"High Hopes"

by Scott Powell

In July, 1925, Henry Ford hosted his old friend, Harvey Firestone, for lunch at his Fair Lane estate in Dearborn. During lunch, Firestone shared his concerns about the increase in the price of rubber that he feared would result from the rubber cartel the British, Dutch, and French were threatening. Winston Churchill, then-Secretary of State for the British colonies, championed the proposed cartel. Churchill viewed it not only as a means to keep the price of rubber high, but also as an opportunity for Britain to exploit the explosive growth of the U.S. auto industry to revive British colonialism after World War I.

By the 1920s, the Ford Motor Company was producing over two million new Model T's a year – approximately fifty percent of the total number of cars sold in America annually. The company not only manufactured the cars – it also produced, extracted, or mined almost all of the materials that found their way into the Model T. One of the materials that Ford did not control, though, was rubber. To the contrary, Ford was entirely dependent on the flow of rubber from foreign sources – particularly the British, Dutch, and French rubber plantations in Southeast Asia. Harvey Firestone got Ford's attention.

After lunch, Ford immediately cornered his personal secretary, Ernest Liebold, and issued a simple order, "Find out where is the best place to grow rubber." Liebold, a former banker with no botanical or horticultural expertise, executed this order in the same way he usually did – trusting no one's opinion but his own. Liebold read everything he could lay his hands on relating to rubber. He did not, however, consult with anyone having first-hand expertise cultivating rubber. Liebold concluded that the best place was the Brazilian Amazon, for the simple reason that "[r]ubber should be grown where it originated."

Tonight I want to share with you the story of Fordlandia, the rubber plantation and American-style town Ford built in the Brazilian Amazon. There, on a tract of land roughly the size of Connecticut, Henry Ford believed that the company could clear the jungle, apply Ford's financial resources and principles of mass production, and churn out rubber much the same way his company churned out Model T's. But Ford also had a non-economic motive for establishing this plantation and town. He saw Fordlandia as an opportunity to "civilize" the Brazilian workers and create both the look and ideals of small-town America in the Amazon.

I hate to give away the ending, but Fordlandia is not a success story. In fact, thanks to uninformed advice, little or no planning, poor judgment, and a series of blunders that border on the comic, Fordlandia was an unmitigated failure. Ford accomplished neither his economic nor his idealistic goals.

Let me first set the stage with some background regarding Brazilian rubber and Henry Ford.

Natural rubber is produced from the latex generated by a number of different tree and plant species. The purest and most-elastic form of natural rubber, called "para rubber," comes from a tree known as *hevea brasiliensis*, or hevea. A mature hevea tree can grow to a height of one hundred feet, with a trunk about a meter in diameter. Hevea is native to the southern Amazon basin, which runs through Brazil, Ecuador, Bolivia, and Peru. In its native Amazon, hevea grows best wild, with only two or three trees per acre. This low density protects hevea from its natural predators – South American leaf blight and certain leaf-eating bugs – which can spread rapidly from tree to tree if leaf canopies overlap.

Through the end of the 19th century, Brazil was the source of virtually the entire world supply of para rubber. As the demand for rubber increased in the latter half of the 19th century, the Brazilian rubber industry boomed. By the turn of the century, however, an earlier act of biopiracy came to fruition and virtually wiped out Brazil's rubber industry.

In 1876, an Englishman named Henry Wickham smuggled 70,000 hevea seeds out of Brazil and back to London. The several thousand smuggled seeds that survived the trans-Atlantic journey became the genetic stock for the hevea at the European plantations in Southeast Asia. And, whereas Brazilian hevea can only survive its natural predators with only a couple of trees per acre, hevea's natural predators did not exist in Southeast Asia. There, hevea can thrive even with high-density planting. As a result, these plantations could produce natural rubber much more efficiently than in the Brazilian jungle.

This mismatch in efficiency caused a dramatic decline in Brazil's market share of rubber production. In 1900, Brazil still produced 95% of the world's supply of rubber. Starting in 1913, when plantation rubber from Southeast Asia started flooding the market, Brazil's market share declined rapidly so that, by the time Ford arrived in 1928, Brazil produced less than 3%. Brazil saw the arrival of Ford as a glimmer of hope. Henry Ford was intrigued with the prospect of becoming the savior of Brazilian rubber.

