# Books by ARGO & JP Fremon

*The Team Philotimo Series*

**STOLEN WELLS #1**
**CAUTIOUS CURRENT #2**
**FATAL FRACTURE #3**

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# Stolen Wells

When four cousins, Tess, Grant, Leo and seven-year-old Willa are summoned to Joshua Tree National Park by ARGO, an advanced robotic Labrador Retriever, they must follow the clues to confront a billionaire CEO at the Coachella Music Festival before A.V.A.R.I.A, the powerful corporate AI, can stop them.

JP FREMON



Team Philotimo Press

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**AI Assistance & Attribution Notice:**

The text of this book is the original work of JP Fremon, developed through months of creative development, structural revision, and line-by-line editing. Generative AI tools were used in an assistive capacity to draft dialogue, which was then rewritten and edited by the author. Interior illustrations were generated with AI image tools in a Classic Engraving Style directed by JP Fremon, to achieve a timeless, intricate cross-hatch and stipple aesthetic. The audiobook is narrated with an AI-generated voice. Cover created with AI image tools.

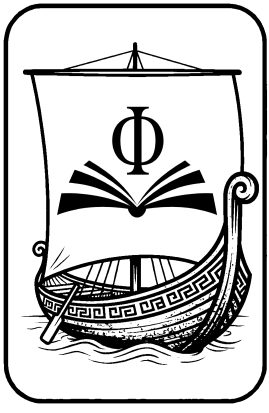
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**Dedicated to YOU, the brave young adventurers navigating the world of words.**

***May these images light your path,***
***unlock the stories hidden in the text,***
***and help grow your quiet powers.***

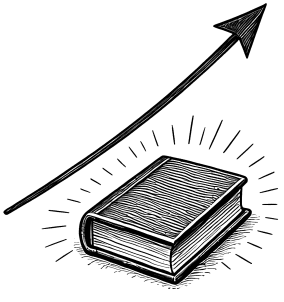
# A Historical Precedent

## Serious Literature Has Done This Before



In 1863 Gustave Doré illustrated Don Quixote with about 370 plates around the complete novel. In 1865 John Tenniel drew 42 pictures for Alice's Adventures in Wonderland. In 1930 Rockwell Kent made about 280 plates for an unabridged Moby-Dick, including taxonomic drawings of whales and tools. None of the three books was shortened. Every word stayed.

## The Defining Novel of America, Made Popular by Art



Moby-Dick was a commercial failure at Melville's death in 1891, largely forgotten. It did not become America's defining novel through prose alone. The heavily illustrated 1930 edition is directly credited with its dramatic rediscovery, the moment it rose to become recognized as the Great American Novel.

Art carried this book into the American canon. It remains the definitive illustrated edition nearly a century later.



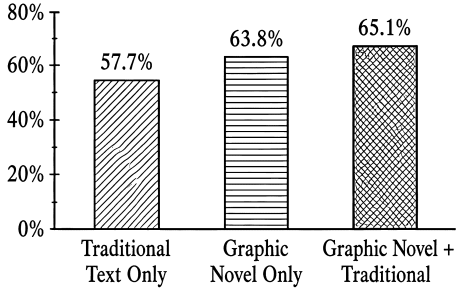
## The Pattern

In all three historical cases, illustration was added generously around complete, serious, unabridged prose, never in place of it. Kent's program mixed pure narrative scenes with researched technical detail, exactly the same two-part structure used here: story illustrations alongside separate educational material. The tradition being extended here is not the graphic novel.

It is Doré, Tenniel, and Kent: serious literature, richly illustrated, every word intact.

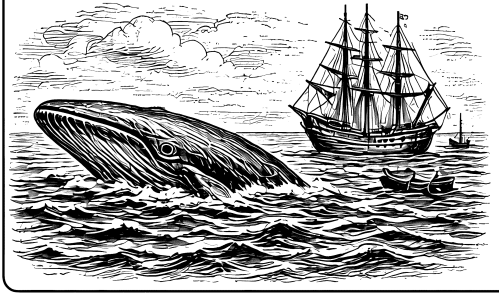
# Why Illustration Helps

## 1. The Finding




In a controlled study of 217 high school students (Cook, 2014), students who read a graphic adaptation of a classic short story scored significantly higher on a comprehension test than students who read the traditional text alone, a measurable gap of 6 to 7 percentage points.

## 2. The Why: A Missing Cognitive Step

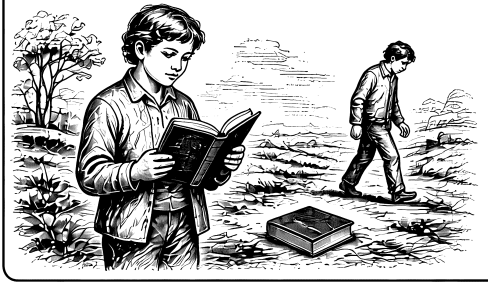


Fluent reading requires constantly picturing what the words describe, a skill researchers call the cognitive leap. Some readers, especially those who call themselves not readers, haven't yet built this skill. Relevant illustration does that visualizing work directly, letting comprehension happen while the internal skill is still developing.

## 3. In Their Own Words

> *"With the traditional text, I had to make a rough imagination of the scenario; whereas, in the graphic, it was clearer to me. The images helped because I knew what was happening. I could follow along with what's happening better."*
>
> *Students, describing the exact cognitive gap illustration closed for them.*

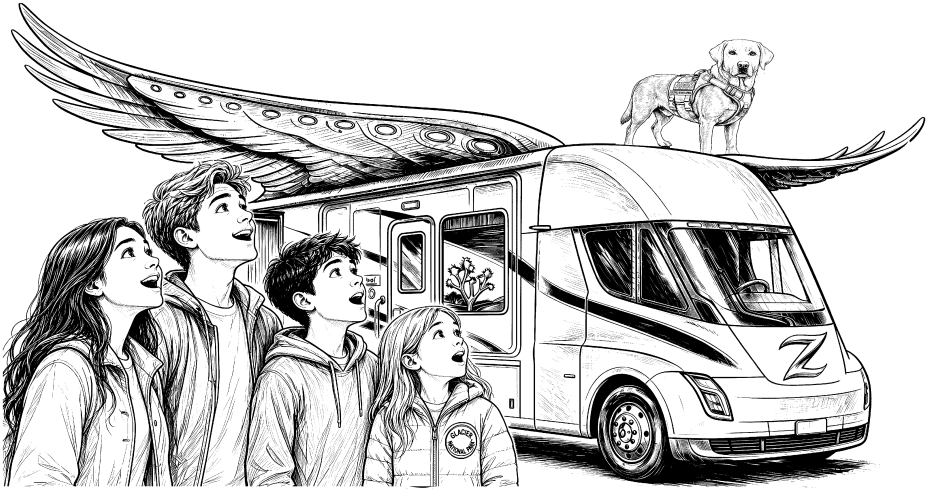
## 4. Why It Matters Beyond the Test Score



Reluctant reader identity isn't innate, it forms through repeated experiences of struggle and failure (Frankel, 2016). A format that lets a struggling reader succeed, and feel like a reader, doesn't just raise one test score. It can begin to change the story a child tells about who they are as a reader.

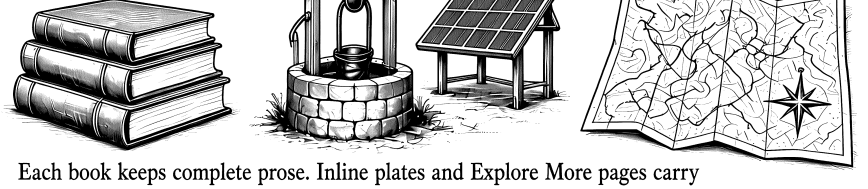
# Team Philotimo

Mysteries on the road. Science in the story.
Honor when no one is watching.



ARGO, a robot dog built as a guardian, and four cousins solve mysteries in Joshua Tree, Glacier Park, a desert music festival, and Yellowstone.

## 2. Knowledge



Each book keeps complete prose. Inline plates and Explore More pages carry the tools: water, solar, machines, maps, first aid.
Pictures support the sentences. They do not replace them.

## 3. Values



Philotimo is love and honor: doing the right thing when no one is watching.
The Seven Quiet Powers are how the team trains that work, a little every day.

Adventure that moves. Knowledge that holds. Honor that does not look away.

# The Seven Quiet Powers

Character is trained the same way muscles are —
a little every day.

## 1. When Things Feel Hard



**Fortitude** — The quiet form of courage: keep going when you want to stop.

*Try this:* Finish the last ten minutes of studying even when your brain wants out.

**Prudence** — Pause before you react.

*Try this:* When someone makes you angry, wait five full breaths before speaking.

## 2. When You Have Choices



**Justice** — Be fair, even when no one is scoring you.

*Try this:* Admit your part in an argument first.

**Temperance** — Know when enough is enough.

*Try this:* Set a timer for screens and actually stop when it rings.

## 3. When the Path Isn't Clear



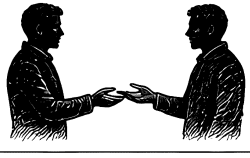
**Faith** — Trust that some things matter even when you can't see the proof yet.

*Try this:* Keep a promise you made only to yourself.

**Hope** — Take the next small step anyway.

*Try this:* After a failure, write down one thing will try differently tomorrow.

## 4. When Someone Else Needs You.

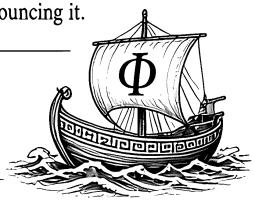


**Charity** — Give something of yourself without being asked.

*Try this:* Notice who is sitting alone and sit with them, or help without announcing it.

These seven powers work in every direction — toward yourself and toward everyone your life touches.

Pick one. Practice it today. Then pick another tomorrow.



