

NIDHIN JOSEPH | VIVEK KANT

AXB 1344–Plummeting Down The Tabletop

This book is a visual narrative of the Accident Investigation Involving flight Air India Express AXB 1344 (B737-800 Aircraft VT-AXH) on 7 August, 2020 at Calicut Airport, India. This book deals with the complex investigation of the accident with an emphasis on Human Factors and Sociotechnical Systems aspects. This book visually develops the gestation and growth of the events that led to the accident. This graphic narrative approach towards the complex accident investigation make this a must read for the readers who are interested in field of aviation as well as for general audience who have a curious drive to understand the dynamics of accidents.

HF
SS Studios



PLUMMETING DOWN THE TABLETOP

AXB 1344



Human Factors & Sociotechnical Systems Studios



AXB 1344

PLUMMETING DOWN THE TABLETOP



Nidhin Joseph | Vivek Kant





Title : AXB 1344 : Plummeting Down the Tabletop

Author : Nidhin Joseph, Vivek Kant

Copyright © Vivek Kant

All rights reserved. No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopy, recording or any information storage or retrieval system, without permission in writing from the publisher.

ISBN : 978-93-5912-971-6

Pages: 143

Published by (self-published):

Vivek Kant

Department of Design,

Indian Institute of Technology Kanpur,

Kalyanpur, Kanpur Nagar,

Uttar Pradesh-208016, India

Email: vkant@iitk.ac.in, vkant42@gmail.com

First Edition: Printed In India

Language: English

Cover Page: Illustration of AXB 1344 by Nidhin Joseph

Printed by:

Patel Digital Printers

Shop No. 5, Hanuman Road, Opp IIT Market Post Office Gate, near Patel Electric &

Hardware General Stores, Powai, Mumbai, Maharashtra 400076

Dedication

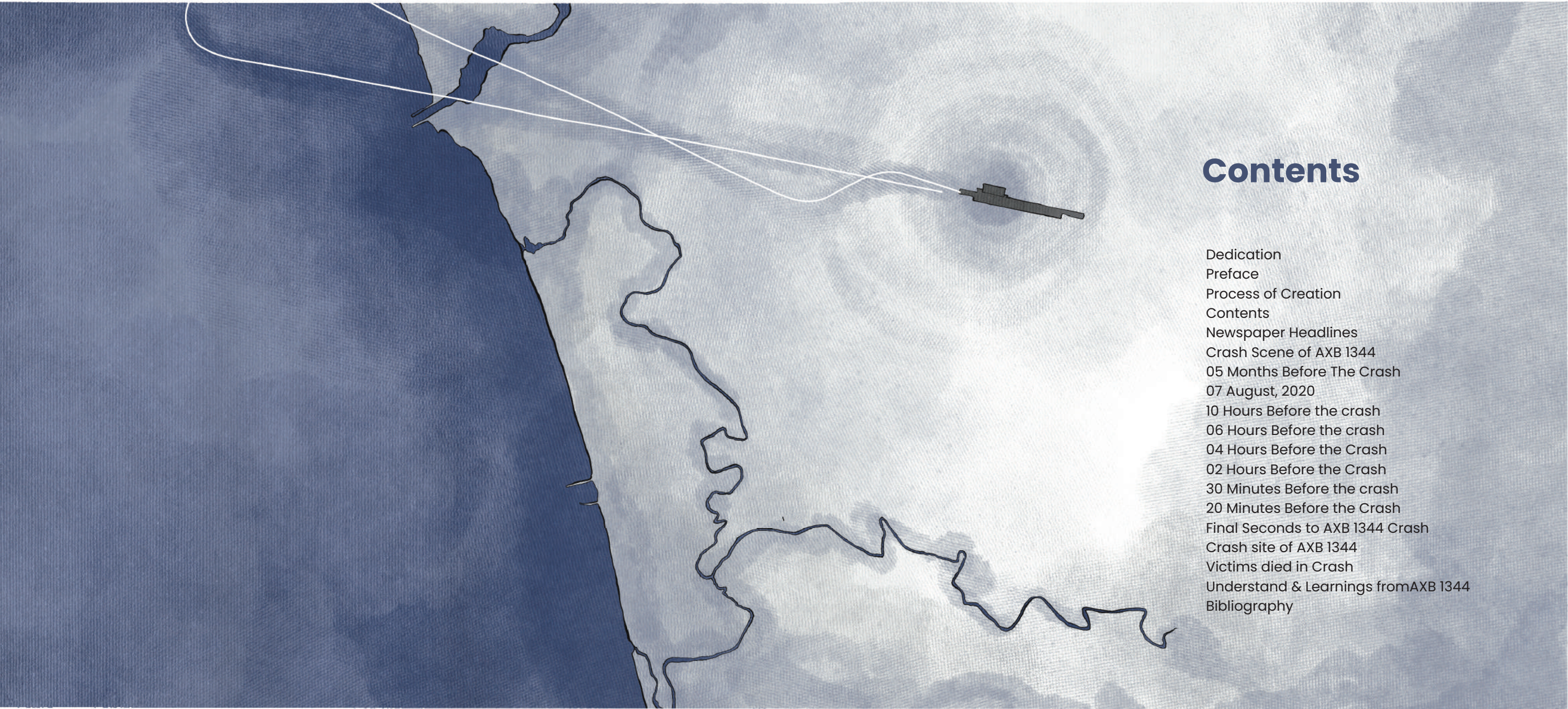
This book is dedicated to the memory of the victims who lost their lives in the crash of Air India Flight 1344 on August 7, 2020. Their lives were tragically cut short, but they will always be remembered. Our thoughts and prayers go out to their families and loved ones, who have been forever impacted by this terrible accident. May they rest in peace.



Preface

Accidents that take place in the world of modern aviation are among the most catastrophic of all possible occurrences in case of various transportational accidents. These mishaps not only result in the death of people and the destruction of property, but they also have far-reaching repercussions for families, communities, and even entire industries. In light of the significance of aviation to both the global economy and our way of fast paced life, it is of the utmost importance that these accidents be investigated in great detail in order to ascertain the underlying reason for them and to prevent future incidents of a similar nature.

The crash of Air India 1344, the flight plummeting down the Calicut airport's table-top runway on August 7, 2020, was a terrible event that sent shock waves through the aviation industry. This graphic-illustrated book tries to explain, from human factors point of view storytelling, that glance through the chain of events that led to this terrible accident. With the help of pictures and easy-to-understand language, readers can learn more about the contributory factors that led to this tragic accident. This book initiates discussions on the human factors and Socio Technical Aspects behind the Contributory factors that led to the accident. This book thereby becomes an essential read for the people linked to the aviation industry, at the same time it is curated to also cater to the general public who is curious to know more about the accident dynamics behind the incident.

The background of the page features a stylized, painterly illustration. On the left, a dark blue, textured area represents the sea. To its right, a light blue, textured area represents the sky or a misty atmosphere. A dark, irregular line separates the sea from the sky, representing a coastline or a bay. In the upper right portion of the sky, a small, dark silhouette of a ship is visible, with two thin white lines extending from it towards the left, suggesting a search or tracking path.

Contents

Dedication
Preface
Process of Creation
Contents
Newspaper Headlines
Crash Scene of AXB 1344
05 Months Before The Crash
07 August, 2020
10 Hours Before the crash
06 Hours Before the crash
04 Hours Before the Crash
02 Hours Before the Crash
30 Minutes Before the crash
20 Minutes Before the Crash
Final Seconds to AXB 1344 Crash
Crash site of AXB 1344
Victims died in Crash
Understand & Learnings from AXB 1344
Bibliography



**AXB 1344:
PLUMMETING
DOWN THE TABLETOP**



മലയാള മനോരമ
ESTABLISHED 1888

കരിപ്പൂരിൽ വൻ വിമാനദുരന്തം വിഷ്ണു പിളർന്നു

■ 162 പേർക്കു പരുക്ക്
■ തെന്നിനീങ്ങിയ വിമാനം 35 അടി താഴേക്കു പതിച്ചു
■ 10 കുട്ടികളടക്കം 184 യാത്രക്കാർ; 6 ജീവനക്കാരും



രൈലറും
കോ-രൈലറും
ഉൾപ്പെടെ
19
മരണം

പറന്നകുന്നത് പരിശീലന
ലിക്വള്ള പൈലറ്റ്



മലയാള മനോരമ
ESTABLISHED 1888

മലയാള മനോരമ വിഷ്ണു

പെട്ടിമുടി: 8 മുതലേം കുടി കിട്ടി;
മരണം 26; കാണാതായവർ 40

THE CRASH OF AIR INDIA 1344

The world woke up to a shocking headline on the morning of August 08, 2020 to the crash story of Air India 1344. The terrible accident shocked the hearts and it was covered in all the local and national media. The calicut crash was predicted way beyond its time, almost 09 years before this accident when a similar crash of Air India flight happened in Mangalore Table Top runway in 2010.(1)

Crash Scene of AXB 1344

Amidst the heavy rain and thunderstorm, the neighbouring civilians of calicut airport rushed to the crash site to be a part of the rescue mission





ABOUT THE CRASH

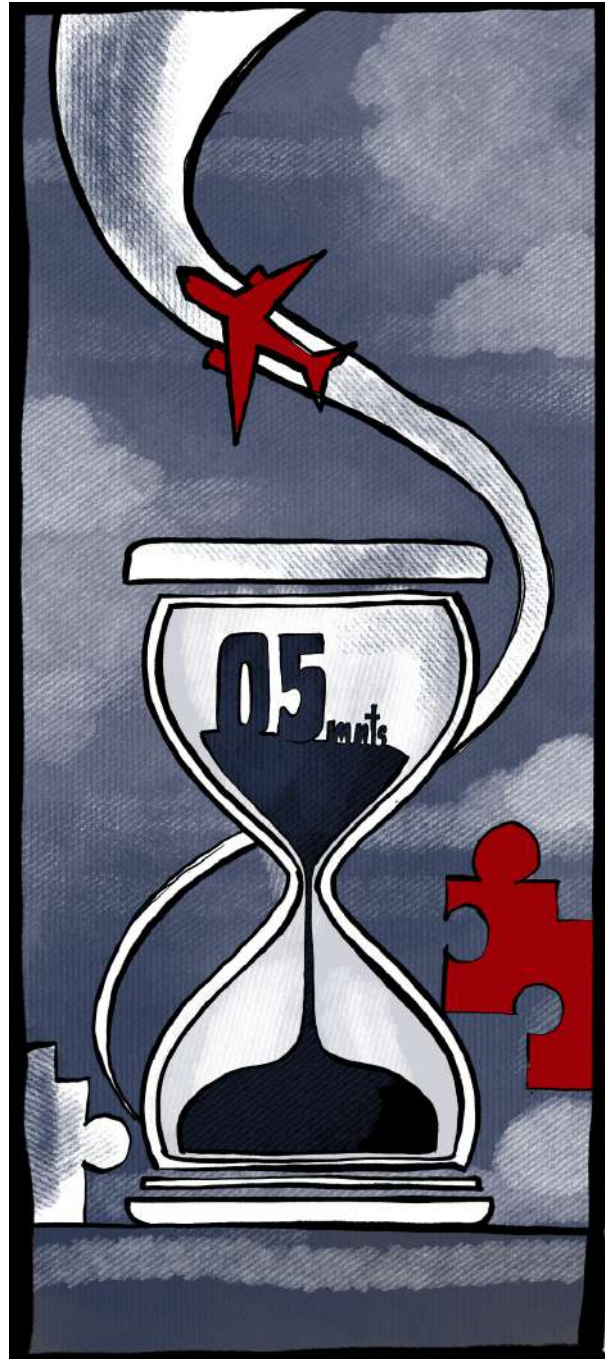
In 2020, the world was suffering from the covid pandemic. The indian government as part of their Vande Bharat Mission, supported by the Air India express had organized several trips to bring back their expatriates from various parts of the world.

Air India Express Flight 1344 was a scheduled international passenger flight from Dubai to Kozhikode, India, which was one of the Vande Bharath Mission Flights aimed to bring the stranded Indians in the middle east back home. It crashed on August 7, 2020 killing 21 people, including both the pilots and a cabin crew member, and injuring more than 100 others. The accident occurred on a night of heavy rainfall with poor visibility due to low lying clouds. The plane missed the runway and plummeted down the a steep slope of the Calicut airport tabletop runway coming to a stop in three pieces. The investigation into the accident showed that the significant aspect of human behaviour and communication during the approach and landing had played a significant role in the accident. For example, the challenges lay in following established procedures as well as not being able to successfully decode the weather and runway conditions. The accident had a prominent effect on the flight safety in India. There were calls for a review of airport infrastructure and procedures, as well as better training and oversight for crews. The lessons that can be learned from this accident will have an important impact on safety, not just in India but all over the world.



“ [...] for disasters arise from specific social settings, they are brought about by social and administrative incidents as well as technical ones and the impact which disasters have upon society when they occur is not limited to the damage and injuries which demand medical attention. Disasters can only be fully understood if they are placed in the context of the social setting from which they emerge and upon which in their turn they have an effect. For this reason, it is particularly important to include a consideration of sociological factors relating to disasters in our attempt to gain an understanding of these disruptive phenomena [...]”

– **Barry Turner, 1978, *Man-made Accidents***



05 Months Before The Crash

The year 2020, human life stood still as the world was hit severely by the clutches of the Corona Pandemic. The deadly virus had its impact globally and strict precautions and lockdown systems were implemented by the governments to control the widespread of corona.





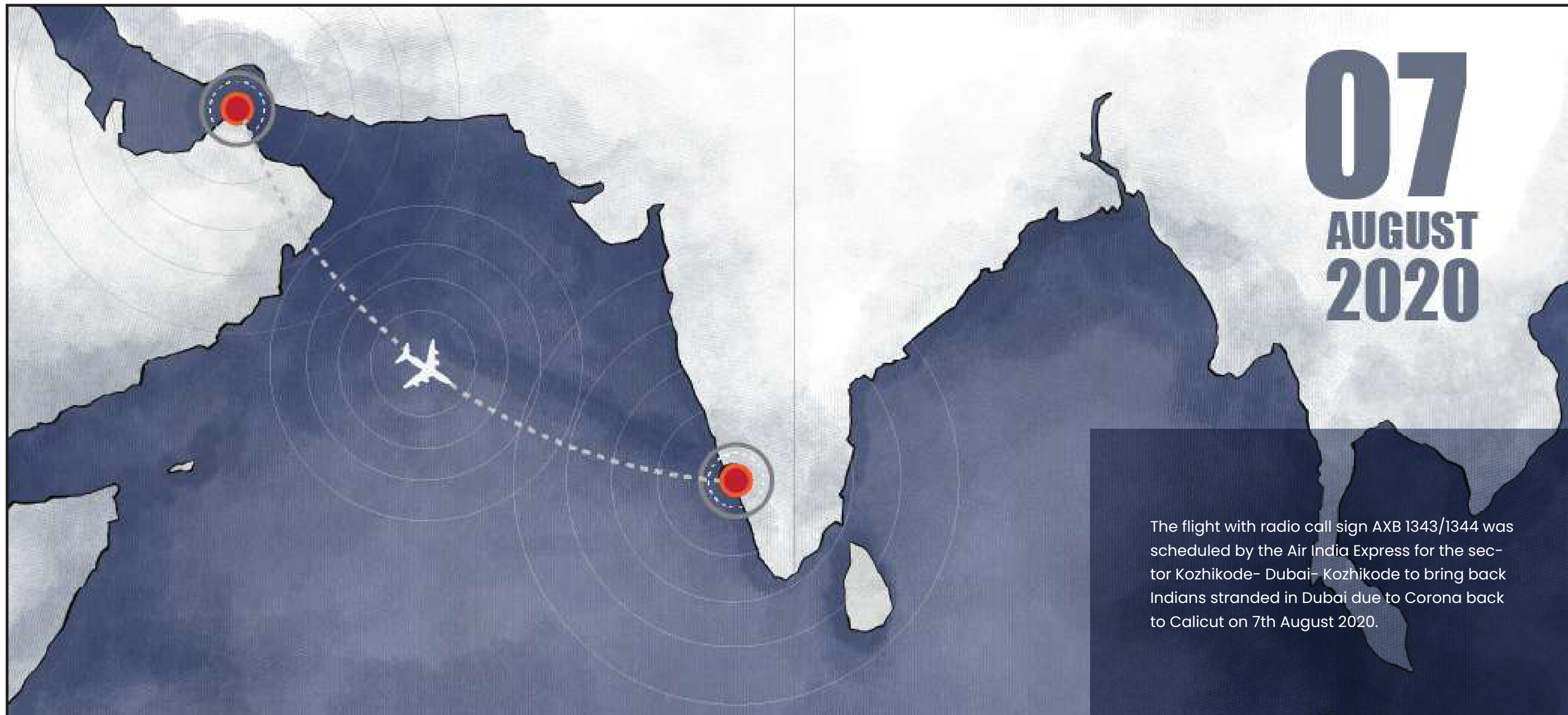
The various world governments went forward with notable efforts such as lockdown implementation and other strategies to tame the pandemic wide-spread. The lockdown of the International airspace held the Indian citizens trapped in various countries during this time.

VANDE BHARATH MISSION

As an answer to the worrying queries as well as to allay the fear and suffering of those trapped in different parts of the world due to corona lockdown, Vande Bharat Mission was kickstarted on May 7th, 2020, an initiative by the Indian Government.



Air India Express is India's first economical subsidiary of its parent Airline, Air India. Air India Express caters to the commute between Tier 2/ Tier 3 cities of India with Middle East and southeast Asia.[3] The Air India express flights were assigned for the Vande Bharat mission, And around 38,40,000 people were brought back to India during the pandemic lockdown.



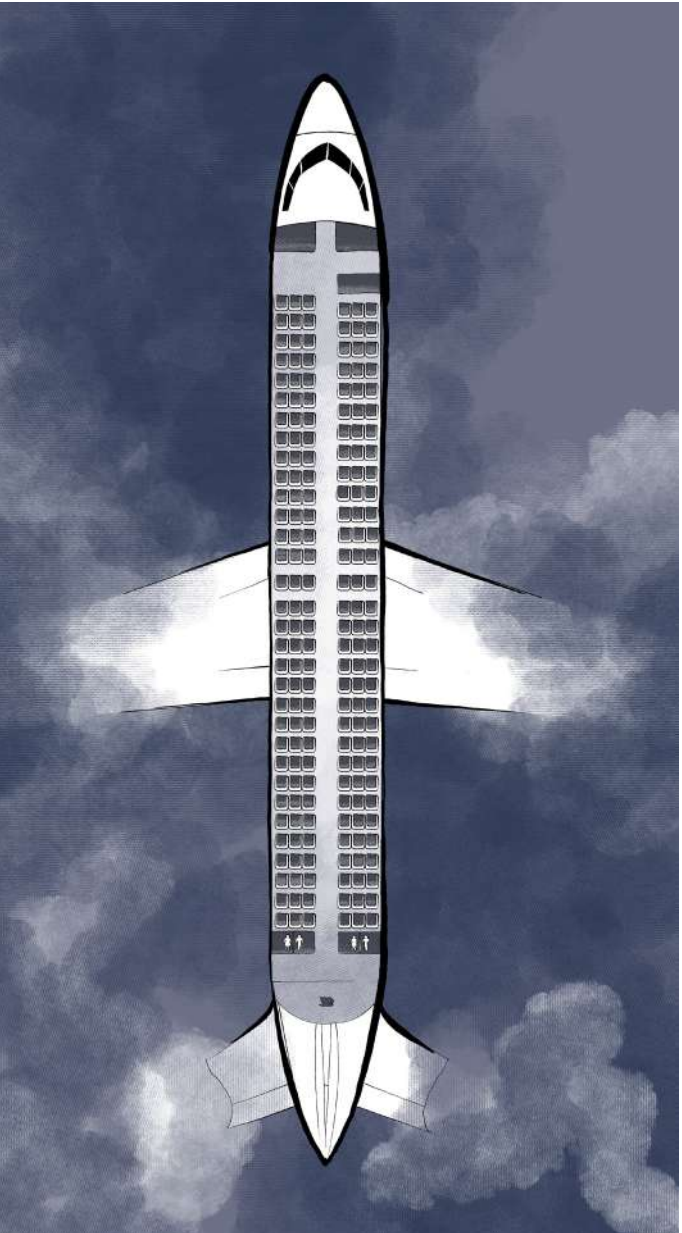


Boeing 737-800 | AXB 1344

The flight AXB 1343/1344 was a Boeing 737-800 Model. This particular Model is a Narrow-Body Jet Airliner with a seating capacity ranging between 179-189 seats. In this particular AXB 1344, the total capacity seating comprised of 184 seats.

BOEING 737-800

The Boeing 737-800 falls under the family of Boeing 737 Next Generation. The Boeing NG Family consists of Boeing 737-600| -700|-800|-900. The most popular Model variant from this family is Boeing 737-800.



Boeing 737-800 Seating Layout

PILOTS OF AXB 1344

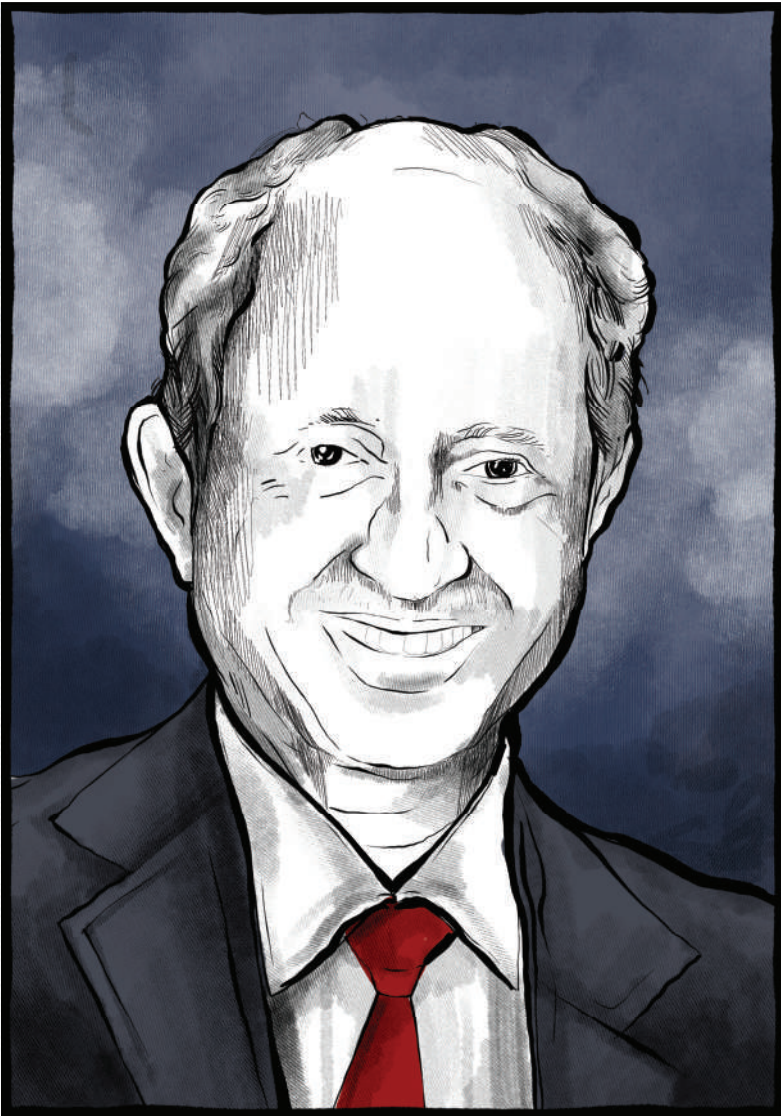
Captain. Deepak Sathe and Co.pilot Akhilesh Kumar were the cockpit pilots of AXB 1344 along with the cabin crew of 4 members.

Co. Pilot Akhilesh Kumar

Akhilesh Kumar was the co.pilot of AXB 1344 and he was of 32 years 03 months of age. He had a total flying experience of 1989.17 hrs including the accident flight AXB 1344. He had his major share of flying experience in Boeing 737-800 series of 1723.49 hours. Akhilesh got his co-pilot licence for B737-800 IRL flights on 22 November, 2017.



