GHANA INSTITUTE OF JOURNALISM

A HISTORICAL OVERVIEW OF GHANA CIVIL AVIATION AUTHORITY AFTER DECOUPLING IN 2007

MICHEL KWASI EXORNAM KAAMEKPOR

A DISSERTATION SUBMITTED TO THE SCHOOL OF GRADUATE STUDIES AND RESEARCH, GHANA INSTITUTE OF JOURNALISM, IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF A MASTER OF ARTS DEGREE IN DEVELOPMENT COMMUNICATION.

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DECLARATION

I, Michel Kwasi Exornam Kaamekpor, the author of this study, '**The Historical Overview of Ghana Civil Aviation Authority After Decoupling in 2007'**, do hereby declare that except for references to other people's work which have been duly acknowledged, the work presented here is the result of my own effort for the award of a Master of Arts Degree in Development Communication at the Ghana Institute of Journalism.

I also declare that this thesis, carried out under the supervision of Dr. Godwin Etse Sikanku, has neither in whole or in part been submitted to any institution for the award of any certificate.

26/10/2015

Michel Kwasi Exornam Kaamekpor — Date

(Student)

10/26/2015

Dr. G. Este Sikanku — Date

(Supervisor)

ABSTRACT

This study examines and presents the historical overview and development of Ghana Civil Aviation Authority from 2007 when it decoupled its regulatory and air navigation services provision, from the airport operational functions, till current state. It also explored some significant and key milestones, administrative and operational structures, Director-Generals at various stages, challenges and the future of the Authority.

The historical method was employed here because the interest is focused on reporting events and/or conditions that occurred since 2007, while attempting to establish facts in order to arrive at conclusions concerning past events or predict future events.

This research was steered by three questions and two hypotheses that try to discover: Why civil aviation was decoupled, what significant milestones there are and what vision is being pursued.

This study is to fill-in the gaps identified from the earlier work of Dr. E. R. K. Dwemoh, (after 2007) the first Director of Civil Aviation.

DEDICATION

This work is dedicated to my wife Mrs. Juliana Kaamekpor and my lovely twin daughters Elorm and Enam Ka-Michel for their love, support, encouragement and prayers throughout the period of my study. I pray for God's ceaseless blessing on you, all the days of your lives.

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much for allowing me easy access to the library and also for the quality time spent helping to straighten and correct some inaccuracies in the history of the Authority since 2007.

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To all those who for the lack of space and time, whose names are not mentioned, you are remembered hereof, and I say thank you.

DESIDERATA

Go placidly amid the noise and the haste, and remember what peace there may be in silence. As far as possible, without surrender, be on good terms with all persons. Speak your truth quietly and clearly; and listen to others, even to the dull and the ignorant; they too have their story. Avoid loud and aggressive persons; they are vexatious to the spirit.

If you compare yourself with others, you may become vain or bitter, for always there will be greater and lesser persons than yourself. Enjoy your achievements as well as your plans. Keep interested in your own career, however humble; it is a real possession in the changing fortunes of time. Exercise caution in your business affairs, for the world is full of trickery. But let this not blind you to what virtue there is; many persons strive for high ideals, and everywhere life is full of heroism. Be yourself. Especially do not feign affection. Neither be cynical about love, for in the face of all aridity and disenchantment, it is as perennial as the grass.

Take kindly the counsel of the years, gracefully surrendering the things of youth. Nurture strength of spirit to shield you in sudden misfortune. But do not distress yourself with dark imaginings. Many fears are born of fatigue and loneliness. Beyond a wholesome discipline, be gentle with yourself. You are a child of the universe no less than the trees and the stars; you have a right to be here. And whether or not it is clear to you, no doubt the universe is unfolding as it should. Therefore be at peace with God, whatever you conceive Him to be. And whatever your labours and aspirations, in the noisy confusion of life, keep peace in your soul. With all its sham, drudgery, and broken dreams, it is still a beautiful world. Be cheerful. Strive to be happy.

By Max Ehrmann in the 1920s --

"Found in Old St. Paul's Church"! – Baltimore, Maryland, USA

Operational Definition of Terms/ Abbreviations/Acronyms

- AERODROME - Airport
- AGL – Aeronautical Ground Lighting
- AWOS-Automatic Weather Observation Systems
- ANS – Air Navigation Systems
- ATC – Air Traffic Control
- ATIS - Automatic Terminal Information System
- BAGAI- Banjul Accord Group Accident Investigation
- BAGASOO- Banjul Accord Group Aviation Safety Oversight Organization
- CAT 9/10 – Category of the capacity of the RFFS to effectively provide fire cover (three fire tenders with other ancillary equipment)
- CASORT – Civil Aviation Safety Oversight Reporting and Tracking
- Code F status – Aircraft types/kind of a Boeing 747-400/800 and beyond (A380)
- D-G – Director-General
- DD-G (T) – Deputy Director-General (Technical)
- DD-G (F/A) – Deputy Director-General (Finance & Administration)
- DME - Distance Measuring Equipment

- DVOR- Doppler Very High Omni-Range
- FANS - Future Air Navigation Systems
- FIR- Flight Information Region
- GACL-Ghana Airports Company Limited
- GATA-Ghana Aviation Training Academy
- GCAA- Ghana Civil Aviation Authority
- GCAR- Ghana Civil Aviation Regulation
- GNSS - Global Navigation Satellite System
- GBAS - Ground Based Augmentation Systems
- IATA – International Air Transport Association
- ICAO-International Civil Aviation Organization
- ILS - Instrument Landing System
- MLS - Microwave Landing Systems
- NOTAMS – Notices To Airmen
- OPS - Operations
- PAPI- Precision Approach Path Indicator
- PEL - Personnel Licensing

- RIMS - Remote Integrity Monitoring Stations
- SARPs – Standards and Recommended Practices
- TDME - Terminal Distance Measuring Equipment

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CHAPTER FIVE: DISCUSSION AND CONCLUSION

CHAPTER ONE

BACKGROUND OF THE STUDY

1.1 Introduction

In this increasingly globalized and competitive world economy, the aviation industry continues to play a fundamental role by taking the fore front of facilitating the growth of international trade, tourism and international investment, and connecting people across continents.

Since its inception in the early twentieth century, civil aviation has become one of the most fascinating, important, and complex industries in the world particularly its airports. The desire for man to move from one place swiftly, safely and securely, made him consider other options of movement. Man first tamed and rode animals bareback. Man later introduced other means of powered transportation such as trains, bicycles/motorcycles, ships and motor vehicles. But Man still wanted speed, safety and comfort. This insatiable need of man necessitated him thinking of flying. This dream was realized on December 17, 1903 on a North Carolina beach of Kitty Hawk when '*The Wright* Flyer' became the first powered, heavier-than-air machine to achieve controlled flight with a pilot on board. Air transportation through Simon and Schuster Wright, was significantly changed by this feat. Man, could now fly.

But man could just not be allowed to fly as and when he pleased and through what means even? He could only, thus, do this flying by means of aeroplanes/airplanes/aircraft powered by engine. This meant, therefore, that some regulation was needed and a reputable body to be responsible for this regimented and orderly oversight. The International Civil Aviation Organization (ICAO) was born.

A United Nations (UN) specialized agency, the **International Civil Aviation Organization (ICAO)** was created in 1944 upon the signing of the Convention on International Civil Aviation (Chicago Convention). ICAO works with the Convention's 191 Member States and global aviation organizations to develop international Standards and Recommended Practices (SARPs) which States reference when developing their legally-enforceable national civil aviation regulations.

There are currently over 10,000 SARPs reflected in the 19 Annexes to the Chicago Convention which ICAO oversees, and it is through these provisions as well as ICAO's complementary policy, auditing and capacity-building efforts that today's global air transport network is able to operate close to 100,000 daily flights, safely, efficiently and securely in every region of the world.

ICAO develops policies and Standards, undertakes compliance audits, performs studies and analyses, provides assistance and builds aviation capacity through many other activities and the cooperation of its Member States and stakeholders.

The global airline industry continues to grow rapidly, but consistent and robust profitability is obscured. If measured by revenue, the industry has doubled over the past decade, from US$369 billion in 2004 to a projected $746 billion in 2014, as observed and published by the International Air Transport Association (IATA). Much of that growth has been attributed and driven by low-cost carriers (LCCs), which now control some 25 percent of the worldwide air transport market and which have been expanding rapidly in emerging markets; growth also came from continued gains by carriers in developed markets, the IATA reported. Yet profit margins are razor thin, less than 3 percent overall (Allianz Global Corporate & Specialty, 2014).

The airline industry, as a whole, operates in an environment of perpetual cyclicality. Periods of strong demand and modest profits are routinely followed by equally long-and usually deeper-periods of weak demand and economic instability. In this roller-coaster environment, achieving profitability is, at best, a zero-sum game. This was certainly evident in the 2001 to 2007 industry cycle. Following several years of healthy profitability in the 1990s, the terrorist attacks of 2001 and the SARS virus scare of 2002 and 2003 contributed to a dramatic reversal of fortune profitability plummeted as did stock performance. The airlines' weak capital returns were apparent when gauged against not just other industries, but also other players in the aviation sector. When compared to airports, catering companies, aircraft manufacturers and other sector players, airlines' return on capital employed (ROCE) was, on average, 140 percent lower (IATA, 2012).

By 2050 it is estimated that some 16 billion passengers – equivalent to more than double the current global population of around seven billion – will need to be flown yearly, an anticipated increase of 384% compared with the 3.3 billion passengers expected to fly during 2014 (The Washington Times, 2011). In 1960 just 106 million passengers flew worldwide. In 2014, 50 million tons of freight will be flown across almost 50,000 routes. By 2050 this is expected to increase significantly to 400 million tons (Boeing, 2011).

Ghana was colonized by Britain and the development of the aviation sector in Ghana was spearheaded by the British colonial administration dating back to 1918 when the idea of aerial transportation for the then Gold Coast was conceived. Starting as a unit within the Public Works

Department in 1930, it was granted Departmental status in 1953 under the Ministry of Transport and Communications. The first time an airline was operated in Ghana was in the Second World War where the Kotoka International Airport was initially used as a military aerodrome by the Royal Air Force from Britain during the war but was handed over to civilian authority in 1946 following military pullout.

By January 1956 a development project was launched for the construction of a proper international airport for Accra which culminated in the commissioning of the first international airline known as Ghana Airways which started operation in March 1958 with Accra Airport as base. Due to the growth in passenger traffic a new passenger terminal was commissioned to take care of the growth. In the same year the Accra Airport was renamed Kotoka International Airport.

It stayed as a department till 1986, when it assumed a status of a corporate body under the PNDC law 151 establishing Ghana Civil Aviation Authority as an autonomous entity in May, 1986, based on the mother international organization, ICAO. This was followed by the enactment of the Civil Aviation Act in 2004, Act 678.

Ghana Civil Aviation Authority is the regulatory agency of Government on air transport in Ghana. It also provides air navigation services within the Accra Flight Information Region (FIR), which comprises the airspace over the Republics of Ghana, Togo, Benin and a large area over the Atlantic Ocean in the Gulf of Guinea.

However, the mandate, vision and mission that informed the creation of this organization has undergone several metamorphosis over the decades.

The purpose of this study therefore, is aimed at giving the evolutionary processes that the organization has gone through, and to adopt a historical approach so as to expand upon knowledge, add together, piece by piece, through time and great effort, the history of the Ghana Civil Aviation Authority from inception to date. The essence is to in fact, attempt to bring to the fore, the step- by-step developments, the contributions of the various Director-Generals and that of other persons and/or associations within and without the authority.

The study would also consider primary and secondary sources of data/information mostly made up of or extracted from journals, newsletters, magazines, diaries, reports and staff narrated accounts that is hoped to provide a comprehensive and accurate history of Ghana Civil Aviation Authority.

Mission Statement:

"To Provide Safe and Secure Civil Aviation Regulation Services in a Professional and Environmentally Responsible Manner".

Vision: "To become a World-Class Aviation Regulator and Air Navigation Services Provider"

Corporate Values: Leadership – Excellence – Integrity – Innovation - Partnership

Functions:

The role of GCAA, as stipulated in Section 3 of its enabling statute, is to provide a safe and secure air transport services through the following functions, inter alia:

- Advice government on all air transport issues:
- Provision of air navigation services within the Accra Flight Information Region (FIR).

- The regulation, promotion, development and enforcement of safe air transport operations and services.
- The licensing of air transport and all personnel engaged in air transport services.
- The licensing of the provision of accommodation in aircraft and licensing and certification of aerodromes and navigation sites.
- The co-ordination of search and rescue services within the Accra FIR and taking security measures to safeguard air transport, life and property.

It must be noted that, GCAA is a signatory to some protocols and international bodies from which it draws its guiding principles and directional powers and/or functional mandate. Some of these international bodies include among others:

- ✓ International Civil Aviation Organization (ICAO)
- ✓ Africa Civil Aviation Commission, (AFCAC)
- ✓ Airports Council International (ACI)
- ✓ Banjul Accord Group (BAG)
- ✓ International Air Transport Association (IATA)
- ✓ Banjul Accord Group Aviation Safety and Oversight Organization (BAGASOO)
- ✓ Banjul Accord Group Accident Investigation (BAGAI)

These notwithstanding, the Ghana Civil Aviation Authority is mandate by Act 678 of Parliament which empowers the Director-General to carry-out sanctions that could sometimes result in legal suits or otherwise.

The first Director of Civil Aviation was the late Dr. E.R.K. Dwemoh appointed in 1962 and served till 1977. After the first Director of Civil Aviation, the mantle of leadership was handed over to several others until it got to Wing Commander Andy Kofi Mensah. He was appointed in 1988 as the Director-General two years after the authority had gained autonomy and had become thus, a fully fledged independent institution. Wg Cdr A.K. Mensah was tasked with the transformation of the Kotoka International Airport into a modern facility with the target of becoming the hub and preferred destination in the sub-region. He received enormous support from the then Head of State, Flt Lt Jerry Rawlings, himself a pilot who had a passion for the aviation industry.

Unfolding events in the general aviation industry globally and in Africa in particular, the need arose from several and previous meetings and sessions at various International Civil Aviation Organization (ICAO) forums on the essence of separating airport operations from airport/aviation regulatory functions. The catch word here, therefore, was ***Decoupling*** Regulatory function from Operational functions.

It was in this regard therefore that the need for Ghana to adapt to the change which sought to make the bodies/institutions in the industry more efficient and functionally focused.

1.2 Background of the Study

That there is inadequate information on the history of the Ghana Civil Aviation Authority and whatever information there is, is quite difficult to find. This research would thus, attempt to look

the necessity and reasons for setting up this organization, the various Directors/Director-Generals, their contribution to the sustenance and growth of the authority and the aviation industry in general.

1.3 Statement of the Problem

There is not much history on Ghana Civil Aviation Authority since 2007, when it decoupled the regulatory and Air Navigation Service Provision from the Management and Operation of the airport.

1.4 Objectives of the Study

The objective of the study is to establish and indeed create a springboard from which further future studies on GCAA can be done. The study would thus, be looking at the following:

1. Provide a comprehensive and reliable history of GCAA since 2007
2. Establish some challenges, and GCAA's vision in the near future
3. The various contributions made by past Directors/Director-Generals
4. The significance of some key installations and infrastructure that have in contributed in the growth of civil aviation

1.5 Research Questions

1. What significant infrastructures have been established since 2007?
2. What necessitated the establishing of the Ghana Civil Aviation Authority?
3. What is the future of the Ghana Civil Aviation Authority in respect of current trends in the global aviation industry?

1.6 Significance of the Study

It is the hope that a comprehensive and systematic data base would have been created and established so as to bring to the fore, the pivotal role of the Ghana Civil Aviation Authority since 2007, when the regulatory function and air navigation services provision was decoupled from the airport building, management and operating. The study would also have served as a start-off point for future studies.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter explores the existence of massive academic research interest by aviation experts and how their research correlates to this study. The works reviewed in this chapter aided in putting this work into perspective. As such, references have been made to studies on the history of civil aviation in some countries. Although some work has been done on the history of the aviation industry worldwide, inadequate has been referenced to specific countries and little has been done on the industry in Ghana. It is therefore important to link what happens in other parts of the world to what is happening in Ghana. According to Marshall and Rossman (2011), when conducting a study in a new area, to get past literature may not be enough to construct the necessary frameworks that will help the study. Hence, the attempt of the researcher is to examine what has been done by other researchers on civil aviation and juxtapose that with the trends in aviation development in Ghana Civil Aviation Authority specifically.

