

Desert Song

By Jack English

Chapter One: Dust Storm

It was a hundred and ten degrees and the desert wind whipped up a blinding cloud of dust. Jack English pulled his coat tight to keep the dust from penetrating his soul. And he was grateful to have snug fitting goggles to keep the grit out of his eyes.

As the wind subsided and the curtain of dust grew thinner, he saw a solitary figure standing on a rock not more than a stone's throw away. The figure wore red Keds sneakers and was wrapped head to toe in khaki, a scarf covering him from shoulder to goggles. His hat was snugged down so that the only hint of life was the light that glinted off the lenses of his goggles.

"You're crazy, you know!" English shouted over the ebbing wind.

The figure stared out at the horizon, and then turned to English as he approached. "Am I crazy?"

"Certifiable."

The figure looked down at the ground for a moment. "Maybe I am."

"What the hell are we doing here?" English asked.

"I own this, all of it, for ten miles in every direction." He stretched his arms wide and did a quarter turn left and right.

"What the hell are you going to do with it?"

The wind stopped as abruptly as it had started. He unwrapped his scarf and slid his goggles up onto his head.

“I’m going to plant trees.”

“Trees? This is the most barren, desolate, godforsaken chunk of land I’ve ever seen. How do you expect to plant trees? How are you going to water them? How are you going to keep them from burning to a crisp under that sun?” English raised his hand to the sky. “And why did you ask me here? I can’t help you.”

The figure standing on the rock was Duncan Fitzgerald. Jack English had gone to college with him, Rutgers University in Camden to be precise. They were fraternity brothers, and they both knew how to knock back a brew, but there wasn’t much else to connect them.

Fitzgerald studied physics and speculated about how physics could be applied to the most obscure problems. For example, it is well known that if something is vibrated at its resonant frequency it can shatter. Soldiers never march across bridges because their synchronized steps might vibrate a bridge at its resonant frequency and bring it down. How did Fitzgerald apply this idea in college? There was a rival fraternity across the street from his. He speculated that if he could project sound waves into the other frat house at the resonant frequency of people’s bladders, he could make everyone over there need to pee at the same time. He never built a gadget to project those sound

waves, but the fact that he thought about it says something about him.

After graduation Jack English joined the Army. Duncan Fitzgerald landed a job with Lockheed Martin and spent a dozen years at their Skunk Works. He wouldn't say what he worked on, other than to smile and say, some of it was pretty spooky. Then, all of a sudden, he quit. Nobody knew why he quit, he just quit. He said it was time to close one chapter of his life and begin another. Two years later, he called Jack English. If that new chapter had been titled *Mad Irishman Takes to Drink*, everyone would have understood. Hell, English would have joined him. But this was something completely different.

Fitzgerald was always a lateral thinker. Never one to say A, B, C, he was the type that said A, B, Pi, 3. His logic was tortured, but his results were usually good. But this?

Fitzgerald looked at his phone. "If all goes well, we should plant the first tree in half an hour."

Two approaching vehicles kicked up a cloud of dust. One was a flatbed truck with something big strapped to it, the other was a crane.

"This heat is killing me," English said, looking at the Ford Expedition that he came in. Its air conditioning was running full blast. "I'm going to cool off."

Jack English had taken an overnight flight from Atlantic City International to Las Vegas, where one of Fitzgerald's people, Stu DeSantis, picked

him up. At first, he thought the big four by four was one of Fitzgerald's grand gestures. But, six hours later, having driven over roads that only existed in people's imagination, he was grateful Fitz hadn't skimmed on the horses.

DeSantis didn't say much, just that Fitzgerald apologized for not picking him up personally. English peppered him with questions. DeSantis gave short, unresponsive answers.

"What's going on?" English asked. "Any idea why he called me?"

"Couldn't say."

"You been working with Fitz long?"

"Not long, maybe a year," DeSantis said.

"What do you do when you're not picking up people at the airport?"

"This and that."

"Is he in trouble?"

That was the question DeSantis didn't immediately answer. He just gave English a long sideways glance. "It's not my place to say."

When the flatbed truck and the crane arrived, DeSantis walked over to the crane operator who was talking to Fitzgerald. They extended the machine's legs so it wouldn't tip over and checked the hydraulics.

Fortunately, DeSantis left the Expedition running with the air conditioning set to max. Not that an air conditioner made much of a dent in the hundred-and-ten-degree heat.

