Final Investigation Report on
Serious Incident: Aborted Take-off on a Taxiway involving M/S Air India, Airbus, A320, Indian, VT-EXT (AIC2592) on 05 December 2024 at Manohar International Airport, GOA (INDIA)

AIRCRAFT ACCIDENT INVESTIGATION BUREAU
MINISTRY OF CIVIL AVIATION
GOVERNMENT OF INDIA

FOREWORD

In accordance with Annex 13 to the Convention on International Civil Aviation Organization (ICAO) and Rule 3 of Aircraft (Investigation of Accidents and Incidents), Rules 2017, the sole objective of the investigation of an Accident/Incident shall be the prevention of accidents and incidents and not to apportion blame or liability. The investigation conducted in accordance with the provisions of the above-said rules shall be separate from any judicial or administrative proceedings to apportion blame or liability.

This document has been prepared based upon the evidence collected during the investigation, an opinion obtained from the experts. Consequently, the use of this report for any purpose other than for the prevention of future accidents or incidents could lead to erroneous interpretations.

Unless otherwise indicated, all times in this report are stated in Coordinated Universal Time (UTC).

For reasons of data protection and simplification of the text, this report uses exclusively generic masculine.

Note 1:
Figures used in this report are taken from different sources and are adjusted from the original for the sole purpose of improving the clarity of the Report. Modifications to images used in this report are limited to cropping, magnification or addition of text boxes, arrows or lines.

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GLOSSARY

AAI	Airports Authority of India
AMM	Aircraft Moving Map
A-SMGCS	Advanced-Surface Movement Guidance and Control System
ATC	Air Traffic Control
ATPL	Airline Transport Pilot License
BR	Mist (Weather)
CAR	Civil Aviation Requirement
CPL	Commercial Pilot License
CVR	Cockpit Voice Recorder
DATCO	Duty Air Traffic Controller
DFDR	Digital Flight Data Recorder
DGCA	Directorate General of Civil Aviation
DEP	Departure
ECAM	Electronic Centralized Aircraft Monitor
EFB	Electronic Flight Bag
FDTL	Flight Duty Time Limitation
FO	First Officer
Hrs	Hours
IFR	Instrument Flight Rule
Kts	Knots
LOC	Localizer
MHz	Mega Hertz
NA	Not Applicable
NM	Nautical miles
PDR	Pilot Defect Report
PF	Pilot Flying
PFR	Post Flight Report
PIC	Pilot in Command
PM	Pilot Monitoring
PPC	Pilot Proficiency Check
RWY	Runway
SD page	System Display page (a part of ECAM)
SOP	Standard Operating Procedure
SRA	Safety Risk Assessment

STD	Standard Time of Departure
TCAS	Traffic alert and Collision Avoidance System
TRI	Type Rating Instructor
TWY	Taxiway
UTC	Universal Time Coordinated
VOGA	Manohar International Airport, Mopa, GOA
VOHS	Rajiv Gandhi International Airport, Hyderabad, Telangana
Wx	Weather

SYNOPSIS

Date and Time of Incident	December 05, 2024 at time 15:47:50 UTC
Operator	M/S Air India
Flight Number	AIC2592
Type of aircraft	A320-251N
Registration	VT-EXT
Place of Incident	Manohar International Airport, MOPA, GOA, India
Type of Occurrence	Aborted Take-off on TWY 'A'
Applicable Standard	Should have used RWY 28 for Take-off
Flight Rule	IFR
Sector	VOGA-VOHS
Phase	Take-off
Type of Flight	Schedule Flight

***Brief resume of Circumstances*:**

The incident occurred during the night with visibility 3000m.

It was supposed to be RWY 28 /TWY 'A5' intersection departure.

During the flight the Pilot – In – Command (PIC) was Pilot Flying (PF) and Co-Pilot was Pilot Monitoring (PM).

An Air India Airbus A320-251N aircraft, registration VT-EXT, was scheduled to operate flight AI2592 from VOGA to VOHS. After being cleared by ATC to taxi to the holding point of RWY28 via TWY 'A5', the aircraft received LINEUP and then Take-off clearance from ATC. Instead, the aircraft LINED-UP on TWY 'A' which was parallel to RWY28. The aircraft rolled on TWY 'A' for Take-off. However, shortly after the Take-off roll began, ATC suspected the aircraft was rolling on a TWY and instructed the crew to abort the Take-off (Fig 01). The crew complied, aborting the Take-off at a speed of 124 kts. There were no other aircraft, vehicle or personnel whilst the aircraft was on TWY 'A'. The aircraft was subsequently taxied back to the bay (Fig 02).

Notification:

The occurrence was classified as a serious incident by AAIB, and an investigation was ordered vide No. INV 12011/07/2024-AAIB dated 10 December 2024 under rule 11 (1) of aircraft (Investigation of Accidents and Incidents) rules, 2017. Director General, AAIB appointed Investigator-in-Charge Mr. Ameet Goel and pilot Captain Akhil Mittal from Indigo Airlines as subject matter expert from AAIB panel. ICAO and BEA, France (Bureau d'Enquêtes et d'Analyses pour la Sécurité de l'Aviation Civile) were notified on 10th December 2024. BEA, France appointed Accredited Representative to participate in the investigation in accordance with ICAO Annex 13 requirements.

1. Factual Information

1.1 History of Flight:

On December 5th, 2024, the Air India a scheduled passenger flight was to operate the VOHS-VOGA-VOHS sector twice this day. PIC was planned to operate all 4 sectors with 2 different FOs: one for the first 2 sectors and one for the remaining 2 sectors.

