



**GOVERNMENT OF INDIA  
MINISTRY OF CIVIL AVIATION**

**FINAL INVESTIGATION REPORT OF SERIOUS INCIDENT  
(PILOT INCAPACITATION) TO M/S JET AIRWAYS B-737  
AIRCRAFT VT-JFA WHILE OPERATING FLIGHT 9W-63  
(BANGKOK – DELHI) ON 07/05/2015**

**AIRCRAFT ACCIDENT INVESTIGATION BUREAU  
SAFDARJUNG AIRPORT  
NEW DELHI – 11003**

## **Foreword**

This document has been prepared based upon the evidences collected during the investigation, opinion obtained from the experts and laboratory examination of various components. The investigation has been carried out in accordance with Annex 13 to the convention on International Civil Aviation and under the Rule 11 of Aircraft (Investigation of Accidents and Incidents), Rules 2012 of India. The investigation is conducted not to apportion blame or to assess individual or collective responsibility. The sole objective is to draw lessons from this incident which may help to prevent such future accidents or incidents.

**INDEX**

<b>1.</b>	<b>FACTUAL INFORMATION</b>	<b>2</b>
1.1	History of Flight	2
1.2	Injuries to Persons	4
1.3	Damage to Aircraft	4
1.4	Other damage	4
1.5	Personnel information	5
1.6	Aircraft information	5
1.7	Meteorological information	5
1.8	Aids to Navigation	5
1.9	Communications	5
1.10	Aerodrome information	6
1.11	Flight recorders	6
1.12	Wreckage and impact information	6
1.13	Medical and pathological Information	6
1.13.1	Medical History (PIC)	6
1.13.2	Medical Evaluation	7
1.14	Fire	8
1.15	Survival aspects	8
1.16	Tests and research	8
1.17	Organizational and management information	8
1.18	Additional information	8
1.18.1	Jet Airways SEP - Crew Member Incapacitation	8
1.18.2	Operations Manual - Crew Member Incapacitation	11
1.18.3	B737 QRH – Pilot Incapacitation	13
1.18.4	Syncope - ICAO Manual of Civil Aviation Medicine	13
1.19	Useful or effective investigation Techniques	14
<b>2.</b>	<b>ANALYSIS</b>	<b>15</b>
2.1	General	15
2.2	Operational Regulation in case of incapacitation	15
2.3	Operational handling of the flight	16
2.4	Medical scenario & probable reason	17
<b>3.</b>	<b>CONCLUSIONS</b>	<b>18</b>
3.1	Findings	18
3.2	Probable cause of the Incident	20
<b>4.</b>	<b>SAFETY RECOMMENDATIONS</b>	<b>20</b>

**FINAL INVESTIGATION REPORT OF SERIOUS INCIDENT (PILOT INCAPACITATION) TO M/S JET AIRWAYS B-737 AIRCRAFTVT-JFAWHILE OPERATING FLIGHT 9W-63 (BANGKOK – DELHI) ON 07/05/2015**

1.	Aircraft Type	B-737
2.	Nationality	INDIAN
3.	Registration	VT - JFA
4.	Owner	Celestial Aviation Trading Limited
5.	Operator	Jet Airways Ltd
6.	Pilot – in –Command	ATPL Holder
7.	Place of incident	While operating flight (Bangkok – Delhi)
8.	Last point of Departure	Bangkok
9.	Intended place of Landing	Delhi
10.	Date of incident	07.05.2015
11.	Passengers on Board	121
12.	Extent of Injuries	NIL
13.	Crew on Board	02+04
14.	Extent of Injuries	NIL
15.	Phase of Operation	Cruise
16.	Type of Incident:	Pilot Incapacitation

(All timings in the report are in UTC unless otherwise mentioned)

## **1. FACTUAL INFORMATION**

### **1.1 History of the flight**

An incident of pilot incapacitation (Pilot in Command) occurred while operating Jet Airways flight 9W-63 from Bangkok to Delhi of 07.05.2015. There were 121 passengers and 06 crew members on board. The flight was completed by the First Officer with the help and assistance of ACM (A-330 commander) on board.

