



THE
IMAGINEERING
STORY

THE OFFICIAL BIOGRAPHY OF
WALT DISNEY IMAGINEERING

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PROLOGUE

IN 2008, I was invited to screen my recently completed feature documentary *The Pixar Story* at Walt Disney Imagineering. It had been a long time since I had visited the unassuming campus in Glendale, California, and I was thrilled to step back into this illusive place that had long been shrouded in secrecy.

After the screening and Q&A were over, I remember Marty Sklar, then the Global Imagineering Ambassador, and a protégé of Walt Disney himself, walked up to me and asked very directly, “So, Leslie, when are you going to make the Imagineering story?” And without hesitation I responded, “Well, Marty, you tell me!” And that was the beginning of one of the happiest periods of my career to date, to tell the then sixty-plus-year history of Walt Disney Imagineering since its formation by Walt Disney in 1952. The result would be a six-part documentary series for Disney+ along with this official biography for Disney Publishing, both called *The Imagineering Story* in honor of Marty’s initial question.

The film was originally commissioned by WDI as a feature documentary to be completed within a year or so; however, it wasn’t long before Marty and the leadership felt I should travel to all the parks over the span

of five years—which ultimately became seven—to capture a new golden age of Imagineering during one of the company's greatest periods of growth. At this time, the Imagineers were just breaking ground on a new Disney resort in Shanghai, overhauling Disney California Adventure in Anaheim, revamping Walt Disney World's New Fantasyland in Orlando, mapping out a whole new *Star Wars: Galaxy's Edge* in Disneyland and Walt Disney World, and about to launch two new state-of-the-art Disney Cruise Line ships, the *Disney Dream* and the *Disney Fantasy*, out to sea. At the time, I had no idea all this and more was currently in the works, but was soon given unprecedented access to document virtually every secret work-in-progress attraction around the world.

Back during the construction of EPCOT in the early '80s, my dad, Don, oversaw the Studio Machine Shop where hundreds of state-of-the-art projectors and camera systems were being designed and built for the many unique attractions in the park. He would take me with him on weekends and let me loose while he worked extra hours to meet the grueling deadlines. These were the wondrous days of the Studio Machine Shop and backlot, and it became my own haven to roam around. I remember seeing one of my favorite film stars—Herbie the Love Bug—parked on the side of the backlot street, right in front of the *Shaggy D.A.* set. Then walking through the old Western saloons to find no interiors, but just plywood infrastructure holding up the exterior facades. So much of this behind-the-scenes magic was imprinted in my mind because of the sixteen-millimeter Disney movies my dad brought home to project for my sister and me and the neighborhood kids, and then to see the real locations backstage was awe-inspiring. I remember him driving us through the back gates of EPCOT, where large animatronic dinosaurs and other hydraulic creatures were being built and tested. Being a fly on the wall to all this activity growing up was the spark that fueled my lifelong interest in telling stories about creators, artists, visionaries, and innovators.

Cut to nearly four decades later, and I am walking backstage at every Disney park around the world and Walt Disney Imagineering, meeting and interviewing over two-hundred Imagineers, so many of the brightest minds the film and themed entertainment industries have ever seen. From

dirt to opening day, I made numerous trips to Shanghai Disney Resort to document the journey, but what was captured through my lens was just a fraction of the enormity and scale of the Imagineers' monumental endeavors. It became clear that Walt Disney created "The Happiest Place on Earth," but creating happiness is hard work. I was guided through history by Imagineers of each generation. Bob Gurr walked me inside the echoey chambers of the Matterhorn, where we took a narrow elevator up and shot hoops on the basketball court where mountain climbers of decades past took their breaks. Kim Irvine and I strolled down Main Street, U.S.A., discussing John Hench's original color schemes, then down into the Haunted Mansion dining room to film dancing ghosts. Marty Sklar toured me through Pirates of the Caribbean (at four a.m.!) and, standing amidst pirates, he illustrated the genius of Imagineering storytelling under one roof, from X Atencio's songs, to Marc Davis' character designs, Alice Davis' costumes, to the state of the art Audio-Animatronics technology developed by a cadre of geniuses. And how could one not mention being one of the first people to launch out of a vehicle at 60mph with Scot Drake, the creative lead on TRON Lightcycle Power Run as he proudly showed off the fastest Disney roller coaster yet in Shanghai Disneyland. Imagineers have one of the best jobs in the world, and nothing was more clear than when Scott Trowbridge toured me through the *Star Wars: Galaxy's Edge* prior to one of the most historic opening day's in Disney theme park history. His enthusiasm to show off every bit of handcrafted detail, not only overt but hidden, all in service to the new Batuu story, was truly inspiring. It was especially touching when Kevin Rafferty and Charita Carter toured me through Mickey & Minnie's Runaway Railway in Disney's Hollywood Studios, only to reveal their own "hidden Mickey" homage to my grandfather, Ub, with a sign above the culvert that reads IWERKS AND UWERKS WATER WORKS, seen just before the railway car is swept into the city by a digital rush of water. The passion for all things past inspires the present at Imagineering.

From blue sky ideation, to pencil on paper, to digital models, to plaster and paint, Imagineers build dreams. They *never* say "never," and the sky is *not* the limit. No idea is a bad idea (at first, anyway!) and they

inherently have it in their veins to say “Yes, *if*,” instead of “No, because,” to any creative idea. Imagineering is a mindset. It is teamwork. It is passion. It is egoless. It is about creating the most exciting, immersive, and unexplored experiences yet. This goes across every facet—be it a ride, an attraction, an Audio-Animatronics figure, a show, a restaurant, a hotel, a meal, a parade, a costume, or just a simple story pulling you through a queue. The goal of every Imagineer, just like Walt Disney himself, is to reassure you—to make you smile, to make you laugh, and to make you wonder, *how did they do that?*

For every person documented in this biography, there are thousands more who have contributed greatly behind the scenes. This is just a marker in time as the next generation of Imagineers rise up and stand on the shoulders of those who’ve come before, and build on the great legacy of Walt Disney and his original Imagineers.