The 'Yamoussoukro Decision' (YD) which was adopted in 2000 by heads of states to progressively open air transport within the continent, commenced liberalization of African Aviation Industry. The decision was signed in Yamoussoukro, Ivory Coast and was expected to progressively eliminate all the non-physical barriers relating to: the granting of traffic rights, particularly fifth traffic right, the capacity of aircrafts, tariff regulation, designation of airlines and air freight operations (UNECA, 2002). According to Article '7' of the decision, provisions of the YD take precedence over all the previous BASAs signed between African countries. However, the practice so far has been a negotiated move whereby individual countries negotiate

bilaterally based on the YD provisions. Hence, each country has some control on the pace and extent of openness since liberalization is a negotiated move (Abeyratne, 2003).

2.2. LITERATURE REVIEW

2.2.1 The USA Federal Aviation Authority

"The aviation and space industry is a dynamic scheme, which the world depends on daily. The vast extent of the industry as a whole can be overwhelming. Each segment has the potential for corruption and vulnerable to intentional attacks from those wishing to cause harm." (Loffi, 2011)

The national aviation authority of the United States is the Federal Aviation Administration (FAA). It is an agency of the United States Department of Transportation and has authority to regulate and oversee all aspects of American civil aviation. The FAA was established under the Federal Aviation Act of 1958 and created the organization under the name Federal Aviation Agency. Its current name was adopted in 1966 when it became a part of the U.S. Department of Transportation.

The industry in the US is very multifaceted. Some of the varied branches include military, general aviation, commercial, cargo and maintenance are just a few of the areas in US aviation. This "clearly demonstrates the multi-faceted characteristics of the U.S. aviation system." (Loffi, 2011).

Prior to the Federal Aviation Act of 1958, The Air Commerce Act of May 20, 1926, which is the cornerstone of the federal government's regulation of civil aviation was enacted. This was a historic legislation was passed through the lobbying of pioneers of the industry "whose leaders believed the airplane could not reach its full commercial potential without federal action to improve and maintain safety standards."(Rollo, 2004) The Act required that the Secretary of

Commerce should foster air commerce, issue and enforce air traffic rules. It also required the secretary to license pilots, certify aircraft, establish airways, and operate and maintaining aids to air navigation.

In the USA, the Airline Deregulation Act of 1978 effected deregulation of the airline industry. Poole and Butler (1998, p.2) stated that 'what deregulation accomplished was to transform a static, cartelized aviation market into a dynamic, continually changing market'. They further stated that the impact of deregulation was felt in three main waves. In the first period, which was the ten years following deregulation, the main shift was the creation of hub-and-spoke systems by the major airlines. This implied schedule changes as well as reconfiguration of fleets to accommodate smaller aircraft on the spoke network. Airports were also affected as the hub-and-spoke system created congestion at some of the larger airports. In the second wave, and in response to the growing congestion at some of the major airports, opportunities developed for alternatives; one of the results was the creation of low-fare point-to-point services. The low fares led to expansion of the market and resulted in a number of new airlines trying to replicate the success of the pioneer low-cost carrier, Southwest Airlines. The latter's business model was, at the time, largely dependent on the use of under-utilized airports, which also led to the development of the secondary airports.

Throughout the years, the FAA has evolved and has improved on its operations becoming the standard for a lot of players in the industry. Today, the industry has become very technologically advanced. The air traffic control system is a major part of the aviation industry. It is one of the most important parts of all major airports of the world. Constantly, aviation-related technology is being developed. As the industry improves, supersonic jets have reached speeds of 1400 miles

per hour and NASA is continuously developing even faster jets (Loffi, 2001). All aspects of this industry must therefore keep up with these developments. (Sweet, 2009).

Safety has always been a priority of the industry. It even became more important after the September, 11 2001 attacks that saw major changes in terms of security precautions in the industry. As a result, safety has improved in the industry. Again, one aspect of safety has been unintentional accidents which are not necessarily terrorist attacks. "For most of our history, safety was a function of accident investigation. Safety was forensic. There would be an accident; we would investigate the causes, and then implement the changes to make sure that accident never happened again." (Whitaker, 2015)

After going through the work done on the Civil Aviation on the USA, it comes out that, the authors concerned themselves more in respect of safety and security issues rather than tackling the history of Civil Aviation of the USA. The study elaborated on aircraft related accidents and/or incidents as against the history of aviation.

Again, the work attempted to bring to the fore, the commercial benefits of the industry in terms of manufacturing of air planes for civil and commercial purposes.

2.2.2 Civil Aviation in Ghana

There is an extensive work (Dwemoh and Associates) in establishing the history of civil aviation in Ghana. He traced the necessitation of introducing planes into British West Africa and the Gold Coast in particular. To him, the early fliers saw that the challenges of travelling long distances could only be achieved by flying and carrying out military reconnaissance and liaison on the confines of the perceived turbulent Western Sahara and the forging of links between the colonies

and the mother country, Britain, through speeding up mail connections and military adventurism and conquests (Dwemoh, p.3).

The French forces who had a virtual monopoly of the skies of West Africa between 1911-1925, places no doubt that they first realized the important role aviation could play in West Africa, albeit for their own specialized need of competing with the English in the 'scramble for Africa', culminating in the establishment of three regular passenger lines, two French and one Belgian that linked French West Africa directly to Europe. This forced the English to have circuitous flight routes via Khartoum pioneered by civilians such as Thiefly and Mermoz, so poignantly described by Saint-Exupery and Kessel.

The work also captured the Embryonic Development of Civil Aviation of the first long-term international flying in 1919 and thus required uniform and universal regulations leading to the Aeronautical Commission of 1919 Peace Conference, drawing the Paris Air Convention to establish the International Commission for Air Navigation (ICAN) to collect and exchange information among member states.

The advent of aviation in Gold Coast was as the direct outcome of British Imperial Policy and the need for political unity of the British Empire initiated in 1918 when aircraft manufacturers Vickers Aviation Limited made a request to the Governor of the gold Coast, Sir Gordon Guggisberg for deployment in the colony. After preliminary aerial surveys by Squadron Leader Wood, these potential aerodrome sites were recommended: the old Polo Grounds, Kumasi, the Constabulary Parade Grounds in Tamale, other potentials in Sekondi, Winneba, Akuse, Kpong and Kete-Krachi.

Recommendations from these surveys captured in subsequent reports, Sir Alan Cobhan piloting the first aircraft ever to visit the country, the flying boat "***Singapore***" circled over the township of Accra then continued to Takoradi Harbour to dock (Dwemoh, p.4).

Britain as colonial masters spearheaded the development of the aviation sector in Ghana. The first time an airline was operated in Ghana was in the Second World War where the Kotoka International Airport was initially used as a military aerodrome by the Royal Air Force from Britain during the war but was handed over to civilian authority in 1946 following military pullout.

By January 1956 a development project was launched for the construction of a proper international airport for Accra which culminated in the commissioning of the first international airline known as Ghana Airways which started operation in March 1958 with Accra Airport as base. Due to the growth in passenger traffic a new passenger terminal was commissioned to take care of the growth. In the same year the Accra Airport was renamed Kotoka International Airport. Later in 1986, that law was promulgation and PNDC law 151 was enacted to establish Ghana Civil Aviation Authority as an autonomous entity. This was followed by the enactment of the Civil Aviation Act in 2004, Act 678.

Again, the work also considered the first landing of an aeroplane (land machine) in the Gold Coast, Civil Aviation in Post-Independent Ghana, the Department of Civil Aviation and its responsibilities i.e. Administrative, Legislative and Judicial Powers, the Civil Aviation Act of 1958, various Boards of Directors and Management Staff, The Policy of Ghanianisation and the Transformation from Department of Civil Aviation to Civil Aviation Authority. It also captured acquisition of lands and building of aerodromes, Ghana Airways setup and the various domestic

and foreign airlines operations and their respective air routes and some recommendations regarding the future efficient running of the authority.

Although the work was extensive, it stopped short of events immediately before and after the decoupling of the regulator from the airport operator. The work also dealt more with governmental policies as against operational direction.

2.2.3 The United Kingdom Civil Aviation Authority

In the UK, the Civil Aviation Agency was established in 1972, under the terms of the Civil Aviation Act 1971, following the recommendations of a government committee chaired by Sir Ronald Edwards. Previously, regulation of aviation was the responsibility of the Air Registration Board. The current main Act of Parliament regulating aviation in the UK is the Civil Aviation Act 1982. Responsibility for air traffic control in the UK passed to NATS in the run-up to the establishment of its public-private partnership in 2001.

The CAA directly or indirectly regulates all aspects of aviation in the UK. In some aspects of aviation it is the primary regulator, in other areas, where the responsibility for regulation has passed to the European Aviation Safety Agency (EASA), the CAA acts as EASA's local office, implementing the regulations. Representatives from the CAA sit on EASA's advisory bodies, taking part in the Europe-wide regulation process.

The work focused more on stringent aviation regulatory functions as against the start of civil aviation in the United Kingdom.

2.2.4 Nigerian Civil Aviation Authority

In Africa, aviation was introduced not too long after the Wright brothers introduced the first in 1903. In Nigeria for instance, it started in 1920 just 17 years after the first plane took off.The British Royal Air Force aircraft touched down on a polo field in Maidugri. This clearly shows, that aviation in Africa started in the form of military exercise. It was not intentionally introduced but was rather a war time operation by the British. Later, it gradually assumed civilian operations. (Ogbeidi, 2006)

By 1925 the British Royal Air Force extended operations in West Africa and, they stationed a squadron in the Sudan. The British commander sought approval from the Colonial Office in England to operate frequent cross-country flights from Khartoum to Maiduguri. By 1930, civil and military aircraft were carrying passengers across boundaries and touching down in places like Kano, Sokoto, Bauchi, Minna, Oshogbo and Lagos while British Imperial Airways carried regular passenger and mail services. Subsequently, Lagos and Accra became hubs for flights enroute to the Middel East and India. (Ogbeidi, 2006)

Nigeria and the then Gold Coast now Ghana, met in May 1946 to discuss the means to effectively tackle issues of transport and communication between the British Isles and the colonies.They also met to form a joint company and an air transport authority to take over the services previously operated by the Royal Air Force. The outcome of this meeting was the establishment of the West Africa Airways Corporation (WAAC). Like its counterpart in East Africa, it was set up by an Order-in-Council of the Colonial Office in 1946. An agreement was reached between the colonies and the British Overseas Airways Corporation (BOAC) and Elder Dempster Lines (both companies having monopolised the air and sea transport respectively).

BOAC was to provide the technical and commercial staff. In effect, the WAAC became a public corporation set up by the colonies to develop efficient air transport services in West Africa.

In 1957 when Ghana gained independence, Kwame Nkrumah pulled out of WAAC and established Ghana Airways. Inspired by Nkrumah's actions, Nigeria also wanted to establish its own national airlines. In October 1958, WAAC changed into WAAC (Nigeria). In 1961, it became known as Nigeria Airways. (Ogbeidi, 2006).

Regulation of the industry was not in force until 1964 when the aviation act was passed in. "What is more, the legal framework for the regulation of the aviation industry in Nigeria, the Civil Aviation Act of 1964, which was almost a carbon copy of the U.K. Civil Aviation Act, hardly gave any serious recognition to the participation of the private sector in the domestic and international airline business." (Ogbeidi, 2006)

The author in this work captures to a vast extent, the history of Civil Aviation in Nigeria in almost its entirety. It covers the periods of its conception, evolution, future and what it is today. I do agree with Michael Ogbeidi with his expose on the relevance of the influence of colonialism in the development of and the history of civil aviation in Nigeria.

2.2.5 Cyprus Civil Aviation

The Cyprus Civil Aviation virtually developed just as that of Nigeria's. It came out of the colonial administration of the British and her military conquests. The colonial government's air transport policy concerned only non-scheduled and charter flights with the airport staffed and manned by Royal Air Force personnel. Indeed, approval for all other flights was scrutinized and determined by the United Kingdom in accordance with its international obligations.

The study also covered the expansion, building and development of airports, determination of the Flight Information Region (FIR), provision of Air Navigation Services and the functions of the Civil Aviation Authority of Cyprus as mandated by their Act of parliament. It also studied the incorporation of her airlines, the development of the civil aviation sector proper.

The study however, did not cover threats to the civil aviation sector of Cyprus and neither did it tell what its future plans are.

2.2.6 Qatar Civil Aviation Authority

Civil aviation in Qatar dates back to the onset of the 1950s when oil companies embarked upon oil-prospecting in the southern parts of the country. When these companies needed air transportation services to carry their personnel and oil-prospecting equipment, a runway was established in the western part of the country, followed by another one south of Umm Said. In the last quarter of the 1950s, another runway was established east of Doha for commercial air transportation.

At the time, that runway used to receive one plane monthly. As the commercial air transportation developed, the first small airport, situated in the same location of Doha International Airport, was established. The airport was equipped with all the navigating and handling services, in addition to other services for monitoring regular flights to and from Doha.

Since then, steps towards developing Doha International Airport, the basis for civil aviation services in Qatar, have been made steps including extensions, services and other facilities, accompanied by the economic and architectural renaissance, as well as a strategy for varying resources of national income, all made under the auspices of His Royal Highness the Prince

naturally attracting investments worth billions of dollars, in addition to thousands of labour force, including professionals, technicians, engineers, and experts in all fields.

Today, Qatar plays a vital role in the diplomatic and economic arenas. It has hosted a number of regional and international conferences and exhibitions. Moreover, concerned authorities paid a special attention to tourism. Many hotels and spas were built; and a number of tourist locations, with all the supporting services, were created. It is noteworthy that Qatar Civil Aviation Authority (QCAA, henceforth) has played a pivotal role in all the foregoing projects.

It is noteworthy that QCAA was established in 2001 under the provisions of Law No. 16 of 2001. In accordance with the said law, QCAA, has a legal personality and is allocated a budget. It is affiliated with the Council of Ministers and has a board of directors and a general manager. The objective of establishing QCAA is to promote civil aviation and weather forecasts in terms of efficiency, accuracy and security, thereby accomplishing the social development goals as designed by its departments:

- Air Navigation Department
- Air Safety Department
- Department of Air Transportation and Airport Affairs
- Meteorology Department
- Joint Services Department

Doha International Airport, as a gateway that links Qatar to the world, and with the help of QCAA, has always played a major role in all the above mentioned developments. It offers handling and navigation services, as well as services related to civil aviation safety and security,

in compliance with the ICAO (International Civil Aviation Organization) standards adopted by more than 25 aviation companies that have regular flights to more than 48 destinations in Europe, Middle East, North Africa, the Indian Peninsula, and the Far East.

Furthermore, QCAA took part in establishing Qatar Airways, the national carrier, in 1994. Within one decade, Qatar Airways became a major regional and international air transportation company. In line with the worldwide developments in the civil aviation industry the construction of the new Doha International Airport began with the plan to accommodate about twelve million passengers a year. In order to offer transit passengers quality services, the airport was connected to two hotels, 100 rooms each, in addition to another hotel close to the airport.

This study shows the significant role strategic investments have played in the development of infrastructure and the general growth of the aviation industry in Qatar. Indeed, the nationalistic pride exhibited by the involvement of the Crown Prince in this regard. It also mentioned the virtual closeness or how fused and/or togetherness of the Civil Aviation Authority, the airport company/authority and the national airlines of Qatar. The seamless nature of the civil aviation authority joined to the other industry players (airport operator and airline), although helps in smooth administration, it is a potential room for lax supervisory and regulatory role to be played by the civil aviation authority. This is because, who will be the 'referee, player and fan'? There should be a clear distinction as exists and prescribed by ICAO and best practiced world-wide.

2.3 Conclusion

The importance of the aviation industry in any country cannot be underestimated. In Africa, the industry has been growing slowly but steadily since the colonial days and today, virtually all the cities with airports are commercial nerve centres. Obviously, Ghana can learn a lot from these

other countries and improve on its aviation industry. With government's intention to expand facilities at Kotoka International Airport and develop the Kumasi and Tamale airports to international levels, it is very important for Ghana to learn from the examples of these countries.