The aircraft took off from Bangkok at 1405 UTC. The departure was uneventful and the aircraft climbed to a cruising altitude of 36000 ft. The aircraft had then entered Kolkata airspace (FIR). After about 01 hr 30 minutes (around 1535 UTC) of flight the PIC was served with Salad, Soup and Curd and as per the PIC after about 15 minutes of having salad, soup and curd, he started feeling uneasy with cramps developing in his lower abdomen. These were reduced in intensity once the seat was reclined back. By 1600 hrs UTC, the PIC handed over the control to the First Officer and in order to ease his situation he stepped out of the cockpit, after one of the cabin crew entered into the cockpit.

As per IFE, the PIC came out of the cockpit and was looking unwell. He complained of indigestion and sat down on the jump seat. PIC advised the IFE to page for a doctor. She immediately paged for the doctor and started primary survey. In the mean time a cabin crew came with the first aid kit. As per the primary survey carried out, the PIC was conscious with carotid pulse less than 10 seconds. There was no active bleeding. One of the cabin crew was present as a back up with the oxygen bottle, first aid kit etc. Meanwhile another cabin crew came with the doctor but the doctor did not have his credentials.

The IFE in the meantime also informed the first officer that the PIC is not feeling well. As per the First officer, he contacted Kolkata ATC, took the latest weather and informed the Kolkata dispatch that his PIC is not feeling well. One of the commanders on A330 working with jet Airways was flying as ACM on the flight. He was requested if he can be inside the cockpit for his assistance. The

ACM occupied the observer seat to assist the first officer with the RT and non - essential work load management in the cockpit.

Secondary survey of the PIC was carried out. There was no history of high blood pressure, heart attack, asthma or diabetes. His pupils were normal. Temperature was checked and was 98.3° F. The pulse of PIC was regular which is 75, respiration was 15 and skin color was normal. The doctor confirmed that everything is normal and advised to give the PIC some orange juice or aerated drink. Orange juice was given to the PIC.

Thereafter, PIC went to the washroom and puked. IFE offered the PIC medicine available in the first aid kit as she suspected that the PIC might have food poisoning. However PIC refused the same and asked for two tablets of Digene with a glass of coke.

By 1625 hrs UTC, the PIC returned to the cockpit as he was feeling better and resumed the flight. The First officer requested the ACM to remain in the cockpit till touchdown for any further assistance if required. In the mean time the aircraft transitioned from Kolkata FIR to Delhi FIR uneventfully. At around 1700 UTC both the first officer and the ACM noticed that the PIC was absolutely unresponsive and shivering. PIC was therefore taken out of the cockpit by the ACM with the assistance of cabin crew. PIC was seated on the jump seat and oxygen was administered to him which continued till landing. The IFE checked the captain's pulse, which was irregular and he was sweating profusely and complained of stomach cramps and nausea. IFE advised one of the cabin crew to call the doctor and bring him along. After discussions with the doctor, PIC was given Disprin tablet and Sorbitrate tablet sub lingually.

Later, PIC was made to sit on 3F with one of the cabin crew on 3D with the oxygen bottle. Doctor was seated on 3C. The captain was given another sorbitrate tablet as his condition was the same. Thereafter his condition improved.

In the meantime the first officer declared MAYDAY with a request for priority landing in to Delhi. Request was also made for medical services and assistance for towing the aircraft from the runway as neither the ACM nor the first

officer were authorized to use the tiller. The first officer then requested the ACM to occupy the left seat and briefed him on approach and arrival into Delhi. The ACM assisted in the descent management and generic preparations for post landing activities. On the advice of ACM, the APU was also switched on and kept running as the main engines would have been shut down for towing the aircraft.

The aircraft was cleared for landing into Delhi on ILS 28. Preparations were made and CAT I auto land for ILS 28 into Delhi was executed. After the aircraft was adequately decelerated and stabilized on the runway center line, the auto pilot and auto breaks were disconnected. The aircraft was manually brought to the taxi speed and runway was vacated on the high speed exit “M”. Once clear of the active runway, the APU was taken online and both the engines were shut down.

