

ORIGINAL

NO.HQCAA/1901/219/SIB



CIVIL AVIATION AUTHORITY

AIRCRAFT INCIDENT INVESTIGATION M/S PIAC

AIRBUS - 310 REG.NO.AP-BEC WHICH OCCURRED

ON 3RD JUNE, 1997

AT

QUAID-E-AZAM INTERNATIONAL AIRPORT

KARACHI.



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CIVIL AVIATION AUTHORITY
KARACHI, PAKISTAN

AIRCRAFT INCIDENT INVESTIGATION

INVESTIGATION IN RESPECT OF INCIDENT TO
M/S PIAC AIRBUS REG NO. AP-BEC OCCURRED ON
3RD JUNE, 1997 AT QIAP KARACHI.

Authority:- Director General Civil Aviation Authority
Memorandum No. HQ CAA/1901/219/SIB dated
16th June, 1997(Ref Appendix 'A')

Composition Of Investigation Team

- | | | |
|-----|---|-----------------------|
| (a) | Air Cdre(R) Rashid A. Bhatti
President SIB CAA | Investigator Incharge |
| (b) | Wg Cdr (Retd) Sajjad Ahmed
Technical Investigator, SIB CAA | Investigator |
| (c) | Zafarullah Mahesar DM (Mech) | Investigator |

1. AIRCRAFT INFORMATION

1.1 Not required.

2. CREW INFORMATION

2.1 Not required.

3. SUMMARY

- 3.1. On 2nd June, 1997 at about 2200 hours PST after the departure of PK-225 from Gate No. 25 at Karachi the Aviobridge retracting mechanism was reported faulty.

/During

During the rectification of subject bridge the Aviobridge wheels which are normally aligned with the longitudinal plane of the Aviobridge were turned to about 85 degrees for installing the sprocket bolts which had sheared-off. However, after turning the bridge wheels to about 85 degrees the maintenance personnel didn't put chocks or any other object to restrict the wheel from rolling. Although ATC had issued a weather warning for Karachi area from 2200 to 0200 hrs PST for thunder storm/rain but it was not communicated to Aviobridge Control Room since it was not included in the existing Air Traffic Instructions. As such, at about 0014 hrs PST when strong turbulent wind conditions prevailed the Aviobridge wheel rolled and the bridge collided with the right wing of M/s PIAC Airbus Reg. No. AP-BEC parked at Gate No.26. Substantial damage was caused to the aircraft and Aviobridge structure; however, no person was injured.

4. INJURY TO PERSONS

4.1. No person was injured.

5. DAMAGE TO AIRCRAFT

5.1. Right wing of the aircraft was substantially damaged.

6. OTHER DAMAGES

6.1. None

7. METEOROLOGICAL CONDITION

7.1. At the time of the incident westerly wind of about 40 knots was reported.

8. NAVIGATIONAL & LANDING AIDS

8.1. Not relevant.

/9.

9. **COMMUNICATIONS**

9.1. Not relevant.

10. **AERODROME AND GROUND FACILITIES**

10.1. Not relevant.

11. **FLIGHT RECORDERS**

11.1. Not relevant.

12. **WRECKAGE & IMPACT INFORMATION**

12.1. Not relevant.

13. **FIRE**

13.1. No smoke or fire was caused due to the incident.

14. **SURVIVAL ASPECTS**

14.1. Nil.

15. **TEST & RESEARCH**

15.1. Nil.

16. **OBSERVATIONS**

16.1. Out of a total of six sprocket bolts used on the Aviobridge wheel drive mechanism three were sheared-off in April, 1997 and subject Aviobridge wheel was running on three bolts till 2nd June, 1997 the date incident occurred.

16.2. The Encoder(wheel position indicator) installed in the Aviobridge console were unserviceable on all Aviobridges at QIAP.

