AN ASSESSMENT OF SECURITY ARRANGEMENT IN MURTALA MOHAMMED INTERNATIONAL AIRPORT, IKEJA-LAGOS

By

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CERTIFICATION

This is to certify that this work was done by IHEKWABA, AL UCHECHUKWU with registration number 20045551489 under the supervision of Dr C.C Ibe.

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DEDICATION

This work is dedicated to the memory of my late mother – Madam Esther Egure Ngozi Ihekwaba (Oji Ochi Eme Oji) who was translated into glory at the time of writing this work.

ACKNOWLEDGEMENT

The Holy Bible says, "If the Lord does not build a house, they labour in vain that build". I want to first and foremost acknowledge the presence of God Almighty in my life, for the scripture alluded- the earth is the Lords and the fullness thereof. It is the Lord that gave me the strength to pursue this thesis to its logical conclusion. Therefore, all glory, majesty and honour be ascribed to HIM in Jesus name, Amen, for HE is the Alpha and Omega.

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A.U. IHEKWABA
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ABSTRACT

Over the years, there have been persistent and consistent issues bordering on security in the Murtala Mohammed International Airport, Ikeja, Lagos. As an International airport as well as the gateway into our Country, it is expected to measure up to international standards in facilities, personnel, services, security, safety etc but unfortunately most of these areas are atimes neglected and consequently fall below acceptable international standards.

This research has been designed to assess and appraise the security system and facilities in the Murtala Mohammed International Airport, Ikeja, Lagos.

The study aims at evaluating the security system with a view to identifying and analyzing all those problems facing the efficient and effective security network.

The data obtained were basically on questionnaires, library research, journals and official documents as well as relevant books. The use of maps, graphs and tables also complement the other source of data collection.

After the analysis, it was discovered that the security system of the airport is poor and does not measure up to international standards and therefore should be beefed up.

The problems were identified and array of suggestions advanced for a safer and more secure airport in order to forestall any security breach.

CHAPTER ONE

1.0   INTRODUCTION

1.1   BACKGROUN D OF THE STUDY

The development of aviation in Nigeria has had a chequered history. Strangely enough, the industry is more than four decades older than its mother, Nigeria for it was one of the technological legacies bequeathed to this nation at independence on October 1, 1960. Nigerian's aviation industry dates back to the 1920 when several flights to Kano and then to Lagos by the Royal Air force squadron aircraft based in Khartoum in East Africa (SKY POWER; 7, 1998).

The first commercial flight was operated to Nigeria by the Imperial Airways which began the first international air services to Nigeria in four ensigned De Havilland Airplanes D.H 9a biplanes (400 h.p liberty engines) departing Cairo Helwan Aerodrome at 7am on October 27, 1925 and connected at Khartoum with the larger type Hannibal Aircraft, owned by the same company.

The exercise was led by Squadron leader Arthur Conningham and other members of the crew were flight – lieuts H.W. Baggs and H.V Rowley, Flight Sergeant Evans and Sergts Kennedy and Grant.

According to Deru, (2002) former Director of the Civil Aviation Department (CAD) in a paper titled the Aviation Industry in Nigerian; the Lagos Airport then was nothing more than "a landing strip on the foreshore of Lagos

Island". The American Air force as part of the Allied Nation's frontier force built the Ikeja Airport. It was later turned into civil use.

In Kano, what was then designated as airport was the polo ground of about 400 square meters.

Deru (2002) said a terminal building was constructed for passenger handling in Kano with custom and immigration facilities provided during the war, thus uplifted Kano airport into a point of entry into Nigeria. Yearly passenger traffic was then about 10,000.

The Second World War accelerated airport development and aircraft technology worldwide. The end of war in 1945, witnessed a rapid and unfiltered growth in the aviation industry both in Nigeria and elsewhere.

In the early 1950, department of Civil Aviation emerged with Wing Commander E.H. Coleman, as its first Director.

The department regulated and drew navigational policies for the country and the three West African States of Ghana, Gambia and Sierra Leone. Besides Lagos and Kano Airports, there began to emerge several air types in the hinterland.

These covered and operated by companies (mostly construction firms) and religious organizations such as the Sudan Interior Mission (S.I.M). In 1946, the West African Air Corporation (WAAC) was born to operate air service throughout the four British West African countries of Nigeria, Ghana,

Gambia, Sierra Leone, with a fleet of De Havilland dove (DH 104), Bristol wavy fares and freighters AB170.

When in 1957, Ghana pulled out at independence to form her airline; Nigeria, British overseas Airways Cooperation and Elder Dampster Lines inherited WAAC. On August 23, 1958, the federal Government took total control of the business by buying out the shares of its partners. It was the birth of the national carrier, Nigeria Airways. (SKYPOWER VOL. & 1998).

The airline which began on a modest scale with Doves, Herons and the DC-3 planes graduated to turbo props such as the Fokker 27, the Fokker 28 and the Boeing 727 Jet-all of which have now been phased out. Then came the Boeing 707, Boeing 737, the McDonnell Douglas DC 10 and two of the fleet, Airbus A310 and Boeing 747 jumbo.

Today, there are nineteen airports; the ones in Lagos, Abuja, Port Harcourt, Kano and Calabar are designated International airports in the sense that they are equipped with custom and immigration facilities. The domestic airports include: Imo, Sokoto, Jos, Yola, Enugu, Benin, Akure, Ibadan, Zaria and Makurdi.

This research has therefore taken one of the International airports, Murtala Mohammed Airport, Lagos to study exclusively buttressing the need to have security facilities and human input in security measures. Lagos airport being an international airport is expected to measure up to international standards in facilities, personnel, services, security, safety etc, but unfortunately most

of these areas are atimes neglected and consequently fall below acceptable international standards.

Effort therefore is being made by the researcher to appraise the security facilities available within the airport.

Also in the history of aviation in 1976, the federal Government in a bid to run multi-Naira edifices established a body. That body today has transformed into an octopus called the Federal Airports Authority of Nigerian (FAAN) formerly Nigerian Airport Authority (NAA) (SKY POWER VOL 2, 1980).

In FAAN. Over 50,000 workers are Nigerian bred trained with local resources looking after an asset of over N106 billion and served with over 280 million annually.

This huge maintenance cost prompted a number of revenue – generating measures from the authority, which yields over N200 million.

The need to adequately secure the nations sea, land and airspace prompted the government to place embargo on passenger charter flights outside the country in 1984 (THE AIRMAN VOL 7, 1998). In FAAN, the enabling decree 45 of 1976 approved that it generates internal revenue by means of fines, parking and landing fees, rents and vehicle parking fees.

By and large, Nigerian aviation industry has recorded significant strides in some areas, as there are still other areas where efforts started may not have achieved the standards desired.

1.2 PROBLEM STATEMENT

The airport like any other city needs the function of the following major sector sections in piloting its affairs by coordinating and management of activities in a professional manner. The sections include:

- ❖ Administrative
- ❖ Fiscal department/Management
- ❖ Operation/Maintenance
- ❖ Planning

By this, one can say that the airport is municipal in nature. Under the operations include the airport security practices and procedures as well as provide recommendations on security and emergency procedures and acquisition, maintenance and application of equipment, traffic accident report and enforcement of airport regulations.

In the Nigerian airports, there is evidence to show gaps in the security management when compared with the international standard.

As far as aviation is concerned, the desired prime objective is security and efficient carriage of passenger and goods.

Hence the need to secure the airport and the facilities- passenger, cargo, aircraft and buildings from unforeseen danger. Due to the factor of development, it is necessary to have a coordinated aviation security system, which is effective and efficient. In the Nigerian Airports, there are still yet to completely measure up to the International standards in the security measures.

Air crashes in aviation are mainly due to aviation security oversight.

AVIATION SECURITY OVERSIGHT

The U.S Federal Aviation Administration (FAA) has not assessed Nigeria's Civil Aviation Authority for compliance with ICAO security standards properly, this is obviously viewed by the way security issues are regarded and implemented in our airports, for instance the Sosoliso air mishap on December 10th 2005 in Port Harcourt that resulted in fatalities, would have had some survivor if not for the inadequate crash and rescue services and also professional structure fire fighters.

Reports on this include eye witnesses (parents or families of victims) say there were no standby rescue team to rescue passengers; water vans had no water to extinguish fire, to compound issues, inadequate medical aides in the form of no ambulances to convey victims quickly to the nearest hospital.

The government of Rivers State provided the ambulance that arrived the airport at the scene of crash at about forty minutes after the accident

In the Vanguard (Lagos) of February 1st, 2006, the NCAA threatened the previous day to shut down any airport that fails to meet the standards set by the International Civil Aviation Organization (ICAO) just as it has commenced the process of recovering its One hundred and forty million naira trapped in liquidated Pacific Bank. This threat was due to the recent plane crashes and the issue of wrong image arising in nation's aviation.

Some of the recent air mishap in Nigeria (some are air incident which have also been included i.e. no death occurred) are:

29-10-2006

Boeing 707-200 operated by ADC from Abuja and Sokoto bound.104 of the 111 people on board the 23yr old aircraft were killed at Tunga-Madaki village 2 km from Abuja aircraft.

17-09-2006
Donnier 228 operated by NAF crashed on its way to Obudu from Abuja. 13 people including 10 senior military personnel lost their lives.

10-12-2005
The Sosoliso Boeing 727-200 crash-landed at Port Harcourt airport claiming 107 lives of which sixty-two children were victims.

28-11-2005
Beechcrast 200 Executive jet crashed in Kaduna killing 2 persons on board

22-10-2005
117 people were killed in the ill-fated Belleview Boeing 727-200 aircraft crash, which occurred at Lisa village, near IFO, Ogun state.

09-07-2005
An Air France aircraft with one hundred and ninety six passengers onboard ran into stray cows on the runway of Port Harcourt International Airport as it touched down.

30-06-2005;

A forker 100 with eight-six passengers and six crew on board made an emergency landing at the local wing of Murtala Mohammed Airport, Ikeja, Lagos.

12-06-2005;

Ex-Milad, hundred others escaped plane crash.

11-06-2005;

Crash landing of an EAS aircraft in Jos airport

04-04-2005;

Management of Chanchangi airlines, owners of Boeing 727 aircraft that skidded off Abuja airport rested plane for safety reasons.

13-03-2005

Two ministers, Bayelsa Deputy Governor and lawmakers escaped death as plane crash-landed in Port Harcourt airport

All these accidents /incidents make it absolutely necessary that a study be made

1.3 OBJECTIVES OF THE STUDY

The objective of the study is to assess and evaluate the security system in a Nigerian airport. Generally therefore; this study aims at identifying and analyzing all those problems facing the efficient and effective network and security system in Murtala Mohammed International Airport, Ikeja, Lagos.

Specifically the following objectives are addressed.

- To examine the airport access controls system (this includes access roads to airports, access to security areas like aircraft and control tower)

- To examine the extent of personnel's security consciousness

- To evaluate the state of airport facilities available in Lagos airport

- To examine how often security meetings are held

- To evaluate the state of passenger and carry on baggage screening

- To examine the function of the existing security equipment available in the airport

RESEARCH QUESTIONS

The appraisal of the security system in Murtala Mohammed Airport, Ikeja Lagos is very important. It will help the study to establish the extent of security facilities available.

To investigate into this topic, the following research questions are used as guiding factors.

1. How do we examine the level of functional security equipment/aid in the airport?

2. What facilities are available in the airport?

3. Do you think that the security personnel should be given adequate training?

1.4   RESEARCH HYPOTHESIS

The hypothesis for the study would be tested using the relevant statistical techniques.

Ho1= null hypothesis

Ho1= there is no significant relationship between the natural density of crime and facilities available

Ho2: = volume of crime is not functionally related to the entry and exist point patterns.

The Null hypothesis is either accepted or rejected depending on the value of the chi-square calculated.

If the calculated x^2 (Chi-square) value is greater than the tabulated x^2 –value, the null hypothesis is rejected. The null hypothesis is accepted if x^2 value tabulated is greater then x^2- value calculated.

In hypothesis 1, Ho1, would compare the crime density with the facilities available. It is pertinent to note the effect of increase or decrease of availability of facilities on the volume of crime. A critical look at this would show whether there is a relationship between the density of crime and facilities available.

On the hand, hypothesis 2, Ho2 would compare the volume of crime with the entry and exit point patterns. These point include two basic zones – airside and landside, the landside area are:

➢ Open access

➢ Staff only areas; offices, lifts, lobbies etc

➢ Plant room

The airside is basically sub-divided into arrival and departures areas; and it is a standard concept that arriving and departing passengers should not mix with arrival airside unless the arriving passengers have been screened. At airside arrivals, there might be the following zones:

❖ International passenger arrivals corridor

❖ Domestic passenger arrivals corridor

❖ Immigration

❖ International baggage reclaim

❖ Customs

Airside departure could have the following zones:

❖ Retail shop area

❖ Departure holding area

In addition to all these areas, there are also apron area and the runways. The two are prime targets for apprehending criminals.

1.5   JUSTIFICATION OF THE STUDY

The aviation industry in Africa generally and Nigeria in particular suffer from neglect primarily due to wrong perception by the populace that it serves only the elite (SKY POWERVOL, 8, 1998).

People are quick to point out the low percentage of the population that takes the air. It is rather convenient to deliberately ignore other industries that depend on air transportation to survive.

Where the authorities recognize the need to establish agencies to manage the services sectors (security services, fleet planning etc) in the industry, the funds realized from air navigation charges to the community at the detriment of the aviation infrastructures. It is wrong to assume that aviation security conceive the developed countries of the world who have series of things to protect.

The implication is that the airports security facilities available in the airport and air navigation sectors of the industry suffer from under funding and are not able to put in place the required infrastructure for efficient security check and management. Against this background, it should be recalled that Nigerian airspace has been labeled unsecured by International Civil Aviation Organization (ICAO), (even after the 2006 recent air mishap), and other International community as a result of poor infrastructure in the nations airport, resulting to poor security management and exposure to risk.

In recent times, however, the world as a whole face a most harrowing threat to aviation security with the September 11, 2001 event in the United States. A research on Newspapers and Internet news show that the occurrence on September 11, 2001 was a purely political and terrorist issue. This being the case therefore Civil Aviation authority should have been able to dictate the loophole in their security network and be able to plug it. This loophole here

that caused the catastrophe on September 11 was as a result of unscreening of the security personnel themselves.

The philosophy is "To screen employee the same way as passenger and then a little more. This is because of their ability to access the aircraft above and below the wing:" (ORAMA ASSISTANT DIRECTOR FOR SECURITY AND SAFETY, MIAMI DADE AVIATION DEPARTMENT).

It would be recalled that the terrorists were personnel employed by the American Airlines and had been working at the airport for two years.

This would confirm that they know all the entry and exist patterns of the airport and services there as officials and would not have been screened thoroughly. In other words, that was not as a result of faulting screening equipment, but rather human error.

This is why the research is investigating not only the security facilities available, but also human factor as a means of security failure in the aviation industry.

1.6   SCOPE AND LIMITATIONS OF THE STUDY

This research is limited to examining the security and safety system in Murtala Mohammed International Airport Lagos. Also reference will be made to security system at Port Harcourt Airport, Jos Airport, Abuja Airport etc. Taking these statistically, whatever is found in these airports may be applied to Lagos airport case with little margin of errors. The research is limited to lack of very concrete information from the Lagos airport.

This reason being that security in the airport is a very sensitive area and so information given would be done with caution. To this effect the researcher will study this project based mostly on things visible within the airport.

