



सत्यमेव जयते

**Final Investigation Report on
Serious Incident of Airprox between ALH MK III (Defence Helicopter) and
A319-112 Aircraft VT-SCV (AIC788) operated by Air India at Port Blair
Airport on 02 Feb 2024**

**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, opinion obtained from the experts and laboratory examination of various components. 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 timings in this report are stated in Coordinated Universal Time (UTC). The relationship between IST and UTC is: $IST = UTC + 5\frac{1}{2}$ hours.

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

Note 1:

Figures used in this report are taken from different sources and are adjusted from the original for the sole purpose to improve 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.

Note 2:

As timings are different in ATC Transcript, Radar display and Air India reports. The timings of ATC transcript are taken as master.

Contents

GLOSSARY	5
SUMMARY.....	6
SYNOPSIS	7
1. Factual Information	7
1.1. History of Flight	7
1.2 Injuries to persons	9
1.3 Damage to Aircraft.....	9
1.4 Other damage.....	9
1.5 Personnel Information.....	9
1.6 Aircraft Information	9
1.7 Meteorological Information.....	10
1.8 Aids to Navigation	10
1.9 Communications.....	10
1.9.1 RT Transcript between AIC 788 & Tower (Frequency 118.100 MHZ)	10
1.9.2. RT Transcript AIC 788, Examiner 7 & Approach (Frequency 123.500 MHZ)	11
1.10 Aerodrome Information	12
1.11 Flight Recorders	14
1.11.1 Cockpit Voice Recorder (CVR)	14
1.11.2 Digital Flight Data Recorder (DFDR).....	14
1.12 Wreckage and Impact Information	14
1.13 Medical and Pathological Information	14
1.14 Fire.....	14
1.15 Survival Aspects	14
1.16 Tests and Research.....	15
1.17 Organizational and management information	15
1.17.1 M/s Air India	15
1.18 Additional Information	15
1.18.1 Coordination procedure with Defence forces for investigation of occurrences.....	15
1.18.2 Past Recommendations by AAIB regarding Coordination with Defence Authorities.....	16

1.19	Useful or effective Investigation Techniques	16
2.	Analysis	16
2.1.	General.....	16
2.2	Situational awareness and Human factors	17
2.2.1	ATCO.....	17
2.2.2	Flight Crew.....	17
2.3	Review of Co-ordination procedures with Defence forces	18
3.	Conclusion	18
3.1	Findings.....	18
3.2	Probable cause of the incident.....	19
4.	Safety Recommendations	19

GLOSSARY

AMSL	Above Mean Sea Level
APP	Approach Control
ATC	Air Traffic Control
ATPL	Airline Transport Pilot License
CAR	Civil Aviation Requirement
CPL	Commercial Pilot License
CVR	Cockpit Voice Recorder
DFDR	Digital Flight Data Recorder
DGCA	Director General of Civil Aviation
DEP	Departure
FDR	Flight Data recorder
FL	Flight Level
FOQA	Flight Operational Quality Assurance
FO	First Officer
Hrs	Hours
ILS	Instrument landing system
LOC	Localizer
MEL	Minimum Equipment list
MHz	Mega Hertz
ND	Navigation Display
NM	Nautical miles
PF	Pilot Flying
PIC	Pilot in Command
PM	Pilot monitoring
RA	Resolution Advisory
RWY	Runway
TA	Traffic Advisory
TCAS	Traffic alert and collision Avoidance system
UTC	Universal Time Coordinated
V _{FE}	Maximum Flap Extended Speed
VSI Airport	Veer Savarkar International Airport, Port Blair

SUMMARY

Final Investigation Report on Serious Incident of Airprox between Defence Helicopter and A319-112 Aircraft VT-SCV (AIC788) operated by Air India at VSI Airport, Port Blair on 02 Feb 2024				
1.	Aircraft	Operator	Indian Navy	Air India
		Type	ALH MK III	A319-112
		Call Sign	Examiner 7	AIC788
		Wake turbulence	Light	Medium
		Nationality	Indian	Indian
		Registration	IN714	VT-SCV
2.	Pilot – In – Command		Indian Navy pilot	ATPL holder
	Extent of Injuries		Nil	Nil
3.	Co-pilot		Indian Navy pilot	CPL holder
	Extent of Injuries		Nil	Nil
4.	Extent of Injuries to passengers & Cabin Crew		Nil	Nil
5.	Sector		Training Flight	VOPB-VECC
6.	Type of operation		Sortie	Schedule
7.	Phase of operation		Overflying (level flight)	Departure (Climb)
8.	Runway used		RWY 04	RWY 22
9.	Instruction given		Proceed outbound on Local Runway 04	On RWY22 heading climb to 4000 feet
10.	Date & Time of Incident		02.02.2024 & 02:58 UTC	
11.	Place of Incident		Port Blair Military Control Zone	
12.	Type of Occurrence		Infringement of Separation Minima (Air Proximity)	
13.	ATS Unit		Approach Radar	

