

## BULLETIN

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

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#### Aircraft

- type & reg.: DHC-8-311, OE-LRW  
Radio call sign: BRA 4317  
Date and time: 3 February 1997 at 1720 hours  
Location: Approx. 5 NM north and northeast of Stavanger airport Sola, Norway  
Type of occurrence: Aircraft incident, unstabilized approach  
Type of flight: Scheduled flight from Kristiansand to Stavanger  
Weather cond.: Actual weather at 1720 hours: Wind 180° 18 kt - Visibility more than 10 km - Clouds: few at 1 000 ft, scattered at 1 500 ft, broken at 2 000 ft - Temperature and dewpoint +4°C/+3°C - Pressure 1 009 hPa - Temporarily partly cloudy at 1 500 ft  
Flight cond.: IMC  
Flight plan: IFR  
Injury: None  
Aircraft damage: None  
Other damage: None  
Pilot in Command:  
- age: 40 years  
- licence: ATPL  
- fl.experience: Total time 8 300 hours, time on aircraft type 5 600 hours  
Information sources: Report from pilot in command, report from approach controller on duty and the AAIB/N's own investigation.

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All times given in this report is local time (UTC + 1 hour), if not otherwise stated.

## SUMMARY

An IFR flight, BRA 4317, was en route from Kristiansand airport, Kjevik to Stavanger airport, Sola 3 February, 1997. This scheduled flight is normally operated by a Fokker 50 owned by the company "Norwegian Air Shuttle AS" (NAS) in co-operation with Braathens SAFE. As NAS had one aircraft in for heavy maintenance, an Austrian company - Rheintalflug, was chartered for the flight. The route was operated by a DHC-8-311.

BRA 4317 was cleared by Stavanger ATCC the route via SIRDA for approach Sola (see enclosed: STAR RWY 18). SIRDA is the initial point for a STAR to runway 18 Sola. Normal transition from Stavanger ATCC to Sola approach (ARR) took place at 1701 hours a few nautical miles before SIRDA.

After establishing normal radio contact, BRA 4317 received the following instructions from Sola ARR:

"Continue inbound Rennesøey, expect vectoring for an ILS approach runway 18, QNH 1010 and information Whiskey."

To this instructions **BRA 4317** answered:

"Ok, 1010, runway 18 and confirm where to go?"

**Sola ARR:**

"4317, when ready descend 5 000 ft, QNH 1010 and continue inbound Rennesøey."

**BRA 4317:**

"Continue down to 5 000, 1010, thank you."

The radio communication was made without complete callsigns and without correct readback. Further on, the use of callsigns was neglected by both parties. BRA 4317 did not repeat the NDB navigation aid "Rennesøey" in the instructions, and Sola ARR did not call attention to this.

From the traffic strip (FPS) at Sola ARR, which is based on repetitive flight planning, BRA 4317 was stated to be a Fokker 50. It was therefore unknown to the controller that the flight was operated by a DHC-8.

Regulations regarding repetitive flight planning are to be found in Norwegian Aviation Regulations: BSL G 1-2, point 8 and BSL G 1-9 point 4.

The radio communication between **BRA 4317** and **Sola ARR** continued:

At 1709 hours: **BRA 4317**: "4317, we are 5 000 ft on ten ten, may we follow the DME 15 arc?"

After a pause, **Sola ARR**: "4317 affirm."

**BRA 4317**: "DME 15 arc in to the ILS 18, thank you."

At 1711 hours, **Sola ARR**: "4317 cleared ILS approach, correction VOR/DME approach RWY 18 via SIRDA arrival, report established on the radial and descend unrestricted accordingly."

**BRA 4317** answered: "VOR/DME approach RWY 18, we are just in a left turn, SIRDA 2B, call you established on the inbound track."

The instructions given at 1711 hours was surprising for the crew on BRA 4317, and it was understood as the ILS runway 18 was unserviceable. As the crew now should perform a VOR/DME approach instead of the planned ILS, the operational procedures of Rheintalflug required a re-briefing on the new approach procedure. At the same time it was necessary for the crew to reset and check the navigation aids. The approach charts had to be changed. While performing these routines, the aircraft drifted off the normal approach pattern and entered an area over the city of Stavanger east of Sola on course for the town of Sandnes. At his time the aircraft had also descended to 2 000 ft and was flying in and out of clouds.