DISADVANTAGES OF SECURITY OVERSIGHT

An oversight of the above stated activity may lead to:

- ❖ Airplane attacks
- ❖ Airplane bombings
- ❖ Hijacking / Sabotage
- ❖ Airplane suicide
- ❖ Bomb threats
- ❖ Crime and theft of airport facilities

ADVANTAGES OF STANDARD SECURITY SYSTEM

- ❖ Promotes public image of the airport
- ❖ Proper preservation of lives and property
- ❖ Increased patronage of airport by airspace users.

Security is closely related to operations and must be linked directly with their services. Security is a day-to-day activity in the airport and cannot be carried out hap-hazardly. It is an open choice whether to lodge security in the airside or landside operating unit. The volume of day-to-day security routine suggests the landside but the seriousness of the occasional emergencies suggest the airside. The final choices with;

- ❖ Manager of Security
- ❖ Manager of Airside

❖ Manager Landside, to work together

ORGANISATION OF THE WORK

The project is divided into five chapters in all. Chapter One is an introduction, which gives a general outlook of what the project is all about.

Chapter Two is a review of work carried out by the researcher concerning security system of airport and air transportation in general.

Chapter Three contains details of Lagos airport, the setbacks and subsequent resuscitation as well as methodology.

Chapter Four includes the analysis of the project work with the operation of security questions drawn from administered questionnaires. Chapter Five contains the conclusion and recommendation.

CHAPTER TWO

2.0   LITERATURE REVIEW

2.1   INTRODUCTION

Aviation security was established in compliance with standard 3.1.7 of Annex 17 to the Chicago convention and in accordance wit national legislation and regulations namely: Aviation law Decree No. 9 of 1996 and FAAN by – laws.

The main aim of aviation security is for the provision and procedures contained in airport's security programmes. The programme is geared towards the prevention of any act of unlawful interference against security of persons, goods, aircrafts and installations at the airport and also to regulate the movement of persons and vehicles within the airport boundary. It is therefore the duty of the Head of Department (HOD) security to mange the day to day running of security at the airports AVSEC MANUAL (2002).

Airport, like any residential or business community need the protection of normal security services such as traffic control, crime prevention and fire extinguishments. In addition, they have special requirements in the form of aircraft crash and rescue services/prevention of civil commotion (crowd control) and anti-hijacking / anti-sabotage measures.

There are many methods of providing these normal and special services to airports, depending on airport size and type of operating entity i.e. whether international, continental, intercontinental or domestic airport (airports are built and upgraded). Whatever the type of security required and the sources from where they come, the airport needs trained, practiced personnel, proven equipment, well-thought and document procedures.

This is headed to alert those concerned to respond effectively to emergencies. This chapter largely reviews worldwide security and safety standard/system and how it is implemented in other parts of the world using some selected countries airport, the aim is to compare and contrast aviation security with other airports and ours (Nigerian airports). However, air incidents and accidents around the world were also highlighted.

2.2 AIRCRAFT ACCIDENT AND INCIDENT INVESTIGATION

Annex #13 to the convention on International Civil Aviation otherwise known as CHICAGO CONVENTION makes provisions for standards and recommended practices for aircraft accident and incident investigation.

The sole objective of investigation of an accident or incident shall be the prevention of accidents and incidents. It is not the purpose of investigation to apportion blame or liability.

"STANDARD" is any specification for physical characteristics, configuration, material, performance, personnel or procedure, the uniform application of which is recognized as necessary for the safety or regularity of international air navigation and to which contracting states will conform in accordance with the convention, in the event of impossibility of compliance, notification to council is compulsory under article 38.

"RECOMMENDATION PRACTICE" on the other hand is any specification for physical characteristics, configuration, material, performance personnel or procedure the uniform application of which is recognized as desirable in the interests of safety, regularity or efficiency of international air navigation, and to which contrasting states will endeavor to conform in accordance with the convention.

"ACCIDENT" is an occurrence associated with the operation of an aircraft, which takes place between the times any person boards the aircraft with the intention of flight until such time as all such persons have disembarked in which

(a) A person is fatally or seriously injured or killed as a result of:

❖ Being in aircraft, or

❖ Direct contact with any part of the aircraft including parts which have become detached from the aircraft, or

- Direct exposure to jet blast except when the injuries are from natural causes, self inflicted or inflicted by other persons, or when the injuries are to stowaways hiding outside the arouse normally available to the passenger and crew, or

(b) The aircraft sustains damage or structural failure which:

• Adversely affects the structure strength, performance or flight characteristics of the aircraft, and - would normally require major repair or replacement of the affected component.

- Except for the engine failure or damage, when the damage is limited to the engine, its cowlings or accessories or for damage limited to propellers, wing tips, antennas, tires, brakes, fairing, small dents or puncture holes in the aircraft skin; of

(c) The aircraft is missing or it's completely inaccessible.

"INCIDENT" is an occurrence, other than an accident associated with the operation of an aircraft, which affects or could affect the safety of operation. The difference between incidents and accidents is that the former does not result to any causality while the later does.

The types of incidents, which are of main interest to the International Civil Aviation Organization for accident prevention, are listed in the accident/incident reporting manual.

"INVESTIGATION" is a process conducted for the purpose of accident prevention, which includes the garnering and analysis of information, the drawing of conclusions, including the determination of causes and, when appropriate, the making of safely recommendations.

The state of occurrences shall take all reasonable measures to protect the evidence and to maintain safe custody of the aircraft and its contents for such a period as may be necessary for the purpose of investigation. Protection of evidence shall include the preservation, by photographic or other means of any evidence, which might be removed, effected, lost or

destroyed. Safe custody shall include protection against further damage, access or unauthorized persons, pilfering and deterioration.

"Serious incident" is an incident involving circumstances indicating that an accident nearly occurred.

The incidents listed below are typical examples of incidents that are likely to be serious incidents and of which International Civil Aviation Organization (ICAO) is interested in as mentioned earlier. The list is not exhaustive but only serves as guidance to the definition of serious incident.

- ❖ Near collisions requiring an avoidance maneuver to avoid a collision or an unsafe situation of when an avoidance action would have been appropriate.
- ❖ Controlled flight into terrain only marginally avoided.
- ❖ Aborted take-offs from a closed or engage runaway.
- ❖ Takes-offs from a closed or engaged runaway with marginal separation from obstacle(s).
- ❖ Landings or attempted landings on a closed or engaged runaway.
- ❖ Gross failure to achieve predicted performances during take-offs of initial climb.

2.2.1 WORLD AIR ACCIDENTS AND INCIDENTS.

Aviation industry is a worldwide event that has an accentuated contribution to economy of the world as well as its socio-political system. It has established trade relationships between countries as it faces tough challenges and problems that require consolidated measures to alleviate them. These challenges have brought about International standards/measures that monitor the quality or services in the industry. As far as the aviation is concerned, the desired prime objective is safety, security in the activities involved in transporting both passengers and goods. Nevertheless it has experienced several setbacks/tragedies occurring in air accidents and incidents in various parts of the world. I believe that an air mishap can take place anywhere in the world, and more so what may be the cause of it in one part of the world will lead to the same in another part of the world. Therefore aviation security is not a problem faced by the Nigerian airports only but also other airports around the world.

The following are the most recent fatal airliner mishaps, listed with the most recent event first, from around the world. In each event, at least one passenger was killed. These events includes all jet passenger flight and turboprop accidents involving models with more than 10 passenger seats and which are used in air line service in North American and Western Europe.

These events include passenger fatalities due to hijackings, sabotage, or Military actions. Some non-airline fatal events are included, but only fatal airline event are numbered.

1 January 2007; Adam air 737-400; near Polewali, Indonesia:

Air traffic control lost contact with the aircraft while it was at cruising altitude about halfway into its scheduled two-hour flight from Surabaya to Manado. The aircraft carried six crew members and 96 passengers.

29 October 2006; ADC 737-200; Abuja, Nigeria:

The aircraft crashed shortly after takeoff on a schedule domestic flight from Abuja to Sokoto. There was a storm in the area at the time of the crash. Four or five crew members and 92 of the 100 passengers were killed. One person on the ground was also killed.

11 October 2006; Cirrus SR-20; New York, NY;

New York Yankees pitcher Cory Lidle and his flight instructor Tyler Stenger were killed when their aircraft crashed into a 50 storey building on the upper east of Manhattan. There were no fatalities on the ground. Because this event did not cause a passenger fatality on the airliner, it is not counted as a fatal event as defined by AirSafe.com. This event is being treated as a major accident investigation by the NTSB, which is unusual for the events involving a single private aircraft. It is likely that this treatment is due to the ongoing security concerns surrounding aircraft crashes into buildings in large U.S. cities.

29 September 2006; Gol Linhas Aereas 737-800; near Peixoto de Azevedo, Brazil:

The aircraft was on the schedule domestic flight from Manaus to Brasilia when it had a midair collision in the area of Sao Felix do Xingu with an Embraer ERJ135 legacy 600 executive jet operated by ExcelAire.

The ExcelAire legacy 600 jet had been on a flight from Sao Jose dos Campos to Manaus. After the collision, which damaged the left wing, left stabilizer, and left elevator of the executive jet, the crew of the damaged ExcelAire aircraft was able to land at a nearby military airfield at Cachimbo, Brazil. The 737 subsequently experienced an in-flight breakup and crashed about 30 kilometers (19 miles) north of the Pexioto de Azevedo municipality.

The legacy 600 was on the first leg of a delivery flight to the U.S. the 737 aircraft was also relatively new, having come into services with the airlines less than three weeks before the crash.

All six crew members and 148 passengers on the 737 were killed. The two crew member and five passengers on the legacy 600 were not injured.

1 September 2006; Iran air Tours Tupolev 154M; near Mashad, Iran:

The aircraft was on a scheduled domestic flight from Bandar Abbas to Mashad. After landing, the aircraft departed the runaway and caught fire.

All 11 crewmembers survived, 28 0f the 137 passenger were killed.

27 August 2006; Delta connection (Comair) CRJ-100; Lexington, KY;

 The aircraft was on scheduled domestic flight from Lexington, KY to Atlanta, GA. The aircraft crashed shortly after takeoff, about one half mile (800m) from the end of the departure runaway. The event occurred shortly

before sunrise, and there was no reported precipitation at the time of the event. The aircraft took off on a shorter runaway that is the typically used by smaller private aircraft rather than the airports main runaway.

Two of the three crew members and the entire 47 passenger were killed.

22 August 2006; Pulkovo Airlines Tupolev 154M; near Donetsk, Ukraine;

The aircraft departed on a scheduled domestic flight from Anapa to St. Petersburg. About 30 minutes after take off and at an altitude of about 36,000 feet (11,000 meters). The crew reported an emergency. Another transmission was reportedly received before the Aircraft crashed. The crashed occurred about 30 miles (48km) north of the Ukrainian city of Donetsk.

All 10 crew members and 160 passengers were killed.

10 July 2006; Pakistan International Airlines F27; Multan, Pakistan:

Shortly after takeoff from Multan Airport on a scheduled domestic flight to Lahore, the aircraft reportedly experienced engine problems. The aircraft lost altitude, struck a power line and crashed in a field near the airport. All four crew members and 41 passengers were killed.

9 July 2006; Sibir Airlines A310-300; Irkutsk, Russia:

The aircraft was on a scheduled flight from Moscow to Irkutsk. Weather at Irkusk included a low overcast, rain, and thunderstorms in the area. The aircraft landed on the runaway, but was unable to stop on the runaway. After departing the runaway, the aircraft collided with a concrete structure, broke

up, and caught fire. Five of the eight-crew members, and 119 of the 195 passengers were killed.

1 May 2006; Armavia Airlines A320; near Sochi, Russia:

The aircraft was on a scheduled international flight from Yerevan, Armenia to Sochi. At the time of the crash, visibility was limited due to darkness, a low overcast cloud layer, and light rain showers. The crew reportedly abandoned the first landing attempt due to the weather conditions. While the crew was maneuvering for a second landing attempt on a different runaway, the aircraft crashed into the black sea about 6km (3.8miles) from the airport.

All eight crew members and 105 passenger were killed.

19 December 2005; Chalk's Ocean Airways Grumman G-73T Mallard; Miami, FL:

The aircraft was on a scheduled International flight from Miami to the Island of Bimini in the Bahamas. Shortly after takeoff, the aircraft experienced an apparent structural failure that resulted in the right wing separating from the aircraft. The aircraft crashed into Biscayne Bay just off Miami Beach. Both crew members and all 18 passengers, including three infants, were killed.

10 December 2005; Sosoliso Airlines DC9-32; Port Harcourt, Nigeria:

The aircraft was on a scheduled domestic flight from Abuja to Port Harcourt. During the approach, it experienced reduced visibility and variable winds due to thunderstorm activity. The aircraft impacted the ground about 500 meters short of the runaway and subsequently broke up and caught fire. In

addition, the runaway and approach lights were not on at the time of the crash. All seven crew members and 101 of the 103 passengers were killed.

I carefully deduced from the above listed air mishaps that most if not all originated from security and safety oversight. Cases that had to do with plane hijack or bomb threats may be tied down to oversight at the checkpoints or the screening point. Issues that have to do with the aircraft defect were all as a result of human factor-negligence, just a few may be as a result of nature own effects like thunderstorm, nevertheless metrological equipments and navigational aids/facilities that detect such natural occurrence are available at the control towers, which suggest to me that the major factor to fatal air mishaps may be human factor.

Also, the problems of the air traffic control was researched and solutions found concerning the need to have a better airspace management rising adequate Instrumental Landing Systems (ILS) like AVHF radio coverage for the entire country, controller – to-controller speech circuit JULIUS (2000). Also, seminars have been held on aviation security. DILLINGHAM (2000). Associate director, Development division, United States General Accounting Office; stressing that a safe and secure civil aviation system is critical component of a nation's overall security and safety, physical infrastructure and economical formulation. Several seminars have been held on aviations security. In delivery a paper in Lagos, a one time General manager, security of FAAN Dr. Udonkanga discussed "the vulnerabilities identified in safe guard to protect passengers and prevent unauthorized access to attacks on aircrafts.

The researcher therefore used this opportunity to do a research on aviation security system and buttress the need for regular security checks at the airports.

2.3 LONDON HEATHROW AIRPORT SECURITY

Aviation securities being a worldwide concern, most airports are faced with different problems associated with security irrespective of location. Event over the past decade have shown that the threat danger coupled with the fact that aviation is an attractive target for terrorists; indicate that the securities of the air transport system remains at risk. A single lapse in aviation security can result in hundreds of death, destroy equipment worth hundreds of millions of dollars, and have immeasurable negative impacts on the economy and the public's confidence in air travel. Recently, at the London Heathrow Airport, a passenger survey was carried out for the airport management to have a wide view of passengers concerning the airports complaints   on the long queues at the check points or screening areas which causes delays and could probably give room for a criminal act to occur.

Heathrow is crowded, dirty, flights are delayed, for the price you pay for long stay parking you would expect a quick journey time and a pleasant transit, go on the internet and take a look at other companies, watch your bags, " Recently an American who ten minutes after arriving had his money/passport stolen" Heelas (2006).

Since security procedures changed, one is now faced with an hour-long queue to get through security. The airport staffs do their best to fast track customers whose flights are closing, however I tend it unacceptable that having waited an hour to get into the security area you find that half the security scanners are not being used. Wood (2006).

Heathrow is a jungle that improves with frequent use as one learns coping strategies. The rush for seats with only minutes to go in order to be home on time. Old ladies and small children were regularly stampeded Eves (2005).

