

## BULLETIN

### AIRCRAFT ACCIDENT INVESTIGATION BOARD/NORWAY (ENGLISH VERSION)

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#### Aircraft

- type & reg.: Tupolev TU-154, UR 85379
- year of man.: Unknown
- No of engines: 3

Radio call sign: UNO 180 (United Nations one eight zero)  
Date and time: 27. April 1994  
Location: Oslo Airport Gardermoen  
Type occurrence.: Operational  
Type of flight: Commercial, charter  
Weather cond.: Wind 190°/15 knots, vis. 10 km, scattered at 3,000 feet,  
temperature/dew point 10/04°C, QNH 1017 hPa  
Flight cond.: VMC daylight  
Flight plan: IFR  
No. of persons onb.: 22 - Crew in cockpit 5, in cabin 3, 14 passengers  
Injury: None  
Aircraft damage: None  
Other damage: An optical sighting instrument, temporarily positioned at  
runway threshold sustained minor damage

#### Pilot-in-Command

- age: Unknown
- licence: Unknown
- fl.experience: Unknown

Information sources: Reports from Air Traffic services at Oslo/Gardermoen and  
the Pilot in Command, comments from CAA.

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

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### SUMMARY/FACTUAL INFORMATION

UNO 180 was a charter flight for the United Nations Organisation, carrying UN-personnel from Zagreb to the Oslo/Gardermoen Airport. The approach was under control of Fornebu Approach (APP) which gave radar guidance and cleared UNO 180 for an "ILS 01,

circling to 19" approach to Gardermoen. This clearance was repeated by APP once before the flight was transferred to Gardermoen Tower. The clearance was not read back by the crew.

The intention of the ATC controller at Gardermoen (Gardermoen TWR) was initially to instruct UNO 180 to make a right brake-off when below clouds, for a left circling east of the airport, to land on runway 19. The flight was instructed accordingly. During the ILS-approach the traffic situation at Gardermoen changed somewhat and the air traffic controller therefore later preferred to have the UNO 180 make a *left* brake-off and a *right hand* circle (west of the aerodrome). The controller issued a new clearance to this respect when the flight reported over the Outer Marker (OM) and below clouds. This clearance was not complied with. The crew called the tower and informed that they did not understand the instructions given and repeatedly asked for a confirmation of a landing clearance on runway 01. A clearance was finally given for a landing on runway 01, after some airport personnel working close to the runway threshold had cleared the area.

These persons had previously been informed that the landing would take place after a circling manoeuvre and to occur some minutes later. The evacuation was rushed and an instrument was left behind and was blown over when UNO 180 landed. The ATC controller considered to instruct the flight to reject the landing and go around for a new approach, but reconsidered when he succeeded in evacuating the persons close to the runway threshold. He was afraid of further misunderstandings and complications because the crew did not comply with his previous instructions, but insisted on landing on runway 01.

The METAR observations at 0920 hrs UTC is quoted on page 1. UNO 180 had received a wind information of 190° at 13 kts when the approach clearance first was issued by Fornebu APP.

The ATIS (Aerodrome Terminal Information Service) gave RWY 19 as runway in use in the transmissions both at 0850 UTC and 0920 UTC, the wind as 190/13 and 190/15 respectively, varying between 160° and 220° in direction.

When UNO 180 first contacted Gardermoen TWR the crew informed that they continued their ILS approach to RWY 01. The detail regarding the circling to RWY 19, with a right brake-off for a left circle, was not read back. Gardermoen TWR confirmed the clearance in the following way:

"United Nations one eight zero - Gardermoen - QNH 1017, report coming below, expect right brake-off for left down-wind runway 19."

When coming below clouds, passing the outer Marker (OM), the crew reported :

"United Nations 180 - outer marker on final for runway 01",

and Gardermoen TWR answered:

"United Nations 180 - you can start a left brake-off for right down-wind instead."

The UN 180 crew answered:

"Confirm landing clearance?"

Gardermoen TWR then repeated the new instruction about a "left brake-off, report right down-wind runway 19" two times, the last time with a wind information of 180°/12 knots added. The crew's answer between these transmissions was:

"I'm sorry, I don't understand you, confirm landing clearance now?"