The pilot-in-command, who also was handling the communication, writes in his report that he had to ask twice in order to receive an approach clearance. He also states, that during the whole approach, he wondered about the controllers instructions and phraseology.

At 1713 hours **Sola ARR** contacted BRA 4317. Now the aircraft had left the normal approach pattern and was flying northeast to east of Sola:

"...317, what's happening now?"

**BRA 4317** answered:

"Just correcting to the right, we got no information over on the ATIS that's only a VOR approach, sorry, we are on the right turn."

From here on, Sola ARR gave BRA 4317 radar vectoring for an ILS approach to runway 18. A normal landing was made at 1722 hours. The pilot in command was then informed that the incident would be reported by Sola ARR to CAA.

There is a "NOTE" in AIP NORGE/NORWAY RAC 4-ZV-10: STANDARD ARRIVAL ROUTES - INSTRUMENT:

"Unless otherwise instructed by ATC a STAR-clearance also includes a clearance to make an instrument approach."

The crew can find this "Note" in the company's Route Manual, chapter RULES AND REGULATIONS NORWAY under 13.2 "Flight plan and clearance". The Note is not printed on ASIR page 3 STAR rwy 18.

The pilot-in-command replies in his answer to the draft of this bulletin that he considers that a strong westerly wind component at altitude aggravated the course deviation.

## COMMENTS FROM THE ACCIDENT BOARD

By listening to the radio communication on the ATC tape between Sola ARR and BRA 4317, it is apparent that the pilot in command had a tendency to start his radio messages just before he presses the microphone button. This hampered the understanding between Sola ARR and BRA 4317. The carelessness in the communication of the use of correct callsigns further on, which is done by both sides, did not improve the understanding. The pilot in command is recommended to reconsider his microphone technique.

In the report from the pilot in command it is obvious that the crew did not understand the instructions "inbound Rennesøey, expect vectoring for an ILS". If Sola ARR had used the callsign RSY (romeo sierra yankee) instead of "Rennesøey", this clearance could possibly be more easily understood.

What really starts the confusion and the fault in navigation are the instructions received at 1711 hours where the ILS approach is changed to VOR/DME approach to runway 18. This change was given to BRA 4317 at the time when the aircraft was just about to turn in on the ILS at radial 015 SOL. AAIB/N considers SIRDA ARRIVAL procedure to include the ILS approach to runway 18. AAIB/N can not understand the reason for changing the approach procedure.

It is the opinion of AAIB/N that The Standard Operation Procedures should take care of unforeseen changes/circumstances in order not lead to the consequences shown in this incident. A revised approach instruction should not bring the crew into such problems that the primary navigation performance in a critical phase of flight, is hampered. In this case the airplane diverted far from course/position. AAIB/N questions the preparations made by the crew for this approach. The aircraft did not go below minimum safe altitude during this incident, but there is high terrain within short distance east of the area.

The use of correct callsign was neglected almost consequently during this approach. In this occasion it did not have any influence on the understanding of the instructions. AAIB/N will nevertheless recommend that the well defined procedures for communications in BSL H (Norwegian Civil Aviation Regulations based on ICAO

Annex 10) are adhered to. In one note it is specified that a callsign as "BRA 4317" can not be abbreviated. All experience indicates that when one participant in radio communication starts to shorten or omit the callsigns in the messages, the other one very easily will follow.

The ATCC can not expect that an scheduled aircraft arriving with a normal callsign necessarily have a crew that is on the "homefield" and easily understands all what is said. BRA 4317 pilot in command was flying in to Sola for the first time. By listening to the sound tape it is obvious that in this occurrence the name "Rennesøy" was not understood by the crew.

Repetitive flight planning should be updated.

This incident was caused by the lack of understanding in the communications. When a readback is not complete, the correct instructions should be repeated until correctly answered. AAIB/N consider CAA should valuate the necessity for the involved parties to improve the communication routines.

