MINISTRY OF WORKS AND TRANSPORT
DIRECTORATE: AIRCRAFT ACCIDENT AND INCIDENT INVESTIGATIONS

INCID/121319/02-18

INCIDENT REPORT - EXECUTIVE SUMMARY

Registration	SW-056	**Date of Incident**	13 December 2019	**Time of Incident**	19:20 UTC
Type of Equipment	PAU EQUIPMENT		**Type of Operation**	Passenger assistance	

Pilot-In-Command Licence Type	N/A	**Age**	N/A	**Licence Valid**	N/A
Pilot-In-Command Flying Experience	Total Flying Hours	N/A		Hours on Type	N/A

Place of incident	On the Apron at Hosea Kutako International Airport
Location of the incident site with reference to easily defined geographical points (GPS readings if possible)	
During the disembarking of passengers with limited mobility from flight SW 708 which arrived from Cape Town.	
Meteorological Information	Wind : 240º @ 05 knots Temperature : 25ºC Visibility :CAVOK Cloud cover : Not given Cloud base : Not given Dew point: Not known

Number of people on board	11	**No. of people injured**	6	**No. of people killed**	0

Synopsis

On the 13th of December 2019 at around 19:20 UTC, a Passenger Assistance Unit (PAU) coded SW-056 operated by Air Namibia to assist passengers with limited mobility while boarding or disembarking, malfunctioned and failed while the raised cabin was in the process of being lowered. The incident happened at Hosea Kutako International Airport during the time when Air Namibia check-in agents and the PAU driver were assisting passengers with limited mobility during disembarking from Air Namibia flight SW 708 which arrived from Cape Town. The equipment was first used to offload passengers who needed assistance from flight SW 7928 which arrived from Johannesburg and proceeded to flight SW 708 as both flights arrived almost the same time.

While assisting passengers with limited mobility to disembark from flight SW 708, the equipment failed and some of the occupants in it were tipped at the back, resulted in six (6) of them to be injured. There were 11 people (8 passengers, 2 check-in agents and a driver) on board the equipment when it failed. The maximum carrying capacity of the PAU equipment is 8 people or 1000 kg. The driver was partially qualified as he did not have a Ground Support Equipment (GSE) Class 2 certificate, while the check-in agents who were helping the driver in operating the PAU equipment were not qualified to do so. The injured people were taken to a private local hospital where they were observed by medical staff before being discharged. Three (3) were immediately discharged after observation and the other three who were hospitalised came to be discharged after some days of observation.

The weather was fine with a good visibility at the time of the incident.

The PAU equipments was subsequently damaged especially the structure on the torque shaft where it was factory joined (welded) to the scissor beams due to failure of the R/H bushing.

According to the report, the last 500 kilometres hydraulic systems inspection on the equipment was carried out by Namibia Truck & Equipments cc on 15 September 2019 at 6739 vehicle kilometres. At the time of the incident the equipment had 6895 kilometres on the odometer. This shows that the equipment had accumulated a further 156 kilometres since the last hydraulic systems inspection was certified.

Probable Cause

Failure of the R/H bushing on the torque shaft caused the PAU equipment to collapse.

Contributing Factors

1. Worn out R/H bushing due to lack of proper maintenance and servicing of the equipment.
2. Exceeding the PAU equipment's approved carrying capacity.
3. Lack of proper training of the company staff.

PASSENGER ASSISTANCE UNIT (PAU) INCIDENT REPORT

Name of Owner/Operator	**:**	Air Namibia
Manufacturer and Type	**:**	Nissan UD 60.
Type and Model	**:**	2013
Registration Marks	**:**	SW-056 Passenger Assistance Unit (PAU)
Place	**:**	Hosea Kutako International Airport Apron
Date	**:**	13 December 2019
Time	**:**	19:20 UTC

All times given in this report are Co-ordinated Universal Time (UTC).

Disclaimer:

This report is given without prejudice to the rights of the Directorate of Aircraft Accident Investigations, which are reserved.

