



**KOMITE NASIONAL KESELAMATAN TRANSPORTASI
REPUBLIC OF INDONESIA**

1st INTERIM STATEMENT

KNKT.21.03.03.04

Aircraft Serious Incident Investigation Report

PT Batik Air

Airbus A320; PK-LUT

Sultan Thaha Airport, Jambi

Republic of Indonesia

6 March 2021

2022

This Interim Statement was published by the Komite Nasional Keselamatan Transportasi (KNKT), Transportation Building, 3rd Floor, Jalan Medan Merdeka Timur No. 5 Jakarta 10110, Indonesia.

The report is based upon the investigation carried out by the KNKT in accordance with Annex 13 to the Convention on International Civil Aviation Organization, the Indonesian Aviation Act (UU No. 1/2009) and Government Regulation (PP No. 62/2013).

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Jakarta, 28 March 2022
**KOMITE NASIONAL
KESELAMATAN TRANSPORTASI
CHAIRMAN**


SOERJANTO TIAHJONO

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ABBREVIATIONS AND DEFINITIONS

AFML	:	Aircraft Flight and Maintenance Log
ARFF	:	Airport Rescue and Fire Fighting
ATC	:	Air Traffic Control
ATPL	:	Airline Transport Pilot Licence
ATS	:	Air Traffic Services
AOC	:	Aircraft Operator Certificate
BMKG	:	<i>Badan Meterologi, Klimatologi, dan Geofisika</i> – The Agency of Meteorology, Climatology and Geophysics
BSCU	:	Brake and Steering Computer Unit
CB	:	Cumulonimbus Cloud
CCTV	:	Close Circuit Television
CPL	:	Commercial Pilot Licence
CVR	:	Cockpit Voice Recorder
ECAM	:	Electronic Centralized Aircraft Monitor
FCTM	:	Flight Crew Training Manual
FDR	:	Flight Data Recorder
FEW/SCT/BKN	:	Amount of cloud are assesses based on the part of the sky that are covers by the cloud. FEW is when the 1/8 up to 2/8 of sky area covers by clouds, SCT (scattered) is when the 3/8 to 4/8 of sky area covers by clouds, BKN (broken) is when the 5/8 up to 7/8 sky area covers by clouds
hPa	:	Hectopascal
Kg	:	Kilogram
Km	:	Kilometer
KNKT	:	Komite Nasional Keselamatan Transportasi
LT	:	Local Time
MEL/CDL	:	Minimum Equipment List/Configuration Deviation List
OEB	:	Operations Engineering Bulletin
OM-A	:	Operation Manual Part A
PIC	:	Pilot in Command
QRH	:	Quick Reference Handbook
SIC	:	Second in Command
TSM	:	Trouble Shooting Manual
UTC	:	Universal Time Coordinated
VOR	:	Very High Frequency Omni-Range

SYNOPSIS

On 6 March 2021, an Airbus 320 aircraft, registration PK-LUT, was being operated by PT. Batik Air on a scheduled passenger flight from Sultan Thaha Airport (WIJJ), Jambi with intended destination of Soekarno-Hatta International Airport (WIII), Jakarta.

At 1302 LT in daylight conditions, the aircraft initiating the pushback with intention to heading south east to take off from runway 31. During starting the right engine, the WHEEL N/W STRG FAULT (wheel nose steering fault) alert appeared on the Electronic Centralized Aircraft Monitor (ECAM). After pushback completed and the parking brake had set, the left engine was started and the alert of WHEEL N/W STRG FAULT reappeared.

After the engine starting process completed, the pilots review MEL related to Nose Wheel Steering then the PIC decided to continue the flight. During initial taxi, the PIC realized that the nose wheel steering failed to turn the nose wheel for taxi. The taxi was stopped and the PIC discussed the aircraft problem with an engineer. The engineer suggested to the PIC to reset the anti-skid and nose wheel steering selector and the PIC stated that reset is not allowed based on the MEL Operational Procedure. The PIC then decided to resume the taxi.

The pilot applied differential braking and asymmetric engines thrust while taxiing and turn, including the 180° turn for line up on the beginning runway.

At 1328 LT, the aircraft departed. The CCTV recorded that during the initial takeoff, the nose wheel was tilted. Rubber mark found on the runway from 26 meters after the threshold marks until about 800 meters. After takeoff the landing gears could not be retracted.

The flight returned and the aircraft touched down at 1351 LT. Shortly after the aircraft touchdown, the Airport Rescue and Firefighting (ARFF) personnel heard the sound like a tire burst. The tower controller saw sparks appeared on the nose landing gear, during the landing roll. Having seen this condition, the controller informed to the pilot and pushed the crash bell.

The ARFF deployed to the last aircraft position and found no sign of fire. The passengers and the crews were disembarked on the runway using passenger boarding stairs and transported to the airport terminal by bus. No one injured as result of this occurrence.

The investigation is ongoing and Komite Nasional Keselamatan Transportasi (KNKT) acknowledged the safety actions taken by PT Batik Air and considered that the safety actions were relevant to improve safety, therefore KNKT did not issue safety recommendation.

1 FACTUAL INFORMATION

1.1 History of the Flight

On 6 March 2021, an Airbus 320 aircraft, registration PK-LUT, was being operated by PT. Batik Air on a scheduled passenger flight from Sultan Thaha Airport (WIJJ), Jambi¹ with intended destination of Soekarno-Hatta International Airport (WIII), Jakarta².