PIC departed from his home at 04:45UTC (10:15 local time) to report for the scheduled flight, with a STD of 07:40 UTC. He completed the first sector and returned to VOHS at 11:12 UTC.

The second sector was scheduled later in the day, with a change of aircraft, requiring the PIC to complete the transfer and transit procedures at VOHS (Hyderabad airport). The next STD at Hyderabad was 13:35 UTC, leaving the PIC with a two-hour wait in the terminal alongside passengers. This flight also involved a change of First Officer (FO). Flight landed at VAGO at 1454 UTC. After landing at MOPA, GOA, the estimated time of departure (ETD) for the return leg was set for 15:35 UTC (night).

After completing flight preparation, at 15:23:26 UTC the crew asked from ATC the departure clearance, to which ATC replied to standby as ATC was busy in giving landing clearance to another aircraft. At 15:24:40 UTC the clearance was passed to AIC2592 which was read back correctly by the crew.

At 15:33:19 UTC the aircraft took permission for pushback from ATC.

At 15:41:57 UTC the crew asked for Taxi instructions. The ATC checked if the aircraft could depart from TWY ‘A5’ and RWY28 intersection to which the crew agreed. After confirming the aircraft was ready to depart from the TWY ‘A5’ intersection, the ATC issued taxi clearance to the holding point for RWY28 via TWY ‘D-E-A-A5.’ The crew of AIC2592 correctly read back the taxi instructions and taxied out at 15:42:47 UTC.

After approximately 3 minutes from commencement of Taxi, upon approaching the TWY ‘E-A’ intersection, AIC2592 reported to ATC being fully ready. ATC then instructed the aircraft to LINEUP on RWY28 via TWY ‘A5,’ and the crew acknowledged this instruction correctly. Thereafter Take-off clearance was issued by ATC and RWY28 was mentioned in take-off clearance.

But instead, the aircraft LINED-UP on TWY ‘A’ which was parallel to RWY. The aircraft rolled on TWY ‘A’ for Take-off.

Post giving Take-off instructions and commencement of the Take-off roll by the aircraft, the Tower controller noticed the aircraft appeared larger than usual. This prompted the controller to cancel the Take-off clearance. AIC2592 acknowledged the cancellation and took prompt action. The aircraft, which had already commenced its Take-off roll on TWY ‘A’, came to a halt at the TWY ‘A-W’ junction after attaining speed of 124 Kts (Calculated Performance Speeds were V1: 138 kts; VR: 138 kts; V2:

139 kts).

The Tower Controller confirmed with the PIC of AIC2592 whether the aircraft was on RWY28 or TWY ‘A.’ The PIC apologized. AIC2592 reported normal operations. (Fig 01)

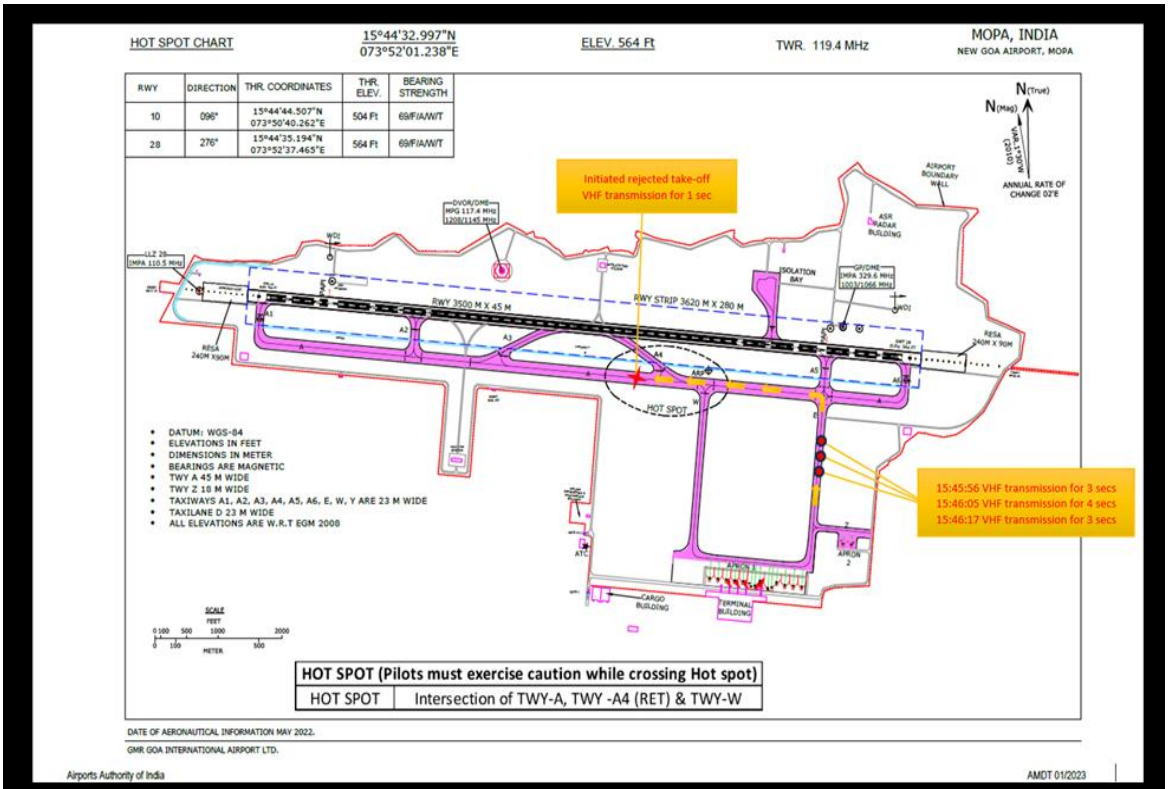


Fig 01: TWY followed by aircraft and rejected Take-off on TWY ‘A’ in yellow arrow

The aircraft was then instructed to taxi back to Bay ‘8B’ via the route TWY ‘A-A2-RWY28-A4-A-W-D.’ A "Follow Me" vehicle was dispatched to inspect TWY ‘A’ which reported TWY ‘A’ fit for operation. (Fig 02).