16.3. One sprocket bolt each on Aviobridge No. 14, 15, 24 and 27 was found missing.

16.4. No chocks for use on PLB wheels were held on inventory.

16.5 The procedure for removing/installing the PLB wheel is not given in the PLB Stearns Ops & Maint Manual.

17. WITNESSES

17.1 Statement of witnesses are given in Appendix 'O' to this report.

INVESTIGATION

18. On 2nd June, 1997 at about 2200 hours PST after the departure of PK-225 from Aviobridge No.25 the bridge operator Mr. Muhammad Shahid Khan observed that the bridge stopped retracting after moving 5 to 6 feet. On inspection it was observed that the bridge motor was tripped-off. However, after resetting the motor retraction/extension operation was not satisfactory. Soon after Mr. Shahid informed Ground Operator Control(GOC) and Passenger Loading Bridge Control(PLBC) about subject discrepancy. Since at that time the shift was changing, therefore, Mr. M. Shahid briefed Sub Engr. Abdul Shahid Khan about subject problem. Later, at about 2230 hours PST Mr. Abdul Shahid Khan along with Mr. Abdul Qadir Sheikh initiated maintenance recovery action of Aviobridge No.25. While inspecting subject Aviobridge both Mr. Qadir and Mr. Abdul Shahid observed that the 3 bolts of the chain sprocket wheel drive mechanism were sheared-off and the other 3 were missing. The two technicians after requesting Mr. Asghar Senior Works Engineer (Mech) to initiate procurement of bolts, proceeded to arrange for chocks, jacks, 'A' frame etc. Mr. Abdul Shahid also contacted M/s PIAC engineering for borrowing chocks, jacks etc. Later the two technicians managed to position ground support equipment like 'A' frame jacks, requisite tools etc. at bridge No.25; however, they didn't succeed in getting the wheel chocks from M/s PIAC engineering. Since no wheel chocks were held in CAA stores the maintenance on the bridge was initiated without wheel chocks.

19. The normal position of the bridge wheel is aligned to the bridge
/longitudinal

longitudinal plane. In order to install the sprocket bolts it was necessary to turn the bridge wheel position. As such, Mr. Qadir asked Mr. A. Shahid to change the position of subject wheel who turned the wheel from bridge console to about 85 degrees to the longitudinal plane of the Aviobridge. Additionally, with sheared sprockets bolts the horizontal brake system was not operational. Hence, the wheel could not be restricted from rolling by the application of brakes. The maintenance personnel after changing the bridge wheel position didn't put wheel chocks or any other object to restrict the wheel movement which was essentially required under the circumstances in accordance to para 19B(2) page 28 of Aviobridge Stearns Ops & Maint Manual(Ref Appendix 'B' to this report).

20. At about 2215 hrs PST ATC Karachi issued a weather warning for Karachi area forecasting thunder storm/rain between the period from 2200 hours to 0200 hours PST/ 3rd June, 1997 (Ref Appendix 'C' to this report). The DATCO informed all agencies about subject warning in accordance with para 3.19.2.1 of CAA Station Air Traffic Instructions which didn't include the Aviobridge Control Room (Ref Appendix 'D'). As such, the maintenance personnel didn't get any warning for taking extra precautionary measures during subject forecasted weather condition.
21. At about 014 hours PST on 3rd June, 1997 strong gusty wind conditions prevailed at QIAP with strong westerly wind of about 40 knots. At this stage subject Aviobridge wheel position was at about 85 degrees to Aviobridge plane and the wheels were not chocked. As such, under the circumstances the unchocked 135 ft long Aviobridge after rolling on its wheel through a distance of about 185 ft collided with the right wing of M/s PIAC Airbus-310 Reg No. AP-BEC parked at gate No. 26 causing substantial damage to its right wing (Ref Appendices 'E' and 'F' to this report).

