



MINISTRY OF INFRASTRUCTURE
STATE COMMISSION ON AIRCRAFT ACCIDENT INVESTIGATION

FINAL REPORT

Serious Incident Occurrence No. 361/07

Clearance for take off despite a car on the runway Airbus A 320 airplane (TS-INF)

23 August 2007
Poznań-Ławica aerodrome (EPPO)

*This report is a document presenting the position of
the State Commission on Aircraft Accident Investigation
concerning circumstances of the air occurrence, its causes and safety recommendations.*

*The report is the result of the investigation carried out in accordance with the applicable
domestic and international legal provisions for prevention purposes only. The investigation
was conducted without the need of application of legal evidential procedure.*

*In connection with the Article 134 of the “Aviation Law” Act (Journal of Laws 2006, No.
100, item. 696 with amendments), the wording used in this report may not be considered as
an indication of the person guilty or responsible for the occurrence.*

The Commission makes no judgments about fault and responsibility.

*In connection with the above, any form of use of this report for any purpose other than air
accidents and serious incidents prevention, can lead to wrong conclusions and
interpretations.*

*This report was drawn up in Polish. Other language versions may be drawn up for
information purposes only.*

Warsaw 2011

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GENERAL INFORMATION

Type and model of aircraft: Airbus A320

Aircraft registration marks : TS-INF

Aircraft commander: **Airline Transport Pilot Licence (ATPL)**

Flight organizer: Nouvelair

Aircraft operator: Nouvelair

Aircraft owner: Lack of data

Place of occurrence: Poznań-Ławica aerodrome (EPPO)

Date and time of occurrence: 23 August 2007, 07:25 UTC

Damage to the aircraft: No damage

Injuries to persons: No injuries

SYNOPSIS

Note: all times in the report are expressed in UTC (local time (LMT)= UTC + 2 hours)

On 23 August 2007, the crew of Airbus A320, registration marks TS-INF (call sign: LBT7685) was cleared to take off from runway 29 of Poznań-Ławica aerodrome (EPPO) for a flight to Monastir aerodrome (DTMB). The clearance was issued by a trainee air traffic controller of EPPO TWR working under instructor supervision. At the time when the trainee cleared the Airbus A320 to take off from runway 29, the car of Duty Officer of EPPO was standing at the other end of the runway (i.e. runway 11), close to its threshold. Once the trainee learned about the car on the runway, he immediately ordered the flight crew to abandon take-off. The airplane was stopped by the crew just after it started take-off roll. When the Duty Officer car left the runway, the crew successfully executed take-off procedure.

Investigation of the occurrence was conducted by MSc.Eng. Bogdan Fydrych - SCAAI Member.

Based on analysis of the radio communications, involved persons statements, and evidence gathered during the investigation, SCAAI determined the following causes of the serious air incident:

1. An ambiguous manner of forbidding Duty Officer by air traffic controller (trainee) to enter the runway.
2. Improper monitoring of radio communication and improper visual control of the runway by ATC staff.
3. Lack of “situational” awareness of the Duty Officer on the runway.

The Commission accepted solutions recommended by the EPPO Runway Safety Team.

1. FACTUAL INFORMATION

1.1. History of the Flight

On 23 August 2007 at around 7:00 LMT, DO of EPPO was requested by the TWR trainee controller to inspect the runway, and disperse birds prior to Embraer 170 take off. Having been cleared by TWR to enter the runway, the DO did it in the area of taxiway “B” and dispersed birds with a noise gun. Then he vacated the runway, turned left into a service road and reported that fact to TWR.

After the Embraer 170 take off, the DO once again requested clearance to enter runway 11 in order to return to the airport building. A TWR assistant controller issued an instruction to return by the service road. Since communication was distorted DO failed to receive that instruction correctly and confirmed the runway occupation. TWR trainee controller stated that after visual inspection of the runway 11 he cleared Airbus A320 to enter it and take off. When the Airbus crew proceeded to take off, the assistant controller spotted the DO car in the area of runway 11 threshold, what he promptly reported to the TWR controllers (trainee and

instructor). The TWR trainee controller immediately ordered the Airbus flight crew to abandon take-off procedure. The airplane was stopped after making approx. 100 m from the starting point. The DO was instructed by the assistant controller to vacate the runway, and then the TWR trainee controller cleared Airbus A320 to take-off. The flight crew safely executed take-off procedure starting from the stop place on the runway 29.