Fig 02: Plan view of returning back to bay

The following sequence was followed during the incident:

Time (UTC)	Event
15:23:26	AIC2592 requested departure clearance.
15:24:40	Departure clearance was issued by Tower to Aircraft before startup.
15:42:03	Tower confirms with AIC2592 if she will accept departure from TWY 'A5' intersection to which AIC2592 accepted.
15:42:07	After startup and pushback, taxi clearance via 'D, E, A, A5' was issued by ATC which was correctly readback by the crew.
15:45:56	While taxiing on TWY 'E' towards TWY 'A' AIC2592 reports Tower 'Fully Ready'
15:46:02	Tower gives 'AIC2592 LINEUP RWY28 via A5' when the aircraft was on TWY 'E'
15:46:14	Tower gives Take-off clearance to AIC2592 when the aircraft was on TWY 'E'
15:46:22	LINEUP check list started when the aircraft on TWY 'E'
15:47:17	**AIC2592 LINED-UP TWY 'A'**
15:47:19	Thrust levers advanced for N1 stabilization
15:47:20	>40% N1 achieved
15:4731	Thrust levers advanced to FLX/MCT for Take-off from TWY 'A' IAS at this point 46 kts
15:47:45	Take-off roll; IAS at this point 105 kts
15:47:46	Tower issues AIC2592 'Cancel Take-off'
15:47:50	Initiated rejected Take-off; thrust levers set to idle; Autobrakes active. IAS recorded at this point 123 kts (max IAS recorded during reject Take-off) and further decelerating
15:47:51	Thrust levers set to full reverse for 1 sec
15:47:52	Thrust levers set to idle reverse
15:47:57	Tower confirms with AIC2592 'Confirm you are on the RWY or you are on Alpha TWY'
15:48:00	Thrust levers stowed to forward idle
15:48:06	Auto brakes disengaged
15:48:07	Aircraft came to complete stop on TWY 'A'
15:48:11	AIC2592 asks for apology
15:48:13	Tower checks with AIC2592 'Confirm all operations normal' to which AIC2592 replies 'Affirm'
15:48:29	Tower asks AIC2592 to hold position
15:48:30	Parking brakes set
15:48:55	Parking brakes released
15:49:03	Further continued taxi

1.2 Injuries to persons:

There was no Injury reported to any occupant on board.

Injuries	Crew	Passengers	Others
Fatal	0	0	0
Serious	0	0	0
Minor	0	0	0
None	07	151	0
Total persons on Board: 158			

1.3 Damage to Aircraft:

There was no damage reported to aircraft.

1.4 Other damage:

No other damage reported.

1.5 Personnel Information:

1.5.1 Crew Information:

	PIC	FO
Age	60/ Male	24/ Male
License	ATPL	CPL
Date of Issue	10 June, 1996	8 March, 2022
Valid up to	14 April, 2026	7 March, 2027
Category	ATPL	CPL
Class I Medical Valid up to	6 January, 2025	17 June, 2025
Date of issue FRTO License	12 December, 1988	8 March, 2022
FRTO License Valid up to	25 May, 2031	7 March, 2027
Total flying experience	23367:21 Hrs	355:23 Hrs
Total flying experience as PIC	16,198:43 Hrs	NA
Total flying experience on Type	21,536:41 Hrs	140:08 Hrs
Total flying experience as PIC on Type	16011:38 Hrs	NA
Total flying experience during last 1 year	474:52 Hrs	140:08 Hrs
Total flying experience during last 6 Months	243:03 Hrs	139:28 Hrs
Total flying experience during last 30 days	41:59 Hrs	53:40 Hrs
Total flying experience during last 07 Days	08:24 Hrs	10:40 Hrs
Total flying experience during last 24 Hours	00:00 Hrs	04:56 Hrs
Rest period before flight	45:00 Hrs	18:00 Hrs
Any fatigue report raised in last 15 days	No	No

Any FDTL extension obtained in last 15 days	No	No
Whether involved in Accident/Incident earlier	No	No
Date of latest Flight Checks and Ground Classes	ALC – 26-09-2024 Ground training-14-06-2024	ALC – 20-10-2024 Ground training-23-08-2024

Both the Pilot in Command (PIC) and First Officer (FO) had prior experience operating at this airport.

1.5.2 ATCO Information:

Unit	Aerodrome Control
ATCO License validity date	31 March, 2052
Medical check validity date	21 Nov, 2027
Date of ADC rating	08 march, 2024
Total experience	9 months
Annual refresher training date	25 Oct, 2024
Other rating	No
Instructor	No
Incident in the past two years	NIL

1.6 Aircraft Information:

The aircraft was Airworthy. All pertinent documents/certificates for the aircraft's operation were valid as of the incident date.

