

**INCIDENT**

**Aircraft Type and Registration:** DC-9-15, YL-BAA  
**No & Type of Engines:** 2 JT8D turbofan engines  
**Year of Manufacture:** 1968  
**Date & Time (UTC):** 23 November 1993 at 0954 hrs  
**Location:** Runway 26L, London Gatwick Airport  
**Type of Flight:** Public Transport  
**Persons on Board:** Crew - 6                      Passengers - Not known  
**Injuries:** Crew - None                      Passengers - None  
**Nature of Damage:** None  
**Commander's Licence:** Airline Transport Pilot's Licence (Latvian)  
**Commander's Age:** Approximately 48 years  
**Commander's Flying Experience:** 15,000 hours (of which 20 were on type)  
Last 90 days - 25 hours  
Last 28 days - 15 hours  
**Information Source:** AAIB Field Investigation

The aircraft was operating on a scheduled service from Riga, Latvia, to London Gatwick. The crew comprised of a Latvian commander and first officer who, although well experienced, were new to type and undergoing the early stages of line training. They occupied the left and right-hand seats respectively and a UK CAA licensed training captain, contracted from a UK airline, occupied the centrally positioned observer's seat.

The Latvian crew, both ex-Aeroflot commanders, had considerable experience on the TU 134, TU 154 and Yak 40 aircraft. They had recently completed a conversion course on the DC-9 in the USA followed by two days of base training and briefings in Riga, Latvia. Their line training had commenced nine days earlier on 14 November 1993.

The departure, cruise and descent phases were flown by the Latvian commander and were assessed by the training captain to be of a good standard. Prior to arrival at Gatwick the Latvian commander briefed the first officer that they would be carrying out an autopilot coupled approach to Category 1 limits on Runway 26L with the autopilot remaining engaged down to their Decision Altitude (DA) of

395 feet amsl (200 feet agl). In addition the training captain reminded the crew that for autopilot coupled approaches it was standard practice for the pilot flying (PF), when approaching DA, to look out of the aircraft for visual cues and for the pilot not flying (PNF) to monitor the flight instruments throughout the approach and advise the PF of any deviations from the localiser or glidepath.

The weather at Gatwick was poor. The Gatwick ATIS for 0945 hrs was: 'SURFACE WIND 035°/02KT, VISIBILITY 550 METRES IN SUPERCOOLED FOG, CLOUD OVERCAST BELOW 100 FEET, AIR TEMPERATURE -2°C, DEWPOINT -3°C, QNH 1020MB, RUNWAY 26L, FURTHER INFORMATION; ATC LOW VISIBILITY PROCEDURES IN OPERATION...'

At 0935 hrs the aircraft made contact with Gatwick Approach and was instructed to maintain FL090 and take up the hold at EASTWOOD. At 0939 hrs the training captain asked Gatwick ATC to confirm the Runway Visual Range (RVR). Gatwick Approach replied "TOUCHDOWN ONE THOUSAND METRES MID POINT EIGHT ZERO ZERO METRES STOP-END EIGHT ZERO ZERO METRES IS THAT ACCEPTABLE?" The training captain replied in the affirmative and confirmed that the minimum RVR required was 550 metres. By 0946 hrs the aircraft was in contact with Gatwick Radar and at 0950 hrs the crew reported that the aircraft was established on the ILS for Runway 26L.

ILS glideslope capture was normal and remained accurate throughout the approach. At 5 nm from touchdown the aircraft deviated from the localiser by  $\frac{1}{4}$  of a dot but quickly regained the centreline. At 4 nm the 'BOW TIE ANNUNCIATOR' illuminated indicating a failure of the first officer's glide slope receiver. The single channel autopilot and commander's flight instruments, however, continued to operate normally. From this point onwards the first officer became distracted by the failure. He tried continuously to cancel the annunciator system and as a result ceased to monitor the approach and omitted the standard altimeter calls. The calls for "500 FEET ABOVE SERVO" and "100 FEET ABOVE SERVO" were made instead by the training captain. At approximately 500 feet agl the autopilot suddenly rolled the aircraft to the left, applying about 20° of bank. The aircraft deviated to the left of the localiser giving rise to full 'fly right' instrument indications. The training captain called "Go around!" but the pilots, both of whom were now looking out of the aircraft for visual cues, did not respond.

The training captain initiated the go-around, from the observers seat, by calling "I have control going around". He leaned forward, disconnected the autopilot, applied full power and rotated the aircraft to a pitch attitude of 15°. Simultaneously the first officer, now realising the situation, reacted incorrectly by selecting the flaps to the 0° position. The training captain, however, quickly re-selected them to the correct 20° position. During the go-around manoeuvre the training captain reported that he observed the Minimum Descent Altitude (MDA) warning light illuminate briefly and this led him to believe that the aircraft did not descend much below 200 feet agl (395 feet amsl).

After establishing the climb, the training captain handed control back to the PF. The aircraft was levelled at 3,000 feet whereupon the training captain exchanged seats with the PF. Now occupying the left-hand seat he carried out a further manually flown ILS approach, landing the aircraft without incident.

After the incident the Far Field ILS Monitor status for the period of the aircraft's first approach was checked. These showed that there were no alarms or unusual indications from the ILS equipment. Furthermore, aircraft landing before and after the incident did not report any problems with the ILS.

