

ACCIDENT INVESTIGATION BRIEF

Presented by: Martyn Lunani

Director & Chief Investigator of Accidents

Aircraft Accident Investigation Department-Kenya

0722 778 773

OBSERVATION FROM THIS MORNING PRESENTATIONS:

-in the years 2017 there were less fatalities as a result of aircraft accidents as compared to the other years

-human factors accounted for 80-90 per cent of all the accidents

WHY IS AIR TRANSPORT CONSIDERED AS THE SAFEST MODE OF TRANSPORT?

S/N	Fatalities	Date	Narrative
01	2,996	September 11, 2001	The four hijacked aircraft were crashed in four separate suicide attacks against major American landmarks-an act of terrorism
02	583	March 27, 1977	Tenerife disaster-KLM Boeing 747 attempted to take off without flight clearance, and collided with a taxiing Pan Am 747 at Los Rodeos Airport on the Canary Island of Tenerife, Spain
03	520	August 12, 1985	JAL Flight 123-the single-aircraft disaster with the highest number of fatalities: a Boeing 747 aircraft suffered an explosive decompression from an incorrectly repaired aft pressure bulkhead, which failed in mid flight
04	349	November 12, 1996	The world's deadliest mid-air collision involving Saudia, Flight 763 and Kazakhstan Airlines flight 1907 over India. Flight 1907 was flying lower than the assigned clearance altitude
05	346	March 3, 1974	Turkish Airlines Flight 981, a McDonnell Douglas crashed in northeast of Paris, France, shortly after taking off from Orly airport
06	329	June 23, 1985	Air India Flight 182, a Boeing 747-237B, crashed off the southwest coast of Ireland when a bomb exploded in the cargo hold
07	301	August 19, 1980	The crew performed an emergency landing at Riyadh after a fire broke out in an aft baggage compartment in Saudi Arabian Airlines Flight 163, a Lockheed L-1011

WHAT IS SAFETY ?

Safety is the control or management of recognised hazards to achieve an acceptable level of risks

A hazard is a condition that might cause (is a prerequisite to) an accident or incident

What is an Accident?



WHAT IS AN ACCIDENT?

Is it absence of occurrences?

An unforeseen/unfortunate/unexpected and unplanned event or circumstance

undesirable outcome

ICAO ANNEX 13 DEFINITION

An occurrence associated with the operation of an aircraft which, in the case of a manned aircraft, takes place between the time any person boards the aircraft with the intention of flight until such time as all such persons have disembarked, or in the case of an unmanned aircraft, takes place between the time the aircraft is ready to move with the purpose of flight until such time as it comes to rest at the end of the flight and the primary propulsion system is shut down, in which:

ICAO ANNEX 13 DEFINITION (CONT'D)

- ▶ a) a person is fatally or seriously injured,
- ▶ b) the aircraft sustains significant damage or structural failure,
or
- ▶ c) the aircraft goes missing or becomes completely inaccessible

WHY INVESTIGATE?

learning experience, (for accident prevention/Safety promotion)



Legal and regulatory requirements



Moral obligations



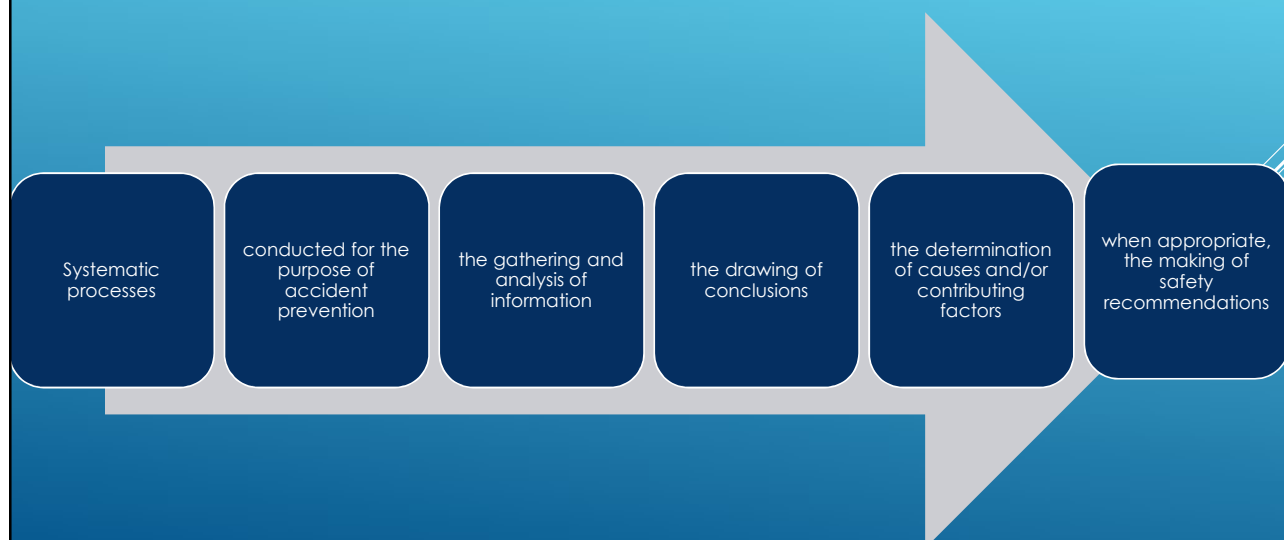
allocation of responsibility (blame, financial liability, and legal liability)