SYNOPSIS

On 02.02.2024, Air India's A319 aircraft VT-SCV, scheduled to operate flight AIC788 from Port Blair to Kolkata, was ready for departure from RWY 22. At the same time, the Indian Navy operated ALH helicopter Examiner 7, which was conducting a training flight and performing a localizer approach at Port Blair for RWY 04, was cleared by the Approach Controller to proceed outbound of ILS at 2700 feet, falling in the take-off path of AIC788. Both the helicopter and AIC788 were given traffic information about each other. The Tower Controller coordinated with the Approach Controller to clear AIC788 for departure, with instructions to climb to 4000 feet on runway heading before turning right to its flight plan route.

The defence helicopter reported overhead and proceeded outbound as planned. Approximately one minute after the helicopter's report, AIC788 departed from RWY 22. After two minutes, at approximately 02:58:53 UTC, a Traffic Advisory was triggered in defence helicopter which performed a right turn to avoid the AIC788's take-off path. Simultaneously, AIC788 reported the traffic and initiated an avoidance maneuver.

Following the incident, AIC788 was cleared to continue climb and establish its planned route, to eventually reach flight level FL160. The defence helicopter discontinued its localizer approach and landed back, as authorized by the Approach Controller.

The occurrence was classified as a Serious Incident under the Aircraft (Investigation of Accidents and Incidents) Rules, 2017, and an investigation into the circumstances of this event was ordered vide no. INV-12011/1/2024-AAI dated 22.02.2024.

Unless otherwise indicated, recommendations in this report are addressed to the regulatory authorities of the State having the responsibility for the matters with which the recommendation is concerned. It is for those authorities to decide what action is to be taken.

1. Factual Information

1.1. History of Flight

On 02.02.2024, Air India flight AIC 788 was scheduled to depart from Veer Savarkar International Airport, Port Blair to Netaji Subash Chandra Bose International Airport, Kolkata. At the same time, Defence helicopter ALH MK III, was conducting a training mission in the north-east sector of the local flying area.

The helicopter planned to carry out an overhead ILS procedure for RWY04 and initiated rejoin from the north-east sector and requested approval from Approach on frequency 123.5 MHz to conduct the overhead ILS procedure, approved by the approach controller. At the time of incident, procedural separation was in effect, and the controller was handling 4 aircrafts. During this period the Tower issued line-up instructions to AIC788 for Runway 22.

The Tower Controller coordinated with the Approach Controller to clear AIC788 for departure. On the basis of Approach controller's instructions, the Tower controller amended the departure clearance for AIC788 to climb on runway heading to 4000 ft and subsequently advised to turn right to establish on its route to Kolkata. Further, Traffic information regarding the helicopter, approaching overhead for ILS approach was passed to AIC788.

Subsequently, at 02:54:34 Hrs, the approach controller instructed the helicopter to continue with the procedure and provided traffic information regarding the planned departure of AIC788 from Runway 22.

At 02:56:21 Hrs, the helicopter reported approaching overhead and proceeding outbound for the ILS letdown for RWY 04 which lies on the take-off path of RWY22. The controller did not take the radial and distance of helicopter from VOR.

At 02:56:46 the Tower issued take off clearance to AIC788.

Again, at 02:57:15 Hrs, Approach controller cleared the helicopter to proceed outbound and informed that AIC 788, at departure point is rolling and will be climbing on RWY heading to 4000 feet.

As the helicopter had proceeded on the outbound leg for a minute, the departing faster aircraft AIC 788 took off and caught up with helicopter at 2700 feet from its rear end. At 02:58:53 Hrs, the Helicopter reported TCAS TA alert at 2700 feet and turned right to keep clear of the take-off path of AIC788. At 02:59:24 Hrs, AIC788 contacted Approach and reported that the traffic was in sight and therefore it had descended. However, AIC788 did not receive any TCAS advisory.



Figure 1 Both Helicopter and AIC 788 came into close proximity and executed corrective maneuvers.

Once the traffic situation was resolved, AIC788 climbed and turned right to re-establish on its planned route, while the helicopter cancelled the ILS procedure and returned for landing.