Copilot. Akhilesh Kumar



Captain. Deepak Sathe

Captain. Deepak Sathe

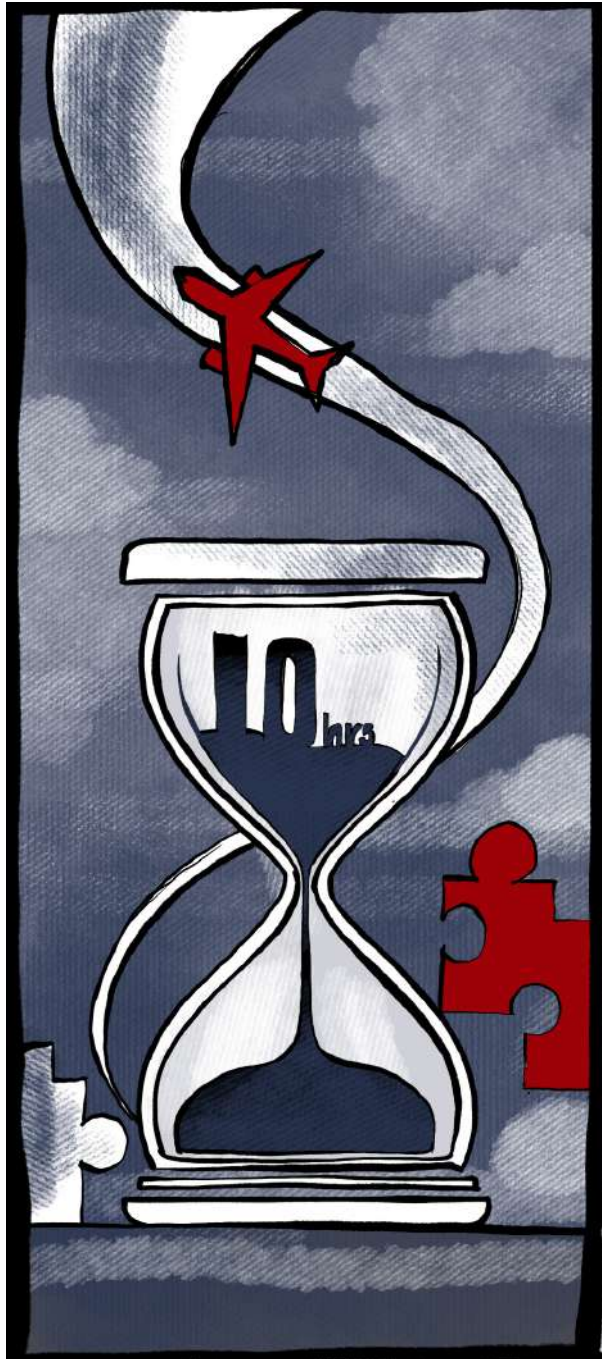
Captain. Deepak Sathe, got his Airline Transport Pilot License on August 24, 1998. He was an ex-Military pilot who graduated from the National Defense Academy's 58th course in Pune's Khadakwasla. He graduated from the Air Force Academy in June of 1981, and he was awarded with the Sword of Honour for his excellence. He had a total of 10,848.50 hours flying experience in total and 4612.59 hours of flying experience in Boeing 700 flights. He was 59 years 03 months old at the time of the crash.



“

The basic argument is that expectations are built into organizational roles, routines, and strategies. These expectations create the orderliness and predictability that we count on when we organize. Expectations, however, are a mixed blessing because they create blind spots. Blind spots sometimes take the form of belated recognition of unexpected, threatening events. And frequently blind spots get larger simply because we do a biased search for evidence that confirms the accuracy of our original expectations. The problem with blind spots is that they often conceal small errors that are getting bigger and can produce disabling brutal audits.

- Karl Weick & Kathreen Sutcliffe, 2007, *Managing the Unexpected*



10 Hours Before The Crash

The flight AXB 1343 Scheduled to fly from Calicut to Dubai on 7th August Morning. Pilots and crew members checked in on time in Calicut International Airport.

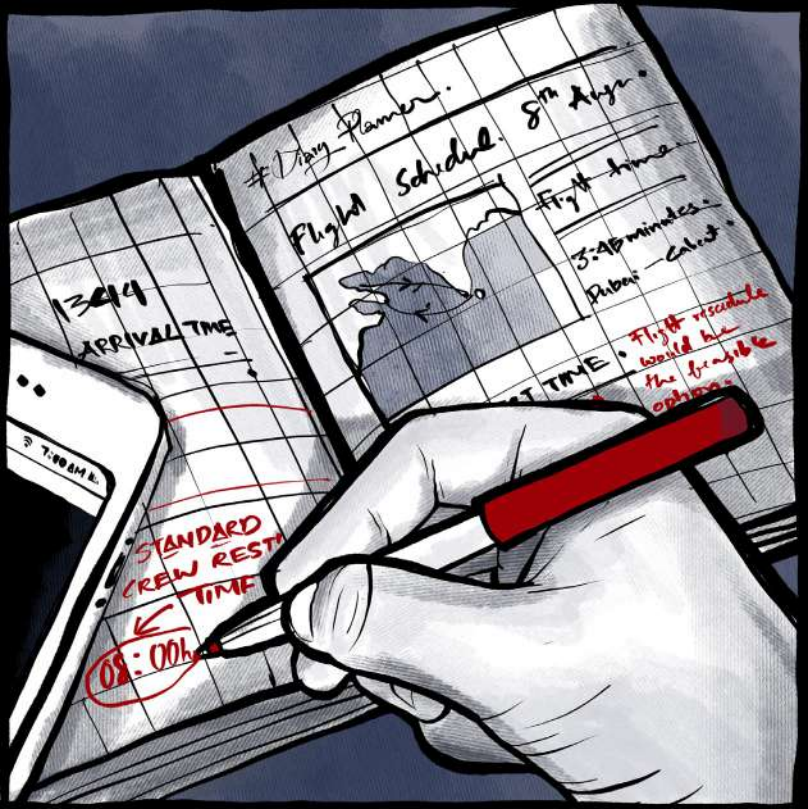




Captain Sathe, had his home base in Mumbai. And he was assigned to the Calicut division on a roster flight basis from August 5th to 10th to operate in the tight schedule. At the time, he was the only free pilot qualified to be the main pilot out of the 26 pilots based out of Calicut.

Initially, the flight for next day was scheduled for 8:00 AM next day, However, based on his calculations Sathe recognized that the official DGCA* Standards for crew resting time would not be achieved. Later, the next days flight was rescheduled from 8 to 10 AM.

***DGCA- Directorate General of Civil Aviation**



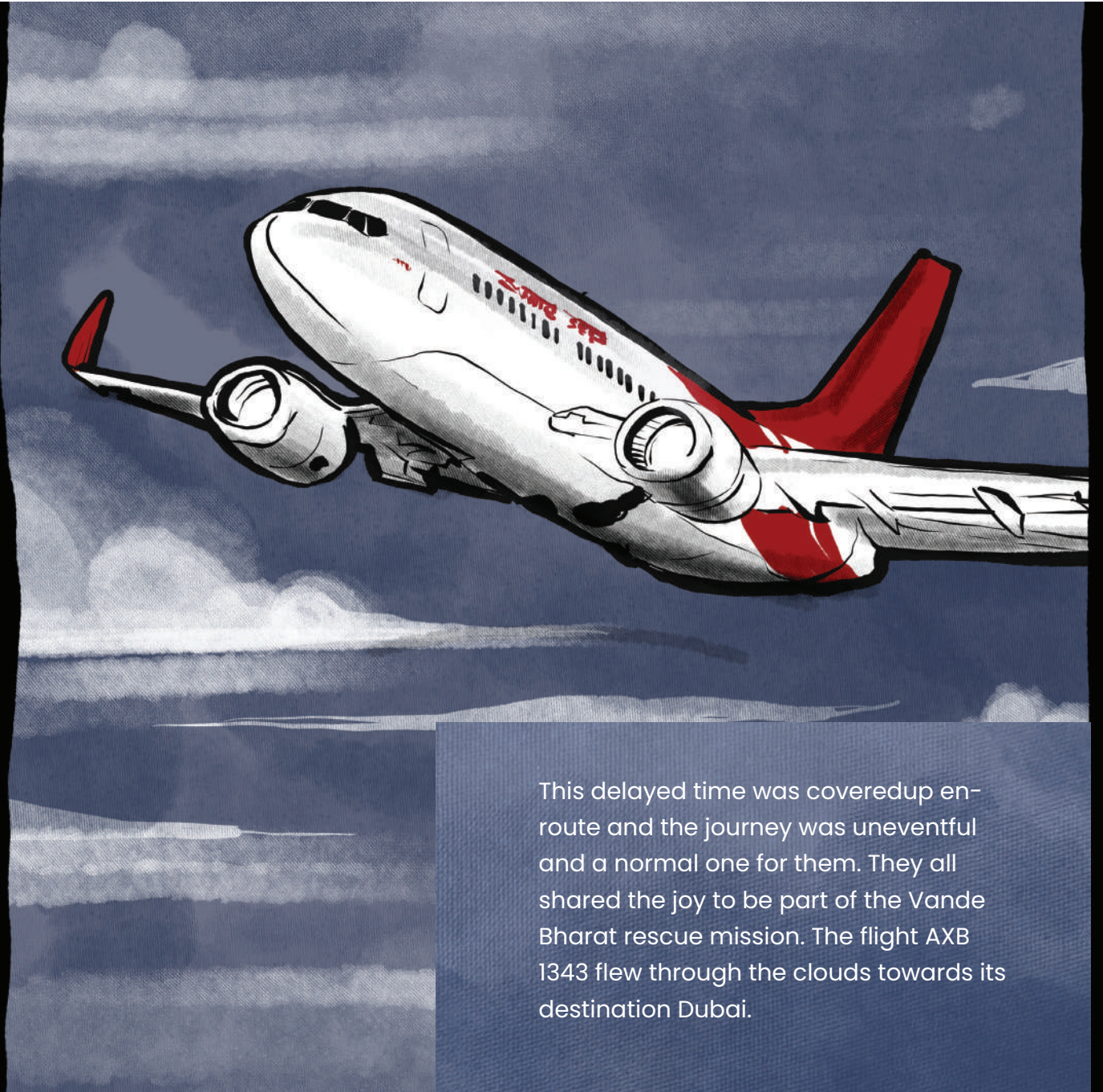
FLIGHT FIRST LEG

With all the calculations and planning Sathe and his crew were prepared for the flight. However, Sathe knew at the back of his mind that he could not afford to be late for the return flight, as that would affect the schedule for next day

04:49 UTC



AXB 1343 took off from Calicut airport at 04:49 UTC for its first leg flight. The flight was delayed for 14 minutes from its scheduled departure out of Calicut.



This delayed time was covered up en-route and the journey was uneventful and a normal one for them. They all shared the joy to be part of the Vande Bharat rescue mission. The flight AXB 1343 flew through the clouds towards its destination Dubai.



“

In order to understand and begin to analyse the ways in which the world is inadvertently transformed when accidents and disaster occur, we have suggested that we must pay attention to the two elements which are basic to all transformations of the world: energy and information. All disasters may be regarded as the outcomes of misplaced or misdirected energy, so that we may state the general principle that: disaster equals energy plus misinformation. If this proposition is accepted, it becomes clear that in order to understand the origins of disaster, it is necessary to study both the social and the non-social sources of both the energy and the misinformation which combine to produce disasters.

- Barry Turner, 1978, *Man-made Accidents*

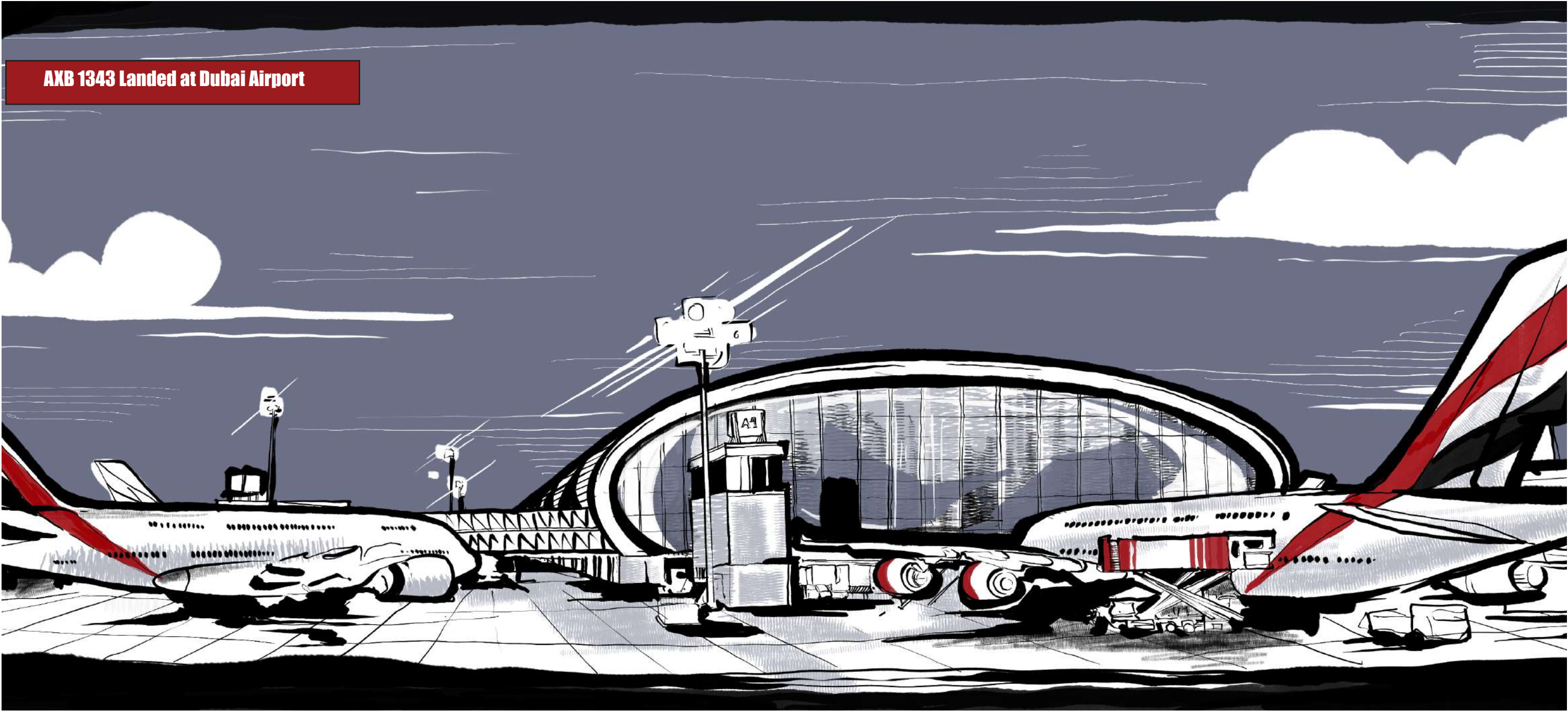


06 Hours Before The Crash

The AXB 1343 landed in Dubai at 08:11 UTC as per the schedule. At the same time many of passengers in AXB 1344 had already reached the Airport Check-In facilities.



AXB 1343 Landed at Dubai Airport



Boarding Pass & Corona testing - Dubai Airport



CORONA PREQUATIONS

The passengers of AXB 1344 were waiting after their check in to the airport. The Dubai airport had a strict Covid 19 prevention protocol. Many of the passengers were in personal protection equipment suits. They all followed the compulsory facemask and other essential precaution measures.



The passengers who were travelling as families were called in for the boarding initially. Next the single passengers as they were called in for the flight boarding.

AXB 1344 was ready for passenger onboarding



The flight underwent the routine check-up and fuel measure were recorded and the Dubai Airport ground crew had provided the clearance signal for the passenger boarding.

Airport routine Flight checkup



Passengers Boarding AXB 1344



Fully Passenger Packed Flight



Passengers walked into the flight one after the other. The flight was filled to its full occupancy of 184 passengers. There were 10 infants among the passengers. With hopes to go back to their home land, they all sat in their respective seats with a relieved mind.



“

[...] No one dreamed that when X failed, Y would also be out of order and the two failures would interact so as to both start a fire and silence the fire alarm. Furthermore, no one can figure out the interaction at the time and thus know what to do. The problem is just something that never occurred to the designers. Next time they will put in an extra alarm system and a fire suppressor, but who knows, that might just allow three more unexpected interactions among inevitable failures. This interacting tendency is a characteristic of a system, not of a part or an operator; we will call it the “interactive complexity” of the system.”

Charles Perrow, *Normal Accidents*, 1984



04 Hours Before The Crash

As after the passengers were all settled in their seats the pilots boarded the flight. Captain Sathe addressed the passengers and welcomed them all back home and AXB 1344 was ready to take off.



Capt. Deepak Sathe addressing the passengers

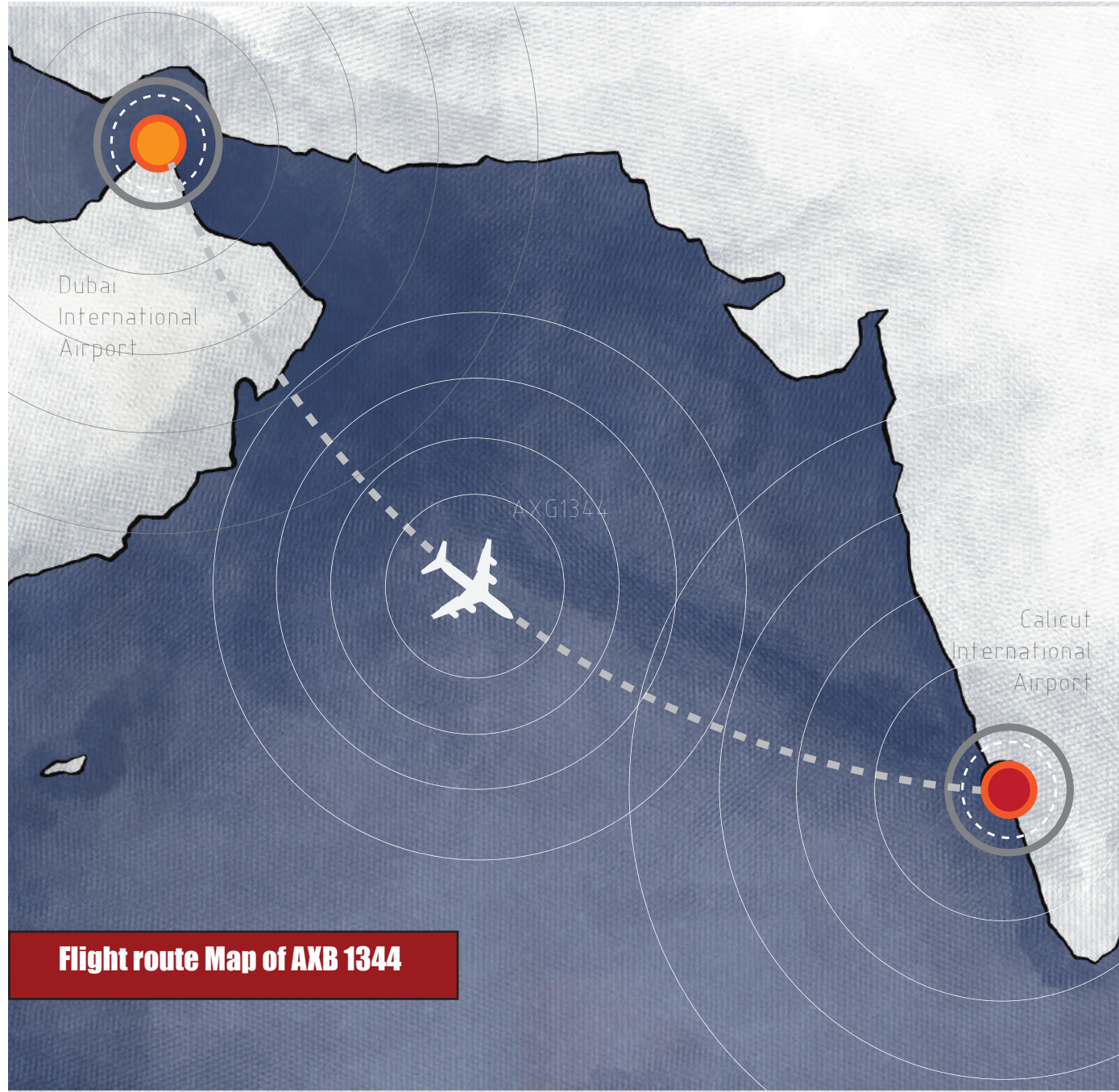


The flight AXB 1344 took off from Dubai Airport without any noted issues in the process. However, the flight was delayed a total of 30 minutes. While they were supposed to take off at 09:30 UTC, but the flight actually took off from Dubai at 10:00 UTC.



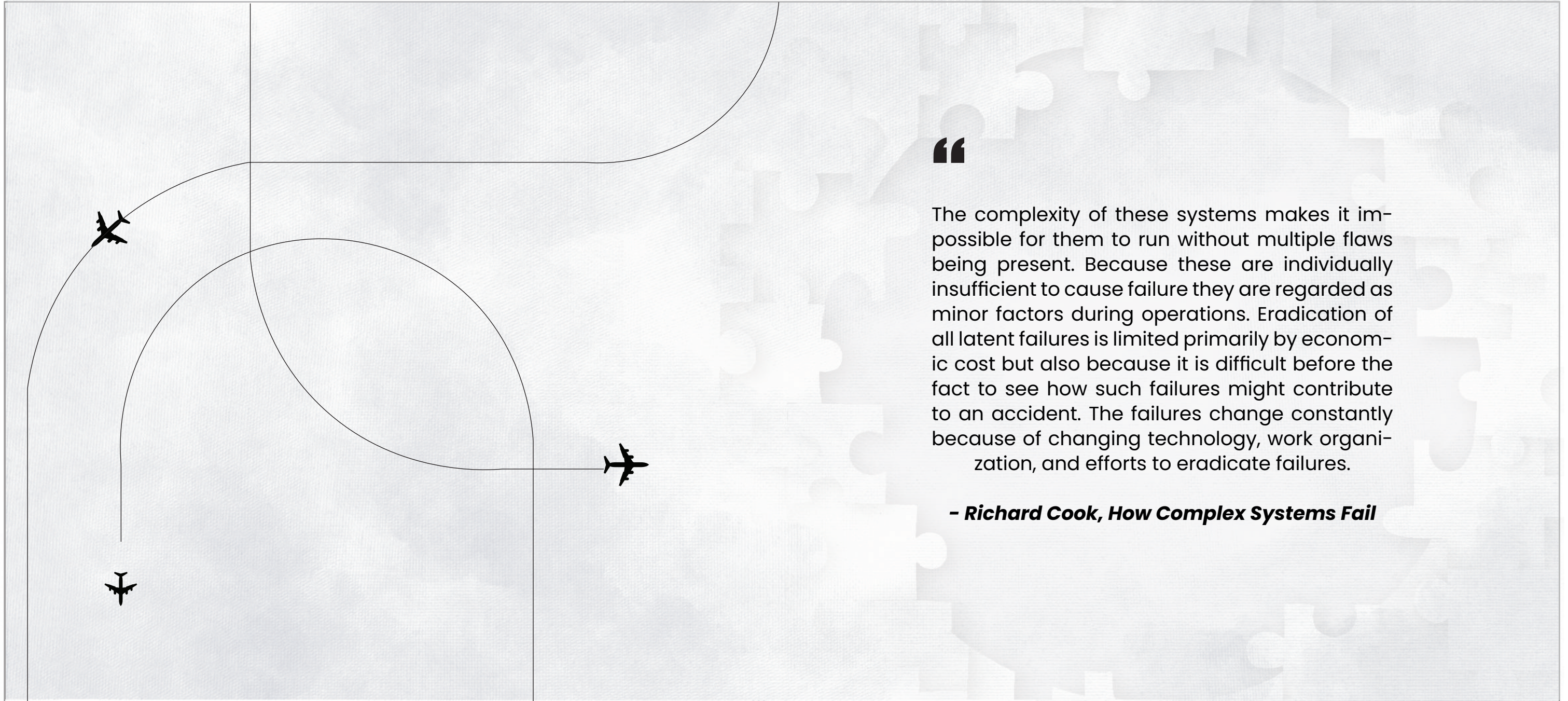
AXB 1344 Flying over Dubai





DXJ - CCJ Route

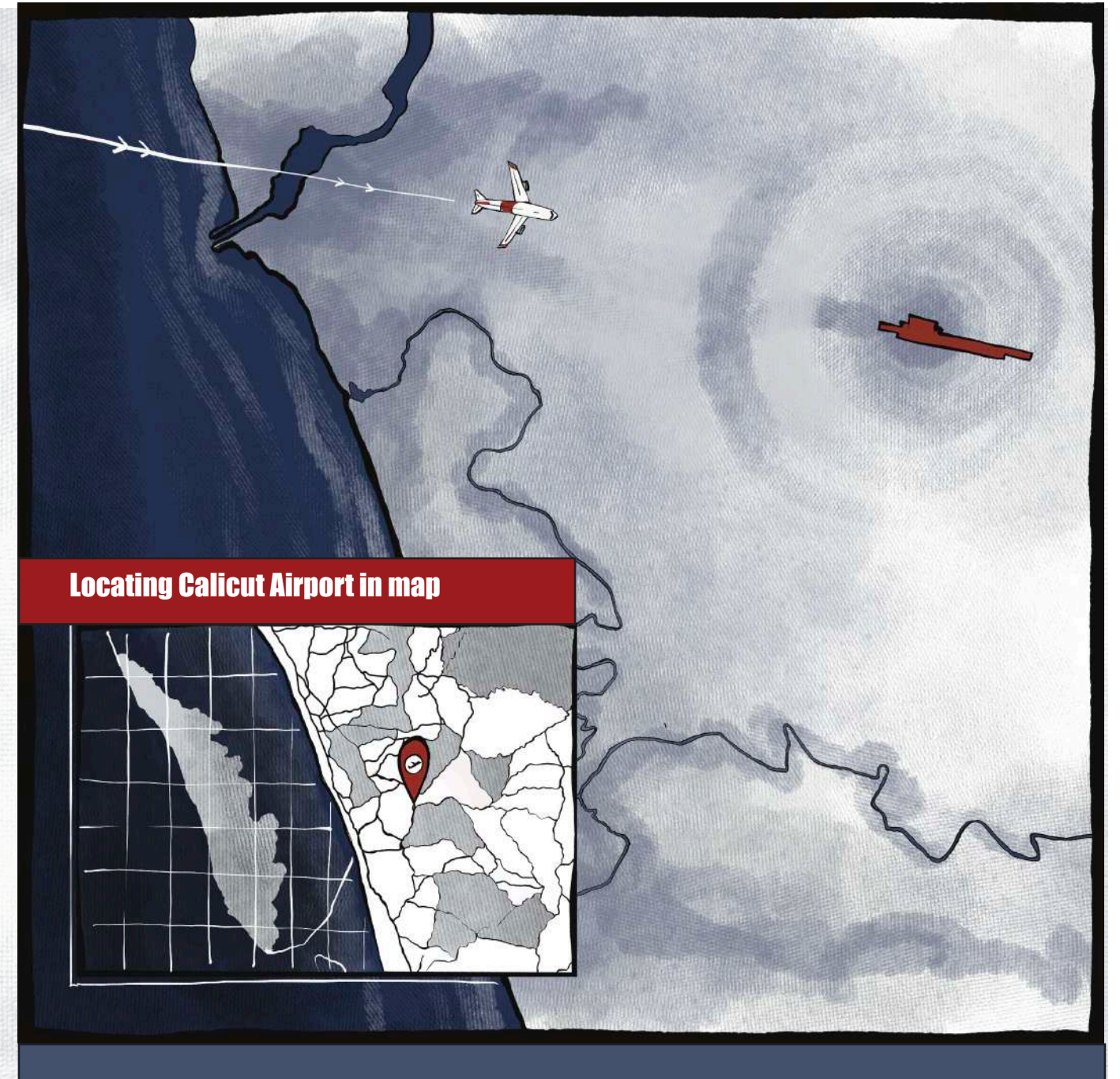
The flight enroute DXJ- Dubai to CCJ- Calicut was uneventful. And the flight duration was 3 hours and 45 minutes. The passengers were settled as the AXB 1344 flew swiftly towards its destination Calicut Airport



