

BULLETIN

AIRCRAFT ACCIDENT INVESTIGATION BOARD/NORWAY (AAIB/N) (TRANSLATED FROM NORWEGIAN)

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Aircraft

- type & reg.: McDonnell Douglas MD 83, TC-IND
Radio call sign: Intersun 1331 (SWW)
Date and time: 19 August 1996 at 0705 hrs
Location: Kristiansand Airport Kjevik, Norway
Type of occurrence: Incident, unstabilized initial approach followed by a go-around and normal landing
Type of flight: Commercial; charter
Weather cond.: TAF valid 05 - 15: Wind 060°/5 kt, visibility 6 000 m, partly cloudy 1 500 ft, tempo between 05 - 07: visibility 3 000 m, mist, clouds few at 200 ft, from 06 - 09: wind 220°/10 kt, CAVOK
METAR 0720 hrs: Wind variabel/1 kt, visibility > 10 km, FEW at 300 ft, temperature and dewpoint 14°/14°, pressure 1 023 hPa
Flight cond.: VMC
Flight plan: IFR
No. of persons onb.: 134 passengers, crew 2/4
Injury: None
Aircraft damage: None
Other damage: None
Pilot in Command:
- age: 46 years
- licence: ATPL
- fl.experience: 6 910 hrs
Information sources: Pilot in Commands report including weight- and balance calculations and operational flightplan, information from the companies flight operational manager, meeting with operational representatives, report and voice recording from ACC Kjevik, witnesses, radarplot and AAIB/N investigation.

The Aircraft Accident Investigation Board has compiled this bulletin for the sole purpose of improving flight safety. The object of any investigation is to identify faults or discrepancies which may endanger flight safety, whether or not these are causal factors in the accident, and to make safety recommendations. It is not the Board's task to apportion blame or liability. Use of this report for any other purpose than for flight safety should be avoided.

All times given in this report is UTC, if not otherwise stated. Local time Norway UTC + 2 hrs.

SUMMARY

The aircraft TC-IND departed Antalya, Tyrkey (LTAI) on an IFR flightplan en route to Kristiansand airport Kjevik (ENCN), Norway. The estimated arrival time was 0710 hrs. The flight was uneventful until the start of the initial approach.

The Pilot in Command (PIC) writes in his report: The aircraft was initially cleared to Svensheia VOR (SVA) for descent to 3 000 ft. Thereafter we received clearance for an ILS approach to runway 04. Due to a "false localizer capture" the crew discovered that the aircraft was to the right of centerline when approaching the outer marker "OM" (Odderøy). A missed approach was initiated in the direction to "BN" (Birkeland). The control tower (TWR) was informed. During the go-around the altitude was approx. 1 500 ft MSL. A new clearance for approach via SVA was received from the TWR. A stabilized approach was carried out and the aircraft landed 0713 hrs.

The PIC has in a later conversation with AAIB/N explained that the aircraft during the descent was operated by the auto-pilot, and an automatic ILS-approach to Kjevik was planned. The aircraft was on course from Ålborg VOR towards SVA, and descending to the initial approach altitude of 3 000 ft. At a distance of approx. 2 NM from SVA, with an indicated airspeed of approx. 180 kt, flaps extended 11°, the PIC armed the auto-pilot for an ILS-approach. The interception angle towards the localizer was close to 90°. The auto-pilot immediately captured the ILS. The PIC also noted that the aircraft was above the glide slope for runway 04. At this time the crew had visual contact with the underlying terrain. Shortly after, the PIC became aware of that the aircraft was paralleling some distance to the right of the localizer. He now realized that the aircraft was not stabilized for an approach, and that a landing could not be performed. He decided to abort the approach and the aircraft was climbed back to 3 000 ft to commence a new approach.

The TWR controller writes in his report that TC-IND was cleared SVA 3 000 ft for an ILS approach to runway 04. During the approach the crew reported a go-around, and the TWR controller observed the airplane at an altitude of approx. 700 ft over Hånes. TC-IND was thereafter given instruction to climb to 3 000 ft ODR for a new approach to runway 04. TC-IND landed 0713 hrs.