Aircraft Detail	
Aircraft Model	A320-251N
Aircraft Serial No.	MSN 7559
Year of Manufacturer	2017
Registration Marks	VT-EXT
Nationality	DUBLIN
Name of Owner	SMBC AVIATION CAPITAL LIMITED
Certificate of Registration Validity	09-04-2029
Certificate of Airworthiness Validity	17-04-2025
Airworthiness Review Certificate validity	17-04-2025
Last Major Inspection	10-10-2024
List of Repairs carried out after last major inspection till the date of incident	NIL
Last transponder/ Radio check	28-10-2024
Aircraft total hours on the day of incident	25871:04

After returning to Bay for inspection, the following snag were reported for AIC2592 and rectification taken-

a) PFR and PDR reviewed found brakes hot in ECAM warning. On SD page, all brakes temperature below 400* C.

b) Carried out inspection after brake emergency application or overheat as per AMM 05-51-16-200-001-A found no abnormalities.

c) All wheel's tire pressure checked found within AMM limits. Operation test of normal braking carried out as per AMM found satisfactory.

1.7 Meteorological Information:

The weather as per the METAR at the time of the incident was as follows:

Time (UTC)	Wind (Kts)	Visibility (m)	Wx	Cloud	Temp (°C)	QNH (hPa)
1430	300/03	3000	BR	SCT 020	28	1012
1500	Calm	3000	BR	SCT 020	27	1012
1530	320/02	3000	BR	SCT 020	27	1012
1600	Calm	3000	BR	SCT 020	27	1013

1.8 Aids to Navigation:

All RWY and TWY Navigation marking, signage and lights as per AIP, India were serviceable. There is no provision of TWY centerline lights at the airport. Other Navigation aids VOR/DME and ILS/DME RWY28 were serviceable. A-SMGCS is not installed with ATC.

1.9 Communications:

At the time of incident, the aircraft was in contact with Tower on frequency 119.4 MHz. There was two-way communication between both the aircraft and ATC. No abnormality was reported in any communication system. CVR recording and ATC recording were obtained with transcript.

1.10 Aerodrome Information:

The airport features a single RWY (10/28), which is 3500m-long and 45m wide. The RWY is designed with the capacity to accommodate a Boeing 777-200. The RWY has two rapid exit ways. TWY 'A' is parallel to RWY and of the same length and width as of RWY28. (Fig 03)

RWY markings: Runway Transverse stripe, Runway Designation, Runway Threshold, Runway Touchdown zone, Runway Centerline, Runway Aiming Point, Runway Side stripe markings.

RWY Lights: Runway Threshold, Runway Edge, Runway Centerline and Runway End

lights.

TWY Marking: Taxiway Edge, Taxiway Centerline and Runway Holding positions, Intermediate holding position (on TWY A near TWY A2, TWY A3, TWY A4, TWY A5, TWY W and TWY E) and Enhanced Taxiway centerline markings.

TWY Lights: Blue in color, omnidirectional taxiway edge Lights are available at all taxiways.

Runway guard lights configuration 'A' available at TWYs A1, A2, A3, A4, A5 and A6.