1.2. Injuries to persons

None.

1.3. Damage to aircraft

None.

1.4. Other damage

None.

1.5. Personnel information

1.5.1. Crew of the Airbus A320 – registration marks: TS-INF – not applicable

1.5.2. Instructor controller in charge of the trainee

- 15 September 1995 – 24 May 1996. Basic course for candidates for air traffic controller assistants, completed with a good grade.
- 10 February 1997 – 25 April 1997. Course for assistants applying for an air traffic controller license.
- 16 March 1998 - air traffic controller license authorizing POZNAŃ airport control and approach control.
- **27 January 2003 – 31 January 2003. Training in unusual and emergency situations.**
*The instructor controller had **not** completed any (refreshing) follow-up professional training containing procedures for unusual and emergency situations. Such training should be conducted at least every two years.*
- 5 September 2005 – 16 September 2005. OJT training course in Luxembourg.
- 18 November 2005. OJT training certificate.
- 25 June 2007 – 13 July 2007. Theoretical course for air traffic controllers applying for an radar approach control certificate (without simulator), practical training planned from January 2008.
- Certificate No. 7047/07 issued by LIM Medical Center on 25 August 2007, confirming ability to work as an air traffic controller, valid until 24 November 2007.
- 18 October 2005. English language certificate at advanced level according to ICAO language proficiency scale.

1.5.3. Trainee Controller

- 9 October 2006 – 11 May 2007. Course for candidates applying for an air traffic controller license.
- 11 May 2007. Simulator examination, passed with a good grade.
- 15 June 2007. Trainee air traffic controller license with ADI and APP authorizations.
- Certificate No. 155/2006 issued by LIM Medical Center on 13 July 2007, confirming ability to work as an air traffic controller, valid until 12 July 2008.
- Trainee air traffic controller license valid until 15 June 2012.

1.5.4. Assistant Controller

- 19 January 2004 – 30 July 2004. Course for candidates applying for an air traffic controller license.
- 12 December 2005 - air traffic controller license authorizing POZNAŃ airport control and approach control, valid until 12 December 2007.

- 26 November 2003 - Certificate issued by Aviation Medicine Center of Military Institute of Aviation Medicine, confirming ability to work as an air traffic controller, valid until 26 November 2008.

1.6. Aircraft Information

Airplane: Airbus A320

- Registration marks: TS-INF
- Serial number: 299
- Date of manufacture: 31 January 1992
- Maximum Take-Off Weight: 10319 kg
- User: Nouvelair Tunisie



1.7. Meteorological Information

- Wind speed: 1 m/s;
- Wind direction: 280 degrees;
- Visibility: 3 km, mist;
- Air temperature: 19°C;
- Dew point: 18°C;
- Pressure: 1014,5 hPa;
- Humidity: 94%.

1.8. Aids to Navigation

No objections concerning aids to navigation were raised.

1.9. Communications.

The report of EPPO Runway Safety Team contained information on frequent radio communication problems between the Airport services and institutions. Poznań-Ławica DO participating in the incident stated that the first TWR message was not readable. No

objections concerning communication equipment used for communications between TWR and the flight crew were raised.

1.10. Aerodrome information

Poznań-Ławica (EPPO) aerodrome has one runway 11/29. On the day of the incident direction 29 was used.

GEOGRAPHICAL DATA:

1. ARP – WGS-84 coordinates and location: 52°25.15.71”N 016°49.34.77”E – RWY central line, 1055 m from THR 29.
2. Distance, direction from the city: 5 km (2,7 NM), BRG 288° GEO.
3. Airport elevation/Reference temperature: 94 m; 24,4°C (JUL).
4. Runway 11/29 dimensions: 2504 x 50 meters.
5. Strength of runway surface: PCN 44/F/A/X/T asphalt/concrete.



1.11. Flight recorders

Not analyzed.

1.12. Wreckage and impact information

Not applicable.