There are huge queues for security screening with more than half of the scanners not in use, the poor quality of information available to travelers, the number of staff that can hardly speak English. Boate (2006).

The above few passenger surveys, suggest to me that aviation security may be inevitable but can be reduced or minimized to the barest minimum considering the LHR to be one of the world's most standardized international airports. The very long queue and crowd that cause delays may lead to insecurity or rather certain crimes that may include:

       -Smuggling / Theft

       - Bombings

       - Sabotage / Hijacking

       - Also unsafe conditions in the case of stampede.

2.4 UNITED STATES AVIATION SECURITY

Vulnerabilities still exist in the aviation security system Dillingham (2000). The air transport system is vital to any nation's prosperity, and protecting the system from terrorist attacks or other dangerous acts remains an important national issue.

The testimony today discusses the Federal Aviation Administration's (FAA) efforts to implement and improve security in two key areas:

- ❖ Air traffic control computer systems and
- ❖ Air passenger screening checkpoints

Computer systems and the information within – are crucial link for providing information to air traffic controllers and aircraft flight crews to ensure the safe and expeditious movement of aircraft. Screening checkpoints and the screeners who operate them provide the means to ensure that passengers and others do not bring dangerous items aboard aircraft.

United States General Accounting Office (GAO) testimony before the subcommittee on aviation, Committee on commerce, science and transportation, U.S. senate, stated that "Major security problems in the U.S. aviation / airports are identified in both the air traffic control computer systems and in the performance of checkpoint screeners.

A report issued in 1998 detailed weaknesses in critical computer security areas, including the physical security of facilities that house air traffic control systems and the management, of security for operational computer systems. For example, FAA had not assessed the physical and had not performed the necessary threat analysis for eighty-seven of its ninety operational air traffic control computer systems. I appreciate that the inadequate implementation and assessment of threat analyses of operational air traffic control computer system is a defect in Nigeria's aviation security, which is the responsibility of the Federal Airports Authority of Nigeria (FAAN), a body that supposedly ensures full implementation of standard security and safety measures in the industry.

FAA and the airline industry have made little progress in improving the effectiveness of not adequate of airport checkpoint screeners.

Screeners are not adequately detecting dangerous objects and long standing problems affecting screeners' performance remain such as the rapid screener turnover and the inattention to screener training. FAA's efforts to address these problems are behind schedule. For example, FAA is two years behind schedule in issuing a regulation that would implement congressionally mandated requirement to certify screening companies and improve the training and testing of screeners, thus FAA has not attained its fiscal year government performance and results as well as goals for improving screener performance GAO (2000).

Security problems identified from one country to the other are not unique; these problems show that the chain of security protecting the aviation system has not a one but several weak links. Dillingham (2000). It must also be recognized that the responsibility for these problems does not fall on the shoulder of FAA alone. The aviation industry is responsible for undertaking the security measures at airports and many of the problems identified –such as rapid screener turnover more appropriately rest with it.

Providing security to USA's aviation system is a complex and difficult task before the nation because of the size of the US system, the differences among airlines and airports, and the unpredictable nature of terrorism or criminal acts. The US unlike the Nigeria civil aviation system comprises hundreds of commercial airports, thousands of aircrafts and tens of thousands of flights each day that transport over two million passengers. Proving security to such a vast and diverse system can be a daunting challenge.

The need for strong aviation security grows everyday in the US. The treat of terrorism against the United States remains high and as evidenced by the 1995 discovery of a plot to bomb as many as eleven US airliners, Civil Aviation is an attractive target. More recent events such as the December 1999 apprehension at the Canadian border of a suspected terrorist with bomb components, including some small enough to be brought onto an aircraft, reaffirm the need for security concern at the airport screening points. Other threats such as "air rage" those hostile or possibly criminal acts that occur on board aircraft are on the increase and could be potentially catastrophic if dangerous objects, such as weapons, were to be involved.

I am convinced that aviation security is a common problem in the world but still differ in levels of security and threat problems with respect to the particular environment, for example, the US is continually faced with bomb threats, and its major cases of air mishap, air rage, are highly associated with criminal acts on board aircraft while here in Nigeria, major cases of air mishaps is as a result of inadequate facilities, incompetence and negligence i.e. human factors, inadequate funding of airport equipments i.e. navigational aids, over-aged aircraft etc. In the US there have been incidents in which passengers attacked pilots in the cabins of airborne flights. It is fascinating to know that such criminals were not even discovered during screening that suggests that problem lie within the security system. Finally, a growing threat computer hackers have evolved that could threaten computer that could threaten the security and safety of aircraft or the entire national airspace system. If hackers are able to penetrate the air traffic control system, they could attack the computer systems used to communicate with

and control the aircraft, potentially causing significant economic problems and placing aircraft at risk.

2.5 NIGERIA'S SCREENING SYSTEM

It is expedient at this point to take a crucial look at the Nigeria's security system, which is the reason for this research. Domestic airline operations using the General Aviation Terminal (GAT) of the Ikeja, Lagos airport have been directed to stop boarding passengers from their private terminals. This directive is part of the effort to boost security in the country's domestic airport

By this directive, all domestic operators of scheduled and non-scheduled airlines, except those who strictly operate private charters, will be disallowed from boarding their passengers at any point except the temporary domestic airport terminal where companies like the Fresh air, Chanchangi, Nicon Airways, Belleview, IRS and Aviation Development Company, (ADC) among others operated.

Aviation officials inspected the private terminals of all airlines some time ago that operate from the separate General Aviation Terminals (GAT) to determine if adequate screening were being undertaken on every passenger and baggage. The finding according to sources was that only one had the mandatory screening facility for all passengers that pass through its terminal. DIXON (2000). The aviation authorities also classified the security provided by the operators as "secondary" as every commercial passengers boarding at the airport must pass through the security test of the Federal Airport Authority of Nigeria (FAAN). This is necessary to check loophole in the

security and screening processes to avert a repeat of 911 in Nigeria. Recently, all security and screening devices at the airport were rehabilitated and overhauled, while necessary repairs were carried out. The reasoning of the aviation authorities was that prevention of airline operation shortage could best be done through (FAAN'S) comprehensive screening rather than being provided at private terminals. It was argued that charter operations could be excluded because private people undertaking charter were not expected to sabotage themselves.

Plans have already been concretized by FAAN with a local vehicle operator to provide buses that would be taking passengers from the check in /boarding points to aircraft entry points. Permit me to say at this junction that I am still not naïve of the fact that Nigerian system is good at making plans but often decline at the physical implementation of these plans, in cases were it is implemented, maintenance becomes the problem.

Since the September 11, 2001 terrorist attack in the United States, the International Civil Aviation Organization (ICAO), has issued newer directives concerning screening of individuals and baggage at all airports. These directives it was learnt advised the recent steps of airport management and aviation Managers in Nigeria. At the beginning of August 2002, the Nigerian Aviation Authorities decided to enforce the ban of all civil aircrafts from using the Port Harcourt military airport. Airlines that were affected by the order included Aero contractors Nigeria limited, Bristow helicopters, Skyline aviation and DANA (AIEP).

In line with that on the 17th of February 2002, the US Department of Transportation (DOT) made a law to screen all bags getting into the airports. An alternative means was developed which was to implement a baggage /passenger match process for airlines in domestic US operations. There is also a call for increasing the scope of Hold Baggage Screening (HBS). While the wider application of effective HBS will be a positive step, the current emphasis is for effective measures that ensure that weapons, be they purpose made or improvised, do not get into the airport. The obvious solution is to screen passengers and hand luggages immediately prior to boarding. LECKENBY (2002).

Operation margins will not, however, withstand great increase in turn around times or delays, which for many airlines would be unacceptable and for larger aircraft impractical. Passengers will therefore have to accept increase in pre boarding processing and passenger profiling.

Passengers will want to see improved security but their tolerance for increase congestion and longer check in times will be limited. The task of designers and airport management is therefore to derive effective measures for new and existing terminals, while at the same time minimizing the inconvenience and discomfort of passengers.

Advance check in and electronic systems (such as ticketing) could offer opportunities to reduce airport check in bottlenecks, provided an equal level of security can be attained along with a rigorous method of ensuring passenger bag reconciliation whether self- service system can deliver the required public confidence and satisfy the relevant authorities is another matter. In addition, while technology will undoubtedly provide some of the

solutions to improve profiling, screening and monitoring, it should be remembered that 11th September 2001 terrorists were legitimate passengers. It is likely that a great deal of reliance will be placed on system such as computer –aided passenger profiling and screening (CAPPS).

CAPPS pick out baggage that requires additional screening. The additional screening is done by integrated radio frequency identification tracking system (RFID), which is incorporated into the baggage handling and reconciliation system with air RFID tag, a bag tag and RFID scanners (reader) positioned along the baggage conveyor system. The RFID has an advantage in that no line-of-sight is required to read the information encoded on the RFID tag. By using RFID, human error is removed from the equation and accuracy and speed are dramatically improved.

Referring back to the US airport, there is a growing concern and need for the purchase and deployment of security. The threat of terrorists or other acts against aircraft have led to numerous call for improvements that addresses the vulnerabilities in the aviation system. Dillingham (2000).

During the last decades say an Internet source, two presidential commissions have reviewed and reported on problems with various aspects of aviation security and two major laws have been enacted that require action to improve security measures worldwide. Let us at this point outline in detail the two key areas in which the FAA is making efforts to implement and improve security.

2.6 AIR TRAFFIC COMPUTER SECURITY

Securing the Air Traffic Control (ATC) computer systems to provide information to controllers and flight crews is critical to the safe and expeditious movement of aircraft.

Failure to adequately protect these systems, as well as the facilities that house them could cause nationwide disruption of air traffic or even loss of life. In our own country Nigeria, adequate provision and protection of these equipment or facilities is not just the issue, but also the need for trained personnel to operate the facilities. It is essential that FAA ensure the integrity and availability of the ATC computer systems and protects them from unauthorized access. Numerous laws as well as FAA'S policy require that these systems be adequately protected.

However, the report of the United States General Accounting office in May 1998, say that FAA had been ineffective in four critical computer areas as review. The first of these areas was:

2.6.1 PHYSICAL SECURITY

At key ATC facilities, such as towers and reroute centers, where known weakness existed. For example, contractor employees were given unrestricted access to sensitive areas without required background investigations. In addition, at many facilities, the extent of weakness was unknown because FAA did not follow its own security assessment from 1993 at a large portion of its ATC facilities.

2.6.2 SECURITY OF OPERATIONAL ATC SYSTEMS

Second, FAA had not ensured the security of operational ATC systems. FAA'S policy requires that all ATC systems be assessed for risk, certified that they comply with FAA's requirements, and accredited by FAA management once the appropriate security safeguards have been implemented.

However of ninety operational ATC systems, only three or less than four percent were certified and none was accredited.

Additionally, security assessments for ATC telecommunications systems were not assessed despite the fact that FAA'S 1994 telecommunications strategic plan stated, "vulnerabilities that can be exploited in aeronautical telecommunication potentially threat property and public safety".

Third, FAA was not adequately managing security for new ATC systems because FAA had no security architecture, security concepts of operations, or security standards, the implementation of security requirements for ATC development efforts were adhoc and sporadic. GAO (2000). Of the six-system development efforts reviewed, only four had security requirements based on sound risk assessments, FAA lacks assurance that future ATC systems will be protected from attack. Dillingham (2000).

2.6.3 INADEQUATE IMPLEMENTATION AND ENFORCEMENT OF POLICY:

Fourth, FAA'S management structure was not effectively implementing and enforcing computer security policy, And FAA lacked a center point for enforcing security. In particular, FAA did not have a Chief Information Officer (CIO) reporting directly to the FAA administrator, a management structure consistent with Clinger Cohen act requirements which explains that the management should have an intermediary or source of information directly to the FAA administrator.

Nevertheless, in the US weakness continue in FAA'S effort to maintain effective computer security. In December 1999 the accounting office made a report that FAA was not following its own security requirements. The investigators said that FAA used contractor employees to make year 200 repairs to mission – critical ATC systems and to review these system' software without the required background searches being performed, thirty six foreign national who had access to copies of critical   ATC system source code. In other words, the system is suffering from policy inconsistency as well as political instability as also seen in Nigeria aviation system which leaves the industry (aviation) open and vulnerable to attacks from criminals, and no wonder the increase in issues of airplanes hijackings, and bombings in a well advanced nation like the United States and also the issue of plane crashes and inadequate navigational facilities in a developing country like Nigeria. As a result of not following its own security requirements, FAA increased the risk of inappropriate individuals having access to and knowledge of its facilities, information and resource. Consequently, the

ATC system may now be more susceptible to intrusion and malicious attacks.

2.7   CHECKPOINT SCREENERS

Security problems are not only found at air traffic control facilities, but more significantly, problems exist at the screening checkpoints and the screeners who operate them are a key line of defense against the introduction of dangerous objects into the aviation system.

Since the hijacking of 11 September 2001, there has been an intense focus on the role that airport security screener's play in protecting passengers and crew from hijacking.

The quality of the security screening that passengers face is due in part to the Federal regulations regarding airline security. According to Federal Aviation Regulation (FAR) 108.13, airlines are responsible for providing screening of passengers and their baggage, including the training and testing of persons responsible for the screening. The federal government also sets minimum requirements for screener training, and prevents some convicted criminals from getting jobs as screeners or screener supervisors. Given the following key information from those regulations, it is likely that most passengers would hope that the airlines exceed minimum requirements.

2.7.1 EDUCATIONAL BACKGROUND

FAR 108.31 (a) (1) requires that screeners passes a high school diploma, a general equivalent of diploma, or a combination of   education and

experience which the certificate holder has determined to have equipped the person to perform the duties of the position. This implies that the airlines can decide that a screener does not have to successfully complete high school.

2.7.2 CRIMINAL BACKGROUND CHECKS

FAR (108 – 33) (A) (5) does not require criminal records checks for every screener applicant, only for those applicants who have specific deficiencies in their employment history, if there are other deficiencies in the application, or if the carrier finds out that the applicant may have been convicted of certain kinds of crime.

2.7.3 CRIMINAL HISTORY

Surprisingly, a conviction for a crime, even a violent felony does not disqualify someone from working as a screener.

FAR 108.33 (2) states a that a criminal records check must not disclose that the applicant had been convicted or found not guilty by reason of insanity, in any jurisdiction during the previous ten years of a number of crimes such as aircraft piracy, interference with a flight crew or cabin crew member, assault with intent to murder, rape or aggravated sexual abuse or armed robbery. These lists of crimes include sedition, treason, extortion, or distribution of a controlled substance. This regulation implies that so long as the conviction were at least ten years old, almost any convicted criminal could become a security screener.

I strongly view this regulation as to be very controversial. How can we be totally convinced that such formerly convicted criminals will not be a threat to the security system in the nearest future? The September 11 catastrophe specifically involved employees that work at the airport using unescorted

access privileges to perpetuate criminal acts. (ORAMAS ASSISTANT DIRECTOR FOR SECURITY AND SAFETY, MIAMI DADE AVAIATION DEPARTMENT).

2.8   FAA's RESPONSIBILITY

All passengers and their baggage must be checked for weapons, explosives and other dangerous articles that could pose a threat to the safety and security of an aircraft and those aboard it. FAA and the air carriers share this responsibility. FAA prescribes the screening regulations and establishes the basic standards for the screener, the equipment and the procedures to be used, and the air carriers are responsible for screening passengers and their baggage before they are permitted into the secure area of an airport or onto an aircraft. Air carriers can use their own employees to conduct screening activities, but for the most part, air carriers hire security companies to do the screening.