Now to Henry Ford. Henry Ford was remarkable – not only for his legendary success, but also for his flaws. He was a mechanical genius, and was the first to recognize that cars were not just toys for the rich. He thought that if a car were dependable and affordable, it would become one of life's necessities. That car – the Model T – hit the market in 1909, and quickly proved that Ford was right.

Ford was very shy, yet he loved publicity. He took great liberties when describing his past to mythologize his transformation from farm boy to revolutionary carmaker. As he grew older, his shyness turned into paranoia. He was not well educated, and did not really trust people who were (including his only child, Edsel). He was vocally anti-Semitic. He formed a department to keep tabs on, and pry into, the private lives of all of his workers. He was an ardent pacifist, but he hired a former boxer to lead a department of thugs who used force to keep order in his factories and intimidate union organizers. He carried on a decades-long affair with a local woman who he later encouraged his personal chauffeur to marry. Ford didn't tell the chauffeur that the only reason for this encouragement was to ensure that she would live close to Ford. The affair continued after the marriage and for the rest of Ford's life.

Henry Ford possessed a dangerous combination of massive wealth, little education, and a sincere belief that his success as an automaker made him an expert on everything. What he didn't have was anyone in his life who had the guts to contradict or challenge him. Edsel, who by all accounts was thoughtful and intelligent, often tried to influence his father, but Henry dismissed Edsel as being too "soft." Henry repeatedly ridiculed and humiliated him, in an effort to "toughen him up." For example, rather than vetoeing Edsel's plans to build a new foundry, Henry let the construction workers complete the foundry and then he immediately sent demolition workers to tear it down.

Surprisingly, by the time he hosted Firestone for lunch that day, Ford had grown nostalgic for the small-town America of his youth, and harbored guilt that his success as an automaker had helped to erode this way of life. He began to build smaller factories in rural towns where his employees could work in the factory during the colder months and return to their farms each spring. He purchased large tracts of land in northern Michigan where he built sawmills and well-ordered company towns in the spirit of the small towns in Michigan he remembered from his youth. In sum, Henry Ford was a curious mix – a successful automaker who was disillusioned with the world that was evolving from the ease of movement that his cars produced.

Although disillusioned, Henry Ford still exercised absolute control over the Ford Motor Company. He had no minority shareholders and no competing management factions. If Ford wanted to build a rubber plantation and an American-style town in Brazil, there was no one to stop him. And he made it very clear that he was moving forward, declaring confidently "[t]here will be schools, experiment stations, canteens, stores, amusement parks, cinemas, athletic sports, hospitals, etc. for the comfort and happiness of those who work on the plantation."

In Brazil, the rumor of American interest in Brazilian rubber, including Ford's and Firestone's, spawned the efforts of a small group of U.S. and Brazilian officials to profit from the enterprise. This group, which included William Schurz, the U.S. commercial attaché in Rio, offered bribes to government officials in exchange for an option on a large tract of free public land along the Tapajos River, a tributary of the Amazon. Ironically, this land likely was the source of the seeds Henry Wickham smuggled out of Brazil 50 years earlier. The group then paid off one of the Ford employees who was scouting out sites for the plantation. Not surprisingly, the Ford employee recommended Schurz's land.

Ford's investigatory work ended in 1927. By that time, however, the economic rationale for building a rubber plantation in Brazil was no longer sound. Churchill's European cartel never developed, and the high price of rubber had led to overplanting in Southeast Asia. These new hevea trees now were mature enough to produce rubber, causing the price of rubber to plummet. But Ford clearly had become as interested in the civilizing mission of Fordlandia as he was the economic goal. He made the decision to press forward.

So, Ford signed a power of attorney in favor of two employees, Reeves Blakely, who was later implicated in the Schurz scheme, and O.Z. Ide, and sent them off to Brazil to negotiate the land acquisition. Blakely was a drunk and a bully. Ide was more level-headed, but seemed indifferent to the task. For instance, Ide was charged with learning basic Portuguese during the two-week cruise to Brazil. He chucked that idea the first day, and instead played bridge the whole time.

Blakely quickly gained notoriety when he arrived in Brazil. He had the corner suite on the second floor of the Grand Hotel in Belem, a major Atlantic port in the Amazon delta. The suite had a veranda and floor-to-ceiling windows that opened to the town square. He became the talk of the town for repeatedly walking around naked and having sex with his wife with the windows of his room unshuttered for all on the town square to see. Ide had to convince the hotel manager not to throw Blakely out.