At 0602 UTC (1302 LT³) in daylight conditions, the aircraft initiating the pushback with intention to heading south east to take off from runway 31. The engines start conducted while pushback. During starting the right engine, the pilot noticed that WHEEL N/W STRG FAULT (wheel nose steering fault) alert appeared on the Electronic Centralized Aircraft Monitor (ECAM), indicated the failure of nose wheel steering system. There was no ECAM action to be performed.

After pushback completed and the parking brake had set, the left engine was started and the alert of WHEEL N/W STRG FAULT reappeared. The Pilot in Command (PIC) asked to the ground engineer who was assisting the pushback and engine starting (engineer 1) to ascertain that the bypass pin was in the correct position. The engineer 1 reassured the bypass pin position by removed the nose wheel steering disconnect pin and reinserted it.

After the engine starting process completed, the pilots checked the Minimum Equipment List (MEL) and found that the problem was under MEL category A⁴ then check MEL Operational Procedure which described the Nose Wheel Steering Control System operation and limitation. Referring to this MEL description the PIC decided to continue the flight. During initial taxi, the PIC realized that the nose wheel steering failed to turn the nose wheel for taxi. The Second in Command (SIC) then requested to Sultan Thaha Tower controller (the controller) to stop the taxi at current position.

The PIC invited the engineer to reconnect the head set. The engineer invited another engineer who rated for the aircraft type (engineer 2) and discussed the aircraft problem. The engineer 2 suggested to the PIC to reset the anti-skid and nose wheel steering selector. The PIC reviewed the MEL Operational Procedure and informed to the engineer that reset is not allowed. The PIC then decided to resume the taxi.

The PIC applied differential braking and asymmetric engines thrust while taxiing and turn, including the 180° turn for line up on the beginning runway.

1 Sultan Thaha Airport (WIJJ), Jambi will be named as Jambi for the purpose of this report.

2 Soekarno-Hatta International Airport (WIII), Jakarta will be named as Jakarta for the purpose of this report.

3 The 24-hours clock in Local Time (LT) is used in this report to describe the local time as specific events occurred. Local time is Universal Time Coordinated (UTC) +7 hours.

4 MEL Category A items must be repaired within the time interval specified in the remarks column of the operator approved MEL. The remark for the this failure in the Batik MEL was allowed to be inoperative for three flights with several limitations (see figure 5 on chapter 1.17.1).

At 1328 LT, the aircraft departed. After takeoff the landing gears could not be retracted and the ECAM alert “L/G ABSORBER FAULT” appeared. The autopilot and the auto thrust could not be activated. The SIC informed to the controller that they experienced technical problem and requested to return. The controller confirmed whether the pilot would make right turn, then the SIC requested via point OLVOD and acknowledged by the controller.

At 1345 LT, the SIC reported to the controller that they were leaving point OLVOD. Thereafter, the SIC reported that the runway was in sight and the controller issued landing clearance with additional information of the wind was 330° with velocity of 6 knots.

At 1351 LT, the aircraft touched down. Shortly after the aircraft touchdown, the Airport Rescue and Firefighting (ARFF) personnel heard the sound like a tire burst. During landing roll, the tower controller saw sparks appeared on the nose landing gear. Having seen this condition, the controller informed to the pilot and pushed the crash bell. The ARFF deployed to the last aircraft position and found no sign of fire.

The passengers and the crews were disembarked on the runway using passenger boarding stairs and transported to the airport terminal by bus.

1.2 Injuries to Persons

Injuries	Flight crew	Passengers	Total in Aircraft	Others
Fatal	-	-	-	-
Serious	-	-	-	-
Minor	-	-	-	-
None	6	117	123	-
TOTAL	6	117	123	-

All occupants were Indonesian citizens.

1.3 Damage to Aircraft

The nose wheel and tire were abraded due to contact with the runway and one nose landing gear tire detached.



Figure 1. Nose landing gear damage

1.4 Other Damage

No other damage to property and/or the environment.

1.5 Personnel Information

1.5.1 Pilot in Command

Gender	: Male
Age	: 56 years old
Nationality	: Indonesian
Date of joining company	: 14 August 2014
License	: Airline Transport Pilot License (ATPL)
Date of issue	: 26 May 1997
Aircraft type rating	: Airbus A320
Instrument rating validity	: Valid until 30 September 2021
Medical certificate	: First class
Last of medical	: 1 October 2020
Validity	: 1 April 2021
Medical limitation	: Holder shall possess glasses that correct for near vision

Last line check : 15 November 2020
Last proficiency check : 15 September 2020

Flying experience

Total hours : 12,059 hours 22 minutes
Total on type : 4,445 Hours
Last 90 days : 50 hours 16 minutes
Last 30 days : 6 hours 16 minutes
Last 24 hours : 2 Hours 54 Minutes
This flight : 54 Minutes

1.5.2 Second in Command

Gender : Male
Age : 25 years old
Nationality : Indonesian
Date of joining company : 26 May 2020
License : Commercial Pilot License (CPL)
 Date of issue : 21 January 2016
 Aircraft type rating : Airbus A320
Instrument rating validity : Valid until 31 August 2021
Medical certificate : First class
 Last of medical : 1 February 2021
 Validity : 5 August 2021
 Medical limitation : Holder shall wear corrective lenses
Last line check : 29 October 2020
Last proficiency check : 19 February 2021