Fitzgerald used a shovel to scrape away some dirt and found what looked like a cement footing a couple of feet on each side with bolts the size of bananas coming up out of it. The crane slowly lifted something big into the air. English didn't know what it was, but it was at least thirty yards high. Fitzgerald and DeSantis muscled the base of the object onto the bolts and used a large wrench to snug down nuts the size of donuts. Once it was secure, Fitzgerald reached up into the whatever it was and pulled a cord. A puff of dust came off the object and it unfolded into the biggest damned tree English ever saw. The branches must have been twenty yards across; the lowest branch was ten yards in the air. It instantly created a huge pool of shade.

English pulled the Expedition into the shade. It was instantly cooler.

Twenty minutes later, the second artificial tree was up. Fitzgerald was in his glory shouting, pointing, and directing operations, so English just sat in the truck and watched. By the end of the afternoon, he had erected eight of his artificial trees.

As the flatbed and crane pulled away, Fitzgerald reached into the pickup truck he had come in and pulled out a packet of documents bound together with a thick rubber band. Then he slid into the passenger's seat of the Expedition.

"I don't get it. What gives?" English asked.

“What’s the one thing a desert has too much of?” Fitzgerald asked.

“Dirt.”

“And what else?”

“Sunshine.”

“Exactly. My trees, my artificial trees, are thirty meters high and their canopy is twenty meters across. With a little overlap, I can cut the sunshine hitting the ground by sixty percent.”

“Don’t go all sciencey on me. Just tell me how big they are.”

“They are a hundred feet high and sixty-six feet across.”

“Why not build a roof? Or a sunshade or something?”

“Aesthetics. The human element. People don’t necessarily want to live and work indoors. My trees filter out some of the sunlight, but not all of it. And I used fractals to design trunks and branches and leaves that are consistent with nature, only better.”

“Better than nature?”

“Better in terms of providing shade. In nature, when sunlight hits tree leaves, some of it goes into photosynthesis, a little is reflected back into space, but a lot of it gets converted to heat. The leaves on my trees reflect ninety five percent of sunlight back into space. By varying the layout of the trees, I can put as little or as much sunlight on the ground as I want.”

“Yeah, but for what purpose?”

“To make the desert bloom.” Fitzgerald stared off into space.

“So why do you need me? You said it was a matter of life or death.”

Chapter Two: Foreclosure

Fitzgerald handed English the packet of documents. “I got this foreclosure notice.”

English looked at it. The first thing underneath the rubber band was a letter from a big Chicago law firm. English knew the firm must be big because there were twenty partners listed on the letterhead in tiny print. The letter was signed by Niles Merritt.

English read the letter and leafed through the packet. “It’s a stock purchase agreement. You’ve got investors.”

“So?” Fitzgerald asked.

“Once you take on investors, you’ve got to dance to their tune. You don’t think investors hand over money with no strings attached, do you? These are the strings.” English waved the packet at him.

“I’m just the science guy. I left the paper shuffling to the lawyers.”

English flipped to the last page of the packet, “That’s your signature isn’t it? When you signed, you told your investors you’d meet certain milestones.”

“Look, science, new product development, breakthroughs – they don’t happen on a set schedule. You try something, it doesn’t work, you step back, rethink it and try again. You have no idea how far we’re trying to push the science here.”

“It doesn’t matter what you’re trying to do. It says that if you don’t meet certain milestones, they have the right to stop funding, get two more seats on the Board of Directors, replace management – that’s you, my friend – or even sell the project.”

Fitzgerald spread his hands wide. “What are we going to do?”

“We? Don’t you have a lawyer? What does he or she say?”

“My lawyer is as useless as an elephant at a barn dance.”

“The first step is to talk to your lawyer, what’s his or her name?”

“Lyle Krasnick. I already know what he’s going to say. A couple of months back, I got an offer to sell the property to some two-bit Las Vegas realtor. Krasnick advised me to sell.”

“For how much?”

“A couple bucks an acre more than I paid for it. Chicken feed really. Is there anything we can do about this?” Fitzgerald jammed his finger down on the packet of papers.

“That’s a big question. I usually don’t render legal opinions in four-by-fours. Is there someplace we can go to talk?”

“Let me drive. DeSantis will get my truck back to the lodge. We haven’t cut in any roads yet, so it’s going to be a little bumpy. The lodge is sort of my base camp.”

“Why didn’t you plant your *trees* around your base camp?”

“Good question. I’m a little concerned about wind loads. If one of these babies gets pulled up and starts flying around the countryside, I don’t want it to wreck my base camp.”

English and Fitzgerald swapped seats. Fitzgerald dropped the Expedition into gear. Its tires spun a little in the loose dirt before catching. There was no road. At most there were a few tire tracks crossing the desert. They came to an arroyo two dozen yards wide and a yard deep. For most of its length, there was a sharp drop from the desert floor to the bottom of the washout. Fitzgerald drove the Expedition along its length to a spot where the bank of the arroyo had collapsed and eased down into it, gunned the engine, picked up speed and drove up the steep embankment on the other side. They rounded a large stone outcropping and turned onto a dirt track pretending to be a road. A quarter mile ahead on the left, there was a large green patch. It stood out because it was the only patch of green for fifty miles.