Purpose of the Investigation:

In terms of the Aviation Act (Act No. 6 of 2016) and ICAO Annex 13, this report was compiled in the interest of the promotion of aviation safety and the reduction of the risk of aviation accidents or incidents and ***not to establish legal liability****.*

This report contains fact relating to aircraft accidents or incidents which have been determined at the time of issue. The report may therefore be revised should new and substantive facts be made available to the investigator(s).

1. FACTUAL INFORMATION

1.1 History of Flight

1.1.1 On the 13th of December 2019 at around 19:20 UTC, a Passenger Assistance Unit (PAU) coded SW-056 operated by Air Namibia to assist passengers with limited mobility while boarding or disembarking, malfunctioned and failed while the raised cabin was in the process of being lowered. The incident happened at Hosea Kutako International Airport during the time when Air Namibia Check-in agents and the PAU truck driver were assisting passengers who needed assistance during disembarking from Air Namibia flight SW 708 which arrived from Cape Town.

1.1.2 The PAU equipment which is used to help passengers who cannot walk or climb stairs, and has been used in offloading the two passengers during the arrival of Air Namibia flight SW 9728 which arrived from Johannesburg without any incident, and proceeded to flight SW 708 to pick up another 3 assisted passengers and 3 family caretakers as both flights (SW 7928 and SW 708) arrived almost the same time. The maximum carrying capacity of the PAU equipment is 8 people or 1000 kg. At the time of the incident, the PAU equipment was overloaded as it was carrying 11 people consisting of 8 passengers, 2 check-in agents and a driver.

1.1.3 The PAU driver/operator executed his duties as required and was assisted by 2 female Air Namibia check-in agents. One check-in agent operationally assisted with the lowering of the unit while the other one was holding a cart on which a disabled passenger was sitting. The PAU equipment is required to be operated by an operator with Ground Support Equipment (GSE) Class 2 Certificate. The driver/operate hold a GSE Class 1 certificate while the female check-in agent who was assisting the driver in lowering the unit down was not certified to operate the said equipment.

1.1.4 The equipment failed during the time the raised cabin was in a process of being lowered down and was half way before reaching full down. All 11 people on board of which some were reported not secured with seat belts, were tipped towards the back of the cabin as the equipment slammed back on its lower platform. This resulted in is six (6) occupants being injured and with the assistance of the Airport Fire Brigade ambulance, the injured persons were transported to a local Private Hospital in Windhoek. Three of the injured persons were discharged immediately after observation by medical personnel while the other three who were hospitalized waiting for further observations, were also discharged after some few days.

1.1.5 During the investigation, it was found that the structure on the torque shaft of the PAU equipment where it was factory joined (welded), allegedly failed and broke due to strain. This caused both inner scissor beams to crack from the bottom side up just aft of the torque shaft attachment.

1.2 Injuries to Persons

1.2.1 Six (6) of the occupants who were on board the PAU equipment were injured and were taken by ambulance to a local Private Hospital in town. Three (3) of the injured people were discharged immediately after observation while the other 3 who remain hospitalized waiting for further observations have also been discharged.

1.3 Damage to the PAU equipment

1.3.1 The structure on the torque shaft of the PAU equipment where it was factory joined (welded), failed and broke due to strain.
1.3.2 Both inner scissor beams was found crack from the bottom side up just aft of the torque shaft attachment.
1.3.3 The right hand side (R/H) bushing on the outer scissor beams of the torque shaft of the hydraulic actuator was severely worn.
1.3.4 Both left and right centre stow support assemblies were found missing.
1.3.5 The right chassis beam appears bent at out rigger attachment point.
1.3.6 None of the working parts of the lifting mechanism appeared to have any grease or lubrication nipples and were not serviced.