As stated earlier, a lot of work has been done on the civil aviation industry worldwide. There is also a lot of literature on the industry in some advanced countries. Although there was some extensive work done by Dr. Dwemoh on the history of civil aviation in Ghana, it stops short prior to the decoupling exercise in 2007. It is for this reason that this research is being conducted, to add up to what he started, try to fill in the gaps left, and also provide a springboard from which future and further studies could be carried out.

CHAPTER THREE

METHODOLOGY

3.1 Introduction:

Methodology basically refers to the science of finding out (Babbie, 2005). It involves the study of methods and also raises questions about what is possible for researchers to know and how valid their claims to knowledge might be (Fisher, 2007). It is referred to by Cohen et al. (2007) as the process of following the steps, procedures and strategies for gathering and analysing the data in a research investigation, thus describes in detail, which methods were employed to undertake this study and why they were used (Burton, 2000).

This chapter will use a historical approach in carrying out the present research on documenting the history of the Ghana Civil Aviation Authority after de-coupling in 2007. Again, primary and secondary sources of information regarding the post-decoupling history of the authority will be some extracts from relevant documents (e.g. books, journals, articles, magazines etc) will also be looked at. This method is employed because of the interest of the researcher in reporting events and/or conditions that occurred in the past, and attempt to establish facts in order to arrive at conclusions concerning past events or predict future events. The historical method indeed is explicated to be a methodological process which allows the researcher to conduct a historical analysis of an issue, here, **'The Historical Overview of Ghana Civil Aviation Authority after Decoupling in 2007'**, through the use of documents.

3.2 Scope and Limitation

The study would cover and limit itself to post-decoupling in 2007 of the Ghana Civil Aviation Authority with Aviation Regulatory and Providing Air Navigation Functions, from the Ghana Airports Company Limited with Aerodrome, building and or construction, operating and management responsibilities.

The study will also include the Vision, Mission and Corporate values, names of the Transport Minister at the time, successive Board Members and Management Staff, the Director-Generals since 2007, pictures of the installations of key instruments and equipment and other developmental projects undertaken, milestones, international institutions and/or organizations GCAA is affiliated or belongs to. It will also consider the functions of the various core (technical) departments in the authority. Again, some challenges and threats facing the authority and future plans would also be looked at. It will also include but not limited to statements by some former Director-Generals, aviation industry players and/or operators extracted from the GCAA 25th anniversary celebration magazine.

Due to the time and financial limitations of this study, this research limited itself to significant events that took place from 2007, Director-Generals who served within that period, pictures, installations and equipment, and some relevant documents that established and empowered the Ghana Civil Aviation Authority. This will mean that the perspectives of other stakeholders in the industry have not been considered in this study.

Again, the study recognizes and acknowledges the relevance of particular documents and pictures to the study. Nonetheless, the researcher attempts to present an accurate, credible and reliable report.

3.3 Research Design

According to Burns and Grove (2003) research design is a blueprint for conducting a study with maximum control over factors that may interfere with the validity of the findings. Parahoo (1997) also defines research design as a plan that describes how, when and where data are to be collected and analyzed. Van Wyk (2009) defines Research as the overall plan for connecting the conceptual research problems to the pertinent (and achievable) empirical research.

The function of a research design is to ensure that the evidence obtained enables us to answer the initial question as unambiguously as possible. Similarly, in social research the issues of sampling, method of data collection (for example questionnaire, observation, document analysis), design of questions are all subsidiary to the matter of 'What evidence do I need to collect?' (Burns and Grove, 2003)

3.4 Sources of Data

This will include primary and secondary sources of data and or information to aid the study.

3.4.1 Primary Sources

- **Interviews**

The primary source will be from in-depth interview(s) which is a loosely structured qualitative data collection method that allows freedom for both the interviewer and the interviewee to explore additional points and change direction, if necessary. Again, it offers the opportunity to capture rich, descriptive data about people's behaviours, attitudes and perceptions, and unfolding complex processes. It can also be used as a standalone research method or as part of a multi

method design, depending on the needs of the research. Indeed, it helps collect direct data from people about the subject matter.

In-depth or unstructured interviews are one of the main methods of data collection used in qualitative research. It is used to stress the importance of talking to people to grasp their point of view (Burgess, 1982a) and personal accounts are seen as having central importance in social research because of the power of language to illuminate meaning (Hammersley and Atkinson, 1995:126).

3.4.2 Secondary Sources

- **Books**

Books are useful for research because they give in-depth coverage of a topic, often provide background information on a topic, used to get an overview of a topic, demonstrate how a research topic relates to broader, narrower and related issues and give a more complete information (causes, effects, long-term consequences, fuller conclusions, etc.), deeper analysis and a broader historical perspective with a more context both within and outside of a discipline. Again, they contain original research that may cover multiple experiments or span several years. Since books provide written records of information that can be referred to, therefore, the following would form the bulk of information to this research:

  - Extracts from 'History of Civil Aviation in Ghana' by the first Director of Civil Aviation Dr. ERK Dwemoh and associates. from their 25th anniversary magazine, will serve as the basis for gathering information

  - Messages from past Director-Generals extracted from the GCAA 25th anniversary magazine (May, 2011).

- **Journals**

Journals, newspapers and/or magazines cover recent developments and events with little time lapse. As a result, information is current but may be incomplete, captures "the spirit of the moment" (especially newspapers and magazines). Journals are important for reporting fast-paced, competitive or time-sensitive research, containing original research and typically focus on one experiment; while newspapers and magazines may refer to research studies, but do not contain original research.

Thus, they will include the GCAA Newsletter and other aviation related magazines etc

- **Pictures**

Photographic images serve as powerful records of people, events, and places. They evoke ideas or emotions in ways that words alone cannot.

The pictures will include among others pictures of the GCAA Head Quarters building, some former Director-Generals since 2007, navigational aids, instruments, installations and equipment.

- **Events**

Some key events that took place since decoupling will also be mentioned.

- **Extracts**

Extracts will include among others, copies of documents such as some of the various Acts establishing the Authority, Legislative Instruments and/or Regulations, Technical Directives etc.

3.5 Data Collection

Data collection instrument is any type of written or physical device which is purported to be used for measuring variables (Sproull, 1988). The key to designing a reliable research instrument is that researchers must be consistent in their approach to measurement by asking respondents exactly the same questions and that they record those answers in a systematic manner (Burton, 2000).

In-depth interviews were conducted with some officials of the Ghana Civil Aviation Authority where the researcher was directed to the appropriate personnel and a face-to-face interview scheduled. After formal introductions were made upon a visit to the Head Office in Accra on 6th October, 2015, the interview was conducted at the Ghana Civil Aviation Library and Registry respectively.

The researcher with an interview guide asked the relevant questions in respect of the subject at hand.

Information from books, journals, magazines and photographs were gotten and assessed from the GCAA library, GCAA Registry and the Corporate Communications Section.

3.6 Data Analysis

The data was analyzed using descriptive analysis of documents that were available to the researcher and a chronological narration approach.

3.7 Definition of Terms/Operational Definitions/Abbreviations

These initials and acronyms would mean the following:

- AERODROME - Airport
- AGL – Aeronautical Ground Lighting
- AWOS-Automatic Weather Observation Systems
- ANS – Air Navigation Systems
- ATC – Air Traffic Control
- ATIS - Automatic Terminal Information System
- BAGAI- Banjul Accord Group Accident Investigation
- BAGASOO- Banjul Accord Group Aviation Safety Oversight Organization
- CASORT – Civil Aviation Safety Oversight Reporting and Tracking
- D-G – Director-General
- DD-G (T) – Deputy Director-General (Technical)
- DD-G (F/A) – Deputy Director-General (Finance & Administration)
- DME - Distance Measuring Equipment
- DVOR- Dopple Very High Omni-Range
- FANS - Future Air Navigation Systems

- FIR- Flight Information Region
- GACL-Ghana Airports Company Limited
- GATA-Ghana Aviation Training Academy
- GCAA- Ghana Civil Aviation Authority
- GCAR- Ghana Civil Aviation Regulation
- GNSS - Global Navigation Satellite System
- GBAS - Ground Based Augmentation Systems
- IATA – International Air Transport Association
- ICAO-International Civil Aviation Organization
- ILS - Instrument Landing System
- MLS - Microwave Landing Systems
- NOTAMS – Notices To Airmen
- OPS - Operations
- PAPI- Precision Approach Path Indicator
- PEL - Personnel Licensing
- RIMS - Remote Integrity Monitoring Stations
- TDME - Terminal Distance Measuring Equipment

CHAPTER FOUR

FINDINGS AND ANALYSIS

4.0 Introduction

This chapter will look at statements from some key personalities who have shaped the Ghana Civil Aviation Authority notably from the time it gained autonomy and after 2007 when it decoupled its regulatory function from airports operation and management. Some of the comments are extracts from interviews granted by some former D-Gs to the researcher, in the GCAA 25th Anniversary Magazine, in May, 2011.

4.1 Extracts from some Key Personalities:

4.1.1 Dr. Edward Dwemoh

Dr. Edward Dwemoh (deceased), an Octogenarian till he passed on, said ''there is pride in hard work, commitment to duty and any cause one pursues in life''.

Speaking to (Aviation News) to mark the silver jubilee of the Ghana Civil Aviation Authority, Dr. Dwemoh said he was always proud of his successors anytime he visited KIA and saw the monumental infrastructural transformation. He noted that civil Aviation had changed dramatically over the years in terms of technology and urged current and future managements and staff of the Authority to continue to work hard to maintain the status of GCAA on the international map.

Dr. Dwemoh, the first Director of Civil Aviation in Ghana, was a teacher at the time of his recruitment to train and work as an Air Traffic Controller in the 1960's. Dr. Dwemoh, then Mr. Dwemoh (now deceased) said since there was no specialised training Institution in Civil

Aviation at the time, the British improvised one to train him as the first Air Traffic Director. He was later sent to the United Kingdom, where he was given formal training to take over the management of Ghana's Civil Aviation as Director. He was among nine Europeans, being the only African at the Glasgow Career Course. On his return to Ghana in December, 1962, he was promoted to the first Directorate position to manage the Affairs of GCAA.

He said he found Civil Aviation to be very dynamic, interesting and promising but with challenges which he had to work in order to overcome. One of such challenges was that as the only African working with the whites, he had to make every effort to "as he put it," "hit the mark". Since his success would pave way for more Ghanaians to be employed in the service. He simply had to avoid lateness and work very hard.

The first president, Osagyefo Dr. Kwame Nkrumah had to push him to do more because he had plans to train more Ghanaians to take up positions occupied by the whites.

He traced his success story to the keen interest Dr. Nkrumah had in the development of Civil Aviation industry in Ghana. Dr. Dwemoh also recalled Nana Opoku Ware who was then the Minister of Transport and communication and his enormous support and co-operation in endorsing his recommendations and requests to purchase equipment.

He worked tirelessly on the African and international scene in line with President Nkrumah's Africa Unity Agenda and this put Ghana high on the World map of nations.

Indeed, he became the first African to win the International Civil Aviation Award, being the first Ghanaian to be accorded such prestige. Dr. Dwemoh also became the president of the African Civil Aviation Commission and was asked to maintain that position after two years due to his credible and distinctive work.

Today many African pilots owe a lot to him, for his recommendations which enabled them to achieve their aim of flying. But for Mr. Dwemoh, who succeeded in discarding the perception by Europeans, African Pilots could not fly because they were perceived to have Sickle cells. After extensive research and collaboration with health experts, Dr. Dwemoh proved that many African might have traits but not necessarily the sickle cell disease which could have presented African pilots from flying.

Dr. Dwemoh himself was trained to fly light Aircraft which was a pre-condition for any candidate to qualify as a Director-General of Civil Aviation at the time.

4.1.2 Captain Joe Boakye

Captain Joe Boakye, a seasoned pilot with several flight records on the defunct Ghana Airways served as Deputy Director-General Technical for almost six years before assuming the high office of Director General following the exit of Wing Commander Andy Mensah in 2001. He told Aviation News that Civil Aviation is a multi-faceted organization. He was able to fit into the Director-General's position because of his varied background as a regulator, a pilot and an administrator.

According to him, the legacies left behind are as a result of team work and an on-going process in the dynamic spheres of Civil Aviation. As such, within the period of his service, he continued with the rehabilitation process to make the terminal more user-friendly. Check-in counters were increased to ten with an improvement in the seating enclave. He said the Airport City Project is also an on-going one.

On the regulatory sector, Capt. Boakye said 'GCAA is shoulders above the other neighboring African countries; and managed to overtake Cote d'Ivoire which was also doing well. He

however noted that the core Regulatory function of Civil Aviation is not a profit making entity but to ensure safety and security. He said the issue of co-management of the Flight Information Region (FIR) should not be dramatized. For him, if Ghana could continue to maintain the present management of the Region and pay some compensation to its neighbours that would be welcome security and safety news. If on the other hand, the neighbors insist on co-management, an amicable arrangement could be sought in the interest of peace without compromising security and safety in the FIR.

It is his dream that Ghana's once cherished Category One status by GCAA would be regained. He advised current Directors, Managers and staff to give off their best, co-operate with one another to ensure that they succeed in making Ghana the preferred destination and hub in the sub-region.

He recalls some happy memories like the days he flew the 'DC' 10 Ghana Airways aircraft when the aged and children alike would lift up their heads to view the famous national colours as our heritage.

4.1.3 Nii Apai Adumansah-Baddoo

The tenure of Nii Mansa Baddoo as Director General of GCAA rested on four thematic pillars. These areas were invested in:

- Technical equipment,
- Business development for revenue generation,
- Capacity building and education of staff and
- Corporate social responsibility and relations with other stakeholders

In his contribution, Nii Mansa Baddoo upholds the decoupling exercise going on at GCAA describing it as the best international phenomenon aimed at efficiency and effectiveness in administration.

On the technical front, Nii Badu Mansa Baddoo said studies were conducted into requirements and (V-sat) small aperture systems were installed to better conduct Air traffic control services within the Accra Flight Information Region (FIR). The equipment were installed first in the Accra Airport, Lome-Togo, Niamey, Coutonu, Sao Tome and Principe to help forestall deficiencies in Air Navigation Services being provided in the FIR

Nii Baddoo's tenure also saw the improvement of the lightening systems at the Kumasi Airport as well as the rehabilitation of the runway to enable the domestic aircraft Antrak Airlines to fly to Kumasi in the evening. He said a 3.5 million dollar loan was secured to implement the projects.

Besides, GCAA had developed a master plan for the development and upgrading of the Kumasi Airport following a lot of agitation from the public to have additional Airports in the country. Studies were also conducted into the use of modern satellites and the recommendations released to the Authority.

As an accountant, Mr. Baddoo said 'there is no discipline one cannot master'. He quietly had to learn to gain his foundation in order to tackle the financial leakages in the system. He therefore by automating the car parts to improve on the revenue stream. He believes for any Airport Manager to succeed and survive, there is the need boost revenue.

His value and quest for quality human resource led him and his team to make contacts with the Swedish Civil Aviation Authority who supported GCAA with the state-of-the-art simulator as a forerunner to the establishment of an Aviation Academy in Ghana.

Nii Baddoo believes a specialized sector like Civil Aviation must be guided and directed by recurrent training to update personnel in applying modern practices in the industry. He called for a constant review of policies and practices because the industry is dynamic one.

4.1.4 Captain Roger Hoover (United Airlines)

Over the years, the Ghana civil Aviation Authority has experienced growth and improvement in the quality of services it provides its clients in terms of modern equipment to enhance Air Service Operations. For Captain Roger Hoover of the United Airlines, flying to and from Ghana's Airport to Washington and Dallas twice in a month is a wonderful experience. Captain Hoover asserted how he and his colleague pilots from the USA, were particularly happy that as far as civil aviation in Ghana was concerned, navigation, surveillance and communication were good and could be compared to any of the major airspaces in the world.

He said ''navigational facilities such as the radar system and communication from Air traffic officers are exemplary''. He stressed that the Air traffic controllers have been exceptionally helpful. Captain Hoover has flown quite extensively in Europe and South America but flying in Africa has been the best.

He said 'one feels pretty close to earth in terms of clear transmissions by radio'. He is one of many pilots of foreign Airlines who think that GCAA has really lived up to expectation by prioritizing safety and security.

