

INVESTIGATION REPORT INTO THE ACCIDENT CESSNA-150 REG.MK.
AP-BAR M/S. RAJI AVIATION WHICH OCCURRED ON 18-03-86 AT
KARACHI AIRPORT.

1. AIRCRAFT INFORMATION:

- | | | |
|-------|---|--|
| 1.1. | Registration Marking | AP-BAR |
| 1.2. | Aircraft type and makers | Sl.No.C-150/G 150-65225 |
| 1.3. | Engine types, airframe
Positions and marks Sl No. | CANT-O-20017,65879-6-A |
| 1.4. | Certificate of Registration
No. and validity | 541/1 valid |
| 1.5. | Certificate of Airworthiness
No. and date of expiry, and
Flight Manual No. | No.494/1 Rev-I(15-1-87) |
| 1.6. | Certificate of Maintenance
date and time (GMT) of issue
and period validity. | Issued on 09-03-86 at
1600 hrs valid from
09-03-86 to 21-03-87 |
| 1.7. | Date of construction of
airframe. | 1966 |
| 1.8. | Name and Address of Owner | M/S. RAJI AVIATION LTD. |
| 1.9. | Gross Weights. Maximum
permitted by C. of A. for
this flight, at the time of
accident. | Max. 1600 LBS
at time of occurrence
1412 LBS |
| 1.10. | Loading. Centre of gravity
limits in C.ofA.and centre
of gravity position at the
time of accident & commen-
cement of flight. | 31 to 37.5 1412 = 33.2
aft of datum |
| 1.11. | Airframe history.(Give fly
ing times since manufacture
last overhaul & last periodic
check.List also essential
modifications completed) | TSN 7843:50 hrs
Since C. of A. 109:30
Since check I 03:05 hrs
modification upto date. |

- | | | |
|-------|---|---|
| 1.12. | Engine history. (Give flying time since manufacture, last overhaul & last periodic check. List also essential modifications completed). | TSN 5307:40
TSDH:- 1249:35
modification upto date.
TS last check 03:05 |
| 1.13. | Accessory history. (Give details of operating life & operating time since manufacture and overhaul). | Accessories life as engine life (1800 hrs) |
| 1.14. | Defects. (List & remark upon any technical defects in airframe engines or accessories, discovered during investigation. | None |

2. CREW INFORMATION:

2.1. Pilot-in-Command.

- | | | |
|--------|--|-------------------------------|
| 2.1.1. | Name | Dr. Muhammad Aslam Rana |
| 2.1.2. | Position in the cockpit. | Pilot |
| 2.1.3. | Date of Birth | 05-01-1952 |
| 2.1.4. | Type of Licence held and No. | Student Pilot Licence No. 334 |
| 2.1.5. | Medical date with status | 22-09-85 fit |
| 2.1.6. | Rating:-
----- | |
| | 2.1.6.1. Type(s) held: | Nil |
| | 2.1.6.2. Type current: | Nil |
| | 2.1.6.3. Assist/Flight instructor R: | Nil |
| 2.1.7. | Flying Experience:-
----- | |
| | 2.1.7.1. Grand total: | 37:05 |
| | 2.1.7.2. Total in Command: | 03:20 |
| | 2.1.7.3. Total in Command on the type accident/incident occurred | 03:20 |
| 2.1.8. | Where trained: | M/S. Raji Aviation |
| 2.1.9. | Date of joining the Organization. | 14-09-85 |

3. SUMMARY

3.1. On 18th March, 1986 Dr. M. Aslam Rana, a Student Pilot was on solo flight to complete requirement for issue of P.F.L. He was cleared for circuits and landings exercise at Karachi Airport in Cessna-150 bearing Nationality and Registration Mark AP-BAR. During second landing the nose gear collapsed. After the nose gear broke the aircraft came to a grinding halt covering a distance of 300 feet on the runway. The aircraft came to rest at 2500 feet from the threshold. No one was injured and there was no fire during and after the occurrence.

4. INJURY TO PERSON (s)

4.1. There was no injury to the occupant of the aircraft or any one else.

5. DAMAGE TO THE AIRCRAFT

5.1. The aircraft was substantially damaged. Details of damages appear at appendix 'B'.

6. OTHER DAMAGES

6.1. No other damages were noted or reported.

7. METEOROLOGICAL CONDITION

7.1. The surface wind at the time of occurrence was reported by the Aerodrome Controller on VHF/RT when the student was taxiing.