1.4 Other Damage

1.4.1 There were no other damages caused.

1.5 Personnel Information

1.5.1 The driver/operate is a holder of a GSE Class 1 certificate and was not fully qualified to operate the PAU equipment which can be operated by an driver/operator holding a GSE Class 2 certificate.
1.5.2
1.5.3 The check-in agent who was assisting the driver in operating the equipment did not received a formal training on how to operate the equipment and was only certified in Dangerous goods, SMS, Human factors, Aviation Security as well as Airside induction training. Authorization to operate the equipment was given to them (check-in agents) by their supervisors. They stated that they started operating the PAU equipment since February 2019 after they were demonstrated by their supervisors on how to operate it without any formal training.

1.6 Aircraft Information

1.6.1 Not applicable.

1.7 Meteorological Information

1.7.1 The following weather information was obtained from weather bureau.

Wind direction	240°	Wind speed	05 knots	Visibility	CAVOK
Temperature	25°C	Cloud cover	Not given	Cloud base	Not given
Dew point	Not known				

1.8 Aids to Navigation

1.8.1 Not applicable

1.9 Communications.

1.9.1 Communication between the driver and the person operating the equipment from inside the equipment cabin has been carried out using the two way radios, but due to the unserviceability of the radios, communication is now being carried out by using mobile celluraphones.

1.10 Aerodrome Information

1.10.1 The PAU equipment incident happened on the apron at Hosea Kutako International Airport at the time passengers with limited mobility were disembarking from Air Namibia flight SW 708 which arrived from Cape Town, South Africa.

1.11 Flight Recorders

1.11.1 Not applicable

1.12 Wreckage and Impact Information

1.12.1 The PAU equipment was subsequently damages especially to its torque shaft where the scissor beams are attached.

1.13 Medical and Pathological Information

1.13.1 The injured passengers' medical conditions were assessed by the local hospital and those who were hospitalised have been discharged after observation by the hospital medical staff.

.1.14 Fire

1.14.1 There was no pre or post impact fire.

1.15 Survival Aspects

1.15.1 This was a survivable incident due to the fact that the impact force was not beyond human body tolerance and they were luck that there was no compression of the PAU cabin compartment.

1.16 Tests and Research.

1.16.1 None.

17 Organizational and Management Information

1.17.1 This was a call in operation depending on which flight does carry passengers with limited mobility.

1.17.2 The PAU equipment which is certified to carry a maximum capacity of 8 people or 1000 kg, was overloaded as it was carrying a total number of 11 people.

1.17.3 The organization's supervisors have been using non qualified personnel (check-in agents) to operate the equipment without receiving any formal training.

1.17.4 The last inspection recorded was carried out on the 18 of November 2019 by Namibia Trucks & Component cc. and covered hydraulic service, truck engine, and tail gate mechanical repairs. The due date indicated on the same form indicated that the next inspection will due by the 20th November 2019.

1.18 Additional Information

1.18.1 The in-house service cycle for the PAU equipment which Air Namibia carried out is 500 hrs. The investigation found another service record carried out by Namibia Truck & Components cc which indicated a 500 hrs hydraulic system service which took place on the 15th of September 2019 at 6739 vehicle kilometres. At the time of incident, the equipment had 6895 kilometres on the odometer. This indicated that the equipment had only covered 156 kilometres since the last service was carried out.

1.19 Useful or Effective Investigation Techniques

1.19.1 None was carried out.

ANALYSIS

2.1 The PAU equipment failed during the time they were assisting passengers with limited mobility to disembark from Air Namibia flight SW 708 which arrived at Hosea Kutako International Airport from Cape Town, South Africa.

2.2 The incident happened at the time one of Air Namibia check-in agent who was assisting the driver/operator in operating the equipment was in a process of lowering the raised cabin down which was half way before reaching full down.

2.3 During the investigation, DAAII found out that Air Namibia supervisors at Hosea Kutako International Airport gave their check-in agents authorization to operate the PAU equipment without receive any formal training.

2.4 The check-in agents started to operate the PAU equipment since February 2019 after they we showed by their supervisors on how to operate it without any formal training

2.5 It is the investigator's opinion that the overloading of the PAU equipment with 11 people while its maximum carrying capacity is certified to carry only 8 people or 1000 kg, might have contributed to the incident.