4.1.5 Mr. Asare (Antrak Airline)

The Quality Assurance Manager of the Antrak Group of Companies, one of the domestic airline operators in Ghana, Stephen Asare, testifies to the elaborate improvement in infrastructure development at the Kotoka International Airport. He said the modern automated systems and equipment installed at the airport by the Ghana Civil Aviation Authority over the years especially at both the Domestic and International flight terminals have enhanced check in time and the general facilitation of passenger processing at the airport.

The airport, Mr. Asare confirmed, has changed in terms of improvement in the facilities and besides there are on-going development projects aimed at expansion of seating capacity; saying "soon domestic airline operations will receive a boost". According to him, the positive impact of the development on Domestic Airline operators will be enormous. Mr. Asare believes GCAA management has the vision and what it takes to measure up to the expectations of the civil aviation industry

He congratulated the Director-General, the Board, Management and staff for their ceaseless efforts in ensuring a safe airspace and wished them all the best in the coming years.

4.1.6 Hon. Collins Dauda (MP) Minister Of Transport (2011-2013)

The Minister of Transport Collins Dawda has congratulated the Director General of GCAA, the Board, Management and staff on the 25th Anniversary of the Authority. He said on behalf of the Government and people of Ghana as well as the civil aviation fraternity he wished the Authority good fortunes and progress in the coming years. Speaking too Aviation Magazine, Mr. Dawda called for a change of attitude from staff and other workers in the country towards work, to enable Ghana to move forward.

The Minister said the Government and people of Ghana are proud of the achievement of GCAA over the years especially the safety and security record of the Authority. He identified the construction of a new Fire Station at t the Airport, influx of Airlines to the Airport as a result of the expansion words on the tarmac and the provision of navigation facilities as achievement worth mentioning.

According to him Government is taking a look at how it could release a more sizeable proportion of the Airport service tax to the GCAA and the GACL to enable them to have sufficient funds to further improve facilities at the Airport. Mr. Dawda gave the assurance that despite the challenges, Government will continue to support the GCAA to promote Civil Aviation and facilitate tourism in the country.

Commenting on the defunct Ghana Airways, Mr. Dawda said it is his dream and that of His Excellency, President Evans Atta Mills to have the national colours flying in the very near future. He said though it is not an easy thing to do, Government will soon come out with an official position on the defunct National Airline, Ghana Airways.

4.2 The Ghana Civil Aviation Authority Now

The Ghana Civil Aviation Authority (GCAA) is the regulatory agency of the Republic of Ghana for air transportation in the country and also provides air navigation services within the Accra Flight Information Region (FIR), which comprises the airspace over the Republics of Ghana, Togo and Benin and a large area over the Atlantic Ocean in the Gulf of Guinea all the way to Sao Tome and Principe and along the coastline of the Republic of Nigeria.

GHANA CIVIL AVIATION AUTHORITY

The GCAA was established in 1930 as a unit with the Public Works Department (PWD) and in 1953 GCAA was granted Departmental Status. It became an Authority under PNDC Law 151 on 16th May, 1986. In the year 2004 the GCAA Act was enacted to replace PNDC Law 151.

The Civil Aviation Act, Act 678 of November 2004 provides for the establishment of a Civil Aviation Authority, which will focus on the core functions of Airspace management and Safety Regulations whilst allowing for a different organization to handle Airport development and operations.

Pursuant to the above, the GCAA was restructured into two bodies, bringing into being on 1st January, 2007, the new Ghana Civil Aviation Authority (GCAA) responsible for the regulatory functions and provision of air navigation services, while the Ghana Airports Company Limited (GACL) assigned with the responsibility of designing, building and operating all airports/aerodromes within the Republic of Ghana.

4.2.1Functions

Under the GCAA Act 678, the functions of GCAA include the following:

1. Licensing and Certification of Air Transport Operators
2. Licensing and Certification of Aerodromes and the Construction, Operation, Maintenance and Managements of Navigation Sites.
3. Provision of Air Navigation Services (Air Space Management) within the Accra Flight Information Region (FIR).

4. Regulation of Air Transport Services.
5. Promoting the Development of Civil Air Transport Industry in Ghana.
6. Advising Government on all matters Concerning Civil Aviation, among other functions.
7. Provision of oversight for all activities related to civil aviation.

4.2.2 The Safety Regulation Department (SRD)

SRD is one of the core departments in the Ghana Civil Aviation Authority. It is responsible for the Safety Oversight Surveillance functions of locally registered operators and for ensuring effective implementation of safety issues in compliance with ICAO Standards and Recommended Practices and associated procedures contained in all ICAO Annexes especially Annexes 1,6,8,14 and 18. It is also responsible for the safety assessment of foreign operators (SAFA) to accomplish the same purpose.

Requisite to the functions of this department are the Eight (8) Critical Elements which are:

- Primary Aviation Law Establishing the Authority (Act 678)
- Secondary laws (GCAR-Regulations: ICAO Annexes 1,6,8,14 & 18 update)
- The GCAA Organizational Chart (Organogram)
- Requisite Training and Quality of Qualified Technical Staff/personnel
- Inspector Implementing Guidance Material
- Certification (Documents and Records required of operators to meet)
- Surveillance (records of continuing inspections and surveillance)
- Resolution of Safety Concerns and Enforcement of corrective actions

4.2.3 Safety Regulation-What it means

This is primarily required to protect the public interest, to ensure public safety and to inspire confidence in the aviation system. It forms part of a global safety regime which applies to all aspects of service provision. ICAO Doc 9734 (*safety oversight manual*) defines Regulation as the giving of authoritative direction to bring about and maintain a desired degree of order which includes, but is not limited to instructions, rules, edicts, directives, sets of law, requirements, policies and orders. Regulations are national legislation from the law making body of a State. They have the power of law and they are the principal tools of Aviation Safety Inspectors.

The Safety Regulator is accountable to the government and is responsible for safety oversight and for ensuring that the right quality of service is provided. In GCAA, Safety Regulation is vested in the Safety Regulation Department with these Responsibilities as the Safety Regulator:

- Setting the overall safety goals and objectives for Service Providers, usually in the form of target levels of safety.
- Setting regulatory requirements for appropriate aspects of service provision.
- Providing oversight of the initial and ongoing compliance with national regulations.
- Requiring that appropriate safety management processes are in place within Service Providers.
- Ensuring that there is a uniform and effective safety reporting system.

The critical elements of a safety oversight system are:

A. Provide:

- Primary aviation legislation.
- Specific operating regulations.
- Technical guidance, tools and safety-critical information.

B. Establish

- State civil aviation system and safety oversight functions.
- Technical personnel qualification and training.

C. Implement

- Licensing, certification, authorization and approval obligations.
- Surveillance obligations.
- Resolution of safety concerns.

4.2.4 Safety Regulatory Core Divisions

An ICAO Contracting State is required to fulfil its safety regulatory obligations as provided for in the Convention on ICAO. On the basis of national legislation, it is obligatory that an appropriately organized, structured, funded and empowered regulatory system is established to effectively fulfil the tasks that it is required to undertake.

Highly qualified technical professionals and support staff are employed to carry out the various functions of the regulatory establishment.

The essential functions or core divisions of a safety regulatory establishment are:

a. Flight Safety Standard (FSS)

Comprises Aircraft Operations (OPS), Airworthiness (AIR) and Personnel Licensing (PEL).

b. Air Navigation Services (ANS)

Comprises Air Traffic Services (ATS), Aviation Meteorology (MET), Aeronautical Information Services (AIS), Communication Navigation & Surveillance (CNS), Search and Rescue (SAR).

c. Aerodrome Safety and Standards (ASAS)

This comprises Aerodrome Design & Environment, Aerodrome Civil / Electrical Engineering, Licensing & Certification, Technical & Safety Data, Ground Handling Inspectorate and Rescue Fire Fighting Inspectorate, deriving its mandate from ICAO Annex 14.

d. Aviation Security Inspectorate (AVSEC)

This has oversight on issues bordering on ICAO Annex 17.

In order to achieve the responsibilities enumerated above, the SRD carries the following specific functions:

- Certification of airline operators, Aviation Training Organizations (ATOs) and Aircraft Maintenance Organizations.
- Registration of aircraft.
- Certification, validation and issuance of personnel Licenses for flight dispatchers and Aircraft Maintenance Engineers.

- Approval of flight simulator exercises.

- Inspection and approval and certification of sites chosen, designs and drawings for airstrips, airports, aerodromes and high rise structures including telecommunication masts within the air navigation airspaces as determined by GCAA.

- Aerodrome Certification and registration.

- Inspection of fire fighting vehicles and supporting equipment, facilities, procedures and training of personnel.

- Inspections of aerodrome security facilities and equipment, access routes, fencing etc.

- Inspections and monitoring of ANS equipment, procedures and training of personnel.
- Monitoring and inspection of ATC facilities, equipment, procedures.
- En-route observation of flight Crew to ensure compliance with standard flight procedures.
- Routine and random inspections of aircraft and engineering equipment.
- Audits of Airline Operators, Aviation Training Organizations and Aircraft Maintenance Organizations.
- Inspection, certification and licensing Ground Handling Agencies and equipment
- Inspection, validation and approval for the flying and use of unmanned aircraft whether for aeronautical, weather or agriculture purposes.

4.2.5 (a) Staffing

- 1 Director, Safety Regulation
- 1 Deputy Director (Airworthiness/ASAS)
- 1 Assistant Director (ATS)
- 4 Managers(AIR, ASAS, PEL, OPS)
- 48 Inspectors/ Trainees/ Assistants

4.2.5 (b) Inspectorates

- Engineering
- Aerodrome Safety & Standards including Ground Handling and Fire Inspectorates
- Flight and Air Operations (dispatch, Cabin Safety)
- Personnel Licensing
- Aviation Security Audit
- Air Traffic Navigation Services

4.2.5 (c) Vision

The vision of Safety Regulation Department is to ensure safe skies within the Accra FIR by developing and implementing Quality Management Systems (QMS) and Safety Management Systems (SMS).

4.3 Air Traffic Safety Engineering

A core function of the Ghana Civil Aviation Authority (GCAA), is the provision of Air Navigation Services (ANS). For this purpose, a number of facilities are used to ensure efficient provision of communication, navigation and surveillance (CNS) for safety-of-life services within the Accra Flight Information Region. The facilities and systems include but are not limited to:

i. New CNS/ATM facilities
ii. Radar (Primary and Secondary) and associated equipment
iii. Satellite Communication Systems (IBS AND VSAT)
iv. Instrument Landing System (Localizer, Glide Slope, Terminal Distance Measuring Equipment)
v. Doppler Very High Frequency Omni Range (DVOR)/Distance Measuring Equipment (DME)
vi. Non Directional Beacons (NDB)

vii. High Frequency (HF) and Very High Frequency (VHF) Radios

viii Voice Communications Switch and Voice Recorders

ix Automatic Message Switch

x. Public Address System (PABX)

xi. Generators, UPS, air-conditioner units, solar panels.

The Air Traffic Safety Engineering (ATSE) Department was set up to plan, provide, operate, maintain and service the electronic, electrical and mechanical equipment used for the provision of Air Navigation Services.

Aside the installation, maintenance and servicing of the mission critical communications, navigation and surveillance facilities, the department also represents the Authority at conferences and seminars where their area of expertise is required.

Since 1986, when the Department of Civil Aviation became an Autonomous entity, the Air Traffic Safety Engineering Department has played a major role in installing, manning, operating and servicing new generation of equipment and facilities used for the provision of air navigation services, thereby enhancing operational safety as well as safety of flights within the Accra FIR.

4.3.1 Functions/Responsibilities of the Engineering Department

The Air Traffic Safety Engineering Department is headed by the Director of Engineering with Engineering Sectional Managers reporting to him. He is assisted by the Deputy Director of Engineering who has direct oversight of the Electronics Section.

In view of the fact that it needs to ensure the safety and efficiency of flights within the Accra FIR (the airspaces of Ghana, Togo and Benin as well as a large portion of the Atlantic Ocean up to

latitude 9.5° South of the Equator) through the provision of sound engineering practice, the responsibilities of the Engineering Department are captured as follows:

4.3.2 Air Traffic Safety Electronics Section

This is the largest Section within the Engineering Department with a mix of Electronics Engineers and Electronics Technician Engineers. Its main responsibility is to carry out planning, installation, operation, maintenance and servicing of mission-critical safety-of-life air navigation equipment and facilities scattered throughout the Accra FIR.

4.3.3 Communications Unit

The Unit is headed by a Communications Manager (currently vacant) and is responsible for the installation, maintenance and servicing of the following communications facilities for Aeronautical Mobile Service (AMS) and Aeronautical Fixed Service (AFS).

- IBS Satellite Communications Ground Earth Station linking GCAA with Lagos, Kano, Libreville, Niamey, Ouagadougou, Bobodiolasso, Abidjan and Brazzaville for the provision of ATS/DS and AFTN.
- VSAT Communications facilities in Accra (hub station) with nodes in Kumasi, Tamale, Lome, Niamtougou, Cotonou, Sao Tome and Lagos for the provision of ATS/DS and AFTN. That of Sunyani was connected to this system in 2011.
- VHF and HF communication radios
- Extended Range VHF radios in Tamale, Niamtougou and Sao Tome
- Voice Communication Control Switch (VCCS), Automatic Message Switch/ATS Message Handling System, Voice Recorders and ancillary units. A new VCCS is going to be installed before the third quarter of 2011.

- Ancillary communications equipment such as the PABX for corporate services as well as serving as a backup for critical communications links with neighbouring FIRs.
- With the implementation of the ICAO Future Air Navigation System, new communications facilities such as VHF data link (VDL), HF data link (HFDL) Controller-Pilot Data Link Communications (CPDLC) are going to be added to or used to replace some existing facilities. These are the communications facilities used for the provision of air-to-ground and ground-to-ground services between Accra ACC and aircrafts or neighboring ACCs. They are mission critical facilities and as such need proper maintenance to ensure availability greater than 99.7% at all times. Without them, ATS services cannot be provided.

4.3.4 Navigation

The Unit is headed by a Navigational Aids Manager and is responsible for the installation, maintenance and servicing of the following navigational aids such as the Instrument Landing System (ILS) which comprises of the Localizer, Glide Slope and Terminal Distance Measuring Equipment (TDME). The ILS provides lateral guidance for aircraft so they can align themselves to the runway centre line during the approach and landing phases of flight.

There is also the VOR/DME which provides bearing and range information for aircraft relative to the airport or for en-route guidance. Non- Directional Beacons are used for approach as well as en-route services. The existing DVOR/DME is being replaced and upgraded this year, 2011, with an Automatic Terminal Information System (ATIS) being incorporated.

The ICAO FANS (Future Air Navigation Systems) program brings on board systems such as the Global Navigation Satellite System (GNSS) with its augmentation systems, including the Ground Based Augmentation Systems (GBAS) and Remote Integrity Monitoring Stations (RIMS), and

the possible replacement of ILS with Microwave Landing Systems (MLS) in future, where appropriate.

4.3.5 Surveillance

The Unit is headed by a Surveillance Manager and is responsible for the installation, maintenance and servicing of the following the primary and secondary surveillance radars which are used by ATC for situational awareness and for controlling/managing the airspace. The availability of near total radar coverage of the continental airspace within the Accra FIR is one reason why airlines feel confident using GCAA's services. GCAA has one (1) primary and two (2) secondary radars situated in Accra and Tamale respectively.

For the implementation of some aspects on the ICAO FANS programme, GCAA is in the process of installing an Automatic Dependent Surveillance Contract (ADS-C)/ Controller Pilot Data Link Communications (CPDLC) system this year, 2011. A Wide Area Multi-lateration (WAMLAT) system is also planned for procurement and installation later in the year. This will enable the Authority to provide more efficient and cost effective surveillance services, including the implementation of AORRA within the oceanic region of the Accra FIR.