The aircraft was towed from exit “M” runway 28 to stand “D51” with the help of a tow truck. Follow me services and all emergency vehicles escorted the aircraft till the parking stand. The PIC was the first one to deplane and was received by the operator’s medical and ground staff.

**1.2 Injuries to persons.**

<b>INJURIES</b>	<b>CREW</b>	<b>PASSENGERS</b>	<b>OTHERS</b>
<b>FATAL</b>	Nil	Nil	Nil
<b>SERIOUS</b>	Nil	Nil	NIL
<b>MINOR/NONE</b>	06	121	----

**1.3 Damage to Aircraft.**

Nil

**1.4 Other Damage:**

Nil

**1.5 Personnel information:**

Both the PIC and the co-pilot were appropriately licenced and were experienced on A-320 aircraft.

**1.6 Aircraft information:**

The aircraft was manufactured in July 2012. The aircraft was registered with DGCA under the ownership of M/s Celestial Aviation Trading Limited. The aircraft is registered under Category 'A' and the Certificate of registration No. 4345. The Certificate of Airworthiness Number 6454 under "Normal category" subdivision Passenger / Mail / Goods was issued by DGCA on 19.07.2012. The specified minimum operating crew is two and the maximum all up weight is 79,015 Kgs. At the time of incident the Certificate of Airworthiness was current.

The aircraft and its engines were being maintained as per the maintenance program consisting of calendar period/ flying Hours or Cycles based maintenance as per maintenance program.

**1.7 Meteorological information:**

Not applicable

**1.8 Aids to navigation:**

The flight was from Bangkok to Delhi. In between at the time of occurrence the flight was in the Kolkata FIR. All these airports are having required navigational aids and no NAVAID was under NOTAM.

**1.9 Communications:**

Two way communications was always maintained and was satisfactory throughout the flight.



### **1.10 Aerodrome information:**

Not Applicable

### **1.11 Flight Recorders:**

The aircraft was equipped with SSCVR and SSFDR. The SSCVR could not be removed for investigation purposes and the aircraft had operated a flight after the incident

### **1.12 Wreckage and impact information.**

Nil

### **1.13 Medical and pathological Information:**

The flight was an international arrival flight originating from Bangkok so no preflight medical check was carried out at Bangkok. Post flight breath analyzer test on both the flight crew members was carried out after landing at Delhi. The results were negative.

#### **1.13.1 Medical History (PIC)**

As per the records maintained in DGCA, the medical documents of the PIC were scrutinised from 20<sup>th</sup> Dec 2012 onwards. It was revealed that PIC is an old case of Right Bundle Branch Block since age of 18 years.

Para 1.7.1 of ICAO Manual of Civil Aviation Medicine on Right Bundle Branch Block states that –

“Incomplete right bundle branch block is a common anomaly that carries a normal prognosis in otherwise normal subjects. It is seen in one to three per cent of professional aircrew. No special precautions are needed”.

His last medical examination was conducted on 2<sup>nd</sup> Dec 14 by Class I Medical Examiner and was assessed Fit by DGCA.

### **1.13.2 Medical Evaluation**

After the incident, the PIC was evaluated at Corporate Hospitals New Delhi by Cardiologist and Neurologist. Following are the results of his medical evaluation:

- a. ECG showed RBBB (Old Finding)
- b. 2D Echocardiography – Normal
- c. TMT – Normal
- d. 24 Hrs Holter – Normal
- e. 24 Hrs Ambulatory BP - Normal
- f. Stress MPI – Normal
- g. Head up Tilt Test Negative for vasodepressor response
- h. USG Abdomen – Normal
- i. Carotid Doppler – Normal
- j. EEG – Normal
- k. MRI Brain – Matured Lacunae in the Middle Cerebral Artery Territories Bilaterally (Age elated changes)
- l. Hemogram, Blood Biochemistry and Urinalysis - Normal

He was asymptomatic during evaluation procedures and was advised Plenty of Oral Fluids with extra Salt and Vitamin Tablet.