On enquiry, the Approach controller clarified that both Controllers had passed respective traffic information to both aircraft and the approach controller was of the perception that AIC788 would be rolling immediately and will be ahead of helicopter on the departure heading, and accordingly the instructions were issued. However, helicopter appeared to be ahead of AIC788 on the outbound leg, as seen on the radar display.

It was observed that the helicopter was not visible on radar during the outbound leg until it was approximately 1-2 nautical miles out overhead and simultaneously the radar blip of departing AIC 788 also appeared on the radar display at 1 nautical mile of departure end. Further, radar identification was carried out only after both aircraft had completed the avoidance maneuvers post occurrence of the airprox event. On subsequent enquiry, it was stated by the ATC controller that the radar in use was a primary radar, which had inherent limitations, and was most likely the reason for the radar blip being lost from the display.



Figure 2 AIC788 continued its flight, while helicopter discontinued the approach.

During interview, the PIC of AIC788 clarified that after take-off, during the initial climb, SIC sighted the helicopter through the right windshield. The helicopter was unusually close and appeared to be climbing. As TA/RA were absent in ND and helicopter's actual position on the right-hand side differed from the expected position given by Port Blair ATC, the PIC maneuvered the aircraft to "See and avoid, in the given situation.

1.2 Injuries to persons

There was no injury reported to any of the occupants on board any of the aircraft.

1.3 Damage to Aircraft

Nil

1.4 Other damage

Nil

1.5 Personnel Information

AIC 788 and the defence helicopter were operated by appropriately qualified and licensed personnel as per the existing regulations.

INS Utkrosh (Indian Navy) is responsible for all air traffic operations over VSI Airport. Both the tower and approach controllers are from the Indian Navy and were appropriately qualified and certified to perform these duties on the date of occurrence.

Following the incident, an internal investigation was conducted by Indian Navy and training of approach Controller was undertaken to enhance operational safety and efficiency.

1.6 Aircraft Information

AIC 788 was airworthy and all pertinent documents/certificates for the aircraft's operation were valid as on the incident date. As per tech log, NAV RA 1 was faulty and carried forward under MEL before the incident flight and Nil sector snags reported.

As per records received from INS Utkrosh, the helicopter was fully serviceable and airworthy on the date of incident.

1.7 Meteorological Information

Weather as per the METAR at the time of incident was as follows:

Time (UTC)	Wind (Kts)	Visibility (m)	RVR (m)	Temperature (°C)	QNH (hPa)	Weather	Cloud
0300	050/09 G 16	5000	-	28	1015	BR	SCT 014 FEW 020 FEW 080
0330	050/09 G 14	5000	-	30	1015	BR	SCT 014 FEW 020 FEW 080

1.8 Aids to Navigation

All navigational aids were available at VSI Airport, Port Blair. The available primary radar was in use during the time of incident.

All navigation equipment on AIC788 were reported to be serviceable.

1.9 Communications

At the time of incident both aircraft were in contact with Approach on frequency 123.5 MHz. No abnormality was reported in any communication system.

Following is the salient extract from the transcript of ATC tape of communication between the aircraft (AIC788 & Examiner 7) with approach and tower.

1.9.1 RT Transcript between AIC 788 & Tower (Frequency 118.100 MHZ)

Time (UTC)	From	R/T call
02:54:20	Tower	AIC 788, enter lineup RWY 22 abeam W1. Correction W3
02:54:29	AIC 788	Lineup RWY 22 abeam W3, AIC 788
02:54:30	Tower	AIC 788, Amended clearance, after departure RWY 22, climb straight ahead 4000ft, turn right, establish on track. Traffic overhead at 2700ft type ALH, c/s Examiner 7
02:54:43	AIC 788	Revised departure Clearance, climb straight ahead 4000ft. turn right climb on track, AIC 788
02:56:41	Tower	AIC 788, winds 040 degrees 08kts RWY 22, clear for take off
02:56:46	AIC 788	RWY 22, cleared for take-off AIC 788
02:58:25	Tower	AIC 788, contact approach 123.5, good day