ANALYSIS

SPROCKET BOLTS

22. The Aviobridge wheel drive mechanism comprise of electrical motor which drive the wheel through a chain running on the sprockets connected to the wheel hub assembly by six high carbon steel bolts. Subject bolts are 0.5 inch in diameter and six inches in length. Prior to the incident it was reported in the Monthly
/preventive

Preventive Maintenance Check record of Aviobridge No.25 for the month of April and May, 1997 that its 3 bolts were sheared-off and 3 sheared-off bolts were recovered from the sprocket assembly after the incident. As such, during subject period the Sprocket Assembly of Aviobridge No 25 was virtually running with 3 bolts. This fact is substantiated from the statement of Sub Engr. Abdul Shahid Khan CAA No./08646-6594, Sub Engr. Abdul Qadir Sheikh CAA No/08514-7193, Dy. Manager Shakeel Ahmed Khan CAA No./0460-6383 and preventive maintenance record copies of which are attached as Appendix 'G' & 'H' to this report. Moreover, subject bolts had evidence of shear at the outer threaded section and were bend unevenly (Ref. Appendicies 'F12 & 'F13') . Furthermore, the hub assembly holes through which subject bolts pass were also elongated indicating play between the holes and the bolts. Additionally, the Board observed that no torque value was specified by the PLB manufacturers M/s Stearns company in its Ops & Maint Manual for tightening sprocket bolts. From the foregoing evidence it is inferred that :-

22.1. The three sprocket bolts of Aviobridge No.25 sheared off in April, 1997 and the Aviobridge wheel was running on 3 bolts till the date incident occurred.

22.2. Out of six the 3 left over sprocket bolts were exposed to twice the designed load for about two months.

22.3. The bolts were not torqued to the desired value(**still to be determined**) causing resultant damage i.e. bolt shear and elongation of the hub holes under the circumstances.

23. In view of the discussion in para 22 above the Board is of the view that:-

23.1 PLB No. 25 wheel was running on 3 bolts since April, 1997 till 3rd June, 1997. This fact was in the knowledge of Mr. Asghar (CAA/0869-5286) Senior Works Engineer (Mech) and Mr. Muhammad Shakeel Ahmed Khan Dy. Manager PLB section as signature of both of them are inscribed on the subject Maintenance Check Record referred in Appendix 'G' & 'H' to this report.

23.2. Due to improper torquing and not replacing the 3
/sheared

sheared bolts in April, 1997 till the date of accident, the remaining 3 bolts were subjected to overloading and resultantly caused bending and shearing of subject bolts.

AVIOBRIDGE MAINTENANCE

24. The PLBs are maintained in accordance with Semi Annual, Quarterly, Monthly Maintenance Schedules given in M/s Stearns Ops & Maint Manual. Additionally, running maintenance is accomplished on daily basis and status of PLBs is recorded in daily check forms and Shift Log Book. The PLBs are required to be maintained operational round the clock. All discrepancies reported in the Semi Annual, Quarterly and Monthly Maintenance Schedule are counter signed by the Dy. Manager and Senior Works Engineer. However, the entries recorded in the shift log book are not seen by the Senior Works Engineer daily. Moreover, the daily unserviceability report on PLBs is also feedback to GM (Works) QIAP Karachi.
25. The Board observed that the discrepancy pertaining to PLB No.25 bolt shearing was reported in the Monthly Preventive Maintenance Schedule dated April and May, 1997 and in the daily PLB Status record. As such, it is concluded that the fact PLB No.25 was running on 3 bolts was in the knowledge of Senior Supervisors and Managers. Despite the fact that subject PLB was running on 3 wheel bolts instead of 6 for almost two months no corrective measure was taken. Additionally, a one time check of subject bolts on all PLBs by the Board revealed that one bolt each was missing on PLB No. 14, 15, 24 and 27(Ref Appendix 'J'). Moreover, the encoders (wheel position indicator on the Aviobridge cabin console) were found unserviceable on all the PLBs. Additionally, it was observed that the weekly maintenance inspection stipulated in para 2B Chapter 2 of Stearns Ops & Maint Manual was not being carried out(Ref Appendix ' K'). As such, the Board is of the view that there is a need for rejuvenating the role of Management for effective Maintenance of PLBs.
26. It was observed that the procedure for installing/removing the sprocket bolts was not given in the PLB Stearns Ops & Maint Manual and no torque for tightening subject bolts was specified. The Board is of the view that appropriate torque value for subject bolts can be determined by taking guidance from the SAE Standards 'General Use Torque Chart' given at Appendix 'N' to this
/report

report.