The reason of the incapacitation during flight was diagnosed as a single episode of Syncope precipitated by a bout of Gastroenteritis.

Afterwards he was referred to AFCME New Delhi for Special Medical Examination. After evaluation Temporary Unfitness was given for 03 months. He was again evaluated at AFCME New Delhi on 18 Sep 15 and was assessed Fit for Pilot in Command with Qualified Experienced Pilot.

**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:**

The aircraft was operated by an SOP holder holding a valid SOP with the aircraft endorsed. The maintenance of the aircraft is carried out under CAR 145 approval.

**1.18 Additional information:**

**1.18.1 Jet Airways SEP - Crew Member Incapacitation**

- **Pilot Incapacitation**

Pilot incapacitation is defined as a specific condition of decline or loss of a crew member's mental or physical ability in performing normal or emergency duties. Early recognition of incapacitation is critical to a safe flight.

- **Subtle incapacitation or partial loss of function.**

It may be transient or progress to medical disorder involving a partial loss of function. The first sign that a crew member is afflicted would probably be his departure from the desired flight path or standard operating procedure. Obviously the subtle or partial loss of function is harder to detect and deal with. Other crew members may not suspect that something is amiss. The real danger is that the other pilot may not take over the controls in time to prevent an accident due to reluctance, inexperience or lack of appreciation that something is wrong.

Examples of possible causes:

“Psychosocial problems, preoccupation with personal problems, fatigue, low blood sugar, hypoxia, and recent use of certain drugs and consumption of alcohol”.

If the incapacitated crew is placed in passenger’s seat, the surroundings passengers in the immediate vicinity should be reassured as apprehensions from passengers would be expected. Passengers in the immediate area should be reassured that things are under control.

It is desirable to move passengers away from the seat adjacent to the one occupied by the incapacitated crew. He should not be placed at exits as this can obstruct evacuation. In the event of a full load, passengers may be reshuffled.

- **Procedure after the incapacitation has occurred:**

Once the incapacitation is identified, the other pilot has to take care of the following:

- 1) Assure a safe Condition of flight.**

- Take control of the aircraft, use of auto pilot.
- Check position of all essential switches and controls
- Declare an emergency explaining situation to the IFE and ATC.

(The old fear of a pilot slumping over the controls has been overstated. The position of the glare shield makes it difficult for an unconscious body, restrained by an ordinary lap belt, to reach these controls. The vulnerable area is the centre pedestal)

- 2) Take care of the incapacitated crew.**

- Restrain the crew in the seat and slide the seat AFT.
- The cabin crew should be summoned over the PA. “IFE to report to cockpit immediately”.

- Provide First Aid. (This responsibility should be assigned to the cabin crew and if possible, any prolonged first aid should be administered outside the cockpit. Seek the assistance of any doctor on board.)
- Have the affected crew member removed from the seat. (If shoulder harness is not engaged they may be engaged and tightened bearing in mind the inertial reel has a manual lock until full assistance becomes available. A temporary good method is to recline the seat rearwards. The horizontal lever near the floor seat rail, when operated can sometimes slide the seats forward especially with a forward slumping body).

### **3) Prepare cockpit for landing.**

- Request medical assistance to be provided on landing.
- Perform approach and final check earlier than normal.
- Fly the aircraft from your normal position, do not change seats
- Request assistance from ATC and make an autopilot coupled approach If possible.
- Fly a completely autopilot assisted approach and disengage the autopilot when airfield is in sight and landing is assured in terms of a stabilized profile.
- Properly prepare the cockpit for landing with an entirely normal aircraft. Do not order the cabin crew for an emergency evacuation.

### **4) Plan procedure after landing.**

- After the aircraft has stopped on the runway and brakes are set, change seat to taxi, if necessary.
- Get incapacitated crew member off loaded to the ambulance as quickly as possible. This could be at the gate/bay.