1.9.2. RT Transcript AIC 788, Examiner 7 & Approach (Frequency 123.500 MHZ)

Time	From	R/T call
02:54:04	Approach	Examiner 7, understand carrying out complete Localizer approach RWY 04 or proceeding direct outbound?
02:54:08	Examiner 7	We will proceed direct outbound, Examiner 7
02:54:09	Approach	Roger
02:54:29	Examiner 7	Approach- Examiner 7, you can advise us of the traffic, we will terminate as required
02:54:34	Approach	Helicopter, continue with procedure, there is one civil departure line up for RWY 22, they will be climbing on RWY heading to 4000ft
02:54:40	Examiner 7	Departure copied, understand inbound at 60 miles?
02:54:43	Approach	Inbound traffic at 65 miles
02:54:44	Examiner 7	Copied
02:56:21	Examiner 7	TWR- Examiner 7, Reporting overhead, setting course for outbound
02:56:24	Approach	Helicopter, Roger, traffic is lined up for departure 22, rolling shortly
02:56:29	Examiner 7	Traffic monitored, Helicopter
02:57:07	Approach	Examiner 7, Traffic rolling now, Air India, they will be climbing to 4000ft on RWY heading, thereafter turning right
02:57:13	Examiner 7	Copied, Examiner 7
02:57:15	Approach	Examiner 7, cleared to proceed outbound
02:57:17	Examiner 7	Cleared to proceed outbound, Examiner 7
02:58:37	Examiner 7	Approach Examiner 7
02:58:40	Approach	Examiner 7, Approach
02:58:41	Examiner 7	Confirm any deviation for the departure?
02:58:42	Approach	Negative, Departure is on RWY heading 22 will be climbing to 4000 ft & turning right
02:58:53	Examiner 7	Copied, we are at 2700ft we have a TCAS Alert
02:59:04	Approach	Roger traffic will be at runway heading climbing to 4000 ft, there after turning right, you are cleared to proceed outbound at 2700ft
02:59:10	Examiner 7	Copied
02:59:20	Approach	AIC788, Approach
02:59:21	AIC788	Go Ahead, AIC788

02:59:24	Approach	AIC788, turn right for W112 and Continue Climb FL160
02:59:33	AIC788	Standby AIC788
03:00:35	Approach	AIC788, turn right for W112 and report establish
03:00:40	AIC788	Port Blair, AIC788
03:00:41	Approach	Go Ahead
03:00:43	AIC788	We are 2700 ft right now
03:00:49	Approach	Confirm on runway heading 2700 ft, AIC788?
03:00:51	AIC788	Affirmative sir, we were very close to traffic on departure at 4000ft. we were very close to traffic
03:01:03	Approach	AIC788, on runway heading, you are advised to climb to 4000ft
03:01:06	AIC788	Sir, we were so close to the traffic you would see the traffic, you know it was bad controlling I am saying that we got a TCAS & we were visually in turning right, we were 100 ft below him
03:01:24	Approach	AIC788, Roger turns right for W112 & continue climb to FL 160
03:01:29	AIC788	Right to join W112, continue climb FL160 AIC788

1.10 Aerodrome Information

Veer Savarkar International Airport (IATA: IXZ, ICAO: VOPB) is an airport located 2 km south of Port Blair and the primary airport serving the Andaman and Nicobar Islands of India. Earlier known as Port Blair Airport, it was renamed in 2002 as Veer Savarkar International Airport. It operates as a civil enclave for civil flights, sharing airside facilities with INS Utkrosh of the Indian Navy.

Due to presence of impending hills on the north (N) and north-northeast (NNE) of the runway strip, Port Blair has unidirectional runway using RWY 04 for landing and RWY 22 for takeoff.

The airport has a single runway 04/22 with length and width of the runway as 3277 x45 M. The Passenger Terminal Building and apron are administered by the Airports Authority of India (AAI). Air Traffic Control (ATC) is managed by the Indian Navy's INS Utkrosh, a naval air station under the joint-services Andaman and Nicobar Command of the Indian Armed Forces. INS Utkrosh is responsible for all air traffic operations over Port Blair.

The Jurisdiction for control is:

- a) Tower Controller: Up to 10 NM radius from ARP up to 3000 ft AMSL or as pre coordinated between controllers.
- b) Approach Controller: Beyond 10 NM and above 3000 ft AMSL, extending up to 80 NM (up to FL 155) or as pre-coordinated between controllers.