Fitzgerald turned left onto a broad driveway. The green patch was a perfectly manicured lawn, thirty yards wide and a hundred yards long, which ran up to a stone plaza in front of a rustic stone and

timber lodge. Another driveway ran down the other side of the lawn from the plaza back to the dirt track. The driveways were flanked on either side by smaller versions of Fitzgerald's artificial trees.

"What's all that?" English pointed to the lawn.

"Demonstration project. It's to show how we're going to make the desert bloom. If you look carefully, you can see there is a three-hole chip and putt course laid out down its length. Nothing fancy, just an experiment." Fitzgerald parked on the plaza. "We're here."

"And here is, where?" English asked.

"I call it Desert Song Lodge."

"May I ask why? Does it mean anything?"

"Sometimes you can hear the wind whistle through the rocks and hills. It's sort of a low whistling sound. It's a sound you never hear in the cities, or on farms, or even in woodlands. You can only hear it in the desert. It's the song of the desert, hence desert song. Right now, the lodge is my construction office, fabrication shop, lab, and home. Let me introduce you to the gang and we can talk over a brew. What do you say?"

"I won't say no." English followed Fitzgerald up a set of wide stone steps and through a double door into what might be described as a lobby. It was two stories high, sixty feet front to back and at least two hundred feet wide. The ceiling was natural wood. To the left was the shell of what might be a registration desk. A balcony

constructed of rough-hewn beams ringed the central lobby. A row of doors at the rear of the balcony led to individual rooms. Several of the doors were open. Construction material was stacked in some of them. There was a machine shop at the far end of the lobby.

Fitzgerald swung his hand around his head. “It’s a work in progress.” Then he pointed to the steel beams running from one side of the lobby to the other. “I wanted to put wooden beams in there, but the span is just too great. Eventually, they’ll be covered in wood. No one will know.” He led English back into a kitchen. The man who picked up Jack English at the airport, Stu DeSantis, was already there, as were two other people.

“Let me introduce you to my crew. Jack English and I went to college together. More importantly, we were fraternity brothers. And, one of the most important things about being a frat brother is that we watch each other’s backs. That’s why he’s here. You all know we’re in deep yogurt and maybe Jack can help us dig out.”

“How?” a woman in khaki work clothes asked.

“Jack’s a lawyer.”

“God help us!” An older heavy-set man gripped his head with both hands. “The damned lawyers got us into this mess.”

Fitzgerald put his hand on English’s shoulder. “I’d stake my life on this guy. If anybody can bail us out...”

“We don’t need another damned Harvard lawyer pissing around,” the heavy-set man said.

“Don’t worry about Jack. He didn’t go to Harvard. He went to Rutgers Law School in Camden.”

“How do we know he’s any good?” the woman asked.

“Jack,” Fitzgerald asked, “you ever go up against a Harvard lawyer in a trial?”

“Sure.”

“And what happened?”

“I smoked him.”

“So, give Jack a break, will you?”

“You’ve already met Stu DeSantis, from Newark, New Jersey, a recent graduate of Ely State Prison. He’s the best damned car thief you’ll ever meet.” DeSantis was a skinny young man wearing a red cowboy shirt and sporting a pompadour.

“I’ve paid my debt to society and I’m ready to move on,” DeSantis grinned.

Fitzgerald proceeded around the table resting his hand on the shoulder of the heavy-set, fiftyish man with the set opinion about lawyers. He had a close-cropped haircut and black horn-rim glasses. “This is Norris Bailey, from no place in particular. I hear he’s a pretty good chemist, but I don’t need chemists. I need welders, so I’m teaching him to weld and do some other light fabrication. He is also a recent graduate of Ely State Prison.

Fitzgerald continued standing behind Bailey and extended his hand toward the only woman in the group. “That is Stephanie Cooper, we call her Coop. She is a former FBI agent.”

DeSantis placed a cold bottle of beer in front of each of them as Fitzgerald did the introductions.

English took a swig. *Damn! It was good*, he thought.

“Coop is a graduate of The Florence McClure Women's Correctional Center.”

“You mean as an employee?”

Cooper waved her beer bottle at English. I was a correctee, an inmate.”

“May I ask what you were in for?”

“Murder.”

Fitzgerald held up two fingers.

Chapter Three: What Went Wrong?

“You were in for murder?” English asked. “A tiger's heart wrapped in a woman's hide!”

“You called me what?” Stephanie Cooper jumped to her feet, her fist clenched.