Flying experience

Total hours : 1,359 hours
Total on type : 128 hours
Last 90 days : 34 hours 52 minutes
Last 30 days : 25 hours 27 minutes
Last 24 hours : 2 hours 54 minutes
This flight : 54 minutes

1.6 Aircraft Information

Registration Mark	: PK-LUT
Manufacturer	: Airbus
State of Manufacturer	: France
Type/Model	: A320-200
Serial Number	: 7644
Year of Manufacture	: May 2017
Certificate of Airworthiness	
Issued	: 23 May 2020
Validity	: 22 May 2021
Category	: Transport
Limitations	: None
Certificate of Registration	
Number	: 3945
Issued	: 23 May 2020
Validity	: 22 May 2023
Time Since New	: 9,413 hours
Cycles Since New	: 6,111 cycles
Last Major Check	: C01 Check on 16 August 2020
Last Minor Check	: P10 Check on 16 January 2021

The Aircraft Flight and Maintenance Log (AFML) recorded that on 4 March 2021, the nose landing gear vibration after lift-off. The maintenance personnel replaced the inner right main landing gear (position number 3) referred to Trouble Shooting Manual (TSM) TASK 32-20-00-810-802-A.

On 6 March 2021, the AFML recorded a report of the nose landing gear vibration occurred during takeoff roll until 1,000 ft. The maintenance personnel replace the left nose wheel (position number 1).

During takeoff from Jakarta to Jambi, the pilot felt the nose landing gear vibration occurred until the aircraft altitude approximately 1,800 feet. The pilots did not write the problems on AFML, instead, the PIC informed the engineer verbally regarding to the vibration. The engineer advised the PIC to write the problem in the AFML after landing in Jakarta for the engineer to conduct troubleshoot.

1.7 Meteorological Information

Weather report for Jambi, issued on 6 March 2021 were as follows:

Time	1300 LT	1330 LT	1400 LT
Surface Wind	310°/9 Knots	300° / 5 Knots	350° / 7 Knots
Visibility	More than 10 km	More than 10 km	More than 10 km
Weather	Nil	Nil	Nil
Cloud ⁵	FEW014CB BKN015	FEW014CB BKN015	FEW014CB SCT015
QNH	1010 hPa	1010 hPa	1010 hPa

1.8 Aids to Navigation

The following is the Instrument Approach Chart for Very High Frequency Omni-Range (VOR) approach runway 31 of Jambi.

⁵ Amount of cloud are assesses based on the part of the sky that are covers by the cloud. FEW is when the 1/8 up to 2/8 of sky area covers by clouds, SCT (scattered) is when the 3/8 to 4/8 of sky area covers by clouds and BKN (broken) is when the 5/8 up to 7/8 sky area covers by clouds.

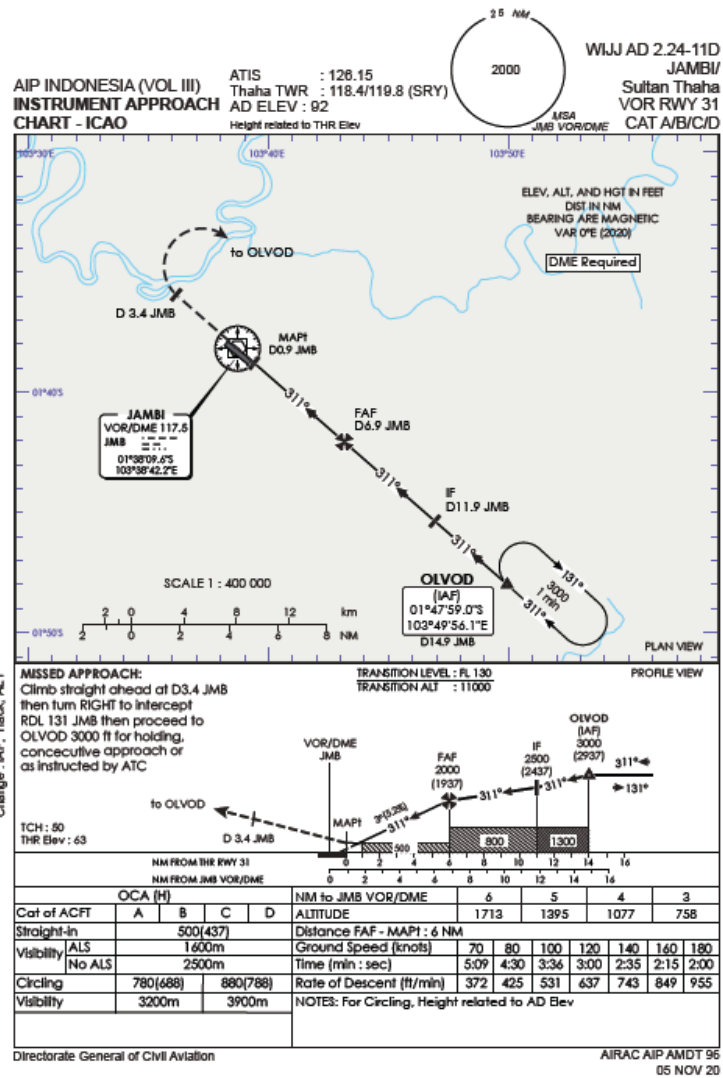


Figure 2: VOR Approach chart runway 31

1.9 Communications

All communications between Air Traffic Services (ATS) and the crew were recorded by ground based automatic voice recording equipment for the duration of the flight. The quality of the aircraft's recorded transmissions was good.

