB LEC 319), due south of the aerodrome, with an altitude restriction of 4 000 ft. After take off and check in with Sola Approach, that also handles the departures, the flight was instructed to level off on account of an MD-80 performing a visual approach to runway 18. The recording of the actual call was not that extensive, just: "level off, level off, traffic is ten o'clock one mile, two thousand feet."

The Approach Controller has in his report stated that the departing flight leveled off with a mode C reading of 1 400 ft while SWW 1351's lowest mode C reading when it approached the field, was 1 900 ft. Mode C readings are to the nearest 100 ft.

A military radar station has recorded both flights. The altitude separation here shows a minimum of 350 ft when the horizontal distance was at the smallest, appr.1 km. This information is taken from a plot on a chart in a relatively small scale. The accuracy is thus not very great and the measurements are given as approximatives.

In addition to the details referred to above, listening to the recorded radio correspondance reveals also a not satisfactory terminologi. The Approach Controller, for instance, omitted the flight prefix in many of his calls. This important part of the appropriate call sign was either not used or the initial part of the transmission was commenced

before the transmitter button was activated. Only the flight's numbers were heard. This was also the case towards other flights. Also other company call signs than the official one, was used. For instance, in one occasion *Toppswiss* 1351 was used in the middle of a sentence, while the tower controller used *Sunwing* 1351 all the time. The flight crew consistently used Intersun 1351, except for some short acknowledgements where only the flight number was used.

The local air traffic instruction at Sola states that the approach control shall clear visual approaches down to 2 000 ft as the lowest altitude, to give the tower control ample air space for local, visual traffic. Further descent will be cleared by the tower control. In an occurance like this, the CAA, Region Rogaland, states that it is natural to apply *geographical* (lateral) separation between approaching and departing flights. (Reference is made to the Norwegian Civil Aviation Requirements (BSL) G 1.3.4 para. 7.2.1 and 7.2.1.1.)

COMMENTS FROM THE ACCIDENT BOARD

This incident was primarily caused by a misunderstanding from the flightcrew's side, and by the Approach Controller expecting the flight to break off its approach to SOL VOR/DME on his own initiative to proceed directly towards a left base leg for runway 18. This is the most common procedure when arriving Sola from the southeast. The tower control did not clear the flight for a visual approach. It was just cleared to land after the flight's first call. Neither was the flight given any instructions to proceed or call e.g. down wind or base leg or final runway 18. This is also the normal traffic direction for visual circuits, if not otherwise specified or instructed. But the PiC's understanding of the instructions, according to his report, was that he should receive radar vectors for the visual approach. The instructions given by the approach control were that the flight might receive vectors for an ILS approach later if it so wanted. The flight therefore proceeded on its original clearance towards the VOR at the last assigned altitude, 2 000 ft. This would also be natural to do if a right hand landing circuit should be flown, even if a left hand circuit is standard. Right or left hand approach was a question the PiC asked when the flight was instructed to turn northbound.

The Norwegian Civil Aeronautical Requirements, volum G, (BSL G) 1-4, para. 9.1.4, (re. visual approaches), says:

> "Duty Air Traffic Controllers should also be restrictive in issuing clearences for visual approaches to PiCs who are expected not to be familiar with the local conditions, or to Pilots in Command of foreign nationality, regardless whether scheduled or other kind of operations."

This requirement should, in the opinion of AAIB/Norway, be adhered to at a greater extent than is now commonly used. There are several examples, including serious incidents, where ATC personnel have issued visual clearences when the pilots have prepared for and briefed a normal instrument approach to the runway in use. The examples referred to are general and has occurred towards both foreign and domestic pilots. It is

the PiC's right, when flying on an IFR clearence, to request an instrument approach if he wants this type of approach, and should also request this from ATC when deemed to be in his interest. The result is, of course, most often that the pilots try to comply with the Air Traffic Controller's suggestions. They want to be flexible to the traffic situation and to show their competence to perform any approach. Another fact is that the ATC personnel often do this as a result of pilots earlier repeated requests for visual approaches, either to save flight time or for other reasons.

This incident shows that incorrect and insufficiant radio phraseologi may cause misunderstandings so that the receiver "hears" or actually percepts differently from what was transmitted. In this case the PiC was of the meaning that he would receive radar vectors for his visual approach, while the expression "vectors" was mentioned as an option if he wanted to perform an ILS approach. A new or continued R/T campaign is obviously still needed within the Norwegian aviation community.

AAIB/Norway's consideration is that there was no risk of collision.

RECOMMENDATIONS

1. The ATS units should be encouraged to follow more closely the intentions in BSL G 1-4, para 9.1.4.