The screeners detect thousands of dangerous objects each year. Over the past five years, they detected nearly ten thousand firearms being carried through checkpoint, according to FAA. Nevertheless, the screeners do not identify all threats, and instances occur each year in which weapons are discovered to have passed through a checkpoint.

United States inspectors have found a number of cases in which passengers passed trough checkpoints on the first flight of heir trips and were subsequently found to have loaded guns at screening checkpoints prior to boarding connecting flights.

There are also instances in which simulated explosive devices used for testing screeners passed through screening checkpoints and were placed aboard aircraft. This calls for the effectiveness of the screeners and the need to improve their performance via constant training.

In 1987, screeners were not detecting twenty percent of the objects during FAA's tests. Two presidential commissions established after the bombing of Pan Air flight 103 in 1988 and the then unexpected crash of TWA flight 800 in 1996 as well as numerous reports by GAO and the Department of Transportation's Inspector General of United States have highlighted problems with screening and the need for improvements. To rectify some of these problems, the Federal Aviation Reauthorization Act of 1996 mandated that FAA certify screening companies, improve the training and testing of the screeners, and develop performance standards. Problems with the screeners' performance remain a serious concern not just in United States, but also in Nigeria and are also world concern. Screeners' ability to detect objects during the agency's tests is not improving and in some cases is worsening. Screener's performance problems are attributed to rapid turn over inattention to Human factors.

2.8.1 RAPID TURNOVER

There is no single reason why screeners fail to identify dangerous objects. Two conditions – rapid screener turnover and inadequate attention to human factors are believed to be important causes.

The rapid turnover among screeners has been a longstanding problem, having been singled out as a concern in FAA and GAO reports dating back to at least 1979.

In 1987 the turnover among screeners was about hundred percent a year at some US airports, and today, the turnover is considerably higher. From May 1998 through April 1999, turnover averaged 126% among screeners at nineteen large US airports, with five airport reporting turnover of 200% or more and one reporting turnover of 416%.

At one of the airports, nine hundred and ninety three screeners trained there over about one year period, only one hundred and forty two, or fourteen percent were still employed at the end of that year. GAO (2000).

Such rapid turnover can seriously affect the level of performance of screeners at the checkpoint at any airport in the world, which may also be a problem at any of the Nigeria airports. Both FAA and the aviation industry attribute the rapid turnover to the low wages the screeners receive, the minimal benefits and the daily stress of the job, which is a major issue in the labor system of Nigeria.

2.8.2 HUMAN FACTORS

The human factors associated with screening those work related issues that are influenced by human capabilities and FAA has also noted constraints as problems affecting performance for over twenty years. Screening duties require repetitions tasks as well as intense monitoring for the very rare event when a dangerous object might be observed. Too little attention has been given to factors such as:

- ❖ Individual's attitudes for effectively performing screening duties
- ❖ The sufficiency of the training provided to the screeners and how well they comprehend it and

❖ The monotony of the job and the distractions that reduce the screener's vigilance. As a result, screeners are being placed on the job that do not have the necessary abilities or adequate knowledge to effectively perform the work and who then find the duties tedious and unstimulating.

The human factor with respect to distractions can cause a fatal accident to occur or criminal act take place on a trip to the duty post of Control Tower Officers (CTOs) which is relevant today in view of the Belleview's flight 210 crash in Nigeria that was investigated. It was a trip to the control towers at the Murtala Mohammed International Airport, Lagos. It was an investigative outing, which required the reporter to stay with the ATCs to have first hand information of how they carry out their duties.

The scene turned out to be a picture of major distractions and other human frailty make the job look like anything but serious. More than an hour spent with the controllers was full of yelling and cajoling. At times, there would be a distraction from a minor conversation among the controllers. But an interaction with some ATCs in the year 2005, they claim a lot had taken place between the past and present time. The Guardian (October 30, 2005).

FAA has demonstrated that it is aware of the need to improve the personnel performance by conducting efforts intended to address the turnover and human factor problems and by establishing goals with which to measure the agenda success in improving performance.

The efforts include establishing;

❖ Threat image projection system to keep screeners alert and to monitor their performance.

❖ A screening company certification program; and screener selection tests.

❖ Computer-based training and readiness tests.

The above efforts should be adopted by the Federal Airports Authority of Nigeria in boosting safety and security measures in our airports by implementing standardized facilities and training/recruitment method for screeners and all other personnel.

2.8.3 THE THREAT IMAGE PROJECTION SYSTEM

FAA is deploying an enhancement to the X-ray machines used at the checkpoints called the threat image projection (TIP) system. As screeners routinely scan passengers' carry-on bags, TIP occasionally projects images of dangerous objects like guns and explosives on the X-ray machines' screens. The screeners are expected to spot the objects and signal for bags to be manually searched. Once prompted, TIP indicates whether an image is of an actual object in a bag or was generated by the system and also records the screeners responses, provided a measure of their performance while keeping them more alert. By frequently exposing screeners to what dangerous objects look like on screen, TIP will also provide continuous on-the-job training.

FAAN should adopt this policy and make adequate plans to install the units on existing X-ray machines nationwide. This system can be implemented and placed at the airports for proper screening performance and evaluation. In the US, the FAA has the system in place in the largest airports since 2003. FAA has created a program to certify the security companies that staff the screening check points. The agency plans to establish performance standards. An action recommended in 1987 that the screening companies would have to meet to earn and retain certification. It also require that all screeners pass automated readiness tests after training and that all air carriers have TIP units on the X-ray machines at their checkpoints so that the

screener's performance can be measured to ensure FAA's standards are met. FAA believes that the need to meet certification standards will give the security companies a greater incentive to retain their best screeners longer and so will indirectly reduce turnover by raising the screeners' wages and improving training.

2.9   SCREENING PRACTICES IN FIVE DEVELOPED COUNTRIES

To identify screening practices that differ from our nations' (NIGERIA), I researched into five countries – Belgium, Canada, France, the Netherlands, and the United Kingdom viewed by FAA and the aviation industry as having effective screening operations. These countries also have significantly lower screener turnover than the United States. About fifty percent or lower. Some significant differences in four areas;

- ❖ Screening operations
- ❖ Screeners' qualifications
- ❖ Screeners' pay and benefits and
- ❖ Institutional responsibilities for screening

First, screening operations in some countries are more stringent.

For example, Belgium, the Netherlands, and the United Kingdom routinely touch or "pat down" passengers in response to metal detector alarm. Additionally, all five countries allow only ticketed passengers through the screening check points, thereby allowing the screeners to more thoroughly check fewer people. Some countries also have a greater police or military presence near checkpoints. In the United Kingdom for example, security forces – often armed with automatic weapons – patrol at or near checkpoints. At Belgium's main airport, a constant police presence is maintained at one of two glass-enclosed rooms directly behind the checkpoints. Second, the

screeners' qualifications are usually more expensive. For example in Belgium screeners are required to be citizens, while France requires screeners to be citizens of European union country, but they must have been residents of the country for five years.

Moreover, while FAA requires that screeners in the country have twelve hours of classroom training, Belgium, Canada, France, and the Netherlands require more. France requires sixty hours of training, and Belgium requires at least forty hours with an additional sixteen to twenty four hours for each activity, such as X-ray machine operations, the screener will conduct. This facilitates high screeners' performance.

Third, the screeners receive relatively better pay and benefits in most of these countries. Some countries receive wages that they view as being "middle income". In the Netherlands, for example, screeners receive at least the equivalent of about $7.50 per hour. This wage is about thirty percent higher than wages at fast – food restaurants in Belgium, screeners receive about $14 per hour. Screeners in some countries also receive some benefits, such as health care or vacations, as required under the laws of these countries. Our country, Nigeria can adopt these outstanding and effective practices that indirectly affect workers or screeners' performance and give a sense of responsibility.

Finally, the responsibility for screening in most of these countries is placed with the airport or with the government, not with the air carriers. In Belgium, France and the United Kingdom, the responsibility for screening has been placed with the airports with either hire screening companies to conduct the screening operations, or as at some airports in the United

kingdom hire screeners, or manage the check points themselves. In Netherlands the government is responsible for passenger screening and hires a screening company to conduct checkpoints themselves. In the Netherlands the government is responsible for passenger screening and hires a screening company to conduct checkpoint operations, which are overseen by a Dutch police force.

CHAPTER THREE

3.0 REASEARCH METHODOLOGY

Business operates in situations of uncertainty. In the same vein, social and economic problems manifest themselves in various manners. It is our duty as trainees in management sciences to seek ways of reducing these uncertainties to a manageable level and this can be achieved through research.

In this chapter the researcher will re-emphasize the research questions and null hypothesis stated in chapter one, as well as research design, characteristic of the population, sampling design and procedure, data collection, instrument and method of data analysis.

3.1 RESTATEMENT OF THE RESEARCH QUESTIONS AND HYPOTHESIS

In fact, the research questions in chapter 1 (1.4) and the stated hypothesis in (1.5) are restated as follows.

1. How do we examine the level of functional security equipment in the airport?
2. What facilities are available in Murtala Mohammed International Airport?
3. Should the security personnel be given adequate training?

The statements of hypothesis are:

Ho: the volume of crime is not significantly related to entry and exit point patterns

Ho$_2$: There is no significant relationship between crime and facilities available.

3.2   RESEARCH DESIGN

A research design for an empirical investigation is equated to the structure, framework or plan that is used as a guide in collecting and analyzing the data for a study (Baridam, 1990). In other words, the research design is the structural framework underlying the factual answer for proposed research questions.

Generally, there are two main steps that can be followed in research study. These steps according to Boyd (1977) involve stages of explorations / study and the research at the exploratory.

In the light of the above, the research at the exploratory study, collection data from unpublished and published sources. These are followed by oral interviews with some knowledgeable and experienced persons on the subject. Trips were embarked upon in the course of study for which interviews held with aviation professionals/ personnel such as aviation security, aircraft controllers, pilots, customs, immigration and other category of airport users such as airlines, air travelers etc.

Equally relevant information were collected from some government agencies such as the ministry of aviation and its parastatals, Federal office of statistics and other aviation related agencies – identified problems were defined and possible hypothesis or proposition were also developed.

Blunt (1983) however, identified three ways by which research can be conducted; a case study, a survey or an experiment. A case study, according to him focuses on a particular organizational problem and traces the courses

of events surrounding the issue; whereas a survey is conducted where there is a large population on which a problem is to measure actual cause and effect relationship, where the behavior of the target population can be observed and the causes determined.

This study however is to appraise the security system in a Nigeria airport, assessment of the behavior and opinion of workers will be questioned. In surveys, individuals are usually the unit of analysis they will constitute the respondents to the question to be asked

3.3   CHARACTERISTIC OF THE POPULATION

The assessment is to appraise the security system in the airport and proffer solutions. The airport consists of various departments. Also, the designed questionnaire was distributed to all departments for easy data collection.

3.4   SAMPLING DESIGN AND PROCEDURES

The objective of sampling is to select a subset of a population that is representative of the entire population various sampling designs and techniques have been developed in attempts to improve this representation. There are two primary types of sample design; the non-probability samples and the probability samples or the so-called random samples.

Now, it would be unorthodox and expensive to administer questionnaire on the entire population. A sample frame of One hundred and twenty (120) was taken in this research while a sample size of fifty (50) was considered representative enough to enable a reliable and generalized statement to be made about the study.

The probability method of sampling called stratified sampling was adopted in sampling the respondents in each department of Murtala Mohammed

Airport. In this case, we first divided the population into strata or departments. Then within each stratum a random sample of units selected. Using these sub-samples, makes it possible to arrive at more precise estimates of the sub-population parameters and hence those of the entire population. A total of fifty (50) staff was sampled at the various departments of the Murtala Mohammed Airport, which could be as follows:

STRATUM OR VARIOUS DEPARTMENTS	NUMBERS OF STAFF IN EACH DEPARTMENT OR STRATUM
A. Customs	24
B. Air Traffic Control	15
C. Engineering Department	17
D. Aviation Security	30
E. NDLEA	14
F. State Security Service	20
TOTAL	**120**

In the table above, proportional allocation ensures that the same proportion of items in each department is sampled.

The overall sampling fraction is achieved mathematically

$$\text{Fraction} = \frac{\text{Sample size}}{\text{Population}} \qquad \frac{n}{N}$$

$$= \frac{50}{120} \qquad = 0.42\%$$

Where n = sample size

N = Population

STRATUM

A. Customs	24 x 0.42% =	10
B. Air Traffic Control	15 x 0.42 % =	6
C.Engineering Department	17 x 0.42% =	7
D. Aviation Security	30 x 0.42% =	13
E. NDLEA	14 x 0.42% =	6
F.State Security Service	20 x 0.42% =	8
TOTAL SAMPLED		50

With a sample of fifty (50) staff, these proportions would result in the following numbers selected above. A total of fifty (50) staff will be studied using stratified sample or proportional sampling technique.

3.5 DATA COLLECTION INSTRUMENT

The data used for this study was collected in MMIA. The study described the appraisal of the security system in MMIA. Using secondary data, which provided a general background, was collected including library research, journals, and official documents, newspapers as well as relevant books. The use of maps, graphs and tables in the study also complement the other source of data collection.

However, vital (primary) data was collected through the use of questionnaires. The administration of question presentation is commonly recommended for a situation in which it is important to ensure the anonymity of respondents Negal (1976).

3.5.1 SECONDARY DATA

There are certified materials, which do not originate from the investigator but from existing records, or publications.

3.5.2 PRIMARY DATA

The primary data comprises mainly of questionnaire distribution to departments in MMIA. Oral interviews were analyzed and utilized in testing the formulated hypothesis. In the process of administering the questionnaires, the author encountered one major problem, which was non co-operation from respondents. The first two visits, the respondents refused to fill the questionnaires and respond to interviews, having considered the researcher as a security agent, until after a repetition visit and careful identification and explanation to the respondents by the author before the questionnaires were finally filled and some verbal questions answered.

In spite of all these problems, it is the author's belief that the wide exercise was a success, since more than half the questionnaires distributed were collected.

The primary concern in designing the questionnaires for this study was to make them as simple as possible as to facilitate the completion by the respondents and at the same time, to ensure accuracy of the respondents. It was also designed from perspective of helping to carry out efficiently, the qualification and analysis of results. BORG and GALL (1979).

In this perspective technical questions were carefully avoided and only questions that were of direct relevance to the study were included.

The questionnaire was sectionalized into four parts; personal data, socio-economic, aviation core questions and its conclusion. There were eighteen (18) questions in the questionnaire embracing dichotomous multiple choice

and open-ended type of question. The open ended forms of questions were designed to allow respondents freedom in supplying answer without being "straight asked" to the researchers prejudice and predications. Six (6) questions in the personal data section introduced the background of the respondents while eight (8) in the socio- economic section focuses on the crux of the subject and four (4) questions in section three. Sections two and three consist of questions used in testing the null hypothesis as well as questions that proffer suggestions for the security system in MMIA. The questionnaires were delivered to all departments at the Murtala Mohammed International Airport and replies collected by hand.

3.6 ADMINSTRATION OF THE DATA COLLECTION INSTRUMENT.

Data administration/gathering is a very vital stage in any statistical inquiry. In fact, the soundness of the method employed in the administration of statistical data determines, to a large extent the success of the assessment.

In this project, the researcher distributed questionnaires to the entire departments of Murtala Mohammed International Airport in order to appraise the security system in the airport. The questions are usually listed in an established sequence. It is a very popular method of collecting data in Business, Social Sciences and Humanities.