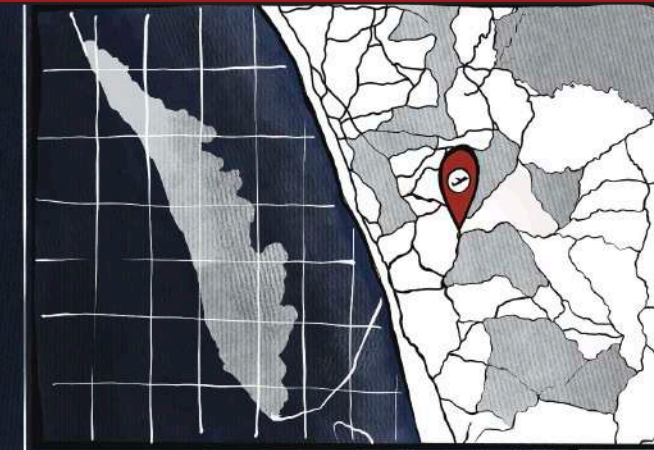


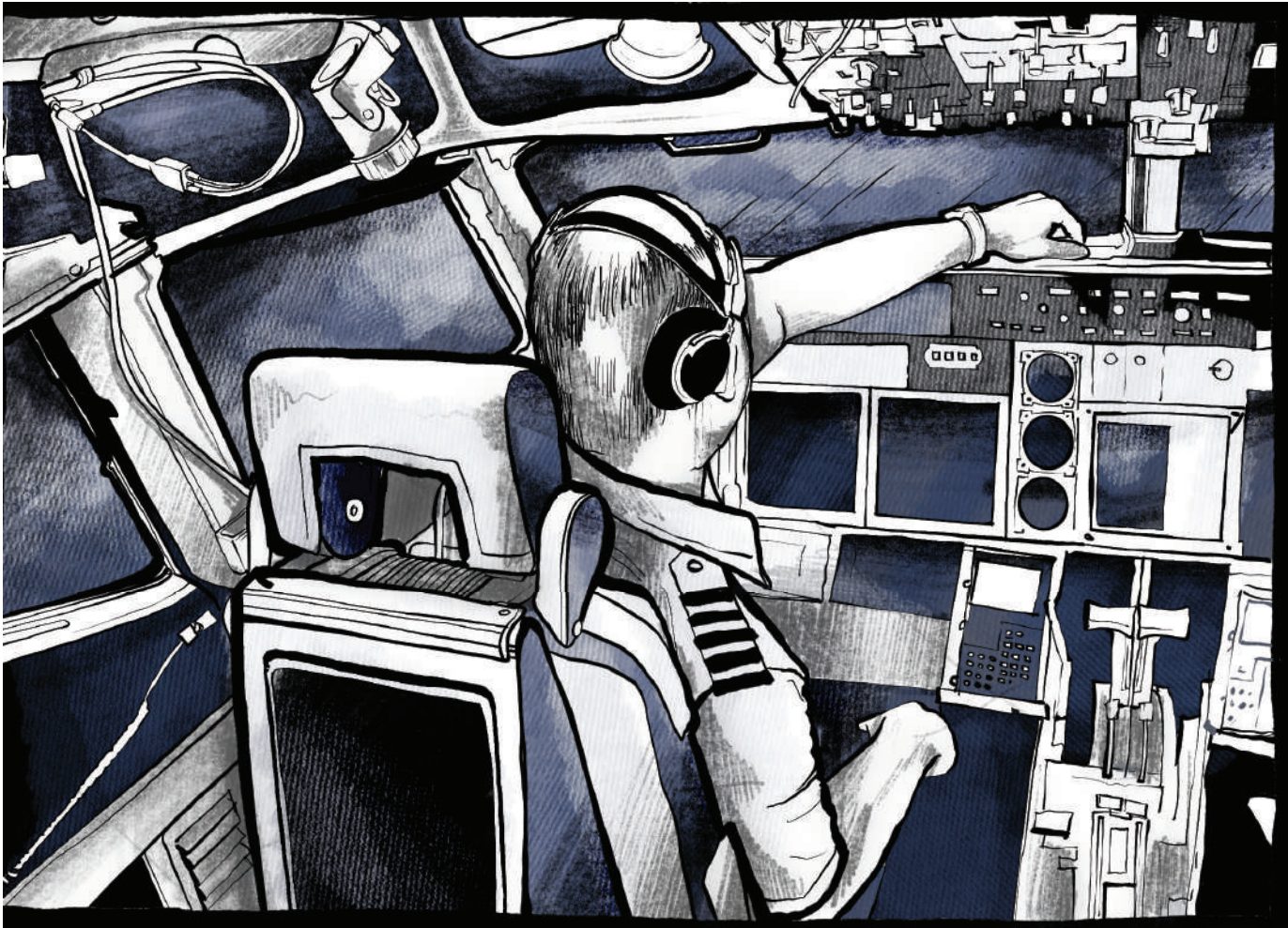
02 Hours Before The Crash

The month of August, is part of the monsoon season in the Indian subcontinent. Two hours prior to the crash, the flight was in proximity to the Indian subcontinent, the flight experienced turbulence from heavy rain clouds and thunderstorms.



Locating Calicut Airport in map





At the Calicut airport, as AXB 1344 was preparing for the descent. Captain Sathe received the destination and alternative airfield weather data through the ACARS system.

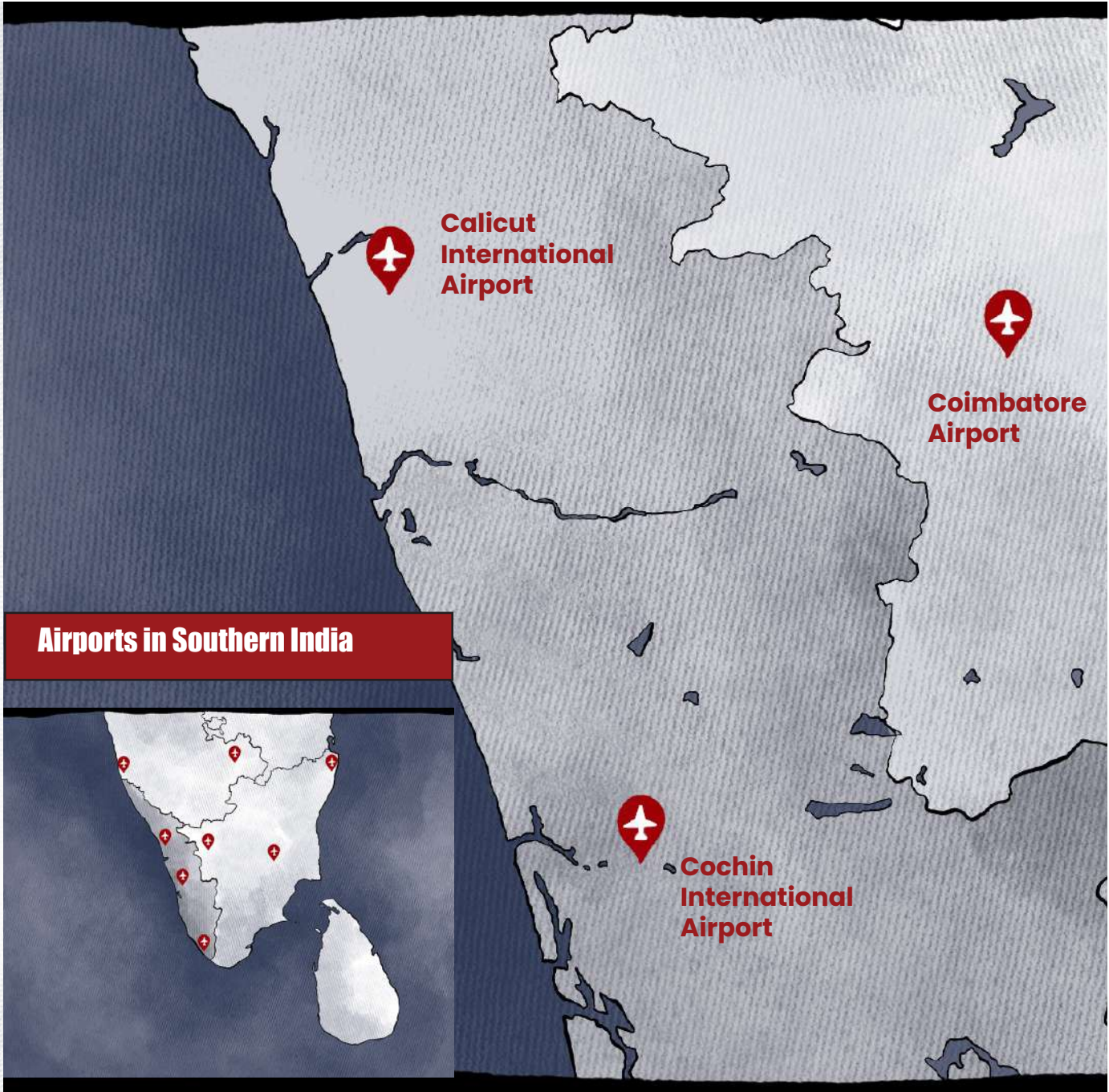
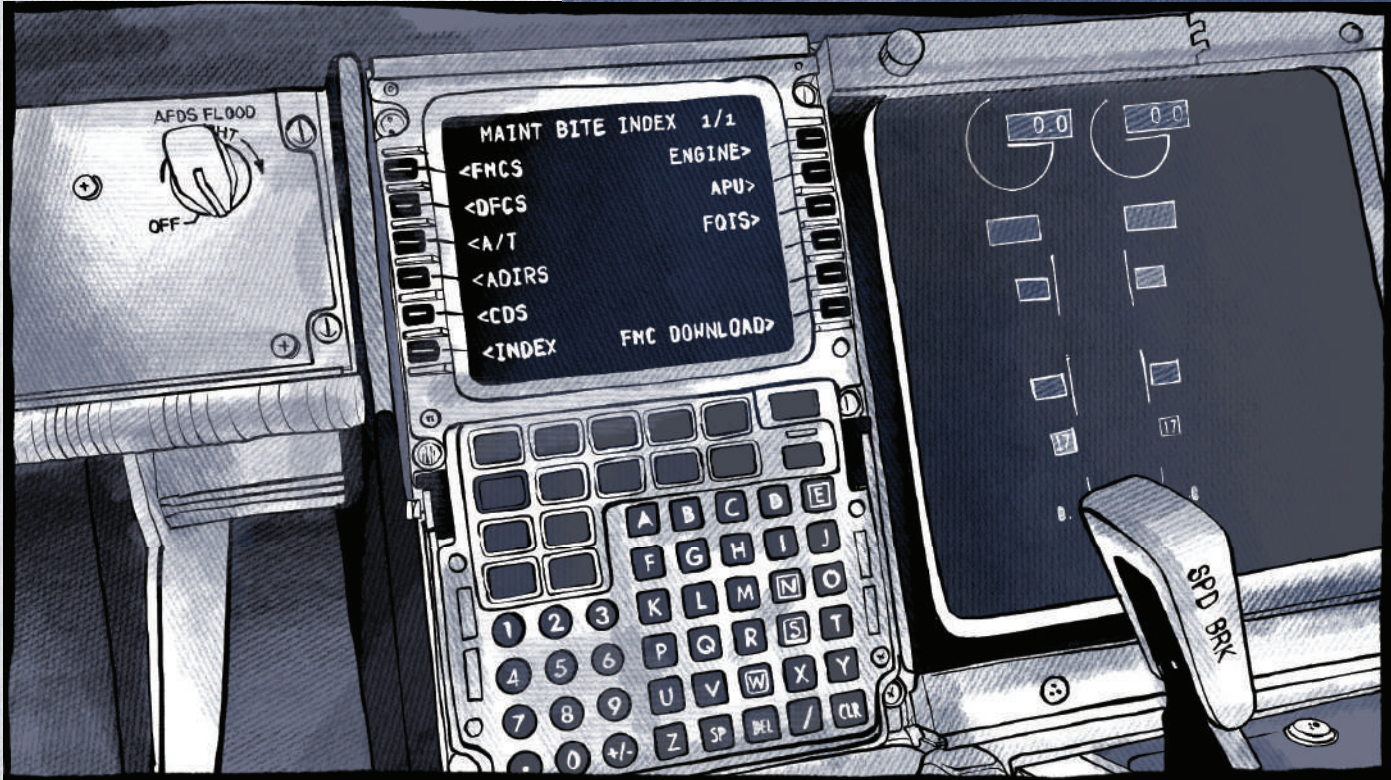
ACARS SYSTEMS

ACARS or Aircraft Communications Addressing and Reporting System. This is the system used in aviation for the transfer of short messages between aircraft and ground control stations with the help of radio or satellite airband waves.

ACARS Interface - Boeing 737-800



Pilots noted the latest weather updates and the navigational data to closer airfields. These alternative airports — Coimbatore Airport and Cochin International Airport — served as the alternative diversion destinations in case of emergency.





Pilots in the Cockpit of AXB 1344



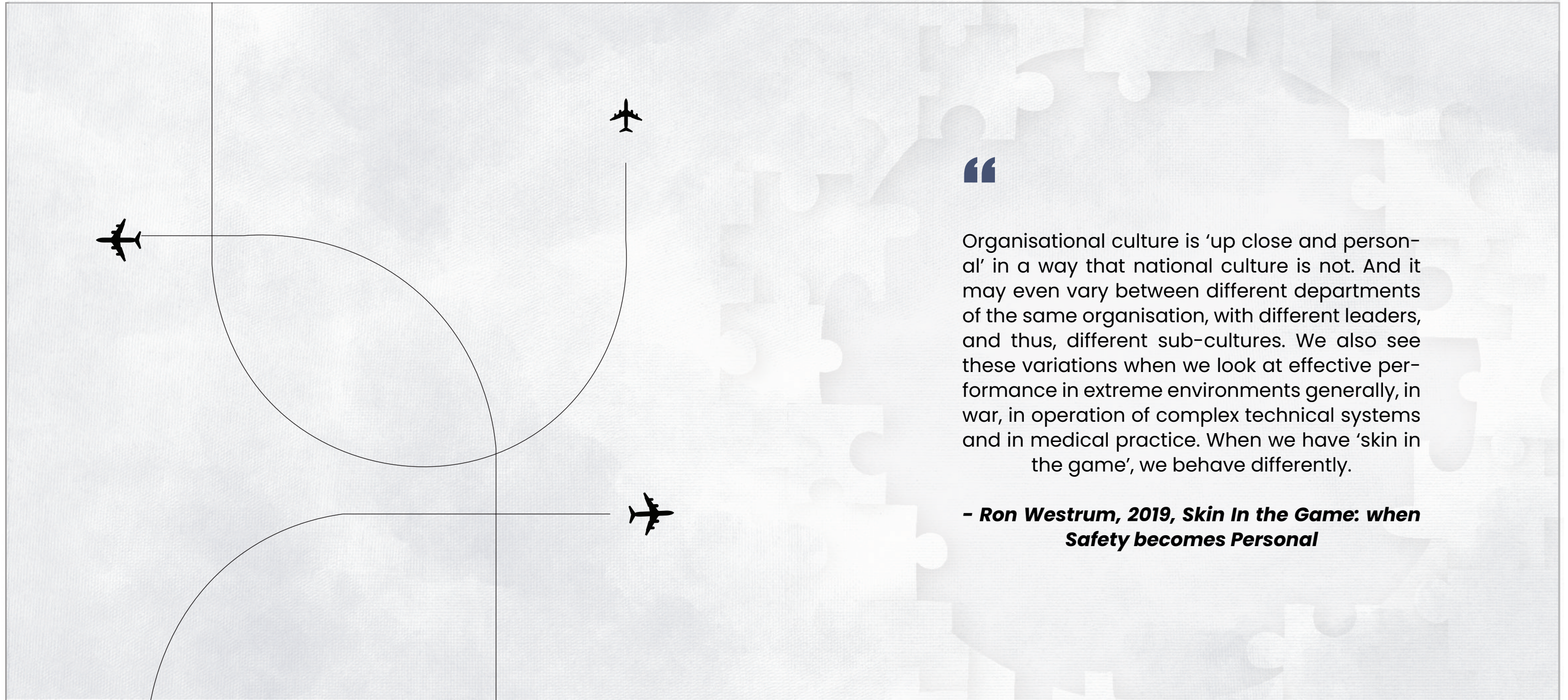
DESCENT REQUEST

At around 13:25 UTC, AXB 1344 made a descent request. The aircraft had got its clearance for descent first from the FL260 by Chennai Upper Area and later cleared for descent to FL120 by Cochin Lower area Control.

It was around 13:19 UTC, Pilots received the Calicut airfield weather Details which were transmitted by the Chennai Upper Area Control. The pilots decided on the landing flaps and brake configurations without verifying the Landing Distance Required (LDR) calculation. The pilots skipped the arrival briefing for the Cabin Crew In Charge which was mandatory before the descent.



Cochin Lower Area Control Tower



“

Organisational culture is ‘up close and personal’ in a way that national culture is not. And it may even vary between different departments of the same organisation, with different leaders, and thus, different sub-cultures. We also see these variations when we look at effective performance in extreme environments generally, in war, in operation of complex technical systems and in medical practice. When we have ‘skin in the game’, we behave differently.

- Ron Westrum, 2019, *Skin In the Game: when Safety becomes Personal*

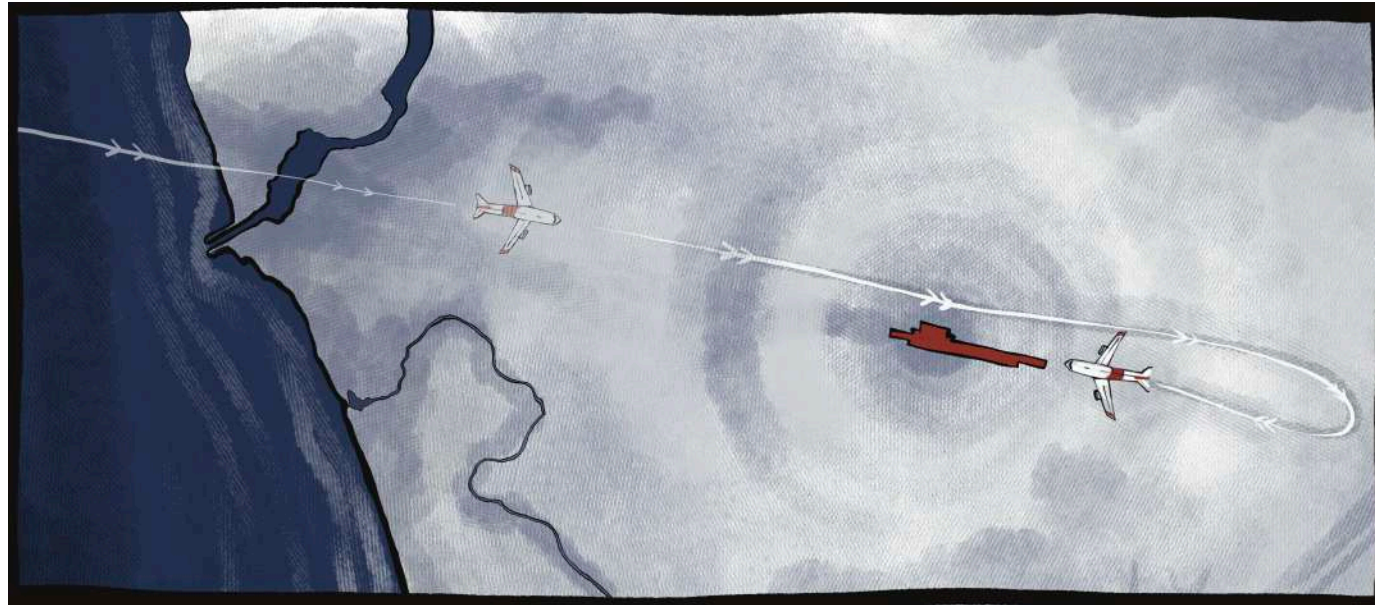


30 Minutes Before The Crash

30 minutes prior to the crash, AXB 1344 got its final descent clearance from the Air traffic controller on duty. The flight was cleared to descend at 7000 ft after the cross checking Calicut VOR's* both the radial and distance aspects.

*VOR- Very High Frequency Omni
Direction Range





INBOUND APPROACH

The AXB 1344, Approached the Calicut airport for landing from the east side of the Airport. At around 13:41 UTC the flight was cleared for descent to 3600 ft. Where the flight was ready with clearance, for its Landing in Runway 28 of the airport.



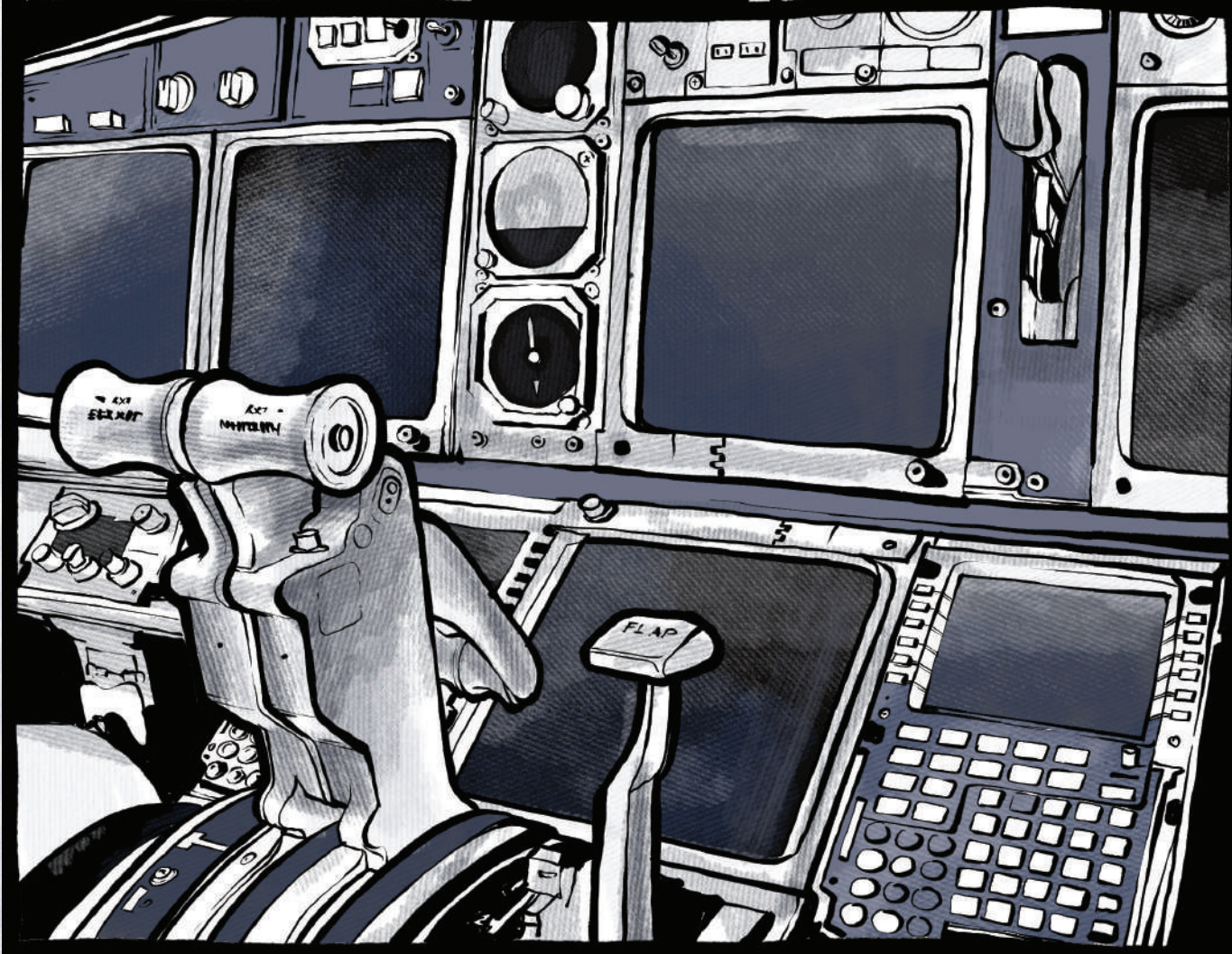
"Hey, Check the windshield wipers

And Put it to High High Speed....."

