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RESEARCH PROJECT

DIFFERENT TYPES OF WOOD WILL AFFECT THE  
TONE QUALITY OF ELECTRIC GUITAR

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# DIFFERENT TYPE OF WOOD WILL AFFECT THE TONE QUALITY

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## CHAPTER 1

### 1.1 BACKGROUND OF THE STUDY

What is electric guitar? Electric guitar is an instrument that is fretted and usually has six strings. Played with both hands by strumming or plucking the strings using either pick or the fingernails. Electric guitar is an instrument that use one or more pickups to convert the vibration of strings into electrical signals. The vibration occurs when a guitar player strums, plucks, fingerpicks, slaps or taps the strings. The pickup generally uses electromagnetic induction to create this signal, which being relatively weak is fed into a guitar amplifier before being sent to the speaker(s), which converts it into audible sound. The electric signal can be electronically altered to change the timbre of the sound. Often, the signal is modified using effects such as reverb, distortion , delay , chorus and "overdrive"; the latter is considered to be a key element of electric blues guitar music and rock guitar playing.

The jazz guitar's player was adopted electric guitar, who wanted to play single-note solos in big band ensemble in 1931. The famous brand that was the early electric guitars that on record is Les Paul, Lonnie Johnson, Sister Rosetta Tharpe, T-Bone Walker, and Charlie Christian. Electric guitar became the most popular instrument music during 1950s and 1960s. It has evolved into an instrument that is capable of a multitude of sounds and styles in genres ranging from pop and rock to country music, blues and jazz. Electric guitar also become as a major instrument to develop blues, rock music, rock and roll, heavy metal, ballad and many other genres of music. Electric guitar design and construction varies greatly in the shape of the body and the configuration of the neck, bridge, and pickups. Electric guitars have fixed bridge and some of it have a spring that hinged the bridg, which let the players "bend" the pitch of notes or chords up or down, or perform vibrato effects. The electric guitar has variable type of techniques such as string bending, tapping, and hammering-on, using audio feedback, or slide guitar playing.

There are many woods used in guitar construction, the first is Alder. In 50s and 60s, Alder was very popular. Fender are using this type of wood in making body wood. Alder bodies tend to produce warm, even sounding mids and lows, although the highs can be relatively subdued. Alder sustains well without weighing a ton, so it is very efficient. Tough to go wrong

with a guitar made from alder. Next is, Ash. Ash also one of the main wood used by fender. Its is because ash wood have a nice twang and good sustain, but have less bite in the midrange. Ash also produce warmer tone because softer wood. Other than that is Mahogany. This wood is Gibson's choice for the Les Paul, Les Paul Jr., and SG. Mahogany. Mahogany produce balance tone. Nothing is missing from the lows, mids or highs. Usually this guitar constructed out of a single slab of wood, mahogany is neutral and powerful. Many mahogany guitars have a maple top, which truly brings out the best tonal characteristics of both woods.

"Sound Fly"

## 1.2 STATEMENT OF THE PROBLEM

The guitar, which is “a stringed musical instrument with a long, fretted neck, a flat somewhat violin like body, and typically six strings, which are plucked with the fingers or with a plectrum” is one of the most well known instruments in the world. The primary material used in making guitar bodies is wood, and the two main parts of the guitar that use wood are the neck and the body. Different species of wood can be used for each part, or the same can be used. For example the neck made from maple and the body made from mahogany wood.

Does the different type of wood effect the tone of the guitar? The species of the wood greatly changes the sound and tone of the instrument. According to many musicians, in order to have the best sound possible, an acoustic guitar has to be made from the "right" type of wood.

There are various opinion on this topic “Different type of wood will affect the tone quality”. Those who don't believe wood affects a guitar's tone point to the physics of how an electric guitar works. The sound is caused by the vibration of strings through the magnetic field emanating from a guitar's pickups. The guitar's intonation also contributes to the tone, and also the amp, which converts the signal from the pickups into an audible sound. Not much mention of wood there, but in reality, that is only part of the story. The strings might not directly touch the wood, but the energy from a strummed string is transferred from the bridge and nut into the body and neck, creating frequencies that move through that wood.

Then how could the wood not play a role in your guitar's tone? The answer is that it does. Generally, heavier woods like mahogany resonate differently than a medium-bodied wood like alder and a lighter wood like basswood. – Fender.com

But there is an article published by a university in Australia claims that a researcher has proven that wood does not affect a guitar's sound, but no data has been published together with this assertion. (La Trobe University 2012)

Therefore this study will be analyses about “Different type of wood will affect the tone quality” and I will find the best type of wood that guitarist should use.

### **1.3 PURPOSE OF THE STUDY**

The purpose of this study is to investigate different types of wood will affect the tone quality of electric guitar.

### **1.4 OBJECTIVES OF THE STUDY**

The objectives of this study are:

1. To investigate the type of wood that produce good tone quality on electric guitars
2. To describe in what way the different types of wood effect the tone of electric guitars
3. To identify which types of wood in electric guitar most not recommended.

### **1.5 RESEARCH QUESTIONS**

The research questions for this study are as follows:

1. What are the types of wood that produce good tone quality on electric guitars
2. How does the different types of wood effect the tone of electric guitars
3. What are the types of wood in electric guitar most not recommended

### **1.6 SIGNIFICANCE OF THE STUDY**

My study will give a huge impact to musician especially amateur guitarist that will move to professional guitarist. They will choose the best type of wood that will produce good tone quality. It also will give some ideas for them to make a custom made guitar. They know to choose the best wood.