The most commonly used survey methods of data collection are:

    i.   Personal interview

    ii.   Use of questionnaires

    iii.   Direct observations

    iv.   Telephone interview

3.6.1   PERSONAL INTERVIEW

This is a verbal communication between the investigator and the respondent. Here, the interview in, his/her house or the office as the case may be, ask the necessary questions as continued in the questionnaire and record them, accurately in the schedule. The method has several advantages as; the interviewer can explain to the respondents any difficult question since he is in possession of this schedule.

However, its disadvantages; in the first place is expensive as much money is spent on transportation. It is also time consuming. Besides, there is the problem of not – at – home. That is the inability of the investigator to interview the respondent due to fact that he was absent when the investigator called.

3.6.2   QUESTIONNAIRE ADMINISTRATION

The questionnaire is a list of questions to be asked the respondent and spaces in which to record the answer, this is the best method of collecting data. It is best to administer the questionnaire in person to ensure a reasonable return rate.

3.6.3   DIRECT OBSERVATION

This means the counting, measuring and recording events and peoples behavior in such a way that the data can be analyzed and interpreted. The implication is that instead of asking people to describe what products they buy or what television programme they watch, the researcher arranges to

observe them. Observation offers the researchers advantages of recording events as they occur, reduction of bias and more an objectives data.

3.6.4 TELEPHONE INTERVIEW

Statistical data are usually generated through the telephone. The researcher merely uses telephone to establish contact with the respondents who in turn would supply answers to questions asked. The method presupposes that most people have telephone sets in their houses or offices, most especially the G.S.M.

In advanced countries, ownership of telephone sets by most people is possible even in developing countries, which includes Nigeria, where the GSM handset has become common. Telephone interview has the advantages of speed and low cost. The disadvantages include the impersonal nature of the interview and possible lack of co-operation by the respondents.

3.6.5 METHOD OF DATA ANALYSIS

In data analysis, various methods were used in presentation and analysis of relevant data. These include tables used to tabulate identical reactions of the respondents to the relevant question; descriptive statistical tool like percentages and Chi-Square x^2 were used.

The sample percentage method was used in the analysis of relevant data while the Chi-Square (X^2) was used in test of the hypothesis. The Chi-Square (X^2) is a very acceptable form of hypothesis testing according to Hoel (1980), the Chi- Square is the sum of ratio of the difference between the square of the observed and expected frequencies. In using the Chi-

Square (X^2) techniques, computation was done manually because the data was small.

Mathematically, (UKWUIJE) stated it thus;

n (i = i)

$$X^2 \ E^{n\,(i-i)} \ \frac{(Oi - Ei)^2}{Ei}$$

Where

Oi = Observed frequency

Ei = Expected frequency

$(Oi - Ei)^2$ = Difference between the observed frequency and expected frequency all squared

X^2 = value of the random variation whose distribution is approximated closely by the Chi-Square distribution and the curve is thus;
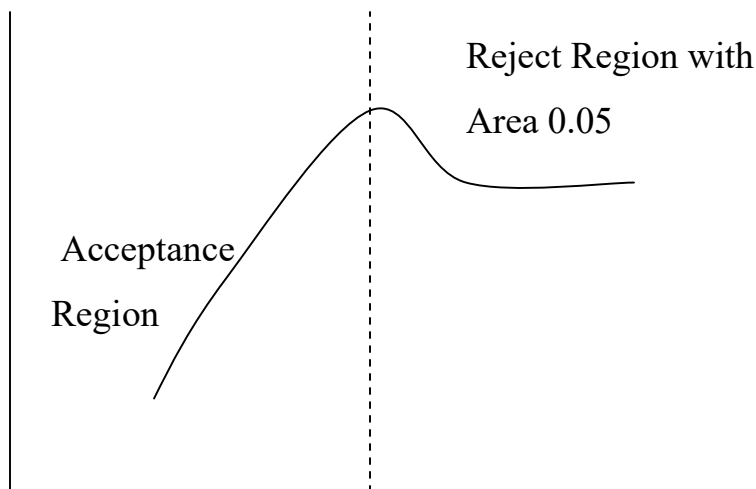
CHI – SQUARE (X^2) DISTRIBUTION

The researcher assumed some degree of freedom and a 5% (0.05) level of significance. The degree of freedom (v) refers to the freedom of variables among a set of scores, which are free to vary randomly and independently (Hoel 1980).

Using Chi-Square (X^2) technique for the hypothesis testing we have the following mathematical symbols.

Ho = Null hypothesis

H_A = Alternative hypothesis

V = Degree of freedom

K = Number of cells of classes

$\leq$ = Less than or equal to

$\geq$ = Greater than or equal to

Oi = Observed frequency

Ei = Expected frequency

X^2 = Test statistic for Chi–Square

$$= \frac{(Oi = Ei)^2}{Ei}$$

X^2 (K – 1) D.F Critical value for Chi-square reading at a 95% of significance.

Based on the test so enunciated, the researcher made a generalization on whether such assumptions are true of false.

Also, the hypothesis was tested by applying the response to the questions related to the formulated hypothesis.

The researcher's decision rule for the hypothesis testing follows. If the computed value of Chi-Square (X^2) is less, then reject the null hypothesis. But if otherwise, it should be accepted.

CHAPTER FOUR

4.0. MURTALA MOHAMMED AIRPORT: SECURITY

The aviation sector by every standard is a very important and lucrative sector of any economy. While it remains the window to various economic opportunities, it is also a window, through which the outside world views the country SUNDAY SUN (MARCH, 26, 2006)

Due to its global outlook and security implications, it is perhaps the most regulated industry. The expectations of the end user and the regulatory bodies are fairly universe and always without discount for the culture or geographical location of the business.

The problems of security arrangement in Murtala Mohammed International Airport can be analyzed critical from two distinct albeit mutually re-enforcing approaches:

1. The Functionalist concept
2. The Institutional concept.

4.0.1 THE FUNCTIONALIST CONCEPT TO SECURITY OPERATION

This approach sees security operations as a function or act directed towards the achievement of set goal. It incorporates such elements as the personnel, procedures, techniques and equipment that are deployed in accomplishing the task. In an idealized form, the functionalist approach recognizes such operators as the aviation security (on land), air traffic control officers, and

air traffic security electronic service, security officers, pilots, etc charter, documents, promulgation communities and navigational facilities (both airborne and ground base) as well as other aeronautical stations that are packaged as a sum total technology used in managing security both on land and in air. The question here is, are these facilities available and adequate?

4.0.2   THE   INSTITUTIONALIST   CONCEPT   TO   SECURITY OPERATIONS

The Oxford Advance Learners' Dictionary defines the word "Institution" as a large important organization that has a particular purpose e.g. a university or bank.

It is further defined to be a building or place where people with special needs are taken care of. In the context of the second and first definition, the airlines could be defined to be organization where airlines collaborate to provide accurate to provide accurate service (i.e. security) for the people or community at large.

The approach views security operations as an institution organ both corporate and otherwise that has been charged with the responsibility of managing the provision of security service in Nigeria. It encompasses such organ as the government authorities, department and parastatals that are charged with the responsibility of security checks management in the nation.

Having introduced the concept from which the problem of security operation in Murtala Mohammed Airport can be perceived, discussion can now

proceed on the issue fully detailed, reference to those problems that seek to militate against the effective and efficient operation of security in MMIA

4.0.3 PROBLEM OF INDIGINOUS AIRLINES

The problem involving the airlines operating at the airport is a major problem encountered in the airport and in the aviation industry at large. Most recently owing to the crash of the Sosoliso air on December 10th 2005, in Port Harcourt International Airport claiming numerous lives of which sixty-two children were among resulted to the Federal Ministry of Aviation grounding all the airlines except the Virgin Nigeria airline and Aero contractors Nigeria limited. It is expedient to mention but few in an orderly form some of the recent plan accidents and incidents in Nigeria that involves most of our indigenous airlines recording from the year 2004.

Twenty-five people died as plan crashed into Goshen Beach near Ajah Lagos.

04-04-2004; Management of Chachangi airlines; owners of Boeing 727 aircraft that skidded off Abuja airport rested the plane for safety reasons.

13-3-2005; Two ministers, Bayelsa Deputy Governor and lawmakers escaped death as plan crash–handed in an airport

11-06-2005; Crash landing of EAS airlines in Jos airport

09-06-2005; Ex- Military Administrator, One hundred others escaped plane crash

09-07-2005; An Air France aircraft with one hundred and six passengers on board ran into stray cows on the runway of International Airport, Port Harcourt as it touched down

30-06-2005; A Forker 100 with Eighty-six passengers' and six crew on board; made an emergency landing at the local wing of Murtala Mohammed Airport, Ikeja, Lagos

22-10-2005; One hundred and seventy seven persons were killed in the ill-fated Belleview crash, which occurred at Lisa village, near Ifo, Ogun state

10-12-2005; the Sosoliso aircraft crash-landed at Port Harcourt airport claiming lives of students

17-09-2006; Donnie 228 operated by NAF crashed on its way to Obudu from Abuja. 13 persons including 10 senior military personnel lost their lives.

29-10-06; Boeing 707-200 operated by ADC from Abuja and Sokoto bound. 104 of 111 persons on board the 23-year-old aircraft killed at Tunga-Madaki village 2km from Abuja airport.

Indeed, the Chairman of Airline Operators of Nigeria (AON). The umbrella body for domestic airlines, Dr Steve Mahonwu, told Daily Sun on an interview that all operators merely exist and "financially sick" since the industry is highly capital intensive.

According to him, the profit any airline would have recorded is usually gulped by high cost of operations in form of landing and parking charges, ticket sales remittances, fuel, among other regular "taxes"

There are certainly more problems facing the operators which includes Over –aged Aircraft

Most of the Domestic airlines operate with over–aged aircraft with the introduction of the ban on aircraft above twenty years in 2002 by Dr Kema Chikwe, the then aviation minister after the EAS air crash in Kano involving a Romanian version of BAC1-11 airplane, most domestic airlines were caught in a web of controversy.

Firstly, there was the issue of where to get younger airplanes. The operators find it difficult to source funds to acquire the fairly web modern aircraft Boeing 737-300, B 737-800, the Airbus A320-200, A340-400, among others.

The following questions arise.

- How would they recoup the cost when they ply mainly domestic routes and dormant regional routes?
- What of the huge maintenance cost?
- The cost of training the personnel that operates such wide-bodied aircraft, who bears it?

Interestingly, aircrafts are measured by the cycles and hours. 10 years old aircraft that is caring 40,000 cycles and 20,000 hours is older than a 20 years aircraft that have 5,000 cycles and 10,000 hours, it depends on the maintenance programmed. For instance, Obasanjo's air plane (B727) is above 22 years old but it's newer than most of the airbuses and aircraft flying into the country because the cycles are low, the hours are also low and the maintenance programmed is top-notch. Such an airplane certainly does

not have the same value with the other commercial B727 that is "limping" into Lagos and back.

The bulk of the operators or airlines cannot afford or acquire a fairly used B737-300 aircraft that costs well over N5 billion judging from the low return on investment.

Unfortunately, Nigerian banks are not really interested in funding the acquisition of aircraft. According to the Chief Executive Officer of Belleview Air lines, Odukoya, the capacity of the mega banks to adequately address the needs of the aviation industry is very much suspect and will require the sourcing of fund consolidation and strategic alliance to realize that, Sunday Sun (March 26, 2006). The lack of capacity has greatly resulted to these operators /airlines acquiring aged aircraft that quickly become over-aged due to overhaul and poor maintenance programmed.

4.0.4 LACK OF PROFFESSIONALS

The International Civil Aviation Organization (ICAO) has a set standard training requirement for air traffic operations. The planning function in airport management should include the establishment and management of a staff capacity with requisite scientific, technical, engineering and management skills to assure that the airport planning, design and construction programme is firmly in the hands of qualified full-time airport personnel. A qualified staff or professional should be able to weigh the views and advice of consultancy and make recommendations concerning the facility planning and development work to be undertaken in the airport.

In Murtala Mohammed International Airport, training of these professionals has not been given the right of place.

Training or rather on-the-job training of personnel should be a continuous programme in order to keep the personnel updated and exposed to the newest development (in technology) concerned with their job. The local operators at the airport claim not to have enough funds to train the volume of manpower needed to conform to International standards due to low profit on investing.

The current average age of key player in the industry is fifty years, particularly in core areas of piloting, maintenance, air traffic control, aeronautical telecommunication, regulation and administration. So if this trend were not checked, there would be serious dearth of key manpower in the next ten years due to forced retirement, says a source in Sunday Sun (March 26, 2006). In my view, a local operator prior to rendering air service should "count the cost" involved before proceeding and the Nigerian Civil Aviation Authority (NCAA) should be able to scrutinize how competent this local operators are able to handle the services involved before being registered and license issued.

The technical requirement of job of security officer in the management of traffic, training and re-training are required to keep them abreast, increase their efficiency and enhance productivity but this is lacking. Aviation Security (AVSEC) personnel are by standard required to go refresher courses. Though training programmes are planned and undertaken, they are inadequate thereby producing unskilled personnel instead of professionals.

4.0.5 OBSOLETE INFRASTRUCTURE

Obviously, there has been no new construction in the past fifteen years in an industry that records new development daily. Most of the airports have on perimeter fence. That was why cows could stroll into the runway of Port Harcourt Airport and an Air France aircraft ran into them on the 9th of July 2005. The aerodrome is small and crying for expansion.

As a result of all these decay, facilities enroute and at the airports, where not only outdated, but are over stretched and grossly inadequate. The runway at the airport is crying for attention. Resurfacing work and pavement drainage systems maintenance on these routes is not adequately done. The runway 18L is over flogged at times owing to the fact that M.M.I.A Lagos is always waterlogged when there is an occasional downpour of rainfall. Airlines have recorded incidents traceable to flooding and the pilots are often blamed for not landing on the threshold.

A DHL cargo aircraft nose-dived into the waterlogged area of the Murtala Mohammed International Airport, Lagos and caused traffic for two weeks before remedy came. The federal airports authority of Nigeria (FAA) passes the buck to the airline. "It never addressed the issue of water setting on the runway," says Mahonwu. Same is the radar. The radar is so old that the parts are no longer manufactured. The radar is often put off on weekend for routine maintenance, hence it packs up. The new radar Nigeria Airspace Management Agency (NAMA) is planning to acquire will be a welcome development. Certainly the industry needs facilities expansion and airports modernization as the growth in traffic is, anticipated. As sophisticated as Heathrow airport, London is, there are new innovations virtually on a daily

basis. Nevertheless, disclosing the development, Malam Yuguda during an interview with Daily Champion said that resurfacing work on runway, which constituted hazard to smooth landing and take-off of aircraft is being rehabilitated

4.0.6 SEARCH AND RESCUE DEFICIENCIES

This study is centered on security management for the purpose of security. When this is over looked, the result is an accident, which still comes under the umbrella of the Air Traffic Managers, like the Nigerian Airspace Management Agency (NAMA) and Nigeria Civil Aviation Authority, (NCAA).

The Nigeria Airspace Management Agency is essentially a service organization and is committed to providing safe and functional standard. NAMA is a government agency charged with the responsibility of aeronautical search and rescue operation in Nigeria. Essentially, the function is directed to coordinate the activities of its personnel, aircraft, machinery, equipment and other resource to achieve the objective of search and rescue (SAR). The objectives include;

- To locate the site of aircraft accidents
- To rescue the occupants of an aircraft involved in such accident
- To assist appropriate authority for aircraft, accidents investigation
- To co-ordinate and update the personnel, aircraft requirement and other infrastructure (information necessary to achieve the above state objective).