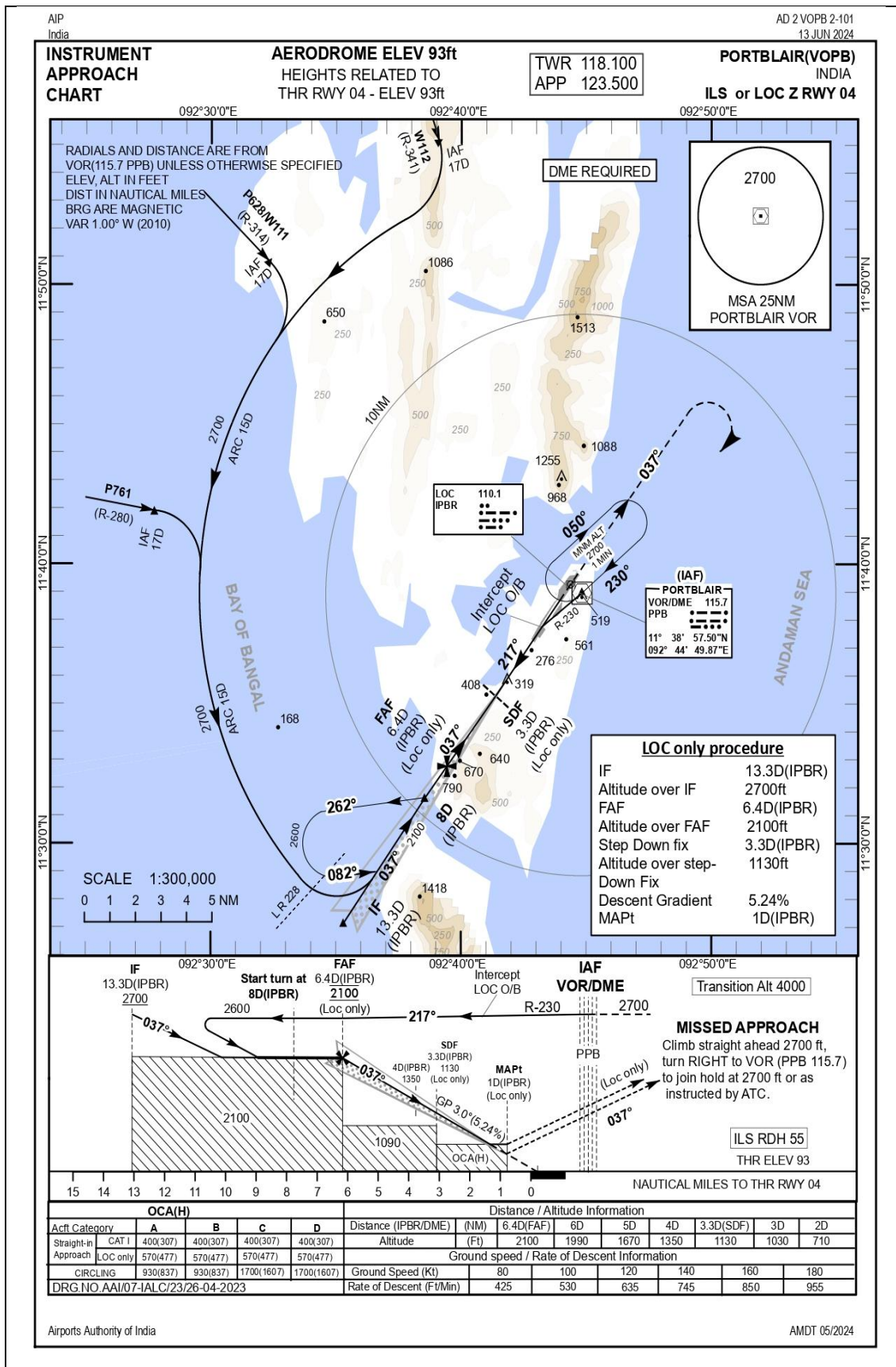


Figure 3 Instrument Approach RWY 04 via overhead

1.11 Flight Recorders

Both the aircraft were equipped with Flight Recorders.

1.11.1 Cockpit Voice Recorder (CVR)

AAIB requested CVR and DFDR data of the helicopter from Indian Navy and CVR recordings of the helicopter was shared with AAIB. It was confirmed from the CVR recording that the helicopter received “traffic traffic” alert and took a corrective turn and the controller did not check the radial and distance of helicopter from VOR when it was proceeding outbound.

Further, the CVR was installed in AI 788. However, by the time M/s Air India learnt of this event, the CVR recording for the flight was overwritten and was not available.

1.11.2 Digital Flight Data Recorder (DFDR)

DFDR data of AIC788 was provided. The data of the incident flight was analyzed and used in the investigation to corroborate with the other available evidence to confirm the findings and other factors leading to this incident.

Following salient observations were made-

Take-off was performed in Configuration 1, with the FCU altitude set to 4,000 ft. The autopilot was engaged after take-off.

While passing radio altitude 2,700 ft, autopilot was disconnected and PIC assumed manual control. During this phase, a descent was initiated at an indicated airspeed of 184 knots.

Subsequently, the flap lever was selected from position 1 to 0 at an airspeed of 199 knots. The aircraft adopted a nose-down attitude, resulting in a maximum recorded vertical speed of approximately 2,800 ft/min. Airspeed continued to increase, with flap retraction occurring at 209 knots.