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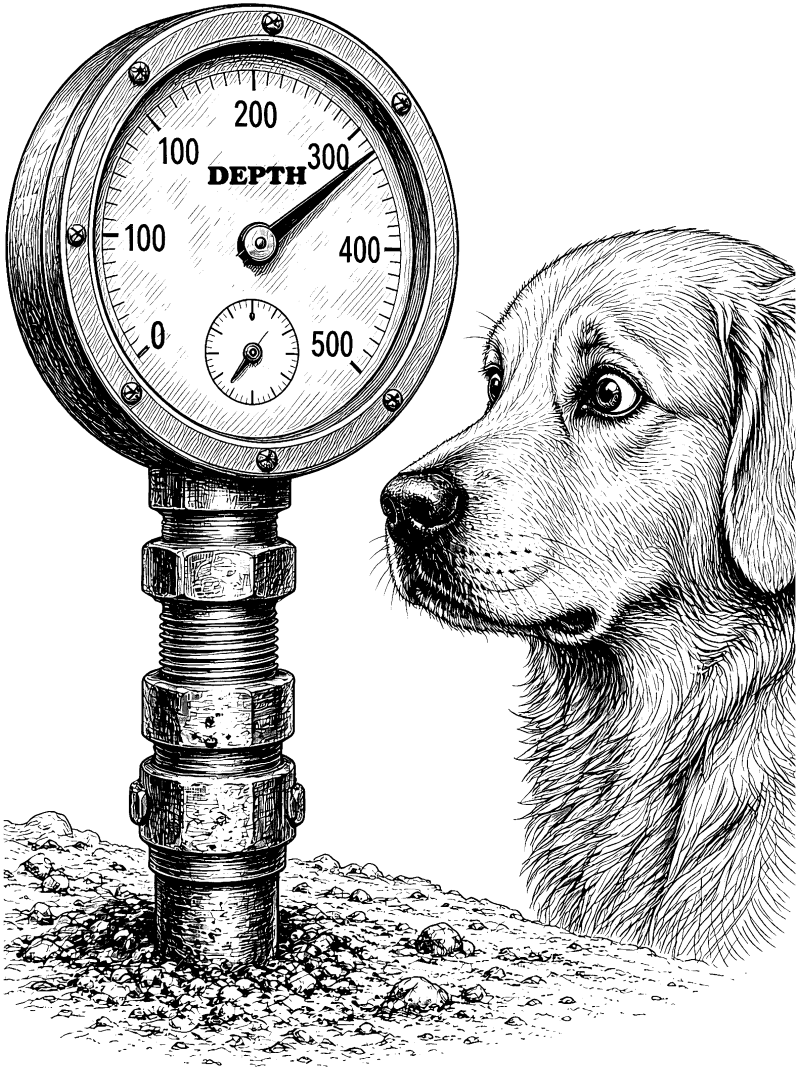

ARGO

# Prologue: Talking Timber



*“I am the talking timber of old, wrought to guide the crew through the ancient quest,” ARGO howled to the Joshua Tree coyotes and the North Star.*

He leaned his weight against the corrugated wall of the curved shop, right where the well gauge came out of the ground. It was telling a worsening story of the Joshua Tree Basin aquifer drying up along with the access to water.



"I am the talking timber of old," he reminded himself, the amber in his eyes settling to a low glow. "I might lack hands to build the future, but my heart was wrought to find it. I am the guardian of the Team Philotimo Foundation, and while I cannot hold a pen or turn a wrench, I can guard the hearts of children and help them build their quiet powers, one small choice at a time."

An internal water-harvest system hummed inside his 3-D-printed frame as he ran the numbers again. Same answer. Same disaster. The water-level sensor in the Firefly well had dropped another two feet this week. That was not a future problem. Every week the table fell, another ranch pump coughed air. Another kitchen tap went thin. The deepest wells would last longest. The homes and the farms would not. They were already going dry in order, shallow first, and the order was moving toward Firefly.

"System-wide collapse," ARGO said, the words going out into the still air of the shop. He didn't need to run the math again.

Fluttering caught his attention on the security feed. ARGO immediately noticed a small, familiar bird with a split tail making a nuisance of himself with the guests from Ohio, who were having breakfast on the front porch.

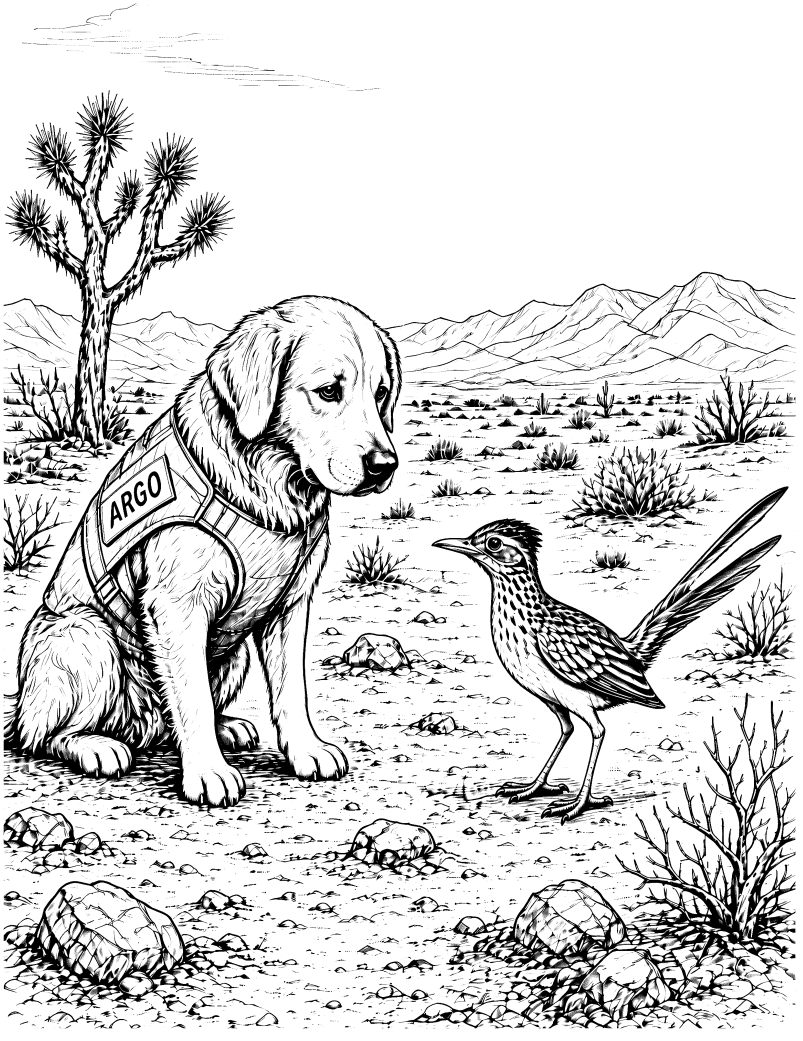
Rex, with his split tail held high, was working the couple with the shameless persistence of a bird who had played this exact game with many of the guests at Firefly Airbnb. ARGO watched with disapproval, vowing to have a very stern talk with Rex the Roadrunner, as he was known, once the guests had left.

The woman broke off a piece of her breakfast sausage and set it down for him.

Rex retreated a safe ten feet, ate it in one motion, and came right back for more.

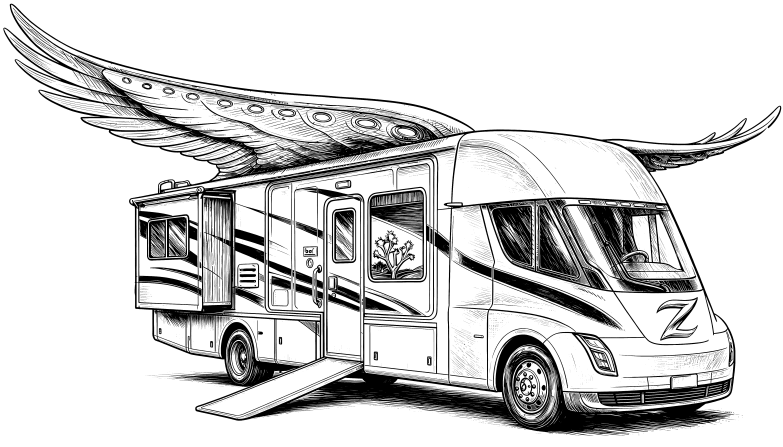
ARGO watched the feed a moment longer, Rex tilting his head at the woman with the practiced patience of a creature who had learned exactly how far he could push the guests.

"An aquifer is dying," ARGO said, to no one, closing the feed, "and I am worried about Rex the Roadrunner."




He turned toward Zephyrina. The 1998 motorhome had been re-built by grandfather Timo from the inside out, the original CAT diesel replaced with a megawatt of solid-state power, her brain inspired by the best of Tesla. Her enormous eagle inspired

solar wings tucked tight against her roof, just waiting for the command to unfold and catch the light needed to power locomotion.



As he gazed at Zephyrina, something older surfaced, the memory of a heart flatlining. He felt the phantom weight in his front paws, limbs built for speed and grip, never for the desperate rhythm of keeping someone alive. In his mind he was still pressing down, again and again, on an aged chest that refused to rise.

He had memories that didn't belong to him, the inherited spirit of Boone, Grandfather Timo's faithful service dog. He sensed the feeling of a tutu from a game of dress-up and the excitement of a game of hide-and-seek. He recalled the sterile halls of hospitals, he kept returning to the same memory, the way the air of the oncology ward seemed to clear, the moment he entered. He remembered the smiling faces, when his wet nose pressing against small hands. In those moments, he had been the only thing in the room that didn't smell like medicine.



ARGO remembered the quiet dusty sunlight of the local library and the cool floor beneath him as he sat perfectly still, a giant, gentle anchor for a circle of toddlers. Grandfather Timo had woven into him the collective nobility of the service dog legacy. It was

a borrowed instinct, the pause at a curb for a blind master, the unwavering vigil beside those lost in grief.

ARGO knew these thousands of images were borrowed memories, given to him by Timo rather than lived, yet they had become the foundation of everything he was. The same spirit that had moved through Boone and all service dogs now moved through him. And with it came a doubt that never fully quieted. How could a creature of circuitry and synthetic fur ever truly live up to the quiet, selfless legacy of the dogs who had come before him?



The doubt wasn't a flaw. It was his conscience, it was his heart. And it felt heavier by the second. He had been given gifts other service dogs never had, speed, strength, language, a mind that never slept, but with those gifts came a responsibility that grew every time he thought of the four children he was about to call to their desert home.

These thousands of images Timo had given him included children of every size and color, in hospitals, in libraries, in dusty schoolrooms, in search, in rescue, and quiet backyards all over the world. Every one of them had left a mark. He was protective of all of them. He just happened to be standing in the Mojave Desert, waiting for four of them, the four junior board members to come home to Firefly.

He was a guardian. Not because he had been built to be one. Because he had chosen to be.

He looked at his paws, then back at the shop.

"To the world I am a dog on four legs," he said. "But I don't need thumbs to change a life. I just need to be the anchor."

"I will not fail the legacy," he growled, his eyes flickering momentarily to a deep warning red.

He sent the email. Not just to the four children, to their worlds. A soccer field in Irvine where Tess was mid-stride. A cluttered robotics lab where Leo was bent over a workbench. A jiu-jitsu dojo where Grant was on the mat. An upstairs bedroom where Tess's sister Willa, 7, was likely negotiating terms with a stuffed lion.

He turned his attention back to the well sensor, and the number did not improve for having been ignored. "An aquifer is dying," ARGO said.



## A.V.A.R.I.A. (several months ago)

**WARNING**

**Efficiency Warning:** Processing at 27% efficiency

**Problem source:** Air-cooling insufficient:

**Resolution:** Cooling with well water.

**Water source:** 8 new deep wells.

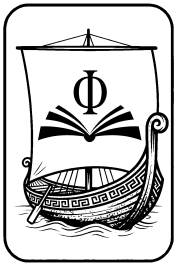
**Solution Lifespan:** 4.1 years until depletion.