TRAINING

27. After the installation of PLBs at QIAP by M/s Trailer Development Corporation of Pakistan, CAA Staff was attached with the Company during the one year warranty period for OJT. The Board during examination of various witnesses observed that the knowledge and degree of skill of individual technicians / operators was satisfactory. While some of the technicians and bridge operators initially inducted were posted out, the present manpower strength was quite adequate to meet the PLBs Operational and Maintenance requirements. However, the Personnel Branch must ensure that not more than 20 percent of the strength of the manpower deployed on PLBs is posted out annually if required.

LOGISTICS SUPPORT

27. The Senior Works Engineer stated that Spare Part Support for PLBs was not prompt and demands for PLB spares submitted prior to December, 1996 were still in the process stage with the Supply Branch at Headquarters under Reference No. HQCAA/2175/1/1584/SUP (Proc). Additionally, Senior Works Engineer and GM (Works) both stated that sufficient funds for PLB maintenance were not allocated. The Board observed that to keep PLBs operational round the clock a prompt supply of spares was necessary for which maintenance of requisite stock level of Critical Items was essentially required. However, it was observed that no List of Critical Parts for PLBs was available for timely replenishing the requisite stock level of various critical parts required for PLBs. The Board is of the view that with the preparation of critical spare parts list and maintaining requisite stock levels of PLB parts the problem of spares can be streamlined.

WEATHER

28. Mr. Muhammad Ayaz Jadoon SATCO Manager Air Side QIAP Karachi stated that ATC Karachi had issued weather warning for thunder storm/rain between the period from 2200 hours PST 2nd June to 0200 hours PST 3rd June, 1997(Ref Appendix 'C'). Subject warning was actioned as per the existing SOP which didn't include the Aviobridge Control Room(Ref Appendix 'D'). As such, no
/information

information for taking precautionary measures was communicated to the PLB maintenance staff. In order to avert such a situation Aviobridge Control Room has now been included in the Weather Warning ATC Dissemination list vide Station Air Traffic Instruction No.1 dated 6th June, 1997 a copy of which is attached as Appendix 'L' to this report.

PLB GROUND SUPPORT EQUIPMENT

29. Engr. Usman Ali Badshah Ex-Senior Engineer of M/s Trailer Development Corporation of Pakistan the company that installed the PLBs at QIAP stated that after installation during one year warranty period the PLBs were jointly maintained by the CAA and company's staff. After the warranty period ground support equipment like 'A' frame, tow bar, hydraulic lifting stand (Qty 2), Tyre Wedges (Qty 4) metallic type, special tools etc were handed over to CAA PLB staff. However, neither Engr. Usman nor CAA Staff could produce any such list of equipment. The Board observed that except for special tools and 'A' frame no chocks, hydraulic jack etc were available at PLB Section. Additionally, there was no inventory record of Ground Support Equipment. As such, the overall status of ground support equipment was unsatisfactory in terms of its availability, upkeep and record. The Board is of the view that all PLB ground support equipment should be brought on charge and its inventory be maintained in accordance with CAA procedures.

MANAGEMENT'S ROLE

30. For upkeep of PLBs operation round the clock it was observed that the Management and Supervisors at various levels had ample feedback tools for keeping them informed about PLB Status. Additionally, it was observed that problems were communicated promptly from lower level to top management and weaknesses were pointed out by higher management in time. However, no measures were taken for ensuring that weaknesses were timely actioned for upkeep of PLBs status at a satisfactory standard. Non-availability of chocks and tyre lifting jacks, missing sprocket bolts and unserviceable encoder (wheel position indicator) on all PLBs are some examples. The Board is of the view that the Management should not restrict themselves to the realm of issuing instructions but must ensure that the instructions were implemented in letter /and

and spirit.