4.3.6 Electrical Section

All the mission critical engineering facilities need stable and clear power supply and cooling to function effectively and efficiently. The Electrical Section is therefore responsible for the management and provision of efficient, and effective electrical services particularly in the fields of power distribution, power generation, ventilation and air-conditioning according to internationally acceptable standards and in conformity with ICAO Annex 14 SARPs of all electrical facilities at the Head office and all equipment areas. Such areas include:

1. Power Distribution facilities
2. Standby Generating Sets for Equipment areas such as Control Centre, Tower, radar, La transmitters, VOR, Outer marker, middle marker, Beacon station as well as all equipment areas at the Kumasi, Tamale & Sunyani Airports.
3. Substation Equipment (Switchgear, relays etc.)
4. Fire Alarm Systems
5. Air-conditioning Systems (Chillers at control centre, split units, cassette units etc.) and associated electrical installations
6. Ventilation systems
7. Lighting Systems
8. Lift/Elevator
9. Uninterruptible Power Supply Systems in vital equipment areas.

4.3.7 Computer Maintenance Planning Section

The Section is responsible for planning and scheduling of maintenance of communications, navigational, radar and electrical equipment within GCAA and interfacing of the maintenance system with the GCAA supply chain management system to ensure regular and timely stocking of the Engineering Stores. The Section regularly generates work orders which are used for planned maintenance of the air navigational facilities and other non-safety related systems. They manage the Idhammar Computerized Maintenance Management System.

4.4 Corporate Communications:

The Corporate Communications Manager reports administratively to the Director, Legal, International Relations and Corporate Communication but, reports functionally directly to the Director-General.

This section is key to the operations of the authority since it bridges the administrative (non-core) Human Resources, Internal Audit, Finance, Corporate Planning, General Services and the Legal, International Relations and Corporate Communications, GCAA Training Academy and Economic Regulation and Business Development departments with the operational and/or functional (core) Safety Regulation, Air Traffic Services and the Engineering departments.

Stakeholders/Publics

GCAA's identifiable publics would have to change.

The Management, General staff and the Board of Directors, form GCAA internal publics. Externally, GCAA has these Publics:

i. Ministry of Transport

ii. Ghana Airports Company Ltd

iii. Airlines

iv. ICAO (International Civil Aviation Organization)

v. The Ghana Armed Forces

vi. Ghana Immigration Service

vii. Ghana Police Service

viii. National Security

ix. Narcotics Control Board (NACOB)

x. National Communication Authority

xi. Customs Excise and Preventive Service (CEPS) – (but now part of Ghana Revenue Authority)

xii. The Airport Clinic

xiii. GCAA approved Aviation Training Institutions

xiv. All communities with aerodromes/air strips/communication & navigational equipment (La, Kumasi, Sunyani, Takoradi, Tamale, Bolgatanga, Wa, Kpong, Afienya, Akuse)

xv. The Media

xvi. The entire air traveling public

4.5 Director-Generals of Ghana Civil Aviation Authority

A list of various Directors of Department, the Directors-General and Acting Directors-General of the Authority

1. **Dr. E.R.K. Dwemoh - Director (1962-1977)**
2. **Mr. K.A. Kwaw - Ag. Director (1977-1979)**
3. **Mr. T.K. Pappoe - Ag. Director (1979-1981)**
4. **Mr. J.W. Ntow Aninkora - Chairman, Interim Management Committee (1981-'83)**
5. **Wg Cdr D.T. Osabukle - Leader, GIMPA Team (1983-1985)**
6. **Gp Capt J.O. Koranteng - Ag. Director-General (1985-1987)**
7. **Sqn Ldr S.N. Okai - Ag. Director-General (1987-1988)**
8. **Wg Cdr A.K. Mensah - Ag. Director-General (1988-2001)**
9. **Capt. J.A. Boachie - Ag. Director-General (2001-2005)**
10. **Nii Apai Adumansah-Baddoo – Ag. Director-General (2005-2007)**
11. **Mr. S.M. Allotey - Ag. Director-General (2007-2009)**
12. **Air Cdre V.K. Mamphey - Director-General (2009-2014)**
13. **Mr. Abdullai Alhassan - Ag. Director-General (2014-2015)**
14. **Mr. S.M. Allotey - Director-General (2015 -)**

CHAPTER FIVE

DISCUSSIONS AND CONCLUSION

5.0 Introduction

This chapter concludes the project and the overall work done by the researcher. It discussed the historical evolution and development of the Ghana Civil Aviation Authority from 2007 when it decoupled to date. It also looked at some of the challenges, in terms of manpower, the place of Ghana Civil Aviation Authority and the future.

This study has provided a platform and/or a background on which a further research can be conducted. It also filled gaps of information that initially existed regarding the history of GCAA which did not cover the part after the decoupling in 2007.

GHANA CIVIL AVIATION AUTHORITY

The Ghana Civil Aviation Authority (GCAA) is the regulatory agency of the Republic of Ghana for air transportation in the country and also provides air navigation services within the Accra Flight Information Region (FIR), which comprises the airspace over the Republics of Ghana, Togo and Benin and a large area over the Atlantic Ocean in the Gulf of Guinea all the way to Sao Tome and Principe and along the coastline of the Republic of Nigeria.

Figure 1: The Ghana Civil Aviation Authority Headquarters Building

The GCAA was established in 1930 as a unit with the Public Works Department (PWD); in 1953 GCAA was granted Departmental Status. It became an Authority under PNDC Law 151 from 16th May, 1986. In the year 2004 the GCAA Act was enacted to replace PNDC Law 151. The Civil Aviation Act, Act 678 of November 2004 provides for the establishment of a Civil Aviation Authority, which will focus on the core functions of Airspace management and Safety Regulations whilst allowing for a different organization to handle Airport development and operations.

Pursuant to the above, the GCAA was restructured into two bodies, bringing into being on 1st January, 2007, the new GHANA Civil Aviation Authority (GCAA) responsible for the regulatory functions and provision of air navigation services, while the Ghana Airports Company Limited (GACL) assigned with the responsibility of designing, building and operating all airports/aerodromes within the Republic of Ghana.

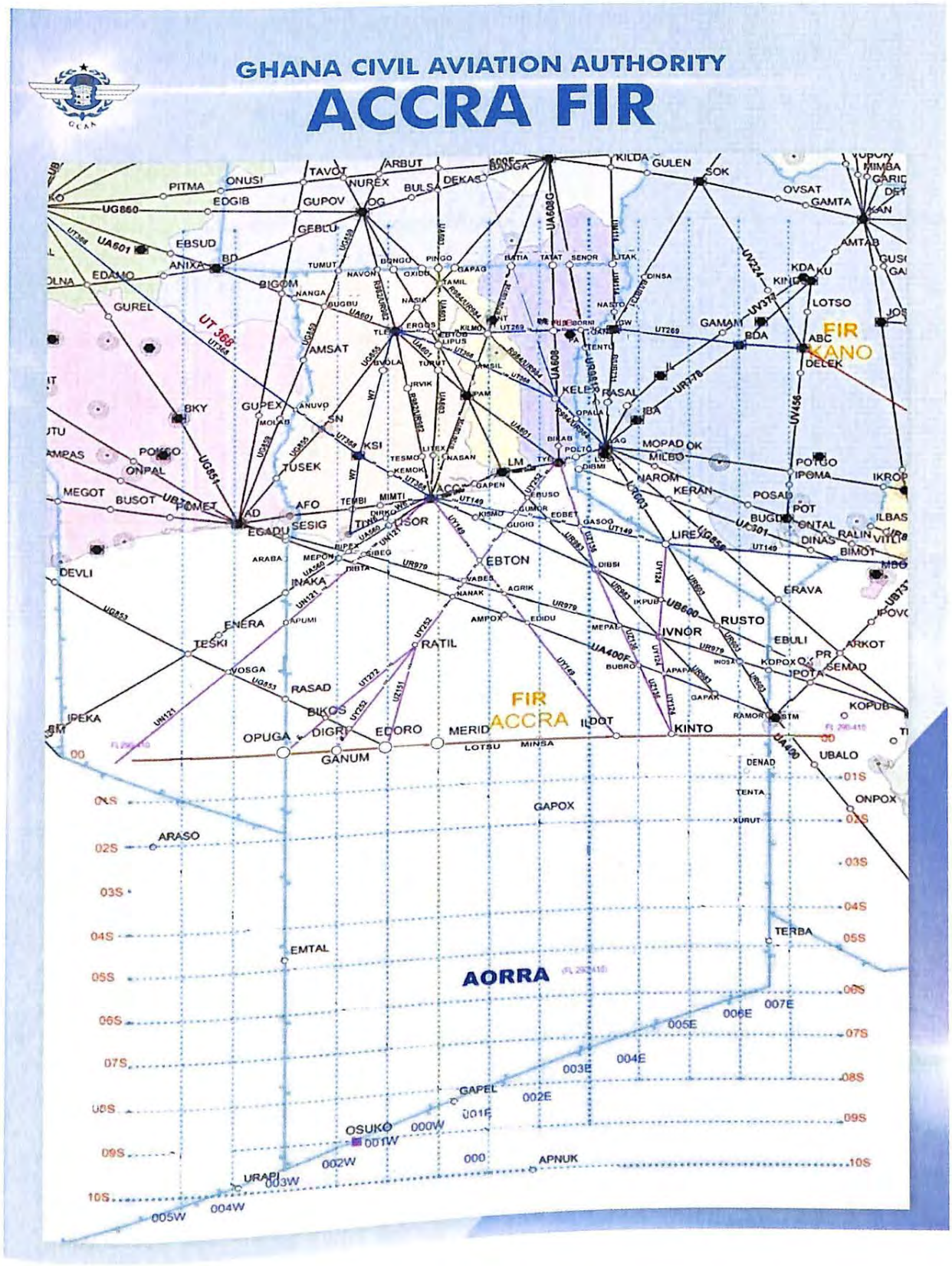

Figure 2: The Accra Flight Information Region (FIR)

5.1 Functions of the Ghana Civil Aviation Authority under Act 678

Under the GCAA Act 678, the functions of GCAA include the following:

8. Licensing and Certification of Air Transport Operators
9. Licensing and Certification of Aerodromes and the Construction, Operation, Maintenance and Managements of Navigation Sites.
10. Provision of Air Navigation Services (Air Space Management) within the Accra Flight Information Region (FIR).
11. Regulation of Air Transport Services.
12. Promoting the Development of Civil Air Transport Industry in Ghana.
13. Advising Government on all matters Concerning Civil Aviation, among other functions.
14. Provision of oversight for all activities related to civil aviation.

5.2 Milestone/Achievements/Events

- In July, 2007, the Ghana Civil Aviation Authority secured a loan for the purchase of a brand new KIA specific designed CARMICHAEL Fire Tender and later straight from the manufacturer's factory, an additional two state-of-the-art CobraII fire tenders capable of providing fire cover of a (category) CAT 9/10 under a Code F status.

- In April, 2008, Ghana Civil Aviation Authority under the leadership of Mr. Simon Christopher Allotey, hosted the Conference of Ministers Responsible for Aviation/Transport to implement the BAGAI Declaration.

- In 2011, the Ghana Civil Aviation Authority chalked its 25th Anniversary as an autonomous body, with a series of activities to celebrate this achievement.

- April of 2013 saw Ghana successfully host the 23rd Plenary Session of the African Civil Aviation Commission (AFCAC) which comprised 54 signatory states. Significant at the session was the nomination and election of the Director-General of the Ghana Civil Aviation Authority, Air Commodore Kwame Mamphey as the President of the Commission. The crowning of this session was the presence of the ICAO President, Mr. Roberto Kobeh Gonzalez.

Figure 3: Air Cdre Mamphey assumes Presidency of AFCAC (April, 2013)

- To meet governments desire to increase domestic air travel, Air Commodore Mamphey ensured the liberalization of the domestic aviation industry by opening up and allowing new operators, thus leading to the increase of domestic operators to five (5) from an initial almost '*monopolistic*' two (2). Total domestic air passenger travel, shot-up from about four hundred (400) a month in 2009, to over four thousand (4,000) within two (2) years.

Figure 4: View of Kotoka International Airport And Environs

5.3 Installations

Under the stewardship of Air Commodore Kwame Mamphey, himself a seasoned pilot of over 33 years, he oversaw the installation and commissioning of vital air navigation equipment and instruments to aid safe aeronautical operations. Among these are:

- Instrument Landing Systems at both Kumasi and Kotoka International Airport (See Figures 5(a) and 5(b) in appendix 5

An **instrument landing system (ILS)** is a ground-based instrument approach system that provides precision lateral and vertical guidance to an aircraft approaching and landing on a

runway, using a combination of radio signals and, in many cases, high-intensity lighting arrays to enable a safe landing during instrument meteorological conditions (IMC), such as low ceilings or reduced visibility due to fog, rain, or blowing snow.

- **Automatic Weather Observation Systems** (AWOS) See figure 6 in appendix

As the most advanced automated aviation weather stations of their kind in the world, An Automated Weather Observing System, or **AWOS**, is defined by the Federal Aviation Authority (FAA) of the United States of America as a suite of weather sensors, which measure, collect and disseminate weather data to help meteorologists, pilots and flight dispatchers prepare and monitor weather forecasts, plan flight routes, and provide necessary information for correct takeoffs and landings.

There are six standard categories of Automated Weather Observing Systems (**AWOS**), and a limitless number of customized weather stations that help to measure: i) Wind speed, wind gust, wind direction, variable wind direction, temperature, dew point, altimeter setting, density altitude ii) visibility, and variable visibility, iii) sky condition, and cloud height and type, iv) present weather, and precipitation identification, v) thunderstorm and lightning detection and vi) present weather, and lightning detection (Coastal Environmental System, 2015).

- **New RFFS Station**: See Figure 7

With a loan guaranteed and secured by the Ghana Civil Aviation Authority, Air Commodore Mamphey supervised the commissioning and commencement of operations of a new Rescue and Fire Fighting Station for the Ghana Airports Company Limited's in June, 2012 with a Code F Rescue and Fire Fighting capability.

- **Aeronautical Ground Lighting at Kumasi Airport (AGL-Runway Lights)** See Fig 8 in appendix.
- **Doppler Very High Frequency (VHF) Omni-Directional Range** (DVOR) See Fig 9 in appendix.
- **ADS-C and CPDLC**

An ADS Contract is an agreement from a pilot, to the Air Traffic Service (ATS), to provide information. The pilot can provide information through various types of contracts and can do this with up to four different ATS providers. The data is extracted automatically from various electronics in the aircraft. In exchange they grant the pilot access to the airspace he is in, or coordinate with nearby airspace. ADS-C will take the place of voice position reports in many regions of the world. But, the pilot needs special equipment and authorization to use ADS-C.

It uses the various systems aboard the aircraft to provide aircraft position, velocity, intent, and meteorological data. The aircraft can transmit this data to the ATS provider system for estimating and predicting aircraft position. The ATS provider applies a contract request to an aircraft. ADS-C reports are issued by the aircraft per the contract request. The contract identifies the types of information and the conditions that the aircraft transmit. The ADS-C and CPDLC give better Required Surveillance Performance (RSP) and Required_Communication Performance (RCP) respectively. Combined, they allow pilots to fly in airspace with tighter separation minima which allow a greater selection of available airspace. This is an Air Traffic Service (ATS) application established by contract in which aircraft automatically transmit, via data link, data derived from onboard navigation systems. As a minimum, the data includes a 3-D

position, corresponding time of the position data, and a Figure of Merit that characterizes the accuracy of the position data and an appropriate provided additional data.

Figure 10: Automatic Dependent Surveillance-Contract/Controller Pilot Data Link Communication (ADSC-CPDLC) installed in 2012

5.4 Challenges

- Currently, Ghana is ceding the upper air spaces of 250,000 feet and above to the Republics of Togo and Benin as part of negotiations after the two countries demanded that their air spaces be returned to them. Their earlier demands were to co-manage or totally revoke their sovereign position that mandated Ghana to manage the airspaces ever these countries (Togo and Benin). Although it is in their right and power to make these

demands, Flight Information Regions (air spaces) and air routes are designed and carved out by or with the supervision of the international Civil Aviation Organization (ICAO).

- A critical challenge that the Ghana Civil Aviation Authority is confronted with is the achieving the prestigious Category (CAT) I status. Ghana was dropped a step down the ladder of the United States Federal Aviation Authority 'barometer', because it failed to meet the safety standards and requirements as prescribed by the FAA. The CAT I status is conferred by the Federal Aviation Authority upon countries whose national airlines meet the aviation safety standards, thus qualifying them to operate directly into the United States.

- Additionally, the inability of the Ghana Civil Aviation Authority to access some and/or part of the Airport Passenger Service Charge (APSC) that is charged on all airline tickets, poses a dire financial constraints on the authority, leading to inadequacy of funds available to the authority.