INVESTIGATION OBJECTIVE

- ▶ The **SOLE** objective of the investigation of an accident or incident shall be the prevention of accidents and incidents.
- ▶ It is not the purpose of this activity to apportion blame or liability.

INVESTIGATION PROCESS



INVESTIGATION PROCESS –PRE INVESTIGATION

- ▶ Establishment of an investigation authority functionally independent from other State aviation authorities (KCAA, KAA etc) plus other entities that could interfere with the conduct or objectivity of an investigation
- ▶ The entity must be adequately funded
- ▶ Clearly spelt out functions
- ▶ Policy and Procedures Manual
- ▶ Appropriately trained and experienced investigators

INVESTIGATION PROCESS –NOTIFICATION

Initial Notification

Assessment

Investigation team

Risk Assessment

Deployment

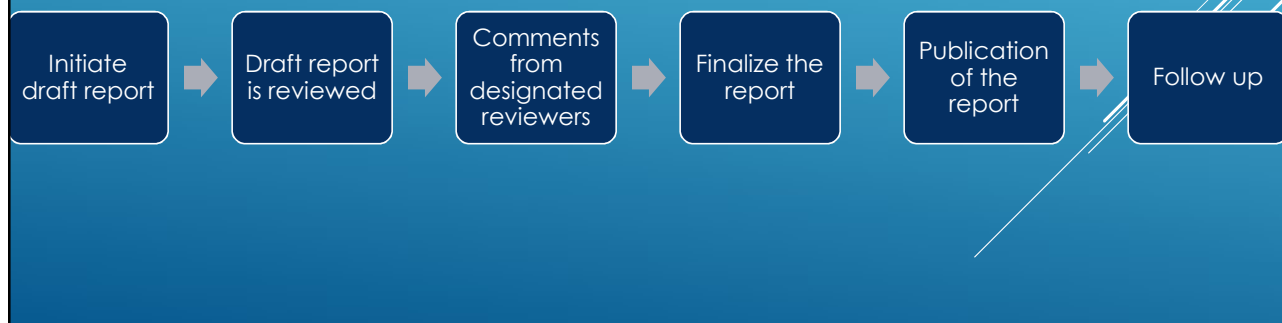
INVESTIGATION PROCESS -FIELD PHASE INVESTIGATION

- ▶ Risk Assessment
- ▶ Secure and examine the site and equipment
- ▶ Interview witnesses, company and government officials
- ▶ Retrieve components for further examination

INVESTIGATION PROCESS -EXAMINATION AND ANALYSIS PHASE

- ▶ Review recorders, medical reports, and conduct further interviews
- ▶ Examine and test components and systems
- ▶ Determine the sequence of events to identify **what happened**
- ▶ Analyse other data to reconstruct events to find out **why it happened**