During slat retraction, the airspeed exceeded the applicable V_{FE} of 230 knots. The slats were fully retracted at an airspeed of 249 knots. The aircraft subsequently levelled off at radio altitude 1855 ft before resuming a climb to 2,700 ft.

No EGPWS warning was generated. No TCAS Advisory was generated during the event.

Following the occurrence, a FOQA analysis was conducted by the operator. The flight crew received counselling related to the VFE exceedance.

1.12 Wreckage and Impact Information

There was no damage to either aircraft.

1.13 Medical and Pathological Information

The flight crew of AIC 788 had undergone preflight medical check prior to the flight, and no adverse medical conditions were reported for the crew.

1.14 Fire

There was no fire in either aircraft.

1.15 Survival Aspects

The incident was survivable.

1.16 Tests and Research

Nil

1.17 Organizational and management information

1.17.1 M/s Air India

M/s Air India Ltd. holds a valid Air Operator Certificate issued by the DGCA, valid until 30.06.2028. The airline operates a diverse fleet comprising Airbus A319, A320ceo and neo, A321ceo and neo, A350, as well as Boeing B777-200, B777-300 and B787-800 aircraft, serving both domestic and international routes.

1.18 Additional Information

1.18.1 Coordination procedure with Defence forces for investigation of occurrences

Para 6.3 of DGCA Civil Aviation Requirements, Section 5, Series C, Part I, stipulates the following on the investigation of Airprox incidents:

- *Airprox Investigation Boards (AIBs) shall be constituted and notified at all Regional Offices of the Air Safety Directorate, namely Delhi, Mumbai, Kolkata, Chennai, and Hyderabad. These teams are responsible for investigating all Airprox incidents and any other occurrences as directed by DGCA Headquarters within their respective regions.*
- *Each AIB will include a convener from DGCA, a member secretary, and a member from the ANS service provider, along with any additional members as deemed necessary.*
- *For cases involving Air Force pilots or Air Force ATCOs in an incident, the matter shall be referred to DGCA Headquarters who will facilitate the participation of Indian Air Force representatives in the investigation team.*

In this regard, a query was raised with DGCA regarding the investigation of occurrences and collection of evidence involving both civil and naval aircraft and personnel. In response, the DGCA confirmed that no formal SOP or Memorandum of Understanding has yet been established between the Ministry of Defence and the DGCA, and that a system currently exists for the exchange of safety-related data and information between the Indian Air Force and the DGCA. However, the existing procedures do not explicitly address coordination with other defence personnel, such as those from the Army or Navy, at present.

The Aircraft (Investigation of Accidents and Incidents) Rules, 2025 provide the requisite statutory authority to AAIB/DGCA to conduct inquiries into aircraft accidents and incidents. However, no formalized procedure exists between defence authorities and AAIB that govern the exchange of safety-related information, facilitate the collection of evidence by investigation personnel and enabling access to defence premises particularly in cases involving military personnel or aircraft operating in civil enclaves and civil aircraft operating in military airfields.

In the absence of such a formalized mechanism, obtaining of data/ evidence directly from the Naval Air Station at Port Blair did not materialize during the initial phase of this investigation. However, Indian Navy subsequently provided the required information and remained cooperative and supportive throughout the course of the investigation. In few other cases, investigations are yet to be closed due to non-availability of evidence from Indian Air force.

1.18.2 Past Recommendations by AAIB regarding Coordination with Defence Authorities

During its previous accident investigations, the AAIB encountered challenges arising from the non-availability of essential evidence from defence authorities. The absence of such evidence has created substantial difficulties in corroborating witness statements, particularly when discrepancies or conflicting accounts arise. In view of these recurring issues, the AAIB had issued recommendations to establish clear procedures with Defence authorities for the exchange of information, evidence, CAR requirements as per the mandate.

The relevant recommendations from the previous two accident investigations are quoted below:

Accident Involving Directorate of Aviation, Government of Madhya Pradesh (DoA, GoMP), SKA B200GT Aircraft VT-MPQ at Gwalior Airport on 06.05.2021

Safety Recommendation 4.3 (XVI) stated that DGCA may like to formulate a methodology to apprise the Defence authorities on a periodic basis about all the DGCA requirements w.r.t to Aerodrome Standards, videography of ARFF activity post an accident, blood & urine test of the surviving flight crew after the accident.

Safety Recommendation 4.3 (XVIII) stated that the DGCA may ensure that all instrument approach charts published by the Defence authorities are made available in AIP India to ensure that current charts are used by the flight crew.

Accident involving M/s Falcon Aviation Academy, Cessna-152 Aircraft VT-PTE on 05.01.2023 at Umari Village Near Rewa, Madhya Pradesh.