- Again, has been the reduction of domestic carriers to two in 2015 from an initial of five in 2010. This though has not affected the general number of travelling because of the strategic operational compensatory role the remaining two carriers have undertaken by assuming the slots left by the departure of the other three carriers.

- Instability of the local currency is another important challenge to the domestic airline industry. The recent fall in the Ghana Cedi and the sharp depreciation against its major trading partners, devalues it drastically, causing the airline operators to incur exchange rate losses. They charge passengers in Cedis but use dollars to buy aviation fuel, pay leases on aircraft and pay their expatriate staff. For this reason, their profit margins are

continually diminished by the losses occasioned by the continuous depreciation of the local currency.

- Another challenge is the cost of aviation fuel (JetA3, AVGAS). The cost of aviation fuel is an important limitation to the development and growth of the domestic aviation industry in Ghana. In fact, aviation fuel cost is a very significant element and critical to domestic airline operators. This issue is not limited to only Ghana but it is a general issue in the aviation industry world-wide. But the impact is felt more by the domestic aviation industry operators more because they tend to use old fleet of aircraft that are not fuel efficient. Additionally, the taxes on aviation fuel in Ghana, makes it the most expensive in the West African Sub-region.

5.5 Vision / Future

Kotoka International airport is the only International Airport in the country at the moment. Airlines can fly to international destinations from only one airport, the Kotoka International Airport. Currently, 63 airlines operate in Ghana, out of which 2 offer domestic flight services. In all, there are plans in place to encourage new entrants to beef up the total number of domestic airlines currently operating in the country (Ghana Civil Aviation, 2015; ghanaweb.com).

In order to meet future demands in terms of technological advancement, aviation professionals and/or manpower capacity building, GCAA under the leadership of Air Commodore Mamphey envisaged this need thus, proposed and initiated the building of an ultra-modern state-of-the-art seven-storey structure to cater for this. The building has among others; offices, an Air Traffic Training Simulation room, a language proficiency theater, an Aerodrome drawing room, a cafeteria, lecture halls, syndicate rooms, a conference hall and a gymnasium.

Since the current Ghana Civil Aviation Training Academy block would not suffice to realize the dream, the sod was cut by Mrs Dzifa Attivor, the Honorable Minister of Transport in April, 2013, to start begin that dream.

- **Ghana Aviation Training Academy** (GATA) See Fig 11 in appendix

5.5.1 Safety Initiatives

The first step in addressing safety related issues within the GCAA was the formation of the Quality Assurance Group. Following this step will be to constitute a Safety Data Acquisition Unit to handle all Mandatory Occurrence Reports, thus creating a continuous updated, relevant and readily available document.

5.5.2 Progression

Over the years, the different sections of the department have improved tremendously in the effective discharge of its safety oversight and enforcement responsibilities. Outlined below are some developments in the various sections o the Department;

5.5.3 Personnel Licensing:

a) In the issuance of licenses, the PEL office has progressed from the issuance of paper licenses to the booklet form. Presently, the office has upgraded in the issuance of the plastic card licenses which are more portable and convenient.

b) For purposes of data and record keeping, CASORT database has been adopted by the office after the usage of FoxPro software and the PEL Database.

c) Knowledge testing for Flight Crew has been upgraded from a manual system to a computer-based system and user friendly.

d) Medical assessors with the relevant know-how in respect of best practices and in compliance with ICAO Annex 9 have also been engaged to oversee the work and facilities of the aviation medical examiners.

5.5.4 Aerodrome Safety and Standards (ASAS):

a) The Office has developed a database for all Aerodromes, towers and high rising buildings in Ghana. (Obstacle Evaluation / Airport Airspace Analysis data, DE/AAA)

b) Certification of all Aerodromes is an on-going process initiated by the office

c) Identification and registration of all Helipads.

d) ASAS has intensified surveillance of all aerodromes in Ghana.

e) There has been such drastic improvement in revenue generation by the office.

f) Inspecting, certification, approval and licensing of ground handling agencies.

5.5.5 Airworthiness:

1. The issuance of Certificate of Airworthiness to operators has increased over the years, due to the influx of new airlines (Local & International).

2. CASORT database which was implemented this year, keep a data/records of inspections conducted, and serves as a tool that alerts Inspectors to follow up on safety-related issues raised during the inspections.

3. The Safety Assessment of Foreign Aircraft (SAFA) has improved, as the activity keeps operators and foreign aircraft in line with the safety measures and policies of the Authority.

5.5.6 Operations:

The Flight Operations Office has developed a new Air Operator Certificate and OPSECS which facilitates the efficiency of work and in conformance with International standards.

5.6 Discussions

Advancement in technology has brought considerable changes in operations and policies that have had significant impacts on civil aviation and its supporting Airport Infrastructure.

Following the data collected in the previous chapter, it emerged that there would be the need to further decouple the Regulatory Function from the provision of Air Navigation Services. Here, the Ghana Civil Aviation Authority will be responsible for the Regulatory Function, while a new organization preferably called the Air Traffic and Navigation Service Organization/Company would be responsible for the provision of air navigation services.

This future decoupling is to ensure that the Ghana Civil Aviation Authority can concentrate on the effective regulation of civil aviation in Ghana and as such, fulfill its responsibility as prescribed by Act 678.

What this means is that revenue generated through the provision of air navigation services within the Accra Flight Information Region (FIR), which comprised the airspace over the Republics of Ghana, Togo and Benin and a large area over the Atlantic Ocean in the Gulf of Guinea all the way to Sao Tome and Principe and along the coastline of the Republic of Nigeria, will dwindle.

GCAA currently serves as the Air Transport Regulator in Ghana and also the provider of Air Navigation Services (ANS) in the Accra Flight Information Region.

The Air Navigation Service consists of the air traffic control section and the aeronautical information service (AIS). The AIS is responsible for flight planning, over flight and landing permit as well as the issuance of notices to airmen (NOTAMS). It is also responsible for the publication and update of the aeronautical information publication (AIP), which contains pertinent information about all the airports and operations in Ghana.

The Air Traffic Control Services is responsible for the provision of the air traffic services within the Accra Flight Information Region (FIR). This region extends from the borders of Burkina Faso in the north and over the Atlantic Ocean to share borders with Angola in the south. From the west, it shares borders with Ivory Coast and encompasses the airspaces of Togo and Benin from flight level 120 (twelve thousand (12,000 ft) till infinity. It really is a very big airspace.

There are various routes within the FIR including those that serve local and international destinations. These routes are created by the use of coordinates or navigational equipments that are placed at particular places on the ground. Again, with recent trends, International Air Transport Association (IATA) and air traffic control have come up with IFLEX, which is the IATA flexible routing system. This allows aircraft to fly directly to their destinations without using the conventional routes on the land areas. The same thing happens on the oceanic region where the flight path of aircraft is based on wind flow and this is called AORRA, Atlantic Ocean Random Routing Airspace. All these are geared towards saving fuel and hence increasing revenue for the operations or airlines.

Air traffic control is a service provided for the purposes of preventing collisions between aircrafts and on the maneuvering area between aircraft and obstructions and expediting and maintaining an orderly flow of air traffic. It is done by the issuance of clearances or authorizations to perform a specific act or instructions through the use of radios with or without radar. The service provision is divided into three units namely; Aerodrome (tower), Approach and Area control.

Aerodrome control provides service to aircraft in the vicinity of the aerodrome and on the maneuvering area. So all the persona and vehicles operating there are equipped with radios and must always seek permission from tower. The tower as high as the name suggests, is to enable proper vision of the runway and also must have a clear 360 degrees view. The runway is 3403m in length and 60m in width. It has 45m grooved to prevent rain water from collecting on it. It is properly prepared to cater for the frequent weights that land on it. Linking it is the taxiway, which is an intermediary for the runway and the apron (tarmac). The aerodrome control has an airspace of 15nautical miles laterally and 1500feet vertically from the ground. The runway is lighted during darkness and also aided with approach lights.

Approach control is the middle man in the provision of the service. It is sandwiched between aerodrome control and area control. It is that service provided to departing and arriving controlled flights. Approach control is actually responsible for the runway as its airspace integrates into aerodromes. It is sixty nautical miles laterally and vertically up to flight level 155 or fifteen thousand five hundred feet.

Considering the speed of aircraft, taking decisions in this phase is very critical and integral and thus considered as the most challenging part of the job. Aero control is the universal set of all. It

entails the entire flight information region. Sometimes it is segmented into sectors depending on the density of air traffic. This is the unit that takes responsibility of the upper airspaces of Togo and Benin and the Atlantic Ocean. Thence, the random routing and IFLEX are employed mostly in area control service.

Another dimension of the air traffic services is search and rescue services which deal with the coordination and mobilization of the various teams to provide assistance such as evacuation of survivors and their onward transportation to hospitals during an aircraft accident. It also provides guidelines on how to search and rescue should be done. Search and rescue is able to provide a probable place an aircraft may be in time of distress based on signals received. The search and rescue unit, teams up with the Aviation Rescue and Fire Fighting Service, Air Force, NADMO etc in the discharge of their duties in most cases.

The Air navigation services nevertheless consist of the engineering division responsible for the installation and maintenance of navigational aids, meteorological equipments and ATC equipments for the smooth operation of air traffic services. Together with the controllers, the engineers collaborate on the best equipments available for use for the provision of the services. Currently Accra has an automatic weather operating system (AWOS), which provides instant meteorological information to controllers for transmission to aircraft.

The newly installed Dopper Very High Frequency Omni-Range (DVOR) and Distance Measuring Equipments (DME) has an incorporated Aeronautical Terminal Information System (ATIS) with the ability to broadcast vital aeronautical information such as weather, Airport Situational Awareness etc directly to Pilots without necessarily depending on Air Traffic Control.

The dynamism of the industry is emphasized by the constant evolution of procedures and processes as well as equipments in the provision of Air Navigation Services.

The regulatory role of GCAA on the other hand ensures the adherence of the following among others:

- Flight Safety Standards which comprise Aircraft Operations, Airworthiness and Personnel Licensing
- Aerodrome Safety and Standards which comprise Aerodrome Design & Environment, Aerodrome Civil/ Electrical Engineering , Ground Handling, Licensing & Certification, Technical & Safety Data and Rescue Fire Fighting.
- Aviation Security Inspectorate with oversight on issues bordering on ICAO Annex 17.

The regulator also regulates all Air Navigation Services activities as well as the personnel who perform such activities.

5.6.1 Factors Responsible for Growth in the Aviation Industry as a whole

There have been some general indicators that have contributed to the growth of the industry and expanded volume of operational activities are the growing economy, political stability, good management team and the cordial industrial atmosphere, facilitated by healthy management and staff rapport.

- **Increased Operational Activities**

All the planning parameter: aircraft movements, Passenger Thruput, Freight and En-route show strong positive growth. Added to this, is the fact that most billings are denominated in Us dollars, which impacts strongly on exchange gains.

- **Economic:**

Key pointers under the economic roots are: Growth in GDP by 5% per annum, Reduction in inflationary rates, Recognition of the private sector as the engine of growth, Institution of the Ghana Trade and Investment Gateway Programme and the establishment of Export Processing Zones. These gains have been mitigated however, by the continued depreciation of the cedi against the major currencies and the high interest rates.

- **Political**

The improving economic performance in the country is predicated on the stable political environment the country has been enjoying over the relative 2 decades of peace amidst the various political upheavals, threats of terrorism (Boko Haram) attacks, public health and safety issues such as pandemics (Ebola) all over Africa and in the West African sub region in particular, there has been relative peace in Ghana. This has helped the performance of the aviation industry, since political stability implies more air travelers coming in and out of the country to do business and to promote trade and investment. GCAA can thus be said to be part of the improving economic growth of the country.

5.7 Conclusion

It is obvious from the above discussions that historical developments in the aviation industry, both international and domestic, have not occurred in a vacuum but have been predicated on policy direction and response to industry players to such policies and the peculiar realities of the aviation industry. Issues such as security, consumer welfare, pollution control, and global economic fluctuations among others have been some of the predominant drivers of change in the industry (Wensveen, 2010).

With the advent of private space tourism, exploration and travel, private flying of unmanned aircraft and/or vehicles, increased public, private, commercial and quasi-state owned aircraft and aerodromes, technological advancement and the introduction of automated air traffic control; changes in airport (an area of land or other hard surface excluding water that is used or intended to be used for the landing and takeoff of aircraft,) design and construction, including terminals, buildings and facilities which are the backbone of world air transport and a necessity to twenty-first-century trade and commerce, has placed an enormous responsibility on civil aviation authorities worldwide, as a matter of urgency and a must to provide guidelines, rules and codes in terms of regulation to bring orderliness and discipline into the industry so as to hold and ensure Safety and Security.

This, thus, vests a duty on the Ghana Civil Aviation Authority to give policy direction, advice and regulation to the key industry players as mandated by Act 678 which also empowers the GCAA through it's Regulations; such as the various Legislative Instruments (LI) i.e. the Ghana Civil Aviation Regulations (GACR) and such Technical Directives and Circulars that shall be issued by the Director-General or his appointee, from time to time.

In the pursuit of these objectives thereof, the GCAA is mandated to perform several functions including all forms of licensing in the aviation industry of Ghana. The GCAA is mandated to grant licenses and revoke same if licensees are not meeting regulatory requirements relating to compliance with conventions, protocols and standards. The provision of air navigation services are also in the domain of the GCAA. They are also responsible for promoting and developing air transport operations and services. Air worthiness of aircrafts and all other things relating to aviation safety and security is the mandate of the GCAA. The GCAA operating as a quasi

autonomous institution finances its operations with funds generated from aeronautical and non-aeronautical functions. Occasionally the government of Ghana provides additional funding.

It is clear from the policy objectives of the GCAA that the government of Ghana recognizes that a thriving domestic aviation sector is very necessary for the overall economic health of the nation. There is the recognition that domestic trade and tourism can be promoted with a thriving domestic aviation industry through the enhanced mobility afforded by the access to remote regions of the country. Although domestic trade is expected to be boosted by the domestic air transportation industry, none of the domestic airlines in operation are involved in cargo transport.

5. 8 Recommendations:

The Ghana Civil Aviation Authority is the body responsible for setting the policy direction in the aviation industry. The policy objectives of the GCAA include;

1. Ghana Civil Aviation Authority must strive to maintain the highest standards of safety and security in the provision of air transport. This can be done by developing the requisite robust regulations and guidance material so as to enforce and sustain aviation safety and security compliance by pursuing corrective actions to ensure safety and security in the industry
2. As a matter of urgency, part of the Airport Passenger Service Charge (APSC) should be given to the Ghana Civil Aviation Authority and be termed 'Aviation Safety Charge' to enable the authority carry out its oversight and enforcement function, more effectively.

3. Government must endeavour as a matter of priority, set up and register a national carrier/airline to operate into the United States of America so as to meet in part, the criteria for re-establishment or achieving the Category (CAT I) status.
4. The Ministry of Transport should expedite the constitution of a committee to oversee the decoupling of the Air Navigation Services Provision (industry service provider) from the Regulatory and Oversight Functions (State)
5. The Ghana Civil Aviation Authority should facilitate, improve the scope, quality and efficiency so as to encourage a strong and sustainable growth in aviation operations and service provision, while preserving the environment
6. The Ghana Civil Aviation Authority must review the overall fees and charges that domestic air transport operators pay, so as to help bring significant cuts in operational costs and free resources for further investment in the industry.
7. To halt or minimize the perennial depreciation of the local currency, the Government of Ghana must intensify its efforts at providing macroeconomic stability. This will help overcome the huge exchange rate losses incurred by domestic air transportation operators.