Yes...
High Speed Wipers
Check..

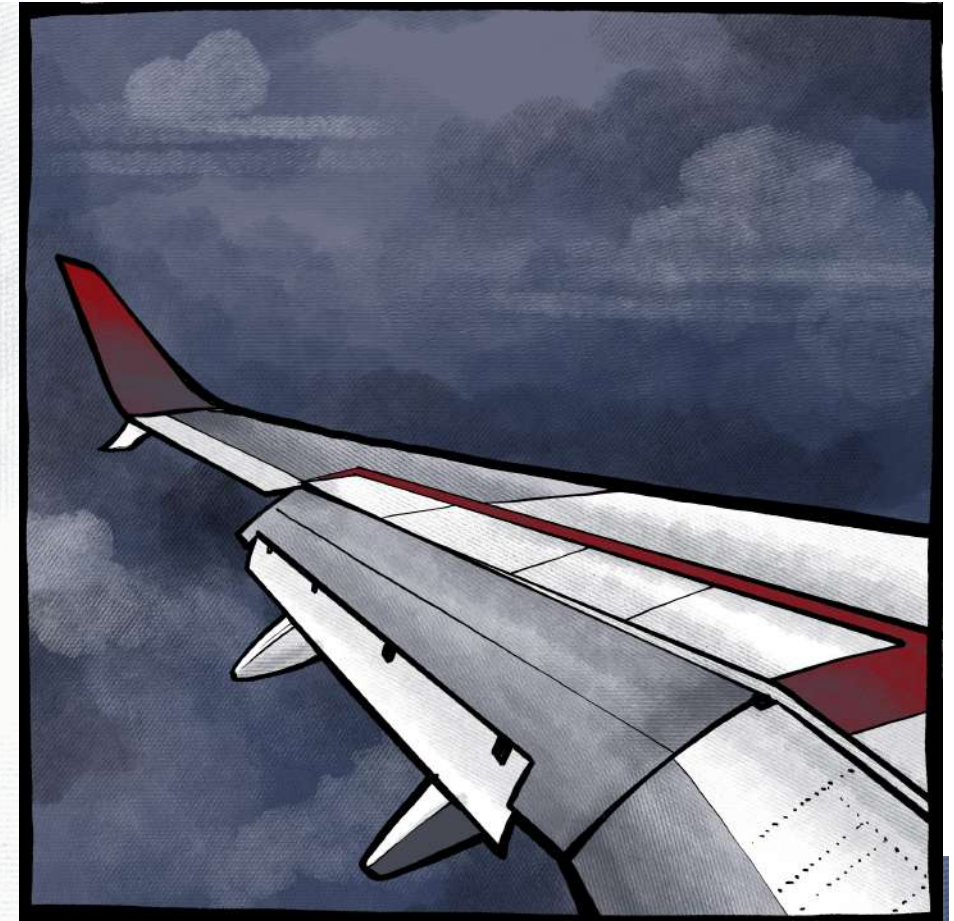
Amidst the landing approach, the pilots had missed out on the mandatory announcement for being seated for the cabin crew. By then the AXB 1344 had made its contact with the Calicut Airport localizer and aligned the flight to the Runway 28 Glidescope. After cross checking the landing checklist, Sathe pointed at the Wind wipers.

Sathe extended the landing flap



LANDING FLAPS

The landing flaps are the metallic flaps that are attached can be pivoted with a limited and controlled degree angle of freedom. These are attached to the wings of the aircraft on its trailing edge for the undersurface. They are technically designed for the creation of lift and drag for the aircraft will the landing and climbing up process of the aircraft.

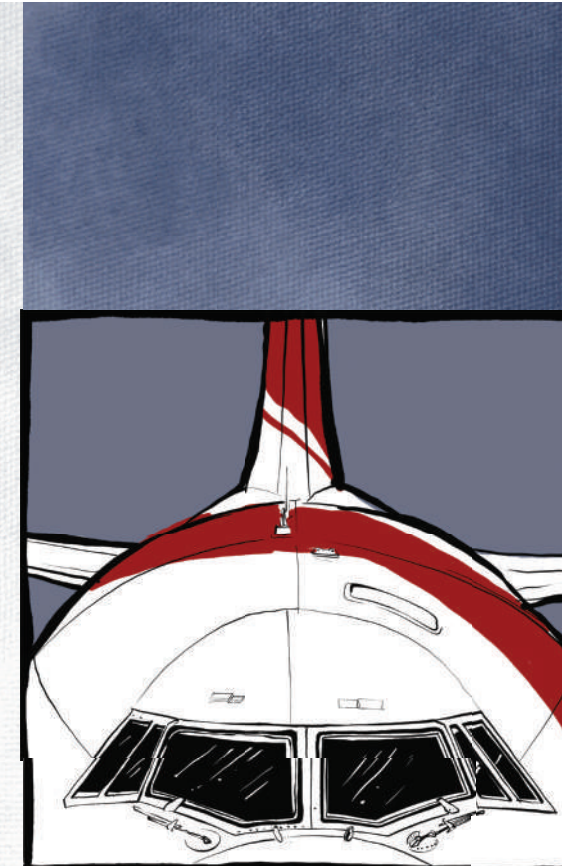


Simultaneously along side setting up the wind wipers, the pilots were cautious about the troublesome area before the landing. They extended the landing flaps and they chose the configuration of Flaps 20.



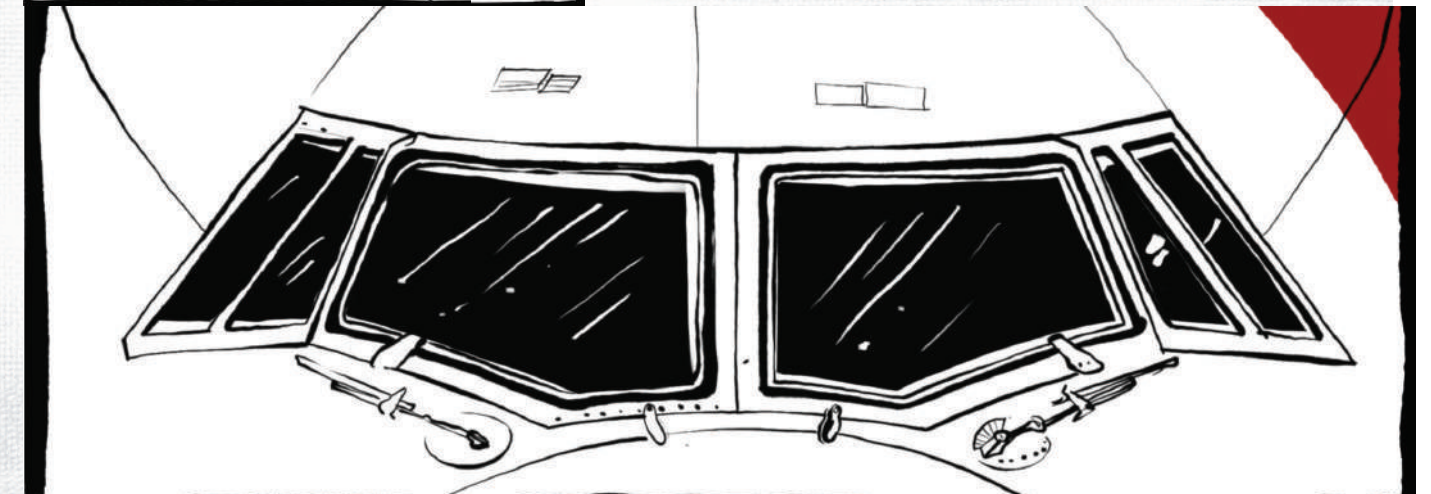
Co. Pilot Akhilesh turned on the wind wipers

As Akhilesh was setting the wind wiper, Captain Sathe noticed the malfunctioning of the wind wiper on his side, that is the Captain's side.

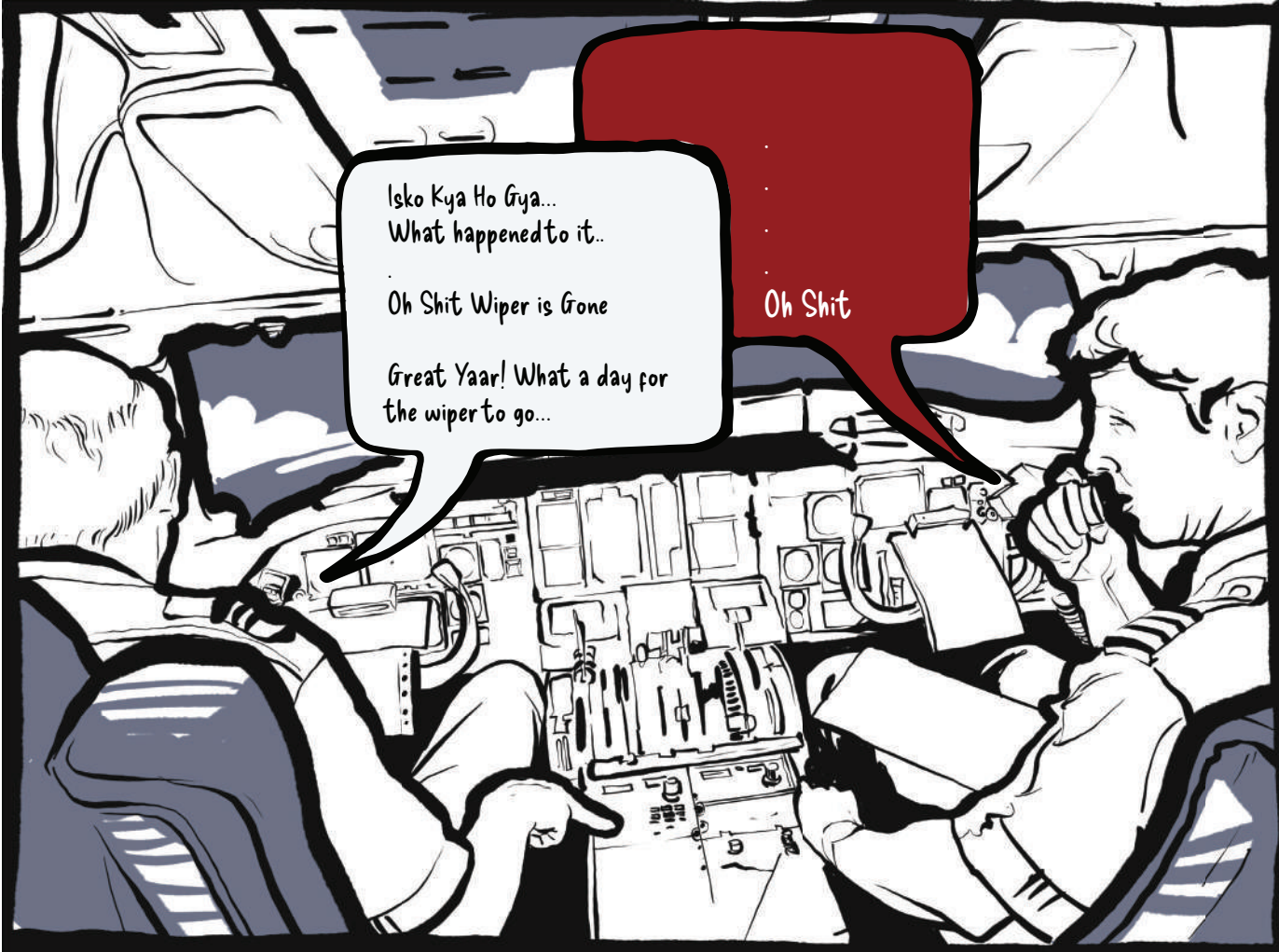


WIND WIPER MALFUNCTION

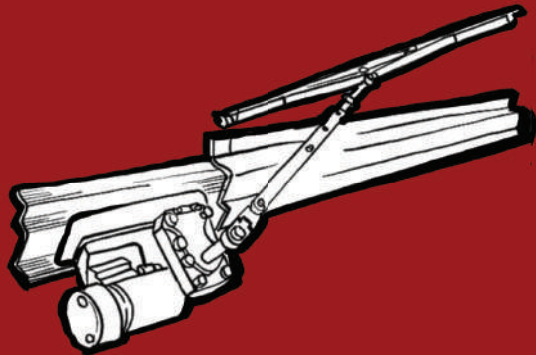
Wind Wipers are the most important feature of the Rain Removal System integrated into the aircraft. Its optimum functioning helps the pilot to have a clear point of view in adverse flying conditions of flying in rain. It was also an important contributory factor to the AXB 1344 accident due to prevailing heavy rain conditions.



Pilots discussing about the wind wiper malfunction



Window wiper details



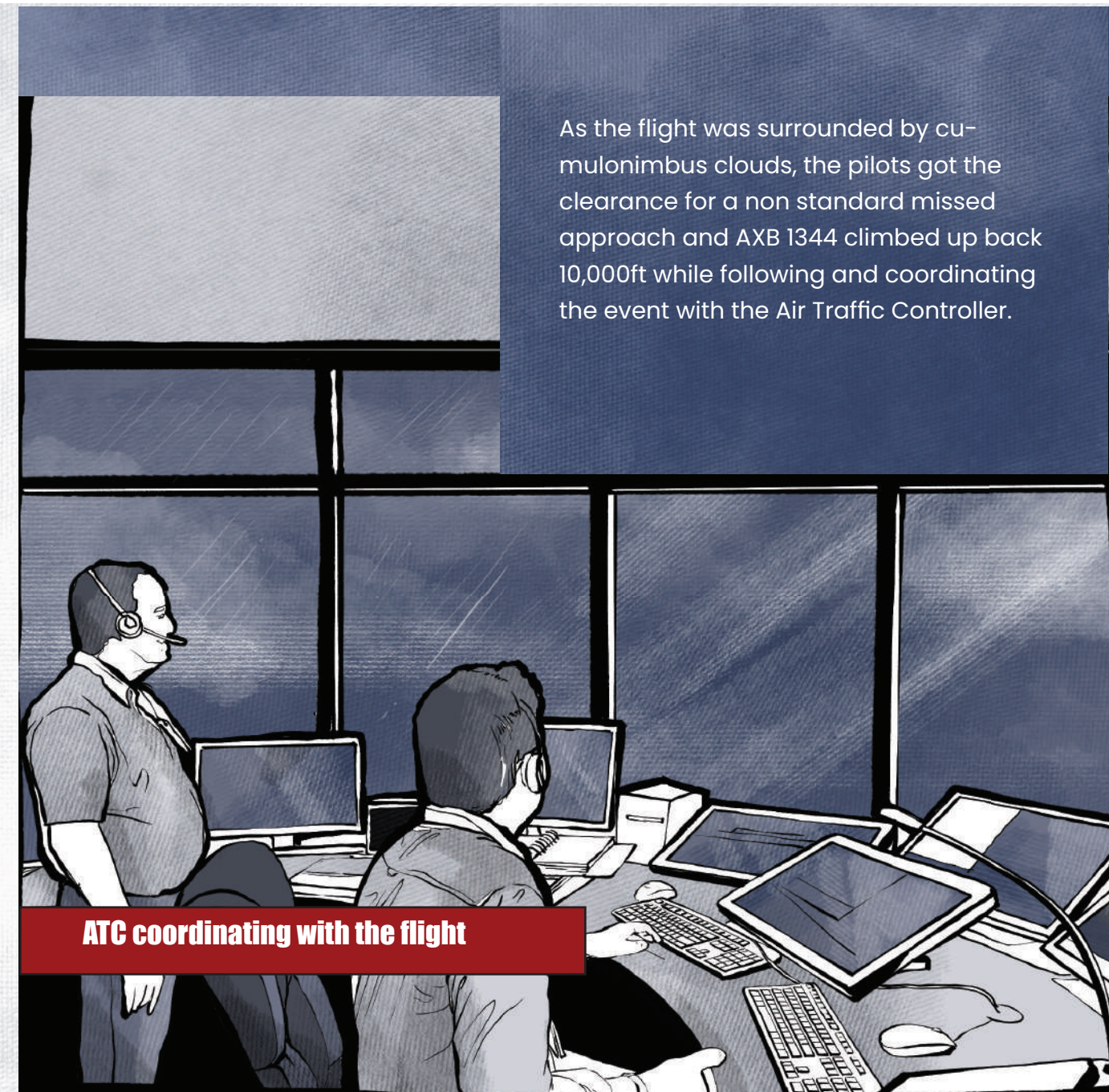
LOW VISIBILITY

Malfunctioning of wind wipers affected the pilot's clear view and contributed to the already existing low visibility conditions.



MISSED APPROACH

As all these things added up, the AXB 1344 pilots were not able to spot the runway, at the minimum height before landing and had to report a missed approach to the Air traffic controller.



As the flight was surrounded by cumulonimbus clouds, the pilots got the clearance for a non standard missed approach and AXB 1344 climbed up back 10,000ft while following and coordinating the event with the Air Traffic Controller.

ATC coordinating with the flight



“

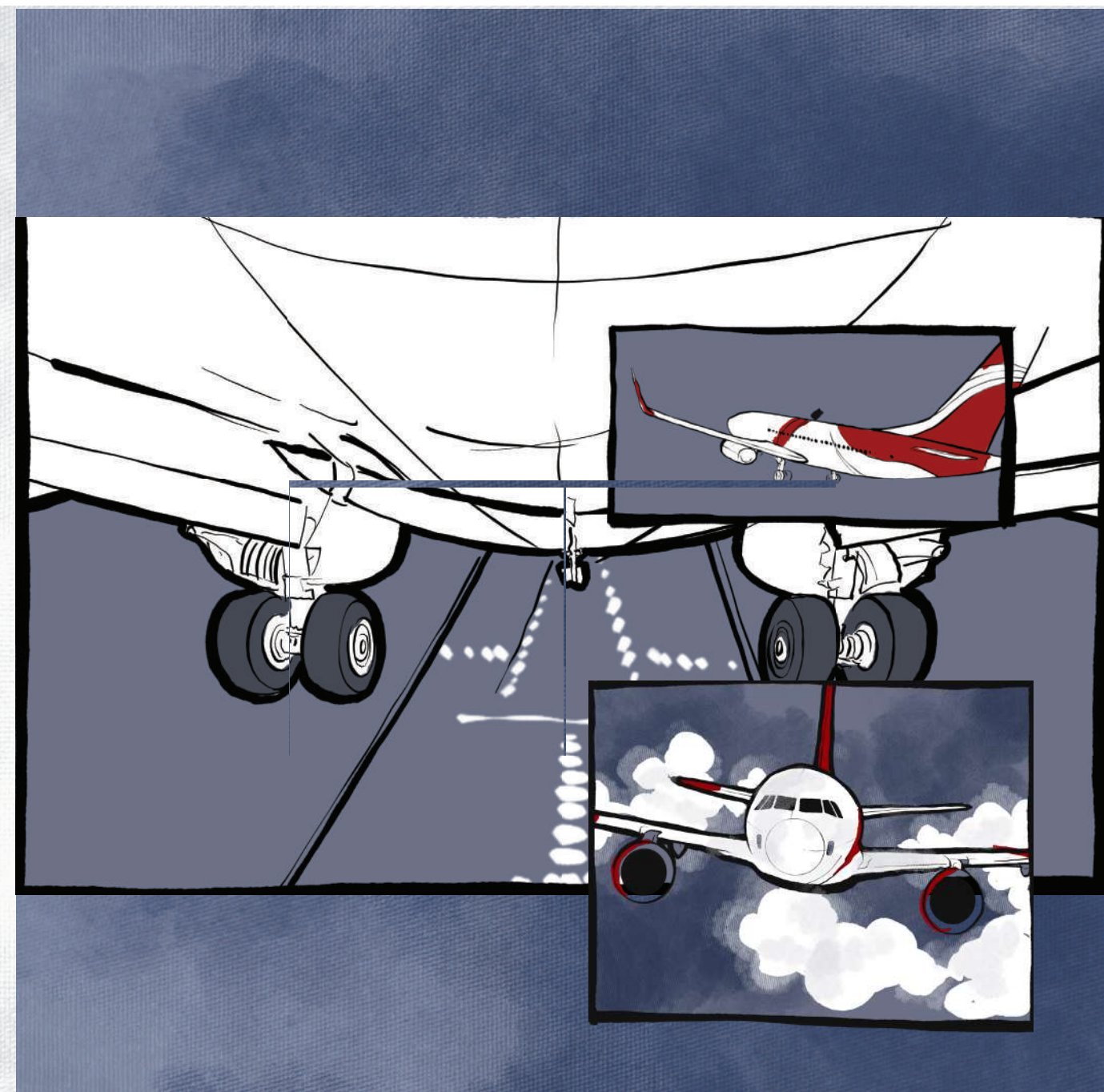
Procedures and plans are seldom able to capture all temporal dimensions of work. They typically do not reflect – at least not to a full extent – the implications of the fact that work is situated in time. To name but a few, what does it mean that the same task has been conducted several times before; that it comes at the beginning or end of a shift, or the general workload at that particular moment; what does it mean that there are parallel activities? Work, when it is executed, must be aligned with ongoing activities: even the most detailed procedures, such as the pre-planned experiments on the International Space Station discussed in Johansen et al.(2016), will need to be implemented in temporal conditions where the trajectories of other activities at the station could interfere with their operations.

- Petter G. Almklov and Stian Antonsen, 2019, *Standardisation and Digitalisation: Changes in Work as Imagined and What This Means for Safety Science*



20 Minutes Before The Crash

AXB 1344 retracted its landing flaps and cleared its undercarriage and the flight was cleaned up and back in the air. During this event, Monitoring pilot completed all the checklists which have to be followed before the take off.

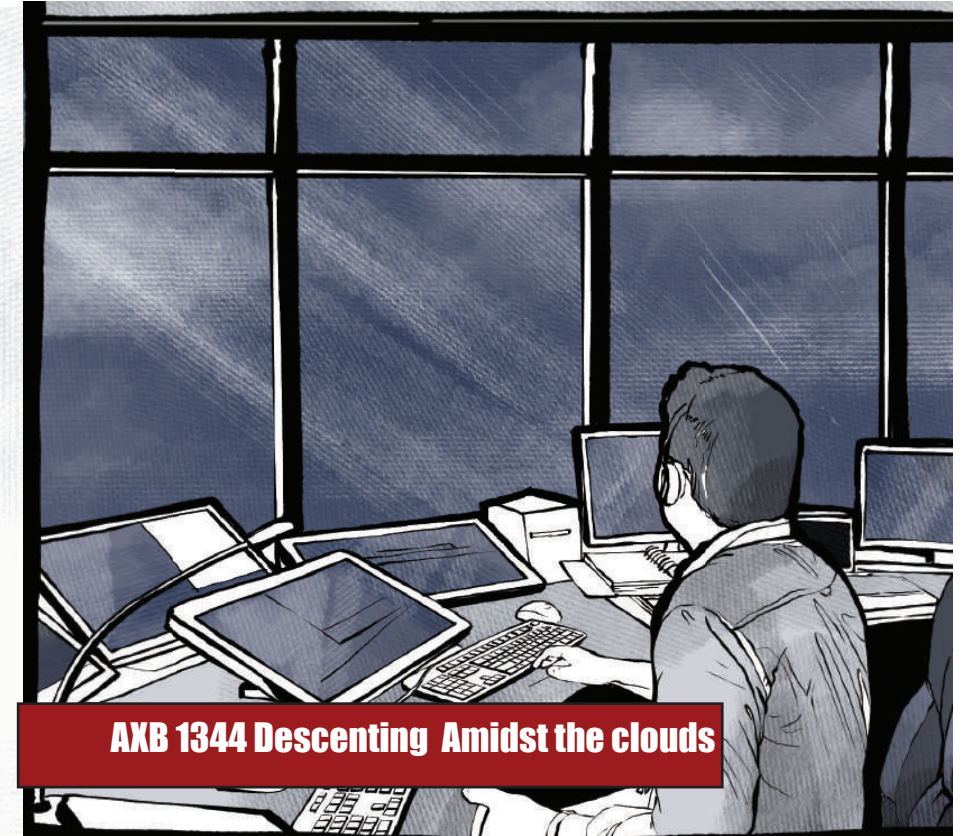




AIC 425 Departure

While, the AXB 1344 had a missed approach, simultaneously the flight AIC 425, an interstate flight flying from Calicut to Delhi requested the Air Traffic Controller for the clearance to take off from runway 10, though it's in-use runway was Runway 28. This request was made in accordance to the situation of prevailing winds and low clouds. Therefore Flight AIC 425 received the clearance for the same.

An aviation runway can be used in two direction and they are also assigned with different sign names as per its direction. In Calicut airport we have Runway 10 & 28. Runway 28 is used when the flight approach for landing from the east side of the airport & Runway 10 when its approaching from airport west side.