8. COMMUNICATION

8.1. The aircraft was in contact with control tower on VHF/RT till immediately prior to the occurrence.

8.2. Radio Communication was not a factor.

9. AIDS TO NAVIGATION

9.1. Aids to Navigation were operating normal.

9.2. Aids to Navigation were not a factor.

10. AERODROME AND GROUND FACILITIES

10.1. All facilities were available and were adequate.

10.2. Aerodrome and ground facilities were not a factor.

11. FLIGHT RECORDERS

11.1. Not fitted nor required to be fitted.

12. WRECKAGE

12.1. The aircraft AP-BAR was found 2500 from the threshold of runway 25L on the centre line. The nose gear which had broken on impact was found on the Northern side of the runway. After thorough inspection carried out by the Investigators and recording to statement of the pilot, the wreckage was released not being required any longer for investigation.

13. FIRE

13.1. Fire did not occur during or after the accident fire tenders had reached the scene of accident immediately and remained in position till the aircraft was removed and secured.

14. SURVIVAL ASPECT

14.1. The Pilot of the aircraft, the only occupant, survived and was unhurt. He did not experience any difficulty in evacuation.

14.2. It was a survivable accident.

15. TEST AND RESEARCH

15.1. Not required.

16. OBSERVATION

16.1. Nil.

17. INVESTIGATION

17.1. Pilot Chief Investigator, Capt. Farmanuddin, was informed of the accident by the Duty Air Traffic Controller at 1102 PST. He along with Mr. Jaffar Malik, Controller of Airworthiness, Mr. Muhammad Ali Siddiqui, Investigator Incharge and Mr. Shamshad Ahmed Qureshi, Investigator, proceeded to the scene of the accident.

17.2. The aircraft was identified as C-150 bearing Nationality and Registration Mark AP-BAR. It was found lying at a distance of 2500' from the threshold of runway 25L (the runway in use). It was in a nose down and tail up position. It was facing 268 degrees. The nose wheel had broken and was found at a distance of 350 feet towards North from the main wreckage.

17.3. A detailed inspection of the wreckage was carried out by the investigator. Photographs were taken and the damage was assessed and recorded (Appendix - K). Only those photographs considered necessary for this investigation have been used in this report.

17.4. In order to expedite the process of investigation the Pilot Chief Investigator was requested to record statement of the Pilot. Question Answer session was also carried out by the investigators. Statements of other eye witnesses were also recorded. (App.D.G & H). The SATO Karachi was requested to secure VHF/RT recording for the period the pilot had remained in contact with the control tower. He was also requested to provide a copy of the transcript of this recording. Later the transcript was collected by the investigator incharge. After thorough inspection of the wreckage and recording of the statements the aircraft was removed from the scene of accident as it was blocking the runway.

18. WITNESSES

18.1 Statement of the following witnesses were recorded:

Dr. M. Aslam Rana	- Student Pilot
Mr. Quadir Baksh Balouch	- Fire Tender Driver
Mr. Syed Shariq Hassan	- Supervisor Instructor
Mr. Tariq Ahsan	- Deputy Chief Pilot
Mr. Aijaz Rab Siddiqui	- Chief Pilot Raji Aviation

18.2 DOCUMENTS

18.2.1. The following information was obtained from the documents:-

- (a) The aircraft was properly registered bearing Nationality & Registration Mark AP-BAR.
- (b) The aircraft was properly maintained having valid C. of A. and C. of M.
- (c) Flight was properly authorized.

18.3. Following information was obtained from the witnesses of the accident.

18.3.1. Crosswind at the time of takeoff was Northerly 15 Kts.

18.3.2. Pilot was not properly briefed about the crosswind limitations.

18.3.3. None of the instructors as well as the Chief Pilot knew the crosswind limitation.

18.3.4. The Assistant instructor posted in the control tower to supervise the students training did not consider the excessive crosswind and failed to discontinue the training flight.

18.3.5. After initial impact on main gears the aircraft bounced to height of approximately 10-12 feet and the student did not attempt to go around.

18.3.6. The fire tender reached the site of accident immediately after the occurrence.

18.3.7. The fire tender operator rushed to the aircraft to rescue the pilot and to operate the fire extinguisher in case of fire. However the pilot was uninjured and evacuated the aircraft without assistance. There was no fire as such fire extinguisher was not use.

