



## **Chakulia and Dhalbhumgarh Airfield During World War II**

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### **ABSTRACT**

Chakulia Airfield was built in 1942 by British Construction Contractor by Das and Mohanty Construction by Mr. Digar Pramotha Nath Mohanty. It was designed for the use of Consolidated B-29 Liberator. Another Airfield Dhalbhumgarh is situated near NH-33 was constructed by British in 1942. This shows that Jharkhand a state of India was also participated in World War II. Dhalbhumgarh Airfield is not in working condition but proofs are available. The Chakulia Airfield acquired by Jharkhand government after the approach of Indian Air Force (IAF). Chakulia was designated as the home of 40<sup>th</sup> Bombardment Group with five B-29 Squadrons that was 25<sup>th</sup>, 29<sup>th</sup>, 44<sup>th</sup>, 45<sup>th</sup> and 395<sup>th</sup>. The Chakulia airport covers the area of 352.9 Acres with the elevation of 424 feet. The runway orientation is 17/35 with the dimension of 7284 feet by 100 feet. The bearing strength of pavement was LCN-10.

Keywords: LCN-10, World War II, Runway, Airfield, Indian Air Force

### **Introduction**

World War II began in 1939 and continued till 1945. It is also known as WWII or WW2. In this war more than 30 million personnel were involved from more than 30 countries. In this war aircraft played a vital role in the conflict. Figure 1.1 shows the German battleship Schleswig-Holstein attacks Westerplatte on September 1, 1939 at the start of the war [1].



Figure 1.1: German battleship Schleswig-Holstein attacks Westerplatte on September 1, 1939 [File:Schleswig Holstein firing Westerplatte September 1939.jpg]

There is various pre-war event before World War II began [2]. In Asia there was Second Italo-Ethiopian War that began on 1935 till 1936. This war was between Ethiopian Empire and Kingdom of Italy. In 1936 Spanish Civil War started. In this war Italy supported Nationalist. In the next year in 1937 Japanese invasion of China started. In March 1938 China won their first victory at Taierzhuang but Japanese took the city of Xuzhou. In 1930s Soviet-Japanese border conflicts happened [1].

India was also the part of World War II. In this phase India was the part of British Empire. If we check the economic condition of India after the war. It affected the economy of India, there was issue with the currency of India.

Jharkhand a state of India was the part of World War II. Jharkhand formed in 15<sup>th</sup> November 2000. A lot of places were selected from the Jharkhand for the World War II to keep the Aircrafts etc.

In this paper we have chosen Jharkhand state for the study on World War II Airfield situated at Dhalbhumgarh in East Singhbhum district. This Airfield was constructed in 1942 by British Construction Contractor by Das and Mohanty Construction by Mr. Digar Pramotha Nath Mohanty. The main purpose of this Airfield construction was to use it for World War II Aircraft B-24 Liberator.

To study the area we have used Inquiry Method. This method is very helpful in gathering and analyzing the evidence.

## Materials and Methods

The study area is situated in the land of forest Jharkhand situated in eastern India. It is created on 15 November 2000 from the southern half of the Bihar [3]. Two Airfield is situated in Jharkhand at Chakulia and Dhalbhumgarh.

Chakulia is a Notified Area Council of East Singhbhum District. It is located at 22.48°N 86.72°E with an average elevation of 377 feet [4]. It is the part of Chota Nagpur Plateau. It is situated between Jamshedpur and Ghatshila [5]. Figure 1.1 shows the Chakulia Airfield. It was constructed to use in 40th Bombardment Group with five B-29 Squadrons that was 25th, 29th, 44th, 45th and 395th.



Figure 1.2: Chakulia Airfield [Google Map, 2022]

Dhalbhumgarh Airfield is situated at Dhalbhumgarh village in the Ghatshila subdivision of the East Singhbhum District in Jharkhand. It is located at 22.5161°N 86.5543°E [5]. Figure 1.3 shows the study area.



Figure 1.3: Dhalbhumgarh Airfield [Google Map, 2022]

We have used Inquiry method to study the Airfield. We have created a set of question to ask to the local people to gather the information about the Airfield. We have visited the site and taken the stone sample to analyze.

### **Coarse Aggregate:**

Coarse aggregate collected from the Airfield area. The size of coarse aggregate ranging from 5 mm to 60 mm. The specific gravity of coarse aggregate is 2.68.

Piece of casted Airfield pavement is collected to check the compressive strength of the pavement at present. The specimen was place in machine in such a manner that the load is applied perpendicular to the casted pavement piece.

Water absorption test of the aggregate is carried out in the lab to check the water absorption capacity of the aggregate used in the construction of the pavement of the Airfield.

Flakiness index of the coarse aggregate is checked to know the size of coarse aggregate used in the construction[6].

## **Result**

We contacted the local people and tribes to collect the information. They told us that they are staying there for last 30 years. The area was suburban. They do animal husbandry, usually they have Cow, Goat. The Airfield area is covered nearly 60% by tree and plants. Figure 1.4 shows the area which is covered.

The thickness of the pavement was 150 mm shown in the Figure 1.5. To construct the pavement, they have used coarse sand and sandy soil in subgrade then they casted the pavement. We found that they have used stone also in the subgrade to make it strengthen.



Figure 1.5: Cross-section view of runway, Dhabhumgarh

The runway was casted in square shape with 10 feet dimension. The overall width of the runway was 100 feet. It is shown in the Figure 1.6.



Figure 1.6: Runway, Dhabhumgarh

In the study area we have found that there was proper drainage work Figure 1.7 shows the arch culvert constructed across the pavement.



Figure 1.7: Culvert constructed across pavement, Dhalbhumgarh

In the construction of runway and all the structures present in the study area they have used local aggregate and stones. We have checked the compressive strength of the pavement by taking a piece of pavement with the help of compression testing machine [7]. The result shows that the compressive strength of the pavement was suitable for LCN 10. The water absorption capacity of the aggregate was 2% [8].



Figure 1.9: Compressive strength test of pavement specimen

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## Conclusion

From this study we found that, In the 20<sup>th</sup>, they have constructed LCN 10 runway without advanced tools only with the help of manpower. Whole runway was constructed by hand. It is clearly observed from the runway. They have constructed this runway to use B-29 Liberator. From the study we found that they have chosen this place because this is green area and they can hide themselves apart from the war area. They constructed the Airfield in a planned way with all facilities. They have used good quality of aggregate in the construction of pavement. For the binding material they have used lime made from the local stones. Future scope of this study is, these results can be used in further reconstruction of the Airfield. Airport Authority of India is working on it.

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