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## **Report RL 2000:39e**

***Incident between aircraft SE-LKC and M76/57,  
At the Ångelholm airport,  
M county, Sweden, on February 14, 2000***

**Case L-011/00**

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SHK investigates accidents and incidents with regard to safety. The sole objective of the investigations is the prevention of similar occurrences in the future. It is not the purpose of this activity to apportion blame or liability.

Translated by Bob Arnesen

From the original Swedish at the request of the Board of Accident Investigation.

In case of discrepancies between the English and the Swedish texts, the Swedish text is to be considered the authoritative version.

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2000-11-07

L-011/00

Swedish Civil Aviation Administration  
601 79 NORRKÖPING

**Report RL 2000: 39e**

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The Board of Accident Investigation (Statens haverikommission, SHK) has investigated an incident between a civil aircraft, registration SE-LKC, and a military fighter formation, call sign M76/57, that occurred on February 14, 2000 at the Ängelholm airport, M county, Sweden.

In accordance with section 14 of the Ordinance on the Investigation of Accidents (1990:717) the Board herewith submits a final report on the investigation.

Olle Lundström

Rune Lundin

## Report RL 2000:39e

**L-011/00**

Finalized 2000-11-07

<i>Aircraft; registration and type</i>	<b>A. SE-LKC</b> , Embraer EMB-120ER <b>B. M76/M57</b> , two AJS-37 "Viggen"
<i>Class/airworthiness</i>	<b>A.</b> Normal, valid certificate of airworthiness. <b>B.</b> Military, military airworthiness
<i>Owner/operator</i>	<b>A.</b> GE Capital Equipment Finance/ IBA <b>B.</b> Dept. of Defence/F10 airbase
<i>Time of occurrence</i>	2000-02-14, 1558 hours, in daylight <i>Note: All times in the report is Swedish normal time = UTC + 1 hour</i>
<i>Place</i>	Ängelholm airport (military designation F10), M county, Sweden (Pos. 5617N 1251E, 20 m above sea level)
<i>Type of flight</i>	<b>A.</b> Scheduled flight <b>B.</b> Military formation
<i>Weather</i>	Visibility more than 10 km, wind 280° at 10 knots, no cloud below 5000 ft, temperature 4°C, dew point -3°C, QNH 1014 hPa
<i>Persons on board; crew</i>	<b>A.</b> 2+1 <b>B.</b> 2
<i>passengers</i>	<b>A.</b> 11 <b>B.</b> 0
<i>Injuries to persons</i>	None
<i>Damage to aircraft</i>	None
<i>Other damage</i>	None
<i>Commander/Formation Lead:</i>	
<i>age, certificate</i>	<b>A.</b> 38 years, ATPL <b>B.</b> 32 years, military
<i>total flying time</i>	<b>A.</b> 7460 hours, of which 430 on type <b>B.</b> 3000 hours, of which 1200 on type
<i>Co-pilot/Formation wingman:</i>	
<i>age, certificate</i>	<b>A.</b> 28 years, CPL with instrument rating <b>B.</b> 27 years, military
<i>total flying time</i>	<b>A.</b> 976 hours, of which 529 on type <b>B.</b> 710 hours, of which 435 on type

The Board of Accident Investigation (SHK) was notified on February 16, 2000 that an incident had occurred between a civil aircraft, registration SE-LKC, and a military formation, call-sign M76/57, at 1558 hrs on February 14, 2000 at the Ängelholm airport, M county, Sweden.

The incident has been investigated by SHK represented by Olle Lundström, chairman, and Rune Lundin, Chief investigator flight operations.

The Swedish Civil Aviation Administration represented by Klas-Göran Bask followed the investigation.

### History of the flight etc.

On February 14, 2000, at 15.55 hrs a Swedish military two-ship formation with call sign M76/57 taxied out to runway 22 at the Ängelholm airport for departure. Shortly thereafter aircraft SE-LKC asked for and received clearance from tower to taxi and line up runway 32, a taxi distance of about 300 m. The flight also received its IFR clearance to the Stockholm/Bromma airport while taxiing out.

During this time M76/57 had reached the takeoff point for runway 22 and had received clearance for takeoff.

The crew onboard SE-LKC lined up on runway 32 and at 1558 hrs commenced their take off roll, at the same time as M76/57 was taking off on the crossing runway 22. The tower controller observed that SE-LKC had started to depart without clearance and was about 300-400 m into the take off roll. He then ordered the flight to abort the take off, where after the crew brought the aircraft to a stop about 600 m short of the point where the runways cross.

The pilots onboard SE-LKC have stated to SHK that they were most probably monitoring the radio frequency for ground control when the military formation received both it's air traffic control and take off clearance and that they were never aware that a departure would occur on the crossing runway.

The company has stated in it's report to SHK that the pilots had not properly confirmed that they had received take off clearance. The standard operating procedure is for the non-flying pilot to read back the clearance over the radio and then for the flying pilot to acknowledge it to the other pilot by repeating it verbally. The commander, who was the pilot flying, could not recall if or when he had asked for the aircraft propeller condition levers to be placed in the MAX (take off) position, which is normally done after receiving take off clearance. The company has offered a possible explanation in that the co-pilot continued to complete the pre-take off checklist prior to receiving take off clearance.

According to the company it is normal procedure to not increase the condition levers to MAX with the power levers at idle as the propeller RPM then ends up in a critical range that the aircraft operating manual states must be avoided. It then becomes natural for the pilot to first increase the power prior to setting the condition levers to MAX to avoid this critical RPM range. It has not been possible to establish if this procedure was followed or not.

The crew has also stated that the terminal building at the Ängelholm airport is located very close to the take off position for runway 32 and that take off clearance is often given prior to the completion of all checklist reading.

## **Conclusion**

The investigation has shown that the aircraft attempted to take off without clearance.

In a well functioning two-pilot cockpit mistakes of this nature shall not normally happen. The fact that it did occur points to a breakdown in cockpit resource management (CRM).

The company revised it's operating procedures immediately after the incident by placing a compulsory stop point in the reading of the checklist, prior to setting the condition levers to MAX and completing the checklist. This procedure demands that the crew reviews all given clearances prior to departure.

Contributing factors are probably the short taxi time between the terminal and the take off point, combined with the fact that complacency can arise in pilot routines as the company only operates on the one route.

## **Recommendations**

None.