19. DISCUSSION

Cessna-150 Nationality and Registration Mark AP-BAR was on a circuit and landing training sortie on 18th March, 1986 at 1025 hrs at Karachi. The Captain of the aircraft Dr. Aslam Rana, a Student Pilot was training to obtain a Private Pilot Licence. After receiving necessary briefing from the Deputy Chief Instructor, Capt. Tariq Ahsan, the student pilot proceeded to the aircraft started up the engine. A weather briefing was obtained on ATIS frequency which reported wind calm at 0930 hours as per statement of Capt. Tariq Ahsan (Appendix - E.)

- 19.1. Prior to take off, an Assistant Flight Instructor Capt. Shariq was sent to the control tower by Raji Aviation to supervise the student's flying and if need be call off the sortie in case the wind speed increased/direction changed or if the students performance was not satisfactory.
- 19.2. The student pilot, received take off clearance from the tower and positioned his aircraft for take off on runway 25L. During the take off clearance the Control Tower reported wind northerly 15 Kts (Transcript at appendix - J). The runway direction being 25/07, it meant that a strong cross wind was prevailing at the time of take off. The first circuit was normal and the landing uneventful. However, during approach to second landing, due to strong cross wind, the aircraft started to drift to the left of the runway. The student pilot in an effort to keep the aircraft on the centre line failed to check the descent rate. The aircraft dropped rapidly and hit the runway on main gears. According to the statement of the pilot and the eye witnesses, after bouncing of the runway, the aircraft gained a height of approximately 10'-12' feet. The student instead of executing a go around moved the Control column forward to avoid gaining any further height. This however, put the aircraft in a nose dive attitude. The aircraft impacted the runway in this attitude hitting the nose wheel first and causing the nose gear to break from its attachment from the fuselage. The propeller contacted the runway and stopped while the aircraft continued to drag till it came to a halt 100 yds from the point of impact.
- 19.3. Dr. Aslam, the student pilot had a total experience of 37 hours of flying of which only 2:50 hrs were solo. This experience is considered inadequate to execute landings at or near the aircraft cross wind limitation speed. The manufacturer recommend maximum demonstrated crosswind velocity is 12 Kts. (Appendix - L). During the flare out phase the pilot lost control of the aircraft & with his experience it was not possible for him to regain control due to strong cross wind.

- 19.4. The instructor, Capt. Tariq Ahsan, who briefed the student before the flight and the student himself did not check the surface wind shortly before the take off. Had they done so, probably they would have decided against the take off and could have averted the accident.
- 19.5. The Asstt Instructor Capt. Shariq, who was supervising the flight did not call off the flight even though, he was present in the control tower when the controller reported that the wind was northerly 15 Kts. During the question and answer session with the instructors including the Chief Instructor when asked as to what was the cross wind limitation of their aircraft none of them knew the crosswind limitation. This indicates the weakness of instructors & shows a very casual attitude of the school towards flying training.

20. FINDINGS.

- 20.1. The aircraft was properly registered.
- 20.2. The certificate of airworthiness was valid.
- 20.3. The certificate of maintenance was valid.
- 20.4. Flight was properly authorized.
- 20.5. Dr. Aslam Rana was holding a valid student pilot licence.
- 20.6. There were no defects reported on the aircraft. AP-BAR.
- 20.7. Both the instructor and the student failed to check the surface wind shortly before the flight.

21. CAUSE.

- 21.1. Cause of the accident was due to improper supervision in that the supervisor allowed the student pilot to fly in conditions beyond his capabilities.
- 21.2. The contributory factor being the inexperience of the student pilot who could not control the aircraft in high crosswind conditions during landing.

22. RECOMMENDATIONS.

- 22.1. It is recommended that the instructors employed in Training Organization to undergo a refresher in training

- 22.1. It is recommended that the instructors employed in Training Organization to undergo a refresher in training techniques and be categorized at least once a year by a CAA flight inspector.
- 22.2. All private companies issued with training licences and flying clubs be asked to prepare training manuals giving details on each exercise. These manuals should include weather, aircraft and operations limitations.
- 22.3. M/S. Raji Aviation be warned that any similar incident /accident caused due to carelessness on the part of the school would result in the suspension of their training licence.

APP K₁



Aircraft position after the accident



APP. K₂

Photograph showing damage to the nose wheel strut and the point where the nose wheel broke.



APP. K₃

Broken nose wheel fairing.



APP. K₄

The track made on the runway after the nose wheel broke.

APP. K 5



Another view of the track followed by the aircraft.



APP K 6

Damaged propeller.

APP K 7



Front view of the damaged aircraft.



APP K 8

Photograph showing drag marks on the fuselage.



APPK₉

Cockpit



APPK₁₀

Deflated nose wheel with its components.