Leslie Iwerks

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Santa Monica, California

CHAPTER 1: AN IMPOSSIBLE IDEA

*“When I see things I don’t like, I start thinking,
‘Why do they have to be like this and how can
I improve them?’”* —Walt Disney

I. WALT DISNEY CALLING

HERBERT RYMAN could not say no to Walt Disney—even though he didn’t work for the man. Ryman *had* worked for Walt, for eight years. From 1938 until 1946 he’d been an artist and art director for *Dumbo* and *Fantasia* and other early classics. But on this Saturday morning in 1953, he was at his home in Van Nuys, California, north of Los Angeles, working on one of his circus paintings. He had begun his series of oils while traveling for two summers with the Ringling Brothers and Barnum & Bailey Circus; he was the only artist the circus had ever hosted for such an extended time. Ryman was a respected painter—his circus art had been the subject of two New York exhibitions. He had an impressive Hollywood résumé—not just his work at Disney but also at the MGM Studios in the early 1930s, creating scenic designs and prop art for classic films such as *Mutiny on the Bounty* and *The Good Earth*. After MGM and Disney, Ryman had worked at 20th Century Fox on films including *Anna and the King of Siam*, a 1946 release that fed his passion for Asian culture, acquired on a two-year trip around the world he had taken after leaving Disney. He had lived in Siam and France and England

and spent one winter in Peking and the Gobi Desert, just “for my own self-edification,” as he put it.

He had worked hard, traveled hard, and had earned some quiet time at home, just painting. Then the phone rang.

It was Walt. Could Herb come down to the Disney studio? Ryman’s former boss made it sound urgent—no time to shave and shower, just get to Burbank immediately. When he got there, Ryman learned that the crisis was related to Walt’s amusement park project, which he called “Disneyland.” As Ryman told the story, Walt said, “Well, Herbie, my brother Roy has got to go to New York on Monday.” Roy O. Disney, the brother with the financial smarts, would be trying to raise millions from investors, Walt said, who “don’t understand anything except money. And we’ve got to show them what we’re going to do.” A crucial selling point would be a grandly scaled drawing depicting an aerial view of the proposed park. Ryman’s interest was piqued. “Well, gee,” he said, “I’d like to see it, too.” To which Walt quickly responded, “You’re going to do it.”

Ryman said no—or tried to. Creating such a persuasive illustration from scratch in less than forty-eight hours, he said, was “an utter impossibility.” But Walt did not back down. “He paced all around the room, and he was thinking, and he went over and stood in the corner, facing the corner. And he kind of turned around and looked at me and he said, ‘Well,’ he said, ‘Well, you’d do it if I stay here with you?’ And then I thought, ‘Well, if he wants to sit up all night Saturday night and all day Sunday and all night Sunday night—if he wants to stay here with me, I’ll give it a try.’” And that was that. Ryman had one demand: “a big chocolate malted milkshake.” He got it.

“Walt, as you know, was a very persuasive person. He could make anyone do anything,” remembered Ryman, one of the original and most celebrated of the Imagineers who worked to bring Disneyland to life. “When he had this idea, and whoever he called in, it was instantaneous. You were supposed to be instantly useful and instantly productive and a kind of instant genius, if that’s possible.”

That Saturday morning, Walt showed Ryman preliminary sketches of proposed sections of the Disneyland park, created by Disney artists,

and a “Proposed Diagrammatic Layout,” created by Walt’s friend Marvin Davis just a couple of weeks earlier. (Davis was an in-demand Hollywood art director, having worked on that year’s musical hit *Gentlemen Prefer Blondes*.) From those fragments, Ryman went to work, with Walt at his side, hunched over a drawing table in the studio, around the clock, to produce the first complete depiction of what would become Disneyland. The drawing had a castle, a Fantasy Land, a World of Tomorrow, and, of course, a Main Street leading to the central hub. It had a train and a riverboat, docked at Frontier Country. And it had dozens of teeny-tiny patrons, wandering through the park’s streets and pathways or stopping to watch the carousel. By Monday morning, this penciled masterpiece, measuring forty-three by seventy inches, was ready for Roy Disney to roll up and take to New York.

Marty Sklar, who worked at Disneyland on Opening Day and later became president, vice chairman and principal creative executive of Walt Disney Imagineering, recalled Ryman referring to his weekend’s achievement as “the drawing that Roy Disney used to raise the \$17 million from the bankers”—a not entirely accurate account—but Sklar saw more than that in Ryman’s work. He saw the future. “If you look at the original drawing,” he said, “there’s so much in it because it was all in Walt’s head. Things that were not done in Disneyland for five or six years later.” It was as if Ryman had reached into Walt’s brain to pull out all those images he had bouncing around, then neatly organized them into a rendering so that less imaginative minds would be able to grasp them.

In the early days, this was the magic of Imagineering—work that went on in a company called WED Enterprises, initially intertwined with the Disney studio and taking its name from Walter Elias Disney. Walt later called Imagineering “the blending of creative imagination with technical know-how,” which was true, but it was more intangible and more instinctive than that. From the start, Imagineers were people in touch with Walt’s psyche, and Walt was in touch with their abilities—sometimes talents they didn’t even know they had. Unbeknownst to them at the time, an animator would become the sculptor who created characters that would live on for generations. A background artist would become

a master at ride layouts. A man known for his ability to draw would write lyrics that park visitors would be humming their whole lives. A woman who painted props and sets would help build castles and create lifelike singing birds from piles of feathers. Imagineering grew beyond the confines of Walt's mind, but it has never stopped coaxing out hidden talents from artists, craftspeople, scientists, and technicians who were, like Walt, unfettered dreamers.