Despite this rocky start, Blakely and Ide successfully negotiated the acquisition of a tract of 2.5 million acres along the Tapajos River, half of which was Schurz's land. Ford paid $125,000 for Schurz's land, and received the rest free. Under the terms of the acquisition, Ford had the right to do anything it wanted to on the land, including the exploitation of lumber and minerals, the creation of its own schools and police force, and the right to "dam up the river in any way [Ford] needed to." The only condition placed on the acquisition was a requirement to clear and plant 1,000 acres of hevea within one year of taking possession.

Later, when the Brazilian press exposed the corruption associated with the acquisition, Ford did not take heat for the payoffs. Instead, the press questioned his business skills since Schurz duped him into paying for land that he could have acquired for free.

Now that Ford had the land, he took the "ready, fire, aim" approach to building the plantation. Charles Lindbergh, who at one point worked for Ford in the aviation division, observed the following about the Ford way of tackling a project, "Once they get an idea, they want to start in right now and get action tomorrow, if not today. Their policy was to act first and plan afterward, usually overlooking completely essential details. Result: a tremendous increase of cost and effort unnecessarily." In addition to Ford's tendency to act first and plan later, he hated using experts because he believed they "always know to a dot just why something cannot be done." So Ford tapped Blakely, the drunk and exhibitionist who had no experience with rubber cultivation or anything else relevant to building Fordlandia, to be the first manager of the plantation.

The land deal closed in July, 1928, and by then preparations were underway both in Dearborn and in Brazil. Blakely and his advance team scouted out the exact location for the plantation and town, and settled on a stretch along the Tapajos River that was 650 miles inland from Belem. In Dearborn, Ford began outfitting two large ships with all of the equipment and supplies necessary to get the plantation underway, including a steam shovel, a distillation plant, building supplies, hospital equipment, electric generators, food, a locomotive, and specialized cranes for unloading this equipment.

The ships were ready to depart at the end of July, 1928. Keep in mind that the Amazon basin's low-water season runs from June to December. This was the subject of a telling exchange between Charles Sorenson, who had home office responsibility for Fordlandia, and Liebold, Ford's personal secretary who had researched the region. Just before the ships departed, Liebold saw them and asked

Sorenson where they were heading. Sorenson said Fordlandia, to which a surprised Liebold responded that it would be impossible to get them there at that time of year because, during the low-water season, a rock ledge down-river from Fordlandia allowed for only nine feet of navigation. Sorenson, upset that no one bothered to tell him about the rock ledge but very aware of the one-year deadline for planting 1,000 acres, sent the ships anyway.

I listed some of the equipment and supplies that were on board the transport ships. What is more interesting is what was not on board – namely, anyone with any knowledge of, or experience with, growing hevea or protecting hevea from its natural predators. Ready, fire, aim.

The ships arrived in Santarem, about 150 miles downriver from Fordlandia, in September, 1928. The rock ledge was, in fact, there, and prevented them from getting any closer. This necessitated the task of moving the equipment from the two large ships to smaller vessels which could navigate in shallow water. Unfortunately, this task proved to be difficult and time-consuming since the workers in Detroit had packed the special cranes designed to unload the equipment, underneath the equipment they were designed to unload. Four months later, most of the equipment made it to Fordlandia. That left only 6 months to clear and plant 1,000 acres.

By then, Ford learned of Blakely's possible involvement in the Schurz scheme, so he fired him as plantation manager. For his replacement, Ford chose the captain of one of the transport ships, a Norwegian by the name of Einar Oxholm. Like Blakely, Oxholm had no relevant experience. However, he did have a reputation for absolute honesty, so Ford felt that qualified him for the job. Oxholm began the dual tasks of clearing the 1,000 acres and building the plantation town. With respect to the former, timing again was a problem. It now was the rainy season, which made it very difficult to burn the jungle trees that were cleared. Ultimately, the Ford crew used large quantities of kerosene, which kept the fires burning but had adverse effects on the soil.

Oxholm also had difficulty retaining a steady labor force. The locals never adjusted to the regimentation of clocking in and clocking out. They also were under the impression that they would be receiving five dollars a day (like Ford's workers in Detroit), not the thirty-five cents a day Ford was paying them. It became clear early on that the Brazilians' approach was to work for a while, make a little money, and then return to their less-regimented lives in the jungle. They generally showed little interest in a long-term job or the opportunity to become "civilized."