Fitzgerald held out his hands. “*Henry VI*, Part I?”

“*Henry the VI*, Part III, but that’s close enough considering how long it’s been.”

Cooper stood there for a second, her fist clenched. “What’s going on?”

“It’s *Shakespeare the Drinking Game*,” Fitzgerald said. “We used to play it all the time at

the frat house. A couple of the brothers were English Lit majors. They created a drinking game based on Shakespeare.”

“Damn!” DeSantis said. “I shoulda’ gone to college. I love to knock back a brewski now and then. I’m in. How do you play?”

“When a situation came up that warranted a Shakespeare quote, one brother would throw it out, and the brother to his right would have to tell us where the quote came from or drink.”

“Fitz,” English waved his hand in Fitzgerald’s direction, “used to throw in quotes from Ben Franklin or Thomas Jefferson. If a brother didn’t immediately recognize it wasn’t Shakespeare...”

“They’d have to drink,” Fitzgerald said.

“Were you an English major? English the English major!” DeSantis laughed.

“I was supposed to be a history major,” English said, “but I actually majored in frat parties.”

“It didn’t seem to hurt you any,” Cooper said.

“Ah, well...”

“So, Jack. What do you think of my little gang?”

“What exactly do you do here?”

“I’m trying to make the desert bloom.”

“That’s a little vague,” English said. “How exactly are you going to make it bloom?”

“Let’s start with some basic physics.”

“I don’t know squat about physics.”

“Let me lay out the puzzle a little at a time and stop me when you get lost. So, we’re in the middle

of a desert. No rain. Too much sun. Too dusty. Nothing inviting about it. Agreed?"

"OK."

"Let's take those problems one at a time. Too much sun. There is no shade anywhere, so the sun bakes every hint of moisture out of the soil. That makes it hard for plants to grow. Still with me?"

"So far."

"Those big things we erected earlier today are artificial trees. You saw them. They're not trees. They are structures that provide shade. I could have built buildings to provide shade, but people don't necessarily want to live in an enclosed box. So, I designed shade structures to look like trees." Fitzgerald handed English a leaf from one of the trees. It was shaped like an oak leaf, but it was as big as a toilet seat. It was silvery on one side and dark green on the other. "The shiny side is up. The green side is down. I want to give the illusion of a tree, but the illusion doesn't have to be perfect."

"Why? What's the point?"

"With my artificial trees, I can control the amount of sunlight hitting the ground. At the very least, it will reduce the rate the soil loses moisture. At the most, it will provide cooling shade. We might even get some dew to condense out. What did you do after we erected the first tree?"

"I pulled into the shade."

"I think that's exactly what plants and animals are going to do."

English spread his hands wide. “But, that’s not the same as having rain. I mean, you’re just nudging around the edges, right?”

“A few years ago, a chemist at the University of California, Berkeley, Omar Yaghi, developed crystalline powders that can wick moisture out of dry air.”

“*Crystals? Really?*”

“Technically, they are called metal organic frameworks, MOFs. Anyway, he contacted an MIT engineer by the name of Evelyn Wang and they used his MOFs to build a water-harvesting device.”

“Didn’t I see that in *Star Wars*?” English asked.

“OK, Jack. I know you need proof. Tomorrow, I’ll take you to the pond and I’ll show you around.”

“The pond?”

“It’s not really a pond,” Cooper said. “It’s an experimental area that we’ve set up to harvest water using MOFs.”

“Realistically, how much water can you expect to extract with this stuff?”

“Right now, we’re getting two thousand kilograms a day,” Bailey said.

“You want to translate that into something regular people understand?”

“Five hundred and thirty gallons a day. That’s enough for six people to drink and take showers... if you’re careful.”

“OK. I’m impressed. But that still doesn’t tell me what you are up to.”

“Let me show you one more thing.” Fitzgerald dragged over a leaf the size of a beach towel. “This is a prototype leaf I’m working on. It will provide shade, and it will wick water out of the air using Yaghi-Wang technology. The water will flow down a capillary system built into the leaves and branches to the trunk. Water will be collected in a centralized water system. We’re already doing that with the trees flanking the front lawn.”

“Tell him the good part,” DeSantis said.

“I thought that was the good part,” English said.

“The good part is that we’re building flexible solar cells into the leaves. So, one tree will provide shade, water and power.”

“Damn!” English took a swig of beer. “So, you’re a brilliant inventor. What’s that got to do with all this?” He swept his arm around the kitchen.

“The plan was to showcase my technology along with that of Yaghi-Wang and some others at a high-end golf resort. That’s what Desert Song Lodge was supposed to be.”

“What went wrong?” English asked.

“Everything.”

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