In that sense, the secret of Imagineering's initial success was "Walt knowing his staff," Sklar said. "I always thought that Walt Disney was the greatest casting director I'd ever worked with, because he could put together people that you would never expect to work together very well and something magic would come out of it. He understood what he could get out of almost every one of the people that he had here at Imagineering in those early days. Many of them he'd worked with for twenty or thirty years already before working on Disneyland."

Certainly the seeds of Imagineering were sown in the movie studio Walt created, where fairy tales and dreams were molded and shaped into stories that audiences would revisit again and again. In fact, though, just a few of the top artists from Disney's early animated classics made the leap to WED Enterprises. So how did Walt know exactly who would be perfectly suited to turn his Disneyland dreams into reality? How did he know that of all the artists in Hollywood, Herbie Ryman was the one to coax to the studio to put pencil to paper that September Saturday?

The origin of Imagineering reaches back well before that 1953 weekend, since Walt had recruited proto-Imagineers Richard "Dick" Irvine, Marvin Davis, and a few others to start work on Disneyland before Ryman got roped in. The Imagineering story is inevitably woven into the history of Disneyland itself—a history that poses its own challenges of origin. Was the theme park's birth as simple as the story Walt himself liked to tell about an epiphany at a carousel? Perhaps it had its roots a century earlier, when a young military officer and magazine publisher convinced the king of Denmark to let him build a fanciful park called Tivoli in Copenhagen to amuse the monarch's subjects—a park from which Walt would later borrow many ideas. Closer to home, the DNA of Disneyland

was determined in part by Walt's love of railroads—an obsession that led him to build a scale railway around his own residence that amused his guests until it went literally off the rails.

Knowing the importance of an authoritative origin story, Walt pegged the source of his conception of the modern theme park to a particular place and time. “It came about when my daughters were very young,” he would explain, suggesting a summer day in the late 1930s. “Saturday was always daddy’s day with the two daughters. So we start out and try to go someplace—you know, different things—and I’d take them to the merry-go-round and I took them different places. As I’d sit there—while they rode the merry-go-round, did all these things—I’d sit on a bench eating peanuts.” Walt felt left out, disconnected from the girls’ enjoyment of the carousel, and he had a vision of something better. “I felt there should be something built, some kind of amusement enterprise built where the parents and the children could have fun together.”

For proof of this account, visitors to the original Disneyland could point to what is reportedly the exact bench where Walt’s idea took hold. Inside the Main Street Opera House, behind a rope barrier that confirmed its historic stature, sat a forest-green seat of wooden slats that bore a plaque declaring it to be “The actual park bench from the Griffith Park Merry-Go-Round in Los Angeles where Walt Disney first dreamed of Disneyland.”

As with any fairy tale, the history that went into the formation of Walt’s epiphany narrative was more complex than the surface story. By his own account, Walt’s buoyant dream remained amorphous—“some kind of amusement enterprise”—until it was shared and given form and substance not just by Walt’s imagination but also by the artists in his employ. If Walt wanted a riverboat, his studio’s craftsmen could interpret his vision in design sketches and construction drawings and wood and paint and smokestacks. That seemed easy enough. But if Walt wanted to re-create a fully functional city street from his childhood or an adventure into a hazardous jungle—and to make those experiences endure for generations—to whom could he turn? Movie sets were fragile and temporary, while architects were practical and averse to whimsy. The creation

of a new kind of amusement park would require the invention of a new kind of artist, and it was Walt's special talent to uncover the oddball geniuses who could give the spark of life to his yearnings. The Imagineers would celebrate not one moment of birth, but many.

II. FAIRS, PARKS, AND DECAY

In 1951, Walt Disney and his friend Art Linkletter, the popular TV personality, visited Tivoli Gardens, the enduring amusement park in Copenhagen. It had opened in 1843 on fifteen acres that Denmark's king had leased to its founder, a former army officer named Georg Carstensen. One of the world's earliest and best-known amusement parks, Tivoli from the beginning featured a carousel, a small railway, and a lake, which reflected fireworks on special occasions. It was also a true park, with flower-filled ornamental gardens, lawns, and paths. Its amusements included a theater, concerts, and restaurants. Tivoli's famous wooden roller coaster from 1914—so old that it had no name other than the Danish word for “roller coaster”—was still operating when Walt visited with Linkletter. (The coaster's mountain theming would later be echoed in the Matterhorn Bobsleds in Disneyland.) Walt wandered around Tivoli, soaking up the atmosphere and making notes about everything: the amusements, the food, the furniture, the re-created pirate ship docked in a lake. Tivoli was spacious, clean, family-friendly, and beautifully landscaped. Indeed, it was everything that American amusement parks of the time were not.

Just as small American towns were home to minor league baseball teams, for fans who couldn't get to the big cities, American amusement parks were miniature imitations of the grand and infrequent World's Fairs—and, to a lesser extent, annual state fairs. World's Fairs, temporary and urban, combined exhibitions with rides, entertainment, and restaurants. The first in the United States was the Centennial International Exhibition of 1876 in Philadelphia, followed by the nation's most celebrated fair, the World's Columbian Exposition of 1893 in Chicago—where Walt Disney's father, Elias, had worked as a contractor. The fairs created a vast, meticulously planned, safe, and well-scrubbed

world closed off from the surrounding city's hubbub. They inspired awe, offered glimpses of foreign cultures, teased the future, and introduced visceral amusements, such as the original Ferris wheel at the Chicago exposition. But they were short-lived and out of reach for most Americans, either economically, geographically, or both.