CONCLUSION

31. On 2nd June, 1997 at about 2200 hours PST retraction mechanism of Aviobridge No. 25 was reported faulty. While inspecting subject aviobridge Sub Engr. Qadir and Sub Engr. Abdul Shahid observed that out of six sprocket bolts 3 were missing and rest 3 were sheared-off. Since installation of sprocket bolts entails PLB tyre removal; therefore, the technicians positioned 'A' frame, tyre lifting jack etc near PLB No.25. For wheel removal chocks were also required but due to non availability of chocks at PLB store or at M/s PIAC Engineering the wheel removal operation was initiated without chocks. For removing the tyre the position of PLB wheels was required to be changed. As such, Sub Engr. Qadir directed Sub Engr. Abdul Shahid to change the position of PLB wheel to about 85 degrees from the Aviobridge control panel. At this stage no chocks or any other object was put to restrict the wheel from rolling. Mean while at about 2215 hours PST ATC Karachi had issued a weather warning for thunder storm/rain that was not communicated to PLB Control Room as it was not included in the Station Air Traffic Instructions dissemination list given at para 3.19.2.1. of CAA Station Air Traffic Instructions. As such, at about 0014 hours PST on 3rd June, 1997 when strong westerly wind condition of about 40 knots prevailed the 135 feet long unchocked Aviobridge rolled and hit right wing of Airbus-310 Reg. No. AP-BEC parked at Gate No.26. Substantial damage was caused to the bridge and the aircraft.
32. Three sprocket bolts of PLB No. 25 were sheared-off in April, 1997 and subject PLB was running on 3 bolts till the date of incident. The bolts sheared-off due to improper torquing and resultant over-loading.
33. PLB maintenance support didn't have chocks, lifting jack etc. Additionally, the PLB section had no list for PLB Critical Spares nor stock level of such parts was maintained for upkeep of PLBs operational round the clock. Subject weak areas have largely contributed to the incident.
34. The PLBs Maintenance System had no communication gap and the maintenance problems were communicated from lower to middle and top level management in time. Additionally, the top Management issued timely instructions pointing out weaknesses observed. However, the Management didn't ENSURE that
/instructions

instructions were implemented in letter and spirit.

FINDINGS

35. The Board finds that:-

- 35.1 On 2nd June, 1997 at about 2200 hours PST after the departure of PK-225 Aviobridge No.25 retraction mechanism was reported faulty by bridge operator on duty Mr.Muhammd Shahid Khan.
- 35.2 Sub Engr. Abdul Qadir Sheikh and Sub Engr. Abdul Shahid Khan on inspecting subject bridge observed that out of six sprocket bolts used in coupling the wheel drive mechanism, 3 were sheared-off and rest 3 were missing.
- 35.3 At about 2230 hours PST Sub Engr. Qadir informed Mr. Asghar Senior Works Engineer about subject discrepancy and requested him to arrange the sprocket bolts as they were not readily available in stock.
- 35.4 Installation/removal of sprocket bolts required wheel removal after turning the wheel to about 85 degrees to the Aviobridge plane for providing access to the bolts after jacking the wheel. Subject maintenance operation required ground support equipment like 'A' frame, lifting jacks, chocks etc.
- 35.5 Sub Engr. Qadir along with Sub Engr. Abdul Shahid Khan positioned 'A' frame, lifting jack etc except the chocks near the vicinity of subject Aviobridge and commenced its maintenance.
- 35.6 Sub Engr. Qadir could not arrange the required wheel chocks as it was not available in CAA Store nor M/s PIAC Engineering had any spare chock in their stores at that time that could be borrowed.
- 35.7 On instructions from Sub Engr.Qadir, Sub Engr. Abdul Shahid changed the position of subject Aviobridge wheel from the Cabin Control and brought the wheel to about 85 degrees to the Aviobridge plane. However, after the bridge wheel position was changed no chocks or any other /object

object was put to restrict the wheel from rolling.

