Do You Really Know

Balsa?

A visit to the source of this remarkable wood

by GUY REVEL

This wild balsa tree was photographed near the flying field of the famous Costa Rican model club, Aeromodellsmo Costa Rica, where the annual Tropical Fun-Fly is held. Inset, top: At eight months, the hand-cultivated balsa trunk is already big. LeBves are cut with a machete so that the stem grows straight. Inset, center: Balsa fruits in various stages of maturation. Once ripe, they're covered and filled with a fur-like stuff, and they explode at the slightest shock, disseminating the seeds. Below: the bark is stripped from the wood as soon as it arrives at the mill.

PHOTOS BY GUY REVEL

WHAT WOULD modeliilg be without balsa? It is the fundamental product; without it, model airplanes never would have been so popular. Balsa is as ne(:essai"y today as it ever was, and all the high-tech space-age materials u~ed for specific modeling applications will never replace this fabulous wood and its many unique properties.

Every modeler learns from the start what processed balsa looks like. But balsa *trees* grow in the tropical rain forest where very few modelers ever go. Although balsa trees grow in many countries, in only a few of these does the

wood have the necessary ~perties for our special use. Tfi largest part of the model-quality balsa comes from Ecuador. Smaller quantities of high-quality wood are also produced at the Balsatica plant in Costa Rica, which I visited.

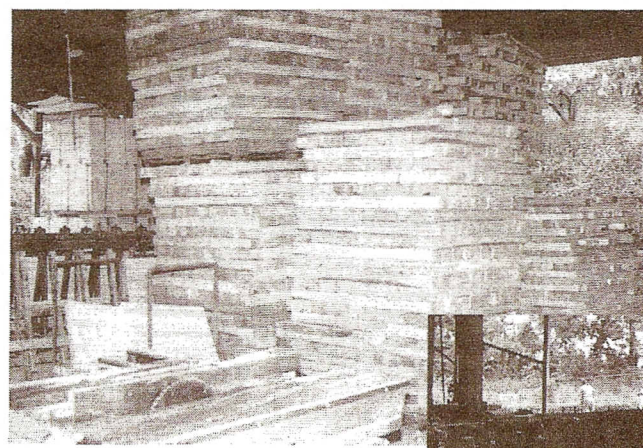
Costa Rica is a small Central American republic that spans between the Pacific and the Atlantic Oceans. Its northern border is Nicaragua and the southern border is Panama.

Heinrich Meisler, presidenl of Balsalica, shows a balsa plant that's a few weeks old. Its leaves are already enormous.

GOING TO A BALSA PLANTATION

Although wild balsa trees grow throughout the country, useable wood comes only from trees growing at altitudes of 150 to 750 feet. On the mountain, the wood-although still quite light compared with other species-is too heavy for most uses. At sea level, it is much too soft to provide any resistance. According to specialists, the very best balsa grows in southern Costa Rica, near the Panamanian border.. Unfortunately, the lack of roads prevents any industrial activity in this very wild and undeveloped region.

While other participants 't the famous Tropical Fun -Fly-which was the other reason for my coming to Costa Rica-were on the flying field practicing for the big Sunday event, I went to Siquirres, a small town near the Atlantic coast.. After a three-hour drive up a central mountain, then down into the tropical rain forest, and after crossing coffee, cocoa, tobacco and banana plantations, I finally arrived at the Balsatica plant, in the huge banana region. This is not by accident: balsa trees, like banana trees, need very rich soil and do not grow just anywhere.



These logs will fill the kiln, and Ihen be healed and dried for about two weeks.

A BALSA PLANT IN TROPICAL NATURE

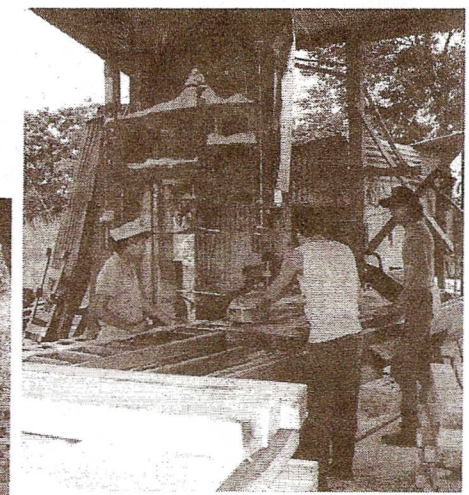
Balsatica is the only balsa producer in Costa Rica. Looking at its customers' list is similar to looking at a listing of countries. This company is headed by Heinrich Meister, a Swiss forest engineer who settled in Costa Rica 20 years ago, and his partner Ron Echandi, a modeler who owns the big balsa plantation and a sawmill where the wood is processed.