State fairs, which began as annual events in the mid-1800s, were more affordable and more modest, chiefly concerned with showcasing agricultural accomplishments through stock animal competitions and exhibitions of farm products. The early state fairs were more akin to farmer conventions than amusement parks, but simple carnival rides and midways and musical performances were gradually added to entertain the attending families. By the end of the nineteenth century, most states had extensive permanent fairgrounds—a few buildings and arenas meant to house exhibits, contests, and shows—that hosted well-attended annual fairs, some lasting a week or longer.

By the beginning of the twentieth century, as state fairs grew more elaborate and World's Fairs earned international acclaim, many cities and towns had seen the establishment of more accessible local amusement parks, borrowing aspects from both state fairs (intimacy and affordability, minus the agriculture) and World's Fairs (amusements and relaxed settings, minus the exhibitions). These local parks, with their merry-go-rounds and funhouses, were often situated at the ends of mass transit lines—whether on Coney Island at the Brooklyn Rapid Transit terminus or on the edge of some New England or Midwestern hamlet, where the trolley line ended, often in a park or alongside a body of water. Coney Island's Sea Lion Park, which opened in 1895 (and was replaced by Luna Park in 1903), is thought to have been the nation's first permanent amusement park with a single entry point and admission fee. Imitators in the hundreds followed, across the country, as entrepreneurs erected a few food stands and a midway, strung up the latest electric lights, and offered occasional live entertainment and simple rides as the seasons permitted. The operators gave their parks names that would promise excitement: Electric Park, Luna Park (borrowed from Coney Island), and White City (the nickname of the Chicago World's Fair) were among the most popular.

Walt would have been familiar with all these variations—starting with stories from his father about building the White City. By 1911, when the Disney family moved from Marceline, Missouri, to Kansas City, Missouri, the Missouri State Fair in Sedalia, one hundred miles to the east, was ten years old, and there were at least two Electric Parks not far away from the Disneys' home. Walt's daughter Diane recalled that her father used to sneak into Fairmount Park as a boy. Fairmount, opened in the mid-1890s, was a true park of fifty acres situated on a lake in the eastern part of the city. It offered outdoor recreation as well as entertainment, roller coasters and other rides, a miniature train, a zoo, horse shows, and a racetrack—much to amuse a growing boy.

But the so-called trolley parks' glory days of the 1910s and '20s ended with the Great Depression and World War II. Fairmount Park in Kansas City closed in the 1930s, the victim of fires and reduced revenue. At amusement parks that stayed open, thin attendance led to neglect, and their reputations suffered as much as or more than their appearance. The games of chance along their midways were notoriously rigged against those wagering to win prizes, and lax maintenance meant the lure of a serene escape had been tarnished by an atmosphere of decay. The return of soldiers after the war and the subsequent economic boom worked against many smaller amusement parks, as families moved out of the cities served by trolleys and bought automobiles of their own, expanding their amusement options via the burgeoning interstate freeway system.

One of the reigning kings of the amusement industry, Luna Park on Coney Island, had burned in August 1944 and never recovered, closing permanently two years later. By the time Walt Disney visited Coney Island in the early 1950s, its surviving amusement destination, Steeplechase Park, was on its last legs, demolishing attractions rather than building new ones. Walt judged it ugly and off-putting, its employees unpleasant. (It closed in 1964.) Coney Island's impressive 150-foot Wonder Wheel, built in 1920, was still operating, but it was a standalone attraction, its owner unable to control the dilapidation at its base. Walt wanted nothing to do with Coney Island, and no typical roller coaster-type rides appeared in his initial plans for Disneyland.

Walt also visited countless other amusement parks across the country, talking to their owners and operators, hearing their stories of what rides people liked, how they handled staffing, and which ventures were the most and least profitable. He was friends with some of the park operators, including Beverly Park owner David Bradley, whose wife, Bernice, had once worked in the story department at Walt Disney Productions. But the typical amusement park's disjointed collection of attractions, unremarkable food, and disinterested workers was a far cry from the cohesive and welcoming place he envisioned.

More to his liking was Greenfield Village, a "living history" park that opened in 1929 outside of Detroit, Michigan, as part of the Henry Ford Museum. It consisted of some one hundred historical buildings, bought by Ford from locations around the country and moved to the Village site, where they were arranged to re-create the sense of a late-eighteenth-century American town. Greenfield Village was staffed not with barkers but with trained interpreters, who explained how early Americans lived and worked, and performed craft demonstrations.

Walt had visited Greenfield Village before—he took his daughter Diane there in 1943—but he went again in August 1948 with Disney animator Ward Kimball, as a side excursion on their visit to the Chicago Railroad Fair. The two men even posed, dressed as old-time railroad engineers, in the village's tintype studio. Greenfield was laid out on a grid of mostly straight streets, and one block lined with vintage shops resembled what Walt recalled of the Main Street in his boyhood hometown. It also had a small church, not unlike the chapel depicted just off Main Street in Ryman's pencil drawing of Disneyland. More than specific design ideas, however, what stayed with Walt from his Greenfield Village visits was its warm sense of nostalgia, of separation from the present day. That was something he'd want to accomplish in his park.

