

No. 45

Jugoslawenski Aero-Transport, Convair CV-340, YU-ADC,
crashed on the northwest slope of the Kahlenberg, 25 km. from
Wien-Schwechat Airport, Austria on 10 October 1955.

Report released by the Accident Investigation Commission, Civil Aviation Office,
Federal Ministry of Transport and Nationalized Industries,
Austria, on 14 January 1956

Circumstances

The flight departed Belgrade Airport in clear weather at approximately 1230 hours Greenwich Mean Time en route to Vienna carrying 25 passengers and a crew of 4. At 1425 hours the aircraft was transferred by area control to Vienna approach control. The pilot was advised to use the homer for approach and a QDM of 100° was given at 1429 hours. At 1430 the aircraft reported over radio beacon OEW and was instructed to remain 150 metres (500 feet) above the cloud top. A QDM of 123° was obtained at this time. At 1431 the aircraft was cleared to descend to 1 060 metres (3 500 feet) and instructed to report again at this altitude over beacon OEW. The flight was cleared then for an instrument approach, the pilot was given the QNH setting for his altimeter and instructed to use Runway 12. Bearings were taken and QDM's reported to the pilot, the last being: "1439 hours: QDM 140". As requested, this one was repeated. However, it was not acknowledged by the pilot. Shortly after, the aircraft, while flying in the direction of the airport, with landing gear down and flaps at the approach angle, gave full throttle for a moment, pulled up and crashed at 1440 hours into the northwest slope of the Kahlenberg, facing uphill. Fire broke out following impact and the aircraft was completely destroyed. The pilot and five passengers were killed and one passenger received fatal injuries. The other occupants of the aircraft received injuries of varying degrees and seven passengers required no medical attention whatsoever.

Investigation and Evidence

A mass of warm air moving in from the southeast on the tail of a cold front was causing precipitation throughout the Vienna airport area, with visibility of 1 - 1.5 km and 0.5 - 1 km in the Vienna city area. The average height of the base of the massive cloud bank was 300 metres above sea level, while the upper limit, on the basis of the Vienna radiosonde observation at 1500 hours Greenwich Mean Time, must have been 3 300 metres.

The following weather reports and forecasts for the Vienna airport area were issued by the airport meteorological station and transmitted by radio to the crews of approaching aircraft.

1430 GMT 270/02 Kt, 1.4, mist, 5/8 Fs
120 m, 8/8 St 240 m,

QNH 1024.7, QFE 1003.3

1500 GMT 270/02 Kt, 1.3 km, drizzle,
5/8 Fs 90 m, 8/8 St 150 m,

QNH 1024.7, QFE 1003.3

1300 GMT for 14-2000 GMT var/02 Kt,
1.2 km, rain, 7/8 St. 300 Ft
prob. 20 tempo 2 km, mist,
2/8 St 600 Ft. 8/8 St 1000 Ft

1400 GMT for 15-2100 GMT var/02 Kt,
1.2 km, rain, 7/8 St 300 Ft
prob. 30 tempo 2 km, mist, 2/8 St
600 Ft 8/8 St 1000 Ft

The following aids were available at Wien-Schwechat aerodrome and functioning normally at the time of the accident: Non-directional beacon (NDB) OEW, 408 kc/s - 1.2 KW; non-directional locator beacon (L) WO, 378 kc/s - 40 W, combined with a 75 Mc/s marker beacon, and a non-directional locator beacon (L) WN, 325.3 kc/s - 40 W. NDB OEW which serves as a homer, is located at the western edge of the airport, while beacons WO and WN are to the west and east of the field on the extended centre line of the runway. A VHF D/F is provided to the south of the east runway. During the approach, both the high intensity approach lights and the high intensity runway lights were turned on to full intensity. The approach light system consisted of 102 lights, each of which provided 20 000 candle-power at full intensity. At the time of the incident, the aircraft was in contact with the control tower and the VHF D/F on 119.7 Mc/s.

It was not possible to ascertain, either from the wreckage or from the testimony of the witnesses, whether the aircraft fire extinguishing system had been operated. It can be assumed that it was not since immediately following the crash the crew were incapable of taking any action to prevent fire and the aircraft began to burn when the explosions occurred.