AXB 1344 Descending Amidst the clouds

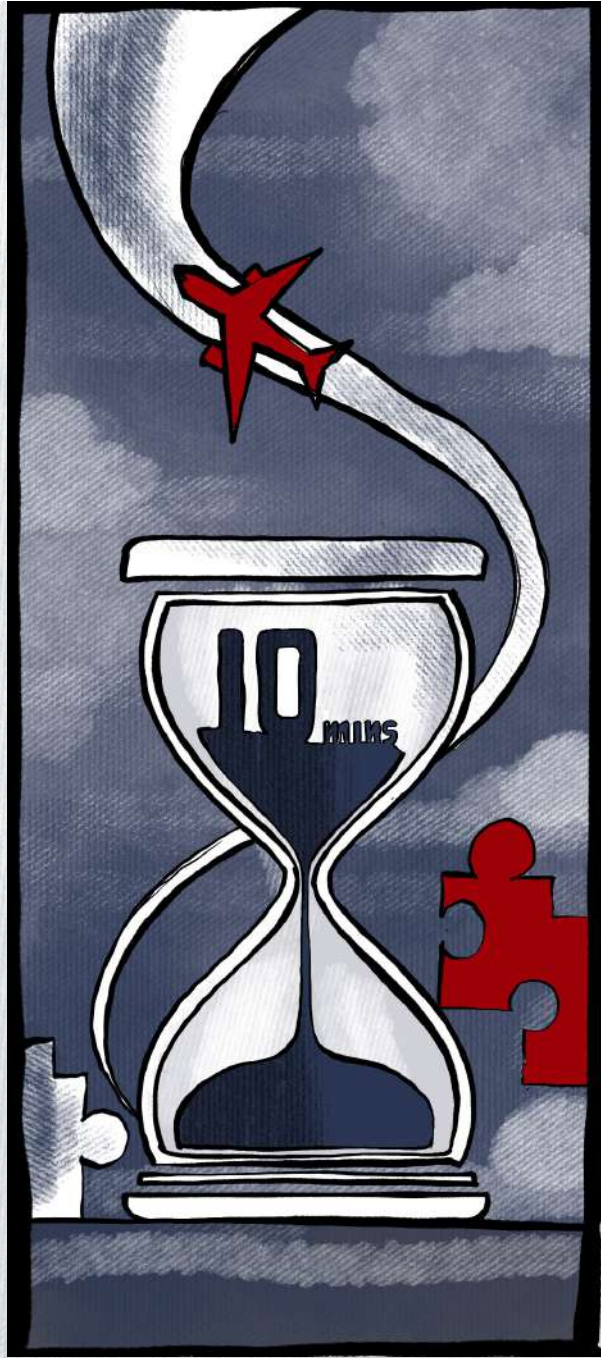
The Air traffic controller afterwards asked the AXB 1344 pilots whether they want to use the Runway 10 for the landing and shared the weather and Visibility data for Runway 10. The Runway 10 landing option was accepted by the AXB 1344.

“

Errors are not intrinsically bad, though their consequences and the workplace local conditions provoking them are often undesirable. It is not so much the psychological processes that determine the nature of the outcome; rather it is the circumstances of their occurrence that shape an error's consequences. Activating the kettle rather than the toaster in your kitchen can be mildly irritating, but the same kind of switching error committed in the control room of a nuclear power plant or on the flight deck of an aircraft can be disastrous.

-James Reason, *A Life in Error*, 1990



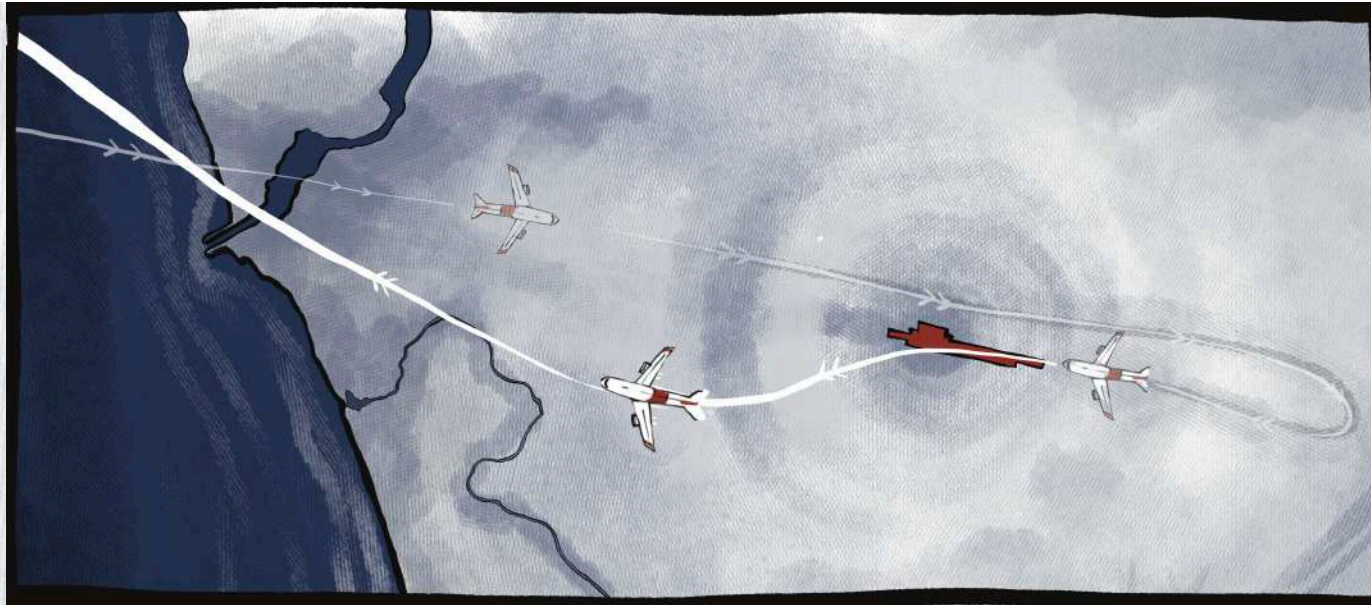


10 Minutes Before The Crash

AXB 1344 asked for descent clearance to the Air Traffic Controller. This clearance to descent from a height of 7000 ft to 3600 ft and further for the ILS*-Z Approach to Runway 10. This clearance was issued.

***ILS – Instrument Landing System**



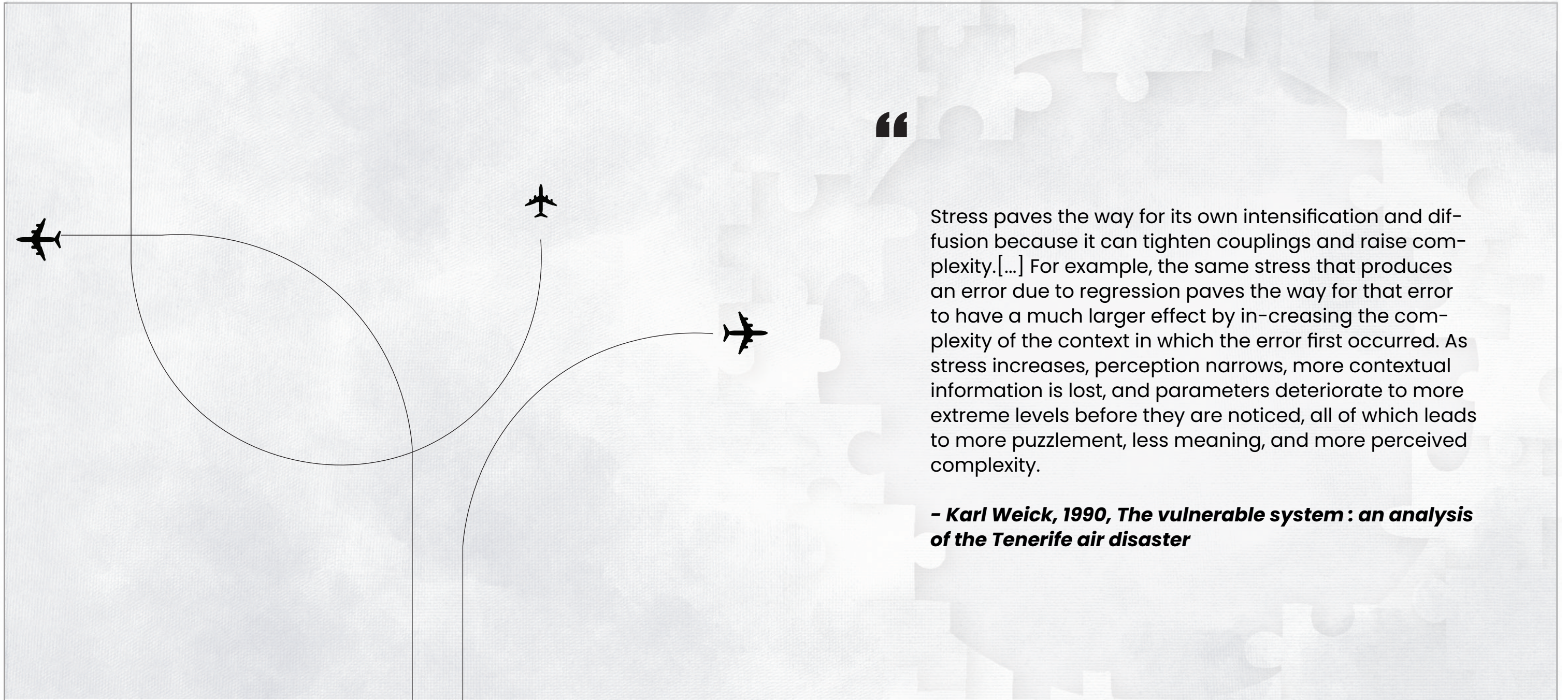


SECOND LANDING APPROACH

The Deputy Air Traffic controller had cautioned AXB 1344 for the inborn turn while they reached the maximum distance of 27.5 Nautical miles. By 14:06 UTC the AXB 1344 was cleared for the landing. It was also spotted in the airport localiser and aligned glidescope for the landing in Runway 10.

wind wiper was turned on immediately after the Akhilesh's prompt



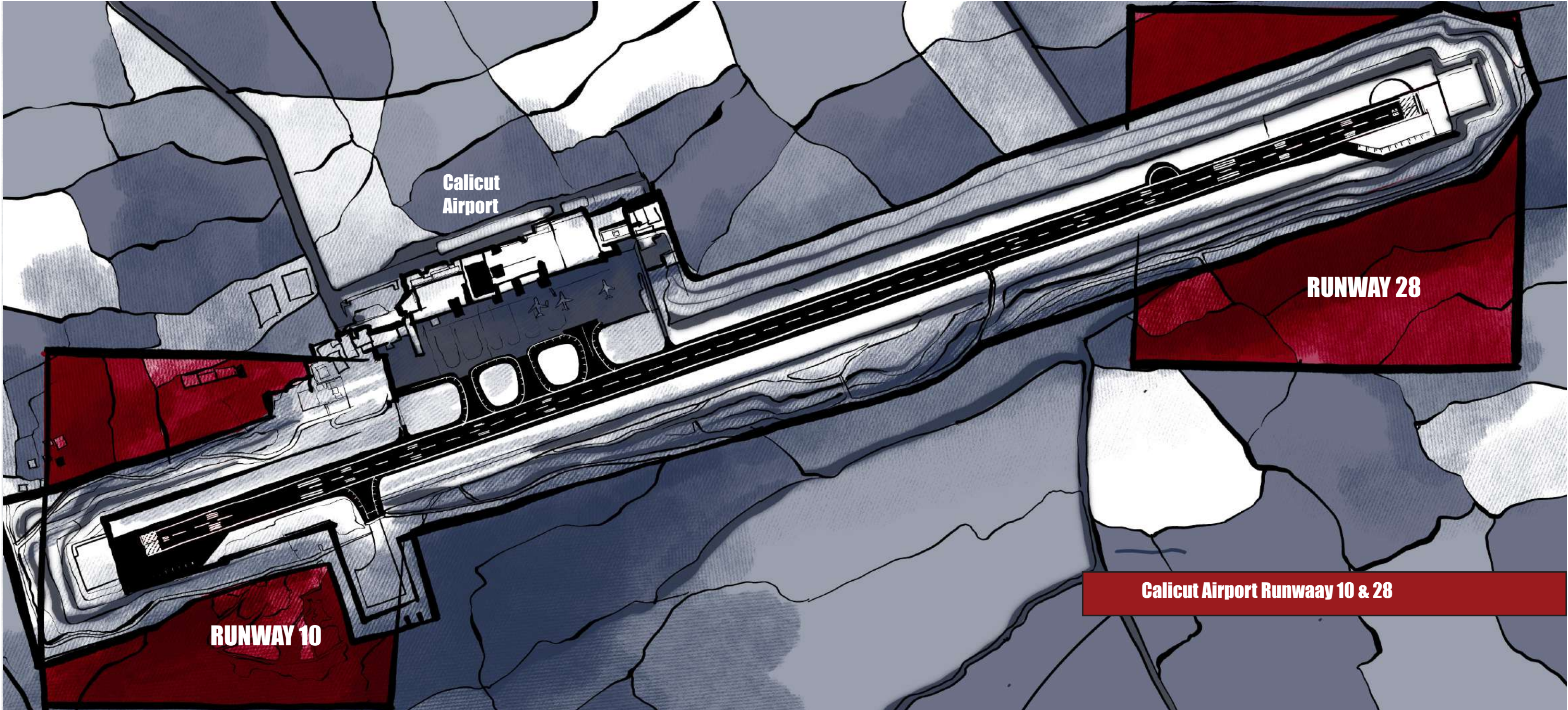




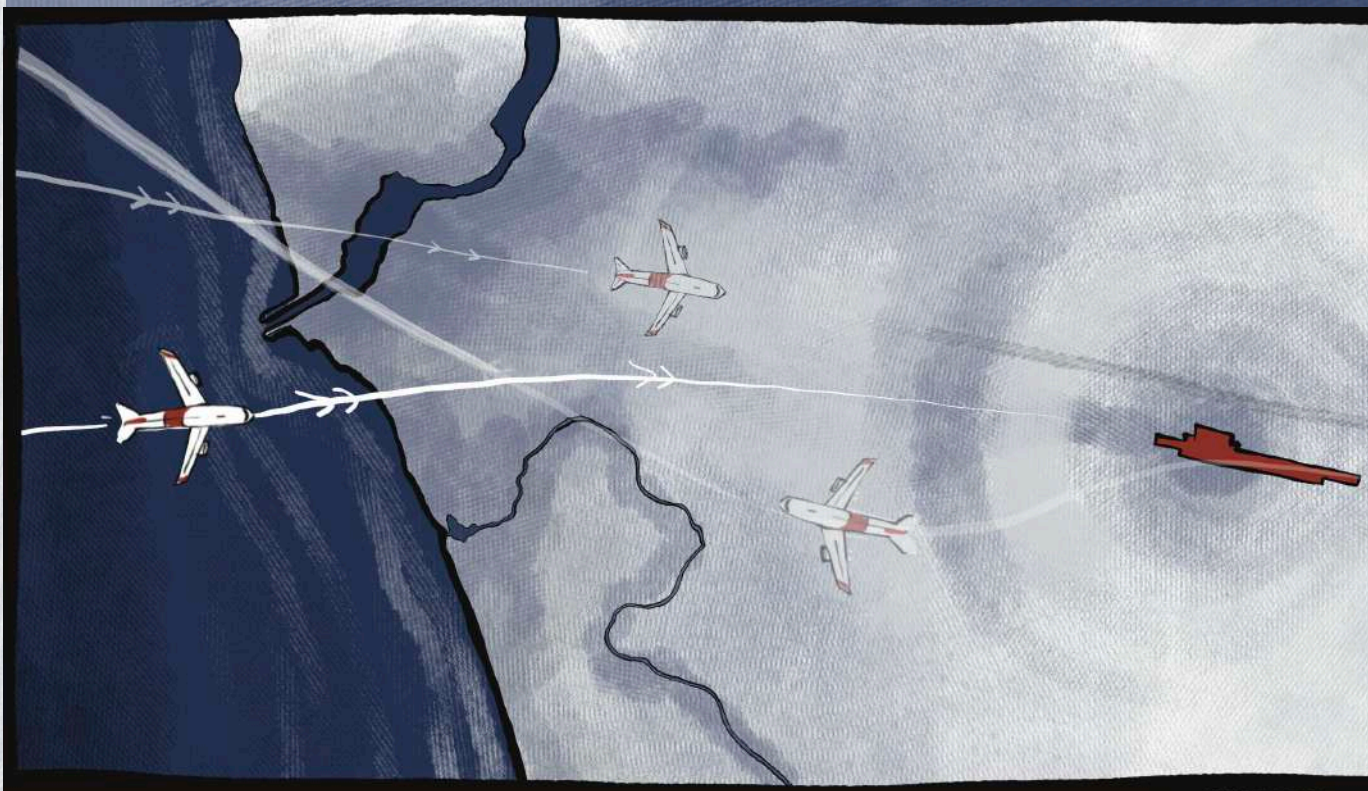
Final Seconds AXB 1344 Crash

The Air traffic controller gave clearance to AXB 1344 for landing at 14:08 UTC. The pilots discussed the landing flap configuration and finally decided to go with Flaps 30 rather than the Flaps 40 to perform better in the expected turbulence. The aircraft was initially functioning with the autopilot and auto throttle engaged. At a height of 500ft autopilot was revoked of action but the autothrottle was still kept on.





As AXB 1344 was on its course of descent for the landing, there was a reduction in the pitch altitude alongside the increase in descent rate. Akhilesh, who was Pilot Monitoring cautioned about the high rate of descent to the Pilot Flying.

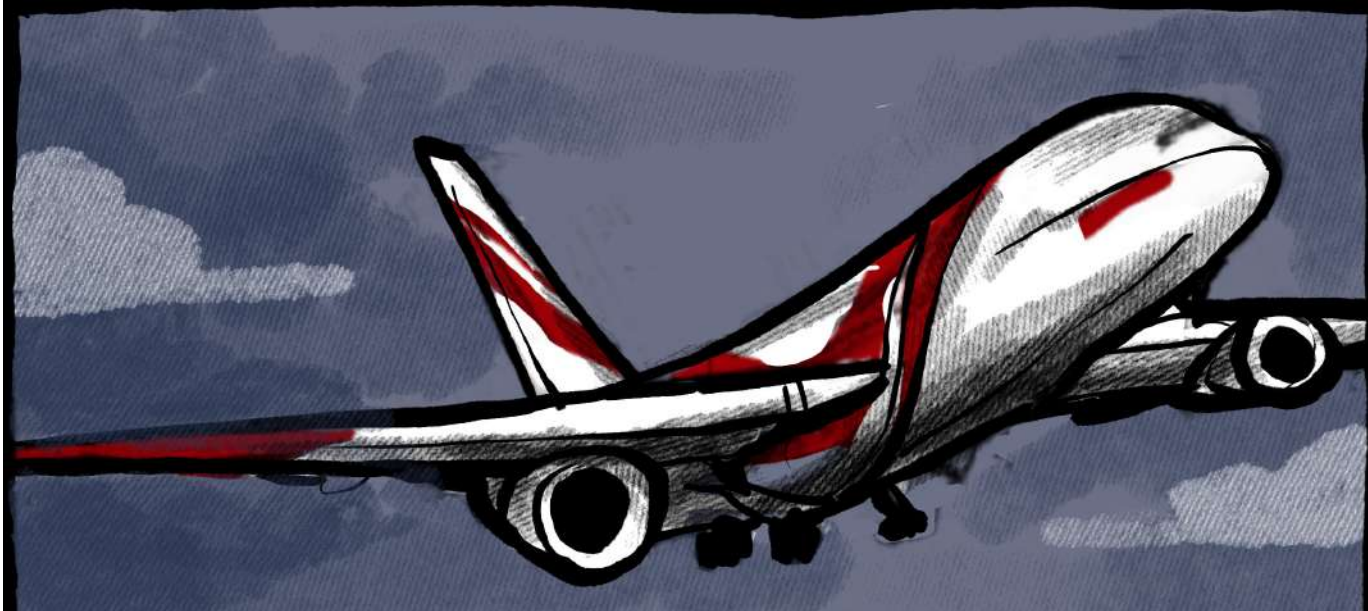


EGPWS ALERT

By this time, the aircraft had already surpassed the runway threshold by around 1363 ft and the flight was at a height 20 ft radio altitude. The flight lateral deviation was corrected while it was floating towards the centreline above the runway.

The landing approach soon became unstabilized, and the reading of ROD* and deviation from Glide-scope increased way beyond the Stabilised Landing approach criteria.

***ROD- Rate of Descent**



Captain Sathe gave the direction for a non standard call to check the landing lights. And by then the AXB 1344 had only a buffer of 500 ft to the end of the Touchdown zone. In the Calicut Airport, the touchdown zone is 3000 ft and they had already covered 2500 ft!

BLACKHOLE APPROACH

Black Hole approach is a term familiar to aviation practitioners as there is a chance of experiencing this illusion in scenarios where there is a low clouds and heavy rain and the low visibility factors adding to the hiding of the landing lights. This inturn can affect the pilot's depth-length perception. In AXB 1344 Captain Sathe would have been is very likely to experience such an illusion which could have affected his decision making skills.

