

A Self-Built Set of Cajones for the Cuban Yambú

by Thomas Altmann, 2006

The History of the Cajón

Those African people who had been transported from their continent to the Americas as slaves carried their culture with them in one form or another, trying to maintain their traditions, rituals, and beliefs, just as much as they were enabled to do so. It is generally approved that the music of the drum has always been at the core of the cultural expression of Africans. However, in many instances the Black slaves were denied the use of African drums, because the White slave owners feared the emotionalizing effect of the drums on their slaves, and perhaps they were afraid to be captured by the magic of the drums themselves. In North America, even after the abolition of slavery the African drum and the African rhythms had to be disguised completely in European forms of music, played on European instruments; this is how Jazz was born. In the Caribbean and South American countries, the Black people were sometimes allowed to play their African drums, even during the times of slavery. Nevertheless there have always been periods in the history of Afro-American culture, when African drums were banned and confiscated to prevent rioting or any kind of animation of Afro-American identity. These were the occasions when household objects like spoons, coins struck on bottles, hoeblades, and packing crates came in handy as surrogate drums, percussive sticks, and bells. The packing crates, wooden boxes in different dimensions, were known in Spanish speaking societies as *cajones* (singular: *cajón*, literally "big box").

Another common reason for the use of musical boxes was the fact that they were easy and inexpensive to obtain. The liberated slaves, often underpaid workers, were the poorest people in American countries with mixed populations. Most of them could never have afforded a crafted conga-type barrel drum with animal skins; but those of them who worked in the harbours had easy access to crates of all sizes, and they knew how to prepare them, so they could serve as surrogate drums, on which African-derived rhythmic music could be produced.

The Hispanic-American countries that are best known for their *cajón* traditions are probably Cuba and Peru. Namely the Peruvian *cajón* has successfully made the passage over to other styles of music in other parts of the world, such as the Spanish Flamenco. Due to their "snare drum" effect, caused by a loosely fixed front board and/or other devices, and the dry, inobtrusive "bass drum" punch in the lower center of the box, the *cajón* is frequently used in musical situations where the volume of a complete drum set is inappropriate or undesired. Today, the Peruvian-style *cajón* is played in small, folkloric settings of any thinkable musical genre; Rhythm 'n' Blues, Brazilian music, Funk – everything. (And it is easy to transport and to set up in the smallest room!)

Meanwhile, quite a few percussion companies have specialized in constructing reproductions of different types of this surrogate instrument that was formerly regarded as the "lowest-budget" kind of drum for the poorest Black inhabitants of Hispanic-American countries. The *cajón* has evolved into a full-fledged musical instrument with optimized sound attributes and maximised retail prices. Nearly all of the newly company-manufactured *cajones* stick out as artwork pieces of high-class furniture, and most of them sound nice, too.

Self-Built versus Commercially Acquired

Whenever I was holding a *cajón* in my hands, I was amused by the idea that someone should pay hundreds of Dollars for an object that had once been of zero value and could be made by anybody for 20 dollars maximum. As a percussionist in the Afro-Cuban music tradition, I felt it was time to own a set of Cuban-style *cajones*. So I made a design of three different wooden boxes, determined the respective measurements intuitively, and visited the next building supply store to select the wood I was going to use. I picked the wood in the way a percussionist perceives the material character of any given object: by touching it, and striking and knocking on different spots of the large boards, figuring out the sound of a box made from it. I knew that nowadays Cuban *cajones* are made of plywood, so I chose birch-covered plywood, refusing the idea of using those Jacarandas or Bubingas and the like. I made sure that there was a clerk working on a big electric precision saw, offering the service of cutting the wood of my preference to the exact measurements I would give him. This man should prove to be my main collaborator and project partner, always cooperative, always patient. Cutting the wood yourself by hand or hand-held machine saw isn't something I would recommend to anybody who is not a skilled woodworker, or a professional carpenter.