Nostalgia was also a theme at Knott's Berry Farm in Orange County, south of Los Angeles. As its name suggested, the park began as a farm, in 1921. It started serving Cordelia Knott's chicken dinners in 1934, in the small berry shop and tearoom she and her husband Walter had opened. Over the years, the dining room grew to seat 350, but the wait

time extended to three hours on some nights. In an effort to amuse the waiting crowds, Walter started building scenes around the property—a rock garden, a waterfall, a twelve-foot volcano that emitted steam. In 1940, he added what he called Ghost Town, a Western village consisting of wooden buildings constructed from actual abandoned wrecks he had relocated or bought for scrap. By 1947, when the Knotts gave their business its current name (replacing “Knott’s Berry Place”), the lively Ghost Town—with a Pan for Gold spot and staff members portraying Western characters—was attracting more people than the restaurant. While businesses founded as amusement parks were foundering, Knott’s Berry Farm, which sought to amuse its restaurant patrons but not to fleece them, was expanding. Ghost Town strove to be, first and foremost, a coherent and welcoming place. Rides would come later.

Walt Disney and his wife, Lillian, were friends with the Knotts and had enjoyed Cordelia’s famous fried chicken on many occasions. They had watched the Knotts’ park grow and attended the opening of the Berry Farm’s narrow-gauge Calico Railroad ride in 1952. By then, the park also featured a carousel and a stagecoach ride—elements that would find their way into Walt’s plans for Disneyland. One aspect of Knott’s Berry Farm was not part of Disney’s planning: the park did not charge for admission until 1968.

The Knotts had a head start on Walt, but his notion of opening a Disney-themed park predated the expansion of the Berry Farm into amusements. Walt’s epiphany at the Griffith Park carousel—or maybe at Beverly Park—likely took place no later than about 1946 or 1947, when his two girls were still young. It was about that time that Walt started in earnest to plan the kind of park he envisioned.

III. DISNEYLANDIA

On August 31, 1948—soon after his return from Greenfield Village—Walt Disney’s office issued a memo to Disney studio artists describing a proposed park (he would refer to it as “Mickey Mouse Park” in a letter to a fellow train enthusiast later that year) in some detail. It would

have a Main Village, Indian Village, Western Village, carriage and stage-coach rides, and a railroad that circled the property, mostly along the perimeter. The proposed site was an eight-acre plot in Burbank, across Riverside Drive from the Walt Disney Studios. Future Imagineer John Hench, who lived on Riverside Drive, remembered seeing Walt in that “weed-filled lot—standing, visualizing, all by himself.” Hench thought Walt was measuring distances in strides, referring to a paper he was holding that might have been a layout or other early plans.

By the early 1950s, Walt had a good idea of what he wanted to build, but he needed to present his proposal to the Burbank City Council to get its approval—he needed concept art. That meant he needed an artist to execute his vision, just as Herb Ryman would do two years later. After a lifeless attempt by an architectural firm, the man Walt selected to sketch out his Burbank park was, like Ryman, a Hollywood designer and illustrator. His name was Harper Goff, and Walt had not met him in Los Angeles through their mutual movie connections. In one of those fateful coincidences that reverberated through the decades, the two men had met while shopping in London.

Goff was an accomplished artist who had painted illustrations for magazines in New York before moving back to Southern California, where he'd spent his late teens. He was soon employed assisting in set design for many Warner Bros. films—*Captain Blood*, *The Life of Emile Zola*, and *Sergeant York* among them—from the 1930s through the 1940s. In 1951, having left Warner Bros., he was on vacation in London and stopped in at a retail location for Basset-Lowke, the highly respected British manufacturer of model trains. A longtime railroad enthusiast, Goff was looking for unusual miniature locomotives to add to his collection. He found one he wanted, but the shopkeeper told him it was on hold for another buyer until that afternoon. If the original buyer changed his mind, Goff could have it. He decided to drop by again before closing time, just in case. As Goff told the story, “We came back that afternoon and we saw this fellow in the store, and he had purchased the locomotive. He turned to me and said, ‘I’m Walt Disney. Are you the man that wanted to buy this engine?’ Well, I almost fell over. He asked me what I

do for a living, and I told him that I was an artist. He said, ‘When you get back to America, come and talk to me.’”

Goff did just that, curious to see what an animation studio might want with a live-action set designer. Walt explained that Disney’s partially live-action *So Dear to My Heart* (1949) and its adventure hit *Treasure Island* (1950) were just the first two of a planned full slate of non-animated movies. Goff took the job and would become best known as the artist who created the designs that convinced Walt to turn Jules Verne’s novel *20,000 Leagues Under the Sea* into a movie. But first there was the matter of Walt’s proposed Burbank park: could Goff create a lively aerial view? He could, and he produced several variations, showing the park’s train, puffing steam; its Mark Twain-era paddle wheeler on a loop of artificial river; its stagecoach, pulled by galloping horses; its carousel and child-friendly carnival; its Old Town Western village; and other features, most of them described in Walt’s 1948 memo.

The name of the project was now Disneyland, as described in some detail in a March 1952 article in a Burbank newspaper. The name was a variation on a different Walt idea, which he had called Disneylandia—not a theme park, but a traveling exhibit.

The Disneylandia concept had emerged from another of Walt’s fascinations: miniatures. He had begun collecting and making miniature rooms and buildings after visiting the Golden Gate International Exhibition in San Francisco in 1939. A display there called the Thorne Room Miniatures showed thirty-two intricately furnished chambers from different historic periods, each one hand-crafted at two feet tall by three feet wide, and eighteen inches deep. Back at the studio, Walt asked Ken Anderson, veteran art director and a future Imagineer, to sketch out scenes from the Old West to turn into mini dioramas.