Oxholm was able to meet the deadline for planting 1,000 acres. Soon after planting, though, it was obvious that the first crop would not survive due to the damage to the soil from the kerosene and inferior seeds. Oxholm ordered the first crop plowed under.

Fordlandia desperately needed experts to assist with planting and cultivating techniques, but none were hired. Several workers claimed to have this expertise, but it was difficult to check credentials. For instance, one worker swore that the best way to protect the trees from predatory insects was to rub Vaseline on the trunks of saplings. Fordlandia's managers learned that this technique did, in fact, keep insects away, but it also killed the trees.

After the first crop was plowed under, Fordlandia's managers realized it might be a good idea to find quality seeds. They sent two workers down the river with a satchel full of Ford cash to gather or buy seeds. Soon after they left, the two men abandoned their translator and marooned their cook on an uninhabited river island. They then went on an all-out bender, wasting a large amount of Ford money on booze and other trifles. Then, they rented a launch, filled it with more booze, and hired a prostitute to accompany them on their journey downriver. When word reached Fordlandia of their hijinks, a trusted Ford manager named John Rogge set off in pursuit of the two. This may sound similar to Marlowe's pursuit of Kurtz in *Heart of Darkness,* but I think the better analogy would be to the movie *Dumb and Dumber*. When Rogge finally caught up with them, they were trying to collect some seeds, but he fired them anyway.

Rogge became plantation manager when he returned to Fordlandia. His predecessors had struggled with the jungle life. In the case of Oxholm, he had lost 4 of his children in the year he served as plantation manager – 3 to fever and one during childbirth.

Rogge made progress during the rest of 1930 roughing out the plantation town – building a powerhouse, roads, a railroad line, a sawmill, a large dining hall, and a small hospital. There were bungalows for the American and European managers, but most of the Brazilian workers still lived in shanties on the edge of the plantation, where there also were a number of ramshackle bars and bordellos. By the end of 1930, there were over 4,000 employees working at the plantation. Fordlandia appeared to be gaining some traction.

In December, 1930, Fordlandia's traction stopped dead. In the sweltering hot dining hall, Brazilian workers, frustrated with the poor quality of food and the new policy of deducting meal costs from their wages, started a riot which escalated

into an all out revolt. The workers grabbed machetes, clubs, and other tools, and moved through Fordlandia chanting "Brazil for Brazilians; Kill all the Americans." Some of the managers escaped with their wives and children on boats. The mob chased the rest of the managers into the jungle. With the managers gone, the mob destroyed buildings, machinery, boats, and just about everything else in its path. Rogge had wired for help, but the Brazilian military didn't show up for two days. By then, although no one was killed, Fordlandia was in ruins. The managers returned, paid the workers their wages to date, and fired all but a skeleton crew of 200.

When Henry Ford learned of the riot, he concluded that the solution was to pour even more money into the plantation. Fordlandia's managers used much of these additional resources to complete a small, modern town. They built churches, schools, a first-rate hospital, a movie theater, restaurants, a 150-foot tall water tower, a dance hall, and an 18-hole golf course. There were comfortable homes along tree-lined streets, and utilities, including electricity, telephone, running water, and sanitary sewers. Henry Ford, an avid fan of American traditional dance, insisted that Fordlandia hold weekly dances in the dance hall.

The press took note of Fordlandia, not so much as a rubber plantation, but more as a modern American oasis in the jungle. For instance, the Chicago Tribune proclaimed, "Fordlandia, an up-to-date town with all modern comforts, has been created in a wilderness that never had seen anything more pretentious than a thatched hut. Water is supplied under pressure after it has been thoroughly filtered to remove dangers of fever infection, and electric light illuminates bungalows in a region where such inventions are proof of the white man's magic."

Not all of the amenities were a success, however. After the riot, Fordlandia's managers tore down the workers' shanties and built modern houses with poured concrete floors and metal roofs lined with asbestos (which Ford's engineers thought would repel the sun). These houses turned out to be bake ovens. One visitor characterized them as "midget hells, where one lies awake and sweats the first half of the night, and frequently between midnight and dawn undergoes a fierce siege of heat–provoked nightmares." As one local priest noted, Ford "never really figured out what country they were in." As a result, Ford appeared to be doing more to alienate the Brazilians than to "civilize" them.