The Cuban Cajón

In the beginning of the 20th. century, the Cuban *cajón* tradition took its inception with a slow style of Rumba known as *Yambú*, particularly in the harbour districts of Havana and Matanzas. They used a big *caja* (crate) for the basic beat (*tumbao*), called the *tumbador(a)*, on which the drummer was sitting while he was playing down between, or beside, his legs. The larger side gave a deeper tone than the smaller side. Reportedly, the big crates that they used for the *tumbador* have been fish (cod) crates; I wonder whether their smell inspired either the players or the other participants of the *rumba* (dance party). The soloing "drum", or *quinto*, that accompanies the dancers and comments or paraphrases their movements, was made up for by a cigar crate, according to Cuban ethnomusicologist Fernando Ortíz. The *quinto* box was held between the drummer's thighs like a conga or bongo. Finally, the "cáscara" time-line pattern was executed on a smaller cigar box with two table spoons. This part is also known as *guagua* or *catá*. The Clave figure was played either with two spoons struck together, or with a coin on a bottle. (Traditionally, the Son Clave is played in *Yambú*.) In the beginning, there was no *segundo* drum (*segunda*, *tres-dos*, *tres-golpes*). Today, the *Yambú* may be played on congas, or probably any type of drum, because a musical style such as the *Yambú* is characterized and identified by its rhythmic feel and the corresponding dance. By the same token, the *cajón* is used for other styles of Rumba, too; moreover, *cajones* are played on religious ceremonies like Palo or Bembe. In Cuba, the *toque de cajón* is especially common in honor of the dead.

The *cajones* that are commonly used in Cuba today – like the ones used in combination with conga drums in the contemporary style of Rumba referred to as *Guarapachangueo* - are shaped quadrangular and conical, tapered towards the open lower part of the instrument. I don't feel that this is a good idea, acoustically, and furthermore it is more difficult to build. Lastly, I wanted a set of *cajones* for the traditional *Yambú* sound; so I decided upon rectangular boxes.

Material and Measurements

My *cajones* have the following measurements:

	Caja (Tumbador)	Quinto	Guagua
Height	47 cm (with legs 49 cm)	31 cm (with batter board 31,4 cm)	12 cm (with top and bottom boards 12,8 cm)
Length	60 cm	25 cm	25 cm
Width	30 cm (with batter and resonance board 31,05 cm)	25 cm	14 cm
Batter surface	60 x 47 cm / 6,5 mm thick (5-ply)	25 x 25 cm / 4 mm thick (3-ply)	14 x 25 cm / 4 mm thick (3-ply)
Resonance board	60 x 47 cm / 4 mm thick (3-ply), sound hole: 18,5 cm diameter	none	14 x 25 cm / 4 mm thick (3-ply)

The material I bought was:

1. Tumbador

- two 5-ply birchwood boards (6,5 mm) 60 x 30 cm
- two 5-ply birchwood boards (6,5 mm) 45,7 x 30 cm
- one 5-ply birchwood board (6,5 mm) 60 x 47 cm (batter)
- one 3-ply birchwood board (4 mm) 60 x 47 cm (resonance)
- four square-profile (2 x 2 cm) pinewood strips of 30 cm length for inside glueing connection of the frame corners
- two square-profile (2 x 2 cm) pinewood strips of 30 cm length as "legs" of the *cajón*
- two square-profile (2 x 2 cm) pinewood strips of 56 cm length for inside central top and bottom reinforcement
- two square-profile (2 x 2 cm) pinewood strips of 43 cm length
- central reinforcement for the smaller shell sides (inside)
- four triangular-profile pinewood strips of 56 cm length for glueing connection between top or bottom and "heads" (batter and resonance)
- four triangular-profile pinewood strips of 43 cm length for glueing connection between the shell sides and the "heads"
- two semicircular-profile (1 cm) pinewood strips of ca 30 cm length for inside reinforcement of the resonance head on both sides of the sound hole (distance to the hole: ca 3 cm), like in a guitar
- four self-adhesive felt dots to stick under the "legs".

2. Quinto

- two 5-ply birchwood boards (6,5 mm) 31 x 25 cm
- two 5-ply birchwood boards (6,5 mm) 31 x 28,7 cm
- one 3-ply birchwood board (4 mm) 25 x 25 cm
- four triangular-profile pinewood strips of 30,5 cm length for inside corner glueing reinforcement (only the sides, not the batter!)

3. Guagua

- two 5-ply birchwood boards (6,5 mm) 12 x 25 cm
- two 5-ply birchwood boards (6,5 mm) 12 x 12,7 cm
- two 3-ply birchwood boards (4 mm) 14 x 25 cm
- four triangular-profile pinewood strips of 11 cm length for inside corner glueing reinforcement (frame only)

Plus:

- A strong wood glue
- Transparent Acryl laquer (water-soluble)
- Two sheets of sandpaper (100) to clean and smoothen the wood before laquering
- One sheet of sandpaper (600) to polish the laquered boxes
- A broad brush for laquering.

