

FINAL INVESTIGATION REPORT



SERIOUS INCIDENT OF M/S SHAHEEN AIR INTERNATIONAL
NL-224 (SECTOR DXB – ISB) A320 AIRCRAFT, REG. NO.
AP-BLK DATED 25-02-2018

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Synopsis

This serious incident occurred on 25th February, 2018 and was reported to Safety Investigation Board (SIB), Pakistan by the operator on 2nd March, 2018 through Mandatory Occurrence Report (MOR) (**Appendix 'A'**) when asked for by SIB. The incident was notified in accordance with ICAO Annex-13 (**Appendix 'B'**). Aviation Division, Government of Pakistan issued memorandum vide letter No. HQCAA/1901/409/SIB dated 21st March, 2018 (**Appendix 'C'**) authorizing SIB, Pakistan to investigate the incident and investigation was conducted by SIB.

1. FACTUAL INFORMATION

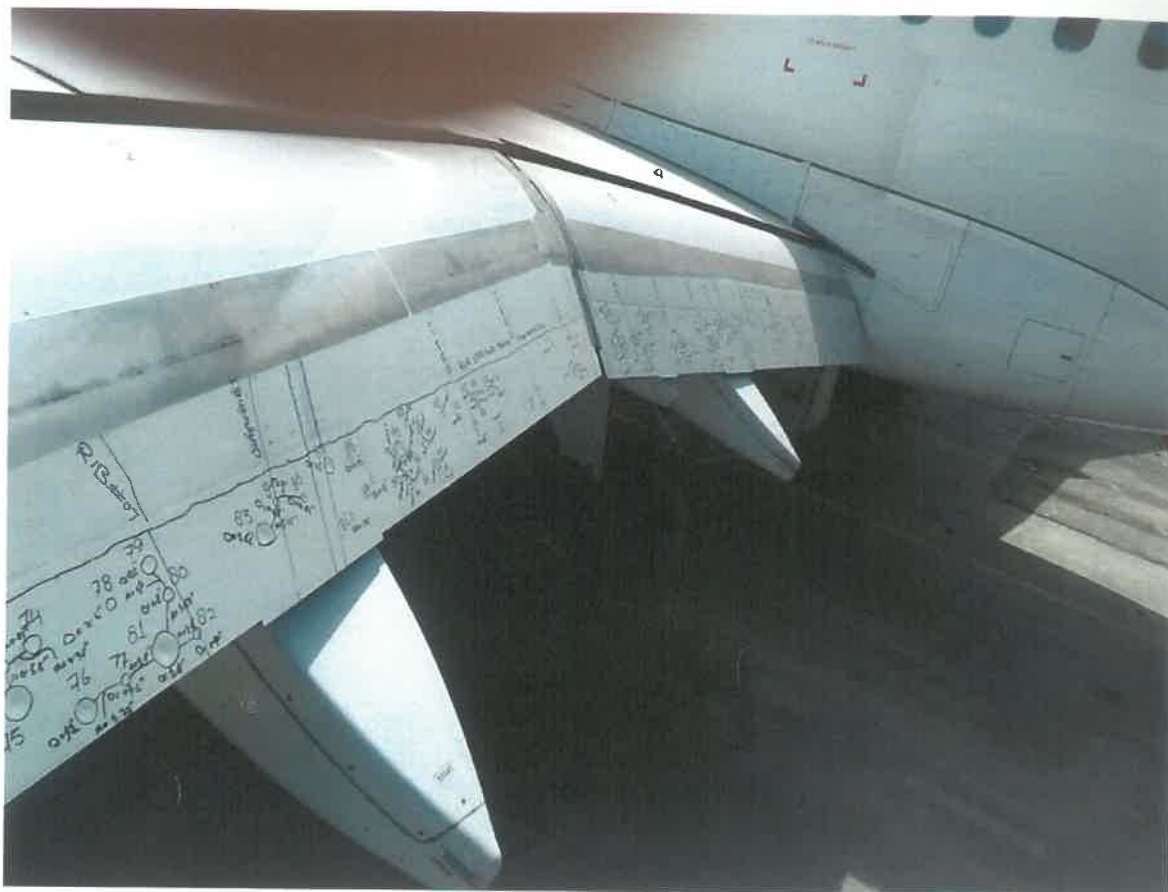
- 1.1 **History of the Flight.** On 25th February, 2018 M/s Shaheen Air International aircraft Reg. No. AP-BLK Airbus A320 was scheduled on NL-224 (Dubai – Islamabad). On arrival at Benazir Bhutto International Airport Islamabad (BBIAP), during Transit Check, 674 dents were observed on aircraft.
- 1.2 **Injuries to Persons.** There were no injuries to any person during the incident.
- 1.3 **Damage to Aircraft.** Aircraft was subjected to hail hits while on ground before departure and 674 dents were observed on aircraft after flight. The majority of dents were detected on the upper surfaces i.e. Flaps, Wings, Horizontal Stabilizer
- 1.4 **Other Damages.** None.
- 1.5 **Personnel information.** Not applicable.
- 1.6 **Aircraft and Engines Information.** Not applicable.
- 1.7 **Meteorological Information.** The hail storm started at 1345 hrs KSA local time and finished at 1420 hrs KSA local time.
- 1.8 **Use of Effective Investigation Techniques.** Standard investigation procedure and techniques were used, however due to lack of evidence and not reporting the incident to SIB, a detailed investigation could not be conducted.

