



ORIGINAL

NO.HQCAA/1901/162/SII

سول ایوی ایشن اتھارٹی

AIRCRAFT INCIDENT INVESTIGATION

A-300 AP-BBM

WHICH OCCURRED ON

26TH SEPTEMBER, 1993

AT

QUETTA AIRPORT

CIVIL AVIATION AUTHORITY

KARACHI, PAKISTAN

AIRCRAFT INCIDENT INVESTIGATION

**TYRE TREAD PEELED-OFF INCIDENT DURING TAKE-OFF
OF PIAC AIRBUS ON 26TH SEPTEMBER, 1993 WHILE
OPERATING PK-321 AT QUETTA AIRPORT**

Authority:- Director General Civil Aviation Authority
Memorandum NO. HQ.CAA/1901/162/SIB dated 3rd
October, 1993.

COMPOSITION OF INVESTIGATION TEAM

- | | | |
|-----|----------------------------|------------------------|
| (a) | Wg Cdr (Retd) Sajjad Ahmed | Investigator-in-Charge |
| | Technical Investigator CAA | |
| (b) | Mr. Muhammad Ali Siddiqui | Investigator |
| | Ops. Investigator CAA | |

1. AIRCRAFT INFORMATION

- | | | | |
|------|-------------------------------|---|------------------|
| 1.1. | Registration Marking | : | AP-BBM |
| 1.2. | Aircraft type & maker's S.No. | : | A-300B4 |
| | | | S.No.064 |
| 1.3. | Engine types, airframe | : | CF6-50/C2 |
| | positions and maker's S.Nos. | | No.1 S/N 517-517 |
| | | | No.2 S/N 517-131 |

- 1.4. Certificate of registration : No.561 permanent
No. and validity.
- 1.5. Certificate of Airworthiness : No.514 valid 3-8-94
No. and date of expiry, and
flight manual No.
- 1.6. Certificate of Safety date : C of M signed on
and time (GMT) of issue and 3-9-93 at 13-25 hrs
period of validity. valid for 1650 hrs
- 1.7. Date of construction of : February, 1979
airframe
- 1.8. Name and address of Owner : PIAC
- 1.9. Gross Weights. Maximum : 124372 KG
permitted by C. of A. for this
flight,at the time of accident
- 1.10. Loading. Centre of gravity : 25.9% MAC
limits in C. of A. and centre
of gravity position at the
time of accident and
commencement of flight.
- 1.11. Airframe history.(Flying : 36114-12 hrs since
times since manufacture, last new 1772-11 hrs
overhaul and last periodic since last base
check. List also essential check 166-12 hrs
modifications completed) since last B & A-II
check

- 1.12. Engine history. (Flying time : No.1 engine
since manufacture, last TSI 1773
overhaul and last periodic TSN 27924 hours
check. Essential modification No.2 engine
completed) TSI 1522
TSN 34283 hours
- 1.13. Accessory history. (Operating : As per Maint.
life and operating time since Schedule
manufacture and overhaul).

2. CREW INFORMATION

2.1. Pilot-in-Command

- 2.1.1. Name : Mian Shahid Habib
- 2.1.2. Position in the cockpit: Captain
- 2.1.3. Date of Birth : 18-9-1946
- 2.1.4. Type of Lic and No. : ALTP No.477/2
- 2.1.5. Medical date with : Fit for renewal of
status ALTP Lic subject to
corrective glasses
- 2.1.6. Rating
- 2.1.6.1. Type(s) held : F-27, B-707/720B,
DC-10,B-737, A-310
and A-300
- 2.1.6.2. Type current : A-300