The TWR controller requested on the radio the PIC to contact him on telephone after landing. On the phone the controller asked for details of what happened during the first approach. During the conversation the PIC stated:

"It was a false capture due to a very high interception angle. We were coming at an approach angle of 310° and the approach heading was 037°. That is too much."

When asked about the lowest altitude during the go-around, the PIC answered "around 1 400 ft". When he was asked again about the lowest height during the missed approach, he could not state a definite figure because at that time he was engaged in the procedure for the go-around. But he suggested, the altitude had been approx. the same as the altitude for passing OM, may be 100 ft lower. The correct altitude established on glide path when passing this nav. aid is 1 600 ft.

After the incident The Nav. Aids. Flight Inspection Unit of Civil Aviation Administration made an inspection flight of the localizer (LLZ) for runway 04. This flight was performed after AAIB/N had received the PIC report on the incident. The control section report states:

".... The testing of Kjevik LLZ 04 was done using our standard procedure for LLZ course alignment and structure, consisting of:

- Recording of Displacement Sensitivity on an approach from 12 NM to threshold.
- Recording of Monitor Displacement Sensitivity Alarm.
- Recording of Modulation Depth (90/150 Hz).
- Recording of Off Course Clearance in +/- 35 deg coverage sector.
- Recording of Monitor Course Alignment Alarm.

The details of the findings are shown in attachment to this report.

Conclusion: These measurements show that Kjevik LLZ 04 is well within the criteria given in ICAO Annex 10 and DOC 8071..."

After the incident some of the passengers contacted the media and reported an abnormal approach. Witnesses on ground observed an airplane at low altitude over a automobile training ground situated some 3 km south-east of Kjevik.

On request from AAIB/N the Air Force "Luftkontrollinspektorat" has been able to partly reconstruct the airplanes flight path based on radarobservations of the approaches. The lowest altitude of the missed approach registered on the radarplot was 1 300 ft MSL (transponder height). After this registration, there is approx. one minute pause where the altitude could not be read. The next registration was 1 800 ft MSL and thereafter increasing height from the aborted approach. The radar registered flight path coincides well with the information AAIB/N has received from the PIC.

Operational representatives from the company stated during a meeting with AAIB/N that it is known that aircraft equipped with modern approach aids have behaved in the same manner, i .e. made some kind of parallel approach under similar circumstances.

A check of the aircraft altitude and flight path with the aid of reading the flight data recorder has not been possible. The incident was reported to AAIB/N more than 24 hours after it happened. When the company was requested to deliver this data, the

company answered that the information was lost because the aircraft had been in operation for several hours since the landing at Kjevik.

COMMENTS FROM THE ACCIDENT BOARD

The PIC had planned to make an automatic ILS-approach to runway 04 at Kjevik. The approach was started directly towards the localizer from the track Ålborg VOR - SVA VOR. This incident was primarily caused by the late arming of the autopilot at a fairly high speed and with an interception angle close to 90° towards the localizer. If the PIC had either reduced the interception angle, or had stabilized the aircraft in the holding pattern between Odderøy NDB and SVA VOR before commencing the approach, this incident would have been avoided.

When the PIC realized that the aircraft was not stabilized on the localizer, and at the same time also was above glidepath, he considered the initial approach to be unsuccessful, executed a missed approach and made a go-around. AAIB/N consider that this was a correct decision. Afterwards the PIC performed a normal stabilized approach and landed without problems.

The lowest altitude over the terrain during the approach can not be ascertained.

RECOMMENDATIONS

1. The company should consider the necessity of increasing pilot training regarding planning of ILS-approaches. The company should establish a safety barrier by having the crew cross-check the ILS indications with other navigational means before commencing descent.
2. The company should also consider the necessity of reviewing the limitations of airborne navigational equipment/systems for ILS approaches during pilot training.

ENCLOSURE

IAC ICAO Kristiansand Kjevik ILS 04.