The aircraft crashed at a point 390 metres above sea level, 200 metres west of the intersection of the Leopoldsberg-Kahlenberg and Leopoldsberg-Klosterneuberg roads. Parts of the landing gear were scattered just before the point of impact, together with the left aileron and parts of the left wing flaps which were torn off by the tops of the trees growing on the steep hillside. The fuselage and the remainder of the wing lay facing uphill at the edge of the roadway, and at right angles thereto. The right leg of the landing gear, which was down, was torn off by contact with the roadway and the curb marking stones and was found lying on the roadway.

The forward section of the fuselage and the cockpit were severely crushed and the passenger cabin section was torn off. All equipment and fittings of the aircraft were displaced by the impact. Furthermore, the fire, which broke out immediately following the impact completely destroyed all the equipment and the main components of the aircraft, with the exception of those which were torn off and lay apart. Consequently, no reliable information which could be of use in the investigation could be obtained from the aircraft equipment or instruments. Immediately following the crash and before the fire had been extinguished, the injured passengers were forcibly extricated from the wreckage. Removal of the victims also required displacement of the wreckage. In addition, the fire fighting operations caused considerable displacement of the wreckage before the arrival of the investigators. It was, therefore, impossible to ascertain with any accuracy the manner in which the crash occurred, from the position in which the investigators found the wreckage.

According to information provided by the airline, their pilots are instructed, in the event of IFR conditions at Schwechat aerodrome, to proceed as follows when instructed by aerodrome control to approach on a 120° heading:

- a) Reduce altitude to 3 500 feet by circling between beacons OEW and WN;

- b) After descending to 3 500 feet and on receipt of clearance from air traffic control, fly on a 320° heading for two and a half minutes, descending to 2 500 feet;
- c) On reaching 2 500 feet on 320° magnetic, execute a procedure turn to the left until on 120° magnetic;
- d) When on 120° magnetic, descend gradually to reach an altitude of exactly 1 800 feet over beacon WO;
- e) From beacon WO, descend gradually on a 120° heading to 1 000 feet;
- f) If visual contact is not made from this altitude, climb in the same direction to 1 600 feet and await further instructions from air traffic control.

From the statements made by the air traffic controller and by the pilot of another JAT aircraft which was flying in the vicinity at the time, it is assumed that the pilot-in-command of YU-ADC was already aware of the unfavourable weather conditions prevailing at Schwechat when he approached the airport.

From the evidence given by the air traffic controller it is assumed that the aircraft reported as instructed over beacon OEW. From the bearings taken at 1429 and 1430 hours, however, it is apparent that the aircraft could not have been exactly over beacon OEW.

It was further confirmed by the statements of the other crew members that the pilot-in-command showed that he intended to land by switching on the "No Smoking-Fasten Seat Belts" sign. It is also assumed from the statement made by the air traffic controller that the flight on the outbound track until commencement of the procedure turn lasted seven minutes (from 1431 to 1438 hours as confirmed by the direction-finding log) and therefore exceeded by four and a half minutes the duration prescribed by JAT for the IFR procedure. Nor did the aircraft maintain the altitudes prescribed in the airline's landing procedure for unfavourable weather conditions.

since it did not hold the 3 500 foot (1 060 metre) altitude prescribed for the outbound track and the procedure turn but descended to 1 280 feet (190 metres - height of the point where the accident occurred) and was therefore considerably below the prescribed altitude of 1 800 feet even before reaching beacon WO.

The statements made by the co-pilot and that made by one of the passengers indicate that the pilot must have assumed, shortly before the crash, that he was on final approach since he had lowered the landing gear and extended the flaps. From the statements of the co-pilot and the testimony of two witnesses it must also be concluded that the engines were throttled down for final approach shortly before the crash.

Probable Cause

The accident was caused by the fact that the aircraft flew for a longer period on the outbound track and descended below the prescribed minimum altitude laid down at the time by the airline for operations into Schwechat aerodrome.

Recommendation

It is recommended that any airline which prescribes particular landing procedures or meteorological minima for operation of its aircraft into a given aerodrome should communicate these procedures and minima to the air traffic control authorities of that aerodrome to permit the latter to supervise approaches made by such aircraft and to enable them to intervene with a warning in case of emergency.

- - - - -