The excerpt of the communication will be included in the final report.

1.10 Aerodrome Information

Airport Name : Sultan Thaha Airport
 Airport Identification : WIIJ/DJB
 Airport Operator : PT Angkasa Pura II (Persero)
 Airport Certificate : 010/SBU-DBU/XII/2020
 Validity : Valid until 7 July 2025
 Coordinate : 01° 38' 08" S; 103° 38' 35" E

Elevation : 92 feet
 Runway Direction : 13 – 31
 Runway Length : 2,602 meters
 Runway Width : 45
 Surface : Asphalt

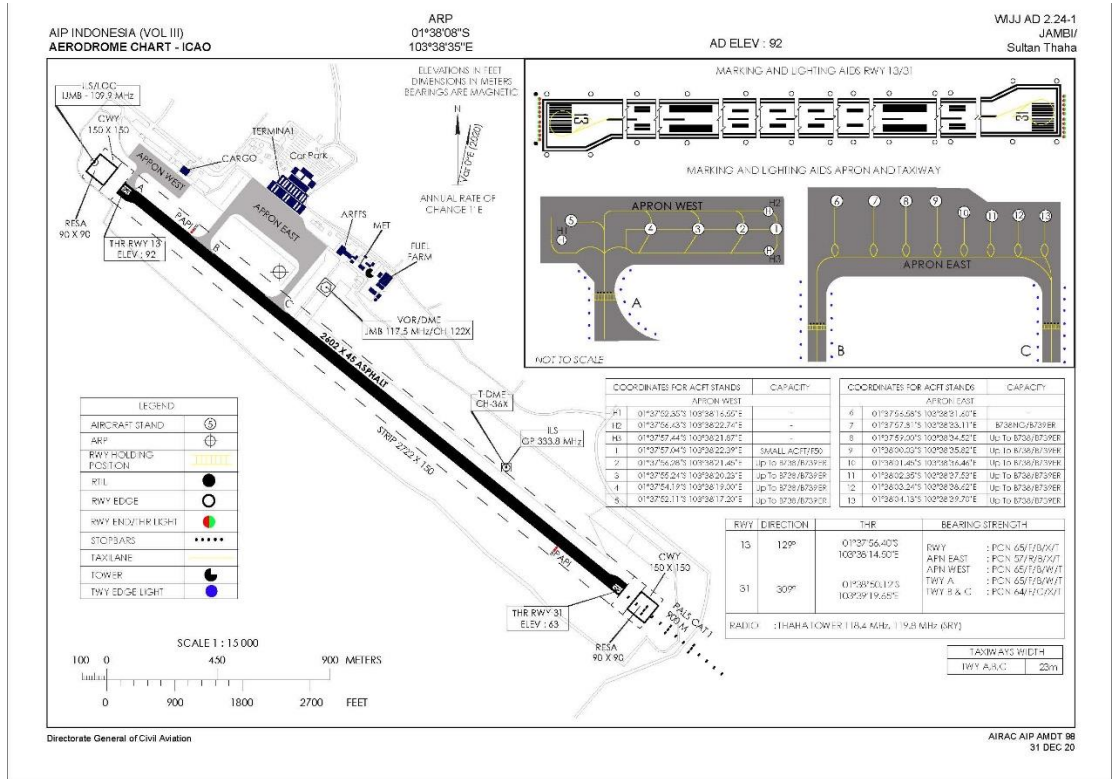


Figure 3: Jambi Airport layout

1.11 Flight Recorders

The aircraft equipped with Flight Data Recorder (FDR) and Cockpit Voice Recorder (CVR). After the accident, both recorders were transported to KNKT recorder facility for data download process.

Both recorders were in good condition and the data were successfully downloaded. The significant information of the flight recorders will be included in the final report.

1.12 Wreckage and Impact Information

Rubber tire mark from the nose wheel was found about one meter left of runway centerline, starting from 26 meters from the threshold marking runway 31 and continued about 800 meters along the runway. The nose wheel mark was the mark during the takeoff as recorded on the CCTV that the nose wheel was at tilted position during takeoff.

The first metal scratch mark was found near the runway centerline at about 1,100 meters from threshold runway 31 and the width of the scratch mark increasing until the aircraft stop position about 1,900 meters from the beginning of runway 31.

One of the nose wheel tire detached from the landing gear and found on the runway at about 1,300 meters from the beginning of the runway 31.

1.13 Medical and Pathological Information

This information is not available at the time of the issuance of this report. In the course of this investigation, should any medical and/or pathological information be obtained that is of relevance to this investigation, it will be included in the final report.

1.14 Fire

There was no evidence of in-flight fire. During the landing roll, the controller noticed spark appeared on the nose wheel which then disappeared after the aircraft stopped.

1.15 Survival Aspects

The Airport Rescue and Firefighting (ARFF) personnel monitored the communication between the pilot and the controller, and aware that an aircraft was experiencing technical problem and was intending to return. The ARFF team then prepared and standby on their station. While the aircraft landing, the fire truck driver heard the sound similar to a tire burst or explosion. The ARFF team deployed to the last aircraft position and found no sign of fire and stand by near the aircraft.

