

GENERAL INFORMATION

Identification number:	2005078
Classification:	Serious incident
Date, time ¹ of occurrence:	28 May 2005, 23.50 hours
Location of occurrence :	Amsterdam Schiphol Airport
Aircraft registration:	PH-KCK
Aircraft model:	Boeing MD-11
Type of aircraft:	Passenger aircraft
Type of flight:	Commercial air transport
Phase of operation:	Take-off
Damage to aircraft:	None
Cockpit crew:	Unknown
Passengers:	Unknown
Injuries:	None
Other damage:	None
Light conditions:	Darkness

SUMMARY

In consult with air traffic control the driver of a bird control vehicle had stopped on the end of runway 24 to clear the remains of an animal from the runway. At that moment a MD-11 aircraft had started its take-off roll from the beginning of runway 24 and passed overhead the vehicle.

FACTUAL INFORMATION

History of the event

At 23.41 hours the controller contacted the driver of a bird control vehicle, call-sign Kievit 2, on the 'runway channel', requesting to inspect runway 24. Four minutes later, Kievit 2 requested permission to enter and drive along runway 24. This request was granted straight away and acknowledged by the driver of Kievit 2. The controller stated that the runway occupation indication was set to "occupied" on her equipment in the tower when the vehicle entered the runway. This indication shows a flashing light for the runway 06/24. The controller turned off the light when she lost sight of the vehicle at the end of the runway.

A MD-11 aircraft was planned to be flown from Amsterdam Schiphol Airport (EHAM) to Lima in Peru (SPIM). On the tower frequency the controller instructed the flight crew to taxi to runway 24 for departure. As the aircraft was approaching runway 24 via taxiway Sierra 7, the controller cleared

¹ All times in this report are local times unless otherwise specified.

the flight for take-off from runway 24 at 23.50 hours. The flight crew acknowledged this instruction.

The driver of Kievit 2 stopped the vehicle on the runway near the end of runway 24 to clear the remains of an animal from the runway. The controller stated that Kievit 2 did not report this on the frequency, something that is normally done. After this work had been conducted, the MD-11 aircraft passed overhead while the driver was vacating the runway at the end. At 23.52 hours the driver of Kievit 2 reported that the vehicle had vacated the runway.

Aerodrome layout

At the time of the incident, Air Traffic Control the Netherlands (LVNL) used runway 24 for departure and runway 18R for arrival. For aircraft lined up on runway 24 at taxiway Sierra 7 the distance to the runway end in the southwest is 3500 meters. The runway is equipped with a runway light system, which was on at the time of the incident due to darkness. In the area around runway 06-24 many lights burn during night time.

Weather

The visibility at the moment of the incident was more than ten kilometres. It was dry and dark. The wind was from the southwest with ten to fourteen knots. A few clouds were reported at 9000 feet.

INVESTIGATION AND ANALYSIS

Flight crew

The flight crew of the MD-11 did not see the vehicle prior and during their take-off run.

Air traffic control

Staff

At the time of the incident, around 23.50 hours, the ground controller², runway controller³ and assistant 2⁴ functions were combined. So one person was in charge of all traffic movements. The runway controller stated that she was alone in the tower during the incident.

Supervisor

Investigation revealed that the function of supervisor in daily operation is often combined with (runway) controller duties. The tower supervisor is an on duty air traffic controller with additional authority to supervise. Generally, he is an experienced controller. It is not a requirement for him to be present in the tower control room at all times and at the time of the incident no supervisor was present in the tower. LVNL indicates the supervisor manages the operational process and it is not the task of the supervisor to act as a safety net in the first place.

² The ground controller is responsible for controlling the traffic in the maneuvering area except for runways available for take-off and landing.

³ The runway controller is responsible for controlling local traffic (departing and landing) except traffic under the control of the ground controller.

⁴ The tower assistant 2 has a general assisting role on tower which amongst other things includes supporting the runway controller, guiding of vehicles in the maneuvering area under responsibility of the ground controller and crossing of runways by towing traffic under responsibility of the runway controller.

One of the recommendations in the Delta investigation report⁵ states that 'a tower supervisor should not have additional duties' as it was concluded that insufficient supervision had been a causal factor in the Delta-incident. As follow-up (re)action LVNL reported to the Dutch aviation authority at that time that 'this recommendation has been complied with'. According to the Board it suggested that the safety net had improved. The Board asked LVNL additional questions about supervision and how it related to a safety net. In its response LVNL did not clarify why it stated in 2001 to the Dutch aviation authority it had complied with the recommendation from the Delta report, and by that improved the safety net, whilst investigation now reveals that supervision is not primarily meant to create a safety net.

Other relevant ATC procedures

Air traffic control will advise the bird controller whenever a runway check is required.

Radio communication

Radio contact between the driver of the Kievit 2 and the controller was on a special frequency, being the 'runway channel'. On this channel the common language is Dutch and it cannot be monitored by flight crew.

The MD-11 was in contact with the runway controller via a tower frequency. The driver of the Kievit 2 had the ability to listen out the tower frequency.

See appendix A for the radio communication transcript of this event.

Amsterdam Airport Schiphol (AAS)

AAS Procedures - bird control

The procedures for bird control measures to be taken by AAS that are published in their operations manual include a procedure initiated by either LVNL or the Airport Operations Manager (AOM) for the inspection of a runway that is available but has not been used for at least 20 minutes. The procedure requires an inspection of the full length of such a runway before it may be used. The bird controllers, or checkers, operate across the whole aerodrome, more or less continuously. In the context of this investigation, only the activities of bird controllers with regard to the inspection of runways were reviewed.

