CHALLENGES FACING CIVIL AVIATION AT JUBA INTERNATIONAL AIRPORT, JUBA CITY, CENTRAL EQUATORIA STATE

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Abstract

This study is conducted to discuss the challenges facing Civil Aviation at Juba International airport, Juba City, Central Equatoria State. Moreover, the study concentrated on illustration of Civil Aviation historical background in South Sudan in general. On the same occasion, the paper tried to explain the theories of Civil Aviation. Nevertheless, the study employed the questionnaire for data collection. It also used descriptive method for data analysis. In addition, the study employed the qualitative and quantitative methods in data collection. Also, the study used tables in data analysis, beside the map of Juba city as well as figures of Airplane was employed as materials in the study. On the other hand, the findings of the study found that 94% of respondents affirmed that lack of skills in Civil Aviation safety had contributed to an increase in number of accidents at international airport, Juba City, Central Equatoria State. In addition, 92% of respondents availed that political instability in South Sudan affected the progress in Civil Aviation at Juba International airport in particular as well as other airports in the country in general. Moreover, the study recommended that Civil Aviation workers should be oriented and train on Civil Aviation safety and equipped them with civil aviation regulations as well as main techniques of specialization. Also, the study recommended for the relocation of the airport because it is based in the area near to the residential sites.

Keywords: *Challenges, facing civil aviation, at Juba international airport, Juba City, Central Equatoria, State.*

1. INTRODUCTION

Civil Aviation is one of the major categories of flying representing all non-military aviation, both private and commercial. Most of the world's Countries are members of the International Civil Aviation Organization (ICAO) work together to establish common standards and recommended practices for civil aviation (Blackbourn, et al, 2012).

Furthermore, civil aviation include air transport of all passenger and cargo flights operating on regularly scheduled routs. Civil aviation also include private or commercial the larger category operating in the world in term of passengers numbers. The world larger civil aviation found in U.S. carries 166 million passengers each year (A very Martin, 2010).

On the other hand, civil aviation in South Sudan falls under the authority of ministry of transport. This authority was formed in 2013, to oversee and regulate the country aviation, airline companies and operation of civil aviation in the country. In South Sudan, the only airport that receive the flights from international commercial airlines carries is Juba International airport. Additionally, there are other airports in Malakal, Wau and Rumbek states as well as Paloch area. At Juba international airport, availability of fuel, aircraft maintenance facilities and handing services remain an issue or challenges facing the progress of civil aviation in the South Sudan (A very Martin, 2010).

2. STATEMENT OF THE PROBLEM

This study focused on the challenges facing civil aviation at Juba international airport, Juba City, central Equatoria State. Furthermore, the study aimed at discussing the historical background of civil aviation, types of non-military flights, and the theories about civil aviation in general as well as solutions to the challenges facing civil aviation in the country. On the same, the study is conducted to answer the following questions:

2.1. Illustrate the historical background of civil aviation in South Sudan?
2.2. State the types of civil aviation operating in South Sudan?
2.3. Discuss the theories explaining civil aviation?
2.4. Examine the challenges facing civil aviation at Juba international airport?

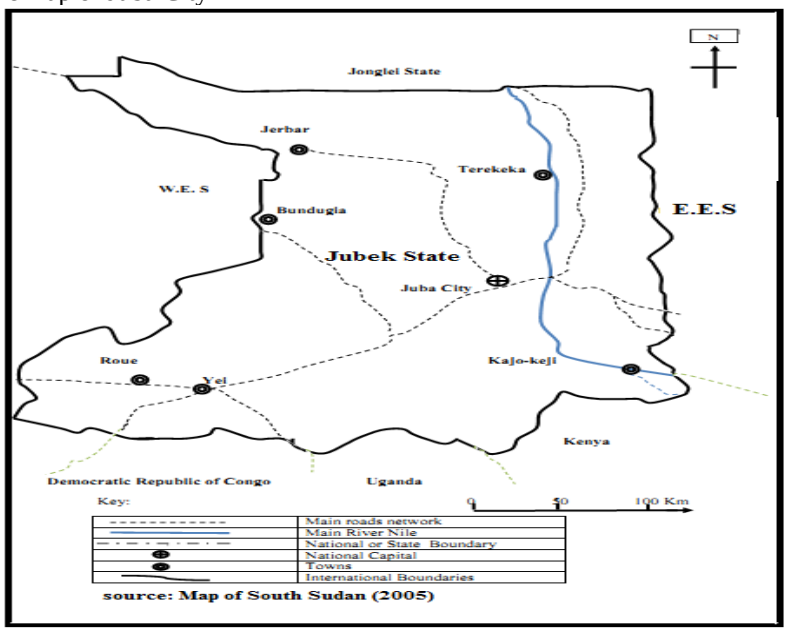
3. OBJECTIVES OF THE STUDY

The objectives of this study are:

3.1. To illustrate the historical background of civil aviation in South Sudan.
3.2. To state the types of civil aviation operating in South Sudan.
3.3. To find out the theories explaining civil aviation in general.
3.4. To examine the challenges facing civil aviation at Juba international airport.
3.5. To explore the number of airports in South Sudan.

4. MATERIALS

Figure 4.1: showing the map of Juba City



5. Juba City

It is located at Latitude 4.51° N and Longitude 31.36° E. Before the 1983-2005 civil wars, Juba was a transportation hub, with highways connecting it to Kenya, Uganda and the Democratic Republic of the Congo (DRC) because Juba lies in the middle of the Highways that connect the East African Countries. Currently, Juba can hardly be called a transportation hub anymore. . On the other hand, Juba international airport is situated northward of Juba City, Central Equatoria State. As of 2011, the county's payams or sub counties formed such are Juba County, Bungu, Dolo, Danji, Gondokoro, Lirya, Lobonok, Mangalla, Northern Bari, Rajaf, Tijor, and Wonduruba

6. Physical Features
Physical features include:

6.1. Climate
Juba has a tropical wet and dry climate (Koppen: AW), and as it lies close to the Equator, temperatures are hot year-round. However, little rain falls from November to March, which is also the time of the year with the hottest maximum temperatures, reaching (100° F) in February. From April to October there are more than 3.9 inches of rain- falls per month. The annual total precipitation is nearly 39 inches (Juba Meteorological Office, 2011).

6.2. Vegetation
Vegetation type is broadleaved woodland with several varieties of trees. It consists of poorly developed scattered perennial and annual grasses in sub-zones whose herbaceous biomass matures very quickly and its quality, especially its digestible protein content, decreases very rapidly. The vegetation also consists of thorny and open mixed woodland savannah with abundant types of perennial and annual grasses including the papyrus species along the river courses. This is to be the arable land for agriculture in South Sudan as a whole and former Central Equatoria in particular. Vegetation in former Central Equatoria also covers the thick forest of thorn bushes and shrubs. It is mainly broadleaved woodland savannah with several species of grasses with low nutritive values for livestock (Juba Climate Normal, 1961-1990).

6.3. Soil
Soil types in former Central Equatoria consist of Red lateritic soil susceptible to leaching and erosion. These soils occupy the former Western Equatoria and the greater parts of Juba area. Iron Stone Plateau and Central Hills possess similar soil types, red acidic with high content of Iron Oxide which is predominantly lateritic with low fertility due to leaching and erosion. Soils also are sandy and permeable in Juba with better drainage on alluvial banks of rivers (Retrieved, 2013).

7. METHODS
Methods of the study involve the following:

7.1. Primary Data Collection
This study used a personal interview method for the purposes of data collection from two payams selected in Juba City. Data was collected from all eligible migrants who are usually residents in the selected households in the two Payams after giving them a brief description of the purposes and procedures of the study and ensuring that they had properly understood, before beginning of an interview.

7.2. Secondary Data Collection
No specific methods of secondary data collection although sources of secondary data vary and include: information from references, public records, organizational records, census data, previous studies and surveys.

7.3. Ethical Considerations
This study used a primary data analysis of survey. In order to protect the anonymity and confidentiality of the information regarding respondents, names and house numbers were not identified in the Questionnaire and in the data set. Permission to carry out the study was obtained from the local stakeholders of the two Payams.

7.4. Data Analysis Methods
In analysis of data sets, descriptive statistical method was employed for the purpose of getting the background characteristics of the migrants' households in Juba City using frequencies, percentages distribution Tables. Also the data were displayed by using histograms or pie charts.