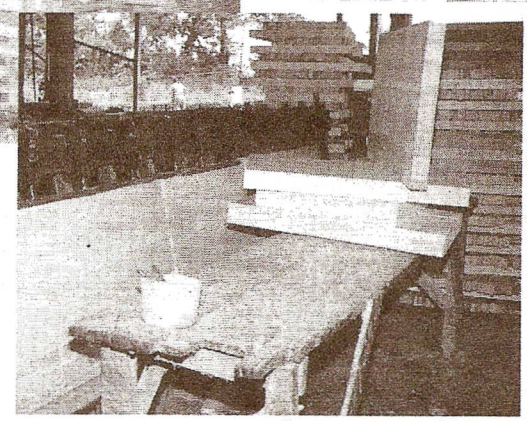
Like most wood mills-particularly in tropical regions-the vast balsa mill is "open-sided" amid lush vegetation where only cacao trees have been planted. Timber arriving from the plantation is processed tpere. After stripping the bark off the wood with the same machete ~~t's used when walking through the forest, the logs are band-sawn, and the remains are then used for heating the kiln in which the balsa lumber is dried. Raw wood contains a lot of water and can't be used until it's dry. This drying process lasts for a minimum of 10 days, but more often, it's two weeks before the balsa is dry.

At this point, the balsa logs are selected according to their density. At Balsatica, 20 to 25 percent of the wood is of the proper quality (the best) for modeling. In other plantations, depending on the climate and growing conditions, it may be only 5 to 10 percent. The rest is used for many other applications. Among these are aircraft floor panels, where vertical-grain balsa is sandwiched between aluminum sheets, as aboard B-747s, and liquid gas tank lining aboard tanker ships. Four thousand cubic feet of balsa are needed to make only one of these enormous tanks in which compressed gas-usually methane-is kept.

Costa Rican balsa is noted not only for its quality, but also for its color: it is so white that it looks almost as if it has been bleached. The dry lumber is sent to the nearby port of Limon, on the Atlantic coast, where it is shipped to Europe and the U.S. However, an increasing amount of balsa is processed at Siquirres and made into planks before being shipped.

As you noticed, I've made no mention, so far, of how the wood is grown. Let's go to the balsa plantation.





Above: Ihe fresh wood is firsl band-sawn into smaller rectangular logs.

Left: finished logs are glued for making end-grain filling stuff for aircraft and boat floor panels.

IN THE FOREST

Most of you have never seen a balsa tree. It is, however, quite recognizable. It has white bark, large leaves and large white-haired fruits, which-when ripe-explode under the slightest shock and release a dense cloud of what was once known as kapok and used as a filling for pillows. Wild trees have huge spans and are often low to the ground, with a number of large branches. Sometimes, in the forest, you can see the seeds floating down as white snow-like fluff when the wind blows even slightly.

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In a plantation, however, it is quite different. It would be difficult to get any sizeable quantity of usable wood from a wild balsa tree. Not so in the plantation; every tree is carefully grown so that its trunk remains straight and devoid of branches up to an enormous height. Growing balsa trees requires a considerable amount of work in a difficult environment that's characterized by heat, high humidity and frequent (let's say daily) rain. If you think that the trees grow without needing any special care until they are large enough to be cut and processed, you are entirely wrong. From the tiny leaves emerging from the carefully drained ground, to the tall adult tree, there is a long, work-intensive process.

Because the tropical climate favors the rapid growth of all kinds of trees and weeds, the plantation resembles a dense forest. The soft, damp ground, covered with high weeds and huge fallen leaves, does not allow the use of any machinery. All work has to be done by hand.

Trees are ready to be cut after four to six years, when they've reach a height of approximately 70 feet and a diameter of about two feet Trunks are sawn into logs of little more than four feet in length; they would not be strong enough to remain in one piece if they were any longer. This is not only because the wood is relatively weak, but also because the fresh wood has a very high water content that considerably increases its weight. Now you understand why it is so difficult to find long balsa sheets.

Balsa Is Here To Stay

People tend to think that balsa is expensive- perhaps too expensive. When you compare it with other timber and understand the many delicate, difficult phases of growing and processing, you'll draw the opposite conclusion. Considering its unique properties, balsa is extraordinarily cheap, and it will remain the premium modeling material for a very long time.

1 *Editor's note: Guy Revel is a highly respected French modeling journalist known for his· willingness to go to the ends of the earth to get the most interesting stories and the latest modeling news. He a/so wrote for us in our May* '92 *issue, when he covered the* '91 *FAI F3A and F3D competition held in Australia .*