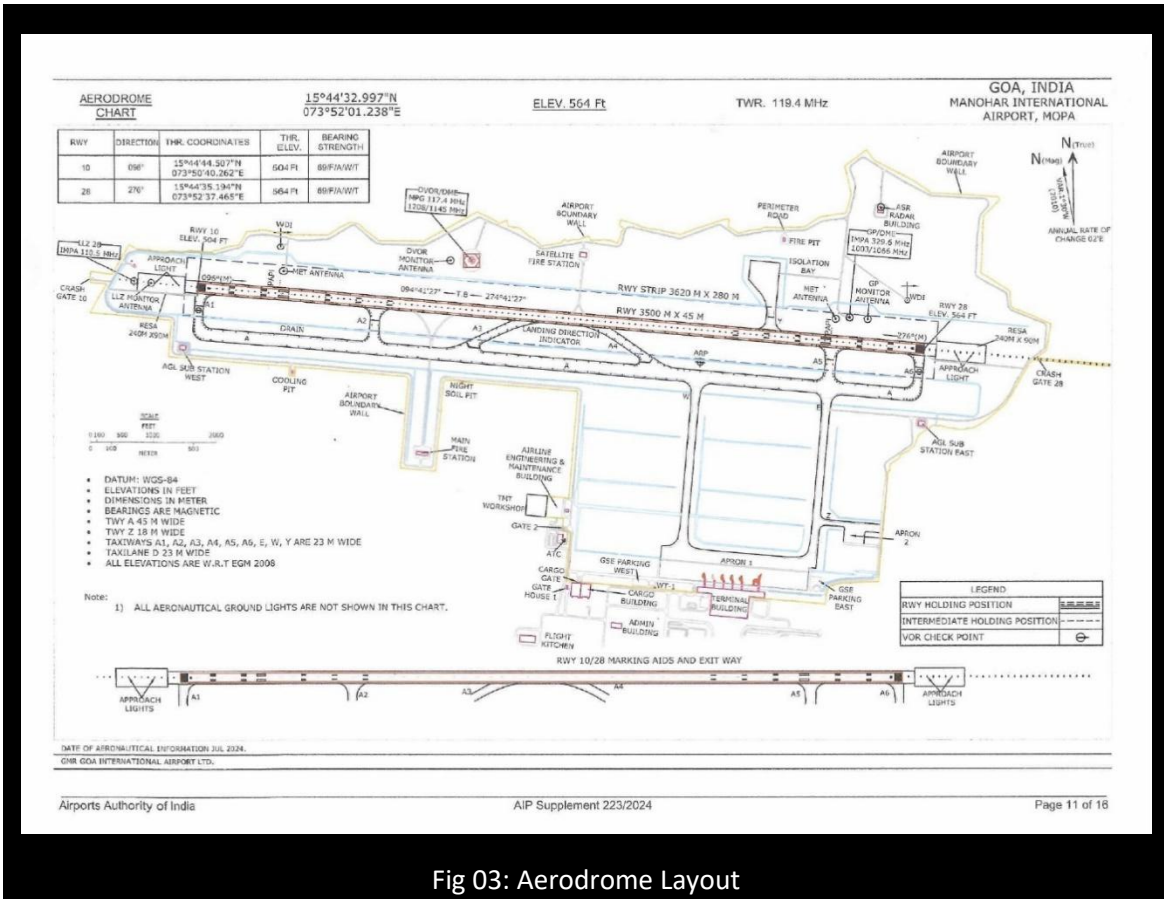


Fig 03: Aerodrome Layout

1.11 Flight Recorders:

The aircraft was equipped with Digital Flight Data Recorder (DFDR) and Cockpit Voice Recorder (CVR).

The DFDR and CVR data of the incident flights was analyzed and used in the investigation to corroborate with the other available evidence to confirm the findings and other factors leading to the incident.

1.11.1

CVR transcript before LINEUP	
	CM2 - TCAS TA/RA Check CM2 - Packs ON CM2 - LINEUP Checklist CM1 - Ya CM2 - Take-off RWY CM1 - 28, A5 CM2 - RWY28 A5 CM2 - TCAS CM1 - TA/RA CM2 - Packs 1 & 2 CM1 - Remaining ON CM2 - LINEUP Checklist Complete Capt. CM1 – Checked CM2 - Cleared for Take-off

1.11.2

DFDR observations	
UTC	FACTUAL INFORMATION
	LHS (Captain) was the PF for the sector
15:45:56 to 15:46:19	Taxiing on TWY 'E' towards TWY 'A'. VHF transmission in 3 instances. 15:45:56 to 15:45:58 for 3 secs 15:46:05 to 15:46:08 for 4 secs 15:46:17 to 15:46:19 for 3 secs
15:47:17	LINED-UP on TWY 'A' for a rolling Take-off on magnetic heading 280 degrees
	Reference V speeds for Take-off: V1: 138 kts; VR: 138 kts; V2: 139 kts Gross weight at Take-off: 63.5 tons
15:47:19	Thrust levers advanced for N1 stabilization
15:47:20	>40% N1 achieved
15:47:31	Thrust levers advanced to FLX/MCT for Take-off from TWY 'A' IAS at this point 46 kts
15:47:45	Take-off roll; IAS at this point 105 kts
15:47:50	Initiated rejected Take-off; thrust levers set to idle. Autobrakes active. IAS recorded at this point 123 kts (max IAS recorded during reject Take-off) and further decelerating
15:47:51	Thrust levers set to full reverse for 1 sec
15:47:52	Thrust levers set to idle reverse
15:48:00	Thrust levers stowed to forward idle
15:48:06	Auto brakes disengaged
15:48:07	Aircraft came to complete stop on RWY
15:48:12 to	Multiple VHF transmissions recorded

15:48:54	
15:48:30	Parking brakes set
15:48:55	Parking brakes released
15:49:03	Further continued taxi
15:50:36	Vacated RWY28 via TWY 'A2' and further returned to bay

1.12 Wreckage and Impact Information:

Not relevant with respect to this investigation.

1.13 Medical and Pathological Information:

The crew of AIC2592 have undergone the preflight Breath analyzer and found negative.

1.14 Fire:

There was no fire.

1.15 Survival Aspects:

The incident was survivable.

1.16 Tests and Research:

Nil

1.17 Organizational and management information:

1.17.1 Air India Ltd:

Air India is the carrier of India with its main hub at Indira Gandhi International Airport in Delhi. Secondary hubs are at Kempegowda International Airport in Bengaluru and Chhatrapati Shivaji Maharaj International Airport in Mumbai. The airline operates a variety of Airbus and Boeing aircraft.

1.17.2 Manohar International Airport, (MOPA) Goa:

Manohar International Airport (IATA: GOX), is an international airport at Mopa, North Goa district in the state of Goa, India. The airport is developed by GMR Goa International Airport Limited (GGIAL). On average, the airport handles around 100 aircraft movements.

1.17.3 Airports Authority of India:

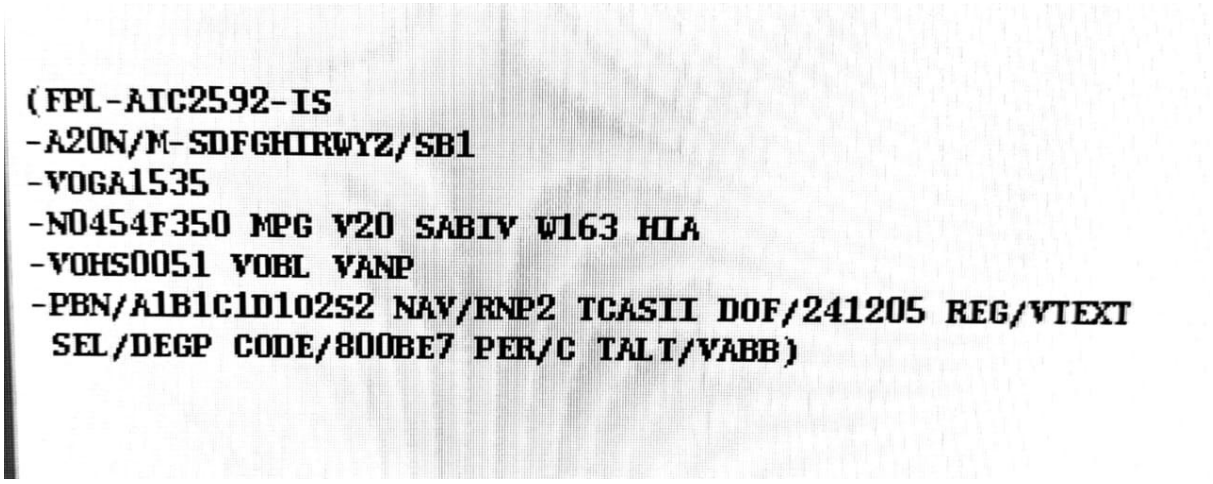
The Airports Authority of India (AAI), a statutory body under the Ministry of Civil Aviation, is responsible for creating, upgrading, maintaining, and managing civil aviation infrastructure in India, including airports and air traffic management services.