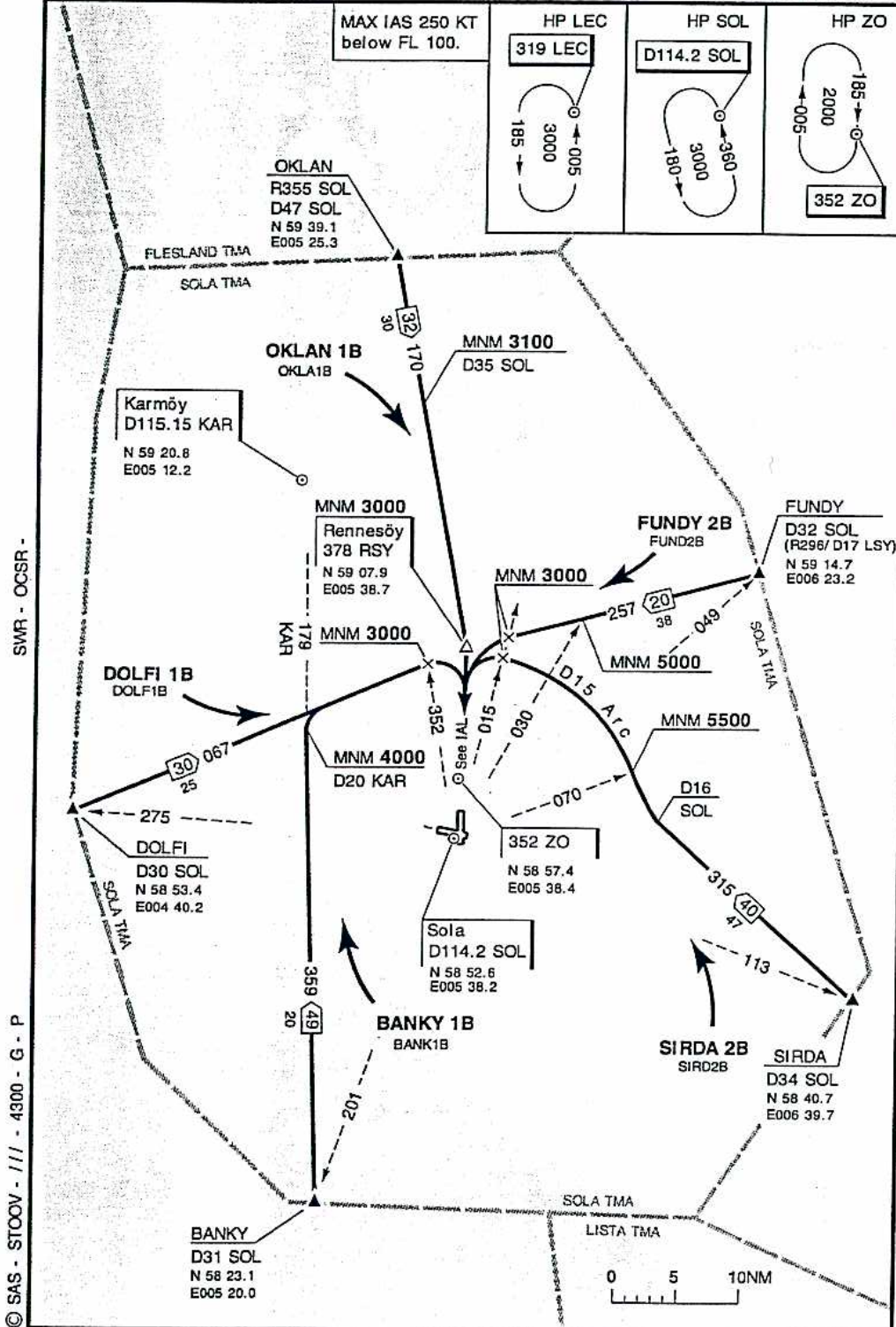
## **RECOMMENDATIONS**

1.

The Civil Aviation Administration should consider if it is convenient to make the information in the mentioned "Note" in AIP NORGE/NORWAY RAC, STANDARD ARRIVAL ROUTES - INSTRUMENT in SAS Route Manual (and also Jeppesen) more accessible for the crew during an approach. It is now only stated in "RULES AND REGULATIONS NORWAY".

## **ENCLOSURE**

SAS Route Manual ASIR page 3 STAR RWY 18.



SWR - OCSR -

© SAS - STOOV - 4300 - G - P

Change: STAR FUNDY 2B, SIRDA 2B

WEF 10 NOV