- 35.8 Under the circumstances with no sprocket bolts the Aviobridge horizontal brake system was also non-operational and changing the wheel angle mandatorily required positioning of chocks to avoid rolling of the bridge wheel in accordance to the instructions given in Para 19B(2) Page 28 Chapter 2 section 3 of M/s Stearns Ops & Maint Manual and Para 7 of the SOP issued on the subject issued vide QIAP/5852/4/JTC dated 26th August, 1992.
- 35.9. On 2nd June, 1997 at about 22 10 hours PST Karachi ATC issued a weather warning for thunder storm/rain for Karachi area from 2200 hours to 0200 hours PST/ 3rd June, 1997 which was not communicated to PLB control room as it was not included in the weather warning dissemination list given at Para 3.19.2.1, Page 3-2 of Station Air Traffic Instructions. Therefore, no extra precautions during maintenance operation were taken to cater for the forecasted weather conditions.
- 35.10. On 3rd June, 1997 at about 00 14 hours PST strong westerly wind condition of about 40 knots prevailed and 135 ft long Aviobridge No. 25 due to its unchocked wheel rolled and collided with the right wing of M/s PIAC Airbus-310 Reg. No. AP-BEC parked at gate No. 26.
- 35.11. Proper chocks for use on Aviobridge wheel 40 x 14 inch in size were not held on inventory at PLB Stores.
- 35.12. PLB Section had no list of PLB Critical Spares for ensuring maintenance of requisite stock level of spares for quick maintenance recovery of the PLBs.
- 35.13. No torque value is specified in the Aviobridge Stearns Ops & Maint Manual for tightening the 6 inch long and 5/8 inch diameter carbon steel sprocket bolts.
- 35.14. After the incident 3 sheared-off sprocket bolts had evidence of uneven bending and were sheared from its threaded end. Additionally, hub assembly holes were also elongated.
- 35.15. Three sprocket bolts of subject Aviobridge were reported sheared-off during the monthly maintenance check carried /out

out in the month of April and May, 1997. As such, the Aviobridge was running with 3 sprocket bolts from April, 1997 till the date incident occurred.

- 35.16. The PLBs are being maintained in accordance with the six Monthly, Quarterly, and Monthly maintenance schedule; however, the weekly maintenance schedule stipulated in the Sterns Ops & Maint Manual was not complied with.
- 35.17. The PLBs are adequately manned and the knowledge/skill of PLB operators/technicians is satisfactory.
- 35.18. In accordance with para 1.1.2 of AIP Pakistan, CAA has no liability for any loss, damage or injury caused by or arises from negligence on the part of any servant or agent of the Authority or any defect in the aerodrome or any part of its equipment(Ref Appendix 'M') .
- 35.19. One bolt each on PLB NO 14, 115, 24 and 27 was found deficient during one time check carried out by the Board on 17th June, 1997.
- 35.20. During one time check the Aviobridge encoders (wheel position indicator) were found unserviceable on all the Aviobridges.
- 35.21. The requirement of PLB spare parts is under process at Headquarters CAA under reference No. HQCAA/2175/1/1584/SUP(Proc) since December, 1996.
- 35.22. Demand for 20 tons jack recurringly submitted by PLB section is still out standing since long at CAA Supply Depot.
- 35.23. The cost of damage to aircraft and Aviobridge is given at Appendix 'P' to this report.

CAUSES

36. Following are the causes of the incident:-

- 36.1 Not chocking of the Aviobridge wheel which is normally aligned with the Aviobridge longitudinal plane after it was turned to about 85 degrees for maintenance.

/36.2

- 36.2 Not replacing in time the 3 sprocket bolts after they were found sheared-off in the month of April, 1997 and using the bridge under subject condition thereby overloading the remaining 3 bolts which sheared-off on the day incident occurred.

