



PAKISTAN CIVIL AVIATION AUTHORITY
(SAFETY & INVESTIGATION BOARD)



SERIOUS INCIDENT TO M/S. SCHON AIR CESSNA – 152
AIRCRAFT, REG. # AP-BET (TRAINING FLIGHT)
ON 23 JUNE 2010
AT
NAWABSHAH AIRPORT

FINAL REPORT

SERIOUS INCIDENT TO M/S SCHON AIR CESSNA – 152 AIRCRAFT REG. NO. AP-BET AT NAWABSHAH AIRPORT ON 23 JUNE 2010

SYNOPSIS:

The investigation is conducted under the authority of Director General Civil Aviation Authority Memorandum No.HQCAA/1901/336/SIB dated 24 June 2010. On 23 June 2010, at 0912 hrs LT, a local training flight of M/s. Schon Air (Pvt) Ltd, aircraft Cessna – 152, Reg. No. AP-BET, after **first solo** take off from Nawabshah RWY-20, immediately landed back approximately 3000 ft down the runway and went off the runway toward right side. Aircraft suffered with nose gear pushed rearward, propeller blades and right wing tips severely damaged. There was no injury to the only aircrew on board.

1. FACTUAL INFORMATION

- 1.1 **History of the Flight:** Local Training Flight from Nawabshah airport. Earlier, the aircraft had flown 02 serviceable flights on the same day.
- 1.2 **Injuries to Persons:** No injury to the only crew member on board.
- 1.3 **Damage to Aircraft:** Propeller and nose gear severely damaged, wings leading edges ruptured due to hitting with bushes / trees, and wing tips damaged. Due to extensive damage and stress pattern, the aircraft was declared beyond economical repairs by AME.



- 1.4 **Crew Information:** Student Pilot (Pakistani National-Female) – The Student Pilot was on solo flight, occupying left seat, at the time of occurrence. She was under training for a period of 1.5 years, and had experience of total of 20 dual training flights.
- 1.5 **Aircraft Information:** Cessna – 152, Reg. No. AP-BET
- 1.6 **Flight Recorder / CVR:** Aircraft was not equipped with FDR / CVR. However ATC recording was available for analysis.
- 1.7 **Weather Information:** Visibility at the time of occurrence was 6 KMs, surface wind 180 degrees, 10 Kts, with gust factor up to 10 knots, temperature 35 deg C. The QNH reading was 2942.

- 1.8 **Impact Information:** There was no impact, as such, observed on the runway surface caused by the landing. However, after landing, aircraft bounced, and at about 4500 feet down the runway, propeller blades touched the runway surface leaving dug marks. Propellers once again touched ground on unprepared surface. Pictorial view indicating tyre marks making appreciable diversion from the RWY centre line is shown as below.



- 1.9 **Fire / Smoke:** No fire / smoke was reported.

2. OPERATIONS ANALYSIS

- 2.1 General Aviation aircraft including those of Schon Air, generally conduct initial flight training of new Student Pilots, especially circuits and landings stages at Nawabshah airport. This arrangement provides required freedom of operation and maximum training time, as well as no disturbance to traffic at JIAP, Karachi. The practice is in co-ordination with JIAP Karachi.
- 2.2 Student Pilot, though had adequate ground knowledge, was observed to be irregular in flying. She had flown 20 training flights in a large time span of 14 months. Also, there was no such CAA regulation addressing this aspect. However, last five training flights were undertaken within a period of 12 days.
- 2.3 The flight was scheduled for first solo training of Student Pilot (SP). The Instructor Pilot (IP) was Chief Flying Instructor / Chief Pilot Schon Air. SP was cleared for first solo flight with necessary pre-solo briefings and last minute tips. Taxi out, line up was reported to be normal. While taking off, during the roll, aircraft started to drift left, however, SP continued her take off and managed to get airborne before the left edge of runway.
- 2.4 SP climbed to about 50-60 feet, where she inadvertently reduced the power and started to lose height and yaw right. The reverse yaw resulted in bringing the aircraft back over the runway. The aircraft came over runway surface, angling, and made relatively harder and three-pointer touchdown at 3100 feet from the beginning Rwy-20. Got airborne again and made second contact with the runway after another 1400-1500 ft (4500 feet down the runway) close to right edge of Rwy-20 leaving propeller and tyre marks on Runway surface. All this while, SP kept silent both in terms of her speech and actions. Her freezing on controls in neutral position did avert the possibility of aircraft entering into porpoise motion.