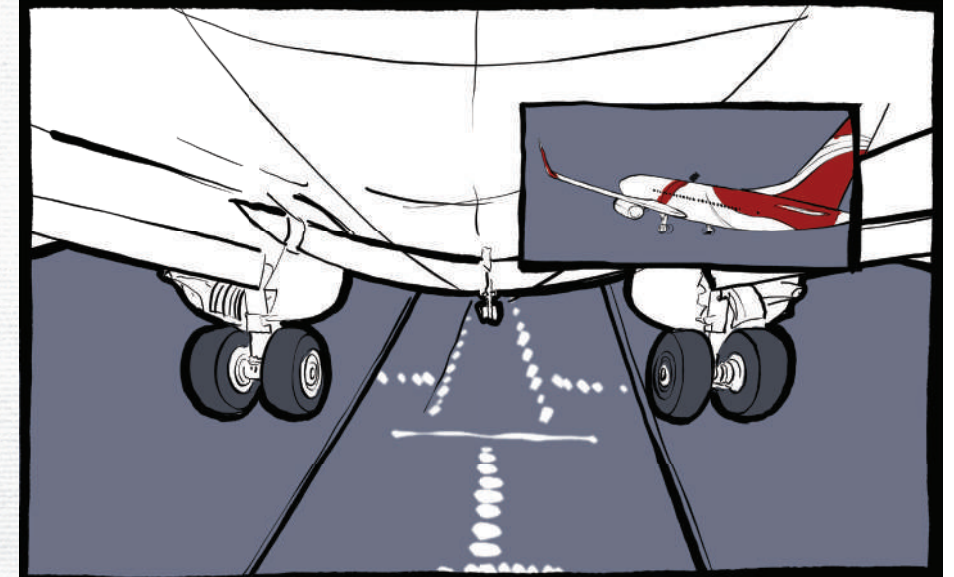


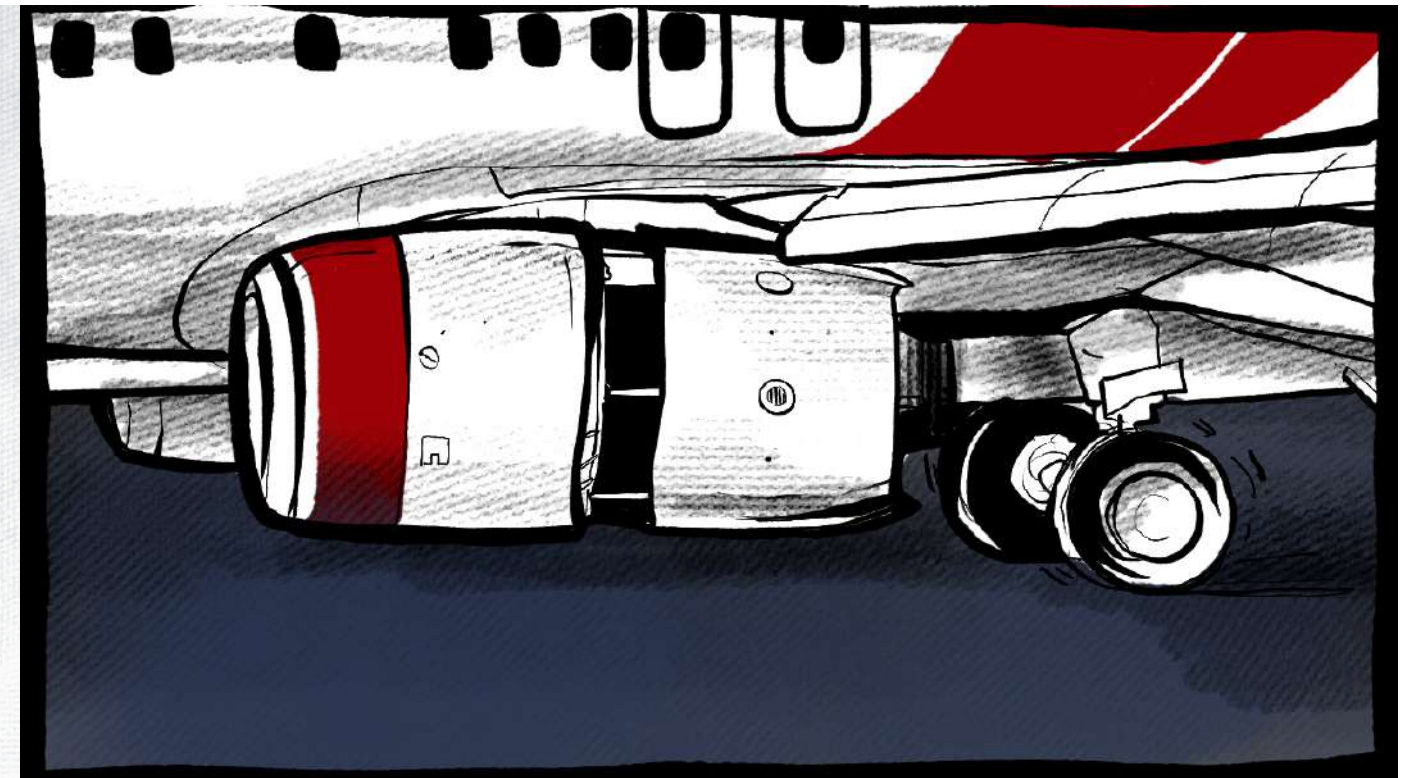
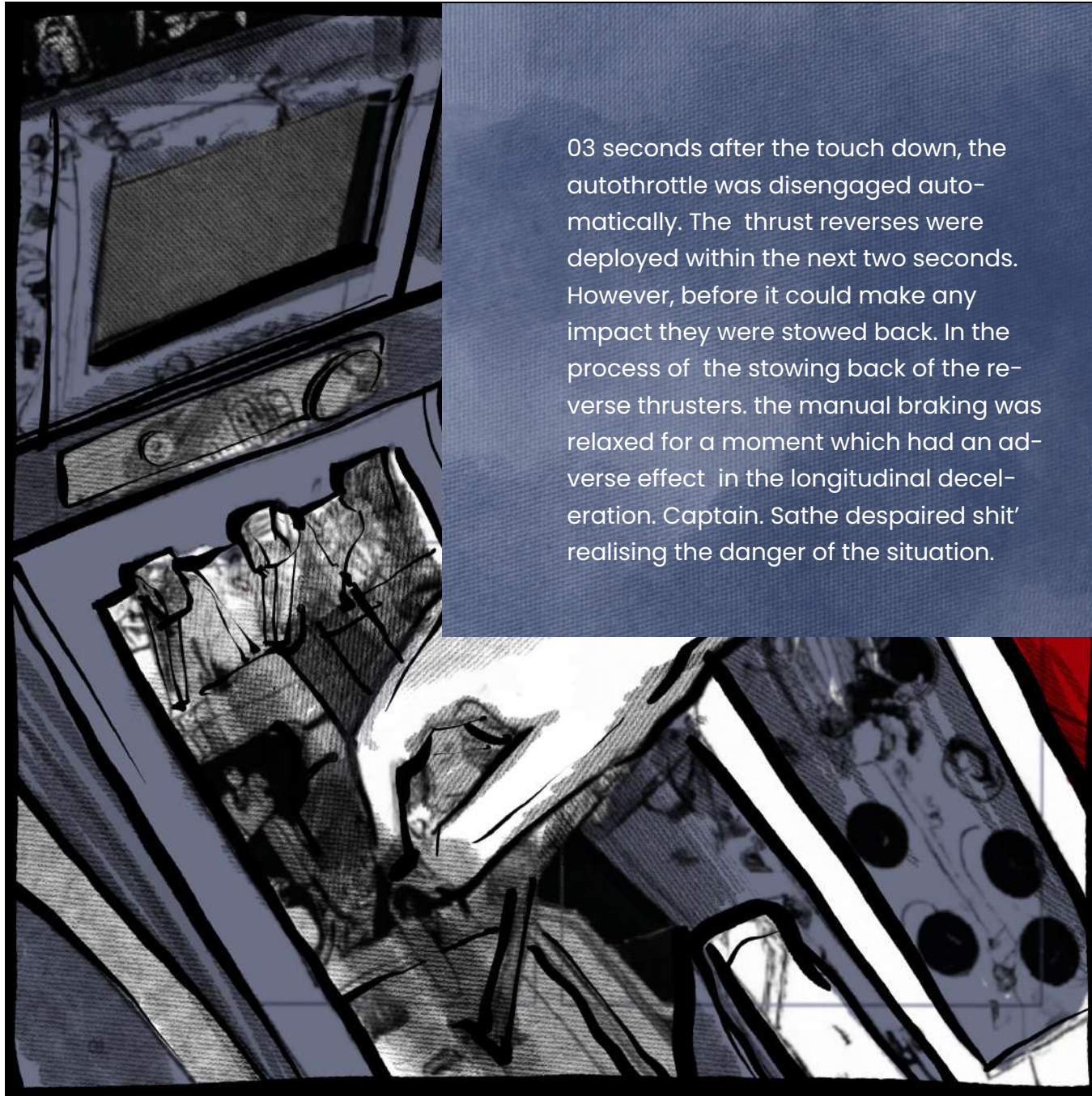
GO AROUND CALL

The Pilot monitoring gave a call to the captain in trembled voice as they had crossed the the of the touchdown zone. Exactly one second before the touchdown, Akhilesh kumar called for a "Go Around" But the Pilot Flying had responded back with a deaf ear and continued with the landing.



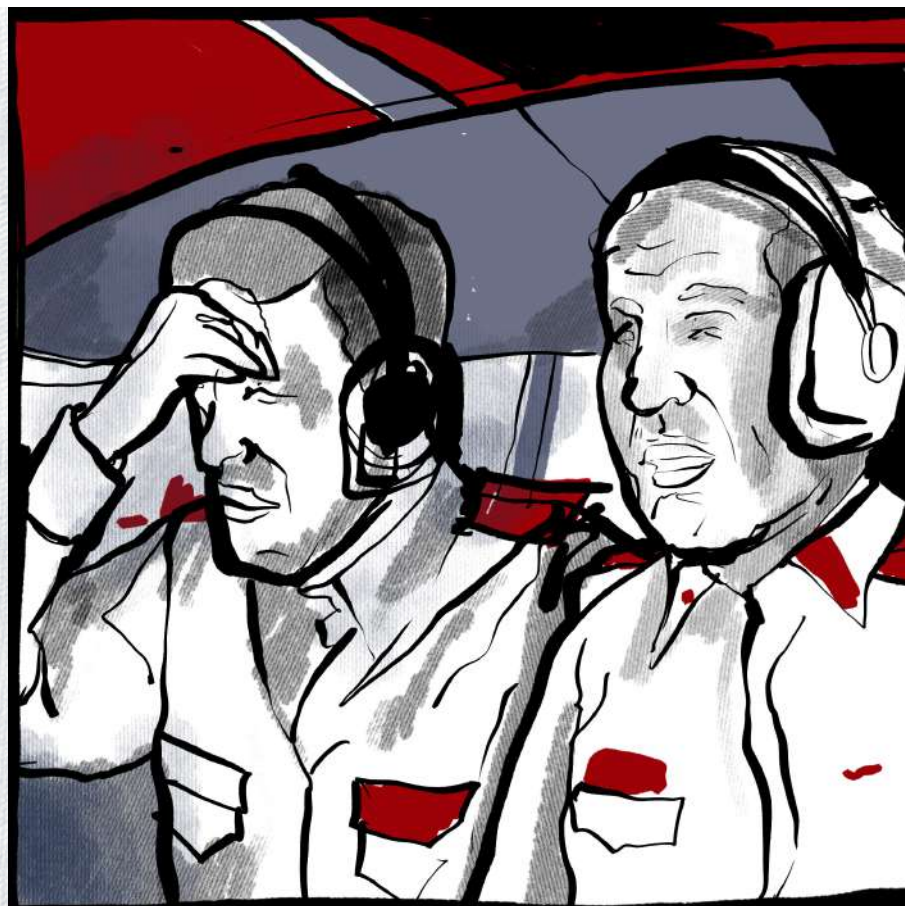
The AXB 1344 aircraft had touchdown in the 8858 ft lengthy runway at a distance of 4438 ft. Captain Sathe resorted to the overriding of auto brake selection with a maximum of manual braking. The Pilot monitoring had given standard calls for autobrake disarm and speed break up but for these too there was no response from the Pilot Flying.





THRUST REVERSERS

Then he went along with the deployment of Thrust Reversers for the second time, and by that time it was almost fifteen seconds after the touchdown. And they remained deployed for the next seven second and it was stowed back again while the engine fan speed was kept still at high speed.



Both the pilots in the sheer pressure and in the vision of death right in front of their eyes, both despaired and “shit” was distinctly uttered by both of them as their last words. And the thrust reversers were equipped again as the AXB 1344 was about to leave the runway and enter the RESA soft ground.



TWO DISTINCT CALLS

The AXB 1344 overshot the runway and the lights for the ‘speed break did not arm’ was lit, by this time the flight had already travelled a distance of 105 ft into the RESA Soft ground. And during the landing role the thrust levers moved forward and came to rest in that position.



PLUMMETING DOWN THE TABLETOP

The aircraft continued to move forward beyond the runway and it exited the Runway 10 designated end with 84.5 kt ground speed. And further it overshot the RESA limits and ILS antenna and fencing was broken down before the aircraft plummeted down the Calicut Tabletop runway and fell into a depth of 110 ft and came to a rest in the perimeter road of the airport.

“

In spite of all efforts to design safer systems, we still witness severe, large-scale accidents. A basic question is: Do we actually have adequate models of accident causation in the present dynamic society? The socio-technical system involved in risk management includes several levels ranging from legislators, over managers and work planners, to system operators. This system is presently stressed by a fast pace of technological change, by an increasingly aggressive, competitive environment, and by changing regulatory practices and public pressure.



Traditionally, each level of this is studied separately by a particular academic discipline, and modelling is done by generalising across systems and their particular hazard sources. It is argued that risk management must be modelled by cross-disciplinary studies, considering risk management to be a control problem and serving to represent the control structure involving all levels of society for each particular hazard category.

- Jens Rasmussen, 1997, *Risk management in a dynamic society: a modelling problem*



Crash Site AXB 1344 Crash

The crashed flight plummeted down the tabletop and came to a rest near the perimeter road. The civilians flocked to be a part of the rescue mission.



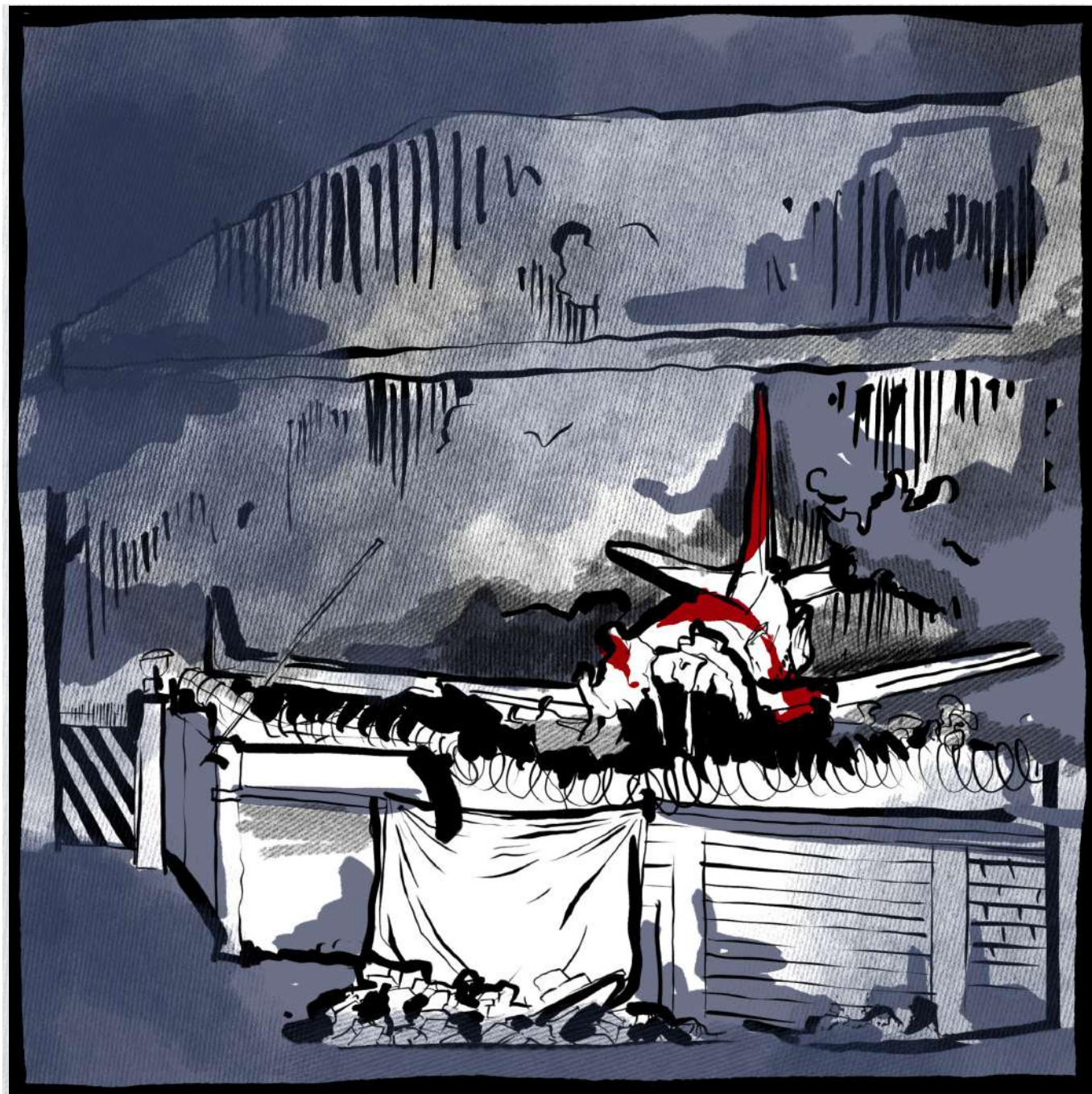
"There were around six of us who managed to get there within a few minutes of the crash. The gates were shut, and people were crying for help. The security people initially refused to open the gates as firefighters were spraying foam on the plane. Many passengers were unconscious. Some were stuck under their seats. We needed to unfasten their seat belts and get them out of the plane.

-Mr Puthiyakath(First responders at crash site)

"We used any vehicle at our disposal, including trucks and auto-rickshaws. There was no time to wait for an ambulance."

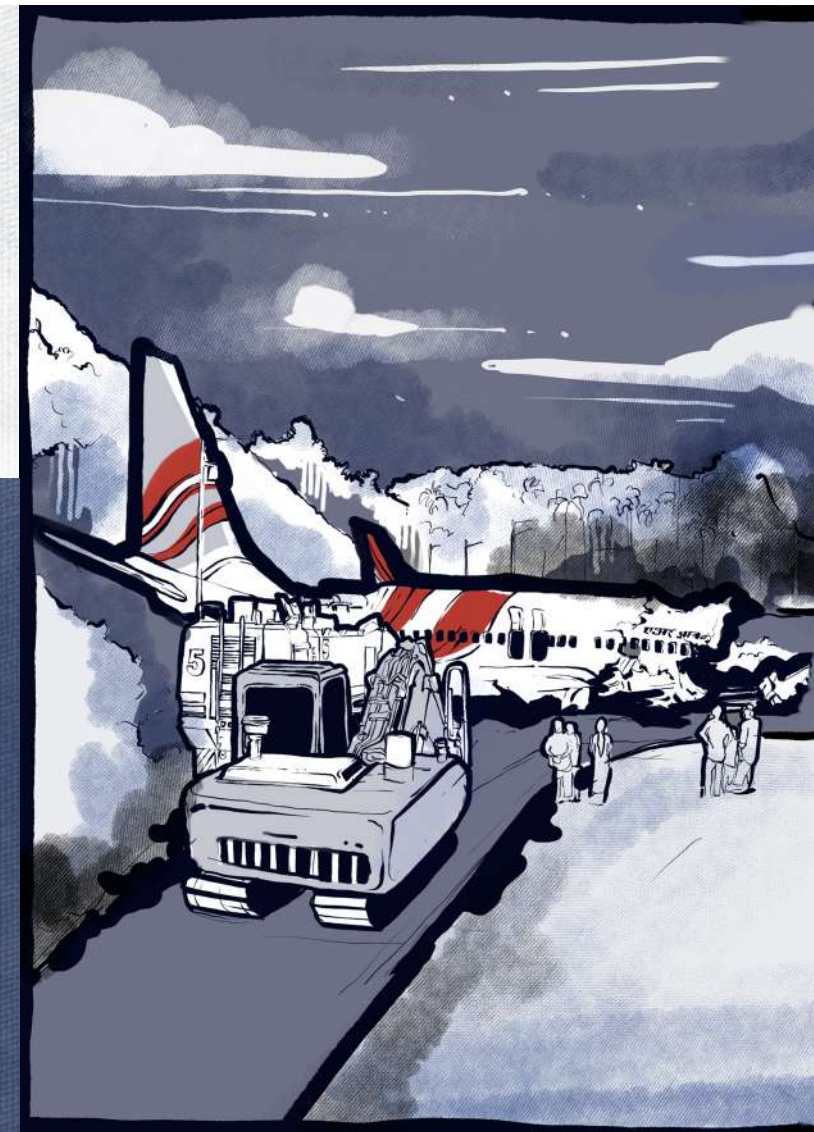
-Mr Fazal Karalil, (a truck driver)





CRASH SITE

Aircraft came to rest near the perimeter road and was broken down into three sections and this tragic accident took the valuable life of 21 people including both the pilots and a cabin crew member. There was no post crash fire due to the heavy rain and that acted as a blessing and many victims were rescued from the crash site.





After Crash Medical Treatments

The fire safety officers, rescue team alongside the local civilians were part of the rescue mission. The crash victims were rushed to hospital in the fastest way.



Crash Victims admitted to hospital



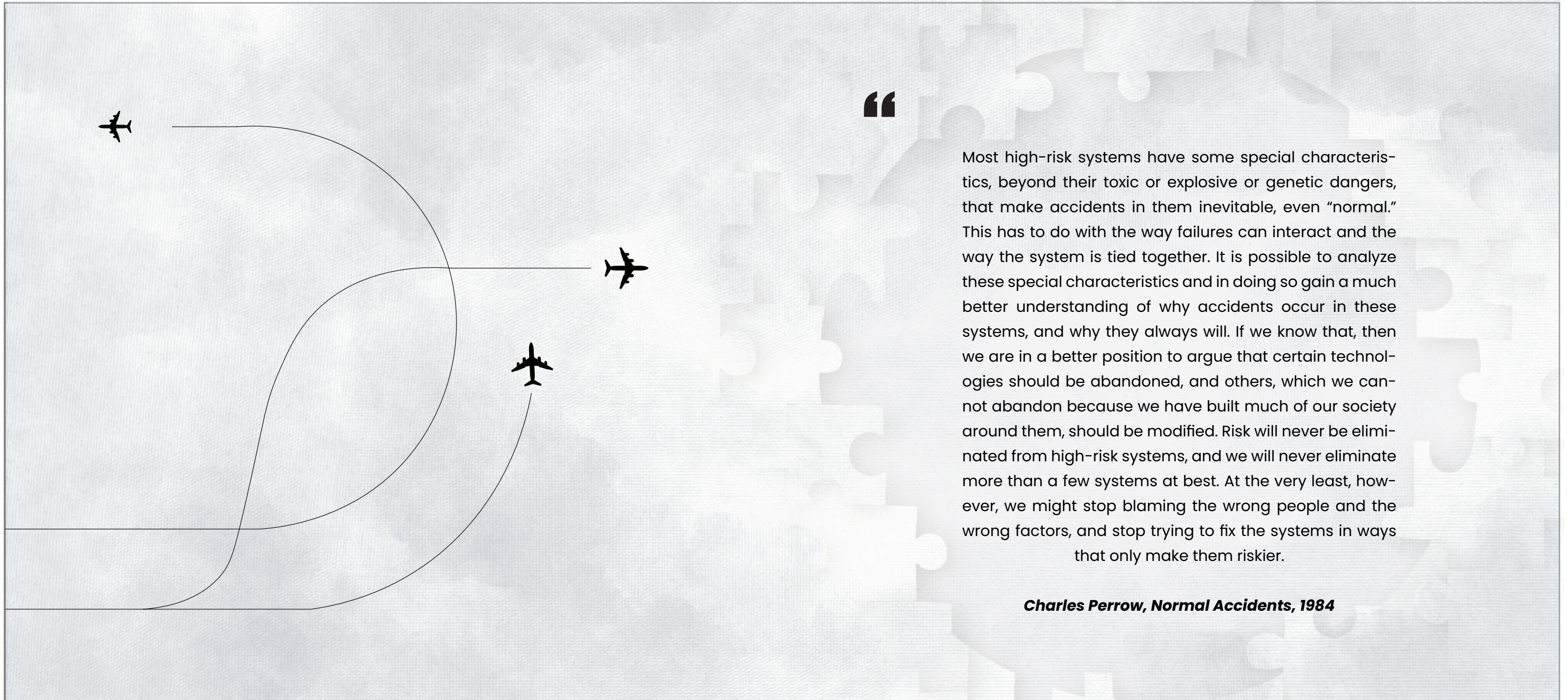
Crash Victims admitted to hospital

THE DEPARTED

Deepak Vasanth Sathe, pilot
Akhilesh Kumar, co-pilot
Sharafudheen Pilassery, 35
Azam Mohammad Chembayi
Shahira Banu, 29
Janaky Kunnoth, 55
Shivathmika Muraleedharan, 5
Remya Muraleedharan, 32
Manal Ahmed, 25
Lailabi K.V, 51
Sheza Fathima, 2
Aysha Dua
Sudeer Variyath, 45,
Saheer Sayed, 38
Muhammed Riyas V. P, 24
Cherikka Parambil Rajeevan, 61
Santha Marakkatt, 59,

FATALITIES

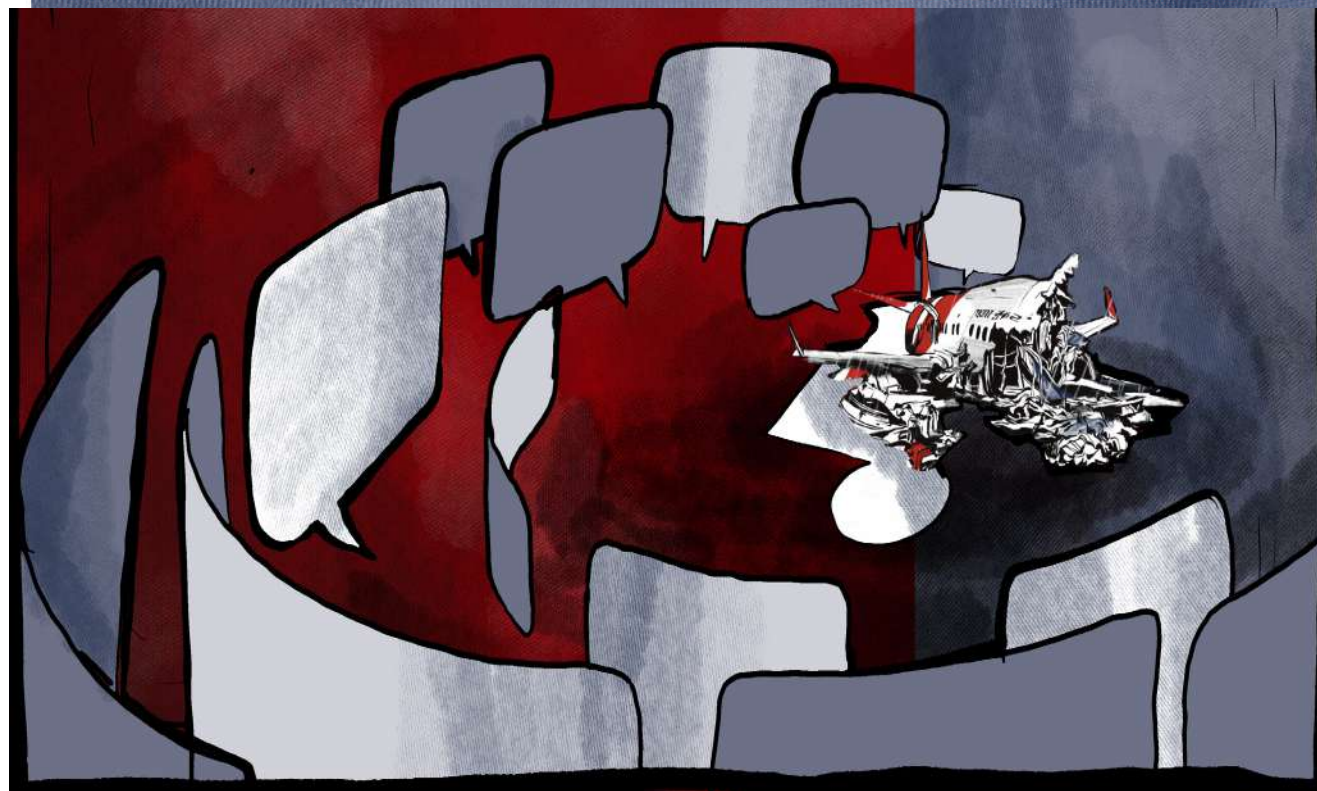
Out of the 184 passengers and a total of six crew members, there was a total death toll of 21 people due to this tragic accident. 16 of the passengers and 2 crew members had embraced death right away in the crash and again three more were added as they also lost their life due to the complications and polytrauma as a result of the accident.