The pilot requested to the controller to informed the company maintenance personnel to check the aircraft condition. The maintenance personnel arrived and informed that the aircraft was unable to taxi due to the nose wheel condition. The pilot requested to the controller to disembarked passenger on the runway and requested transportation for the passengers to the airport terminal. The passengers and the crews were disembarked on the runway using passenger boarding stairs and transported to the airport terminal by bus.

1.16 Tests and Research

The component Brake and Steering Computer Unit (BSCU) Part number E21327107, Serial Number 11498 and Electrical Box Part Number D23119751-1, Serial Number B884 were removed from the aircraft and sent to repair facility. Based on shop finding (examination) report, the BSCU was found no fault. The functional test to the Electrical Box was found out of tolerance. The visual inspection found evident of corrosion, the connector was being replaced.

1.17 Organizational and Management Information

1.17.1 Aircraft Operator

AOC Number	:	121-050
Aircraft Owner	:	Celestial Aviation Trading 4 Limited
Address	:	Aviation House, Shannon, County Clare, Ireland
Aircraft Operator	:	PT. Batik Air
Address	:	Lion City Komplek Talaga Bestari Perkantoran Lion Air, Gedung B 2 nd Floor. Jalan Harmony Blok GK No. 06 Sindang Jaya, Tangerang, Banten.

The Batik Air Operation Manual Volume A (OM-A) described the general policies, rules, standards and operational procedures. The OM-A chapter 8.6.9 MEL / CDL APPLICABILITY stated that:

The provisions of the MEL/CDL are applicable until the aircraft commences the flight (i.e. when the aircraft begins to move under its own power for the purpose of preparing for take-off).


Failures occurring between “Off Blocks” and “Brake Release” require accomplishment of the appropriate abnormal procedure by the crew. Upon completion of the procedure, once the failure has been clearly identified and confirmed, and prior to take-off, the MEL/CDL must however be consulted:

- *If the item is NO GO or if the MEL/CDL requires the completion of a maintenance procedure, the PIC must return to the blocks;*
- *If the item is “GO” or “GO IF” in the MEL/CDL, any decision to continue the flight must be subject to PIC judgment and good airmanship taking into account all other relevant factors, performance penalties and operational restrictions related to the intended flight.*

The MEL/CDL may also be consulted in flight to decide on an in-flight turn back depending on the “GO”/”NO GO” status of the failed function and the possibility to repair the failure at the destination.


The investigation could not find the policy and procedure in the company manual that address the pilot action in the case of instrument and equipment failures that occur after the aircraft leaves the gate or ramp areas until prior to takeoff.

Batik Air issued the Minimum Equipment List (MEL) Airbus A320 which contained lists of the equipment, components, systems or functions that are safety-related and that are temporarily permitted to be inoperative at departure. The MEL Entries, MEL Items and MEL Operational Procedure related to the ECAM Alert Nose wheel steering Fault were as follows:

 A320 MINIMUM EQUIPMENT LIST	MEL ENTRIES 32 - LANDING GEAR	
	ECAM Alert: LG SYS DISAGREE	
Ident.: ME-32-00008123.0001001 / 18 JUL 12 Applicable to: ALL		
AIRCRAFT STATUS	CONDITION OF DISPATCH	
NIL	NO DISPATCH	
ECAM Alert: WHEEL HYD SEL FAULT		
Ident.: ME-32-00008124.0001001 / 18 JUL 12 Applicable to: ALL		
AIRCRAFT STATUS	CONDITION OF DISPATCH	
NIL	NO DISPATCH	
ECAM Alert: WHEEL N/W STRG FAULT		
Ident.: ME-32-00008125.0002001 / 15 SEP 16 Applicable to: ALL		
AIRCRAFT STATUS	CONDITION OF DISPATCH	
If the NWS electrical deactivation box is failed	<i>Refer to Item 32-51-03 NWS Electrical Deactivation Box</i>	
In the other cases	<i>Refer to Item 32-51-01 Nose Wheel Steering Control System</i>	

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Figure 4. MEL Entries related to nose wheel steering fault

 A320 MINIMUM EQUIPMENT LIST	MEL ITEMS 32 - LANDING GEAR 32-51 - Steering
--	--

32-51-01	Nose Wheel Steering Control System
-----------------	---

Ident.: MI-32-51-00007755.0002001 / 17 OCT 19

Applicable to: ALL

32-51-01A

Repair interval	Nbr installed	Nbr required	Placard
A	1	0	Yes

- (o) May be inoperative for three flights provided that:
- 1) The failure is detected by the BSCU (the **WHEEL NW STRG FAULT** alert is displayed on the EWD), and
 - 2) The runway width at departure and arrival airports is at least 45 m, and
 - 3) The runway is not contaminated, and
 - 4) The crosswind component is below 20 kt at departure and arrival airports.

Note: 1. For nose wheel steering offset, Refer to FCOM/PRO-SUP-32 Operation with Nosewheel Steering Offset.
 2. For CAT II operations with Autoland Rollout, must be operative.