The checker reports to the AOM and advises him on whether or not any particular runway may be used and whether or not restrictions to that use need to be applied. A checker may directly request tower controllers to suspend operations on a runway in use whilst birds are scared off and/or animal remains are removed. The manual Regulations Department Traffic Control 2⁶ instructs controllers to comply with such requests.

Other investigations and findings

AAS reported the incident to both LVNL and the Dutch Safety Board two days later. LVNL secured radio communication and ground radar data and obtained statements from the controllers involved. LVNL conducted an investigation using the above data. In addition they reported the incident to the Air Traffic Investigation Commission (ATIC).

⁵ Final report 98-85/S-14. Dutch Transport Safety Board; N193DN, Boeing 767, 10 December 1998 Amsterdam Airport Schiphol.

⁶ Voorschriften Dienst Verkeersleiding 2.

AAS participated in the LVNL investigation conducted. It is common practice that LVNL and AAS coordinate investigations and agree that one party shall take the lead role. This is conducted for the sake of efficiency. LVNL concluded that the incident was in Severity Category B⁷ and was the result of an operational error. No recommendations were made.

The Board conducted its investigation using the material provided by AAS and LVNL. The Board made use of the Tripod Beta method.⁸

CONCLUSION

Based on Tripod Beta it is concluded that unwanted events occur when barriers or safety measures fail (i.e., failed barrier) or are not in place (i.e., missing barrier). The descriptions of the situations or failed active barriers have been identified and listed below:

- The process of verification of the vehicle position (and monitoring by the controller) and the use of the flashing runway signal by the controller did not work. Reduced ability to easily observe the vehicle might have been an unfavourable precondition in the mix of illuminated runway and taxi lights during darkness. This also might have contributed to the controller's assumption that the vehicle had vacated the runway. The bird controller informing the controller about his intentions, to leave the vehicle and pick up some bird remains, might have been an additional trigger for the controller.
- The visual check by the flight crew did not work. The surrounding lights might be an unfavourable precondition to observe a vehicle at 3500 meter distance during darkness.
- Intervention by a supervisor failed. During late evening operations all traffic movements are in charge of one controller and no additional supervisor was present.

Note: This report has been published in English and Dutch language. If there are differences in interpretation the Dutch text prevails.

⁷ Category B: Separation decreases and there is a significant potential for collision.

⁸ Tripod Beta is a systematic and structured process of incident investigation and analysis.

APPENDIX A

Radio communication transcript

The texts below are reproduced from a transcript made by LVNL. The following abbreviations are used to identify the parties speaking:

- TWR Runway controller
- GC Ground controller
- KLM Flight crew KLM 753
- Kvt Driver, Kievit 1
- Kvt2 Driver, Kievit 2

Local Time	Communication		Content
	Between		
23.41:49	GC	Kvt	Kievit, Toren (Kievit, Tower).
23.41:54	Kvt	GC	Toren, Kievit (Tower, Kievit).
23.41:56	GC	Kvt	Hallo, ik heb weer een start van de 24 (Hello, I have got a take-off from 24 again).
23.42:08	GC	Kvt	Hallo, ik heb weer een start van de 24 (Hello, I have got a take-off from 24 again).
23.42:21	GC	Kvt	Kievit, Toren... (Kievit, Tower...).
23.42:31	Kvt	GC	... van de Kievit (... from Kievit).
23.42:32	GC	Kvt	Ja, ik hoor u nu weer. Ik heb een start van de 24... (Yes, I can hear you again. I've got a take-off from 24...).
23.42:36	Kvt	GC	<i>(zeer slecht te verstaan)</i> ja ik heb problemen met de apparatuur. Ik roep u terug. Toren (<i>(very difficult to read)</i> Yes I've got a problem with the equipment. I will call you back. Tower.).
23.42:39	GC	Kvt	Dank u wel (Thank you).
23.45:32	Kvt2	GC	Toren, Kievit 2 vanaf Sierra 7 baan 24 afrijden? (Tower, Kievit 2 drive down runway 24 from Sierra 7?).
23.45:36	GC	Kvt2	Kievit 2, baan 24 afrijden toegestaan (Kievit 2, drive down runway 24 allowed).
23.45:39	Kvt2	GC	Baan 24 afrijden toegestaan voor de Kievit. (Drive down runway 24 allowed for Kievit).
23.46:42	KLM	TWR	KLM 753 request taxi.
23.46:47	TWR	KLM	KLM 753 taxi runway 24.
23.46:51	KLM	TWR	Roger, taxi 24, KLM 753.
23.47:19	KLM	TWR	Can we take Alpha 12, KLM 753?
23.47:22	TWR	KLM	Affirm.
23.47:23	KLM	TWR	Roger.
23.50:14	KLM	TWR	And KLM 753 is approaching 24.
23.50:16	TWR	KLM	And KLM 753 ready for departure?
23.50:19	KLM	TWR	Affirm.
23.50:20	TWR	KLM	Roger KLM 753. The wind is 230 8 knots, runway 24, you're cleared for take-off.
23.50:26	KLM	TWR	Cleared for take-off 24, KLM 753.
23.52:27	Kvt2	GC	Toren, Kievit 2 is vrij baan 24 (Tower, Kievit 2 has vacated runway 24).

	Communication		
Local Time	Between		Content
23.52:29	GC	Kvt2	24 vrij, bedankt Kievit 2 (24 vacated, thanks Kievit 2).
23.52:32	GC	Kvt2	En Kievit 2, ja... ik wilde even... [diepe zucht].. misverstand, maar bedankt in ieder geval (And Kievit 2, yes... I wanted.. [deep sigh]... misunderstanding, but thanks anyway).