In addition, Fordlandia still was not producing rubber, and there was no one on the plantation with the expertise to determine when it would. The following anecdote illustrates this dearth of expertise. In 1932, Will Rogers wrote a letter to

the New York Times while visiting Brazil. The letter closed with a jab at his friend Henry Ford:

> Up from here is where Mr. Ford's rubber plantation is but somebody sold him all male trees and they are having a little trouble getting 'em to bear. I bet they couldn't fool him on carburetors but he didn't know sex life in the forest.

Rogers was joking – hevea obviously does not reproduce by gender. A concerned John Rogge, the plantation manager, saw Rogers' letter, and in earnest sent a letter to the U.S. Dept. of Agriculture asking whether hevea were, in fact, divided by male and female trees. A U.S.D.A. employee responded that "Rubber does not have male and female trees," and then continued with a basic explanation of insect cross-pollination.

In 1933, Fordlandia's managers finally brought in an expert, a respected plant pathologist. Unfortunately, his interest lay more in the study of hevea and its predators than the successful production of rubber. This may explain why he endorsed the dense planting at Fordlandia when he should have been aware of the risks of this approach.

As I noted earlier, hevea in the Amazon jungle has the best chance of surviving predators if there are only two or three trees per acre. The distance between the trees serves as a protective barrier for the spread of deadly South American leaf blight and destructive bugs. In 1935, the densely planted hevea at Fordlandia had grown to the point where the crowns of the trees were touching. On cue, South American leaf blight promptly began to spread throughout the plantation, devastating the hevea at Fordlandia.

The year before, Ford had traded a portion of the land at Fordlandia for land along the Tapajos further down river. The plant pathologist convinced the managers that this site, called Belterra, was better suited for plantation rubber than Fordlandia. His real motive, though, may have been to lower expectations of production at Fordlandia so that he could turn it into a giant laboratory for his continuing research. The managers ramped up planting at Belterra, and scaled back planting at Fordlandia. Another modern town took shape at Belterra, with most of the same amenities found at Fordlandia.

Within a year, Belterra boasted over 700,000 hevea trees. Six years later, in 1942, Belterra actually was producing a modest amount of rubber – 1.5 million pounds worth. Unfortunately, the Ford Motor Company required 50 million pounds of rubber annually.

It was about this time that the hevea at Belterra matured to the point where the crowns of the densely planted trees began to touch. A massive swarm of leaf-eating caterpillars laid siege to the hevea groves. In addition, South American leaf blight promptly spread throughout the plantation. Belterra never recovered.

A few years later, after the death of Edsel, and Henry's massive stroke, Edsel's son, Henry Ford II, negotiated the sale of Fordlandia and Belterra to the Brazilian government for approximately $250,000 – the amount Ford needed to cover its severance payments to the plantation's workers. All total, Ford had spent 20 million dollars on Fordlandia and Belterra. That translates to almost 250 million in today's dollars.

If you travel up the Tapajos River today, you will find that Fordlandia's water tower and many of its other buildings are still standing. Most now house bats, rather than people. The thousands of acres of hevea are long gone. No one has taken a crack at plantation rubber since Ford left. In fact, Brazil has imported all of its rubber since the early 1950's.

I originally had the impression Fordlandia would be an amazing story of the creation of small-town America in the Amazon. Instead, I found Fordlandia to be a cautionary tale that is alternately surprising, humorous, and farcical. Ford made little or no attempt to truly understand, or properly prepare for, this monumental task. Instead, Ford arrogantly, or naively, assumed that brute economic force alone could produce rubber in the jungle and civilize its inhabitants. In essence, Henry Ford set out to grow plantation rubber where it was impossible to grow, and to Americanize people who did not want to be Americanized.

The "can-do" spirit, a combination of confidence and determination, is an attribute that we value and admire (and rightfully so). I think we tend to assume that the can-do spirit is all we need to be successful, like the ant moving the rubber tree plant in the song "High Hopes" after which I've titled my essay. Fordlandia reminds us that confidence and determination alone are not enough. They must be coupled with a foundation of preparation, fitness for purpose, and an understanding of the true nature and scope of the task at hand. Without them, confidence becomes foolishness, and determination becomes futility.