Walt told Anderson, “I’m tired of having everybody else around here do the drawing and the painting. I’m going to do something creative myself. I’m going to put you on my personal payroll, and I want you to draw twenty-four scenes of life in an old Western town. Then I’ll carve the figures and make the scenes in miniature.” Some furnishings Walt would construct, some he acquired through ads in newspapers and hobby

magazines. “When we get enough of [the miniature scenes] made,” he continued, “we’ll send them out as a traveling exhibit.” The name of the proposed collection and tour was Disneylandia. The first scene that was completed was a scale model, not even a foot tall, of the set for Granny Kincaid’s cabin, seen in *So Dear to My Heart*, with a tiny spinning wheel, rocking chair, and shelves filled with teeny jugs and other crockery. It was exhibited in late 1952 at the Festival of California Living at the Pan Pacific Auditorium in Los Angeles, intended to promote the upcoming Disneylandia tour.

Walt’s traveling show plan had been inspired by a national charity tour of silent film star Colleen Moore’s Fairy Castle, a doll-house-like collection of miniature rooms that had mesmerized visitors across the country in 1935. It had taken one hundred people and \$500,000 to build the Fairy Castle, and Walt himself had donated to Moore two tiny portraits of Mickey and Minnie Mouse that hung over a fireplace. The castle had been displayed in a series of toy stores, but Walt thought he could install his Western town miniatures in railway cars and take them from town to town, charging visitors to see the scenes.

Walt then decided to up the ante in his exhibition, adding movement to some of the miniature tableaux. On a visit to New Orleans, he had bought a mechanical bird that moved its wings and sang, powered by a wind-up clockwork mechanism. Walt’s idea was to re-create and advance that technology for what came to be known as Project Little Man—a mechanical puppet on the stage of his miniature Western opera house, as depicted in one of Anderson’s paintings from 1949. The Little Man would have a cane and straw hat, and his routine would be based on a reference film Walt had commissioned of actor Buddy Ebsen doing a little soft shoe. Once Project Little Man was in the works, Walt expanded his idea to encompass another of Anderson’s scenes. Inside the old-fashioned barber shop, the barber, his seated customer, and two friends would become a mechanical barbershop quartet, moving in time to a recording of “Down by the Old Mill Stream.”

Future Imagineer Roger Broggie, the head of the studio’s Machine Shop, and his team got the Little Man to work, although the machinery—hidden

beneath the scene—was cumbersome and high-maintenance, which would have made a traveling display a touchy prospect. Broggie got as far as creating half the barbershop quartet when the Disneylandia project was called off. Among other impediments, estimated revenue wouldn't have covered the costs, and grimy railroad yards, where the traveling boxcars would have been parked, were considerably less family-friendly than toy stores. But Disneylandia's development work had been another significant step toward the creation of Imagineering. Future Imagineer Marc Davis, who had joined the studio in 1935 during the production of *Snow White and the Seven Dwarfs*, remembered both Anderson and Goff working on the plans and sketches for Walt's miniatures—each unaware of the other's involvement—with contributions from future Imagineer Wathel Rogers, who made models as a hobby. The line between work on Disneylandia and the proposed park was blurred, since the park's Old Town would feature some of the same Western scenes Anderson had been drawing for years. Walt's love of miniatures and mechanical people would guide aspects of Disneyland for decades, and model-making would become a cornerstone of the Imagineers' work.

Little by little, Walt was seeing what his artists were capable of, directing their talents away from their original assignments—whether animation, background painting, filmmaking machinery, or set design—and toward his own visions of a buildable fantasy realm that would transport people out of the present day. Instead of creating models that people could view but not enter, Walt set his sights on something grander. “We’re going to do this thing for real!” he told Broggie. Disneylandia would be supplanted by Disneyland.

But it would not be in Burbank. Despite Goff's engaging drawings and layouts, and Walt's best effort to make the park sound clean and educational, the presentation to the city council was a bust, the members voting against the project for fear of noise, accidents, and an undesirable “carny atmosphere.” Walt was miffed, but the rejection was a blessing in disguise. It was spring 1952, and it was becoming clear that Walt's dream of Disneyland could not be shoehorned into a cigar-shaped plot of land along the decidedly un-scenic (and usually dry) Los Angeles River. (The

site is even less scenic today, as the Ventura Freeway was built alongside the riverbed, on the edge of the property. The Disney Company found other uses for the land, building a new Animation Building there in 1995, with a giant Sorcerer's Hat from *Fantasia* over the entrance. The West Coast headquarters for the ABC television network was built there in 1999.)

Walt was undaunted by Burbank's rejection and continued to work on planning a park. He had gained an important deputy in Richard Irvine, whom everyone called Dick. Irvine had been an art director at 20th Century Fox when he agreed to leave the studio to work on Disneyland—Walt's first full-time artist dedicated to creating his park. Irvine's first assignment was to serve as liaison with the architectural firm Walt had contracted to create preliminary plans. The first was headed by Charles Luckman, an architect, and William Pereira, an art director at Paramount Studios. Despite guidance from Walt and Irvine, the firm's work was unimaginative and dull, lacking whimsy and charm. It wasn't what Walt had in mind. He next went to his friend and neighbor architect Welton Becket to ask for help. Becket listened, then gave Walt some of the best advice he would ever get: Disneyland, he said, was such a particular project, so entwined with Walt's own imagination, it needed to be designed by the artists at the Disney studio, by set designers and others who understood how Walt thought. Architects could be consulted as needed to turn the artists' ideas into buildable blueprints, but not to do the original designs. Walt took his friend's advice. Irvine would help him put together the team he needed from within his own studio, adding other motion picture artists as fate dictated (as it had in the case of Harper Goff).