## **5) Cabin Crew Actions:**

- Remove the incapacitated crew into the cabin (galley), if possible and administer further first aid. Remove his identity. It takes two people to remove the dead weight of an unconscious person from an aircraft seat without endangering any control switches. A major reason for recommending that incapacitated crew be removed from cockpit is to reduce the distraction his/her presence would have on the remaining crew.
- Page for medical assistance on board.
- Check if a type qualified company pilot is on board to replace the incapacitated crew.
  - ✓ Remove pilot away from the control panels. Lock and harness seatbelt. Recline seat, administer first aid remove pilot from the flight deck if necessary
  - ✓ Administer oxygen from the cockpit oxygen system.
  - ✓ Activate medilink.

### **1.18.2 Operations Manual - Crew Member Incapacitation**

Para 17.3.12.3 of the Operations Manual Part 'A' General contains Standard Operating Procedures (Flight Procedures) which in turn contains action in the event of pilot incapacitation and are as follows :

The recovery from a detected pilot incapacitation shall follow the sequence below:

#### **1) Assure a safe condition of flight**

- Take control of the aircraft, use the auto-pilot
- Check position of all essential controls and switches
- Inform ATC and declare an emergency
- Call the cabin crew member to the cockpit immediately for assistance in restraining the incapacitated pilot, so as to ensure

that the incapacitated pilot cannot interfere with the handling of the aircraft. The simplest and most effective way to summon help is via the PA system: "CABIN CREW TO REPORT TO THE COCKPIT IMMEDIATELY".

- Restrain the crew member in the seat and slide the seat aft
- Have the affected crew member removed from the seat, if possible

## **2) Take care of the incapacitated crew member**

- Provide first-aid (this responsibility should be assigned to the cabin crew and is possible any prolonged first-aid should be administered outside the cockpit)
- Seek the assistance of any doctor on board
- Request medical assistance to be provided on landing

## **3) Seek assistance from ACMs pilot on board –**

as per succession of command

## **4) Prepare flight deck for landing**

- Perform approach and final checks earlier than normal
- Fly the aircraft from the fit pilot normal position: do not change seats unless necessary due to abnormal failure and qualified to occupy the other seat.
- Request assistance from ATC if necessary and make an autopilot coupled approach, if possible
- Fly a completely autopilot assisted approach, and execute an auto land landing if available. Disengage the autopilot only when the airfield is in sight and landing is assured in terms of a stabilized profile.
- If incapacitation occurs during an approach to land, the remaining pilot may continue the planned approach if he considers that the approach and landing can be completed safely.

### **5) Plan procedure after landing**

- After the aircraft has stopped on the runway and breaks are set, change seat to taxi, if necessary. Taxiing from unfamiliar seat is not permitted.
- Requests tow truck if unable to taxi.

### **1.18.3 B737 QRH – Pilot Incapacitation**

As per the Boeing Quick Reference Handbook under the heading pilot incapacitation, in addition to informing ATC about the emergency with degree and nature of incapacitation of the flight crew, request for medical assistance on arrival should be requested. Further it mentions that, if required, the crew should consider diverting to a suitable airport.

### **1.18.4 Syncope - ICAO Manual of Civil Aviation Medicine**

As per para 1.18.1 of ICAO Manual of Civil Aviation Medicine, the mechanism is global cerebral hypo perfusion due to a number of causes. As a rule, recovery is spontaneous and complete but although recovery to consciousness is usually rapid, full return of intellectual function may be delayed. Depending on cause, syncope may be abrupt and without warning, or there may be a prodrome (presyncope) of variable length with symptoms such as nausea, weakness, light-headedness and visual disturbance”.

Para 1.18.9 mentions that sufficient investigation of suspected vasovagal syncope is needed to exclude other causes and establish the diagnosis. An exercise and 24-hour (Holter) ECG and echocardiography, should be undertaken and be within acceptable limits. An electroencephalogram (EEG) and brain CT/MRI scan are not indicated, unless there is doubt as to the cause. The head-up tilt test, in which the subject is raised from the supine position to an angle of 60-70 degrees for 45 minutes, is the procedure of choice if tilt table testing information is thought necessary to improve the certificatory decision.