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APPENDIX A

Figure 5(a): Instrument Landing System (ILS) at the Kumasi Airport

Figure 5(b) Air Cdre Kwame Mamphey in a chat with H.E. The President at Kumasi airport

Figure 5(c): Instrument Landing System (ILS) at the Kotoka International Airport

Figure 6(a): Automatic Weather Observation System

Figure 6(b) Wind Sock

Figure 7 New Rescue & Fire Fighting Station

Figure 8: Hi-Tech Aeronautical Ground Lighting (AGL) System at the Kumasi Airport

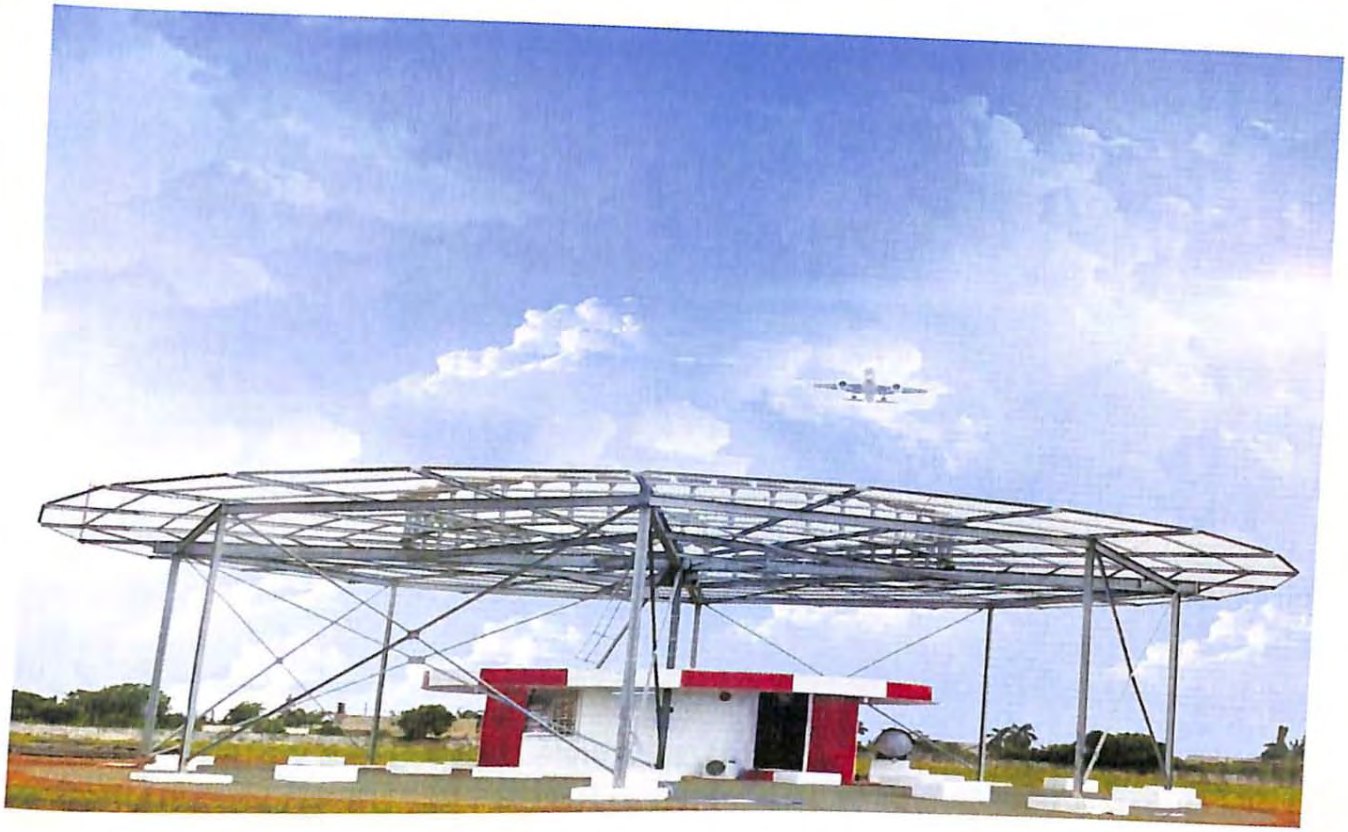


Figure 10: Doppler Very High Frequency (VHF) Omni-Directional Range (DVOR)

Figure 11: The New GATA Complex completed in October, 2015

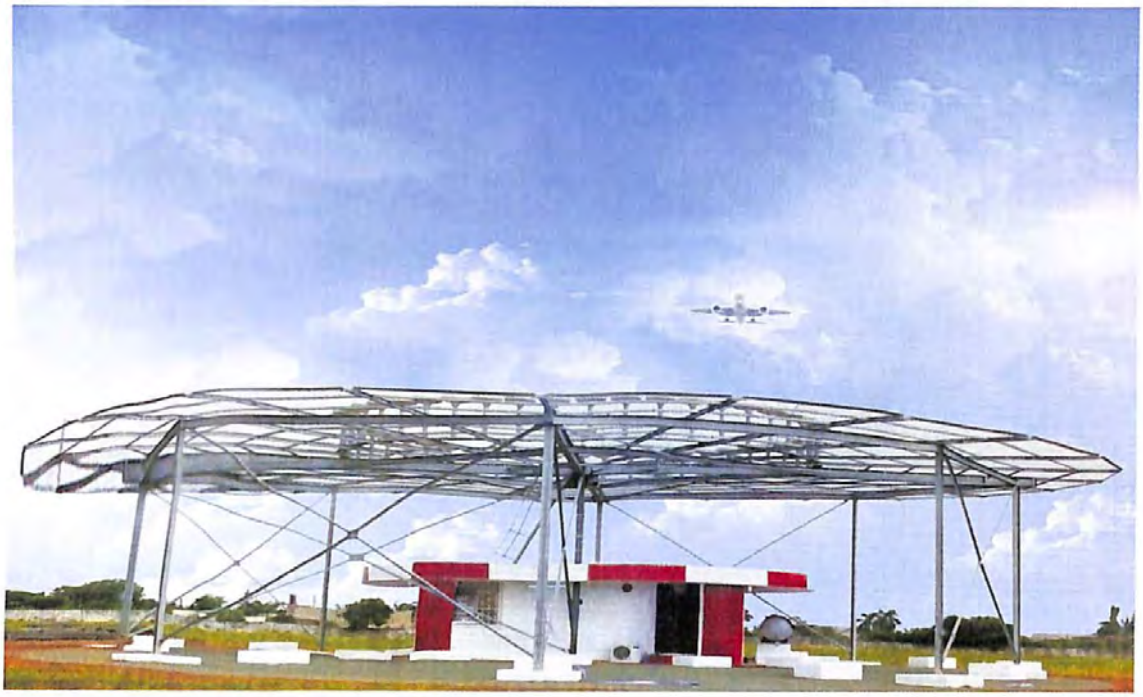


Figure 10: Doppler Very High Frequency (VHF) Omni-Directional Range (DVOR)

Figure 11: The New GATA Complex completed in October, 2015

Figure 12: The First President of Ghana Osagyefo Dr. Kwame Nkrumah interacting with some dignitaries including Dr. E. R. K. Dwemoh (first right) First Director of Aviation

Figure 13: Alhaji Asuman Banda, a Member of the Council of State, Hon. Alhaji Collins Dawda, Transport Minister and Air Cdre Mamphey; Director-General, GCAA, taking the General Salute during the Climax of the 25th Anniversary Celebrations in 2011 (L-R)

Figure 14: Some Key Director-Generals

1. Dr. E.R.K. Dwemoh
First Director of Aviation (1962-1977)

2. Wg Cdr A.K. Mensah
Director-General (1988-2001)

3. Nii Apai Adumansah-Baddoo
Ag. Director-General (2005-2007)

4. Mr. S.M. Allotey
Ag. Director-General (2007-2009)

5. Air Cdre V.K. Mamphey
Director-General (2009-2014)

6. Mr. Abdullai Alhassan
Ag. Director-General (2014-2015)

7. Mr. S.M. Allotey
Director-General (2015)

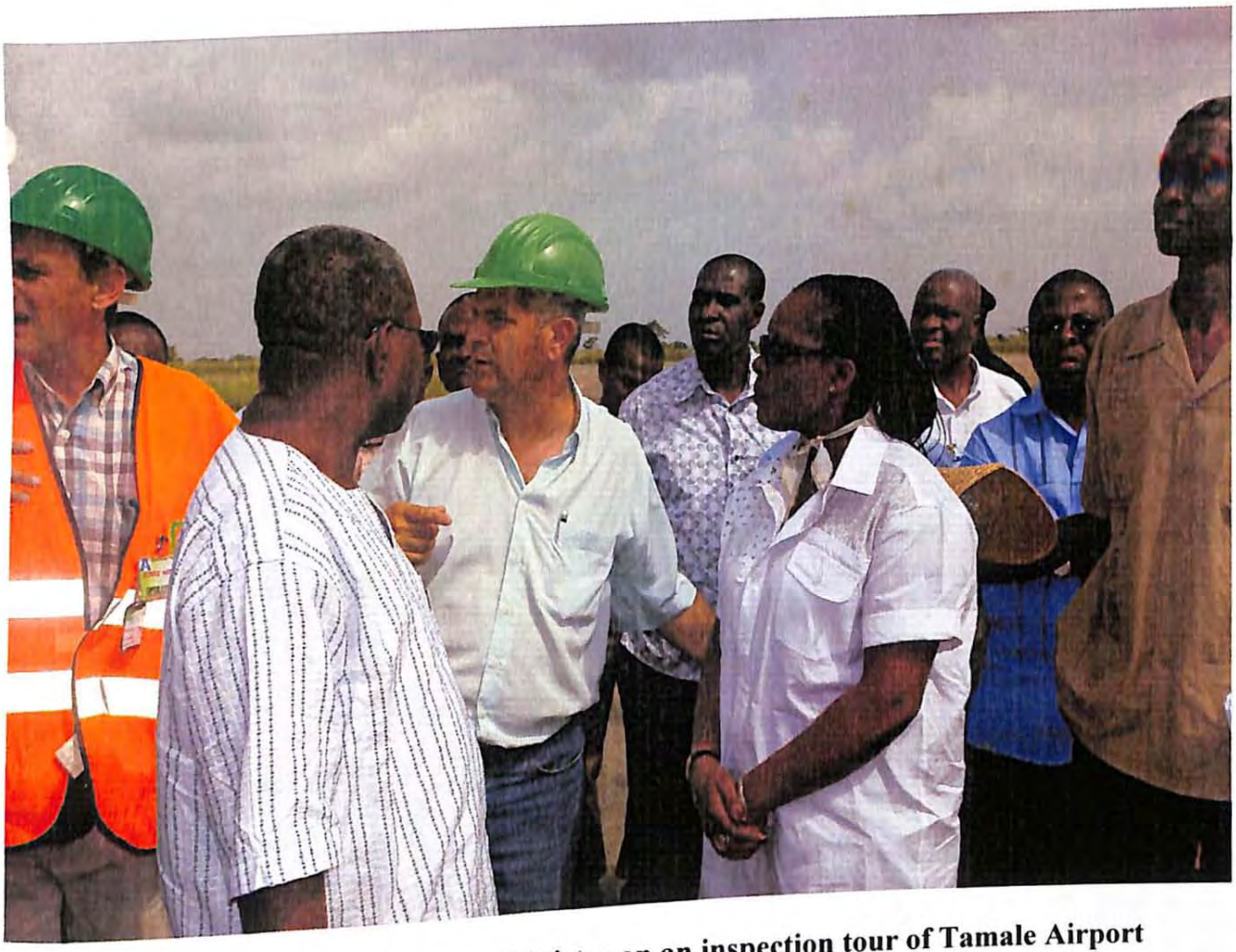
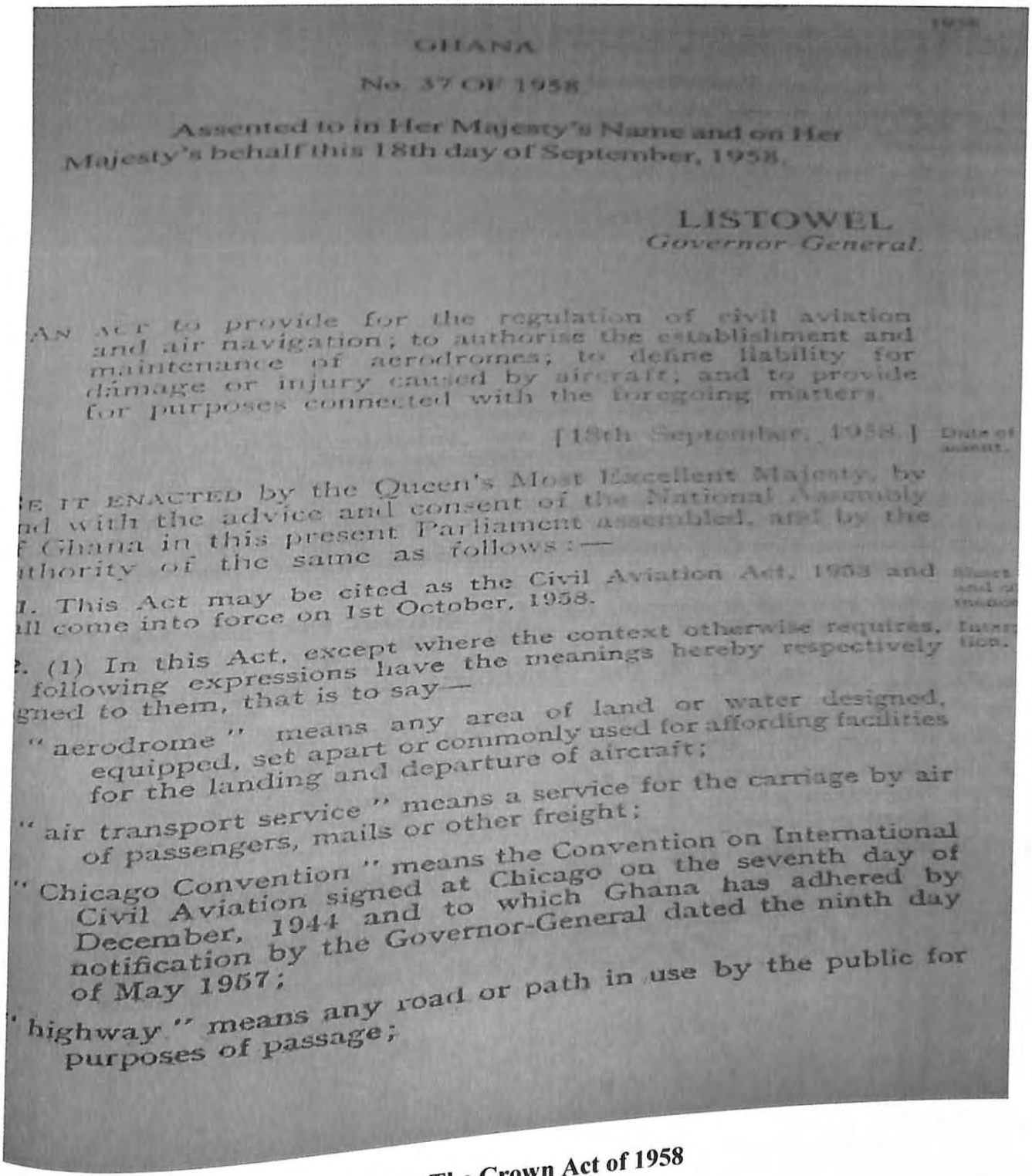


Fig 15: Ms Gloria Akuffo, Aviation Minister on an inspection tour of Tamale Airport (2007)

APPENDIX B - Relevant Acts and Regulations



GHANA

No. 37 OF 1958

Assented to in Her Majesty's Name and on Her Majesty's behalf this 18th day of September, 1958.

LISTOWEL
Governor-General.

AN ACT to provide for the regulation of civil aviation and air navigation; to authorise the establishment and maintenance of aerodromes; to define liability for damage or injury caused by aircraft; and to provide for purposes connected with the foregoing matters.

[18th September, 1958.] Date of assent.