2. ANALYSIS

- 2.1.1 At Islamabad airport 674 dents were observed on aircraft AP-BLK after arrival NL-224 dated 25th February, 2018, during Transit Check.
- 2.1.2 The damage pattern indicated that the aircraft received these dents, while it was on ground.
- 2.1.3 To determine the place of occurrence, cause, time, date and location of the aircraft while it received hail damage, last 08 flights of AP-BLK along with weather conditions were tracked. The details of such flights are appended below :-

DATE	FLIGHT NO.	SECTOR
23 rd February, 2018	705	Islamabad – Medina
23 rd February, 2018	704	Medina – Lahore
23 rd February, 2018	441	Lahore – Kuwait
23 rd February, 2018	442	Kuwait – Lahore
24 th February, 2018	703	Lahore – Medina
24 th February, 2018	706	Medina – Islamabad
24 th February, 2018	221	Islamabad – Dubai
25 th February, 2018	224	Dubai - Islamabad

- 2.1.4 Weather reports of all these sector were analyzed. During analysis it was discovered that at Medina, hail storm was reported on 24th February, 2018. The hail storm started at 1345 hrs KSA local time and finished at 1420 hrs KSA local time.
- 2.1.5 It was evident from the weather report that the aircraft was subjected to hail hits while aircraft was on ground and scheduled for flight NL-706 dated 24th February, 2018 (Medina – Islamabad).
- 2.1.6 Boarding was announced at 1350 hours KSA time and aircraft departed Medina Airport at 1430 hours KSA time.
- 2.1.7 At the time of hail hit, boarding was in progress and aircraft departed Medina station after 10 minutes of culmination of hail storm.
- 2.1.8 The operating cockpit crew did not make an entry or ask the engineer to conduct a Post Hail check after the hail storm and prior to departure.
- 2.1.9 At Medina, Shaheen Air International has outsourced its maintenance inspection inclusive of Transit Check to M/s NAGS. As per M/s SAI, the duty engineer of M/s NAGS did carry out the walk around of the aircraft and no damage was observed. However, no substantial evidence could be established from aircraft Tech Log, to this effect. Moreover the damage does not substantiate this.
- 2.1.10 Subsequently, aircraft operated further following two sectors with the same damage that was not checked during these flights :-
- 2.1.10.1 NL-221 dated 24th February, 2018 (Islamabad – Dubai Sector)
- 2.1.10.2 NL-224 dated 25th February, 2018 (Dubai – Islamabad Sector)
- 2.1.11 For both of these flights the transit inspection / walk around inspection by the cockpit crew was not done carefully due to which such significant damage to the airframe skin was missed.
- 2.1.12 After arrival of NL-224 dated 25th February, 2018, during Transit Check, following 674 dents were observed by M/s Shaheen Air International Maintenance Organization (SEAMS) at Islamabad and aircraft was grounded for maintenance. The majority of dents were detected on the upper surfaces i.e. Flaps, Wings, Horizontal Stabilizer