_____ Reference(s) _____

- (o) Refer to OpsProo 32-51-01A Nose Wheel Steering Control System

32-51-02	Rudder PEDALS DISC pb
-----------------	------------------------------

Ident.: MI-32-51-00007756.0001001 / 22 MAY 19

Applicable to: ALL

32-51-02A


Repair interval	Nbr installed	Nbr required	Placard
C	2	0	Yes

- (o) One or both may be inoperative (no disconnection is possible).

_____ Reference(s) _____

- (o) Refer to OpsProo 32-51-02A Rudder PEDALS DISC pb

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 A320 MINIMUM EQUIPMENT LIST	MEL ITEMS 32 - LANDING GEAR 32-51 - Steering
--	--

32-51-03	NWS Electrical Deactivation Box
-----------------	--

Ident: MI-32-51-00007757.0001001 / 22 MAY 19

Applicable to: ALL

32-51-03A No towing mode when lever in the TOWING position

Repair interval	Nbr installed	Nbr required	Placard
C	1	0	No

- (o) May be inoperative.

Note: The towing mode is not available when the lever is in the TOWING position.

Reference(s)

- (o) Refer to OpsPro 32-51-03A NWS Electrical Deactivation Box (towing mode is not available when the lever is in the TOWING position)

32-51-03B NWS electrical deactivation box deactivated

Repair interval	Nbr installed	Nbr required	Placard
C	1	0	No

- (o) (m) May be inoperative provided that the NWS electrical deactivation box is deactivated.

Reference(s)

- (o) Refer to OpsPro 32-51-03B NWS Electrical Deactivation Box (NWS Electrical Deactivation Box deactivated)

- (m) Refer to AMM Task 32-51-00-040-002

32-51-04	PARKING BRAKE light on the NWS Electrical Deactivation Box
-----------------	---

Ident: MI-32-51-00007758.0001001 / 22 MAY 19

Applicable to: ALL

32-51-04A

Repair interval	Nbr installed	Nbr required	Placard
C	1	0	No

- (o) May be inoperative.

Continued on the following page

BTK A320 FLEET

MEL

C to D →


MI-32-51 P 2/4

17 OCT 19

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Figure 5. MEL Items related to the Nose Wheel Steering Fault

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 A320 MINIMUM EQUIPMENT LIST	MEL OPERATIONAL PROCEDURES 32 - LANDING GEAR 32-51 - Steering
--	--

32-51-01A	Nose Wheel Steering Control System
------------------	---

Ident: MO-32-51-000000000000001 / 05 JAN 15
 Applicable to: ALL

GENERAL INFORMATION

The electrical and hydraulic control of NWS is inoperative. Do not reset the **WHEEL N/W STRG FAULT** alert with A/SKID & N/W STRG selector. The **WHEEL N/W STRG FAULT** alert indicates that no hydraulic pressure is applied on the NWS actuator.

FLIGHT PREPARATION/LIMITATIONS

Dispatch is not permitted from (or to) contaminated runways.
 Maximum crosswind component for takeoff and landing: 20 kt.
 Maximum landing capability is CAT 3 SINGLE.

Note: the automatic roll out is not permitted (Refer to QRH/OPS Required Equipment for CAT2 and CAT3).

- For operations with crosswind component above 5 kt:
 Reduce maximum takeoff performance limiting weight by 1 000 kg (2 200 lb)

DURING TAXI

Taxiing Procedure:


- Avoid high thrust settings, taxi speed limited to 20 kt.
- Check brakes temperature (if available) before takeoff.
 If necessary, set the BRAKES FAN pb-sw to ON.
- Minimum speed of 5 kt is required to initiate a turn.
- Apply asymmetrical thrust in straight taxi to compensate crosswind and differential braking for taxi and line up as required.
- Avoid sharp turns and use maximum width of the runway.
- Do not apply too high asymmetrical thrust to avoid that nose landing gear get stuck to full travel (90 °) (in that case release the aircraft by towing).

FOR TAKEOFF

- In the case of crosswind component above 5 kt:
 - Set full nose down elevator till 80 kt regardless of the aircraft loading.
 - Apply N1 = 50 % on the brakes
 - Release the brakes, and smoothly apply takeoff power
 - Use asymmetric braking, if required, to keep on runway center-line until directional control is available by use of rudder.
 - Release stick progressively to reach neutral at about 100 kt.

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 A320 MINIMUM EQUIPMENT LIST	MEL OPERATIONAL PROCEDURES 32 - LANDING GEAR 32-51 - Steering
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Continued from the previous page

FOR LANDING

Do not use autobrake for landing.

- **In the case of crosswind component above 5 kt:**
 - Aircraft lateral control is achieved with the rudder until slowing to approximately 50 kt IAS.
 - Upon reaching 50 kt IAS use differential braking to achieve taxi speed as required.

AFTER LANDING

Disengage AP at touchdown when autoland is performed.

32-51-02A	Rudder PEDALS DISC pb
------------------	------------------------------

Ident.: MO-32-51-00012799.0001001 / 17 SEP 10
Applicable to: ALL

The purpose of the procedure is to explain how to perform the flight control check with one or both PEDALS DISC pb failed in the released position.

GENERAL INFORMATION

- **When the disconnection is not possible on one side:**
The flight control check can be performed on the operative side.
- **When the disconnection is not possible on both sides:**
The flight control check must be performed while aircraft is stopped.
Note: it is not necessary to set the A/SKID & N/W STRG sw to OFF.