BE IT ENACTED by the Queen's Most Excellent Majesty, by and with the advice and consent of the National Assembly of Ghana in this present Parliament assembled, and by the authority of the same as follows:—

1. This Act may be cited as the Civil Aviation Act, 1958 and shall come into force on 1st October, 1958.

2. (1) In this Act, except where the context otherwise requires, the following expressions have the meanings hereby respectively assigned to them, that is to say—

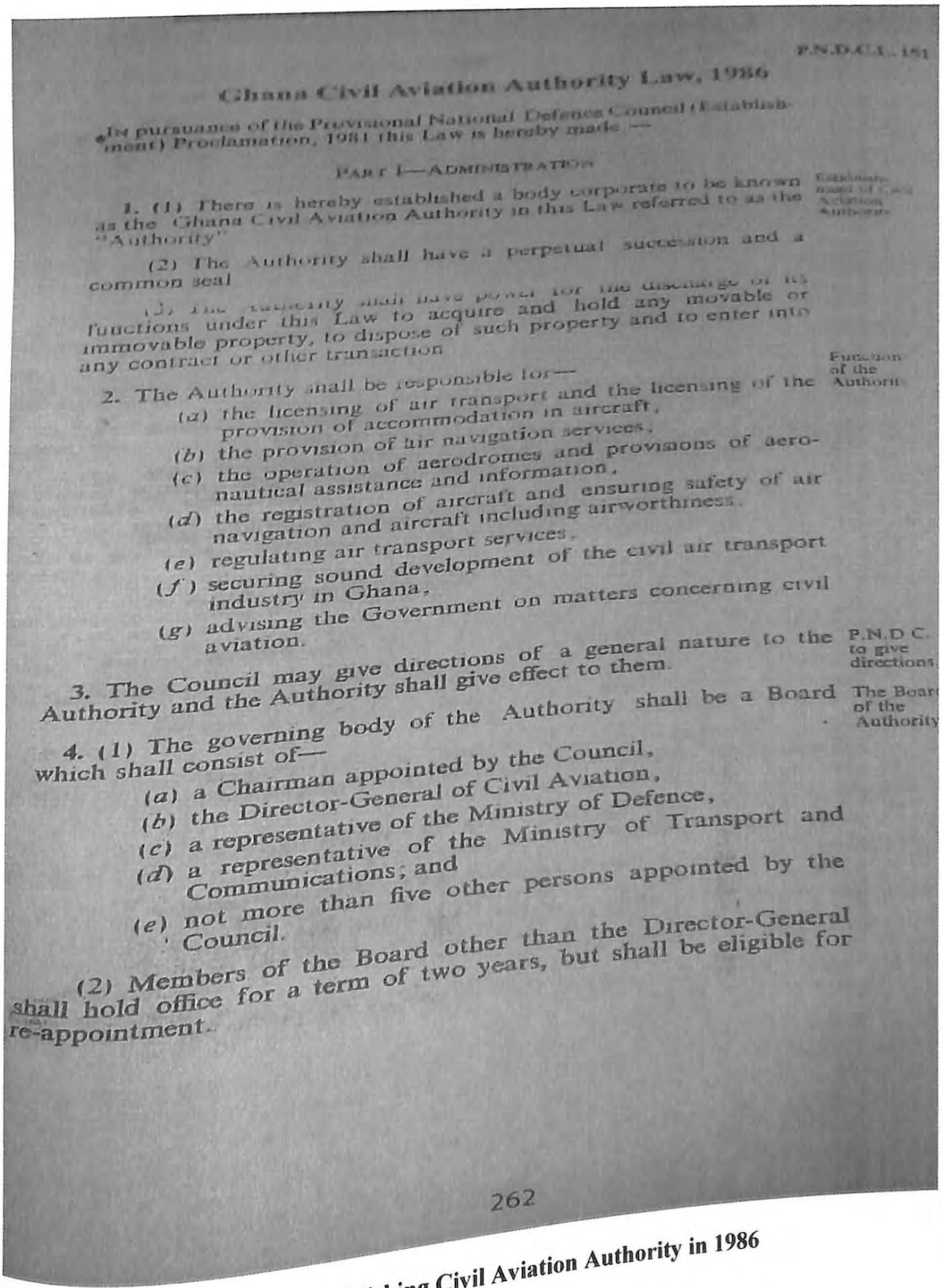
"aerodrome" means any area of land or water designed, equipped, set apart or commonly used for affording facilities for the landing and departure of aircraft;

"air transport service" means a service for the carriage by air of passengers, mails or other freight;

"Chicago Convention" means the Convention on International Civil Aviation signed at Chicago on the seventh day of December, 1944 and to which Ghana has adhered by notification by the Governor-General dated the ninth day of May 1957;

"highway" means any road or path in use by the public for purposes of passage;

Fig 16: The Crown Act of 1958



P.N.D.C.L. 151

Ghana Civil Aviation Authority Law, 1986

IN pursuance of the Provisional National Defence Council (Establishment) Proclamation, 1981 this Law is hereby made —

PART I—ADMINISTRATION

Establishment of Civil Aviation Authority

1. (1) There is hereby established a body corporate to be known as the Ghana Civil Aviation Authority in this Law referred to as the "Authority"

(2) The Authority shall have a perpetual succession and a common seal

(3) The Authority shall have power for the discharge of its functions under this Law to acquire and hold any movable or immovable property, to dispose of such property and to enter into any contract or other transaction

Function of the Authority

2. The Authority shall be responsible for—

(a) the licensing of air transport and the licensing of the provision of accommodation in aircraft,

(b) the provision of air navigation services,

(c) the operation of aerodromes and provisions of aeronautical assistance and information,

(d) the registration of aircraft and ensuring safety of air navigation and aircraft including airworthiness,

(e) regulating air transport services,

(f) securing sound development of the civil air transport industry in Ghana,

(g) advising the Government on matters concerning civil aviation.

P.N.D.C. to give directions

3. The Council may give directions of a general nature to the Authority and the Authority shall give effect to them.

The Board of the Authority

4. (1) The governing body of the Authority shall be a Board which shall consist of—

(a) a Chairman appointed by the Council,

(b) the Director-General of Civil Aviation,

(c) a representative of the Ministry of Defence,

(d) a representative of the Ministry of Transport and Communications; and

(e) not more than five other persons appointed by the Council.

(2) Members of the Board other than the Director-General shall hold office for a term of two years, but shall be eligible for re-appointment.

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Fig 17: The PNDC Law 151 Establishing Civil Aviation Authority in 1986

In case of reply the Number and date of this Letter should be quoted

REPUBLIC OF GHANA

MINISTRY OF AVIATION
P. O. BOX M232
MINISTRIES
ACCRA

TEL: 662626 / 666049
FAX: 688913

Our ref: MOA/CH.L/1/015

Your ref:

6th February, 2007

RE: GHANA AIRPORTS COMPANY LIMITED
TRANSITIONAL COMMITTEE

It has come to my attention that a Transitional Committee has been appointed pending the appointment of the substantive Board of Directors and Management of the Ghana Airport Company Limited (GACL)

While I do not doubt the good intention behind that measure, I wish to draw the attention of the GCAA Board to the transitional provisions of Act 678 which states inter alia that:

> "Until the appropriate arrangements are made and effective and efficient mechanisms are set up for a dichotomy establishing an airport management which undertakes the development and management of aerodromes on sound commercial principles, leaving the Authority to focus on airspace management and safety regulations,
>
> (a) the assets and liabilities of, and property vested in the former Authority immediately before coming into force of this Act should vest in the Authority
>
> (d) the Authority shall continue to perform the functions under the repealed Act relating to the establishment, development and management of aerodromes".

I wish therefore to advise that until the necessary arrangements as required by the Act are in place, the Authority should continue to operate under the old law.

It is my expectation that, the President will soon appoint the Boards and Management for the two organisations which would then enable the two new institutions to take major decisions.

In the meantime, the Decoupling Implementation Committee should continue to assist the Board with the implementation process.

I count on your continued co-operation in this matter.

GLORIA AFUA AKUFFO (MISS)
MINISTER FOR AVIATION

THE BOARD CHAIRMAN
GCAA
ACCRA

cc: ✓**The Ag. Director-General**
GCAA
Accra

Fig 19: A letter in respect of the decoupling exercise

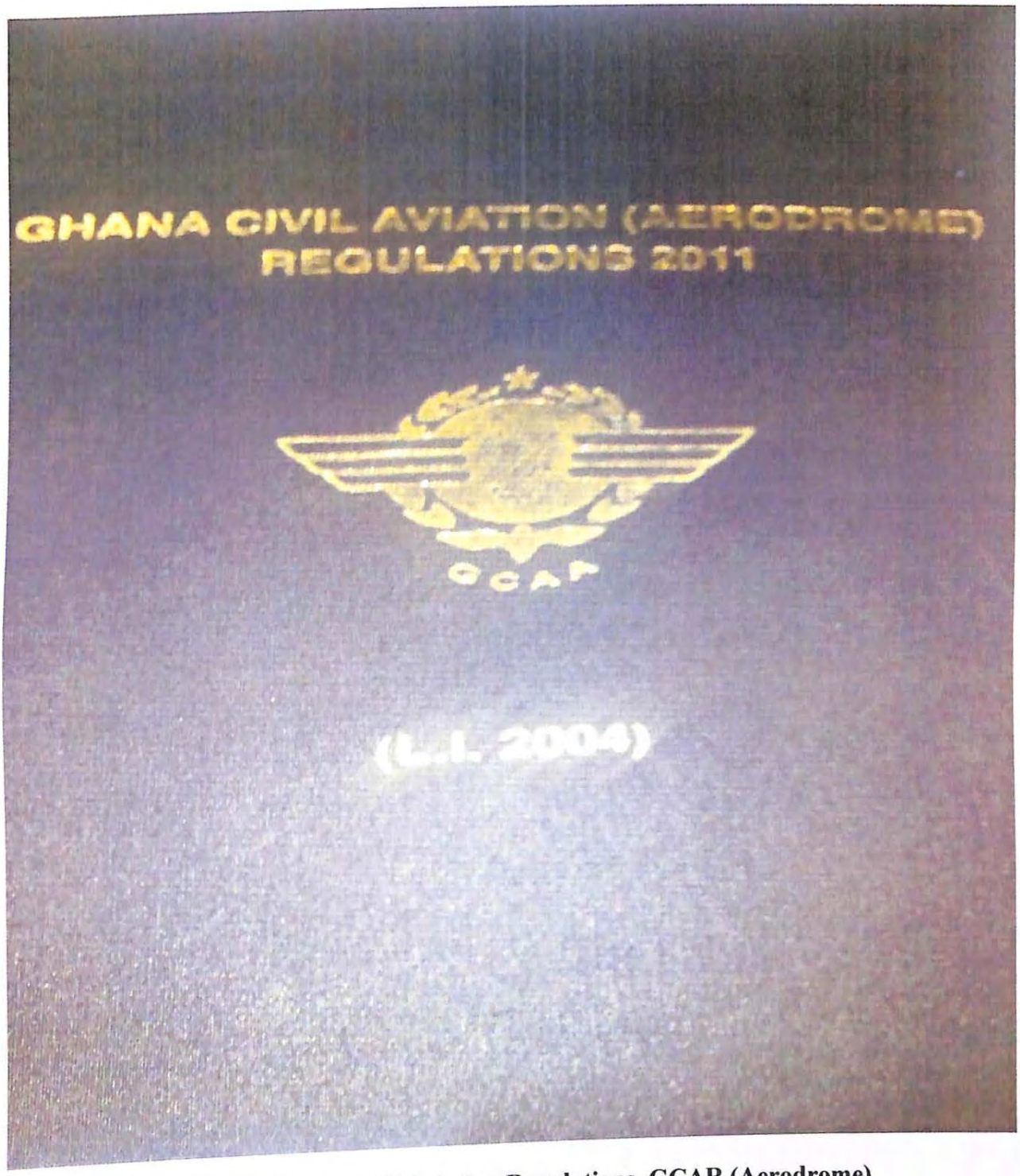

Fig 20: One of Several Ghana Civil Aviation Regulations, GCAR (Aerodrome)

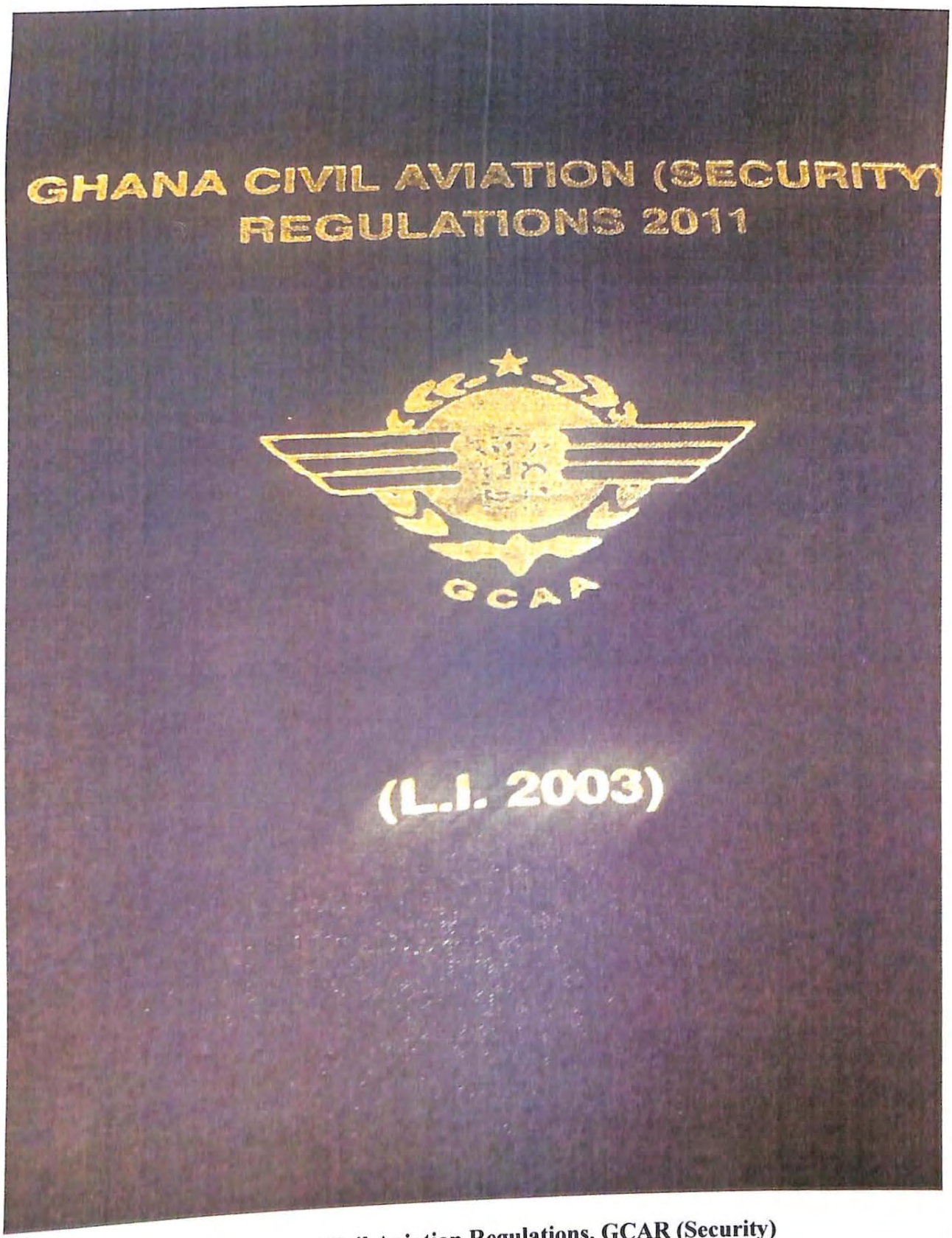

Fig 21: One of Several Ghana Civil Aviation Regulations, GCAR (Security)

Appendix C: Interview guide

DEVELOPMENT COMMUNICATION PROGRAMME

SCHOOL OF GRADUATE STUDIES AND RESEARCH

GHANA INSTITUTE OF JOURNALISM

INTERVIEW GUIDE ON THE TOPIC:

"A HISTORICAL OVERVIEW OF GHANA CIVIL AVIATION AUTHORITY AFTER DECOUPLING IN 2007"

The questions in this module are strictly for academic purposes. On no account whatsoever, will it be used for any other purpose than the one intended. Kindly provide genuine responses as much as possible. Be assured that your anonymity will be strictly upheld.

1. What necessitated the decoupling of the airport operator from the Regulator in 2007 and why was it necessary?
2. Has the decoupling made the Ghana Civil Aviation Authority more effective?
3. What laws mandate and guide the Ghana Civil Aviation Authority in its function?
4. Would there be a need for a further decoupling, where the Air Navigation Service Provider would be decoupled from the Regulator? When would that be?
5. What are your sources of revenue?
6. What do you consider as the most important challenges facing the Ghana Civil Aviation Authority?
7. What do you think needs to change for the domestic aviation sector of Ghana to live up to its full potential?

Thank you for your participation