ATC is being provided by AAI. The ATC functions to ensure the safe and efficient movement of aircraft, providing clearances, information, and guidance to pilots, while also maintaining separation between aircraft in the air and on the ground.

As per MATS 1 (Manual of Air Traffic Services- part 1) para 7.9.3.4 “the take-off clearance shall be issued when the aircraft is ready for take-off and at or approaching the departure runway, and the traffic situation permits. To reduce the potential for misunderstanding, the take-off clearance shall include the designator of the departure runway.”

1.18 Additional information:

1.18.1 Flight Plan of AIC2592:



1.18.2 Aircraft Moving Map (AMM) in EFB:

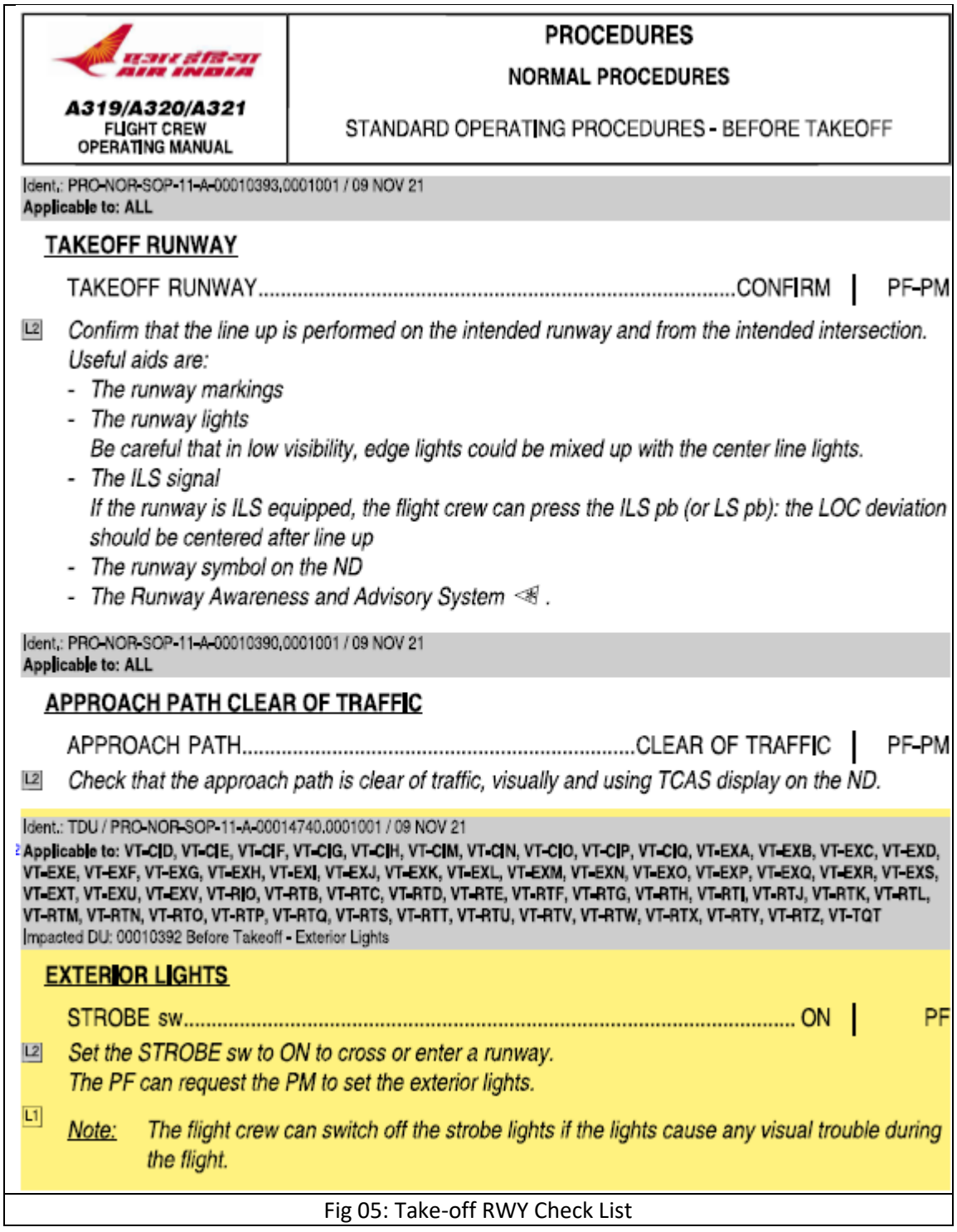
The aircraft moving map function in an Electronic Flight Bag (EFB) uses real-time position data from the aircraft's Flight Management System (FMS) to display a dynamic map, enhancing situational awareness, especially during ground movements and critical flight phases. The EFB receives accurate position data from the aircraft's FMS, allowing for precise depiction of the aircraft's location on the map. Pilots can see their aircraft's location in relation to other aircraft, taxiways, runways, and potential hazards, improving situational awareness. The moving map aids in ground navigation, particularly at unfamiliar airports or during poor visibility, by showing the cleared taxi route and runway location.