Safety Recommendation 4.10 stated that AAIB may co-ordinate with defence authorities as deemed fit to ensure that the information/evidence are made available to AAIB in time for conduct of aircraft accident investigations as per the prevalent Rules.

Implementation of above safety recommendations is in progress.

1.19 Useful or effective Investigation Techniques

Nil

2. Analysis

The analysis was carried out based on the available evidence such as crew & controllers' statements, ATC Tape, DFDR data of AIC788, CVR data of defence helicopter and RADAR display.

2.1. General

AIC 788 held a valid Certificate of Registration, Certificate of Airworthiness, and all other relevant certifications at the time of the incident.

The crew of AIC788 possessed valid licenses, fulfilled all operational requirements, and their medical records were current as of the date of the occurrence.

The weather at the time of incident was acceptable with visibility 5000m and did not contribute to the occurrence.

The approach controller was radar rated and possessed valid certification.

2.2 Situational awareness and Human factors

2.2.1 ATCO

The approach controller was handling 4 aircraft at the time of incident. Procedural separation was in effect. The departing aircraft AIC 788 was in contact with the Tower controller while Examiner 7 was maintaining the approach frequency. No discrepancy was observed in the frequency. Respective controllers passed traffic information to both the aircraft. Statement of the approach controller revealed that the departure clearance of AIC788 on RWY heading, on the same track as followed by helicopter was based on the individual perception, that AIC 788 would commence take-off roll immediately and remain ahead of Examiner 7 in its outbound phase.

Further, at the time of the occurrence, the radar system in use was a primary surveillance radar. Examiner 7, during the ILS approach procedure while overhead the field, did not paint on the radar due to the limitations of the primary radar. As a result, Examiner 7 blip after being lost on the radar display did not appear until approximately 1-2 nautical miles from the overhead position.

Simultaneously the radar blip of departing AIC 788 also appeared on the radar display at 1 nautical mile of departure end.

The Examiner 7 re-identification on return of the blip on the radar display and labelling could only be achieved after the occurrence of this event.

Also, approach controller did not ensure the position of the Examiner 7 by asking radial and distance from VOR while AIC788 was given take off clearance by tower controller in coordination with the approach controller. This reduced the approach controller's situational awareness.

From the above, it is evident that, once the initial instructions were issued, the approach controller did not sufficiently re-evaluate the evolving traffic situation to recognize that the actual traffic order differed from the expected sequence, and that the controller's inadequate situational awareness was influenced by the limitations of the Primary Surveillance Radar system.

Post-incident, Approach controller's training was conducted in accordance with INS Utkrosh's internal investigation findings.

2.2.2 Flight Crew

A review of the available evidence indicates that helicopter was operating ahead of AIC 788 on the same track and in the same direction of flight, while AIC 788 was in the takeoff and initial climb phase. Examiner 7 received a Traffic TCAS alert and subsequently altered its course to the right to mitigate a perceived flight path conflict.

During the climb, SIC of Aircraft AIC 788 visually acquired the helicopter's position through the right windshield. The helicopter was sighted unusually close and positioned ahead of AIC 788, with an apparent climbing profile.

In response to this perceived threat, the Pilot-in-Command disconnected the autopilot and initiated a nose-down maneuver. This action resulted in a rapid descent, with the rate of descent reaching a maximum of approximately 2,800 ft/min. AIC 788 subsequently leveled off at approximately 1,855 ft. During the ensuing forced descent, aircraft speed increased to

approximately 245 knots while in CONF 1 configuration, triggering a V_{FE} overspeed warning. Post evasive maneuver, AI788 Crew informed ATC regarding their close proximity to the helicopter and reported that they received a TCAS alert. However, FDR and crew during interview confirmed that no TCAS was generated. Actions by crew were solely based on visual contact with the Helicopter.

Further, it was observed from the RT transcript that AIC788 crew made an inappropriate comment regarding ATC controlling.

From the above, it is evident that AIC788 crew's action was primarily influenced by visual acquisition of the helicopter's position. This was amplified by limited maneuvering margins during the critical phase of takeoff, and the sudden sighting of traffic most likely induced an avoidance response.

Post incident, the crew of AIC 788 were counselled.

2.3 Review of Co-ordination procedures with Defence forces

Examination of the existing coordination mechanisms with defence forces revealed that the Aircraft (Investigation of Accidents and Incidents) Rules, 2025, provide the necessary statutory authority to the AAIB/DGCA to conduct inquiries into aircraft accidents and incidents involving all civil aircraft in context of ICAO annex 13.