The attention given so far to this all aviation sectors leaves much to be desired. The question remain, where were the trained personnel, machinery, equipment and other resources when the Sosoliso air crash landed at the Port Harcourt airport on the 10th of December 2005? If these facilities were adequately provided and on standby for emergency cases most occupants of that aircraft would have been from burning, unfortunately lives were lost and the country was left, with only one survivor from that crash.

Past experience has shown that when accidents occur, such equipments as were used are mostly borrowed from private organizations 'the historical event of the crash of Sosoliso air, reveals that the airports standby emergency rescue team could not render any help due to lack of fire fighting facilities in addition to that, ambulances were borrowed from the government of rivers state'.

The airport and the country at large are very backward in search and rescue. For those who have not been ardent followers of developments in the aviation sector, the recent mishap and fatal crash would come as a surprise. But for close watches of the system, these incidents came across as accumulation of the neglect the nation's airport and entire aviation sector have suffered over the years. The incident of the Sosoliso air crash at the airport further exposed the inadequacies of emergency rescue requirement in the sector and airport, as it took up to a week for the aircraft (the wreckage) to be removed from the incident scene. For the period the aircraft wreckage was abandoned there was a temporal shut down of the airport.

Other major incident encountered due to lack of proper search and rescue in Nigeria airports came on Saturday June 11, 2005 when EAS airlines

"Boeing 737-200 overshot the runway of Jos airport due to water logged nature of the runway. The city had just been hit by a heavy downpour and the flooding that came with the rain made the runway unsuitable for operation (due to inadequate drainage system) the anxiety generated was yet to settle when in less than twenty four hours a Chachangi airlines' Boeing 727-200 aircraft with one hundred and ninety two passengers also overshot the runway of the Murtala Mohammed Airport; Ikeja Lagos, before skidding into a ditch. Inadequacies of emergency rescue equipment sector resulted from the accidents scene. Air safety was out in danger, with aircraft taking the wind in violation of International civil aviation regulations.

The dust generated by these two incidents had hardly settled when IRS airlines' Lagos- Abuja-Kano bound forker 100 with close to 100 passengers made an air return to its point of take-off at the Murtala Mohammed airport in Lagos, after suffering a hydraulic problem barely 55 nautical miles after take off. The aircraft suffered wing collapse while taxing for a bend on the runway of the airport; forcing prompt emergency response of the Federal Airports Authority of Nigeria (FAAN) fire tenders, the aircraft would, perhaps, have burst into flames. But again, the ill-fated aircraft was abandoned on the runway for hours before it could be towed off, forcing diversion of flights to alternate Ilorin airport for local flights and Accra for national flights.

4.0.7 SCREENING MACHINES

The only screening machines available are metal detectors, X-ray screening machines and walk-through machines used by the security officials. What

happens to dangerous weapons like bombs, guns and other dangerous weapons properly packaged can be taken (smuggled) through the airport.

The airport could also be transit base to carry drugs like cocaine, marijuana, Indian hemp, etc across or into the country through neighboring countries. There are no detectors for these except the one at NDLEA office used only when they suspect a passenger bearing in mind that 80% (eighty percent) of the drugs brought into this country is usually through the airport. (DRUG FORCE, VOL2, NO2)

In order to ensure compliance with standard requirement for baggage and cabin baggage screening, there is need for the procurement of

- ❖ Modern high – tech detector machines,
- ❖ Additional x-ray screening machines
- ❖ Walk – through and
- ❖ Hand held metal detectors

4.1 MURTALA MOHAMMED INTERNATIONAL AIRPORT: SECURITY

During the last three decades a new type of danger to international civil aviation has emerged which was not foreseen at the time of Chicago convention: violent human acts against safety of civil aviation, use of force or threat of force, unlawful service of aircraft's and acts of sabotage. These violent and criminal acts are a worldwide problem, not limited by geographical or political boundaries and no airline of the world is immured to such acts. In an effort to deal with full support and clean expression of the political will by all its members' states. The SARPS so developed consist

essentially of programmes in the legal and technical and are completed with view to their practical implementation by technical co-operation projects.

At the Murtala Mohammed Airport like else where, security depends on the following: the airside, airport fencing, identification of persons, identification of vehicles and protection of aircraft on the apron.

4.2   THE AIRSIDE

The airside of am airport is usually defined as the movement area of the facility and all adjacent terrain and building to which access is controlled. Airport operators now recognized that the airside is likely to be the prime target area for those undertaking any unlawful action against either an aircraft and its crew or the passengers. It is therefore of paramount importance that the airside is protected against all unauthorized intrusion which must be regarded as potentially dangerous, specific action is therefore required in a number of areas.

4.3   AIRPORT FENCING FORTIFICATION

The airside must be provided with an adequate security fence that serves the multiple functions of defining the protected area, providing a determent to the intruder, delaying and possibly inebriating unlawful entry and providing defined controlled access points at gates. These access points should be kept to a minimum. Where access is other than by key or an automatic control of entry system, gates must be manned and illuminated.

Furthermore, the access point should be provided with communications to the central security conduit unit. The fence itself must be a real deterrent to entry; normally it is a high block work. Construction care must be taken to

secure all conducts, sewers and other ducts and pipes that pass under the fence to ensure that entry to the airside is not possible in this way.

4.4   IDENTIFICATION OF PERSONS

Recognizing that the airside is potentially an area vulnerable to terrorist attack, access should be restricted to identify personnel. All airports and airline ground staff members needing access to perform their jobs, all necessary aircraft crews should have passes authorizing them to enter the details in tamper proof covers should be issued by the Airport authority to staff. Control of the use of cards should necessarily be strict. Access by light should be given only where the operations requires it and cards need give universal access to be airside staff should have special passes. All passes should be subjected to periodic checks. This is best achieved by having expiring dates that limit the validity to not more than one year. It is of particular importance that all staff displays properly, passes permanently when in the airside.

4.5   IDENTIFICATION OF VEHICLES

Airside access should be granted only to those vehicles that must be in airside in performing their functions. Access can be restricted by the issue of individuals' vehicular passes, the control which is maintained by a firm rule that individuals within the vehicle require personnel passes as well as their vehicle pass.

4.6   PROTECTION OF AIRCRAFT ON APRONS

If the airside is kept secure by restricting access, normally there are no special protections required for aircraft while they are in Apron. General

security precautions should be kept such as flood lighting to apron to deter intruders by locking aircraft doors and removing steps and stairs from crew aboard, other general precautions include the use of temporary covers on all aircraft in let where tampering is possible and ensuring that there has been no tampering with vehicles such as catering trucks and mobile stairs that will later approach the aircraft.

Thus from the foregoing, there is no doubt that the aviation sector specifically security must be given adequate attention to prevent the ugly scene which took place in U.S, on September 11, 2001, following the Islamic aircraft bombing on the World Trade Centre (WTC) and the Pentagon, the American defense heartbeat. For a meaningful airport security network therefore the government must strive to update communication facility, better trained personnel, availability of arms to the security personnel, motivation, eradication of corruption, eradicating touting activities as well as advocating Nigerians on the need to be security conscious in various airports.

In monitoring activities some equipment surveillance like surveillance radar ground as well as CCTV (Close Circuit Television) should be used as security watch.

The above illustrations/explanations is necessary therefore to explain better to the reader the urgent need to carry out a research on the security system in our airport, using Murtala Mohammed International Airport as a case study

4.7   PRESENTATION AND ANALYSIS OF DATA

In this chapter, the data collection is presented and carefully analyzed. The two null hypothesis spelt out in chapter one will be tested and decision based

on them will be taken. The data collected for this study was obtained through the administration of questionnaires. It was assumed that the respondents were sincere with their responses. However, the completed questionnaires were reviewed to check for misconception of instructions.

The presentation and analysis assumed the form of tabulated and explanation of the data, which was denied from the complete questionnaire. It is however, worthy of note that only the questions that relate to the hypothesis of the study were gathered together, presented, analyzed and tested using the Chi-Square (X^2) statistical test.

4.8 DATA PRESENTATION

All the departments received a total of fifty (50) questionnaires and forty (40) were retrieved. However, for the purpose of this study, question numbers 2,8,11 and 13 would test hypothesis one, while questions 5,6,7 and 14 were used in testing hypothesis two. Therefore, the statistical analysis will be drawn based on this forty (40) retrieved questionnaires.

TABLE 4.1

TABLE OF QUESTIONNAIRE DISTRIBUTION IN MURTATLA MOHAMMED INTERNATIONAL AIRPORT

S/N	DEPARTMENT	NUMBER DISTRIBUTED	NUMBER RETRIEVED	NOT RETRIEVED
1	Customs	12	6	6
2	Air Traffic Control	7	7	-
3	Engineering Department	3	2	1
4	Aviation Security	14	13	1
5	National Drug Law Enforcement Agency (NDLEA)	6	6	0
6	State Security Service	8	6	2
		50	40	10

Source: Field Survey, 2007.

4.9 DATA ANALYSIS

The responses to the question on the questionnaires were tabulated according to the questions assessed. This is carried out below with questions that are related to a particular issue.

4.9.1 Responses to question number 1 state: How would you assess the level of security aids in the airport?

ALTERNATIVES	FREQUENCY	RESPONSE PERCENTAGE
GOOD	6	15
FAIR	27	67.5
POOR	7	17.5
TOTAL	40	100%

Source: Field Survey, 2007

4.9.2   Responses to question 2 states:

Do you think the airport have the modern security security aids?

ALTERNATIVES	FREQUENCY	RESPONSE PERCENTAGE
YES	11	27.5
NO	20	50
UNDECIDED	9	22.5
TOTAL	40	100%

Source: Field Survey, 2007

4.9.3   Responses to question number 3 states
Do you support the fact that aviation security personnel should be allowed to carry arms?

ALTERNATIVES	FREQUENCY	RESPONSE PERCENTAGE
YES	22	55
NO	14	35
UNDECIDED	4	10
TOTAL	40	100%

Source: Field Survey, 2007

4.9.4 Responses to questions number 4 states.

What type of arms should the security personnel carry?

Heavy or Light?

ALTERNATIVES	FREQUENCY	RESPONSE PERCENTAGE
HEAVY	10	25
LIGHT	30	75
TOTAL	40	100%

Source: Field Survey, 2007

4.9.5 Responses to question number 5 states.

How would you assess the level and nature of infrastructure in the airport?

ALTERNATIVES	FREQUENCY	RESPONSE PERCENTAGE
GOOD	11	15
FAIR	28	70
POOR	6	25
TOTAL	40	100%

Source: Field Survey, 2007

4.9.6 Responses to question number 6 states: Do you think that the airport security facilities are properly managed?

ALTERNATIVES	FREQUENCY	RESPONSE PERCENTAGE
YES	4	10
NO	30	75
UNDECIDED	6	15
TOTAL	40	100%

Sources: Field Survey, 2007

4.9.7 Responses to question number 7: How would you assess the power supply in the airport?

ALTERNATIVE	FREQUENCY	RESPONSE PERCENTAGE
GOOD	10	25
FAIR	16	40
POOR	14	35
TOTAL	40	100%

Sources: Field Survey, 2007

4.9.8   Responses to question number 8 states:

Are you satisfied with the level of security arrangement at the airport?

ALTERNATIVE	FREQUENCY	RESPONSE PERCENTAGE
YES	7	17.5
NO	29	75.5
UNDECIDED	4	10
TOTAL	40	100%

Sources: Field Survey, 2007

4.9.9   Responses to question number 9 states: How often should aviation security personnel is trained?

ALTERNATIVE	FREQUENCY	RESPONSE PERCENTAGE
ANNUALLY	20	50
BI-ANNUALLY	15	37.5
QUARTERLY	5	12.5
TOTAL	40	100%

Sources: Field Survey, 2007

4.9.10   Responses to question number 10 states: Do they need local or overseas training to upgrade their performance.

ALTERNATIVE	FREQUENCY	RESPONSE PERCENTAGE
LOCAL	11	27.5
OVERSEAS	26	65
UNDECIDED	3	7.5
TOTAL	40	100%

Sources: Field Survey, 2007

4.9.11 Responses to question number 11 states: Are Nigerian aviation security personnel well equipped?

ALTERNATIVE	FREQUENCY	RESPONSE PERCENTAGE
YES	5	12.5
NO	32	80
UNDECIDED	3	7.5
TOTAL	40	100%

Sources: Field Survey, 2007

4.9.12 Responses to question number 12 states: What security gadgets should be seen at the airport, metal detectors, bomb detectors, screening machines?

ALTERNATIVE	FREQUENCY	RESPONSE PERCENTAGE
METAL DETECTOR	11	10
BOMB DETECTOR	2	5
SCREENING MACHINE	2	5
ALL OF THE ABOVE	32	80
TOTAL	40	100%

Sources: Field Survey, 2007

4.9.13   Responses to question number 13 states: Do you believe that the Nigerian civil airspace is safe and properly managed in terms of security?

ALTERNATIVE	FREQUENCY	RESPONSE PERCENTAGE
YES	19	47.5
NO	14	35
UNDECIDED	7	17.5
TOTAL	40	100%

Sources: Field Survey, 2007

4.9.14   Responses to question number 14 states: Do you think what happened in USA on September 11 2001 can happen here in Nigeria?

ALTERNATIVE	FREQUENCY	RESPONSE PERCENTAGE
YES	26	65
NO	10	25
UNDECIDED	4	10
TOTAL	40	100%

Sources: Field Survey, 2007

4.10 HYPOTHESIS TESTING

In the course of this study, two null hypotheses were put forward to give direction to the research work.. In order to test the validity of the stated null hypothesis, the Chi-Square (x^2) statistical analysis was employed since the questions were measured on a nominal scale i.e. Yes, No or Undecided, and

if further measured how observed series of values differ significantly from what was expected.

In this part, data relating to one –hypothesis or research question will be grouped and analyzed together. Question by question analysis of the data will be avoided.

4.10.1   TESTING HYPOTHESIS 1

The statement of hypothesis

Ho: the volume of crime is not functionally related to the entry and exist point patterns.

Ha: the volume of crime is functionally related to the entry and exit point patterns.

The relevant questionnaire elements in addition to literature, to this null hypothesis are numbers 2,8,11 and 13.

The response as shown in the table 4.2.2, 4.2.11, 4.2.13 above shows that from table 4.2.2, which is on modern security aids, 27.5% of the respondents agree that Nigeria airports have the modern security aids, 50% said that they have none while 25.5% were undecided.

On the analysis of level of security system at the airports as contained on table 4.2.8, 17.5% of the entire respondents said 'Yes,' 75% said 'No' while 10% on the hand were undecided. It therefore means that security should be beefed up in our airports.

From table 4.2.11, which assessed if the Nigerian aviation security personnel are well equipped? It was discovered from the analysis that only 12.5% said 'Yes' while 80% said 'No. This means that more efforts should be made in order to equip them with modern gadgets. Also only 7.5% were undecided.

Finally, in table 4.2.13, 47.5% respondents believed that the Nigerian airspace is safe and properly managed in terms of security, 35% answered 'No' while only 17.5% were undecided that the Nigerian airspace is safe and managed properly in terms of security.

Subsequently, the responses to the Chi-Square test as shown in chapter 3 of the research methodology above us have.