1.18.3 Advanced Surface Movement Guidance and Control System (ASMGCS):

ASMGCS is not installed at the airport. It is a modular system consisting of different functionalities to support the safe, orderly and expeditious movement of aircraft and vehicles on aerodromes under all circumstances with respect to traffic density and complexity of aerodrome layout, considering the demanded capacity under various visibility conditions, independent of line-of-sight connection between the controller and aircraft/vehicles. (Fig 04)

Fig 04: ASMGCS

1.18.4 LINE UP procedure as per FCOM:



A319/A320/A321
FLIGHT CREW
OPERATING MANUAL

PROCEDURES

NORMAL PROCEDURES

STANDARD OPERATING PROCEDURES - BEFORE TAKEOFF

Ident,: PRO-NOR-SOP-11-A-00010393.0001001 / 09 NOV 21
Applicable to: ALL

TAKEOFF RUNWAY

TAKEOFF RUNWAY.....CONFIRM | PF-PM

L2 *Confirm that the line up is performed on the intended runway and from the intended intersection.*
Useful aids are:
- *The runway markings*
- *The runway lights*
  Be careful that in low visibility, edge lights could be mixed up with the center line lights.
- *The ILS signal*
  If the runway is ILS equipped, the flight crew can press the ILS pb (or LS pb): the LOC deviation should be centered after line up
- *The runway symbol on the ND*
- *The Runway Awareness and Advisory System* .

Ident,: PRO-NOR-SOP-11-A-00010390.0001001 / 09 NOV 21
Applicable to: ALL

APPROACH PATH CLEAR OF TRAFFIC

APPROACH PATH.....CLEAR OF TRAFFIC | PF-PM

L2 *Check that the approach path is clear of traffic, visually and using TCAS display on the ND.*

Ident.: TDU / PRO-NOR-SOP-11-A-00014740.0001001 / 09 NOV 21
Applicable to: VT-CID, VT-CIE, VT-CIF, VT-CIG, VT-CIH, VT-CIM, VT-CIN, VT-CIO, VT-CIP, VT-CIQ, VT-EXA, VT-EXB, VT-EXC, VT-EXD, VT-EXE, VT-EXF, VT-EXG, VT-EXH, VT-EXI, VT-EXJ, VT-EXK, VT-EXL, VT-EXM, VT-EXN, VT-EXO, VT-EXP, VT-EXQ, VT-EXR, VT-EXS, VT-EXT, VT-EXU, VT-EXV, VT-RIO, VT-RTB, VT-RTC, VT-RTD, VT-RTE, VT-RTF, VT-RTG, VT-RTH, VT-RTI, VT-RTJ, VT-RTK, VT-RTL, VT-RTM, VT-RTN, VT-RTO, VT-RTP, VT-RTQ, VT-RTS, VT-RTT, VT-RTU, VT-RTV, VT-RTW, VT-RTX, VT-RTY, VT-RTZ, VT-TQT
Impacted DU: 00010392 Before Takeoff - Exterior Lights

EXTERIOR LIGHTS

STROBE sw..... ON | PF

L2 *Set the STROBE sw to ON to cross or enter a runway.*
The PF can request the PM to set the exterior lights.

L1 *Note: The flight crew can switch off the strobe lights if the lights cause any visual trouble during the flight.*

Fig 05: Take-off RWY Check List

1.18.5 Intersection Departures:

The aircraft was given intersection departure. An "intersection departure" refers to a takeoff that begins at a point along a runway where a taxiway or another runway intersects, rather than the traditional runway threshold, potentially saving time and improving runway capacity.

1.18.6 Situation awareness deficit:
A "situation awareness deficit" refers to a lack of or impairment in an individual's ability to perceive, understand, and project their surroundings and situation, leading to potential errors or accidents. Recognizing and addressing SA deficits is crucial for safety and performance, which includes training.

1.19 Useful or effective in investigation techniques:

Standard investigation procedures and techniques were used during investigation.

2. Analysis

The analysis was carried out based on the available evidence such as Crew & Controllers Statements, ATC Tape Transcript, DFDR and CVR data of AIC2592.

a) The incident occurred during the night with visibility 3000m.
b) The airport navigation signage, markings and lighting were serviceable as per standard.
c) There was no miscommunication or readback error.
d) It was an intersection departure.
e) The Crew had rest as per the FDTL scheme.
f) The PIC was PF whereas FO was PM
g) There was no Miscommunication in cockpit.
h) There was no flight delay.
i) As per CVR the crew were not in hurry or pressure.
j) It was not a training flight.
k) Crew coordination and CRM were found to be highly effective.
l) No aircraft or vehicle was reported on TWY 'A' during the Take-off roll.
m) Any time during Taxi the Ground speed did not exceed 15 Kts as per FDR.
n) CM1 is P1 with ~23,000hrs total experience and ~16,000hrs PIC on Airbus 320 family. CM2 is a First Officer with total experience of ~140:08 hrs on Airbus 320 family.
o) The PM was distracted by the EFB login issue and pre-Take-off tasks and therefore was head down. It leads to critical oversight in identifying the correct RWY.
p) On receiving Take-off clearance by ATC there was rushing through pre-Take-off checks by the flight crew.
q) The crew did not cross-check visual aids to identify RWY28 before initiating Take-off roll on TWY 'A' as per procedure.
r) Take-off clearance was issued and confirmed by the crew when the aircraft

was on TWY ‘E’ which does not lead to RWY.