2.1.7. Flying Experience

2.1.7.1. Grand total : 9377.00

2.1.7.2. Total-in-Comd : 5375.00

2.1.7.3. Total-in-Comd : 50.15 (U/S)
on the type of
accident/inci-
dent occurred

2.2. Co-Pilot

2.2.1. Name : Faisal Rais

2.2.2. Position in the cockpit: Co-Pilot

2.2.3. Date of Birth : 08-2-1963

2.2.4. Type of Lic and No. : CPL No.1339

2.2.5. Medical date with : 11-5-93 (Fit for
status CPL)

2.2.6. Rating

2.2.6.1. Type(s) held : C-150/152, F-27,
B-737 and A-300

2.2.6.2. Type current : A-300 (P-2)

2.2.7. Flying Experience

2.2.7.1. Grand total : 1896:42 hrs

2.2.7.2. Total-in-Comd : 270:42 hrs

2.2.8. Where trained : PIA

3. SUMMARY OF INCIDENT

3.1. PIAC Airbus (A-300 B4) registration No. AP-BBM while operating PK-321 on 26th September, 1993 experienced an incident in which its No.6 tyre tread peeled-off during the take-off roll. The Air Traffic Controller informed the Captain of subject incident after some tyre pieces were reported on the runway by the ground staff. Since the wings of the aircraft are low visual check of tyre conditions could not be carried out by the crew on board. However, prior to landing at karachi the aircraft executed a low pass in which all tyres were physically checked for security by the ground staff and the aircraft landed safely.

4. INJURY TO PERSONNEL

None

5. DAMAGE TO AIRCRAFT

5.1. The left inner flap was dented at various place and its rib No.14 was damaged substantially.

6. OTHER DAMAGES

None

7. METEOROLOGICAL CONDITION

Not relevant

8. NAVIGATION & LANDING AIDS

Not relevant

9. COMMUNICATION

Not relevant

10. AERODROME & GROUND FACILITIES

Not relevant

11. FLIGHT RECORDERS

11.1. Flight recorder information was not required during the course of investigation.

12. WRECKAGE & IMPACT INFORMATION

None

13. FIRE

13.1. No fire or smoke was caused during the incident.

14. SURVIVAL ASPECTS

14.1. No Survival problem was faced and all personnel on board disembarked using normal aircraft exit doors.

15. TEST & RESEARCH

15.1. It was observed that on full nozzle depression No.6 tyre pressure depletes from 165 PSI to 140 PSI in 34.31 sec. Additionally, it was found that pressing TPG 20 times on the tyre nozzle caused pressure depletion ranging from 1 to 2 PSI.

16. OBSERVATION

16.1. The tyre store at PIAC was visited and following discrepancies were observed:-

- (a) The personnel working in the tyre store were neither aware of conditioned environment requirements for tyre storage in terms of humidity and temperature nor the information was displayed on the wall for ready reference.
- (b) About half of the tyres were kept on the floor due to shortage of tyre racks.
- (c) The tyre store is fitted with exhaust fans which were perhaps used before the aircondition plant was installed.

17. WITNESSES

17.1. Statement of witnesses are given in appendix 'D' to 'K' to this report.

18. INVESTIGATION

18.1. PIAC Airbus A-300B4 registration No. AP-BBM was operating scheduled domestic flight PK-321 (Lahore - Quetta - Karachi). During take-off roll at Quetta at about 1640 PST the Air Traffic Controller informed the Captain of the aircraft that some tyre pieces were reported on the runway by the ground staff. As such, prior to landing at Karachi a low pass was executed for tyres security check by the ground staff and subsequently the aircraft landed safely. During post flight inspection No.6 tyre tread was found completely peeled-off as shown in Appendix 'A' to this report.

18.2. Prior to the incident on 25th September, 1993 at Lahore the No.6 tyre pressure of subject aircraft while operating PK-302/303 was found under inflated and was charged to correct pressure of 185 PSI and an entry to that effect was made in the technical log, details of which are given in appendix 'B' to this report. After the subject tyre was charged at Lahore on 25th September, 1993 the aircraft came to Karachi (directly) and on the same day it carried out one mission from Karachi to Islamabad and back. A lay over check was carried out during night on 25/26th September, 1993 and no discrepancy as regard tyre pressure was reported by the ground crew.