2.6 The investigation also found out that some of the 11 people on board the cabin of the PAU equipment were not secured with seat belts which caused them to be tipped towards the back of the cabin as the equipment slammed back on its lower platform, causing some injuries to six (6) of the occupants.

2.7 All six (6) injured occupants who were taken to a local private Hospital in town, three (3) were discharged immediately after observation while the other 3 who were hospitalized for further observations have also been discharged after some few days of observation by the medical staff.

2.8 The investigation also found that the PAU equipment suffered some damages to its inner scissor beams which was cracked from the bottom side up just aft of the torque shaft attachment.

2.9 The working parts of the lifting mechanism appeared not to have any grease or lubrication nipples and were not serviced.

2.10 Due to the non lubrication of the working parts of the lifting components, the right hand side (R/H) bushing on the outer scissor beams of the torque shaft of the hydraulic actuator was severely worn with visible corrosion and no indication of lubrication to indicate that the parts were serviced.

3. CONCLUSION

3.1 Findings

3.1.1 The Passenger Assistance Unit (PAU) coded SW-056 operated by Air Namibia to assist passengers with limited mobility while boarding or disembarking, failed at the time the raised cabin was in a process of being lowered down and was half way before reaching full down.

3.1.2 The driver/operator has a GSE Class 1 certificate and was not properly qualified to operate the Equipment as the PAU equipment require to be operated by a person having a GSE Class 2 certificate.

3.1.3 Air Namibia check-in agents whom the airline is using to operate the equipment have not receive any formal training and does not have any qualifications to do so.

3.1.4 The check-in agents started operating the PAU equipment since February 2019 after they were showed by their supervisors on how to operate it without any formal training.

3.1.5 Due to the fact that some of the occupants inside the cabin of the PAU equipment were reported not be secured with seat belts, it resulted in them being tipped towards the back of the cabin as the equipment slammed back on its lower platform.

3.1.6 The carrying capacity of the PAU equipment which has got a certified maximum carrying capacity of 8 people or 1000 kg, was exceeded as it was carrying 11 people.

3.1.7 Six (6) occupants on board the cabin of the PAU equipment were injured as a result of the incident and were taken to a local private hospital for observation and treatment.

3.1.8 The investigation found out that the structure on the torque shaft of the PAU equipment where it was factory joined (welded), allegedly failed and broke due to strain.

3.1.9 Both inner scissor beams were found cracked from the bottom side up just aft of the torque shaft attachment.

3.1.10 None of the working parts of the lifting mechanism indicated to have been serviced and there were no any grease or lubrication nipples.

3.1.11 The right hand side (R/H) bushing on the outer scissor beams of the torque shaft of the hydraulic actuator was severely worn with visible corrosion and no indication of lubrication to indicate that it was serviced.

3.1.12 The right chassis beam appears bent at out rigger attachment point and both left and right central stow position support assemblies were found missing.

3.1.13 According to the record, the in-house servicing and repairs of Air Namibia's PAU equipments indicated that the service and repairs was not satisfactorily done.

3.2 Probable Cause/s

3.2.1 Failure of the right hand (R/H) bushing on the torque shaft caused the PAU equipment to collapse.

4. SAFETY RECOMMENDATIONS

4.1 NCAA / Air Namibia 01/2020

DAAII recommended that Air Namibia should review the maintenance programme of their ground equipments.

4.2 NCAA / Air Namibia 02/2020

DAAII also recommended that Air Namibia should use properly trained staff (operators/drivers) that are qualified and certified to operate their ground equipments and who will also enforce compliance with Ground Safety Operational Procedures as some passengers in the PAU were not putting on their safety belts during the incident.