"Because Dick had worked with movie set designs, creating structures and settings, he understood our needs more than standard architects," observed John Hench, who would soon be one of the artists tapped for Disneyland. The people Walt needed to realize his vision were Hollywood storytellers, whether animators, art directors, or technicians—people who knew how to engage an audience and what it took to transport them to a new realm for a few hours. "Very few architects have any experience

with theater at all,” Hench added, “and the kind of architecture we use is closer to the theater.”

On December 16, 1952, Walt solidified his dream team by founding a new company, separate from the studio and wholly owned by Walt and dedicated to the Disneyland project. Originally called Walt Disney, Inc.—a name confusingly similar to Walt Disney Productions—it was renamed WED Enterprises the next year, a name derived from Walt’s initials. While the studio had gone public in 1940, and was therefore answerable to the shareholders, WED Enterprises was a private company where Walt could do as he pleased. His instincts for who would fit in at WED were sharp, recalled Marty Sklar. “He put people here in the beginning that he wanted here. He picked people out of the studio—John Hench, and Claude Coats. Claude was a background artist in animation, and turned out he was the best layout artist we ever had here at Imagineering.”

Walt needed artists with more than pencil skills, as he had understood when he called Herb Ryman in September 1953. He needed partners, co-conspirators, people who would listen and also talk back, who would do his bidding but with an additional layer of vision and creativity. That described Hench and Coats and certainly Ryman, who finished his drawing of Disneyland just in time that September. A few days after he’d gone home from his marathon drawing session and caught up on his sleep, he got another phone call. “Walt was ecstatic,” Ryman recalled. “And he said, ‘Herbie,’ he said, ‘we’ve got the money. We’ve got the money. . . . Now we can start.’ And he said, ‘Could you help us?’”

Once again, Ryman could not say no. “Walt had unassailable confidence in his convictions. He believed in this thing. And when he looked at you, you gotta believe it, too,” he said. He would have to give up all that free time he had been using to work on his portraits and circus paintings, “but I thought, ‘Well, this is just as interesting as anything else I’m doing. And if Walt thinks that I could be useful, I will be.’ And I told Walt, ‘I’ll work on this thing as long as it’s interesting and exciting. When it ceases to be interesting, I’ll go back to my work.’ And Walt

said—and I remember very well—he said, ‘Well, Herbie, I’ll try to make it interesting.’ And of course he did.”

IV. ALL ABOARD

In a sense, Walt Disney’s dry run for Disneyland was built at his home in Holmby Hills, a hilly neighborhood of spacious lots west of Beverly Hills that was bisected by Sunset Boulevard. Walt bought a five-acre plot there in 1949, planning not just a new home for Lillian and their two daughters but also his own scaled-down railway, circling the property. The address was 355 Carolwood Drive, just north of Sunset, and the train line would be known as the Carolwood Pacific.

It was the year after Walt’s visit to the Chicago Railroad Fair with animator and fellow train enthusiast Ward Kimball. Kimball not only collected model trains; he owned a full-size locomotive. Walt wasn’t planning to go that far, but the plans for his new home included the track for a small-scale, 7¼-inch-gauge train, just big enough for adult passengers to ride atop the cars like Gulliver in Lilliput. The layout was roughly oval, with an additional figure eight behind the house and a tunnel beneath Lillian Disney’s flower garden in the front of the property. The ninety-foot tunnel was designed with an S-curve, so the exit was not visible from the entrance, creating a few moments of thrilling darkness for passengers. Traversing the uneven terrain and crossing over itself, the layout included three bridges, a forty-six-foot trestle, and eleven switches.

The one-eighth-scale steam engine for this railroad was built in the Disney Studios Machine Shop under the supervision of Roger Broggie, based on plans acquired from the Southern Pacific Railroad; Walt dubbed the locomotive the *Lilly Belle*, after his wife. Walt himself built its whistle, flag stands, and handrails. Within the studio’s Machine Shop, “Walt had his own bench and tools, and he’d come down and work at night,” Broggie recalled. “He was a perfectionist.” The engine had a functioning steam boiler fired by coal chopped to a diminutive size to match the

scale of the burn box. The Machine Shop and Prop Shop joined forces to create the rest of the train: a flatcar, two boxcars, two cattle cars, six open-top gondolas, and a caboose. The Carolwood Pacific had its inaugural run in May 1950.

The project taught Disney a lot—not just about railroads, but about the skills of his machine shop and props department, and about designing landscaping to produce a desired effect. Building the Carolwood Pacific was as much about shaping the surroundings to match the ride as it was about laying the track to match the terrain. Trees and shrubs were relocated or brought in to block sightlines and muffle the train sounds on adjoining properties. The tunnel through the front yard preserved the atmosphere of a completely separate domain—the serenity of Lillian’s flower garden, visible from the house. Guests enjoying either experience might not even be aware of the other—just as guests on Main Street, U.S.A. in Disneyland would never know there was an exotic Jungle Cruise right behind City Hall.

The Carolwood Pacific also imparted a lesson in working with outside contractors. “I was out there helping him lay the track when they were building it,” recalled Harper Goff. “There were all kinds of problems, and the contractor thought he’d be helpful and, you know, score a few points with Walt. So he said to him, ‘Mr. Disney, this is turning out to be very expensive. I’ll tell you how you can simplify it and save money: make the tunnel straight or with a mild curve.’ Walt looked at him long and hard and raised one eyebrow the way he always did. ‘Do you think,’ he finally said, ‘that if I wanted to save money, I’d be engaged in building this complicated railroad around my house?’ The contractor was taken aback, of course—and the tunnel was built just the way Disney wanted it.” Builders were grounded in numbers and schedules and could not be expected to share or even understand the storytelling their work was designed to accomplish. They needed to be closely supervised, lest their helpful suggestions destroy part of the guest experience.