“

Most high-risk systems have some special characteristics, beyond their toxic or explosive or genetic dangers, that make accidents in them inevitable, even “normal.” This has to do with the way failures can interact and the way the system is tied together. It is possible to analyze these special characteristics and in doing so gain a much better understanding of why accidents occur in these systems, and why they always will. If we know that, then we are in a better position to argue that certain technologies should be abandoned, and others, which we cannot abandon because we have built much of our society around them, should be modified. Risk will never be eliminated from high-risk systems, and we will never eliminate more than a few systems at best. At the very least, however, we might stop blaming the wrong people and the wrong factors, and stop trying to fix the systems in ways that only make them riskier.

Charles Perrow, *Normal Accidents*, 1984



LEARNINGS FROM AXB 1344 ACCIDENT

We are flooded by news about accidents on a daily basis. We Indians as a nation have developed a sense of inattentive blindness towards these accidents. We have subliminally accepted the reasons behind these accidents as beyond controllable or in other words we blame it over the fate of the victims whenever an accident occurs.

As responsible citizens and compassionate social beings, we should start asking the questions about what led to this accident, as this will help us to prevent them in the future. Accidents in complex systems are not the manifestation of errors of a single individual, viewed from hindsight. Rather, accidents should be comprehended at various levels of abstraction ranging from people in situations to the rules, regulations and governance structures to successfully prevent accidents in the future. We have to comprehend how work is imagined and how work is done in real situations so that we can envision strategies to reduce the occurrences of these accidents.

Let us return to our fundamental question: What caused the crash of AXB 1344?

According to the Aircraft Accident Investigation Bureau's report one of the core reason that led to the accident was in terms of "Human error", or the misjudgments and action based on those which led to this tragic accident. However, we have to really understand how the accident gestated over a period of time.

Therefore, it was important to layout the the unfolding of the scene with the large-scale context of the flight.

In May, 2010 when a similar accident happened in Mangalore airport, the investigation reports and aviation experts had predicted the risk of recurrence of such an accident in the Calicut Airport as both Calicut and Mangalore airports have tabletop runways. Though there was an alarming concern about the risk factors of Tabletop runway landing in monsoon climates, at an institutional level, there was no change until the very unfortunate tragedy itself unveiled at calicut Airport. And it's only after the crash that the measures as ban on the International flight to Calicut airport was implemented. Who is at fault here? Is the location of Calicut Airport itself a faulty one? or is it the discrepancies from the airport authorities which turned a deaf ear towards these warnings? Is the blame game enough at the institutional level?

Based on the official accident report, other contributory factors prevailed in the gestation of the accident. One of the first technical glitches which led to this accident was the malfunctioning of the wind wipers. The investigation reports point towards the suspicion of a verbal briefing for the pilots regarding the glitches of the Wind wiper. The suggestion by the Pilot Flying to the Pilot Monitoring about setting the Wind wipers to high speed backed the suspicion for the prior awareness of pilots regarding the chance of wind wipers malfunctioning.

the official accident report states that the next key contributory factor was the change of the designated Runway 10 to Runway 28. AS AIC 425 was departing from runway 10, the AXB 1344 also asked for the landing in Runway 10 which was cleared by the ATC. As the investigation report suggests, Runway 10 was a convenient option for the Air Traffic Controller but the Pilot In charge should have been more critical towards this decision. Due to the circumstantial change of runway there was a lack of planning for the second approach. Before the finalisation on the landing in Runway 10, the crew should have made a critical analysis over the factors as the surface winds, selection of the landing flaps and the calculations of the landing distance. The risk factors regarding the landing on a wet runway with tailwinds and the adverse climatic conditions of heavy rainfall and low clouds along side the unserviceability of the wind wipers should have been taken into consideration and then fixed upon the decision whether to land on Runway 10 or to fly towards any alternative nearby airfields. The organisational pressure over the staff to meet the tight workdeadline can be also an indirect contributory factor which clouded the rational reasoning of the pilot.

The official accident report further lists all the factors and actions that led to the accident. In the instance of second approach, the "Go Around" called by the pilot monitoring was not responded by the pilot flying and it is as per the aviation standards if a go around is called by any one of the pilots the pilot flying have to take that into account and do the necessary and even a missed approach is mandatory. Further, if a flight misses two landing approaches, the flight have to

be mandatorily redirected to the nearby airfield. However, the crew of AXB 1344 had flight scheduled for the next day morning 10. This aspect could also be one among the reasons that led to the fixation of runway 10 for the Landing.

The thrust reverses were stocked and unstocked several times in the course of the final seconds before the crash and this action also direct towards the miscalculations of the Pilot flying as the brake was relaxed momentarily in the process stocking of thrust reversers again added as a factor of increasing the speed of the flight while the final landing. In conclusion, an accident happens when numerous factors align and facilitate its occurrence. However, just by identifying the “pilot errors” and actions/inactions in hindsight is not a preventive approach towards accidents of the future. A better step would be to recognize how human actions and their consequences unfold differently in different situations. Perhaps a bit more of immersion and creative empathy is required to understand accidents and use them as learnings to prevent future ones.

Variations in performance become human errors only in an “unkind” environment which does not allow immediate correction. This means that to characterize human “errors”, one has to determine the variability of human behaviour and the acceptance limits for variation which hold for the work situation.

“

Variations in performance become human errors only in an “unkind” environment which does not allow immediate correction. This means that to characterize human “errors”, one has to determine the variability of human behaviour and the acceptance limits for variation which hold for the work situation.

–Jens Rasmussen, 1981, Human errors. A taxonomy for describing human malfunction in industrial installations.

DESIGN PROCESS



The visual book “AXB 1344”, was created following a rigorous process of information collection so as to obtain accurate and comprehensive information about the accident. First, we gathered information from various newspaper sources with emphasis on the local edition newspaper alongside the national ones to get a detailed and contextual understanding of the accident. Second, we extensively engaged with online articles and digital content available on the topic, which included tweets and social media posts based on the Air India 1344 accidents. The YouTube simulation videos on the air crash, supporting documentaries and crash victim interviews were of great help in the curation of the final content structure. In order to provide a more detailed and accurate representation of the accident, we also referenced the Aircraft Accident Investigation Bureau (AAIB), India, report on the accident, which served as a basis of the final. This process ensured that we collected the most relevant and reliable information possible to provide readers with an accurate and detailed account of the incident.

Once the final report was completed, the communication design aspects were considered. We tried different art styles and graphic design elements. The colour palette followed in the book is of a combination dual tone of 'Air Force Blue' and 'Dark crimson Red' Highlights. The Red tone from the "Air India Express" logo was the inspiration for the red highlights added in the book design and as its complementary colour in the colour wheel the pastel dark shade Blue found its way into the design. In the case of the illustration style, a bold stroked comic style was used. Further, a smooth blend of textured shading to add depth to the illustrations is the visual language followed. Overall "AXB 1344" was conceived to follow a minimal palette with a handmade textured finish. This style of illustration was used to ensure that the macro issues get reinforced by the illustrations as well as supporting the criticality and seriousness of the topic, while giving it a unique experience.

The cover design is a very crucial aspect in book design. In the process of creation of the cover, the key concept which is kept in the limelight is a metaphorical composition of puzzles along with the after crash scene of the flight. The puzzles which annotate the investigative decoding of the accident experience is brought to the forefront for the reader. This puzzle slowly unravels as one progresses through this book. The book itself is created in terms of a flashback structure of the events derived from typical accident analysis techniques. It presents the pathways in which the various factors collude together and the accident gestates over a period of time.

References I

1. Thenewsminute. (2020). Dubai-Kozhikode Air India flight splits in two on Karipur runway, many injured. Thenewsminute. Retrieved April 1, 2023, from <https://www.thenewsminute.com/article/dubai-kozhikode-air-india-flight-crashes-karipur-runway-several-injured-130270>
2. Victoria, B. (2021). Pilot error, work culture highlighted in Kozhikode crash of Air India Express. Aerotime. Retrieved April 2, 2023, from <https://www.aerotime.aero/articles/28872-air-india-express-crash-kozhikode>
3. Haritha , J. (2020). What happened in the minutes before Air India Express 1344 crashed in Calicut. The-newsminute. Retrieved April 2, 2023, from <https://www.thenewsminute.com/article/what-happened-minutes-air-india-express-1344-crashed-calicut-130460>
4. BBC. (2021). Air India Express: Deadly plane crash blamed on human error. Bbc. Retrieved April 2, 2023, from <https://www.bbc.com/news/world-asia-india-58532514>
5. Vishnu, S. (2021). Pilot Error Led To Air India Express Crash In Kerala Last Year: Report. Ndtv. Retrieved April 2, 2023, from <https://www.ndtv.com/india-news/report-on-2020-air-india-express-crash-in-kerala-says-pilot-landed-beyond-safe-touchdown-zone-despite-go-around-call-2537792>
6. Manju, V. (2021). Pilot error, Air India Express’ repeated systemic failures; .. Read more at: [http://timesof-](http://timesof-india.indiatimes.com/articleshow/86129930.cms?utm_source=contentofinterest&utm_medium=txt&utm_campaign=cppst)

[india.indiatimes.com/articleshow/86129930.cms?utm_source=contentofinterest&utm_medium=txt&utm_campaign=cppst](http://timesof-india.indiatimes.com/articleshow/86129930.cms?utm_source=contentofinterest&utm_medium=txt&utm_campaign=cppst). Timesofindia. Retrieved April 2, 2023, from <https://timesofindia.indiatimes.com/business/india-business/pilot-error-air-india-express-repeated-systemic-failures-probable-cause-of-kozhikode-aug-2020-crash-aaib-report/articleshow/86129930.cms>

7. Indianexpress. (2020). Air India Express IX 1344 plane crash in Kozhikode: How the incident happened. Indianexpress. Retrieved April 2, 2023, from <https://indianexpress.com/article/india/kozhikode-kerala-air-india-plane-crash-how-the-incident-happened-6544695/>
8. Admiralcloudberg. (2021). The Cost of Inaction: The crash of Air India Express flight 1344. Admiralcloudberg. Retrieved April 2, 2023, from <https://admiralcloudberg.medium.com/the-cost-of-inaction-the-crash-of-air-india-express-flight-1344-2b5300225048>
9. Wikipedia. (2021). Air India Express Flight 1344. Wikipedia. Retrieved April 2, 2023, from https://en.wikipedia.org/wiki/Air_India_Express_Flight_1344
10. Indiatvnews. (2020). Pilot and co-pilot of Air India flight IX1344 killed as plane overshoots runway in Kerala. Indiatvnews. Retrieved April 2, 2023, from <https://www.indiatvnews.com/news/india/air-india-express-ix1344-pilot-dead-after-flights-skids-off-runway-in-kozhikode-640379>
11. Businesstoday. (2020). Kerala plane crash: Air India Express says 85 injured passengers discharged from hospitals. Businesstoday. Retrieved April 2, 2023, from <https://www.businesstoday.in/industry/aviation/story/kerala-plane-crash-air-india-express-85-injured-passengers-discharged-from-hospitals-269876-2020-08-12>
12. FI360aero. (2021). Final Report On Indian Kozhikode Airport Air India Express Aircraft Crash : More Than An Year On , AAIB Final Report Says Pilot’s Non-adherence To SOP Probable Cause ! FI360aero. Retrieved April 2, 2023, from <https://fi360aero.com/detail/final-report-on-indian-kozhikode-airport-air-india-express-aircraft-crash-more-than-an-year-on-aaib-final-report-says-pilot-s-non-adherence-to-sop-proba->

ble-cause/694

13. Wisnerbaum. (2020). Air India Express Flight 1344 Crash in Kerala Kills 18. Wisnerbaum. Retrieved April 2, 2023, from <https://www.wisnerbaum.com/blog/2020/august/air-india-express-flight-1344-crash-in-kerala-ki/>

14. Civilaviation. (2021). REPORT OF THE COMMITTEE CONSTITUTED TO OVERSEE THE IMPLEMENTATION OF RECOMMENDATIONS MADE IN THE KOZHICODE AIRCRAFT ACCIDENT INVESTIGATION REPORT. Civilaviation. Retrieved April 2, 2023, from <https://www.civilaviation.gov.in/sites/default/files/calicut%20report%201.pdf>

15. Pranjal, P. (2021). Investigation Points At Pilot Error In Deadly Air India Express Crash. Simpleflying. Retrieved April 2, 2023, from <https://simpleflying.com/air-india-express-crash-report/>

16. Quora. (2020). What is the present casualty of the Air India 1344 flight accident in Karipur (Kozhikode)? Quora. Retrieved April 2, 2023, from <https://www.quora.com/What-is-the-present-casualty-of-the-Air-India-1344-flight-accident-in-Karipur-Kozhikode>

17. Discoveryplus. (2021). Vande Bharat Flight IX 1344. Discoveryplus. Retrieved April 2, 2023, from <https://www.discoveryplus.in/videos/vande-bharat-flight-ix-1344-hope-to-survival/vande-bharat-flight-ix-1344?type=EPIISODE>

18. NCBI. (2022). Personal effects management of Air India Express flight AI1344: A case study. Ncbi. Retrieved April 2, 2023, from <https://pubmed.ncbi.nlm.nih.gov/35655411/>

19. Facebook. (2021). Air India Express flight 1344 crash video. Facebook. Retrieved April 2, 2023, from <https://www.facebook.com/Mohitflyworld/videos/air-india-express-flight-1344-crash-videoaviationdailynewsupdatecrashlandingonyo/1345162542595802/>

20. Indiatoday. (2020). Thought I'd lost my hands: Air India plane crash survivor recounts final moments before crash. Indiatoday. Retrieved April 2, 2023, from <https://www.indiatoday.in/india/story/air-india-express-plane-crash-survivor-recounts-details-before-kozhikode-kerala-crash-1714731-2020-08-25>

21. Pradeep, S. (2021). Kozhikode crash report: No lessons learned from previous incident, say experts. The-week. Retrieved April 2, 2023, from <https://www.theweek.in/news/india/2021/09/12/kozhikode-crash-report-no-lessons-learned-from-previous-incident-say-experts.html>

22. Rajeev, K. R. (2021). A year on, Karipur survivors battle trauma and loss Read more at: http://timesofindia.indiatimes.com/articleshow/85119286.cms?utm_source=contentofinterest&utm_medium=text&utm_campaign=cppst. Timesofindia. Retrieved April 2, 2023, from <https://timesofindia.indiatimes.com/city/kozhikode/a-year-on-karipur-survivors-battle-trauma-and-loss/articleshow/85119286.cms>

23. Abdullah, A. (2022). Air India Express 1344_4.pptx. Slideshare. Retrieved April 2, 2023, from <https://www.slideshare.net/AbdullahAmjad21/air-india-express-13444pptx>

24. Indiatvnews. (2020). Pilot and co-pilot of Air India flight IX1344 killed as plane overshoots runway in Kerala. Indiatvnews. Retrieved April 2, 2023, from <https://www.indiatvnews.com/news/india/air-india-express-ix1344-pilot-dead-after-flights-skids-off-runway-in-kozhikode-640379>

25. Firstpost. (2020). Kozhikode plane crash: 17 dead, several injured as Air India Express flight IX-1344 bringing Indians home breaks into two while landing. Firstpost. Retrieved April 2, 2023, from <https://www.firstpost.com/india/kozhikode-plane-crash-17-dead-several-injured-as-air-india-express-flight-ix-1344-bringing-indians-home-breaks-into-two-while-landing-8683781.html>

26. Businesstoday. (2020). Kerala plane crash: Air India Express says 85 injured passengers discharged from hospitals. Businesstoday. Retrieved April 2, 2023, from <https://www.businesstoday.in/industry/aviation/story/kerala-plane-crash-air-india-express-85-injured-passengers-discharged-from-hospitals-269876-2020-08-12>

27. Siasat. (2020). Air India Express mishap: Death toll rises to 17. Siasat. Retrieved April 2, 2023, from <https://www.siasat.com/air-india-express-mishap-death-toll-rises-to-17-1941611/>

28. Wisner-law. (2020). Air India Express 1344. Wisner-law. Retrieved April 2, 2023, from <https://wisner-law.com/cases/air-india-express-1344/>

29. Business-standard. (2020). AI Express flight aborted 2 landings before tragic crash-landing: Official. Business-standard. Retrieved April 2, 2023, from https://www.business-standard.com/article/current-affairs/ai-express-flight-aborted-2-landings-before-tragic-crash-landing-official-120080800152_1.html

30. Anu, S. (2020). Air India Express IX 1344 flight touched down 1,000 metres from beginning of runway. Cnbctv18. Retrieved April 2, 2023, from <https://www.cnbctv18.com/aviation/air-india-express-ix-1344-flight-touched-down-1000-metres-from-beginning-of-2700-metres-runway-6582931.htm>

31. Saudigazette. (2020). 17 die, scores hurt as Air India Express flight from Dubai breaks in two in Kozhikode. Saudigazette. Retrieved April 2, 2023, from <https://saudigazette.com.sa/article/596352/World/Asia/17-die-scores-hurt-as-Air-India-Express-flight-from-Dubai-breaks-in-two-in-Kozhikode>

32. Neha, L. M. (2020). Air India crew members who survived Kozhikode air crash given special leave to recover from tragedy. Hindustantimes. Retrieved April 2, 2023, from <https://www.hindustantimes.com/india-news/cabin-crew-members-who-survived-kozhikode-air-crash-given-special-leave-to-recover-from-tragedy/story-akPQHICWSg2BYNObbwYI9H.html>

33. Primevideo. (2020). Vande Bharat Flight IX 1344: Hope to Survival. Primevideo. Retrieved April 2, 2023, from <https://www.primevideo.com/detail/Vande-Bharat-Flight-IX-1344-Hope-to-Survival/0NLKLR-5SIOQFAIFTW9BK04EK1A>

34. Kaypius. (2020). AIR INDIA EXPRESS FLIGHT IX-1344 CRASH: A WAKE-UP CALL TO REFORM DGCA. Kaypius. Retrieved April 2, 2023, from <https://kaypius.com/2020/08/11/air-india-express-flight-ix-1344-crash-a-wake-up-call-to-reform-dgca/>

35. Pinterest. (n.d.). AIR INDIA EXPRESS Flight 1344 Crash | What happened to Air India Express flight 1344. Pinterest. Retrieved April 2, 2023, from <https://in.pinterest.com/pin/533606255854493136/>

36. Thewire. (2020). Black Box Recovered From Air India Express Flight That Crashed at Kozhikode Airport. Thewire. Retrieved April 2, 2023, from <https://thewire.in/government/air-india-express-flight-dubai-kozhikode>

37. Sajila, S. (2020). Dubai-Kerala Air India Express crash: 127 receiving treatment at five hospitals in Kozhikode. Gulfnews. Retrieved April 2, 2023, from <https://gulfnews.com/uae/dubai-kerala-air-india-express-crash-127-receiving-treatment-at-five-hospitals-in-kozhikode-1.73063808>

38. ANInews. (2020). Air India plane crash: Indian consulate in Dubai issues 4 helplines Read more At: <https://www.aninews.in/news/world/asia/air-india-plane-crash-indian-consulate-in-dubai-issues-4-helplines20200807224824/>. Aninews. Retrieved April 2, 2023, from <https://www.aninews.in/news/world/asia/air-india-plane-crash-indian-consulate-in-dubai-issues-4-helplines20200807224824/>

39. Kirti, P. (2020). Pilot of crashed Kozhikode flight jettisoned fuel, switched off engine before crash; averted fire, saved lives. Timesnownews. Retrieved April 2, 2023, from <https://www.timesnownews.com/india/article/pilot-of-crashed-kozhikode-flight-jettisoned-fuel-switched-off-engine-before-crash-averted-fire-saved-lives/633931>

40. Nasreen, A. (2022). Dubai-Kozhikode plane crash: Two years on, survivors live with the consequences. Khaleejtimes. Retrieved April 2, 2023, from <https://www.khaleejtimes.com/uae/dubai-kozhikode-plane-crash-two-years-on-survivors-live-with-the-consequences>

41. Latestly. (n.d.). Kozhikode Plane Crash: Did 40 Passengers of The Air India Express IX 1344 Flight Test COVID-19 Positive? Fact-Check Debunks Fake News. Latestly. Retrieved April 2, 2023, from <https://www.latestly.com/social-viral/fact-check/kozhikode-plane-crash-did-40-passengers-of-the-air-india-express-ix-1344-flight-test-covid-19-positive-fact-check-debunks-fake-news-1950776.html>

42. Alquds. (2020). Air India Express Flight 1344. Alquds. Retrieved April 2, 2023, from https://wiki.alquds.edu/?query=Air_India_Express_Flight_1344

43. Newsnationtv. (2020). watch the expert opinion on Air India Flight IX-1344 crash. Newsnationtv. Retrieved April 2, 2023, from <https://english.newsnationtv.com/videos/india/watch-the-expert-opinion-on-air-in-dia-flight-ix-1344-crash-8/63800>

44. Themorningcontext. (2020). Who really crashed flight AXB 1344? Read more at: <https://themorningcontext.com/business/who-really-crashed-flight-axb-1344> Copyright © The Morning Context. Themorningcontext. Retrieved April 2, 2023, from <https://themorningcontext.com/business/who-really-crashed-flight-axb-1344>

45. Thehindu. (2020). Kozhikode plane crash | Pilots gave Calicut ATC no hint of danger. Thehindu. Retrieved April 2, 2023, from <https://www.thehindu.com/news/national/kozhikode-plane-crash-pilots-gave-calicut-atc-no-hint-of-danger/article61696907.ece>

46. India. (2020). Kerala: Chilling Videos Surface Online Of Air India Express Flight Split In Two Pieces At Kozhikode Airport | WATCH. India. Retrieved April 2, 2023, from <https://www.india.com/viral/kerala-chilling-videos->

surface-online-of-air-india-express-flight-split-in-two-pieces-at-kozhikode-airport-watch-4105356/

47. Paul, W. (2020). Air India Express plane crash: Aircraft breaks apart with 191 people—rescuers at scene. Express. Retrieved April 2, 2023, from <https://www.express.co.uk/news/world/1320066/air-india-express-plane-crash-dubai-calicut-runway>

48. Ecoleglobale. (2020). KOZHIKODE PLANE TRAGEDY: AIR INDIA EXPRESS PLANE CRASH, AT LEAST 18 DEAD. Ecoleglobale. Retrieved April 2, 2023, from <https://www.ecoleglobale.com/blog/kozhikode-plane-tragedy/>

49. Reddit. (2020). The crash of Air India Express flight 1344 – Analysis. Reddit. Retrieved April 2, 2023, from https://www.reddit.com/r/CatastrophicFailure/comments/pqp2vg/2020_the_crash_of_air_india_express_flight_1344/

50. Boomlive. (2020). Video Simulation Of Air India Express Flight 1344 Crash Viral As Real <https://www.boomlive.in/fake-news/video-simulation-of-air-india-express-flight-1344-crash-viral-as-real-9233>. Boomlive. Retrieved April 2, 2023, from <https://www.boomlive.in/fake-news/video-simulation-of-air-india-express-flight-1344-crash-viral-as-real-9233>

51. Abplive. (2020). Air India Plane Crash: Death Toll Rises To 19, Union Minister V Murleedharan Reaches Kerala’s Kozhikode Airport. Abplive. Retrieved April 2, 2023, from <https://news.abplive.com/news/india/air-india-plane-crash-death-toll-rises-to-19-in-kerala-union-minister-v-murleedharan-reaches-kozhikode-mishap-site-1306966>

52. Teodor, S. (2020). VIDEO / Accident: Boeing 737–800 Air India Express, flight IX–1344. Aeronewsglobal. Retrieved April 2, 2023, from <https://aeronewsglobal.com/video-accident-boeing-737-800-air-india-express-flight-ix-1344/>

53. Airlinestaffrates. (2020). IX 1344 incident at Kozhikode – UPDATES Accident bulletin 3 – 7th August, 2020. Airlinestaffrates. Retrieved April 2, 2023, from <https://www.airlinestaffrates.com/air-india-express-state-ment/>

54. Ajay, P. (2020). AIR INDIA EXPRESS FLIGHT IX–1344 – CRASH UPDATE. Mentourpilot. Retrieved April 2, 2023, from <https://mentourpilot.com/air-india-express-flight-ix-1344-crash-update/>

55. Krishna, B. S. (2020). Air India Plane Crash : खाई में गरी वमिान, दो टुकड़ों में बंटा, 17 की मौत, बचाए गए 174 लोग, PM मोदी ने मदद का भरोसा दिया. Jagran. Retrieved April 2, 2023, from <https://www.jagran.com/news/nation-al-air-india-express-plane-skidded-during-landing-at-karipur-airport-in-kerala-kozhikode-20602589.html>

al-air-india-express-plane-skidded-during-landing-at-karipur-airport-in-kerala-kozhikode-20602589.html

56. Newindianexpress. (2020). ialpa. Newindianexpress. Retrieved April 2, 2023, from <https://www.newindianexpress.com/states/kerala/2020/aug/07/air-india-flight-splits-into-two-after-skidding-off-calicut-airport-runway-pilots-among-19-dead-2180503.html>

57. Ialpa. (2020). IFALPA Global Pilots On Air India Express Flight IX 1344. Ialpa. Retrieved April 2, 2023, from <https://ialpa.net/ifalpa-air-india-express-flight-ix-1344/>

58. Newsinfo. (2020). Air India Express flight from Dubai with 190 aboard crash lands at Kerala airport Read more: <https://newsinfo.inquirer.net/1318391/air-india-express-flight-from-dubai-with-191-passengers-crash-lands-at-kerala-airport#ixzz7xfDHQ57V> Follow us: @inquirerdotnet on Twitter | inquirerdotnet on Facebook. Newsinfo. Retrieved April 2, 2023, from <https://newsinfo.inquirer.net/1318391/air-india-express-flight-from-dubai-with-191-passengers-crash-lands-at-kerala-airport>