Gardermoen TWR had by this time warned the persons at threshold RWY 01 that a landing was imminent on RWY 01. A landing clearance for RWY 01 was then given to avoid further complications, 1 min. 30 seconds after the flight reported passing the OM. The flight landed without any difficulties, but an optical instrument left behind at the threshold was blown over by the landing aircraft. The continued correspondence between TWR and UNO 180 did not contain any request that the crew should contact or visit the control tower for consultations.

The Pilot-in-Command stated in his report (submitted in English) that the crew before descent and during the approach listened to ATIS and thus was informed about runway in use, RWY 19, and actual weather and wind information. The inbound clearance from the approach controller (Fornebu APP) was a radar guidance for the ILS to RWY 01, which was accepted. The additional part about a circling to RWY 19 is not mentioned in the Captain's report. After reporting established on the ILS for RWY 01, the crew was instructed to contact Gardermoen TWR and did so by reporting that they continued the ILS-approach to RWY 01. From this time onwards, the P-i-C claims that the Air Traffic Controller in the Tower did not use standard ICAO phraseology.

The crew then received instructions the P-i-C perceived as contradictory, first to brake off right and then to brake off left from 01 to start approach for RWY 19. The Captain also stated in his report that a circling maneuver west of the field was not approved according to information on his Jeppesen Instrument Approach Chart. The crew had then informed the tower that they did not understand such instructions that endangered flight safety, and requested a landing clearance. Finally, the landing clearance was given before the flight passed the inner marker beacon. (Should be Middle Marker, MM, there is no Inner Marker for this approach, AAIB/N.) After the landing, the Pilot in Command was not called to the tower. This request was submitted to the crew the next day, when checking in for flight. All this according to the Pilot-in-Command's report.

From the report from the Air Traffic Services it is stated that the P-i-C and crew were not aware of being instructed to a circling maneuver as an addendum to the ILS clearance before they were given the opportunity to listen to the tape recordings from the approach the day before. They had understood and accepted the clearance only as an ILS approach clearance to runway 01, with a later landing clearance for the same runway. The P-i-C also stated that there was no problems in landing this type of aircraft in the actual tail wind conditions.

Information about circling at Oslo/Gardermoen is found in the Aeronautical Information Publication (AIP) for Norway, map section. The wording is: "Visual circle east of aerodrome". The corresponding information in the Jeppesen Manual is found in the column Circle-to-Land: "Not authorized West of airport". This map also contains actual spot heights in the area west of

the aerodrome, elevation ranging from 1505 ft to 2145 ft. The CAA's comments on the circling limitation explains the reason for the restriction on circling: only to be performed east of the airfield. An unrestricted circling, both east and west of the runway at Gardermoen would have resulted in a higher circling minimum, taking the higher terrain on the west side into consideration. By restricting the circling to the east of the aerodrome, it is possible with a lower circling minimum. The CAA comments conclude that this again means that it is not *prohibited* to make a visual landing circuit to the west of the aerodrome in daylight with good visibility and a high cloudbase. The Region office at Gardermoen has in their hearing comments informed that the Jeppesen Manual was not available in the tower and that the wording of the warning consequently was not known to the Air Traffic Controllers. Further, the approach chart did contain instructions for missed approach procedures.

### COMMENTS FROM THE ACCIDENT BOARD

This incident occurred when a foreign crew with an apparently reduced familiarity of the local conditions at Oslo/Gardermoen was given an approach procedure that implemented an approach to a runway in opposite direction of the runway in use for landing, followed by a circling for positioning to the correct runway. There was also other local traffic at the time. Additional difficulties arose when the Pilot in Command/crew did not fully understand the part of the inbound clearance that contained the instructions about brake-off and circling to RWY 19. A possible language barrier when trying to communicate outside standard phraseology cannot be ruled out. The Board do not know if the P-i-C would have complied with the original clearance: A right brake-off for a left circling to RWY 19, east of the field. The approach chart has no warning against this maneuver, but the original clearance/instructions were reversed. According to the P-i-C's statements the following day, he was determined to land on runway 01, as he had understood and accepted his first clearance. In the Pilot-in-Command's opinion, the actual wind conditions created no problems for such a landing with actual type of aircraft.