8. DISCUSSION AND RESULTS
8.1. Discuss the theory of flight?
The theory of flight is a phenomenon that has long been a part of the natural world. Birds fly not only by flapping their wings but by gliding with their wings outstretched for long distances. Smokes composed of tiny particles can rise thousands of feet into the air. Likewise, man-made aircraft rely on principles to overcome the force of gravity and achieve flight. Lighter-than air craft such as the hot air balloon work on a buoyancy principle. They float on air much like rafts float on water. The density of a raft is less than of water so it floats. Although the density of water is constant, the density of air decreases in altitude. The density of hot air inside a balloon is less than the air at the sea level, so the balloon rises. The balloon continue to rise until the air outside of the balloon is of the same density as the air inside the balloon. Smoke particles rise on a plume of hot air being generated by a fire. When the air cools, the particles fall back to the Earth (R.D, Alfred, 2021).

For flight, an aircraft lift must balance its weight and its thrust must exceed it drag. A plane uses it wings to lift and thrust the engine. The drag is reduced by a plane's smooth shape and the weight is controlled by constructed materials. For an aircraft to rise into the air a force must be created equal or exceeds to the force of gravity. The lift force is created by the flow of air over an airfoil. The shape of an airfoil causes air to flow faster on top than on bottom. The fast flowing air

decreases the surrounding air pressure. Because, the air pressure is greater below, the airfoil than above resulting lift force (ICAO, 2010).

8.2. State the types of Civil Aviation operating in South Sudan?

The civil aviation operating in South Sudan include Airline companies, private or commercial flights and air transport of passengers as well as cargo flights operating. Mainly these flights operating mostly in Juba the Capital of South Sudan because other airports such as Malakal airport have rarely passengers due to displacement of it population since 2013 crisis in the town. Historically, Malakal airport is consider as the second airport after Juba international airport in South Sudan.

Figure 2: showing types of civil aviation at Juba International airport, Juba City.

8.3. Determine other paved airports in South Sudan?

The other paved airports in South Sudan are:

8.3.1. Malakal airport
8.3.2. Wau airport
8.3.3. Rumbek airport
8.3.4. Paloch airport

8.4. Examine the challenges facing civil aviation in South Sudan?

Table 8.4: the challenges facing civil aviation in South Sudan, Juba international airport.

Response	Number of respondents	Percentage
Aviation Noise	10	20%
Environmental Incompatibility	12	24%
Political Instability	08	16%
Government Policies	05	10%
Lack of Civil Aviation Safety	09	18%
Small-Community access to civil aviation	06	12%
Total	50	100%

Table 8.4: comprise of the challenges facing civil aviation in South Sudan, Juba international airport, central Equatoria State. 20% of respondents said that aviation noise is among the challenges facing civil aviation at Juba international airport because of larger jets operating activities in nation after independence in 9 July 2011. Because the nearest communities to the airport affected by the aircraft noise. This led to strong political pressure or reactions by the neighborhoods to the authorities of airport to control aircraft noise, especially, the Helicopters and heavy aircraft that create noise while taking off and landing in the airport. Also, the aircraft noise can be control by phasing out the noisier aircraft and replace it by the quieter aircraft which have better designed to reduce engine noise. Furthermore, 24% of them affirmed that environmental incompatibility is also of the challenges facing civil aviation in South Sudan, because environmental issues constrain growth the aviation sector. Aircraft noise and increasingly air quality concerns are major obstacles to the expanded of airports in the country. Despite technologies that have made aircraft engines quieter and reduced pollutant emissions could be the useful methods to control the aircraft noise. Whereas, 16% of respondents stated that political instability played a major disincentive and economic crisis which discourage civil aviation development in the country. Also, the level of corruption, lack of trust in institutions especially judiciary discourage the development of civil aviation in the country. While, 10% of defendants identified that government policies directly affect the civil aviation in South Sudan due to excise taxes on airline tickets increase consumer prices and that affects the demand. Consumer protection

legislation requiring airlines to limit tarmac time during weather delays increases the flight cancellation rate and decrease revenue. Stimulus checks to consumers provide discretionary income which increase demand for vacations and air travel. On the other hand, 18% of respondents said lack of civil aviation safety is another challenges facing civil aviation at Juba international airport. In addition, 12% of them answered that small-community access to civil aviation is among the challenges because, rural and small communities located far from major urban airports having limited access to air transportation in the country.

9. CONCLUSION

In conclusion, the study examine the historical background of civil aviation and discuss the types of civil aviation as well as the theories of civil aviation. Also, the study explain the challenges facing civil aviation at Juba international airport, Juba city, central Equatoria State. Furthermore, the study is trying to state the number of functional airport in South Sudan out of Juba international airport. Civil Aviation is one of the major categories of flying representing all non-military aviation, both private and commercial civil aviation in South Sudan.

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