s) LINEUP checklist initiated on TWY ‘E’ which does not lead to RWY. The TWY intersection may have been confused with RWY intersection by the Flight Crew.

t) The crew attempted Take-off from TWY ‘A’ in a westerly direction instead of RWY 28 as cleared by ATC.

u) Post instructions by ATC, crew carried out high speed rejected Take-off which was initiated below V1 (Max IAS recorded 123 kts; V1-138 kts)

3. Conclusion

3.1 Findings:

a) DATCO has mentioned RWY28 in the instructions issued thrice i.e. first while issuing taxi instruction to holding point RWY28 at time 15:42:07, second while instructing the aircraft to LINEUP RWY28 at 15:46:02, third while issuing Take-off clearance at 1:54 614. All the above instructions were correctly read back by the crew.

b) Due to topography at the airport, far distance of TWY ‘A5’ / RWY28 intersection and visibility of 3000 M in night, the DATCO was unable to maintain the required visual surveillance. As per the statement issued, the larger than usual size of aircraft raised a concern and prompted the DATCO to cancel Take-off clearance.

c) As per the review of the CVR transcript the respective checklists had been completed by the crew from cockpit preparation till commencement of Take-off.

d) While performing Take-off checklist, crew didn’t confirm that the LINEUP is performed on the intended RWY and from intended intersection as the check was completed on TWY ‘E’. Useful aids for Take-off procedure as per FCOM are:

TAKEOFF RUNWAY……confirm I PF-PM

I. The runway markings.

II. the runway lights.

III. the ILS signal if the runway is ill equipped, the flight crew can press the ILS pb (or LS pb): the LOC deviation should be centred after LINEUP.

IV. the runway symbol on the ND.

g) The crew had wrongly LINED-UP on TWY ‘A’ whereas taxi instructions from ATC were ‘TAXI via D, E, A, A5 holding point RWY28’.

h) The PF did not observe any visual cues such as TWY edge lights (which were blue), TWY centerline marking (Yellow in color), RWY signage, etc. available at

that time to ascertain the intended RWY for departure.

i) The PM was busy with head down as he was trying to login to EFB to bring the display of EFB back to ON mode to initiate LINEUP checklist and did not check the departure RWY when PIC was incorrectly lining up on TWY 'A'.

j) Aircraft never entered TWY 'A5' as instructed by ATC. Same was not raised by PM to the PF.

k) Significant disparity in experience between the Pilot in Command (PIC) and the First Officer, exceeding 15,000 hours.

l) The airport is not equipped with an Advanced Surface Movement Guidance and Control System (A-SMGCS).

3.2 Probable Causes:

a) Situational Awareness Deficit: The issuance of "Take-off clearance" by ATC likely caused the crew's cognitive focus to shift entirely toward executing the Take-off. This shift may have diminished their situational awareness, resulting in expectation bias or cognitive overload, which prevented them from recognizing the visual cues indicating they were at the TWY intersection instead of RWY intersection.

b) Both Take-off clearance was issued by ATC and TAKEOFF checks completed by crew on TWY 'E' near TWY intersection.

Note: *If Take-off clearance had been issued by ATC on TWY 'A5' leading to RWY28, and the crew had initiated the Take-off checks upon reaching the designated holding point, it might have provided an additional layer of defence against this incident.*

c) The flight crew did not fully adhere to the ATC taxi instructions and failed to enter TWY 'A5' before lining up. If the crew had completed the taxi instructions and properly entered TWY 'A5' before turning for LINEUP, the incident could have been avoided.

3.3 Contributory factors:

a) The airport is not equipped with an Advanced Surface Movement Guidance and Control System (A-SMGCS) which might have improved situational awareness for ATC with this topography.

b) The PM was busy with head down as he was trying to login on EFB to bring the display back to ON mode to initiate the LINEUP checklist and did not check the departure RWY when PIC was incorrectly lining up on Taxiway A.

4. Safety Recommendations

a) Air India: DGCA should ensure-

To avoid EFB screen going into sleep mode issues in the Electronic Flight Bag (EFB) during flight operations, operators should coordinate with IT to **optimize screen sleep mode settings** while maintaining security.

b) All Operators:

Crew should be encouraged to cross-check their position using the AMM (Aircraft Moving Map) functionality of the EFB, if available **as an additional measure** alongside primary navigational instruments before Take-off.

Note: EFB systems include real-time GPS positioning and airport charts along with AMM, which allow flight crew to cross-check their actual position on the airfield against the planned taxi route and assigned RWY. This verification process is a vital step in preventing errors such as taxiing to or departing from the wrong RWY/TWY, enhancing overall situational awareness and safety.

c) AAI: DGCA should ensure-

I. AAI may review MATS 1 para 7.9.3.4 and may consider to add a procedure to issue take-off clearance to departing aircraft not before when the aircraft has entered a designated **taxi route that clearly leads the departing aircraft to the final holding point** as far as practicable.

Note: This approach can help prevent LINEUP on the incorrect RWY or TWY.

II. AAI should consider installing Advanced Surface Movement Guidance and Control Systems (A-SMGCS) at Manohar International Airport, (MOPA) Goa.

Note: It will assist Air Traffic Control Officers (ATCOs) in accurately determining aircraft positions and enhancing situational awareness.