RECOMMENDATIONS

37. The Board recommends that:-

- 37.1. PLB Management must ensure that instructions are not only issued but they are also complied with.
- 37.2. PLB sprocket bolts installation procedure must be included in the M/s Stearns Ops& Maint Manual specifying the torque values for tightening of sprocket bolts.
- 37.3. PLBs Critical spare parts list should be prepared on priority keeping in view last three years consumption of PLB spares and requisite stock level of subject items should be maintained.
- 37.4. PLB Section must ensure that PLB ground support equipment is brought on charge and subject inventory is maintained properly.
- 37.5. CAA Management should inform M/s PIAC that in accordance with para 1.1.2 AIP Pakistan FAL 2-1 CAA is not liable to pay any cost of damage incurred on recovery of Airbus Reg. No. AP-BEC damaged in the incident.
- 37.6. Supply Branch HQ CAA should expedite procurement action on the PLB items vetted under reference HQCAA/2175/1/1584/SUP(Proc).
- 37.7. CAA Supply Depot should take appropriate measures for expeditious provisioning of 20 tons jack required for PLB Maintenance.
- 37.8. CAA Personnel Branch must ensure that not more than 20 percent of the manpower deployed on PLBs at QIAP is posted out annually.

/37.9.

37.9. Disciplinary action should be taken against Sub Engr. Abdul Shahid Khan (CAA No/08646-6594) for not chocking the wheel of Aviobridge No. 25 when its horizontal brake was unserviceable and the Aviobridge wheel was turned to about 85 degrees from its aligned position which was contrary to the instructions stipulated in Para 19B(2) page 28 Chapter 2 section 3 of Stearns Ops & Maint Manual and Para-7 of SOP issued vide QIAP/5852/4/JTC dated 26th August, 1992.

37.10. Disciplinary action should be taken against Sub Engr. Abdul Qadir Sheikh (CAA NO/ 08514-7193) for not chocking the wheel of Aviobridge No. 25 when its horizontal brake was unserviceable and the Aviobridge wheel was turned to about 85 degrees from its aligned position which was contrary to the instructions stipulated in Para 19B(2) Page No. 28 Chapter 2 Section 3 of STEARNS Ops & Maint Manual and Para 7 of SOP issued vide QIAP/5852/4/JTC dated 26th August, 1992.

37.11. The cost of damage to Airbus Reg No. AP-BEC and the Aviobridge should be borne by M/s PIAC and CAA respectively.

APP 'F₁'



NOS.25 AVIOBRIDGE COLLIDED WITH M/S PIAC AIRBUS.
PARKED AT GATE NO.26 SEE WHEEL POSITION

APP 'F₂'



AVIOBRIDGE NO.25 COLLIDED WITH RT WING OF AIRBUS REG.NO.AP-BEC
PARKED AT GATE NO.26 AFTER IT ROLLED ON ITS WHEEL
DUE TO STRONG WIND.
NOTE: SEE PLB WHEEL POSITION.

APP 'F₃'



AVIOBRIDGE NO.25 AFTER IT COLLIDED WITH RT WING
OF AIRBUS PARKED AT GATE NO.26.

APP 'F₄'



AVIOBRIDGE COLLISION.

NOTE: EVIDENCE OF PLB WHEEL AT ABOUT 850 TO THE AVIOBRIDGE
PLANE ALSO ELECTRICAL MOTOR LYING ON THE GROUND.



AVIOBRIDGE AND AIRBUS WING COLLISION



AVIOBRIDGE POSITION AFTER IT COLLIDED WITH RT WING OF AIRBUS
NOTE: POSITION OF AVIOBRIDGE WHEEL.

APP 'F7'



AVIOBRIDGE AND AIRBUS RIGHT WING CLOSE UP VIEW

APP 'F8'



AVIOBRIDGE NO. 25 INTERNAL DAMAGE TO SIDE WALL
AFTER THE INCIDENT

APP 'F9'



AVIOBRIDGE NO.25 INSIDE DAMAGE AFTER THE INCIDENT
(ANOTHER VIEW)

APP 'F10'



RT WING DAMAGE CAUSED DUE TO AVIOBRIDGE NO.25
STRIKING IN THE INCIDENT.



AVIOBRIDGE NO.25 EXTERNAL DAMAGE AFTER THE INCIDENT

APP. 'F₁₂'



THREE SHEARED-OFF SPROCKET BOLTS

APP. 'F₁₃'



THREE SHEARED-OFF SPROCKET BOLTS