Further para 1.18.12 states that the aviation environment is one that is marked by fatigue due to disrupted sleep, circadian stress, and at times high temperatures and humidity in places that are visited. There is also a significant risk of gastroenteritis which may provoke an episode in a vulnerable individual.

Regarding certification para 1.18.14 advises that restricted certification after a single episode may be permitted after an interval, arbitrarily of three to six months with full certification no sooner than five years after the attack, provided there has been no recurrence. Aircrew in whom the diagnosis has been made need to be counseled about the condition and told when attacks are likely to occur and how to manage them should they do so.

**1.19 Useful or effective investigation techniques:**

Nil

## **2. ANALYSIS:**

### **2.1 General**

- Both the operating crew were appropriately licensed and qualified to operate the flight. As per the records maintained in DGCA, PIC is an old case of Right Bundle Branch Block since age of 18 years. Post flight breathanalyser test was carried out at Delhi and nothing adverse was detected for any of the flight crew.
- The aircraft was having a Valid Certificate of Airworthiness at the time of incident. The Aircraft held valid Certificate of Release to Service which was issued at the airport of departure. Airworthiness Directive, Service Bulletins, DGCA Mandatory Modifications has been complied with.
- The weather at the airport at the time of incident was fine and is not a contributory factor to the incident.

### **2.2 Operational regulations in case of incapacitation**

Jet airways Safety and Emergency procedures as well as operations manual part A contains the actions required by the flight crew and cabin crew in order to carry out the safe landing. Once the incapacitation has been identified including the subtle incapacitation or partial loss of function the crew assures a safe condition of the flight and takes care of the incapacitated crew. In addition the remaining flight crew prepares cockpit for landing along with the planning of procedures after landing. The ops manual also requires that assistance may be taken of ACM if one is onboard.

In the present case the procedure as detailed in the above two documents were followed. The above documents do not refer about the earliest landing in case of flight crew incapacitation. Boeing QRH under the heading pilot incapacitation mentions that the crew should consider diverting to a suitable airport.

There are no regulations (CAR etc) on the subject except a requirement that training of flight crew should also include actions in case of incapacitation.

There are no details of the training to be imparted nor are there any operational regulations. In the present case though no untoward incident has happened but it is opined that the aircraft should have diverted to Kolkata when the first subtle incapacitation of PIC was observed or to Lucknow when the PIC had second bout of incapacitation.

### **2.3 Operational Handling of the Flight**

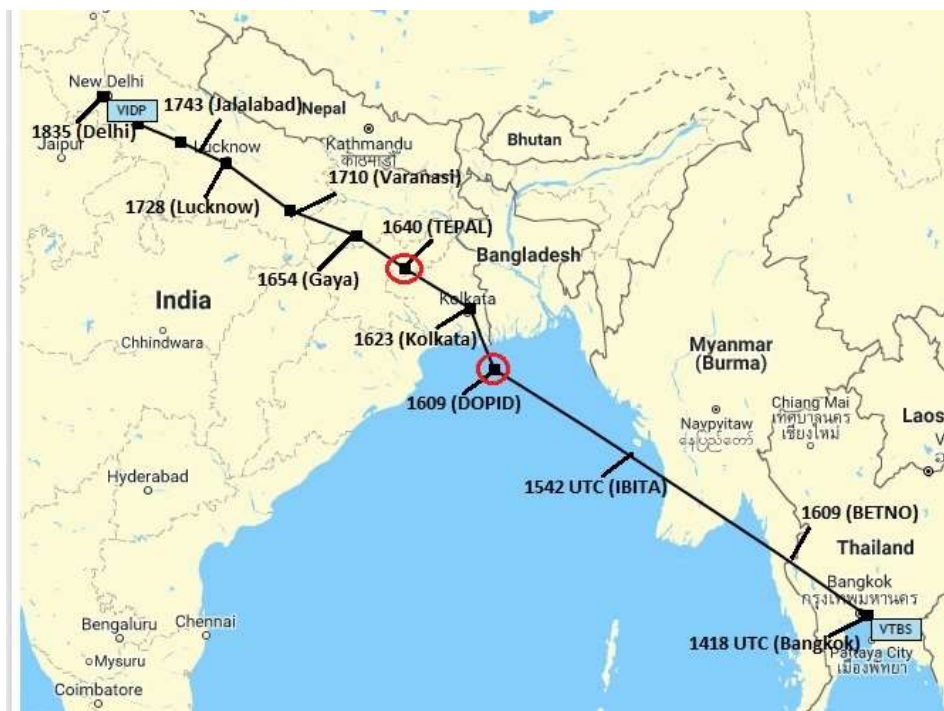
The flight 9W-063 departed Bangkok (Suvarnabhumi) at 1418 UTC for New Delhi. Enroute at 1550 UTC (approx.), the PIC started feeling uneasy after consuming a meal (Salad & Soup). At 1600 UTC (approximately), the PIC left the flight deck to ease himself. In flight ACM (an A330 Commander) went inside the cockpit for assisting the First Officer with his duties and together decided to continue the flight after asking the PIC.