While certain coordination procedures exist with the Indian Air Force, there is currently no formalized mechanism for the exchange of safety-related information between Defence authorities namely the Indian Air Force, Indian Army, and Indian Navy with the investigation authorities i.e AAIB and DGCA.

Further, DGCA has prescribed procedures for investigation of Airprox incidents in its CAR Sec 5 series C part I for cases involving only Air Force pilots or Air Force ATCOs in an incident.

In the absence of such a formalized mechanism, difficulties were encountered in obtaining the evidence from Naval Air Station at Port Blair during the initial phase of this investigation. However, the Indian Navy subsequently provided the required information and remained cooperative and supportive throughout the course of the investigation.

Although AAIB has previously issued recommendations regarding coordination with defence authorities as part of its investigation reports into the accident to VT-MPQ at Gwalior Airport on 06.05.2021 and the accident to VT-PTE at Umari on 05.01.2023. These recommendations are yet to be implemented.

The absence of a formalized coordination framework may limit or hinder the timely exchange of safety-critical information essential for effective investigations under other circumstances.

3. Conclusion

3.1 Findings

- 3.1.1 Both the aircraft were airworthy at the time of incident.
- 3.1.2 The crew of both the aircraft had fulfilled requirements to operate the flight.
- 3.1.3 Both Tower and approach controller was qualified to provide air traffic services as on the date of incident.
- 3.1.4 The weather at the time of the incident was within the operating limits.

- 3.1.5 No abnormality was reported in any communication system.
- 3.1.6 Procedural separation was in effect.
- 3.1.7 The Approach Controller was handling moderate traffic.
- 3.1.8 The controller gave instructions based on the consideration that AIC 788 will commence take off roll immediately and will be ahead of helicopter.
- 3.1.9 The Approach controller did not ascertain the exact position of the helicopter when it reported overhead.
- 3.1.10 Inherent limitation of primary surveillance radar equipment to capture overhead position reduced the controller's ability to positively monitor the helicopter's position and progress.
- 3.1.11 During incident, the helicopter received a traffic TCAS alert and subsequently altered its course to the right to mitigate a perceived flight path conflict.
- 3.1.12 Post-incident, Approach Controller training was conducted in accordance with INS Utkrosh internal investigation findings.
- 3.1.13 Crew of AIC 788 did not receive any TCAS TA or RA. Actions by crew were solely based on visual contact of the Helicopter position as sighted by the co-pilot.
- 3.1.14 PIC of AIC788 engaged in undue conversation with the controller.
- 3.1.15 During the ensuing forced descent, the speed of aircraft AIC 788 increased to approximately 245 knots while in CONF 1 configuration, due to which a VFE overspeed warning was triggered.
- 3.1.16 Post incident, Crew of AIC 788 were counselled.
- 3.1.17 DGCA CAR section 5 Series C part I describe procedures for investigation of Airprox incidents in cases where Air Force pilots or Air Force ATCOs are involved in an incident and does not include other defence forces. Further, no procedures are defined for other types of occurrences.
- 3.1.18 No formalized mechanism for the exchange of safety-related information exists between defence authorities especially the Indian Airforce, Indian Navy, and Indian Army with the AAIB and DGCA. Although, AAIB has previously issued recommendations on coordination with defence authorities in its investigation reports into the accidents involving VT-MPQ at Gwalior Airport on 06.05.2021 and VT-PTE at Umari on 05.01.2023; these recommendations are yet to be implemented.

3.2 Probable cause of the incident

The probable cause of the incident was inadequate assessment of the traffic situation by the approach controller which resulted in reduced separation and close proximity between the departing aircraft and the overflying helicopter.

4. Safety Recommendations

- 4.1 In view of finding 3.1.10, considering the increased traffic, Indian Navy may consider the provision of secondary radar system at Port Blair with the capability to aid the controller in managing the traffic efficiently while avoiding similar situations.
- 4.2 In view of finding 3.1.18, Recommendations from previous investigation reports regarding coordination with defence authorities should be implemented on a priority basis, and a

formal framework for collaboration between DGCA/AAIB and defence authorities should be established. This will ensure that the regulations are followed for the investigations conducted under the Aircraft (Investigation of Accidents and Incidents) Rules 2025 and relevant DGCA CAR.

- 4.3 In view of finding 3.1.17, DGCA may review and suitably amend the CAR Section 5 Series C part I to include the procedures to investigate incidents /accidents conducted under Aircraft (Investigation of Accidents and Incidents) Rules, 2025 in case of occurrences involving defence aircraft or occurrences in defence aerodrome.
- 4.4 In view of finding 3.1.14, Air India may sensitize their flight crew on importance of adhering RT discipline.