The Board is questioning whether this episode could have been avoided if UN 180 had been given a clearance that would have brought the flight all the way to the decision point for the runway in use, without the need for an additional visual circuit at an airport with other local, visual traffic. A clearance for an ILS-approach to RWY 19 would in this case also complied with the ATIS information which the crew had received earlier, and thus most probably the information on which they planned their approach. This direction of landing was also desirable in the actual wind conditions and the direction used by other actual traffic. The Board is not considering the time saving element in the ILS-approach to RWY 01 with circling, only the flight safety aspect. This approach direction was not requested by the UNO 180 crew. For a Pilot-in-Command with limited knowledge of local conditions and probably to some extent, a somewhat limited knowledge of the English language beyond flight phraseology, it would most probably be more convenient to follow an instrument flight approach procedure all the way to the decision point for the runway in use, without the need for a brake-off followed by a visual circuit. A straight in procedure is also safer regarding a possible radio communication failure. With a suggested reduced knowledge of the English language outside the phraseology needed for flight operations, the crew's uncertainty most probably increased when they were re-instructed about a *left* brake-off for a *right* circling as a reversed clearance. To the not approved side of the airfield. This note of warning should have been known and taken into consideration by an Air Traffic Controller with authorization for that aerodrome when giving instruction to a foreign air crew with reduced knowledge of local conditions.

The crew did obviously not perceive the total content of the original clearance and they accepted the approach to RWY 01 as an approach followed by a landing straight in, without objections. (Ref. the tower personnel's statement.) The AAIB/N has not been informed about certified tail wind limits for the TU-154, nor does the P-i-C's report contain any information about this or about company procedures in this respect. The actual tail wind when landing on RWY 01 was 12 knots. For aircraft manufactured and certificated in Western Europe or the USA, a 10 knots tailwind is most often the tailwind limit for landing. The P-i-C claimed that the reported tailwind was not any problem for actual aircraft type. This was probably also the reason for his insisting on a landing clearance for runway 01 as he approached that runway and had previously been cleared an approach to that runway.

AAIB/N has no comment as to the P-i-C's complaint about the Air Traffic controller's phraseology in connection with a non standard situation. It was correct and easily understood by people belonging to our language group and environment. The P-i-C's problem was to perceive the air traffic controllers intentions regarding an unexpected clearance that was also contradictory to a warning on his approach chart. This part of the clearance was never read back by the crew, and the question arises whether the ATC controller should have requested a full read back as a confirmation that the clearance was understood by the crew. The CAA's comments on the circling limitation explains the reason for the restriction on circling - only to be performed east of the field. An unrestricted circling, both east and west of the runway would have caused a much higher circling minimum, taking the higher terrain on this side into consideration. By restricting the circling to the east of the aerodrome, it is possible with a much lower circling minimum. The CAA comment concludes that this again means that it is not *prohibited* to make a visual landing circuit to the west of the aerodrome in daylight with good visibility and a high cloudbase. The Jeppesen Manual was not available in the tower and the wording of the circling restriction was not known to the tower personnel. The corresponding and original restriction, as written in the AIP Norway, is considered familiar to a locally checked out Air Traffic Controller.

The Director of Gardermoen Region commented in his statement the often used procedure to clear an ILS-approach followed by a circling maneuver when weather permits. His explanation to this is that Pilot-in-Commands often request such approaches to save time, compared to make a full procedure to the opposite runway direction. To be service minded, the ATC controllers consequently quite often offer such an approach without the procedure being wanted or requested. Such a positive servicemindedness has earlier led to misunderstandings that again caused serious flight occurrences, like one approach to RWY 01 at Tromsø/Langnes 27. October 1989, HSL (AAIB/N) Report Hen 1/90.

## RECOMENDATIONS

The airline in question is recommended to give their air crew briefings on local conditions at destinations before flights.

The Air Traffic Services is recommended not to issue unrequested clearances followed by circling maneuvers to transport aircraft when approved instrument approach procedures to the runway in use for landing is available.