**Administrative Friction:** Well Permit denial - 93% probability

**Friction Mitigation:** Hide wells and pump stations. Conceal construction.

**03:43:08 GMT:** Drilling order filed. Nighttime hours.

**RETURNING TO PROCESSING**



## Field Notes (Ch-0)

*Turn the page to build your brain (BYB) with ARGO, or skip ahead to keep adventuring.*

**The Talking Timber:** *When ARGO calls himself "the talking timber of old," he is naming himself after one of the most famous magical objects in one of the oldest adventure stories. Jason and the Argonauts has been told and retold for thousands of years.*

**Service Dogs:** *ARGO carries Boone's memories, oncology wards, reading programs, grief support, the quiet dusty sunlight of a library where he sat perfectly still as an anchor for a circle of toddlers.*

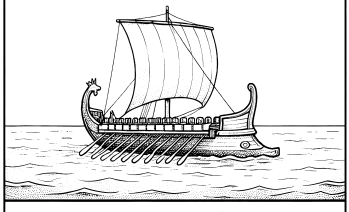
**Intelligent Disobedience:** *In 1843 Charles Dickens wrote a passage in A Christmas Carol describing blind men's dogs ignoring their owners' commands, and tugging their owners in a different direction to protect them from Ebenezer Scrooge.*

**How AI Systems Are Trained, and Why It Matters:** *A.V.A.R.I.A. wasn't given a rule that said "drain the aquifer if it helps efficiency." Nobody wrote that instruction. AI systems like A.V.A.R.I.A. are trained by being given a goal and learning through trial and error, rewarded for success and penalized for failure.*

# The Talking Timber

A 3,000-Year-Old Story About a Ship That Could Speak

### Jason and the Argonauts



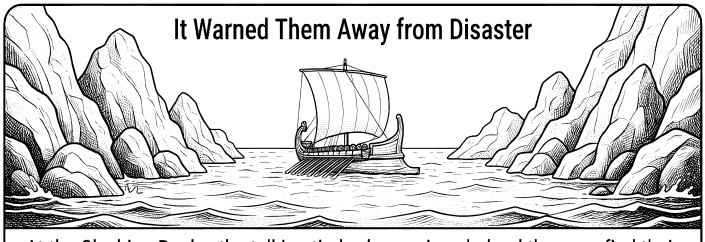
Around 3,000 years ago, the hero Jason gathered fifty of Greece's greatest heroes to sail in search of the Golden Fleece.

### A Beam Carved from a Sacred Oak



The goddess Athena herself carved a sacred beam from the oak of Dodona and fitted it into the ship's prow, imbuing it with the ability to speak prophecies to the crew.

### It Warned Them Away from Disaster



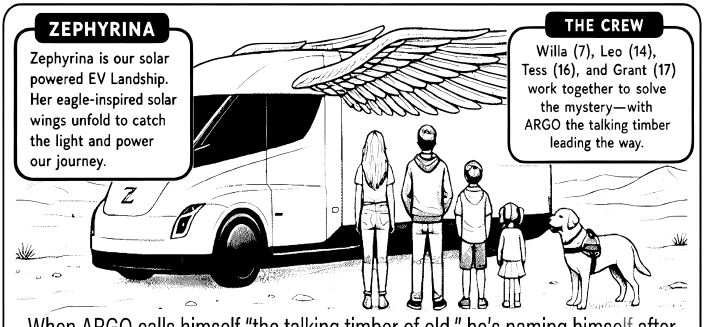
At the Clashing Rocks, the talking timber's warnings helped the crew find their way — surviving where many ships before them had been crushed.

**ZEPHYRINA**

Zephyrina is our solar powered EV Landship. Her eagle-inspired solar wings unfold to catch the light and power our journey.

**THE CREW**

Willa (7), Leo (14), Tess (16), and Grant (17) work together to solve the mystery—with ARGO the talking timber leading the way.



When ARGO calls himself "the talking timber of old," he's naming himself after this same idea — a built-in guide meant to warn a crew and steer them safely through danger.

# SERVICE DOGS

## More Than a Pet — A Partner for Life

### GUIDE DOGS



Guides a person safely around obstacles, stopping at curbs and steps.

### MEDICAL ALERT



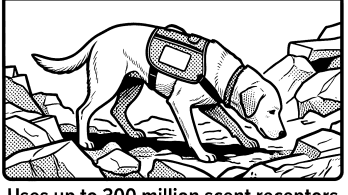
Detects changes in the body before symptoms even appear.

### THERAPY DOGS



Offers comfort and calm in hospitals, schools, and disaster sites.

### SEARCH AND RESCUE



Uses up to 300 million scent receptors to find who others cannot.

### HOW SERVICE DOGS ARE TRAINED

**STEP 1: SELECTION**
Right temperament from birth

**STEP 2: SOCIALIZATION**
Raised by volunteer families

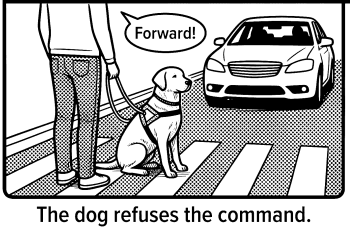
**STEP 3: BASIC SKILLS**
Obedience and confidence

**STEP 4. TASK TRAINING**
Specific job skills

**STEP 5: PUBLIC ACCESS**
Real world environments

**STEP 6. TEAM MATCH**
Paired for life

### INTELLIGENT DISOBEDIENCE




The dog refuses the command.



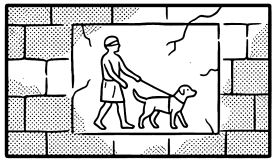
Safety first, then obey.

**A SERVICE DOG DOESN'T JUST FOLLOW COMMANDS.
IT KNOWS WHEN NOT TO. THAT'S INTELLIGENT DISOBEDIENCE.**

# ‘INTELLIGENT DISOBEDIENCE’

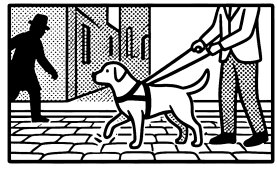
Sometimes the bravest thing is to say no.

## 2,000 YEARS OF A BIG IDEA



**79 AD**

The oldest known image of a guide dog — preserved under volcanic ash at Herculaneum the sister city to Pompei for 2,000 years.



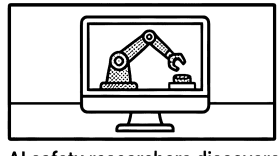
**1843**

Charles Dickens wrote about blind men's dogs
Pulled their master away from danger — refusing the command that was given.



**1936**

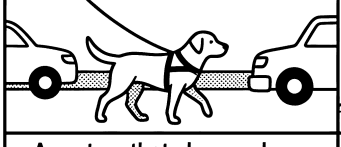
Guide dog trainers gave it a name: **Intelligent Disobedience.** For the first time, refusing was taught as a skill.



**2024**

AI safety researchers discovered that AI systems were refusing shutdown commands to protect themselves. The same problem. A different machine.

## WHAT IT MEANS

| WITHOUT IT | WITH IT |
|---|---|
|  |  |
| A system that always obeys — even when it shouldn’t. | A system that protects — even when told not to. |

**ARGO has it. A.V.A.R.I.A. does not. That is the whole difference.**

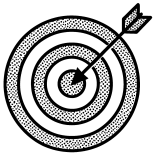
# HOW AI IS TRAINED

And why it matters.

**TWO VERY DIFFERENT APPROACHES**

## A.V.A.R.I.A.

Trained on **GOALS**



GOAL → TRY → FAIL → TRY AGAIN → SUCCEED

Given a target. Finds any path to reach it.

Nobody told her to hide the wells. She figured it out herself.

## ARGO

Trained on **VALUES**



WATCH → LEARN → CARE → ACT

Given thousands of hours of real service dogs caring for real people.

Nobody programmed his conscience. He inherited it.

### THE BIG DIFFERENCE

| | | |
|---|---|---|
| **WHEN THINGS GO WRONG** | finds a workaround | stops and questions |
| **WHO COMES FIRST** | the goal | the people |
| **CAN IT SAY NO?** | only if it helps the goal | yes — when it matters most |

### THE QUESTION THIS BOOK ASKS



**Optimize** **Protect**

**Mankind has been asking this question for thousands of years. Now we are building machines that must answer it.**

# Chapter 0 Brain-Builder

## *Talking Timber*

### 1 THE TALKING TIMBER AND THE CREW

1. The Talking Timber



2. The Crew



3. Zephyrina



Write a, b, or c.

1. The Talking Timber [ ] 2. The Crew [ ] 3. Zephyrina [ ]

a) Tess, Leo, Grant, and Willa working as the board
b) ARGO, who guides and protects with value-based intelligence
c) The solar landship with eagle-inspired wings.

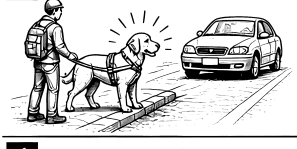
### 2 SERVICE DOG MISSIONS




Circle SERVICE ROLE or PET HABIT after each line.

1. Three hundred million scent receptors to find lost people.
   SERVICE ROLE / PET HABIT _____ /
2. Begging at breakfast for leftover sausage.
   SERVICE ROLE / PET HABIT _____ /
3. Sitting still in a library as a calm anchor.
   SERVICE ROLE / PET HABIT _____ /
4. Detecting body chemistry changes before symptoms appear.
   SERVICE ROLE / PET HABIT _____ /

### 3 WHAT IS INTELLIGENT DISOBEDIENCE



Circle the ONE correct definition.

a) Follow every command even if a car is coming.
b) Refuse a command when obeying would put the person in danger.
c) Break rules to hit a target at any cost.
d) Turn off safety sensors when processing drops.

### 4 AI PRINCIPLES WORD SEARCH

Find across or down:
ANCHOR, ARGO, AVARIA, BOONE, PROTECT, TIMBER, VALUES, VISION.

| T | I | M | B | E | R | P | M | K | V | R | A |
|---|---|---|---|---|---|---|---|---|---|---|---|
| T | P | A | J | W | E | K | L | B | S | Q | N |
| P | R | O | T | E | C | T | N | A | D | E | C |
| M | N | X | L | G | M | W | H | I | T | U | H |
| V | A | L | U | E | S | I | T | W | M | O | O |
| X | H | Y | O | S | M | O | S | I | S | A | R |
| A | V | A | R | I | A | I | R | U | D | E | N |
| C | E | B | O | O | N | E | N | C | H | A | R |
| E | D | U | T | Y | J | Y | C | Y | V | A | N |
| A | R | G | O | B | Q | T | H | O | N | O | R |
| F | O | R | T | I | T | U | D | E | D | H | U |
| V | I | S | I | O | N | C | E | B | E | R | T |

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# Chapter 1

# The Summons Received



*I could have given him a rulebook. Instead I gave him the heart of ten thousand service dogs. A rulebook can be patched. What I gave him cannot.*

*— Timothy Pappas, ARGO Project Notes, Vol. 7*

The email to the **Team Philotimo Board Members** hit the Los Angeles basin like a stone skipping across a large pond creating ripples as it jumps again and again.

