

In the Netherlands, air traffic control (ATC) supervisors of the Area Control Centre Amsterdam (ACC) went through a tough training scenario in which one unlikely event followed another to create an almost out-of-control situation. The question remained: How would they handle a real crisis while on duty?

On Feb. 25, 2009, many of the participants were put to the test.

It was a morning peak-traffic hour at Amsterdam Airport Schiphol, with about 100 departing and arriving aircraft to be controlled, a routine day at the ACC facility of ATC the Netherlands.

Suddenly the routine was broken. Turkish Air 1951, a Boeing 737-800 on final approach for Runway 18R, crashed 1 nm (2 km) short of the runway.¹

There was a moment of disbelief, followed by all the actions necessary for arranging and guiding rescue services, accepting the consequences of the sudden closure of the airport, stopping all traffic on the ground, managing traffic in the air, initiating go-arounds, managing holding aircraft in the stacks, and guiding aircraft to alternate aerodromes.

The ACC supervisor on duty took all the actions necessary for the altered traffic flow and took charge of the ATC crew. The next priority was handling the external attention an aircraft accident brings — incoming calls from colleagues, management and sometimes even family members seeking information. Calls from the press had to be routed to the designated spokesman. A checklist detailed all the internal and external authorities that had to be informed.

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ATC Crisis Management Training Pays Off

Prior training proves its worth in a real-life event.

BY DICK VAN ECK



The accident involving Turkish Air Flight 1951 was only the beginning of an exceptionally demanding workload for controllers at Amsterdam Schiphol.

After 45 minutes, the airport operations manager, in conjunction with local authorities, concluded that flight operations at the airport could be resumed, although only in a low-capacity mode with one landing runway.

Then a “pan-pan” call was received from an Airbus A330 flight crew experiencing a major hydraulic failure.

The aircraft received priority handling, with guidance to the landing runway. It made an uneventful landing but was unable to clear the runway. Following traffic had to go around, and the traffic flow was disturbed once again.

An alternate, smaller runway was made available for aircraft of medium size, and Boeing 737s and Airbus A320s were allowed to land. The heavies had to divert to alternate airports.

In the control rooms — tower, approach and center — some air traffic controllers directly involved with the accident were relieved by colleagues, and some were questioned by investigators.

Looking back, the ACC supervisor on duty remembered that he had felt confident during those hectic hours, even though the experience was far beyond routine.

Flashback to Crisis Training

A few weeks before, he had been one of the participants in a course titled “Crisis Training for

Supervisors.” He believed himself an improved manager as a result of that training; his increased ability to recognize the nature of events and control the flow of activity made him feel more confident in his position.

How different were the circumstances for the ACC supervisor on duty Oct. 4, 1992, when a Boeing 747 freighter crashed into an Amsterdam suburb during an attempt to make it to the airport after critical structural damage had occurred.²

The correctness of that supervisor’s actions were questioned in the formal accident report and, in the years following, ATC the Netherlands used this fact to drive ongoing improvements.

Slowly but thoroughly, training goals, methods, tools and checklists were developed. Also, the Dutch National Aerospace Laboratory–NLR and experts in crisis handling were invited to help create a complete crisis training plan for supervisors.

In 2008, two employees at *Luchtverkeersleiding Nederland* (LVNL/ATC the Netherlands) were selected to formulate and conduct the first crisis training for supervisors on the Dutch ATC simulator. The two were Pauline Visser and Diko Holstvoogd, both supervisors and air traffic controllers in the Dutch Area Control Centre.

“Most surprising to me was how each individual approached the crisis in her or his own manner, of course within the limits of standard procedures. And with satisfying results; apparently there is no one best way,” Visser said.

A Quick Sequence

The training was given on the ATC simulator with some technical adaptations for specific needs. Several controllers handled routine traffic simulations as the training started. Then unusual events occurred in a quick sequence, confronting the supervisor with a crisis scenario.

The scenarios included, among other events, a communication failure on a 747 and its interception by two F-16s of the Royal Dutch Air Force. Then, another controller reported a similar problem with another aircraft, a scenario inspired by the events of Sept. 11, 2001, in the United States. All the necessary coordinating efforts were being simulated as part of the scenario when, suddenly, another aircraft made an emergency call and needed the highest priority handling as the government made the decision to close Dutch airspace due to the imminent threat of terrorism.

The existing air traffic had to go somewhere, and how do you close airspace? The external world was included in the scenarios: Simulated calls came from the news media, management, the Air Force, a representative of the prime minister and worried “relatives.”

The safe handling of air traffic is the supervisor’s utmost priority. His or her decisions, actions and commands must be clear and concise for the duty controllers. Next, the controllers’ well-being and the quality of their

job performance must be monitored, especially under extreme and unusual situations.

After accidents involving ATC, investigators always examine the supervisor’s actions. Their professional responsibility includes the fact that liability — and even the threat of criminal prosecution — could become part of an investigation.

“The participants’ drive to perform well during this training course was at an extremely high level,” Holstvoogd said. “One candidate was so involved in this scenario that, by mistake, he managed to get the real-life airport operations manager on the phone, explaining all the disasters. Of course, this man had no idea it was an exercise.”

Simultaneous Emergency and Normal Control

Handling flights in distress is, sooner or later, part of the controller’s job. These flights require and receive the utmost attention. However, at the same time all other flights that are part of the traffic stream have to be handled with the same efficiency and safety level as under normal circumstances. The controllers’ workloads reach peak levels as routines, plans and standards are suddenly disrupted. This applies to the flight crews as well. Diversions, holding patterns, fuel starvation concerns; the workload is high for everyone. Nonetheless, one seldom hears of any failures under these circumstances.

One aspect of the crisis training consists of continuous and personal guidance by trained specialists and psychologists in critical-incident debriefings. Each candidate showed a different approach in coping with a stream of stress-inducing messages. There are rules and guidelines for

everyone on how to deal with this. This personal assistance during the training was appreciated and helpful to the participants.

The goal of the exercises was to prepare supervisors for the tasks they need to accomplish during a crisis. This preparation was achieved by recognition, knowledge and actual performance. Each participant was pre-briefed and debriefed in person. All of them were enthusiastic about the course. Before the training, there was a reserved response from controllers; afterward, the course management received only compliments.

A continuation of the course is planned in 2010, perhaps with an extended scenario including tower, approach and airport participation. 🌀

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Notes

1. Turkish Air Flight 1951 was approaching Amsterdam Schiphol at the end of a flight from Istanbul, Turkey. The airplane struck the ground and broke into three pieces but no fire ensued. Nine people, including the pilots, were killed. The cause is under investigation.
2. The El Al 747 cargo airplane had taken off from Amsterdam Schiphol after a stopover on a flight from New York to Tel Aviv, Israel. During the climb through 6,500 ft, the no. 3 engine separated from the wing and struck the no. 4 engine, which in turn separated. The pilots attempted to maneuver for a return to Schiphol, but with the loss of two engines and partial loss of control surfaces, the attempt failed. The airplane crashed into a high-rise apartment complex, killing the pilots and the only other occupant, an El Al employee. Ground fatalities were estimated at 39, the exact figure uncertain because the building was partially inhabited by illegal immigrants whose numbers were unknown to authorities.