32-51-03A	NWS Electrical Deactivation Box (towing mode is not available when the lever is in the TOWING position)
------------------	--

Ident.: MO-32-51-00009010.0001001 / 17 SEP 10
Applicable to: ALL

BEFORE CONVENTIONAL OR TOWLESS PUSHBACK

A/SKID & N/W STRG selector..... OFF


AFTER PUSHBACK

A/SKID & N/W STRG selector..... ON

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Date: ____/____/____ Signature: _____

Figure 6. MEL Operational Procedure related to the Nose Wheel Steering Fault

The Quick Reference Handbook (QRH), on the chapter of Abnormal and Emergency Procedures, system reset table describe the reset procedure when the system malfunction or ECAM alert WHEEL N/W STRG FAULT as follow:

 A318/A319/A320/A321 QUICK REFERENCE HANDBOOK	ABNORMAL AND EMERGENCY PROCEDURES	02.02M
		18 SEP 20

Continued from the previous page

ECAM System	System malfunction or ECAM Alert (Affected System)	Reset Procedure
WHEEL	WHEEL N.W STEER FAULT or WHEEL N/W STRG FAULT (BSCU)	<p>On ground only:</p> <p>Case A If the three conditions below are fulfilled: - the WHEEL N/W STRG FAULT alert was triggered just after engine start - the N/W STRG DISC memo was displayed before the start of the pushback (before the aircraft starts moving) - the N/W STRG DISC memo remained displayed even after the pushback is finished (nosewheel steering selector bypass pin is in the steering position).</p> <p>Apply the below reset procedure. If the ECAM alert disappears after the reset, the flight crew may continue the flight without troubleshooting.</p> <p>Case B In all other cases, including in case of doubt on the above conditions, troubleshooting must be performed before continuing the flight, even if the ECAM alert disappears after the reset. For a return to the gate :</p> <ul style="list-style-type: none"> - Apply the below reset procedure - The taxi speed must not exceed 10 kt. <p>Reset Procedure:</p> <ul style="list-style-type: none"> - STOP aircraft - Set PARK BRK handle to ON - Confirm that towing bar is disconnected - Set A/SKID & N/W STRG sw to OFF - Set A/SKID & N/W STRG sw to ON. <p><i>Note:</i> After any BSCU reset: 1. Check brake efficiency 2. Check absence of aircraft veering 3. Record the BSCU reset in the logbook.</p>

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Figure 7. QRH page system reset table on Nose Wheel Steering Fault

Refer to Flight Crew Techniques Manual (FCTM) – Chapter Airbus Operational Philosophy on subchapter Management of Abnormal Operations subject Sequence of Procedure describe that

“In most situations, the following sequence is the basic one that should be applied by the flight crew. However, this sequence may not cover all operational situations. Therefore, in all cases, the flight crew should exercise their judgment and adapt the sequence of actions to the real conditions. In the case of abnormal or emergency situations, the flight crew should apply the procedures in the following sequence, as appropriate:

- *MEMORY ITEMS or OEB immediate actions,*
- *OEB,*
- *ECAM,*
- *QRH.”*

1.17.2 Civil Aviation Authority in Indonesia

The civil aviation in Indonesia is administered by the Directorate General of Civil Aviation (DGCA) which is part of the Ministry of Transportation. The DGCA has several directorates including the Directorate of Airworthiness and Aircraft Operations (DAAO) that responsible in formulating policy and standard including oversight to the civil aircraft operator, and the Directorate of Air Navigation (DAN) that responsible in formulating policy and standard including oversight to the ATS provider and aviation meteorological provider.

The DGCA issued Staff Instruction number 8900 - 4.4 on August 2015 titled Procedure for The Development Review and Approval of a Minimum Equipment List (MEL) and Configuration Deviation List (CDL). On the chapter 1.10 Take off with inoperable instruments and equipment subchapter C. Instrument and Equipment Failures that Occur After an Aircraft Leaves the Gate or Ramp Area (Pushes Back or Taxis) - Part 121 stated that:

Certificate holders conducting part 121 operations must have policies and procedures that address instrument and equipment failures that occur after the time an aircraft leaves the gate or ramp area (but prior to takeoff) in their MEL Management Program. Operation Inspectors must ensure that each certificate holder's MEL Management Program has procedures for the PIC to communicate with the dispatch (or operational control for supplemental operations) and maintenance organizations prior to takeoff to review each situation and determine whether the flight should:

- 1. **Return for Repairs.** If for any reason (e.g., weather, route of flight, aircraft weight, item not listed in MEL) an inoperative item (instrument or equipment) would prevent a flight from operating with safety, the aircraft would have to return to the gate or ramp area for repairs.*
- 2. **Return to Accomplish (M) Procedures and (O) Procedures.** PICs, dispatchers, or persons authorized to exercise operational control may determine that an inoperative item may be deferred and the appropriate (M) and/or (O) procedures accomplished, in accordance with the certificate holder's approved MEL and MEL Management Program, or*
- 3. **Flight crew Accomplishment of Certain MEL Procedures.** Operation Inspectors may approve procedures that permit flight crew members to accomplish certain MEL deferrals in coordination with the certificate holder's dispatch and maintenance organizations without returning to the gate or ramp area. Operation Inspectors must coordinate with the Maintenance Inspector to approve such procedures. Operation Inspectors must not approve these types of procedures unless they contain enough detail to ensure that all of the applicable (M) and/or (O) procedures are accomplished by qualified persons, and that the certificate*

holder has a means to ensure that they satisfy all of the conditions and limitations associated with each MEL. DGCA's (Operation Inspector, and Maintenance Inspector) will ensure that certificate holders document these procedures in their DGCA-approved MEL Management Program.