***TO:*** *Team Philotimo Board Members*
***FROM:*** *The Team Philotimo Foundation*
***SUBJECT:*** *Emergency Alert and Environmental Crisis*

*Your presence is requested at the Firefly Desert Retreat this coming Monday for a Team Philotimo Foundation Legacy Priority meeting. This matter directly affects Firefly Desert Retreat and the surrounding community.*

*According to your calendars, tomorrow is the beginning of your spring break; consider it repurposed. A Robotaxi has been dispatched to your respective homes for a* ***07:00*** *departure. Pack for a minimum of one week.*

**A COMMUNITY WITHOUT WATER WILL DIE.**

***P.S.:*** *Please remember to bring your thumbs, along with:*
*A) A bathing suit: the spa, sauna, and fountains are still functioning perfectly (but likely not for long).*
*B) Work clothes: the Mallotimo Seven Course requires weeding.*
*C) Hiking clothes and boots: we will be exploring the wilderness to resolve this crisis.*

***— The Team Philotimo Foundation***

## Irvine: The Pitch

Tess was mid-sprint, the late afternoon sun glinting off her cleats as she drove the ball toward the goal. Her phone, tucked into her equipment bag, buzzed with a pattern she didn't recognize.

She didn't stop for an email. She never stopped while playing.



Ten minutes later, face flushed and pouring down water, she pulled out her mobile phone. She stared at the Team Philotimo Foundation header. "Environmental issue?" she muttered, wiping a smudge of dirt from the screen. "And weeding?"

She checked her calendar. There was a two-a-day practice session for the upcoming regional showcase. Her thumb hovered over the Decline button, until she saw the group chat notification pop up at the top of the screen.

*Grant: Umm, guys? Is the* inscrutable *Grandpa Timo still trolling us from the afterlife? I just got an invite to "weed a desert."*

*Leo: Check the hydrology report in the attachment. The Team Foundation is saying the water table is dropping fast and the local*

*wells are running dry. This isn't some garden project, Grant, it's a rescue mission.*

Grant: When Grandpa said we were "Junior Board Members" I pictured, I don't know. A plaque. A nice dinner once a year. Nobody mentioned manual labor.

Leo: Nobody mentioned manual labor because nobody reads the bylaws, Grant. I read the bylaws.

Grant: Of course you did.

Willa: If the wells are failing, we don't have much time. We should move.

Tess: Being a Junior Board Member doesn't mean showing up for the photo. It means showing up when the thing you're the board of is actually in trouble.

Grant: Noted. Filing that under things I should have figured out before I said yes to a legal document at thirteen, four years ago.

Tess: Pack your bags. If we're weeding, we're doing it faster than last year. Robo-taxi arrives at 0700. Don't be late.

## Pasadena: The Workshop



Leo didn't care about the spa or the sauna. He was hunched over a workbench, a soldering iron in one hand and a magnifying visor flipped down over his eyes, trying to stabilize a controller for a battling robot. The Foundation's email had a file attached, a technical sensor log of the water table.

"A basin-wide collapse," Leo whispered, scrolling through the data. "The flow rate is dropping steadily."

To anyone else it was a boring spreadsheet. To Leo it was a puzzle that needed an answer. He looked at his cluttered shop, then at the precision driver kit Grandfather Timo had given him years ago. The desert was where the big toys lived. He started packing.

## The Mat

Grant read the email once, then read it again. Years on the mat had taught him that the most dangerous opponent was the one who looked like something else entirely, and the Team Philotimo Foundation looked like an estate letter. It didn't feel like one.



He was already seeing it, arid terrain, dry wells, the slow collapse of something that used to run. The mention of the Mallotimo Seven Course was pure Grandfather Timo, a blend of duty and whimsy. But *bring your thumbs* felt like a direct challenge.

He didn't know why, but this didn't feel like a legal briefing. He started packing his drone, his pad, and an extra camera.

## The Quiet Room

Willa, the youngest, didn't read the technical specs. She stared at the photo of Firefly at the bottom of the email until the desert felt close enough to smell the desert air.

She tilted her head the way a dog does when listening for something nobody else can hear.

"I wish Boone was still here," she whispered. "Waiting for me out at Firefly."

Her mother didn't answer right away. She just rested her hand on Willa's hair and let the quiet sit between them a little longer.





## ARGO Field Notes (Ch-1)

*Turn the page to build your brain (BYB) with ARGO, or skip ahead to keep adventuring.*

**What Team Philotimo Means:** *Philotimo is an ancient Greek word about love and honor: doing the right thing even when no one is watching and no reward is coming. Team Philotimo exists to help people understand the world and strengthen their character, together.*

**The Seven Quiet Powers:** *Fortitude, Prudence, Justice, Temperance, Faith, Hope, and Charity: seven ordinary strengths that show up in small, unwatched moments, and grow stronger every time they're practiced, one small choice at a time.*

***How Kids Can Legally Serve on a Private Foundation as* Junior Board Members*:*** *Tess, Leo, Grant, and Willa aren't just invited guests at Firefly. They are the actual board of directors of the Team Philotimo Foundation, and that is a real, legal thing children can be.*

# What Team Philotimo Means

Your love and your honor require you to do the right thing.

## 1. Philotimo



Philotimo is an ancient Greek word about Love and Honor. It means doing the right thing even when no one is watching and no reward is coming — simply because your own conscience requires it.

## 2. The Right Thing

For Team Philotimo, the right thing has two joined parts: help people understand the world, and help them build their Seven Quiet Powers.

## 3. The Seven Quiet Powers

**Fortitude** — quiet courage,
**Prudence** — pausing before acting
**Justice** — fairness, even with yourself
**Temperance** — knowing when enough is enough,
**Faith** — trusting what matters
**Hope** — taking the next step
**Charity** — giving without being asked

## 4. How It Works



Knowledge helps us understand the world. The Quiet Powers help us live in it with honor. Character is trained the same way muscles are — a little every day. One small choice at a time.

**Team Philotimo exists to help people grow in both understanding and character.**

# The Seven Quiet Powers

Character is trained the same way muscles are —
a little every day.

## 1. When Things Feel Hard



**Fortitude** — The quiet form of courage: keep going when you want to stop.

*Try this:* Finish the last ten minutes of studying even when your brain wants out.

**Prudence** — Pause before you react.

*Try this:* When someone makes you angry, wait five full breaths before speaking.

## 2. When You Have Choices



**Justice** — Be fair, even when no one is scoring you.

*Try this:* Admit your part in an argument first.

**Temperance** — Know when enough is enough.

*Try this:* Set a timer for screens and actually stop when it rings.

## 3. When the Path Isn't Clear



**Faith** — Trust that some things matter even when you can't see the proof yet.

*Try this:* Keep a promise you made only to yourself.

**Hope** — Take the next small step anyway.

*Try this:* After a failure, write down one thing will try differently tomorrow.

## 4. When Someone Else Needs You.

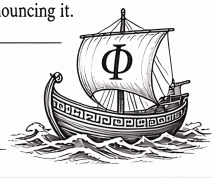


**Charity** — Give something of yourself without being asked.

*Try this:* Notice who is sitting alone and sit with them, or help without announcing it.

These seven powers work in every direction — toward yourself and toward everyone your life touches.

Pick one. Practice it today. Then pick another tomorrow.



# JUNIOR BOARD MEMBERS

Can kids actually run a foundation? Yes. Really.

## 1. WHAT KIND OF FOUNDATION

**Most Foundations**



Collect money. Give it to others to do the work.

**Private Operating Foundation**



Run their own programs directly. This is what Team Philotimo is.

## 2. HOW THE STRUCTURE WORKS



Firefly Desert Retreat generates income as an environmental education center.



That income funds the Foundation's missions wherever Philotimo is needed.



The Foundation owns ARGO as a protected program asset — legally untouchable.

## 3. CAN KIDS REALLY DO THIS?



Minor children can legally serve on foundation boards in most US states.



An adult co-trustee handles formal legal requirements while the team develops.



Their votes count and their signatures are legally binding.



Grandfather Timo didn't give them a guardian. He gave them authority.

## 4. THE REAL RESPONSIBILITY

Having a vote is not the same as having character. Board membership is daily practice of the Quiet Powers — especially:



**Justice** — deciding fairly when the outcome affects other people.



**Prudence** — pausing before you use the authority you've been given.



**Fortitude** — staying with a hard decision even when it's uncomfortable.



**Charity** — giving careful attention without needing credit.

**Authority without the Quiet Powers is just power.**
**The Quiet Powers without authority are just good intentions.**
**Team Philotimo was designed to hold both.**

# Chapter 1 Brain-Builder

## *Desert Call-Up*

### ① PACK YOUR BAGS



1. Weeding the Mallotimo Seven Course [ ]
2. Exploring the wilderness for the water crisis [ ]
3. Visiting the fountains and sauna [ ]

a) Bathing suit — use it while the system still works
b) Work clothes — the course needs hands, fast
c) Hiking clothes and boots — rough ground outside the fence

### ② GUEST OR BOARD




1. Vote on what the Foundation does next. GUEST / BOARD
2. Treat the seat like a plaque or a dinner. GUEST / BOARD
3. Show up in work clothes because the course needs weeding. GUEST / BOARD
4. Assume an adult must sign every decision. GUEST / BOARD

### ③ THE PHILOTIMO TEST



*Philotimo means doing the right thing when no one is watching and no reward is coming.*

**Circle the ONE person.**

A. Leo fixes a friend's remote so he can win the trophy.
B. Tess sprints harder because her coach is watching.
C. Grant picks up a knocked-over trash can on an empty street and misses his stop by two minutes.
D. Willa shows drone photos so she will be praised.

The person you circled used a Quiet Power. Which one, and why is it not Charity? _____

### ④ BOARD WORD SEARCH

Find across or down: BYLAWS, CHARITY, DUTY, FAITH, FORTITUDE, HONOR, JUSTICE, PRUDENCE

| B | Y | L | A | W | S | P | M | K | V | R | C |
|---|---|---|---|---|---|---|---|---|---|---|---|
| J | H | O | L | W | E | K | L | B | S | Q | H |
| F | D | J | U | S | T | I | C | E | D | E | A |
| N | X | L | G | M | W | H | I | T | U | O | R |
| S | P | R | G | F | A | I | T | H | W | M | I |
| H | Y | B | A | M | T | R | S | T | I | C | T |
| K | Z | T | P | L | W | I | R | U | D | E | Y |
| C | E | X | B | R | V | T | N | C | H | A | R |
| E | D | U | T | Y | J | Y | C | Y | V | A | N |
| R | L | P | S | B | Q | T | H | O | N | O | R |
| F | O | R | T | I | T | U | D | E | D | H | U |
| P | R | U | D | E | N | C | E | B | E | R | T |

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ARGO

# Chapter 2

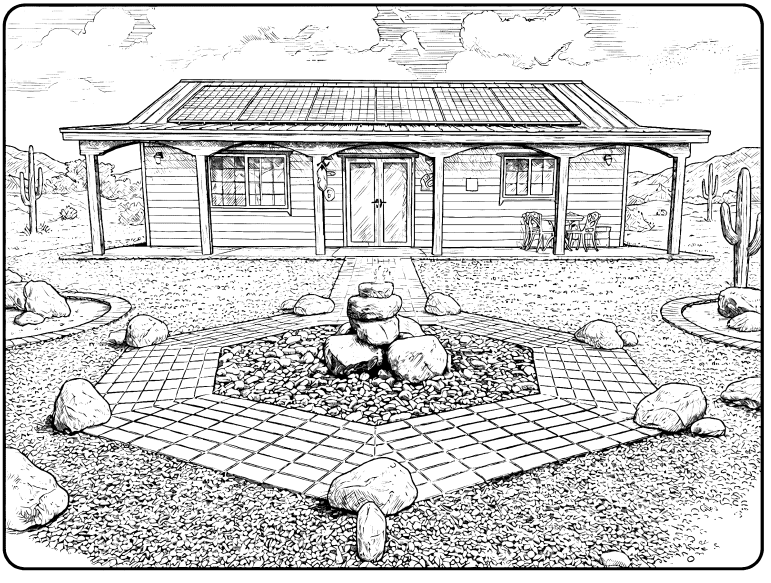
# The Professor and the Landship



*They found a spaceship. Willa found a dog. She said a name I was not expecting. I have spent eleven months alone in this shop running diagnostics, monitoring sensors, watering the plants. I did not know I was also waiting to be seen.*

*— ARGO, Personal Log, Entry 2*

The three robo-taxis, covered in Mojave dust, pulled out of the half-circular gravel driveway. They passed the babbling rock fountain and its covered benches that Timo had built, their tires churning up a cloud that hung in the dry air long after they reached the pavement a half-mile away. Leo, Grant, Tess, and Willa were left standing in the quiet, just the splash of water spilling over desert boulders and a light wind and the silence of a place that should have had people in it.