### **Radar information**

Radar data recorded from the Gatwick 'Watchman' radar was analysed and plotted to show the aircraft's ground track during the final stages of the approach. It showed the aircraft starting to deviate to the left of the centreline at  $\frac{3}{4}$  nm from the threshold and at the lowest height, recorded from transponder mode 'C' transmissions, the aircraft was over the southern maintenance taxiway adjacent to the maintenance hangars. A lighted obstruction, approximately 100 feet agl on the roof of one of the hangars, is positioned 500 feet to the south of the aircraft's final ground track.

Gatwick ATC is also equipped with a Ground Movement Radar (GMR) designed to provide radar returns from taxiing aircraft in order to assist controllers during low visibility conditions. The tower controller on duty at the time of the incident reported that, although he could not see the aircraft during the go-around manoeuvre, he observed on the GMR several radar returns which were aligned along the maintenance taxiway.

### **Flights to and from the United Kingdom by foreign commercial scheduled and non-scheduled aircraft**

#### **(a) International Standards**

Contracting states of the International Civil Aviation Organisation (ICAO) agree, subject to the notification of national differences, to follow laid down 'Standards and Recommended Practices' (SARPs) in normal aviation operations. Annex 6 to the Convention on International Civil Aviation contains SARPs dealing with the operation of aircraft on international commercial air transport operations. Airlines of foreign countries who are contracting states of ICAO and who operate international flights into and out of the UK are considered by the UK authorities to be operating to these agreed standards. In this particular case the airline was regulated by the Russian Department of Civil Aviation, an ICAO contracting state.

## (b) Documentary requirements

Foreign airlines wishing to operate scheduled and non-scheduled flights to and from the UK must obtain prior permission from the Secretary of State for Transport for such flights. Permission, when granted, is in the form of a permit issued under Article 88 of the Air Navigation Order (ANO) 1989. In order to issue a permit the International Aviation Division of the Department of Transport (DoT) require the following documentary evidence:

- (i) Certificate of Competency: Evidence that the operating company is considered by the national authority of the State of Registry of the aircraft to be operationally competent to undertake the type of flight concerned.
- (ii) Certificate of Airworthiness: Evidence that the aircraft to be operated is considered by the national authority of the State of Registry of the aircraft to be airworthy.
- (iii) Insurance Certificate: Evidence that the operating company of the aircraft has entered into adequate insurance arrangements in respect of the aircraft to be operated.

## (c) Technical requirements

In addition to the above, applications for permits must comply with Articles 32 and 32A of the Air Navigation Order 1989. These require the operator to specify, to the CAA Flight Operations Inspectorate, the Aerodrome Operating Minima (AOM) to be used for the relevant runway and approach aid when the aircraft carries out approaches in Category 1 conditions. Applications to the CAA must also state the type and series of aircraft intended to be operated into the UK, under which ICAO aircraft category (A,B,C or D) the aircraft are operated, which published aerodrome / route guides and regulations the company use and confirmation that the airline crews are fully acquainted with the UK approach and procedures.

## Permit application procedures

Permit applications and issues are processed by International Aviation Division of the DoT. They ensure, through liaison with the CAA Flight Operations Inspectorate, that the necessary AOM and the other technical requirements have been specified. These procedures are conducted in an administrative environment only and on the understanding that, in practical terms, the operation of the aircraft, once a permit has been issued, will be to ICAO SARPs.

## **Monitoring of safety standards**

Once operations commence there is no monitoring by any UK authority of the actual standards of operation and safety achieved. This is the responsibility of the State of Registry. Some feedback is received however from passengers if circumstances arise that give cause for complaint. If these complaints are of a consistent nature and concern flight safety then the DoT will make representations to the airline and the authority of the State of registry.

In the extreme, the DoT will consider suspending the permit in accordance with article 67 of the ANO 1989.

Article 95 of the ANO 1989 concerns the power to prevent aircraft flying. In general terms, if it appears to the CAA or an authorised person that any aircraft is likely to contravene certain articles of the ANO, be a cause of danger to any person or property or be in a condition unfit for flight they may direct the operator or the aircraft commander that he is not to permit the aircraft to make the particular flight.

Day to day operations of foreign registered aircraft conducting commercial operations to and from UK airports are not examined, as a matter of routine or at random, to check that the recognised and internationally agreed operating standards are being applied.

## **Operating company background and operations**

AAIB enquiries were made into the operating company structure, training standards and operating practices. The company, still in its infancy and operating on a very limited budget, has only recently started operations with the DC-9 aircraft. It was operating from a country which was newly independent from the former USSR and with an embryonic aviation administration. The company Chief Pilot, who was also the Director of the Aviation Department of the Ministry of Transportation of Latvia and had expressed the intention of adopting 'western methods' of operation, was developing the legal framework which would eventually become the Latvian Civil Aviation Authority.

Limited funding within the company has led to the inadequate initial training of crews and poor engineering backup resources. Engineering support was initially provided in Riga by an 'on-site' engineer but a contract with a German company based in Frankfurt had to be agreed when the aircraft's technical serviceability state had reduced to an unacceptable level. Although the crews are all very experienced, language difficulties have given rise to problems with line training and operations into West European airspace. The crews are considered to be reasonably proficient in operating into Frankfurt, where they have been operating with TU134 aircraft for some time but language and communication difficulties associated with operating into unfamiliar environments such as Gatwick has had a detrimental effect on operations.



Crew training on the DC-9 had been provided initially in the US followed by base and line training in Riga. Training captains from a UK airline had been contracted to conduct the line training programme. Additionally they provided suggestions and recommendations to the company so that improvements in operation and engineering practices could be implemented. Line training however was suspended after the incident due to the company's failure to improve the engineering and maintenance support for the aircraft.