TABLE 4.2

OBSERVED FREQUENCY TABLE OF RESPONSES REGARDING THE SECURITY SYSTEM IN MURTALA MOHAMMED INTERNATIONAL AIRPORT

RESPONSES	FUNCTIONAL	NOT FUNCTIONAL	TOTAL
YES	8	2	10
NO	12	8	20
UNDECIDED	2	8	10
TOTAL	22	18	40

Sources: Field Survey, 2007

The above table represents responses to the hypothesis to be tested using Chi-Square test.

$$X^2 = \frac{\Sigma^n_{\Sigma i} (Oi\text{-}\Sigma i)^2}{\Sigma 1}$$

We proceed to calculate the expected frequencies.

$$\frac{\text{Row total X Column total}}{\text{Grand total}}$$

$$C_{11} = \frac{10 \times 22}{40} = 5.5$$

$$C_{12} = \frac{10 \times 18}{40} = 4.5$$

$$C_{21} = \frac{20 \times 22}{40} = 11.0$$

$$C_{22} = \frac{20 \times 18}{40} = 9.0$$

$$C_{31} = \frac{10 \times 22}{40} = 5.5$$

$$C_{32} = \frac{10 \times 18}{40} = 4.5$$

TABLE 4.3

O	E	O – E	$(O - E)^2$	$(O - E)^2/E$
8	5.5	2.5	6.25	1.136
12	1.1	1.0	1.00	0.091
2	5.5	-3.5	12.25	2.227
2	4.5	-2.5	6.25	1.389
8	9.0	-1.0	1.00	0.111
8	4.5	3.5	12.15	2.722
			TOTAL	7.676

4.10.2 SELECTING DEGREE OF FREEDOM

The contingency table contains 2 rows and 3 columns thus:

Degree of freedom = (r – 1) (c – 1)

(2 – 1) (3 –1)

1 x 2 = 2

$$E = \frac{(O - E)^2}{E}$$

Where E = Expected end

 O = Observation

Using significance level of 5% (0.05) under a degree of freedom of 2, the critical value is 5.99 (see appendix)

DECISION RULE

If X^2 calculated $< X^2$ accept H_o and reject H_A but

If X^2 calculated $> X^2$ accept H_A and reject H_o

INTERPRETATION AND DECISION

The critical value X^2, at 2 degree of freedom and 50% i.e. 0.05 level of significance is 5.99 and computed value is 7.676.

$X^2 < X^2$ tab (i.e. 7.767 > 5.99) then accept H_A which states that the volume of crime is significantly related to the entry and exit point patterns.

4.10.3 TESTING HYPOTHESIS 2

The statement of hypothesis is:

H_{02}: There is no significant relationship between the crime and facilities available.

H_{A2}: There is significant relationship between the crime and facilities available. The relevant questionnaire elements in addition to literature, to this null hypothesis are numbers 5, 6, 7, and 14. The responses as shown in the tables 4.2.5, 4.2.6, 4.2.7, and 5.2.14.

On the analysis, the assessment of the level and nature of infrastructure in Nigeria Airport as contained on table 4.2.5, only 15% of the entire respondents said it is good, 70% said it is fair while 15% were undecided.

From table 4.2.6, only 10% said 'No' and 15% were facilities are properly funded, while 75% said 'no' and 15% were undecided.

On the assessment of power supply system in the airport as contained in table 4.2.7, only 25% said it is good, 40% said it is fair as 35% responded to poor power supply system.

On the issue of what happened in U.S.A September 11, 2001 whether it can happen here, on table 4.2.14, 65% of the respondents said 'Yes' and 50% said 'No' while 10% were undecided. It shows that we should properly police our airports, right caliber of personnel and adequate security facilities should be provided in the airports.

TABLE 4.4

OBSERVED FREQUENCY TABLE OF RESPONDENTS REGARDING CRIME AND FACILITIES AVAILABLE.

FACILITIES

RESPONSES	FACILITIES	NO FACILITIES	TOTAL
YES	4	10	14
NO	14	7	21
UNDECIDED	4	1	5
TOTAL	22	18	40

Source: Field Survey, 2007

The above table represents response to the second hypothesis to be tested using Chi-Square test.

$$X^2 = \Sigma^n \frac{(O_i - E_i)^2}{E_i}$$

We proceed to calculate the expected frequencies: i.e.

$$\frac{\text{Row total X column total}}{\text{Grand total}}$$

$$C_{11} = \frac{14 \times 22}{40} = 7.7$$

$$C_{12} = \frac{14 \times 18}{40} = 6.3$$

$$C_{21} = \frac{21 \times 22}{40} = 11.55$$

$$C_{22} = \frac{21 \times 18}{40} = 9.45$$

$$C_{31} = \frac{5 \times 22}{40} = 2.75$$

$$C_{32} = \frac{5 \times 18}{40} = 2.25$$

TABLE 4.5   CONTINGENCY TABLE

O	E	O – E	$(O_i - E_i)^2$	$(O_i - E_i)^2/E$
4	7.70	-3.70	13.69	1.778
10	6.30	3.70	13.69	2.173
14	11.55	2.45	6.003	0.520
7	9.45	-2.25	6.003	0.635
4	2.75	1.25	1.563	0.568
1	2.25	-1.25	1.563	0.694
			TOTAL	6.368

SELECTION: DEGREE OF FREDOM

The contingency table contains 2 rows and 3 columns thus Degree of freedom: $(c - 1)(r - 1)$

$$(3 - 1)(2 - 1)$$

$$2 \times 1 = 2$$

$$\frac{(O_i - E_i)^2}{E}$$

$$= 6.368 \; X^2 \text{ calculated.}$$

Using significant level of 5% (0.05) under a degree of freedom of 2 the critical value is 5.99

DECISION RULE

If X^2 calculated is less than (X^2 tab) THEN ACCEPT H_o and reject H_A on the other hand: accept H_A and reject H_o

INTERPRETATION AND DECISION

The critical value ((X^2 at 2 degree of freedom and 5% i.e. 0.05 level of significance is 5.99 and computed value is 6.368. X^2 calculated $> X^2$ tabulated i.e. 6. 368 $>$ 5.99 then, accept H_A which states that there is significant relationship between the annual density of crime and facilities available.

CHAPTER FIVE

5.0 SUMMARY, RECOMMENDATIONS AND CONCLUSION

SUMMARY

The work carried out so far (the assessment into the security arrangement in Nigeria Airports, a study of Murtala Mohammed International Airport has been to examine or more appropriately analyze those problems that are associated with security systems in MMIA. An exposition was done on the place of airside and land side security in the aviation industry, so that whatever problems would be identified would be understood within that context. Basically the study aims at analyzing all those problems that face efficient and effective network of security system in Nigeria. And to achieve the aim, the study reviewed the following objectives; airport access controls (includes access roads to airports, access to security areas like airport, tarmac and control tower), also evaluated the state of airport facilities available in the airport, assess the state of passenger and carry-on baggage screening, examined the level of functioning of the exiting security equipments available in the airport and determined alternatives to current screening practices.

RECOMMENDATION

CARGO HANDLING FACILITIES

Mobile equipment needed at the airport for the above purposes includes.

- ❖ Forklift for truck carrying up to 40,000kg of cargo
- ❖ Self propelled aero platform for cargo loading
- ❖ Hydraulic platform for double deck loading
- ❖ Conveyor belts etc.

The conveyor belts are only available modern facilities at the airport for passenger baggage. There is need to provide facility at airport for easy carriage not just for the passenger baggage but also for heavy cargoes. An "international" airport requires the procurement of modernized facilities, the use of more trolleys to carry passenger lounge into the airport on return trip or from the passenger lounge into the airport, for those traveling increases the job of the airport cargo handlers and results to fatigue.

Also, equipments for transporting passenger within the airport is very important, such facilities include

- ❖ Self propelled passenger steps on steers
- ❖ Mobile lounges: they are used to conveyor passenger to aircraft packed outside terminals protecting them from noise and whether.
- ❖ Buses for passenger conveyers.

Many a type of aircraft take hundreds of passengers on a single flight and in large airport there are many flights each hour thus passengers and baggage require to be checked speedily and efficiently and these require the use of long conveyors bringing baggage's into the arrival lounge.

STRESS RELIEVERS

We need to make our airport stress relievers rather than stress promoters. The fast paced environment in which we all live. And the limited space resources of airports make the provision of a stress relieving service all the more challenging. The use of large aircraft and the parking of flights at certain times of the day, resulting in peak concentrations of large numbers of

people in small blocks of times in the concourses and terminals, are overtaxing the facilities and the patience of traveling public. The multiple bookings and timing of flights on many different carriers is also contributing to delay which keep people in terminal longer.

Both concessionaries and airport operators and managers could find better ways of improving the one design to create a more comfortable and relaxing atmosphere; the selection of colors and furnishings, lighting and noise levels, the planning of pedestrian flow and the use of effective, quickly comprehended signs, exhibits and advertising will help to make airports stress relieving instead of stress producing.

The quality of service is very important and is dependent on the selection and abilities of the work force. Operators must ensure that their employees are courteous as well as competent, and the over all impression left with the travelers is that of a friendly, caring, well wishing, person to person, customer contact and atmosphere. Training, effective human resources, 'mystery shopper', and close supervision by management are key elements for attaining this quality service.

High traffic loads, over capacity, airports weather and operating problems are all causing increased numbers of delayed flights. The situation of airline delays makes time available to passengers in the terminals (however involuntary that arrangement might be) and creates the need for a more personalized, broader ranger of services. Delayed passengers are looking for consoling service to help effect the inconvenience that the delayed flight may be causing.

Concessionaries needs sufficient square footage in proper locations to provide facilities to meet this growing market demand. Inattention to delayed passenger may yield poor airport public image. A direct relationship exists between passenger level of service and the space devoted to various types of passenger service.

Security needs in this crazy world in which we live need to be very carefully balanced with passenger desires and needs. Security procedures need to be created and current ones improved, not only from the viewpoint of eliminating the threats by the threatening few, but also with the goal of minimizing the anxieties of the majority of passengers. To an international traveler, the problems resulting from procedures of allowing only ticked passenger pass security checkpoints are causing significant anxiety and inconveniences to passengers and to the meeters and greeters themselves.

A redistribution of airport concession space from the main terminal to the sterile area would also help to meet the needs of passengers. Too frequently a passenger has remained in line, gone through security, walked into terminal in which there are no concessions, experienced a delay but has not wanted to return to the main terminal, as this would have meant another long delay going through security. Adequate equipment and friendly, courteous people who have helpful smiles on their faces at security stations would contribute a great deal towards making our airports 'people places' rather than 'thing places'.

SECURITY FACILITY

For the improvement of security at the airport, there is need therefore to implement a baggage / passenger match process for the airline. This is done to ensure that luggage not belonging to passengers can be removed, as they are suspect luggage.

Sentinel II contraband detection portal has been specifically designed for non-invasively screening people for the presence of traces of explosive or narcotic substance. This is necessary because a report from NDLEA shows that some suspects were arrested, and some seizures made of drug weighing 4.1012 kilogram of cocaine, 18.092kg of heroine and psychotropic substances weighing 599.001kg, while cannabis sativa weighing 596.969kg was seized in 1999. In 2000 NDLEA recorded 28 drug seizures, 38 suspects, 4.070 kilograms of cocaine, 7.888 kilograms of heroine, 247.57 kilograms of psychotropic substances, and 58 kilograms of Indian hemp (DRUG FORCE, third quarter, 2005)

These drugs are usually concealed in areas such as: Trouser lining, inside pots of soup, drums of oil, controlled delivery (mails), yam tubers, wine jugs, packs of detergents, smoked fish, in belt and so many other areas. These can only be detected with sentinel II contraband detection portal.

The screening of people for detection of concealed items, detection of explosives and other substances should be effectively done with the adequate X-ray machines and Bomb detectors.

Many other innovations in the field of security should be researched on for potential solutions to some of these possibilities viz.

- ❖ Facial recognition systems that could identify known suspicious persons
- ❖ Monitors that indicate any tampering with air craft wiring.
- ❖ Override systems that prevent unauthorized shutdown of critical aircraft parts such as transponders, radios' and flight records.
- ❖ Real time location systems that track mobile airports assets and prevent them from operation by unauthorized personnel.

FUNDING OF THE NATIONS SECURITY FACILITY

To enumerate the facilities required in Murtala Mohammed International Airport, the problem arising would be how to finance all these capital needs as the airports have traditionally been designed for. Those expenditures are required to comply with Federal mandates (such as safety, and security regulations), maintain infrastructure, accommodate growth, meet user requirements, incorporate technological enhancements or improvements, and mitigate noise and other environmental impacts (AIRPORT DEVELOPMENT NEEDS AND FINANCIAL OPTIONS 2002).

A program, Airport Improvement Programme (AIP) could be set up to research on ways in which the existing facilities at the airport could be improved. Historically, Federal Government's involvement in airport development has been intended to ensure the public on demand access to the national air transportation system.

Four objectives could guide Federal investment at the airport.

- ❖ Pursuing system goals such as safety and security ;
- ❖ Stimulating capacity projects of national significance;

❖ Helping finance general aviation airport that are dependent on aid; and

❖ Paying a major part of noise and environment mitigation costs.

The federal Government's goal should be to provide a balanced transportation system, taking into account the diverse needs of different communities and the various segments of aviation, and coordinating planned airport development with plans for aircraft, approach and navigational aids, and other components of the air transportation system. Our airports in this plan should provide national interest associated with civil aviation national defense and emergency readiness.

STATE FINANCE

The individual states contribute substantially to the financing of airports. In 1975 – 1976 the total state contribution to airports amounted to 336.3 million. In this period almost all states had programmes of airport finance. About half these states require Federal funding to be channeled to local government through state agencies. It is normally in this circumstance for the state to share in the non-federal contribution of matching finance for Federal funds, 50 – 50. Where no federal funds, much of state funding comes from taxes on aviation fuel, much largely is reused for airport improvement / development.

Financing may also be arranged through international agencies such as World Bank, or by direct loans from more affluent countries.

ECONOMIC ASPECT

The key to success in any business is to identify what the customer wants and then to find a way of providing it at a profit.

An airport's primary function is to provide a profit of interchange between modes of transport. Indeed some airport operators restrict themselves to this activity and face the financial consequences, which often leaves them loss making and a financial burden on their community. The point is that the airport itself can generate its own fund for airport upgrading and maintenance without necessarily depending solely on the government for fund.

However many airport owners believe that they should derive benefit from the very substantial number of people who pass through their airports or who visit them or work on them. All are potential customers. Such airports pursue the commercial exploitation of their asset to turn losses into profits with benefits to passengers. Indeed, no less a body than the International Civil Aviation Organization (ICAO) encourages the full use of non-aeronautical revenues to minimize airport charges and therefore direct costs to airlines.

I support the opinion that a pre-requisite to success in the development of non-aeronautical revenue is to put on your payroll a marketing expert or experts with flair and at a sufficiently senior level to make things happen. Such a senior manager must be fully accountable for results.

He must be given executive responsibility to maximize commercial profits and to do that he will need the necessary capital and revenue expense budgets. Do not expect the average airport manager, however competent, to perform this role. He may come from such disciples as Engineering,

Planning, Accountancy, Aviation or even Politics, but he is unlikely to have either the experience or the time to devote to the highly specialized commercial area. He will in any event be too involved in the demanding properties of ensuring the smooth passage of people, freight and aircraft through the airport.

The basis of success in any business is to identify the market, its needs and the propensity of customers to buy; then to develop a strategy to meet these user requirements / needs and take advantage of the opportunities. Airports differ considerably in their ability to exploit commercial opportunities e.g. difference in airports' political, social and religious differences affecting the freedom of airport owners to engage in certain activities. Before setting out to develop non-aeronautical revenues, it is vital to know your airport and to know your customers; this may mean carrying out some consumer research using of course a professional research team.