INVESTIGATION PROCESS -REPORTING PHASE



IMPORTANCE OF INVESTIGATION

Provides investigation signposts

Clarifies the sequence of events

Converts opinion into facts

Tests hypotheses

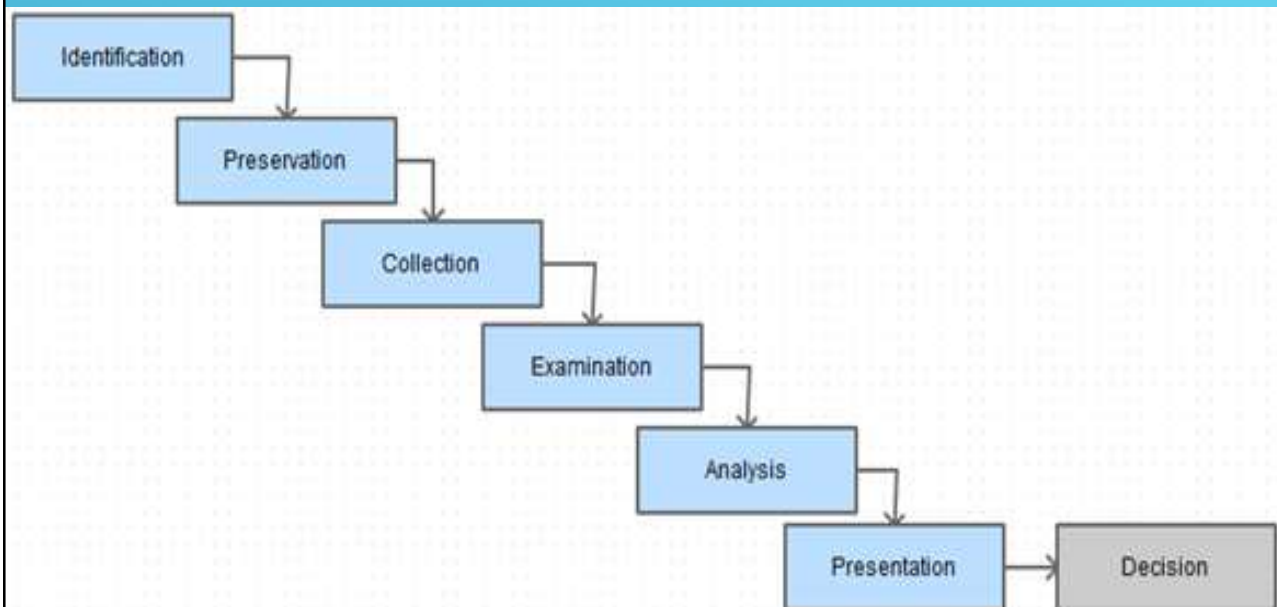
Facilitates analysis

Justifies/underpins recommendations

EVIDENCE

Any piece of information that aids the investigator and the report reader in understanding the causes of an occurrence under investigation and/or supports arguments presented in the report that identifies issues to be addressed to minimise the risk of recurrence.

MANAGEMENT OF EVIDENCE



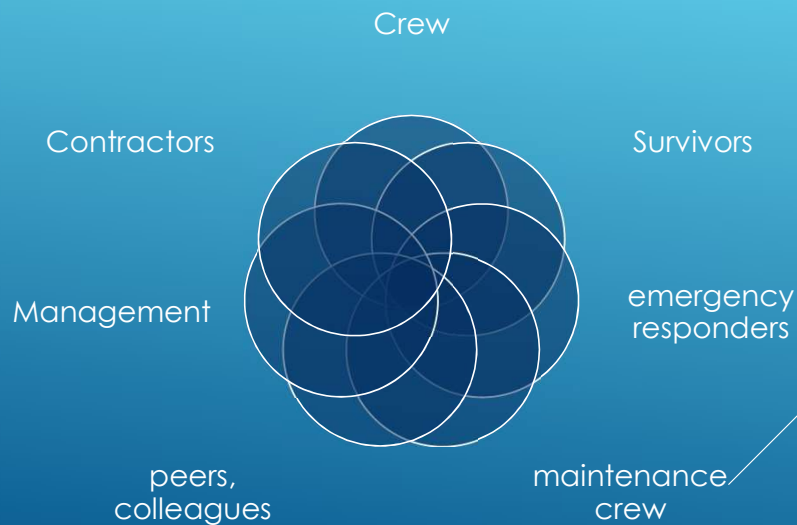
THE PURPOSE OF AN INVESTIGATION

WHAT happened

HOW it happened

WHY it happened

CATEGORIES OF EVIDENCE-PERSONNEL



CATEGORIES OF EVIDENCE-PHYSICAL

- ▶ the site
- ▶ Wreckage
- ▶ Recorders
- ▶ Memories
- ▶ witness photos
- ▶ ATC tapes
- ▶ Radar tapes
- ▶ CCTV, mobile etc.
- ▶ Voice recordings
- ▶ Transcripts
- ▶ Controller statements
- ▶ Flight progress strips
- ▶ Facility procedures
- ▶ Letters of agreement
- ▶ Letters to airmen
- ▶ Airport/airspace charts
- ▶ Position logs
- ▶ Equipment
- ▶ Recorded radar data
- ▶ Weather data
- ▶ Air traffic services
- ▶ Aircraft procedures (approaches, etc.)
- ▶ Facility training

CATEGORIES OF EVIDENCE-DOCUMENTARY

COA

COR

COM

tech logs

load and balance sheets

pax/freight manifest, crew licences, crew training records, crew log books, navigation sheets operation manual, maps, charts, and notes

STAKEHOLDERS IN AN INVESTIGATION

- ▶ Regulator/government,
- ▶ Operations/infrastructure providers,
- ▶ Maintainers, ICAO
- ▶ Training providers,
- ▶ Other operators, accident investigation bureaus, AIBs, and the Insurers.
- ▶ Manufacturers
- ▶ The involved parties include : families/relatives, news media, emergency responders, travellers, third parties.
- ▶ Armed Forces
- ▶ The Police
- ▶ ETC

**WHY IS AIR TRANSPORT CONSIDERED
THE SAFEST MODE OF TRANSPORT?**

**AIR TRANSPORT IS CONSIDERED
SAFEST MODE OF TRANSPORT
BECAUSE OF THE EFFICIENT AND
EFFECTIVE ACCIDENT
INVESTIGATION PROCESS**

END OF THE PRESENTATION

THANK YOU

DICUSSION