5. APPENDICES

5.1 The attached Appendices at the back of the report are made to illustrate how the PAU equipment was damaged during the incident. **(See Appendix 1-6 on page 7 t0 11).**

Compiled by :

.....T Shilongo

T. Shilongo
Investigator-in-charge

Date : 17/07/2020

Released by:

.....
John Mutorua, MP
MINISTER: MINISTRY OF WORKS AND TRANSPORT

MINISTRY OF WORKS & TRANSPORT
Office of the Minister
Date : 23/7/2020
2020 -07- 23
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REPUBLIC OF NAMIBIA

Appendix 1: **SW 056 Air Namibia Passenger Assistance Unit Truck after incident**

Apendix 2: **Visible cracks on both sides of the Torque Shaft underneath the truck to where the Lifting Scissors are attached (welded).**

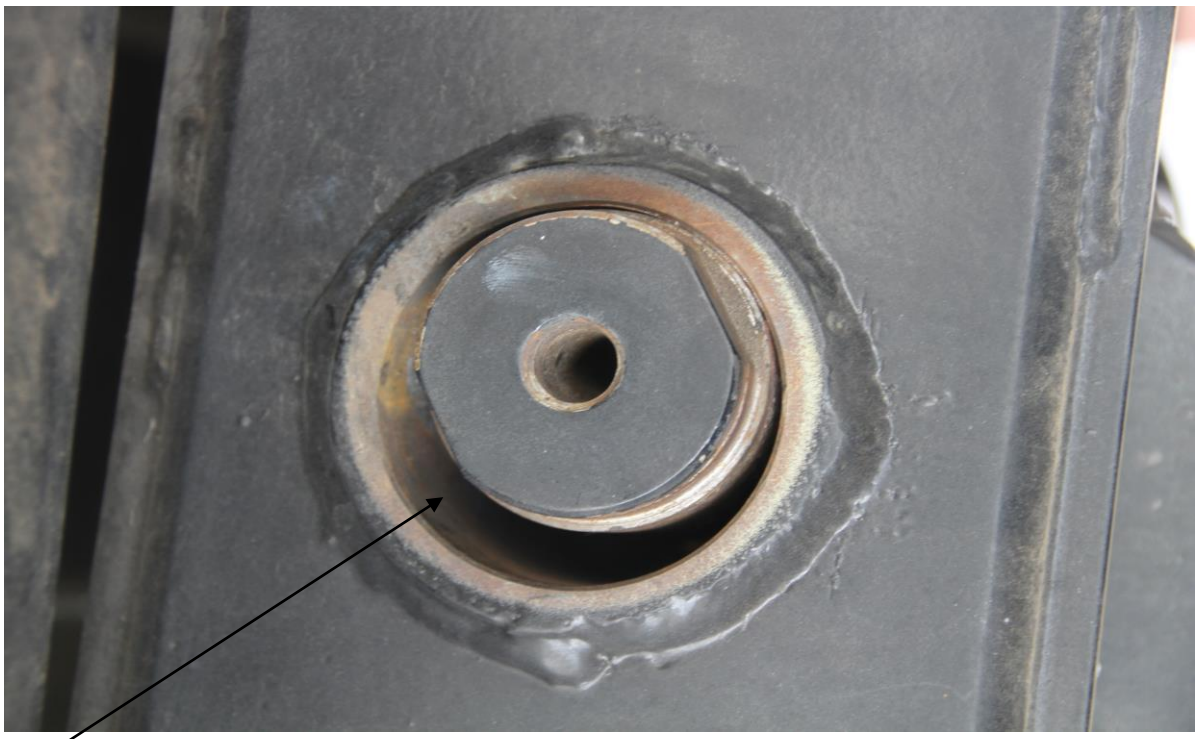
Cracks on both sides of the torque shaft.

<u>Appendix 3:</u> A closer view of the crack on the right hand (R/H) side to where the lifting scissor is attached to the torque shaft.

<u>Appendix 4:</u> A closer view of the crack on the left hand (L/H) side to where the lifting scissor is attached to the torque shaft.