The railroad also wound up imparting an unpleasant lesson in rider safety. Walt loved to serve as the engineer himself, seated on the coal car attached to the engine and lifting the roof of the cab to reach the controls

inside. But so many people clamored for rides that he often had to deputize others to drive the train. A famous photo of surrealist artist Salvador Dalí seated on a gondola in a dapper suit, holding his signature walking stick between his knees, for example, depicts an unidentified young man in a railroading outfit in Walt's place behind the engine. In the spring of 1953, one of these substitute engineers was driving the *Lilly Belle* when it took a curve at too high a speed and derailed. Walt closed down the railway for good. It was a mishap that would not be repeated at his park, where the railroad would be operated by trained engineers—safely and precisely.

The people who worked with Walt on the Carolwood Pacific were some of the original Imagineers, Broggie and Goff among them. Broggie also represented the porous divide between WED Enterprises and the Disney Studios, since the Machine Shop headed by Broggie was part of the studio, but it serviced many of the mechanical needs of WED projects. WED, meanwhile, worked exclusively on the proposed park, even before funding was secured. Under the leadership of Walt and Dick Irvine, WED had a growing staff, some coming from outside the Disney studio. "Dick [Irvine] was from 20th Century Fox, an art director, and had worked on many pictures there," Marty Sklar recalled. "Dick knew all the art directors and would bring them in for different projects. Some of them stayed."

But many of the early leaders at WED Enterprises were artists Walt knew well, and he simply plucked them from their jobs at the Disney studio—sometimes abruptly. "There's some wonderful stories about that," Sklar said. "I remember John Hench told me that Walt came into his office [at the studio] one day and looked over his shoulder at what he was doing and then started to walk out and said, 'By the way, John, you're going to work on Disneyland.' And he turned and said, 'And you're gonna like it.'"

Hench was the quintessential Imagineer, often referred to as "Disney's Renaissance artist" for his voracious appetite for knowledge of all things and for the ease with which he adapted his artistic talents to all the different forms needed to create a theme park. He read fifty-two

magazines a month and was a natural storyteller, never hesitating to share his experience, whether as a hands-on teacher or more generally as a philosopher despite being somewhat shy. More intently than anyone, perhaps including Walt himself, Hench sought the meaning behind what the Imagineers were creating—the goals and guiding principles—so that wisdom could be verbalized and passed on. He was particularly fascinated by and adept with color theory, and generations of Imagineers would hold their breath as Hench reviewed their choices of hues for everything from castle turrets to cobblestones. His expertise was largely self-taught, learned through years of experience in different aspects of animated film production. For *Fantasia*, *Dumbo*, *Peter Pan*, and other Disney classics, Hench had worked on effects animation, contributed to story and layout, and painted backgrounds. He spent three years in the Camera and Special Effects Department. He collaborated with Salvador Dalí on the animated short *Destino*, begun in 1945, shelved in 1946, and finished in 2003, when Hench was ninety-four.

So when architect Welton Becket advised Walt to look to his own artists to build a team to create Disneyland, Hench was among the recruits, although not until 1954, more than a year after the founding of WED Enterprises. The team who had worked on the designs and fabrication for Disneylandia—Harper Goff and Ken Anderson among them—were the most natural first picks. Dick Irvine helped Walt select others, including his former Fox associate Marvin Davis, an art director whose work on movie sets demonstrated “how to create architectural form that had a message for people,” as Herb Ryman observed.

Ryman joined the team permanently not long after Walt had brought him in to sketch that aerial view of Disneyland. In the months that followed Roy’s fateful 1953 New York trip, Ryman said, “We’d attack each problem as it came, knowing really full well that eventually there would be scores and hundreds of people involved in this thing to bring it to its necessary completion. But we did have the privilege of being in on the birth of the baby. And it was quite a baby.”

Ryman recalled that he and other early Imagineers “have talked many times about, what was it that brought these particular people together,

these special original people? And of course it was coincidence, it was accident, and it was naturally a fortuitous thing.” That Saturday morning in 1953, he speculated, “Dick Irvine, my friend, and Marvin Davis were already there in the parent company, WED Enterprises. And so naturally when Walt was casting around for somebody to do this job that was needed for Roy to go and get the money, very likely Bill Cottrell and Dick Irvine and Marvin Davis said, ‘Why don’t you give Herbie a call? It’s Saturday and he’s probably at home and maybe he could come over.’ So that was the way it worked.”

But despite Ryman’s modesty, it wasn’t quite that simple. Walt had an instinct for which of his studio artists, present and past, would best contribute to Disneyland. “He was a very intuitive guy,” Hench said. “He got his knowledge dropped in his lap from somewhere and he didn’t even know where it came from. It’s hard to beat intuition.” Disneyland, Hench believed, could not have been built “except by people that had had some motion picture experience, because we relied so much on all the techniques—introducing an idea and following through a theme or an idea or a story very much as you do in motion pictures.”

This narrative approach to an amusement park came to define *Imagineering*, long before the word *Imagineer* came to define the artists at WED Enterprises. Disneyland would be a place that shared some characteristics with both the thrills of Steeplechase Park and the historic wistfulness of Greenfield Village. It would echo the elegance and rich history of Tivoli, offer some of the aspirational and educational characteristics of World’s Fairs, and enlarge the homey fun of Walt’s Carolwood Pacific to the scale of nearly full-size steam engines. What it would not be was vulgar and grimy—the chief concern of Lillian Disney in another oft-told anecdote about Walt. “When he told his wife that he was going to build what became Disneyland,” Sklar recounted, “she said, ‘Why would you want to do that? Those places are so dirty, people who work there are so unfriendly.’ Walt looked at her and he said, ‘My park’s not going to be like that.’”