AREA	NUMBER OF DENTS
Forward Fuselage Crown Area b/w FR 10 to FR 35	38
Engine No. 01 Outboard Fan Cowl	20
Engine No. 01 Inboard Fan Cowl	20
Engine No. 02 Outboard Fan Cowl	13
Engine No. 02 Inboard Fan Cowl	20
LHS I/B Flap	112
LHS O/B Flap	118
RHS I/B Flap	105
RHS O/B Flap	148
Engine No. 1 Pylon	15
Engine No. 2 Pylon	09
RHS Stabilizer Tip	05
LHS Stabilizer Tip	05

Horizontal Stabilizer Panel 334 BT	07
Horizontal Stabilizer Panel 344 BT	08
Fuselage Tail Cone Crown Area Panel	23
LHS Over Wing Composite Panel	01 Perforation
RHS Slat No. 03	01
LHS Slat No. 03	01
RHS Slat No. 01	01
LHS Slat No. 05	02
LHS Slat No. 04	01

3. CONCLUSION

3.1 Findings

- 3.1.1 At Islamabad airport 674 dents were observed on aircraft AP-BLK after arrival NL-224 dated 25th February, 2018, during Transit Check.
- 3.1.2 The damage pattern indicated that the aircraft received these dents, while it was on ground.
- 3.1.3 Weather reports of all involved sectors of prior 08 flights were analyzed. During analysis it was discovered that at Medina, hail storm was reported on 24th February, 2018.
- 3.1.4 The hail storm started at 1345 hrs KSA local time and finished at 1420 hrs KSA local time.
- 3.1.5 It was evident from the weather report that the aircraft was subjected to hail hits while aircraft was on ground and scheduled for flight NL-706 dated 24th February, 2018 (Medina – Islamabad).
- 3.1.6 Boarding was announced at 1350 hours KSA time and aircraft departed Medina airport at 1430 hours KSA time.
- 3.1.7 At the time of hail hit, boarding was in progress and aircraft departed Medina station after 10 minutes of culmination of hail storm.
- 3.1.8 The operating cockpit crew did not make an entry or ask the engineer to conduct a Post Hail check after the hail storm and prior to departure.
- 3.1.9 No substantial evidence was available to authenticate that a post hailstorm inspection was carried out by cockpit / maintenance crew before departure from Medina.
- 3.1.10 Subsequently, aircraft operated further following two sectors with the same damage that was not checked during these flights :-
 - 3.1.10.1 NL-221 dated 24th February, 2018 (Islamabad – Dubai Sector)
 - 3.1.10.2 NL-224 dated 25th February, 2018 (Dubai – Islamabad Sector)
- 3.1.11 For both of these flights the transit inspection / walk around inspection by the cockpit crew was not done carefully due to which such significant damage to the airframe skin was missed.

3.1.12 After arrival of NL-224 dated 25th February, 2018, during Transit Check, following 674 dents were observed by M/s Shaheen Air International Maintenance Organization (SEAMS) at Islamabad and aircraft was grounded for maintenance. The majority of dents were detected on the upper surfaces i.e. Flaps, Wings, Horizontal Stabilizer.

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4. OBSERVATIONS

- 4.1 The Captain was physically present in the aircraft during Hailstorm, he should have called for Post Hailstorm checks and also an entry to this effect should have been in Tech Log.
- 4.2 The damage was detected after the 3rd flight which posed serious safety concerns for every subsequent flight of the aircraft in the same damaged state.

4.3 After the detection of damage, the matter was not reported to SIB. It was by chance that SIB member was on visit to BBIAP Apron for another occurrence, observed the damaged aircraft and later on followed up.

4.4 **Cause of the Occurrence.**

4.4.1 The damage to the aircraft occurred at Medina Airport, KSA after being exposed to hail storm prior to flight.

5. SAFETY RECOMMENDATIONS

5.1 An advisory is to be issued by Flight Operations M/s SAI to all pilots regarding this incident/ finding and outcome of this investigation for better decision making.

5.2 Directorate of Flight Standards, PCAA may issue necessary instructions as deemed appropriate, while considering already existing procedures on the subject, for making aircrew responsible to conduct post hailstorm checks /inspections in such cases.

5.3 M/s Shaheen Air International is to apprise M/s NAGS for the negligence by duty engineer.

5.4 M/s Shaheen Air International is to revisit the incident reporting procedure to SIB and remove anomalies / grey areas, if any. However, it is to be ensured that all incidents are reported to SIB.