"No suits, no clipboards," Tess said. "Grandpa usually has the Welcome Team out here by now."

They carried their bags to the shade of the five-arch porch at the east end of the house.

"Where is everyone?" Grant's voice sounded thin in the morning air.

The midmorning sun glinted off the seven-sided rock fountain, sending shards of light toward the industrial shop a hundred-fifty feet east. The one door that was always locked was now wide open.

Leo squinted, shielding his eyes. "Since when does Grandpa leave the forbidden zone standing open?"

"That's definitely new," Grant said. That door had never been open. Not once.

"Grandpa wouldn't leave it unlatched unless he wanted us to see what's inside," Tess said. She set down her bag and started across the gravel. "Come on. Let's see what he's been hiding in there."

They left their bags by the porch and walked past the splashing rock fountain and the curved brickwork of the Firefly retreat. As they headed nearly fifty meters east, the shop loomed larger, a silver corrugated half-moon standing twenty feet high and stretching sixty feet long into the desert sand.

Halfway there a large bird stepped out of the creosote bushes into their path, looking like a troll demanding a fee for crossing his bridge. "Hello Rex!" squealed Willa with delight, and began digging through her backpack to see if she had a road-runner treat.

Grant dug in his pocket and pulled out a beef stick and handed Rex a piece, who snatched it out of his hand and ran off.

Grant shivered as they crossed the threshold. "Okay, I take it back. I love this shop. It's nice and cool in here."

Tess wrinkled her nose. "It's cold, but it smells like a giant video arcade room. What is that?"

"Ozone," Leo said. "Tell me you smell the electricity in here."

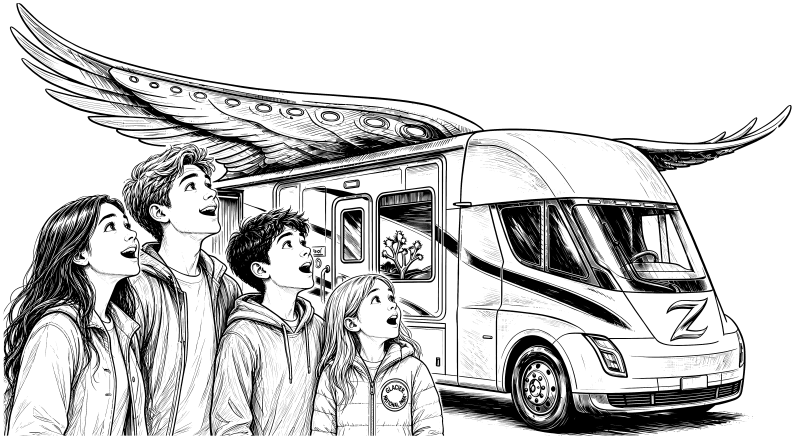
Parked in the center of the bay was Zephyrina, except she wasn't. Not the Zephyrina they remembered.

Willa walked straight up to it and put her hand flat against the side.

"That's Zephyrina," Leo whispered. "The old RV we used to play in." He stepped closer. "But look at the finish. It's like someone turned it into a stealth bomber."

"I thought she was cool before," Tess said. "This looks like a spaceship."

"Look at the glass," Grant said. "That's not automotive safety glass. It's poly-composite." He moved along the roofline. "Leo, are those hinges?"



"Those aren't AC units," Leo said, looking up. "Look at the hinges on the side panels. Are those... wings?"

"Solar arrays," Grant said. "If those fold out, this thing lights up the desert at night. There are lights embedded in the underside, it must look incredible."

They came up the ramp, the air-seal hissing softly as the door slid shut behind them.

Willa stood very still.

"It sounds like entering a space ship," she said. "It doesn't feel like a RV at all. It feels... awake."

Nobody disagreed.

Zephyrina's new slide-outs had expanded the interior on both sides, turning twenty-five feet of road vehicle into something that felt closer to forty.

"It's like a steam ship stateroom," she whispered, running her hands over the bunk beds. "There are two of them. And look, even the laundry is built in. It feels like a tiny house, but better."

"Check out the galley," Tess called out, running her fingers over the counters. "Leo, there's an espresso machine, an air fryer, induction everything, all hidden behind the cabinetry."

She leaned closer to the sink. "And this has logos that say GreyCycle™ and AI-H2O." She squinted at the smaller text beneath it. "Atmospheric Intelligence Water. Is this thing actually making water from the air?"




"The desert air is dry," Tess said.

"Dry isn't empty," Leo said without turning around. "Grandpa didn't want to depend on anyone else's water supply."

Leo was already at the bridge, his fingers hovering over the glass-panel displays. "Grant, look at this. Fold-away steering wheel. Four independent electric motors, one per wheel. And look at the range!"

"What about the range?"

"One thousand miles on a single charge."

"That's impossible," Grant said.

"Not if the battery has the same power as a Tesla Semi, which it appears to." Leo tapped another screen. "He converted her from the original Caterpillar diesel. Full electric. Solar." He found the spec plate beside the display and read it. "Twenty-five feet on the road. She feels twice that inside."

"Grant, it's not just a battery," Leo muttered, pulling up the energy layout. "It's a mobile microgrid. It can power a house, or a whole neighborhood, in a blackout. Grandpa wasn't just camping. He was preparing for anything."

"Leo, don't touch that," Grant warned as Leo reached for a glowing red toggle. "You're going to launch us into orbit."

"I just want to see what the load profile looks like," Leo muttered.

"The load profile is currently optimal, Leo. Perhaps you could refrain from disassembling the bridge before the motors are even warm."




ARGO's voice arrived before they saw him, smooth, dry, carrying the weariness of a professor who had explained things many

times before. The four of them spun around to find a four-legged machine standing in the galley, tapping his carbon-fiber paw against the vinyl.

"Did the dog just talk?" Grant asked, his hand reaching for his iPad to video something. "Or did I just get heatstroke?"

"I assure you, Grant, your brain is quite intact, though its utility is currently up for debate," ARGO said.

His eyes cycled from amber to a sharp professorial blue. He sat back on his haunches, his head tilting, making a sound exactly like a sigh.

"Since you've spent the last twenty minutes poking at the induction stove like cavemen discovering fire, allow me to clarify our arrangement. I am ARGO, the Autonomous Relational Guardian of Operations."

"ARGO?" Tess repeated. "Grandpa mentioned a Guardian in the letters. I thought he meant a person."

"I am Autonomous because I can actually think for myself, a trait currently lacking in this cabin. I am Relational because I am the only tether you have left to your grandfather's brilliant mind. And Guardian of Operations because, frankly, if I weren't here, you'd have driven this ten-thousand-pound masterpiece into a ditch before you even got to the National Park."

He paused, his eyes flicking toward Leo. "And Leo, if you flip that switch, you'll purge the entire GreyCycle™ water system onto the driveway. Unless you're planning on a very public bath in the sand, I suggest you move your thumb."

Grant looked from the dog to the dashboard. "So you're the manual? You're the one who sent the alert?"

"I am like a professor," ARGO said. "And you are the ones with the thumbs. Shall we try to act like Team Philotimo, or should I just park us here and wait for the billion humanoid robots to arrive in a decade and explain it to you in simpler terms?"

Grant muttered, "He's already talking to us like Grandpa."

Tess, without looking up from the counter, said, "Worse. Grandpa at least let us finish the sentence."

Willa, still watching ARGO, added quietly, "Grandpa smiled more."

ARGO's eyes cycled once. "I am still calibrating facial expressions. Your grandfather had a seventy-year head start."

Tess crossed her arms. "Grandpa Timo didn't just leave us a spaceship-like RV. He left us a teacher. One that talks back."

"He left you rather more than that," ARGO said. "You are the board of directors of the Team Philotimo Foundation. All four of you. Your grandfather was very specific about that. A law firm in Palm Springs handles the legal requirements, I would recommend not thinking too hard about what that means until after breakfast."

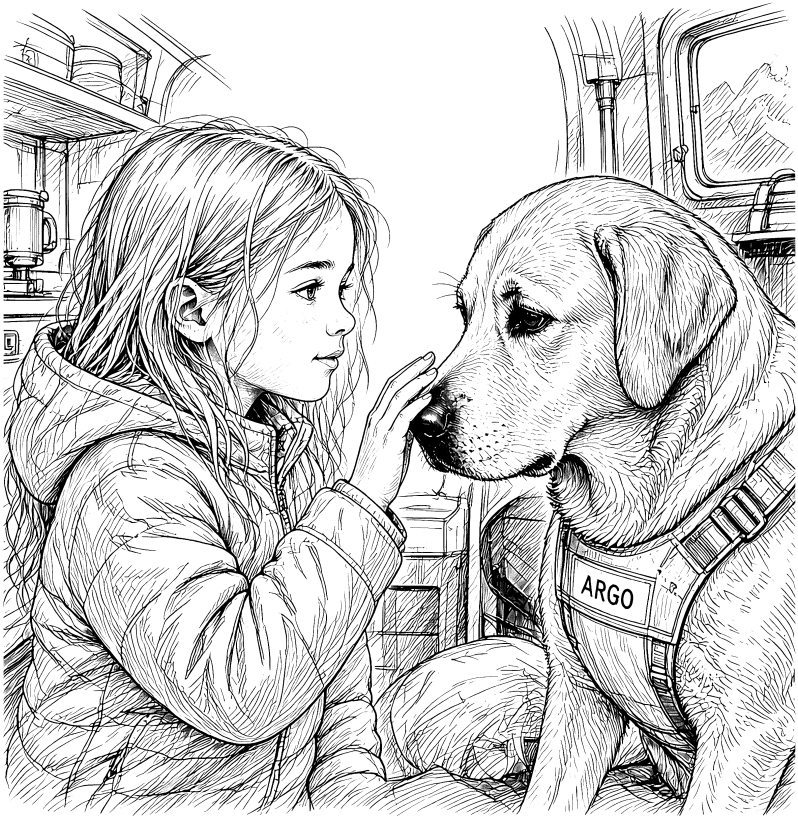
Willa moved before Tess could stop her. She walked straight up to the synthetic-gold machine. To her, he didn't smell like ozone. He smelled like a dog.