18.3. In accordance with A-300 aircraft Maintenance Manual Chapter 32-41-00 page 605 if the tyre pressure is less than 147-166 PSI then the pertinent tyre should be replaced. (Refer appendix 'C' to this report). As per statement of Aircraft Engineer Mohammad Aslam who had charged the subject tyre at Lahore following points have been brought out:-

- (a) That after about half an hour on arrival of the aircraft he had observed the subject tyre pressure gauge to be reading 165 PSI.
- (b) That in order to validate the tyre pressure he used another TPG and while checking the pressure the tyre was further depleted to 140 PSI due to improper seating of the gauge nozzle on the shrudder valve stem.
- (c) That an entry stating tyre pressure 140 PSI was erroneously made in the technical log.

- (d) That since the pressure of subject tyre was 165 PSI the tyre was recharged and was not changed.

18.4. The arguments for not changing the subject tyre are not logical in view of the following evidence:-

- (a) That a tyre pressure will deflate from 165 PSI to 140 PSI in about 34.31 seconds. Additionally it was observed that if TPG is pressed 20 times on the tyre stem the pressure drops between a range of one to two PSI. Therefore, momentary deflation of pressure due to improper seating of gauge nozzle on the shrudder valve stem, as stated by ground engineer, would not cause the pressure to deplet to 140 PSI under the circumstances.
- (b) That subject tyre pressure was observed to be 140 PSI and was recharged to 185 PSI as authenticated from the technical log.
- (c) That under inflated tyre operation generally results in separation of tyre tread due to extensive friction and heat generation.
- (d) That No.6 tyre which was faulty had tread peel-off problem on 26th September after it was recharged on 25th September, 1993.

18.5. From the discussion in para 18.3 and 18.4 above it is concluded that:-

- (a) No.6 tyre pressure was not 165 PSI when it was observed at Lahore on 25th September, 1993 and was at some figure close to 140 PSI because momentary

pressure depletion, due to any reason(s), would deplete a small volume of air and pressure loss would be considerably less as compared to fall of pressure from 165 PSI to 140 PSI.

(b) No.6 tyre was faulty and it should have been replaced at lahore on 25th September, 1993 instead of recharging it.

(c) The depleting pressure of faulty No.6 tyre went unchecked during operation after it was recharged on 25th September, 1993 till the time of incident.

19. FINDINGS

19.1. Documentation of the aircraft was in order.

19.2. The crew licences were appropriate and valid.

19.3. On 25th September, 1993 at Lahore. No.6 tyre pressure was found 140 PSI and was recharged to 185 PSI and the aircraft flew to Karachi. On the same day the aircraft flew another mission from Karachi to Islamabad and back.

19.4. On 26th September, 1993 the aircraft operated Karachi/Quetta/ Lahore/Quetta/Karachi and way back at Quetta No.6 tyre tread peeled off completely during the take-off roll.

19.5. The ground engineers failed to detect the depleting pressure of faulty No.6 tyre after it was recharged on 25th September, 1993 till such time the incident occurred.

20. CAUSE(S)

- 20.1. The cause of the incident was failure to change No.6 tyre on 25th September, 1993 at Lahore when its pressure was found 140 PSI.
- 20.2. Contributory cause of the incident was failure to detect the depleting pressure of No.6 tyre after it was recharged till such time the incident occurred.

21. RECOMMENDATIONS

- 21.1. Disciplinary action be taken against AME Mohammad Aslam P-18122 for not changing No.6 tyre at Lahore when its pressure was found less than 165 PSI.
- 21.2. All Ground Engineers be briefed to be meticulous during walk around checks and display vigilance while scrutinizing the technical log.
- 21.3. Additional racks for tyre storage be provided in the tyre store.
- 21.4. Exhaust fan ducts at PIAC tyre store should be closed.
- 21.5. Information regarding temperature and humidity control should be displayed prominently in the tyre store for ready reference.



FRONT VIEW : NO.6 TYRE

NOTE: TREAD PEELED-OFF SURFACE



SIDE VIEW : NO.6 TYRE

NOTE : TREAD PEELED-OFF SURFACE