- 2.5 Subsequently, the aircraft departed from the prepared runway surface after about another 300 feet, but continued to move forward with moderate Ground Speed. It went through the unprepared surface full of bushes / small tree branches which helped in further deceleration and finally stopping the aircraft just before entering taxi way 'C'.
- 2.6 Apparently, SP did not take adequate action to control the aircraft and subsequently she did not switch off the engine too. Instructor Pilot, watching entire sequence with hand held VHF set approached the aircraft and manage to switch off the engine and selected switches safe.
- 2.7 On-site analysis, and Aircrew / ATCO examinations revealed following sequence of event;
- (a) Aircraft started to yaw / drift left during takeoff due to propeller effect which could not be adequately registered, and effectively controlled by SP.
 - (b) Aircraft managed to take off just leaving the left edge of the runway.
 - (c) After takeoff, SP inadvertently reduced power and the aircraft was allowed to develop descent. Retardation of power also resulted in reverse yaw and brought the aircraft back on the runway.
 - (d) Aircraft made uncontrolled 3-pointer touchdown at about 3100 ft down the runway-20
 - (e) On relatively harder touchdown, aircraft bounced up and again landed/touched the runway at about 4500 ft and continued to yaw right on the runway.
 - (f) Aircraft continued to roll and gradually drift right side on the runway 20.
 - (g) Aircraft departed prepared surface at a distance of 5000 distance, and came to halt after crossing the bushes approx 150 ft before taxiway 'C'.
 - (h) SP did not make enough efforts to stop / control the aircraft during takeoff, return back and during landing roll.
 - (i) Aircraft tech log data revealed that pre-flight checks were carried out on mishap day and no abnormality was recorded.

3. CONCLUSION

- 3.1 Aircraft was allowed by SP to yaw left during the phase of solo take off under moderate and steady wind conditions. Throttle was retarded, and nil / insufficient flight controls were applied to regain the control of the aircraft. Retardation of power also resulted in yaw in the opposite (Right) direction and develop descend from a low height. Thereafter, aircraft remained mostly out of control till it stopped on its own.
- 3.2 **Cause of Occurrence** : The cause of occurrence is attributed to inadequate understanding of aircraft behaviour during acceleration / take off and deceleration / landing phases as well as nil / incorrect actions taken by Student Pilot to control the aircraft.

4. FINDINGS

- 4.1 Student Pilot had gone through the required ground training cycle before the commencement of flying.

- 4.2 SP had flown total of 18 sorties, 02 solo check flights before being cleared for first solo flight.
- 4.3 SP was familiar with Nawabshah airfield lay out and weather conditions as she had flown 12 sorties at Nawabshah.
- 4.4 SP while in pre-solo training phase completed 20 training sorties in a relatively large period of 14 months.
- 4.5 Though, last five flights were conducted in 12 days, yet on the average, SP flew each sortie after a gap of more than 23 days.
- 4.6 SP was trained by one and experienced Instructor Pilot who happened to be CFI, indicating consistency in imparting instructions.
- 4.7 SP could not comprehend the situation, and therefore did not apply correction to cater for propeller effect during takeoff.
- 4.8 SP inadvertently retarded the throttle and induced reverse yaw to right during deceleration.
- 4.9 Aircraft ended up making 3-pointer and harder touchdown, which subsequently resulted in at least two bounces. Aircraft did not enter in porpoise as the control column was held loosely in the neutral position.
- 4.10 Aircraft stopped because of unprepared surface which had thick scrubs and bushes.
- 4.11 SP could not switch off the engine even after the aircraft had come to stop, as she remained frozen.
- 4.12 Weather conditions were within the allowable limits.
- 4.13 No abnormality was observed on aircraft airworthiness.

5. SAFETY RECOMMENDATIONS

- 5.1 Aircrew training system (including aircraft knowledge, its characteristics and behaviour during various stages of flight, takeoff and landing abnormalities) and its monitoring at Schon Air be made more effective (Schon Air).
- 5.2 Regularity during initial flying training be ensured through CAA Rules / ANOs and Company SOPs (Schon Air and DFS, HQCAA).