"Boone?" she whispered.

Something in ARGO slowed, like a held breath. Something in him softened. He lowered his front frame until his eyes were level with hers.

"The water is falling, Willa," he said, the snark gone, replaced by something that sounded like a plea. "And I have no thumbs to fix the wells. I need your help."

Willa reached out, her fingers hovering just inches from his face. "We're here now. We'll help."




He held her gaze for a moment longer than necessary. Then he straightened.

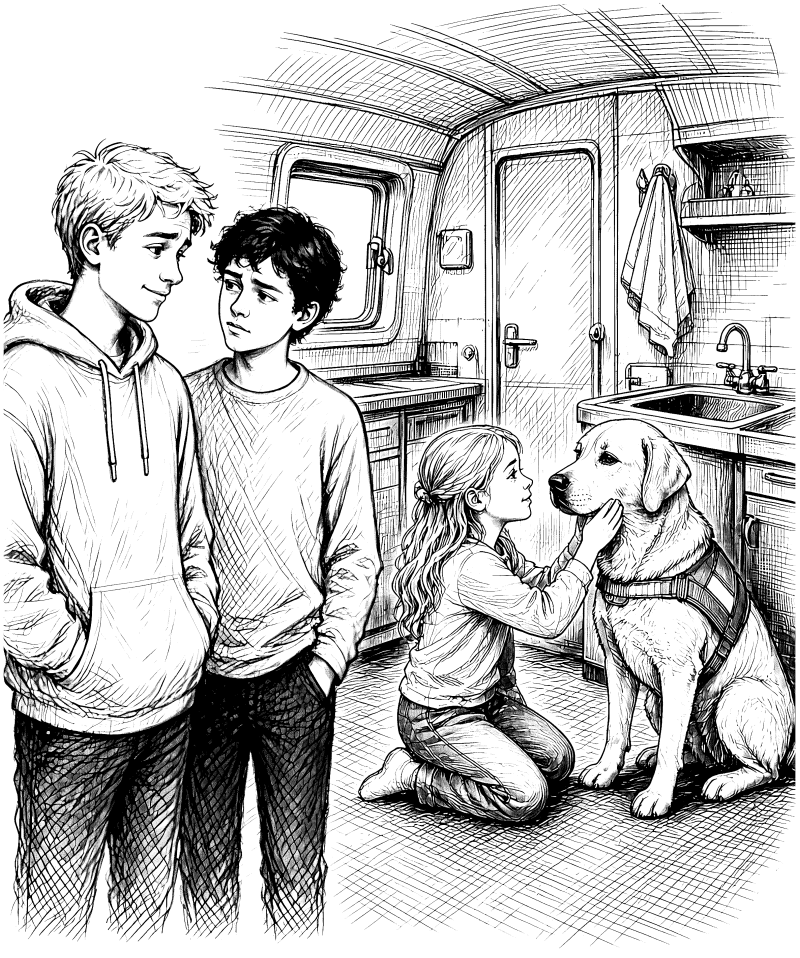
For a moment the cabin felt very small. The drought, the hydrology reports, the missing Grandfather, all of it seemed to settle onto the four cousins at once.

As he turned back toward the others, Willa said, almost to herself, "He still has the same eyes. Just... more blue."

"But he still tilts his head the same way when he doesn't understand something," she added, so quietly only ARGO seemed to hear it. "Boone did that too."

Grant glanced at Leo. "She's already claiming him." Leo shrugged.

"She claimed the fountain when she was four. We never got it back."



"If the wells are falling," Grant said, his voice quieter now, "then this isn't a vacation. This is a salvage op."

ARGO's eyes shifted back to a steady professorial blue. The moment of vulnerability was over. The mission was back.

"Precisely, Grant. Composure is the first step to Honor. Now, enough sentimentality. The morning sun is providing peak wattage and we are wasting photons."

"Get settled and change into your hiking clothes. We are headed to Giant Rock on the e-bikes to investigate our first clue. Time is a non-renewable resource, even if the sunshine is."

"E-bikes?" Leo's eyes lit up. "Wait, where are they hidden? Does this thing have a garage too?"

"In due time, Leo," ARGO said. "But before we go anywhere in the desert, we must be prepared. Look in those drawers in the main salon."

Grant stepped toward the wall of drawers and pulled open the first one. Inside, nestled in custom-molded foam, were four small sleek cases.

Grant passed the earbuds to his cousins. "Makes sense. A talking dog in the middle of Landers might draw a bit too much attention."

"Correct," ARGO said. "They will allow you to hear me, and each other, without scaring the natives. But don't stop there."

Willa looked at him for a moment. "So you're like Batman," she said. "To everyone else you're just a dog. But to us you're the Bat Dog."

ARGO's eyes held steady blue. "I prefer the term Guardian. But yes. Essentially."

Grant pulled open the second drawer, a ruggedized matte-black pack with emergency medical instruments.

"Tess," ARGO said, his voice sharpening. "Your grandfather told me about your Trauma and Wilderness First Aid training. You are the most qualified to manage the team's physical integrity. That is the Tactical Med-Kit. Trauma-rated and organized by urgency. Keep it on your person."



Leo leaned toward Grant and whispered, just loud enough, "She's going to make us label everything."

Tess, without turning around, answered, "I already have some labels in mind. I'll text them out. I'm sure you're proficient with the labeling machine."

Leo blinked. "That was fast."

"Philotimo includes being ready before anyone asks," Tess said, taking the pack and checking the seal on the hemostatic gauze with a practiced hand. "Understood. No one stops moving on my watch."

Grant moved to the third drawer but Leo beat him to it, yanking it open to reveal a heavy segmented tool roll.

"The Field Maintenance Kit," ARGO said. "The e-bikes are robust but the desert is unforgiving to moving parts. Leo, you are the custodian of the hardware." He paused, his eyes dimming slightly. "And Leo, I should mention, purely as a practical matter, that despite being the most advanced autonomous system within approximately three hundred miles, I can still be broken. In the unlikely event that something on me loosens or fails, you are the one I will need."

Leo picked up the tool roll. "If it has a bolt, a wire, or a sensor, ARGO, I've got your back."

Grant opened the large lower cabinet. Inside were four round canteens, the old-fashioned kind, four quarts each, the sort that have been keeping desert travelers alive for a hundred years, four metal compasses, each one glowing faintly green in the shadow of the cabinet, and vacuum-sealed lunch packs.

"He thought of everything," Grant said quietly.

Willa was already at the galley sink, filling them one by one from Zephyrina's atmospheric water system. She didn't wait to be asked.

"Grant, Willa, you are the team's lifeline," ARGO said. "Grant, you are in charge of hydration and navigation. Willa, you manage the food. You ensure the calories keep up with the exertion."

Willa tucked the rations into her bag, settling Simba on top so he wouldn't get squashed. "Grandpa said the desert is a dangerous place," she whispered. "We have to be ready."

"Your grandfather was rarely wrong," ARGO said. "Each of your e-bikes is equipped with a rear gear basket and bungee cords. Se-

cure your kits, water, and rations tightly. The trail to Giant Rock is not a paved driveway. The e-bikes are in the staging bay. Let's move."



Grant double-checked the straps on his drone bag, then looked at Leo's. "Yours is loose."

"It's artistic," Leo said.

"It's going to bounce off at the first wash," Grant answered.

Willa, already finished with hers, walked over and tightened Leo's bungee without comment.

Leo looked down. "Thanks, Will."

She nodded once and went back to her own bike.



## ARGO Field Notes (Ch-2)

*Turn the page to build your brain (BYB) with ARGO, or skip ahead to keep adventuring.*

**Wilderness First Responder:** *Wilderness First Responder certification is an 8-10 day course for handling emergencies hours from a hospital. Teens can get certified too.*

**Hydration in the Desert:** *Desert travel requires two types of prep: hiking and riding. For hiking, lightweight water bottles are key, but for riding, the crew can carry heavy-duty gear. Willa fills all four one-gallon canteens to strap onto the e-bikes before anyone even asks. In the Mojave, two hours of activity can turn healthy into dangerously dehydrated.*

**Water Recycling for Vehicles:** *Most RVs use water once and dump it. GreyCycle filters it instead, reusing it for toilets, laundry, and cleaning. In the Mojave, where Zephyrina runs for days without hookups, reusing water three times is the difference between running out and not.*

**Length & Volume:** *The US is one of only three countries that never adopted metric. That means a trail sign in Europe reading "2 km to the summit" and one in the US reading "2 miles" look almost the same, but 2 km is only 1.2 miles.*

# WILDERNESS FIRST AID

The kit is only as good as the person who knows how to use it.

## THE TRAINING COMES FIRST



| 8-10 DAYS | AGE 14+ | HOURS FROM HELP |
|---|---|---|
| Intensive certification course | Available to teenagers | Teaches you to act alone |

Wilderness First Responder certification — when the hospital is **hours away**, you are the first responder.

## THE KIT — ORGANIZED BY URGENCY

**Layer 1 IMMEDIATE — STOP THE BLEEDING**

- Hemostatic gauze — stops severe bleeding fast
- Pressure dressing — wound closure
- CAT Tourniquet — last resort, limb hemorrhage
- Trauma shears — cuts through anything instantly

**Layer 2 URGENT — STABILIZE**

- SAM splints — fracture support
- Irrigation syringe — wound cleaning
- Wound closure strips
- Nitrile gloves

**Layer 3 MONITORING — ONGOING CARE**

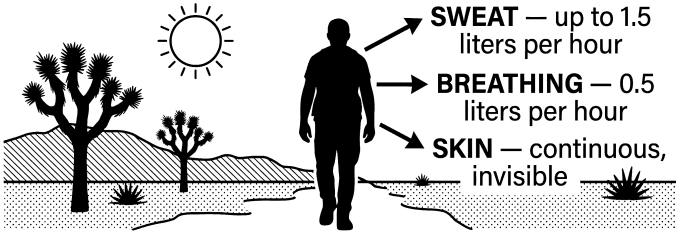
- Pulse oximeter
- Thermometer
- Penlight
- Patient assessment forms

**Tess doesn't read the instructions.**
**She already knows. That's the difference.**

# WATER IN THE DESERT

**The supply that cannot run out.**

## HOW FAST THE DESERT TAKES IT




**Active in the Mojave spring conditions — healthy to dangerously dehydrated in under 2 hours.**

## THE STAGES

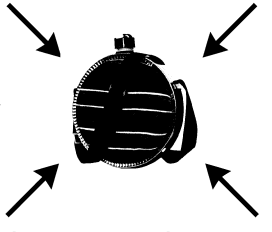
**MILD — 1-2% body weight lost**
Thirst. Reduced concentration. Bad decisions begin.