1.13. Medical and pathological information

Not applicable.

1.14. Fire

Not occurred.

1.15. Survival aspects

Not applicable.

1.16. Tests and Research

The SCAAI Investigation Team analyzed:

- radio communication of the flight crew, EPPO air traffic controller and DO;
- statements of the trainee controller, instructor controller, and DO;
- the evidence gathered.

1.17. Organizational and Management Information

SCAAI was notified about the incident by the Polish Air Navigation Services Agency on 24 August 2007. SCAAI notified about the occurrence the Tunisian aviation authorities, International Civil Aviation Organization (ICAO) and the interested parties, in accordance with the recommendations of Annex 13 (Aircraft Accident and Incident Investigations) to the Convention on International Civil Aviation. On 30 August 2007, the Runway Safety Team of EPPO was set up. The Team recommended the following solutions:

- to check functioning of the communication equipment by service personnel;
 - to introduce refresher training in operating of radio communication equipment;
 - to introduce refresher training in use of radio communication phraseology.
- to apply to the Airport President for convening of Airport Safety Team meeting on communication issues.

1.18. Additional information

None.

1.19. Useful or effective investigation techniques

Not used.

2. ANALYSIS

2.1. Occurrence analysis

On the day of the occurrence, an air traffic instructor controller, a trainee controller and assistant controller were working at EPPO TWR.

DO of EPPO was requested by the TWR trainee controller to inspect the runway, and disperse birds prior to Embraer 170 take off. Having been cleared by TWR to enter the runway, the DO did it in the area of taxiway “B” and was dispersing birds with a noise gun moving along the runway 11 towards its threshold. Then he vacated the runway, turned into the service road in the area of threshold 11 and reported that fact to TWR.

After the Embraer 170 take off, the DO once again requested clearance to enter runway 11 in order to return to the airport building. A TWR assistant controller instructed him to return by the service road. It was done in an ambiguous manner: *“tower control, instead through the runway, I’d like you to come back rather by the service road”*. DO did not receive that instruction and confirmed entering the runway: *“Roger, tower control, I take the runway.”* This communication was distorted. Record of the radio communication showed that the last word *“runway”* was incomplete and only *“..ay”* could be heard, but the phrase *“take”* was clear. DO was convinced that he was cleared by TWR to return to the airport by the runway (*“...I heard, clear”*).

The situation described above is so-called “tendency towards expected”, which simply means that you often hear – or think that you hear – what you are expecting. This may happen to a controller, pilot, driver, or anyone involved in radio communication. Having expected clearance to come back by the runway, DO confirmed that alleged clearance which in fact he had not received. Neither the controllers (instructor and trainee), nor the assistant, who was maintaining radio communication with DO did notice an unjustified acknowledgement of clearance to enter the runway. DO entered the runway, and for about one minute (i.e. from acknowledgement of clearance to enter runway until having been ordered to vacate it) he was moving along it towards taxiway “B” unnoticed by TWR personnel. TWR trainee controller stated: *“I checked the warning lights on the lighting control panel which indicate whether the runway is occupied or not* (author’s note: when the runway is occupied they are on). *I also checked visually the runway and did not notice the DO car.”* He did not find the runway to be occupied, so he cleared (which is a standard practice) the Airbus A320 crew to line up, and then to take off. When the

flight crew proceeded to take off, the assistant controller spotted the DO car on taxiway 11, i.e. a minute and five seconds after DO mistakenly confirmed clearance to enter runway. The assistant controller, using ground movement control frequency, twice instructed DO to vacate runway and turn on grass.

Having witnessed that situation, the TWR trainee controller immediately ordered the Airbus flight crew to abandon take-off procedure. The crew acknowledged the order and stopped the airplane after approximately 100 m. When DO vacated the runway, the TWR trainee controller cleared the Airbus A320 crew to take-off. The flight crew executed take-off procedure without further problems.