59. Republicworld. (2020). Debris Of AI Express Flight That Crashed At Kozhikode Cleared From Runway; WATCH. Republicworld. Retrieved April 2, 2023, from <https://www.republicworld.com/india-news/general-news/debris-of-ai-express-flight-that-crashed-at-kozhikode-cleared-from-runway-watch.html>

60. Scmp. (2020). Survivors of deadly Air India crash describe how plane swayed, nosedived after landing. Scmp. Retrieved April 2, 2023, from <https://www.scmp.com/news/asia/south-asia/article/3096607/survivors-deadly-air-india-crash-describe-how-plane-swayed>

61. Takeoffwithguru. (2020). Air India Express plane crash in Kerala: What we know so far. Takeoffwithguru. Retrieved April 2, 2023, from <https://takeoffwithguru.com/air-india-express-plane-crash-kerala/>

62. Suman, M. (2020). Kerala: Air India Flight Crashed, Pilot & Co–Pilot Killed. Gulte. Retrieved April 2, 2023, from <https://www.gulte.com/political-news/18768/kerala-air-india-flight-crashed-pilot-co-pilot-killed>

63. Geo. (2020). Black box of ill–fated Air India flight IX–1344 recovered. Geo. Retrieved April 2, 2023, from <https://www.geo.tv/latest/301863-black-box-of-ill-fated-air-india-flight-ix-1344-recovered>

64. Businessinsider. (2020). Air India Express plane crash death stands at 18 – a deceased passenger tests positive for COVID–19, rescue officials asked to go on self–quarantine. Businessinsider. Retrieved April 2, 2023, from <https://www.businessinsider.in/india/news/air-india-express-plane-crash-lands-in-kerala-af->

ter-overshooting-the-runway/articleshow/77417928.cms

65. Businesswire. (2020). IFALPA Global Pilots on Air India Express Flight IX-1344. Businesswire. Retrieved April 2, 2023, from <https://www.businesswire.com/news/home/20200807005494/en/IFALPA-Global-Pilots-on-Air-India-Express-Flight-IX-1344>

66. Inquirer. (2020). Air India Express flight from Dubai with 190 aboard crash lands at Kerala airport Read more: <https://newsinfo.inquirer.net/1318391/air-india-express-flight-from-dubai-with-191-passengers-crash-lands-at-kerala-airport#ixzz7xf6Lr3Be> Follow us: @inquirerdotnet on Twitter | inquirerdotnet on Facebook. Inquirer. Retrieved April 2, 2023, from <https://newsinfo.inquirer.net/1318391/air-india-express-flight-from-dubai-with-191-passengers-crash-lands-at-kerala-airport>

67. Republicworld. (2020). Debris Of AI Express Flight That Crashed At Kozhikode Cleared From Runway; WATCH. Republicworld. Retrieved April 2, 2023, from <https://www.republicworld.com/india-news/general-news/debris-of-ai-express-flight-that-crashed-at-kozhikode-cleared-from-runway-watch.html>

68. Scmp. (2020). Survivors of deadly Air India crash describe how plane swayed, nosedived after landing. Scmp. Retrieved April 2, 2023, from <https://www.scmp.com/news/asia/south-asia/article/3096607/survivors-deadly-air-india-crash-describe-how-plane-swayed>

69. Luke. (2020). Air India Express plane crash in Kerala: What we know so far. Takeoffwithguru. Retrieved April 2, 2023, from <https://takeoffwithguru.com/air-india-express-plane-crash-kerala/>

70. Suman, M. (2020). Kerala: Air India Flight Crashed, Pilot & Co-Pilot Killed. Gulte. Retrieved April 2, 2023, from <https://www.gulte.com/political-news/18768/kerala-air-india-flight-crashed-pilot-co-pilot-killed>

71. Geo. (2020). Black box of ill-fated Air India flight IX-1344 recovered. geo.tv. Retrieved April 2, 2023, from <https://www.geo.tv/latest/301863-black-box-of-ill-fated-air-india-flight-ix-1344-recovered>

72. Prabhjote, G. (2020). Air India Express plane crash death stands at 18 - a deceased passenger tests positive for COVID-19, rescue officials asked to go on self-quarantine. Businessinsider. Retrieved April 2, 2023, from <https://www.businessinsider.in/india/news/air-india-express-plane-crash-lands-in-kerala-after-overshooting-the-runway/articleshow/77417928.cms>

73. Businesswire. (2020). IFALPA Global Pilots on Air India Express Flight IX-1344. Businesswire. Retrieved April 2, 2023, from <https://www.businesswire.com/news/home/20200807005494/en/IFALPA-Global-Pilots-on-Air-India-Express-Flight-IX-1344>

on-Air-India-Express-Flight-IX-1344

74. Simon, H. (2020). The Aviation Herald. Avherald. Retrieved April 2, 2023, from <https://avherald.com/h?article=4daf960f>

75. Edition. (2020). Deadly plane crash in India. Edition. Retrieved April 2, 2023, from <https://edition.cnn.com/world/live-news/india-plane-crash-august-2020/index.html>

76. Wikidata. (2020). Air India Express Flight 1344. Wikidata. Retrieved April 2, 2023, from <https://www.wikidata.org/wiki/Q98129149>

77. Wheeler, J. (2020). Air India Express Flight IX-1344 Tragedy, Kozhikode International Airport. Ialpg. Retrieved April 2, 2023, from <https://www.ialpg.com/air-india-express-flight-ix-1344-tragedy-calicut-international-airport-7-august-2020/>

78. Bismee, T. (2020). Air India Express crash in Kerala is flag carrier's deadliest tragedy since 2010. Theprint. Retrieved April 2, 2023, from <https://theprint.in/india/air-india-express-crash-in-kerala-is-flag-carriers-deadliest-tragedy-since-2010/477426/>

79. Deepayan, S. (2020). "Back To Home": Kozhikode Air India Express crash victim posted last selfie with family after boarding the ill-fated flight. Indiablooms. Retrieved April 2, 2023, from <https://www.indiablooms.com/news-details/N/63836/-back-to-home-kozhikode-air-india-express-crash-victim-posted-last-selfie-with-family-after-boarding-the-ill-fated-flight.html>

80. Factly. (2020). A flight simulation video shared as video of Air India Express flight just before its accident. Factly. Retrieved April 2, 2023, from <https://factly.in/a-flight-simulation-video-shared-as-video-of-air-india-express-flight-just-before-its-accident/>

81. Brad, B. (2020). Air India Plane Crashes, Rips Into Two on Calicut Runway. Interestingengineering. Retrieved April 2, 2023, from <https://interestingengineering.com/culture/air-india-plane-crashes-rips-into-two-on-calicut-runway>

82. Ifalpa. (2020). IFALPA Global Pilots On Air India Express Flight IX 1344. Ifalpa. Retrieved April 2, 2023, from <https://www.ifalpa.org/news/ifalpa-global-pilots-on-air-india-express-flight-ix-1344/>

83. Wikiwand. (2020). Air India Express Flight 1344. Retrieved April 2, 2023, from <https://www.wikiwand.com/en/>

Air_India_Express_Flight_1344

84. Nytimes. (2020). Air India Crash Investigators Focus On a Dangerous Runway and a Pilot's Actions. Nytimes. Retrieved April 2, 2023, from <https://www.nytimes.com/2020/08/08/world/asia/india-plane-crash-dubai.html>

85. Oneindia. (2020). Air India Express crash: What we know about flight IX 1344 Read more at: <https://www.oneindia.com/india/air-india-express-crash-what-we-know-about-flight-ix-1344-3131660.html>. Oneindia. Retrieved April 2, 2023, from <https://www.oneindia.com/india/air-india-express-crash-what-we-know-about-flight-ix-1344-3131660.html>

86. Joe, C. (2020). BREAKING: 17 Killed in Air India Express Flight 1344 Crash. Flyertalk. Retrieved April 2, 2023, from <https://www.flyertalk.com/articles/breaking-air-india-express-flight-1344-crashes-at-kozhikode-intl-airport.html>

87. Insurancebusinessmag. (2020). Insurers pay record-breaking claim after deadly Air India crash. Insurancebusinessmag. Retrieved April 2, 2023, from <https://www.insurancebusinessmag.com/asia/news/breaking-news/insurers-pay-recordbreaking-claim-after-deadly-air-india-crash-238279.aspx>

88. Scroll.in. (2021). Pilot's error probably caused 2020 Kerala plane crash, says inquiry report. Retrieved April 2, 2023, from <https://scroll.in/latest/1005190/pilots-error-probably-caused-2020-kerala-plane-crash-says-inquiry-report>

89. Livefromalounge. (2020). Air India Express Boeing 737 crash lands in Calicut on arrival from Dubai. Livefromalounge. Retrieved April 2, 2023, from <https://livefromalounge.com/air-india-crash-calicut/>

90. Thequint. (2020). 18 Dead as Air India Plane Skids Off Kerala Runway, Snaps in Two. Thequint. Retrieved April 2, 2023, from <https://www.thequint.com/news/india/air-india-express-plane-skids-during-landing-at-karipur-airport-kozhikode-kerala>

91. Thewire. (2020). Black Box Recovered From Air India Express Flight That Crashed at Kozhikode Airport. Thewire. Retrieved April 2, 2023, from <https://thewire.in/government/air-india-express-flight-dubai-kozhikode>

92. ANInews. (2020). Air India flight's Black Box recovered from Kozhikode crash site, probe underway, says Hardeep Singh Puri Read more At: [https://www.aninews.in/news/national/general-news/air-in-](https://www.aninews.in/news/national/general-news/air-in-dia-flights-black-box-recovered-from-kozhikode-crash-site-probe-underway-says-hardeep-singh-puri20200808192613/)

[dia-flights-black-box-recovered-from-kozhikode-crash-site-probe-underway-says-hardeep-singh-puri20200808192613/](https://www.aninews.in/news/national/general-news/air-in-dia-flights-black-box-recovered-from-kozhikode-crash-site-probe-underway-says-hardeep-singh-puri20200808192613/). Aninews. Retrieved April 2, 2023, from <https://www.aninews.in/news/national/general-news/air-india-flights-black-box-recovered-from-kozhikode-crash-site-probe-underway-says-hardeep-singh-puri20200808192613/>

93. Saudigazette. (2020). 17 die, scores hurt as Air India Express flight from Dubai breaks in two in Kozhikode. Retrieved April 2, 2023, from <https://saudigazette.com.sa/article/596352/World/Asia/17-die-scores-hurt-as-Air-India-Express-flight-from-Dubai-breaks-in-two-in-Kozhikode>

94. Ajay, P. (2020). Kozhikode Air India Crash: Where is the Preliminary Report of the Crash of Flight IX-1344? Thepublicindia. Retrieved April 2, 2023, from <https://thepublicindia.com/2020/09/19/kozhikode-air-india-crash-where-is-the-preliminary-report-of-the-crash-of-flight-ix-1344/>

95. Blog.feplay. (2020). What happened on Air India Express Flight 1344? Retrieved April 2, 2023, from <https://blog.feplay.com/2020/09/expressflight1344.html>

96. Amarujala. (2020). Kerala Plane Crash: भयावह मंजर की दृदनाक कहानियां, ये है भारत में हुए पांच बड़े वमिन हादसे. amarujala.com. Retrieved April 2, 2023, from <https://www.amarujala.com/photo-gallery/india-news/dubai-kozhikode-air-india-flight-ix-1344-skidded-during-landing-know-biggest-plane-accidents-in-india>

97. Gulfbusiness. (2020). Air India Express flight from Dubai breaks apart after skidding off runway at Kerala airport. gulfbusiness.com. Retrieved April 2, 2023, from <https://gulfbusiness.com/air-india-plane-from-dubai-crashes/>

98. Express.co. (2020). Air India crash: Mass panic as aircraft plummets into gorge - video. Retrieved April 2, 2023, from <https://www.express.co.uk/news/world/1320095/Air-India-crash-video-dubai-calicut-latest-news-flight-IX-1344>

References II: Videos

1. Kumar, K. (2020). Why Air India Express Plane Crash Is A Wake-Up Call To Reform DGCA. Thequint. Retrieved April 1, 2023, from <https://www.thequint.com/opinion/kozhikode-kerala-air-india-express-plane-crash-civil-aviation-ministry-dgca-responsibility>
2. MPC Flight Recreations. (2020, August 8). Air India Express flight 1344 crash video – (P3D) [Video]. Youtube. Retrieved April 1, 2023, from <https://www.youtube.com/watch?v=8cO5lqlzSc4>
3. Boeing 737 Crashes in India, Here’s What Really Happened to Flight 1344. (2021). Boeing 737 Crashes in India | Here’s What Really Happened to Flight 1344. Youtube. Retrieved April 1, 2023, from <https://www.youtube.com/watch?v=FicWAYFTuOA>
4. Mini Air Crash Investigation. (2022). How An Illusion Crashed A Passenger Jet | Air India Express Flight 1344. Youtube. Retrieved April 1, 2023, from <https://www.youtube.com/watch?v=QVYkFSCf6FA>
5. Mini Air Crash Investigation. (2022). How An Illusion Crashed A Passenger Jet | Air India Express Flight 1344. Youtube. Retrieved April 1, 2023, from <https://www.youtube.com/watch?v=QVYkFSCf6FA>
6. Aviation1st. (2021). How Air India Express Boeing 737 Crash Landing in Kozhikode, Calicut Airport | Flight 1344 Accident. Youtube. Retrieved April 1, 2023, from https://www.youtube.com/watch?v=a6hzrlQ_ddo
7. Rajendra Prasad. (2021). Animated case study of Air India Express IX 1344 by an Aircraft Engineer | Calicut Aircrash. Youtube. Retrieved April 1, 2023, from <https://www.youtube.com/watch?v=vWyDWBjNvVY>
8. Fly High Spotter. (2021). Air India Express IX1344 Plane Crash At Calicut International Airport. Youtube. Retrieved April 1, 2023, from <https://www.youtube.com/watch?v=elhNPMmjLBg>
9. discovery plus India. (2021). Stories Of IX 1344 Pilots | Vande Bharat Flight IX 1344 | discovery+. Youtube. Retrieved April 1, 2023, from <https://www.youtube.com/watch?v=7ARvPX9DMss>

10. discovery plus India. (2021). IX 1344 Crash Survivor Stories | Vande Bharat Flight IX 1344 | discovery+. Youtube. Retrieved April 1, 2023, from <https://www.youtube.com/watch?v=8eOZInOhgO0>
11. Sagar Maiti. (2021). Recap of Air India Express Flight 1344 VT-AXH Crash, the aircraft involved in the accident. Youtube. Retrieved April 1, 2023, from <https://www.youtube.com/watch?v=B2y6lI3jxwo>
12. The Public India . (2022). Air India Express IX-1344 Crash Report Summary | WDTDS. Youtube. Retrieved April 1, 2023, from <https://www.youtube.com/watch?v=6yz4hGLsFos>
13. 24 News . (2021). [കേരളം](#) | [കേരളം](#) [കേരളം](#) [കേരളം](#) | Karipur Plane Crash | Special Program. Youtube. Retrieved April 1, 2023, from <https://www.youtube.com/watch?v=JzxdUVMlov4>
14. asianetnews . (2021). [കേരളം](#) [കേരളം](#) [കേരളം](#) [കേരളം](#) [കേരളം](#); [കേരളം](#) [കേരളം](#) | Karipur flight crash. Youtube. Retrieved April 1, 2023, from https://www.youtube.com/watch?v=V_Go7MpG-_o
15. Arogyam . (2021). [കേരളം](#) [കേരളം](#) [കേരളം](#) [കേരളം](#) [കേരളം](#) [കേരളം](#) | Karipur flight accident. Youtube. Retrieved April 1, 2023, from <https://www.youtube.com/watch?v=pM7HoHqqz88>
16. Manorama News . (2021). [കേരളം](#) “[കേരളം](#) [കേരളം](#)” [കേരളം](#) [കേരളം](#); [കേരളം](#) [കേരളം](#) | Karipur Airport | Flight Crash. Youtube. Retrieved April 1, 2023, from <https://www.youtube.com/watch?v=qMFIhaekJxw>
17. InEcLabs Embedded & Automotive Linux. (2021). IX 1344 Air India Flight Crash | Karipoor /Kozhikode International Air Port | Flightradar. Youtube. Retrieved April 1, 2023, from <https://www.youtube.com/watch?v=xSjRDI-guWOg>
18. Top 5 Aviation. (2021). AIR INDIA EXPRESS Flight 1344 Crash | What happened to Air India Express flight 1344. Youtube. Retrieved April 1, 2023, from <https://www.youtube.com/watch?v=PhlnxjQTUqQ>
19. Captain Airplane . (2021). B737 How The Accident Happened, Calicut International Airport, Air India Express Flight 1344. Youtube. Retrieved April 1, 2023, from <https://www.youtube.com/watch?v=3DRODtixYjk>
20. Creative Entertainment’s. (2021). Kerala Plane Crash [Animated Video] | Air India Express flight IX1344 Crash 2020 |. Youtube. Retrieved April 1, 2023, from <https://www.youtube.com/watch?v=FsyL8CNrz-M>
21. ABC News . (2021). Air India Express plane crash kills at least 17 | WNT. Youtube. Retrieved April 1, 2023, from <https://www.youtube.com/watch?v=Cvg8NkzEWAc>

22. discovery plus India. (2021). A survivor's second life | Vande Bharat Flight IX 1344 | discovery+. Youtube. Retrieved April 1, 2023, from https://www.youtube.com/watch?v=rnisq8_C8Uo

23. FlyWithPenguin. (2021). Sliding too long | Air India Express IX1344 | First look reconstruction. Youtube. Retrieved April 1, 2023, from <https://www.youtube.com/watch?v=ICGUf9Ap88k>

24. Ryanleo Njie. (2021). Air India express flight 1344 – crash animation. Youtube. Retrieved April 1, 2023, from <https://www.youtube.com/watch?v=e0rGWXEpV2s>

25. Techno Blog . (2021). Full Story of Air India Express Flight 1344 [Calicut International Airport] Kozhikode, India. Youtube. Retrieved April 1, 2023, from <https://www.youtube.com/watch?v=q7r6G-NhyNk>

26. Sadda Delhi. (2021). Air India Express (IX-1344) Plane Crash | 191 Passengers On-Board | VIEWERS DISCRETION. Youtube. Retrieved April 1, 2023, from <https://www.youtube.com/watch?v=t89lIZSnK0g>

27. Sneha, M. K. (2020). What Happened At Kerala Airport In The First 5 Minutes After Crash. Ndtv. Retrieved April 1, 2023, from <https://www.ndtv.com/kerala-news/kerala-plane-crash-what-happened-at-kozhikode-airport-in-the-first-5-minutes-after-crash-2276703>

28. thehindubusinessline. (2020). AI Express flight from Dubai crash-lands at Kozhikode; 17 dead, many injured. Thehindubusinessline. Retrieved April 1, 2023, from <https://www.thehindubusinessline.com/economy/logistics/dubai-kozhikode-ai-express-flight-breaks-up-into-two-while-landing-at-karipur-airport/article62202747.ece>

29. thehindu. (2021). One year after Air India Express crash at Karipur, AAIB yet to submit probe report. Thehindu. Retrieved April 1, 2023, from <https://www.thehindu.com/news/national/kerala/one-year-after-air-india-express-crash-at-karipur-aaib-yet-to-submit-probe-report/article35760850.ece>

30. zeenews.india. (2020). Centre orders inquiry into Air India Express plane crash at Kerala's Kozhikode airport. Zeenews. Retrieved April 1, 2023, from <https://zeenews.india.com/india/centre-orders-inquiry-into-air-india-express-plane-crash-at-keralas-kozhikode-airport-2301381.html>

31. zeenews.india. (2020). Centre orders inquiry into Air India Express plane crash at Kerala's Kozhikode airport. Zeenews. Retrieved April 1, 2023, from <https://zeenews.india.com/india/centre-orders-inquiry-into-air-india-express-plane-crash-at-keralas-kozhikode-airport-2301381.html>

32. thenewsminute. (2020). Dubai-Kozhikode Air India flight splits in two on Karipur runway, many injured. The-

newsminute. Retrieved April 1, 2023, from <https://www.thenewsminute.com/article/dubai-kozhikode-air-india-flight-crashes-karipur-runway-several-injured-130270>

33. THE PTEROLYCUS. (2020). CALICUT FLIGHT CRASH | IX 1344 Final Investigation Report |. Youtube. Retrieved April 1, 2023, from <https://www.youtube.com/watch?v=Q1WS60u7lUg>

34. Kumar, K. (2020). Why Air India Express Plane Crash Is A Wake-Up Call To Reform DGCA. Thequint. Retrieved April 1, 2023, from <https://www.thequint.com/opinion/kozhikode-kerala-air-india-express-plane-crash-civil-aviation-ministry-dgca-responsibility>

35. wikipedia. (2020). Air India Express Flight 812. Wikipedia. Retrieved April 1, 2023, from https://en.wikipedia.org/wiki/Air_India_Express_Flight_812

36. thehindu. (2020). One year after Air India Express crash at Karipur, AAIB yet to submit probe report. Thehindu. Retrieved April 1, 2023, from <https://www.thehindu.com/news/national/kerala/one-year-after-air-india-express-crash-at-karipur-aaib-yet-to-submit-probe-report/article35760850.ece>

37. zeenews. (2020). Centre orders inquiry into Air India Express plane crash at Kerala's Kozhikode airport. Zee-news. Retrieved April 1, 2023, from <https://zeenews.india.com/india/centre-orders-inquiry-into-air-india-express-plane-crash-at-keralas-kozhikode-airport-2301381.html>

38. skymetweather. (2020). AIR INDIA FLIGHT CRASH-LANDED AT KOZHIKODE, TABLETOP AIRFIELD COMPROMISE ON FLIGHT SAFETY, SUGGEST A REVIEW. Skymetweather. Retrieved April 1, 2023, from <https://www.skymetweather.com/content/weather-news-and-analysis/air-india-flight-crash-landed-at-kozhikode-tabletop-airfield-compromise-on-flight-safety-suggest-a-review/amp>

39. ഭൂമി മാലയാളം Bhumi Malayalam. (2022). കലിക്യൂട്ട് ഫ്ലൈറ്റ് IX 1344 : കോഴിക്കോട് ടേബിൾ ടോപ്പ് വിമാനത്താവളം | Calicut Flight IX 1344 | Investigation. Youtube. Retrieved April 1, 2023, from <https://www.youtube.com/watch?v=QNhcW2c6lBo>

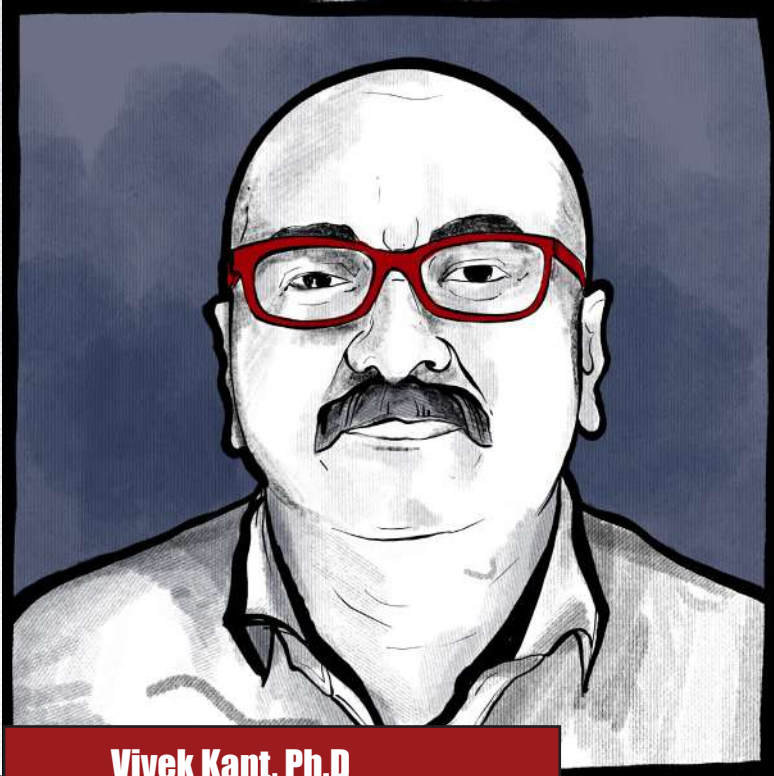
40. indianexpress. (2021). Probable visual illusions, faulty windshield wiper too contributed to Kozhikode plane crash. Newindianexpress. Retrieved April 1, 2023, from <https://www.newindianexpress.com/states/kerala/2021/sep/13/probable-visual-illusions-faulty-windshield-wiper-too-contributed-to-kozhikode-plane-crash-2358039.html>

**AUTHORS
OF AXB 1344:
PLUMMETING
DOWN
THE TABLETOP**



Nidhin Joseph

Nidhin Joseph, is an interdisciplinary designer with roots in architecture, and Communication Design Masters from IDC IIT Bombay. With a keen interest towards understanding the dynamics of accidents and disasters from a Human Factors and Sociotechnical systems perspective.



Vivek Kant, Ph.D

Vivek Kant is cross-trained in both systems design engineering and cognitive/behavioral sciences. His research interests are human-centred digitalization, human machine interaction design and human systems integration in complex sociotechnical systems.