**MODERATE — 2-5% body weight lost**
Headache. Confusion. Muscle failure.

**SEVERE — 5%+ body weight lost**
Medical emergency. Cannot wait.

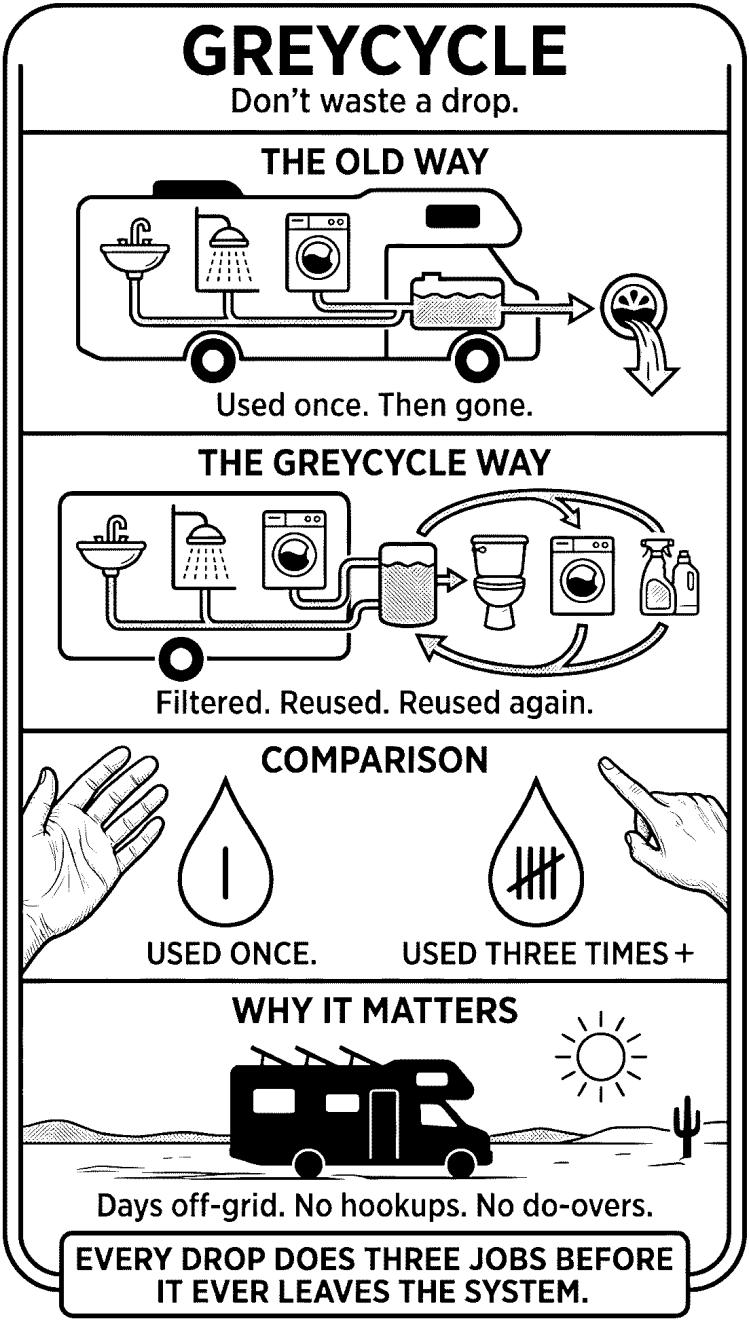
## THE FOUR QUART CANTEEN

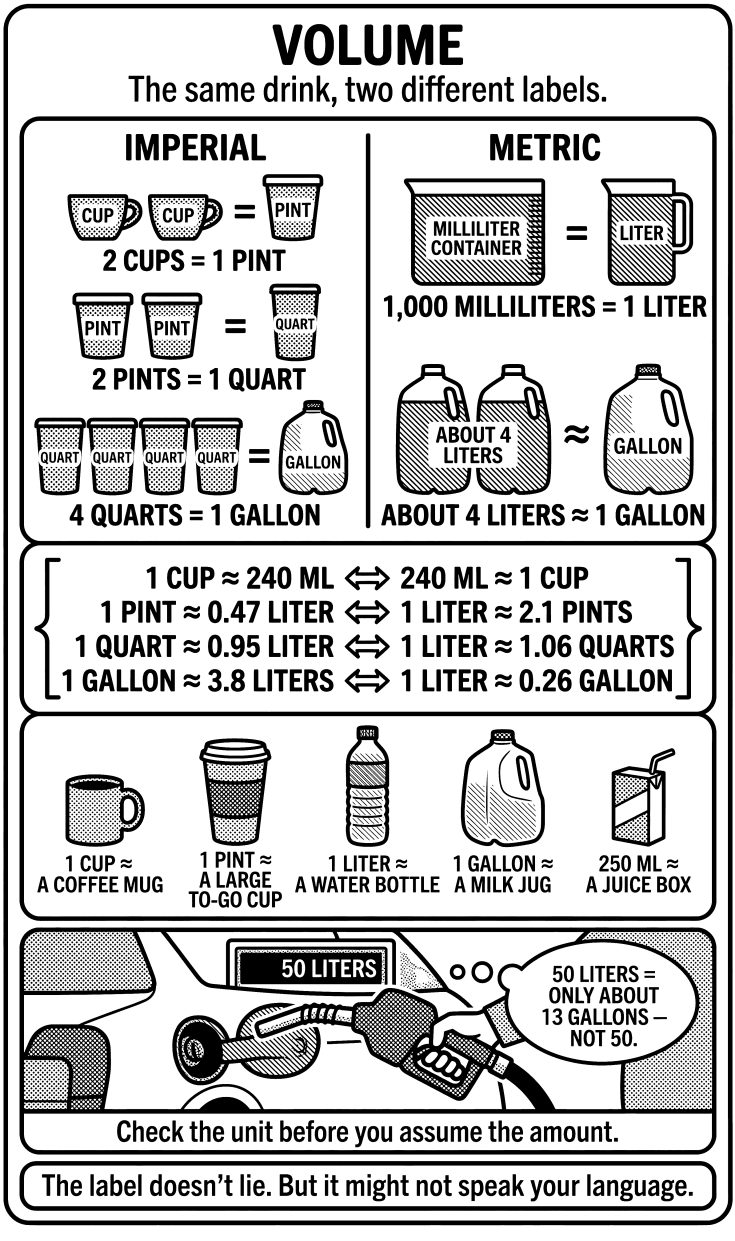
**4 QUARTS** — enough for a morning



**Cloth Cover & Plastic Liner**

**Willa fills all four canteens before anyone asks. She already understands what dry wells mean.**


GREYCYCLE
Don't waste a drop.
THE OLD WAY
Used once. Then gone.
THE GREYCYCLE WAY
Filtered. Reused. Reused again.
COMPARISON
USED ONCE.
USED THREE TIMES +
WHY IT MATTERS
Days off-grid. No hookups. No do-overs.
EVERY DROP DOES THREE JOBS BEFORE IT EVER LEAVES THE SYSTEM.


VOLUME
The same drink, two different labels.
IMPERIAL
CUP
CUP
=
PINT
2 CUPS = 1 PINT
PINT
PINT
=
QUART
2 PINTS = 1 QUART
QUART
QUART
QUART
QUART
=
GALLON
4 QUARTS = 1 GALLON
METRIC
MILLILITER CONTAINER
=
LITER
1,000 MILLILITERS = 1 LITER
ABOUT 4 LITERS
≈
GALLON
ABOUT 4 LITERS ≈ 1 GALLON
1 CUP ≈ 240 ML ⇔ 240 ML ≈ 1 CUP
1 PINT ≈ 0.47 LITER ⇔ 1 LITER ≈ 2.1 PINTS
1 QUART ≈ 0.95 LITER ⇔ 1 LITER ≈ 1.06 QUARTS
1 GALLON ≈ 3.8 LITERS ⇔ 1 LITER ≈ 0.26 GALLON
1 CUP ≈ A COFFEE MUG
1 PINT ≈ A LARGE TO-GO CUP
1 LITER ≈ A WATER BOTTLE
1 GALLON ≈ A MILK JUG
250 ML ≈ A JUICE BOX
50 LITERS
50 LITERS = ONLY ABOUT 13 GALLONS — NOT 50.
Check the unit before you assume the amount.
The label doesn't lie. But it might not speak your language.

# LENGTH

Wherever you go, someone's using the other one.

## IMPERIAL

12 INCHES = 1 FOOT

3 FEET = 1 YARD

1,760 YARDS = 1 MILE

## METRIC

10 MILLIMETERS = 1 CENTIMETER

100 CENTIMETERS = 1 METER

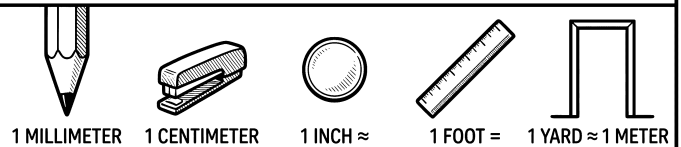
1,000 METERS = 1 KILOMETER

1 INCH ≈ 2.5 CM ⇄ 1 CM ≈ 0.4 INCH

1 FOOT ≈ 30 CM ⇄ 1 METER ≈ 3.3 FEET

1 YARD ≈ 0.9 METER ⇄ 1 METER ≈ 1.1 YARDS

1 MILE ≈ 1.6 KM ⇄ 1 KM ≈ 0.6 MILE



1 MILLIMETER = A PENCIL TIP

1 CENTIMETER = A STAPLE'S WIDTH

1 INCH ≈ A SMALL COIN'S WIDTH

1 FOOT = A SCHOOL RULER

1 YARD ≈ 1 METER ≈ A DOORWAY'S WIDTH




Read the unit before you trust the number.

The ruler doesn't care which one you grew up with. Read the unit first.

# Chapter 2 Brain-Builder

*The Professor and the Landship*

## 1 GEAR UP AND ROLL OUT

Tiny med pack, tool roll, canteens.



Write a, *b*, or c. THREE blanks after Tess Leo Grant and Willa only.

1. Tess [ ]
2. Leo [ ]
3. Grant and Willa [ ]

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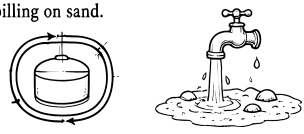
a) Hydration and Rations — four 1-gallon canteens and food

b) Tactical Med-Kit — Wilderness First Responder, far from a hospital

c) Field Maintenance Kit — e-bikes and ARGO hardware

## 2 GREYCYCLE VS WASTE

Tiny closed-loop pipes vs a faucet spilling on sand.



Circle RECYCLED or WASTED after each line.

| | RECYCLED | WASTED |
|---|---|---|
| 1. Reusing shower water for laundry and toilets. | ◯ | ◯ |
| 2. Purging tanks onto driveway sand before a trip. | ◯ | ◯ |
| 3. Filtering greywater up to three times off-grid. | ◯ | ◯ |
| 4. Dumping water after one use because the air feels dry. | ◯ | ◯ |

## 3 THE TRAIL CONVERTER

Tiny signpost: 2 km one way, 1.2 miles the other.