Improper monitoring of radio communication combined with DO unjustified acknowledgement of clearance to enter the runway led to the situation that the Airbus A320 flight crew was cleared to take off despite the car on runway. Largely contributing to the development of the occurrence were weather conditions in the airport area on that day, including visibility, which was three kilometers. It enabled the assistant controller to spot the car on runway early enough, and the TWR personnel to take appropriate actions to resolve a conflict situation. The threat was eliminated in time, although the TWR personnel (the assistant controller responsible for ground movement coordination, the trainee controller, and the instructor controller in charge of the trainee) did not notice DO unjustified acknowledgement of clearance to enter the runway and were improperly monitoring runway. Given visibility on that day (3 kilometers) proper monitoring of threshold 11 required use of binoculars.

Cooperation within the team is the basis for proper operation of air traffic control service. Especially important is clear communication between flight crews, drivers on the airport maneuvering area and air traffic control personnel. In such an environment, everybody is a crew or team member. Everybody should be aware of the duties and responsibilities of others and, if necessary, should help them within the limits of his or her experience and skills. Use of correct phraseology is aimed at efficient and clear transmission of information. Every acknowledgement requires good understanding of information received. In order to close such a “communication loop” an acknowledgement must be complete and clear. This is the only way to ensure that all clearances and instructions are well understood. This is necessary in all voice communication. Requirements regarding acknowledgement were established in the interest of air operations safety. Strict compliance with the requirement to confirm reception by repetition is directly linked to serious consequences of possible misunderstanding of the transmitted clearances or instructions. Strict compliance with the procedures for acknowledgement ensure that a clearance or instruction have been properly received and understood by a recipient.

In a case of acknowledgement of the instruction to stop or cross the runway, to take off or land, it is necessary to use the runway designator and repeat the whole clearance. Clear phrases, such as “*cleared*” or “*not cleared*”, should always be used, not as it was in the presented occurrence: “*instead through the runway, I’d like you to come back rather by the service road*”. In case of any doubts or unclear communication, even if only partially so, it is important to insist on a message repetition.

A crucial factor in this occurrence was awareness of the current traffic situation. Misunderstanding of the situation in such a complex environment as airport maneuvering area, where air operations were carried out, most often lead to the air occurrences with varied consequences. DO operated only on the ground movement frequency and was not able to monitor the overall situation because he had no equipment that would have enabled him to monitor communications on TWR air frequency. Although he spotted an airplane taxiing onto the runway, he was not able to see from that perspective and distance that it had already started rolling for take-off. **In this situation, DO should had informed the TWR Control that he had been still on the runway and ask what had been going to do the airplane observed by him, and entering the runway.**

2.2. Evacuation action

Not applicable.

3. CONCLUSIONS

3.1. Commission findings

1. The TWR personnel had sufficient authorizations to conduct air operations.
2. The instructor controller **had not** completed any (refreshing) follow-up professional training containing procedures for unusual and emergency situations. Such a training is required by internal regulations and should be conducted at least every two years.. Last time the TWR controller attended such training in the period of 21-25 February 2005.
3. Two-way radio communication was maintained between the Airbus A320 flight crew and the TWR controller.
4. Two-way radio communication was maintained between DO and the TWR assistant controller on the frequency used to coordinate the ground movement on the maneuvering area of the airport.
5. The communication equipment used for air traffic flow was working during the occurrence. There was interference on the frequency used for ground movement coordination.
6. DO was not aware of the situation on the runway.
7. TWR controller ordered DO to vacate runway in an ambiguous manner.
8. TWR personnel was improperly monitoring the radio communication with DO.
9. TWR personnel monitored runway visually in an improper way.
10. The flight crew correctly reacted to the instruction ordering to abandon take-off.
11. Collision was avoided after TWR personnel reaction.

3.2. Causes of serious incident

1. An ambiguous manner of forbidding Duty Officer by air traffic controller (trainee) to enter the runway.
2. Improper monitoring of radio communication and improper visual control of the runway by ATC staff.
3. Lack of “situational awareness” of the Duty Officer on the runway.

4. SAFETY RECOMMENDATIONS

The Commission accepted solutions recommended by the Runway Safety Team of EPPO:

- to check functioning of the communication equipment by service personnel;
- to introduce refresher training in operating of radio communication equipment;
- to introduce refresher training in use of radio communication phraseology.

THE END

SCAAI Investigator-in-Charge

MSc.Eng. Bogdan Fydrych

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