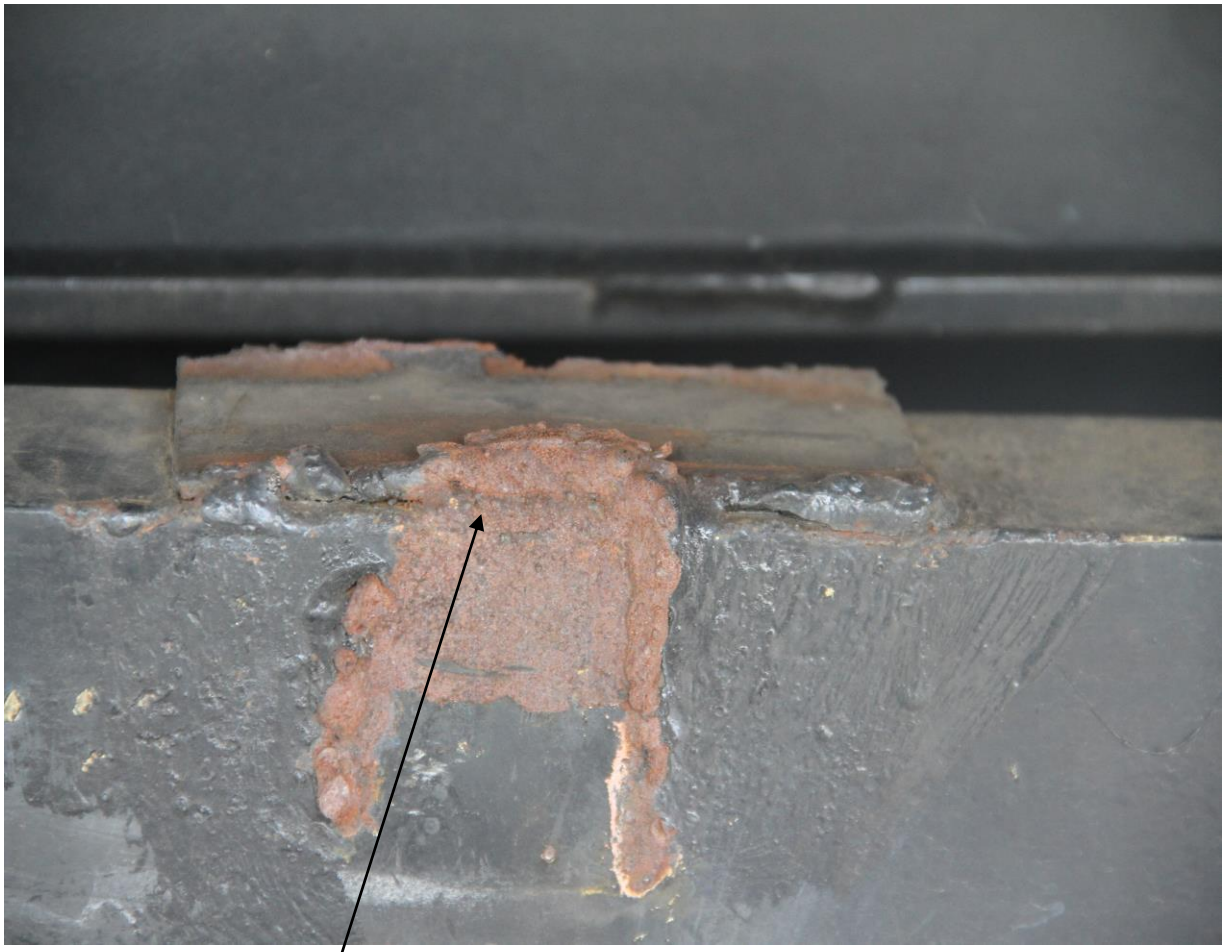
<u>Appendix 5:</u> A view of the intact bushing on the left side of the torque shaft and the missing bushing on the right hand side of the torque shaft.

A bushing on the left side of the torque shaft that held the shaft in its position. The dryness and corrosion gives a sign that the equipment has not been lubricated for a long time.



An opening space displaying a missing bushing on the right side of the torque shaft.

<u>Appendix 6:</u> Both left and right central stow position support assemblies that use to hold the cabin in place when fully down were found missing.



A place to where one of the missing central stow position support assembly use to be attached.