It may be helpful to consider non-aeronautical revenues as being traditionally derived from such principal sources as trading activities (e.g. shops, bars, restaurants, bank, car rentals, car park, advertising, insurance etc), services (e.g. energy handling, cleaning, fuel supply, licenses to films to operate on the airfield, etc) and rents (the straight forward letting to tenants of grand building or other accommodation on the airport). These areas are consolidated means of generating substantial revenue for the airport.

The airport has previously been defined as a municipal; this gives me the conviction that these non-aeronautical services are not out of place. Historically, there has been resistance by airport authorities to acknowledge the importance of non-aeronautical revenues; a feeling perhaps that such a

sideline should not be allowed to gain importance or even a smug belief in the capital market. For successful commercial development to be marketed, airport management should look down for their commercial inspiration. I suggest that airports should adopt the best advanced city center developments in the world and not from other airport practices, the same could be said of car parking, property development and many other activities.

Concerning rents and services provided on airports or the license granted to other organizations to provide services should be reviewed frequently in other to maximize revenue. Wherever possible, long contracts should be avoided and charges should be reviewable as frequently as possible. An annual audit should be made of any activities being carried out on the airport estate; both landside and airside, to assets where and at what level charges could be levied. Even buses, taxis, firms delivering to aircrafts, private ambulance services and so on should be considered as possible contributors, they do after all use expensive airport facilities.

Business plans for the airport dealing with both aeronautical revenue–earning proposals must be adequately developed. Funds must be provided for (say every three years) for the re-appraisal and refurbishing of commercial facilities, keeping a sharp lookout for new ideas and development down town. The enormous-earning potential at every airport must be exploited with innovation and expertise and certainly not as a sideline to the serious business of operating the airport.

EMPLOYMENT OF SECURITY PERSONNEL

The current aviation security structure and its policies requirements and practices have evolved since the early 1970s and where influenced by a service of high-profile aviation security incidents. Historically, the federal government in compliance with standard 3.17 of Annex 17 of the Chicago convention and in accordance with national Legislation and regulations namely; Aviation Law and decree No 9 of 1996 FAAN By-Law established Aviation security.

The recruitment of more staff that is qualified for the job is recommended. I suggest that these people should undergo retraining yearly preferable overseas to keep abreast with the modern crime pattern of the industry. I am not comfortable with the criminal background checks that allows or accepts or recruits a formerly convicted criminal as a screener though stated that "so long as the conviction were at least ten years old" this may appear controversial to the security factors and I suggest that it may be avoided. The September 11 catastrophe specifically involved insiders i.e. employees that worked at the airport. In recruiting personnel, proper investigation of their background/profile should be undertaken to avoid or alleviate unnecessarily risks. It is worthy to note that the security personnel at the airport include, "The Customs, Police, Immigration, NDLEA, and State Security Service (SSS), and all these staff are part of the security at the airport.

It is pertinent to note here that this does not end with employment but also paying these employed personnel. Both FAAN and Aviation industry attribute the rapid turnover of staff to the low wages screeners receive, along with the daily stress of the job.

Generally, screeners are paid at or near the minimum wage. The demand of the job also affects the performance. Screening duties require repetitive tasks

as well as intense monitoring for the very rare event when a dangerous object might be observed; too little attention has been given to such factors as: improving individuals' attitudes for effecting performing screening duties. The sufficiency of the training provided to screeners and how well they comprehend it. The monotony of the job and the distractions that reduce screener's vigilance. As a result, screeners are being placed on the job that do not have the necessary aptitudes, or sufficient knowledge to perform the work efficiently and who then find duties tedious, dull and rewarding.

In August 2001, FAAN set out a number of actions to improve screeners' performance (AIRPORT NEWS VOL 17, NO. 6). However, FAAN did not have an integrated management, plan for these efforts that would identify and prioritize checkpoint and human factors problems should be resolved; measure identified and related milestone and funding information for addressing the performance problems.

Additionally, FAAN should have adequate goals by which it can measure and report its progress in improving screeners' performance.

Regardless of hi-tech aids, the human element is likely to remain a key ingredient in the fight against aviation and terrorism for the foreseeable future. Greater attention must be paid to the vetting of recruitment, background checks, training and supervision of staff at all levels within the establishment.

It should therefore be the focus of a new strategy in FAAN to concentrate efforts in manpower development and training, manpower rotation and utilization. To this end, Murtala Mohammed International Airport should join and embark on the redeployment of most of their operations and security staff as well as fire and safety staff that has been in one location for

so long might have become complacent to their duly requirement and thus require challenges.

CUSTOMS AS A SERVICE

Customs areas need to be redesigned to be adequate and spacious, to meet the needs to be provided: information centers, rest rooms, instant currency exchange, perhaps food and beverages, telephone, baggage carts and the like. The availability of free baggage carts and the like throughout the airports and train stations of Switzerland and most of Europe needs to be imitated in Nigeria airports. The congestion of baggage handling areas causing more and more business travelers and pleasure travelers alike to keep hold of their personal possessions through the entire flight. Our customers are behaving this way and our airports are not finding the facilities and services to make their lives easy. Older people are seen lugging or tugging suitcases in apparent distress because no convenient carts are available. Enough, perhaps, on the things we need to do to make our airports people and user friendly. I would like to refer to the role of the airport as a tourism center. The ability of an airport to be tourist attraction itself can add to the drawing power of a region. Services needed in airports to meet the demands centers, multilingual language center, business facilities, and greatly improved custom handling systems and procedures.

Airport in Nigeria have been found to be particularly deficient with respect to these types of foreign travelers' aid service.

Ground transportation planners need to do a better job, as so many of the great European airports have done, in marring effective service transportation for the arriving airline passenger.

Customs people should be taught, trained and re-taught on a regular basis that they are more than government functionaries, providing a control service: they are also part of the hospitality of the welcoming nation, and as such, they need to be schooled in hospitality as much as in their skilled arts of inspection; they need to welcome people, rather than being appliers of rubber stamps to their passports. This will take same efforts, but those who represent governmental agencies should think in terms of there being official greeters and symbols of the hospitality of the receiving nation.

CONCLUSION

Security strategy is crucial for an airport security which involves both national and local, education and training of all the personnel involved, in-depth analysis of the suitability of the security controls, detection system etc. No single piece of detection equipment either existing or in development, is likely to resolve aviation's terrorism threat completely.

Instead, several technologies combined in an integrated system are more likely to attain a level of security acceptable to the traveling public. A property sequenced combination of technologies is more effective, harder to circumvent and more of a deterrent to potential intruders than any single method.

The advantage of integrating several technologies and standardizing the equipment is that operating costs are kept to a minimum and the passenger traffic flow is streamlined. It is recommended that the personnel and baggage inspection systems should be arranged in several phrases with the fastest and the least expensive systems at the end of the inspection chain.

There should therefore be a balance between equipments, manpower deployment, barriers and policy procedures to determine the level of integration.

As a service provider i.e. security management, the FAAN must be customer oriented, providing its services to the benefit of the flying public. It must do away with archaic methods, equipments and adopt modern and strategic methods of doing and achieving things. It must establish a demonstrative atmosphere in the achievement of its mission objective. Also efforts should be made in renovating airport structures methods, personnel activities (Aeronautical and non-aeronautical) all in a balanced form to also act as a stress reliever, tourist attraction to passengers thereby unleashing anxiety caused by previous incidents and accidents in aviation. If these recommendations are implemented, aviation security in Murtala Mohammed International Airport will definitely show a considerable standard of improvement.

REFERENCES

Alabi W. 2005   'A Nation stalked by potential disaster'
                                 Guardian Sunday, October 30 2005 p. 66

Anyanwu, A 1994   Data Collection and Analysis (A practical
                                 guide) Avan Global Publications, Okigwe.

Bamaiyi, M. 1998   'The role of Aviation industry in eliminating
                                 drug trafficking", Drug force third quarter
                                 1998, vol. 2 No. 3 pp. 20 & 22

Billie V. 2000   'Where do we stand? Passenger terminal
                                 world June 2002, pp. 38 – 49

Bolaji, D. 1985   'Moving the Aviation Industry' SKY
                                 POWER vol. 2, 1985, pp. 5 – 8.

Capt. Idris, 2005   'Our regulatory authorities are too strict'
                                 Daily sun July 18 pp.21 – 22.

Desmond A. 1998   'An ideal transport management pattern
                                 Msc (unpublished).

Dillingham, G. 2002   'Vulnerabilities in and alternatives for pre-
                                 boarding screening security operations'
                                 Aviation security journal, Vol. 1. 2002.

Dillingham, G. 2002

Criteria for assessing screening alternatives Vol. 2, pp. 1 – 2 2002.

Dele O. 2005

'Aircraft accident and incident investigation' Daily Champion, Friday June 10, 2005 p.

Dixon S. 2002

'Government orders airlines to operate single boarding terminals' Guardian
August 19, 2002. vol. 19 p. 1.

Dixon S. 2005

'Government beefs up security at airports' Guardian August 189, 2002, vol. 19 p. 2.

Ehigiator K. 2006

'Security challenge at airports. Special Report. Sunday Vanguard. November 26, 2006 p.10.

Emma E. 2005

'Our Response and rescue system needs Urgent review' Guardian, October 30, 2005 pp. 64 & 66.

Erin L. 2001

'A head of the Game' Passenger Terminal world. Nov., 2001 pp. 82 – 84.

FAAN 2001

Aviation security training programme module 2001.

FAAN 2006   Operations Manual, Port Harcourt Airport, 2006.

Felix N. 2005   'MMIA runway gets category III lighting daily champion, Friday. June 10, 2005. p.22.

Guardian 2005   'The Human factor in air travel, Mishaps' Guardian October 30, 2005 p. 64

Hoel P. 1980   Introduction to mathematical statistics. 4th edition, New York. John Willey & Son, 1980 p. 225.

ICAO 1994   Publication Annexes 2,6,9,11,14 & 17

Ikenna E. 2005   The Sosoliso Tragedy' Sun. December 17, 2006 pp. 11 &12.

ICAO 1990   Search and rescue manual – Dot 733 4th Edition, 1990. ICAO.

Ihekwaba, A. 2006   Baggage services and boarding safety in air transport industry. Seminar paper (unpublished).

Kenneth E. 2005   'The surest path to air travel safety in
                                   Nigeria by experts' Vanguard, November 5,
                                   2005 pp.12 & 13.

Kingsley O. 2005   'Search and rescue during plane crashes'
                                   The air force option. Sunday Vanguard
                                   December 11, 2005 p. 16

Leckenby, A. 2001   "Aftermath". Passenger terminal world,
                                   Nov. 2001. pp. 86 – 88.

NCAA 1999   Nigerian Civil Aviation Security programme
                                   for Nigeria, September 1999.

Nworuh G. E. 2001   Basic research methodology for research
                                   trainee and trainers in management sciences,
                                   2001.

Obiora, O. 2006   'Still on aviation Industry (2)' January, 9,
                                   2006 Guardian, October 30, 2005 p. 64.

Omeogu H. 2002   'Threat Assessment: Nigeria's readiness for
                                   security challenges".
                                   Daily Times February 13, 2002. p. 28.

Roger C. 2001   "Baggage Blueprint" Passenger terminal world, Nov. 2001 pp. 46 – 48.

Ronke O. 2005   'We have to take information serious' Guardian Sunday, October 30, 2005 p.65.

Transport Journal 2002   Journal of transport geography' the development of air transportation in Nigeria Vol. 7, 2002.

Uche U. 2005   'For indigenous airlines, still uneasy flight' Sunday Sun, March 26, 2006 p. 14

QUESTIONIARE

IHEKWABA, AL. UCHEKWUWU (PRINCE)

POST GRADUATE SCHOOL,

DEPARTMENT OF TRANSPORT MANAGEMENT TECHNOLOGY

FEDERAL UNIVERSITY OF TECHNOLOGY OWERRI,

TOPIC: AN ASSESSMENT OF THE SECURITY ARRANGEMENT IN MURTALA MOHAMMED INTERNATIONAL AIRPORT, IKEJA

Dear Sir/Madam

I am a Post Graduate student of the above named institution pursuing a course in Air Transport Management. As part of the course requirement of this programme, I am undertaking a study on the assessment of security arrangement in M.M.I.A, Ikeja.

In this regard, you have been selected as a member of this sample group I wish to appeal to you to assist in this study by kindly sparing your time to complete this questionnaire. I also wish to assure you that answers will be treated in strict confidence and used for the stated academic purpose only.

Thank you.

Yours sincerely,

IHEKWABA, AL UCHECHUKWU.

QUESTIONNAIRE FOR RESPONDENT

TOPIC: AN ASSESSMENT OF SECURITY ARRANGEMENT IN MURTALA MOHAMMED INTERNATIONAL AIRPORT, IKEJA.

SECTION A: PERSONAL INFORMATION DATA

Please tick as appropriate:

1.   Sex: Male   -----------

       "   Female   -----------

2.   Age: 20 – 30   -----------

             51 and above   ---------

3.   Marital status: Single   ---------- Married   -------

                        Other specify ----------

4. Educational Qualifications: FSLC ----------

                                WASC ---------

                                DEGREE ----------

                                OTHERS SPECIFY ---------

5. Occupation   ---

6. Rank: ---

Department: ---

SECTION B: SOCIO – ECONOMIC

1. How would you assess the level of security aids in M.M.I.A airport? (a)   Good ---------- (b) Fair ----------- (c) Poor ------(d) Undecided -------------

2. Do you think that M.M.I.A has the modern security aids? (a) Yes --------- (b) No --------- (c) Undecided ----------

3. Do you support the fact that aviation security personnel should be allowed to carry arms? (a) Yes --------- (b) No ---------- (c) Undecided ------------

4. What type of arms should the security personnel carry? (a) Heavy -------- (b) Bad -------- (c) Undecided -----------

5. How would you assess the level and nature of infrastructure in M.M.I.A?
   (a) Good -------- (b) Bad ---------- (c) Undecided ------------

6. Do you think the airport security facilities are properly managed?
   (a) Yes ---------- (b) No --------- (c) Undecided

7. How would you access the power supply system in the airport?
   (a) Good --------- (b) No --------- (c) Undecided

8. Are you satisfied with the level of security arrangement at the airport? (Yes) -------- (b)

SECTION C: AVIATION CORE QUESTIONS

9. How often should aviation personnel be trained?
(a) Annually ------ (b) Bi-Annually ------- (c) Quarterly --------

10. Do they need local or overseas training to upgrade their performance? (a) Local ------ (b) Overseas ------- (c) Both ------- (d) Undecided ----------

11. Are Nigerian Aviation security personnel well equipped?
(a) Yes -------- (b) No -------- (c) undecided -----

12. What security gadget should be seen at the Airport?
(a) Metal detectors -------- (b) Bomb detectors -------- (c) Screening Machines--------- (d) All of the above -------

SECTION D: CONCLUSION

13. Do you believe that the Nigeria Airspace is safe and properly managed in terms of security? (a) Yes ------ (b) No ---- (c) Undecided ---------

14. Do you think what happened in USA on September 11, 2001 can happen here in Nigeria?

     (a) Yes ----- (b) No ------- (c) Undecided ------

15. Do you accept that aviation security is a problem faced by not just Nigeria Airports but also all other Airports across the globe?

     (a) Yes ------ (b) No ----- (c) Undecided

16. Suggest remedies to prevent such an occurrence.

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17. Suggest two (2) ways in which our security system can be improved.