TOOLS:

You will need **a small saw** for cutting the wood strips (a device for even rectangular cuts is recommendable), **a high jigsaw** for cutting the sound holes into the resonance head of the *tumbador* and the side of the *guagua* box. For rounding the edges of the *cajones*, especially around the batter boards, you will need a **file**. The glueing process requires pressing (the wooden parts together); so **a couple of screw clamps** should be ready to use anytime you need it. (I do not recommend using electric tools, because these are difficult to control.)

CONSTRUCTION:

I do not use screws or nails in any way. The glue itself is even stronger than the wood itself, so there's no need for screws or nails, unless you want a loose batter board for a snare effect.

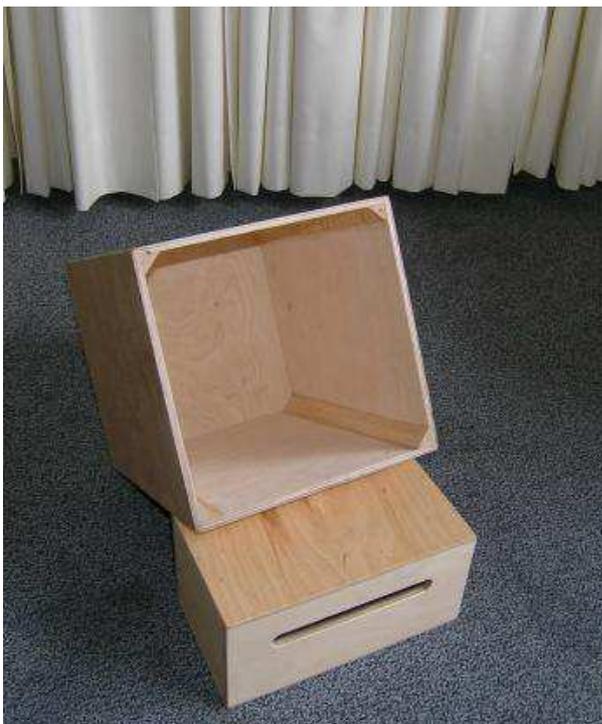
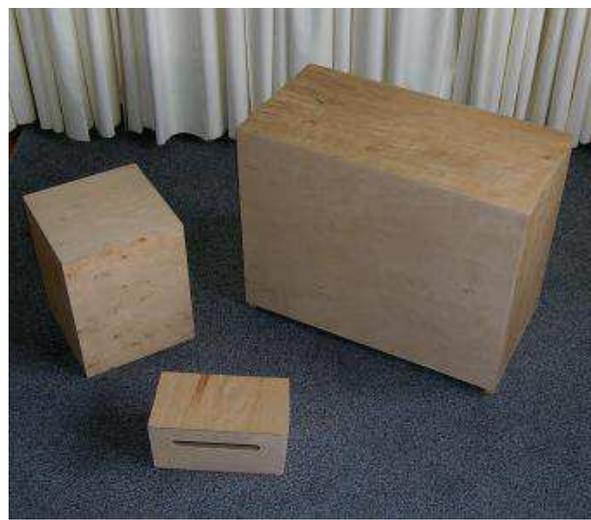
The first thing I do is glueing the corner connections (wood strips) and reinforcements to the walls of the box. Then I put the box together. The last parts I mount are the "heads": batter- and resonance boards. I always work with two larger and two smaller panels for the walls of the shell; so the two opposite small panels are sitting between the larger ones. On the

caja (tumbador), the smaller side walls of the shell carry the top (on which you will be sitting) and stand on the bottom panel. The "heads" are always mounted on top of the walls (the way I did it). Absolutely precise work is required for the assembly. Do not stress or use the assembled pieces before the glue has dried out sufficiently!

Note: If the wood strips have to be cut from longer pieces, make sure you buy a sufficient amount of these, and plan the segmenting cleverly!

The Ready Set of Cajones

I was not able to make a documentary photo series of the building stages during the construction process, but I hope that everybody can draw his conclusions from these photos:



(A glimpse inside the sound hole of the caja)

Needless to say that these *cajones* sound gorgeous. The *tumbador* has already stood the test of fire in a full band (with electric bass and brass section). Should someone want to order a set like this from me, I think 400 Euros plus shipping must be a fair price, compared to the boxes that are company-manufactured, and I would make a 100 % profit. Make up your mind; if I can make these, anybody can make them!