Thereafter PIC on exiting the wash room sat on the cabin crew seat near the forward galley. He was visibly in a state of discomfort and the IFE did render some “Over the Counter” medication (Gelusil) to the PIC. PIC remained outside the flight deck for more than 25-30 minutes. Thereafter moved back to the flight deck and remained in the flight deck for about 25-30 minutes after which the F/O & ACM (Capt.) observed that PIC was sweating & shivering (around 1700 UTC) and had to be physically removed from the flight deck. He was removed with the help of male cabin attendant to the cabin. IFE announced for a “Doctor”. Doctor attended to the flight crew. Doctor and IFE decided to render medication (Sorbitrate), suspecting it is a cardiac issue. Initially the PIC was seated on the cabin crew seat & thereafter was relocated to a seat in the cabin (business class seat). Thereafter the PIC remained in the cabin till the aircraft landed (1840 UTC) in Delhi.

Time wise the **approximate** aircraft position was:

1609 UTC	:	DOPID waypoint
1623 UTC	:	Over Kolkata

1640 UTC : TEPAL waypoint  
 1654 UTC : Overhead Gaya  
 1710 UTC : Overhead Varanasi  
 1728 UTC : Overhead Lucknow  
 1743 UTC : Jalalabad  
 1835 UTC : Landed in Delhi



## 2.4 Medical Scenario and probable reasons.

During the previous night, the PIC had his dinner which mainly consisted of Noodles. On the day of incident he had fruits, fresh fruit juice, soup & bread for his Breakfast & Lunch. He had sufficient sleep i.e. 8 hours during night and 2 hours during day. His last medical examination was conducted on 2<sup>nd</sup> Dec 14 by Class I Medical Examiner and was assessed Fit by DGCA.

As per the records, PIC is an old case of Right Bundle Branch Block since age of 18 years. Incomplete right bundle branch block is a common anomaly that

carries a normal prognosis in otherwise normal subjects and is seen in one to three per cent of professional aircrew. No special precautions are needed by them for performing their professional duties.

After the incident, the PIC was evaluated by carrying out ECG, 2D Echocardiography, TMT, 24 Hrs Holter, 24 Hrs Ambulatory BP, Stress MPI, Head up Tilt Test, USG Abdomen, Carotid Doppler, EEG, MRI Brain & Hemogram. Everything was normal except the ECG which showed RBBB which was an old finding. Matured Lacunae in the Middle Cerebral Artery Territories Bilaterally which is an age related change was also observed.

He was asymptomatic during evaluation procedures and was advised Plenty of Oral Fluids with extra Salt and Vitamin Tablet.

The reason of the incapacitation during flight was diagnosed as a single episode of Syncope precipitated by a bout of Gastroenteritis.