Coordination between flight-crew members and the maintenance organization must not involve directed troubleshooting or other forms of system fault diagnosis beyond what is specifically authorized in the certificate holder's MEL Management Program procedures. Unless otherwise authorized, troubleshooting or fault diagnosis necessary to determine suitable MEL relief must be performed by qualified maintenance personnel.

If the conditions and limitations contained in an MEL affect the aircraft performance or flight operation (e.g., fuel penalties or restrictions to flight level), the dispatcher or person authorized to exercise operational control will have to recalculate (compute) a new flight plan and issue a new or amended dispatch or flight release.

1.18 Additional Information

This investigation involved the participation of the Bureau d'Enquêtes et d'Analyses (BEA) of the France as State of Design and State of Manufacturer and have appointed the accredited representative to participate in this investigation in accordance with the provisions in ICAO Annex 13.

Should further safety issues emerge during the course of the investigation, KNKT will bring the issues to the attention of the relevant parties and issue safety recommendation as required.

1.19 Useful or Effective Investigation Techniques

The investigation was conducted in accordance with the KNKT approved policies and procedures, and in accordance with the standards and recommended practices of Annex 13 to the Chicago Convention.

2 FINDINGS⁶

Findings are statements of all significant conditions, events or circumstances in the accident sequence. The findings are significant steps in the accident sequence, but they are not always causal, or indicate deficiencies. Some findings point out the conditions that pre-existed the accident sequence, but they are usually essential to the understanding of the occurrence, usually in chronological order.

According to factual information during the investigation, the KNKT identified initial findings as follows:

1. The aircraft had valid Certificate of Airworthiness (C of A) and Certificate of Registration (C of R).
2. The pilots and controller the held valid licenses and medical certificates.
3. During starting the right engine, the WHEEL N/W STRG FAULT (wheel nose steering fault) alert appeared on the Electronic Centralized Aircraft Monitor (ECAM).
4. After pushback completed and the parking brake had set, the left engine was started and the alert of WHEEL N/W STRG FAULT reappeared.
5. The Pilot in Command (PIC) asked to the ground engineer who was assisting the pushback and engine starting to ascertain that the bypass pin was in the correct position. The engineer 1 removed the nose wheel steering disconnect pin and reinserted it.
6. After the engine starting process completed, the pilots checked the Minimum Equipment List (MEL) and referring to this MEL description the PIC decided to continue the flight.
7. During initial taxi, the PIC realized that the nose wheel steering failed to turn the nose wheel for taxi. The taxi was stopped and the PIC discussed the aircraft problem with an engineer. The engineer suggested to the PIC to reset the anti-skid and nose wheel steering selector and the PIC stated that reset is not allowed based on the MEL Operational Procedure. The PIC then decided to resume the taxi.
8. The PIC applied differential braking and asymmetric engines thrust while taxiing and turn, including the 180° turn for line up on the beginning runway.
9. At 1328 LT, the aircraft departed. The CCTV recorded that during the initial takeoff, the nose wheel was tilted. Rubber mark found on the runway from 26 meters after the threshold marks until about 800 meters.
10. After takeoff the landing gears could not be retracted and the ECAM alert “L/G ABSORBER FAULT” appeared. The autopilot and the auto thrust could not be activated.

⁶ Findings are statements of all significant conditions, events or circumstances in the accident sequence. The findings are significant steps in the accident sequence, but they are not always causal, or indicate deficiencies. Some findings point out the conditions that pre-existed the accident sequence, but they are usually essential to the understanding of the occurrence, usually in chronological order.

11. The flight returned and at 1351 LT, the aircraft touched down. Shortly after the aircraft touchdown, the Airport Rescue and Firefighting (ARFF) personnel heard the sound like a tire burst. The tower controller saw sparks appeared on the nose landing gear, during the landing roll. Having seen this condition, the controller informed to the pilot and pushed the crash bell.
12. The ARFF deployed to the last aircraft position and found no sign of fire.

3 SAFETY ACTION

At the time of issuing this report, the *Komite Nasional Keselamatan Transportasi* (KNKT) had been informed of safety actions resulting from this occurrence by the aircraft operator as follow

1. On 9 March 2021, the Operation Directorate published a Notice to Pilot (NTP) regarding Abnormal Management Procedure to remind the pilot to comply with the sequence of the abnormal operation management.
2. On 11 March 2021, the Batik Air Safety, Security, and Quality (SSQ) Department published two Safety Circulars (SC) subjected to:
 - a. Abnormal Procedures Handling
The Safety Circular was addressed to the Flight Crew to ensure compliance with handling Abnormal Procedures.
 - b. Repetitive Defects Management
The Safety Circular provide several safety recommendations for maintenance and engineering Directorate regarding the management and the anticipation of repetitive defects.
3. On 24 March 2021, the Operation Directorate published a Notice to Pilot (NTP) to remind the pilot regarding the management and understanding of MEL and announce additional policy of MEL applicability.

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