Afterwards he was referred to AFCME New Delhi for Special Medical Examination. After evaluation Temporary Unfitness was given for 03 months. He was again evaluated at AFCME New Delhi on 18 Sep 15 and was assessed Fit for Pilot in Command with Qualified Experienced Pilot.

### **3. CONCLUSIONS:**

#### **3.1 Findings:**

1. The Certificate of Registration and the Certificate of Airworthiness of the aircraft was valid on the date of incident. The certificate of flight release was valid on the day of incident. The maintenance of the aircraft was being done as per the approved maintenance programme.
2. Both the pilots were appropriately licensed and qualified to operate the flight.
3. PIC suffered the first bout of incapacitation around 1548 UTC & left the flight deck. He was provided assistance by the cabin crew.
4. In flight ACM (an A330 Commander) went inside the cockpit for assisting the First Officer with his duties.

5. First officer and the ACM asked the PIC regarding diversion to Kolkata who (PIC) desired that flight should be continued as planned.
6. Kolkata being the closest airfield should have been their first choice for landing.
7. The PIC returned to flight deck after 25-30 minutes of being in cabin.
8. PIC suffered second bout of incapacitation around 1640 UTC. At that time, he became unresponsive and thereafter was taken out of the cockpit by the ACM with the assistance of cabin crew & he (ACM) occupied seat in the cabin till landing & parking at the bay.
9. The First Officer and the ACM did not decide on a diversion to Lucknow which was closest at that point of time.
10. The IFE checked the captain's pulse, which was irregular and he was sweating profusely and complained of stomach cramps and nausea.
11. PIC was given Disprin tablet and Sorbitrate (twice) tablet sub lingually.
12. First officer declared MAYDAY with a request for priority landing in to Delhi, for medical services and assistance for towing the aircraft from the runway as neither the ACM nor the first officer were authorized to use the tiller.
13. ACM occupied the left seat and briefed the First Officer on approach and arrival into Delhi.
14. The aircraft carried out CAT I auto land for ILS 28 into Delhi and was decelerated and stabilized on the runway center line, the auto pilot and auto breaks were disconnected.
15. Though emergency was declared with a request for priority landing in to Delhi, for medical services and assistance for towing the aircraft, SSCVR was not replaced as required by the DGCA CAR.
16. PIC was referred to AFCME New Delhi for Special Medical Examination. After evaluation Temporary Unfitness was given for 03 months. He was again evaluated at AFCME New Delhi and was assessed Fit for Pilot in Command with Qualified Experienced Pilot.

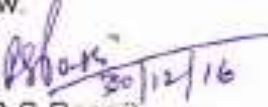
### 3.2 Probable Cause of the Incident

The incident was caused by the sudden incapacitation of the PIC, during flight due to syncope precipitated by a bout of Gastroenteritis. There were no indications in follow-up tests to suggest that the syncope could have been anticipated.

### 4 Recommendation:

- a) DGCA may issue regulations that all airlines must clearly define as a policy that an aircraft must commence diversion to the closest suitable airport once a flight crew incapacitation is confirmed.
- b) All airlines must ensure that Incapacitation checklist must be readily available to all flight crew in the "Quick Reference Handbook or Operations Manual" for flight crew for reference purposes.
- c) All airlines to ensure guidance material is available in the "Operations Manual" regarding the meals which flight crew must not consume before a flight or a layover leading to a flight within 24 hours.
- d) Ensure all flight crew are trained in incapacitation in the simulator once every 12 months.
- e) DGCA may reiterate the requirement of removal of SSCVR in case of any serious incident including those where emergency has been declared due incapacitation of the flight crew.

  
(Capt. Dhruv Rebbapragada)  
Member  
Committee of Inquiry

  
30/12/16  
(R S Passi)  
Chairman  
Committee of Inquiry

  
(Gp. Capt. (Dr) Rajesh Kumar)  
Member  
Committee of Inquiry

Place: New Delhi  
Date: 30.12.2016