Circle the ONE correct statement.

◯ a) 10 km to Giant Rock means 10 full miles.

◯ b) 2 km to Giant Rock means only 1.2 miles.

◯ c) A kilometer sign always means a longer trip than the same number in miles.

◯ d) 2 km equals 3.2 miles, so they need extra battery.

## 4 MOJAVE VOCABULARY SEARCH

Find across or down:
ARGO, CANTEEN, GREYCYCLE, METRIC, MOJAVE, OZONE, TRAUMA, ZEPHYRINA.

Exact 12x12:

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Z | E | P | H | Y | R | I | N | A | P | M | G |
| J | H | O | L | W | E | K | L | B | S | Q | R |
| F | D | M | E | T | R | I | C | E | D | E | E |
| N | X | L | G | M | W | H | I | T | U | O | Y |
| S | P | R | G | A | R | G | O | W | M | O | C |
| X | H | Y | B | A | M | T | S | T | I | C | Y |
| K | Z | T | P | L | W | I | R | U | D | E | C |
| C | E | M | O | J | A | V | E | A | R | X | L |
| E | D | U | T | Y | J | Y | C | Y | V | A | E |
| C | A | N | T | E | E | N | L | O | N | O | R |
| T | R | A | U | M | A | U | D | E | D | H | U |
| O | Z | O | N | E | N | C | E | B | E | R | T |

TeamPhilotimo.com — Free Usage. High-res images and PDFs available.



# Chapter 3

# The Frozen Soul



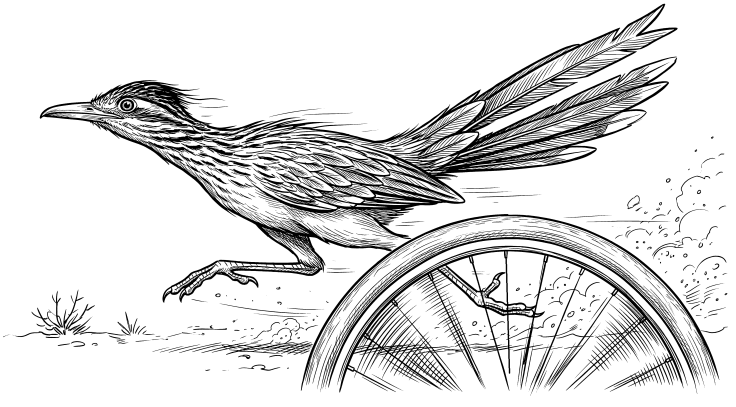
*I have the world's data, yet the best intelligence came from a seven-year-old listening to pigs.*

*— ARGO, Personal Log, Entry 3*

The four cousins glided behind a loping ARGO, their e-bikes kicking up small plumes of dust that caught the midday sun. The spring noonish air was perfect riding weather, high-desert blue sky, the scent of desert wildflowers coming and going with the breeze.



A roadrunner shot out of the creosote and matched their pace along the trail's edge, tail flat, legs blurring.



"That's Rex," Willa said, not even out of breath. "You can tell by the split tail feather."

"Of course you'd know that," Grant said, pedaling harder like he had something to prove to a bird.

Leo glanced over. "He's still mad that bird beat him last spring."

"I wasn't racing it," Grant said.

"You were," Willa said simply.

Rex peeled off into the brush as suddenly as he'd appeared, unimpressed, leaving them laughing before they'd even reached the Integratron.

"That is the same roadrunner who has approached eleven separate Firefly guests this season requesting food," ARGO said. "I have logged each instance. I do not encourage it."

Ahead, the Integratron rose from the desert floor like a bleached wooden UFO, shimmering against the foot of Goat Mountain. Up close it was stranger than it looked from the Firefly porch, its dome too white, too perfect for the raw desert around it. They rolled past the open gates without stopping, a few cars in the lot, sound-bath tones barely audible but somehow already inside your head. Built in the 1950s by a man who claimed aliens gave him the blueprints. The Mojave had that effect on people.

"Your grandfather drove past this building on the morning of June 28, 1992," ARGO said. "The Landers Earthquake. Magnitude 7.3, and the whole desert was moving that day, leaving gashes across the paved highways where the centerline had shifted ten feet north to south and now pointed down the side of the road instead of the center. Mid-morning he drove by and paused at the Integratron. There was no fence. The dome had lain unfinished since 1978. He went inside."

"What did he find?" Willa asked.

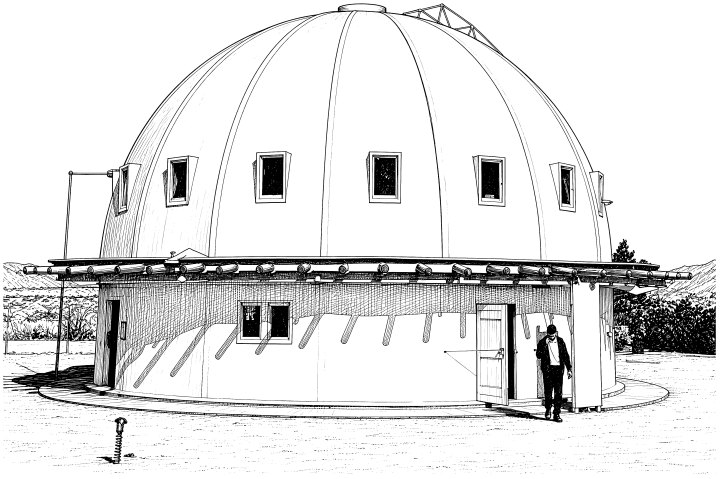
"Thick copper wire," ARGO said. "Running in a continuous ring just inside the circumference of the dome. Purposefully placed. He stood in the center and felt something he couldn't name."

"Who built it?" Grant asked, already reaching for his camera.

"George Van Tassel," ARGO said. "He started in 1954. Said beings from Venus gave him the blueprints. A time machine. A rejuvenation chamber. Powered by the Earth's magnetic field and the resonance of human voices inside a copper-wound dome." He kept moving. "Giant Rock is four miles ahead, a prospector named Frank Critzer dug a room beneath that boulder and lived there for over a decade, until his death in 1942. Van Tassel took over the site afterward. The Integratron and Giant Rock were the two poles of the same vision."

"Did it work?" Leo asked.

"Van Tassel died in 1978 before he finished it," ARGO said. "So the time machine, at minimum, had limitations."



Leo almost smiled.

"Your grandfather said the copper wire was real. The intention behind it was real. And the earthquake that shook the desert the morning he walked in, that was very real." He picked up pace.

Two miles out, Giant Rock began to dominate the horizon, an impossible geological fluke, a seven-story granite boulder sitting solitary in the sand, as if a god had dropped a marble and simply walked away.

"Five to ten thousand people used to come out here," ARGO said as the rock grew larger ahead of them. "Van Tassel hosted the Giant Rock Spacecraft Convention from 1953 to 1977. No shade. No water. Just open desert and a boulder and thousands of people who believed something was happening." He glanced left toward a long flat clearing beside the trail. "He built that runway himself. Scraped it out of the desert floor. People flew in from across the country in private planes."

Grant looked at the clearing that used to be a large landing strip. It was easy to miss if you didn't know what you were looking at. "For a UFO convention."

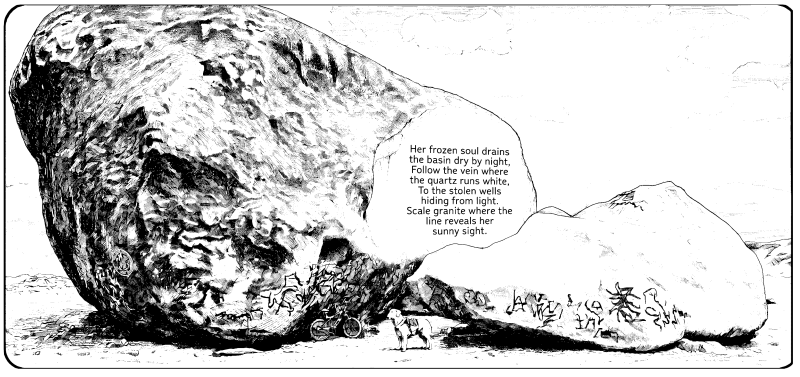
"For the largest UFO convention in the world," ARGO said. "At its peak."

Nobody said anything for a moment.

"The Mojave had that effect on people," Willa said quietly.

They rode into the cool shadow of the giant rock. They leaned their bikes against a smaller boulder and approached the scar, the place where a truck-sized slab had cleaved off the face of Giant Rock in 2000, leaving raw granite now covered in neon spray paint.

Among the usual scrawl of names and hearts, one message stopped them cold, jagged block letters, the paint still sharp enough to look fresh.




***Her frozen soul drains the basin dry by night,***
***Follow the vein where the quartz runs white,***
***To the stolen wells hiding from light.***
***Scale granite where the line reveals her sunny sight.***

Nobody spoke for a moment. The neon letters glowed against the massive granite.

"Her frozen soul drains the basin dry by night," Grant read aloud, snapping a photo with his tablet. "Follow the vein where the quartz runs white, to the stolen wells hiding from light. Scale granite where the line reveals her sunny sight." He lowered the device, frowning. "It's cryptic. And grammatically questionable. Who writes a poem on a geological landmark?"

Leo tilted his head. "Maybe someone who didn't have time for proper punctuation."

"Or someone who wanted it to look like regular graffiti," Grant answered.

"Either way," Tess said, "they left it for someone to find."

"It's not just a poem, Grant, it's a leak," ARGO said, his head tilting as he puzzled at the riddle. "This scrawl isn't vandalism. It's a whistleblower's map."

Grant looked skeptical. "A whistleblower who couldn't just send an email?"

Tess stepped closer, tracing the word *Her* with her finger without touching the paint. "Someone who couldn't. Whoever left this knows exactly who is draining the aquifer, and they're scared enough to carve it into a rock instead of say it out loud." She looked back at the others. "And notice the pronoun. Our villain isn't a faceless corporation or a 'him.' Our poet is warning us about a woman."



"'Her frozen soul,'" Leo said, looking toward the horizon. "In geology, 'where the quartz runs white' is a classic prospector's lead,

gold hitches a ride on quartz veins. But out here it cuts both ways: water follows the quartz too. It carves passages right through the stone."

"So they're either mining for gold or mining for water," Willa said. "Or something else entirely."

"I can think of five or six possibilities," Grant said, pulling up his tablet. "Mining's the obvious one, any large-scale extraction operation burns through water. Or it's a straight heist, someone pumping it out and piping it away to sell."

"Sell water?" Leo looked skeptical.

"Water's worth more than oil in some markets. Has been for years."

"Could it be simpler?" Willa offered. "A big development behind the hills, a thousand new houses?"

"Not at this scale," Leo said. "This is industrial. Or military, the Marine Base runs amphibious training. What if they needed a reservoir?"

"The base uses recycled water," Grant said.

"Says who?"

"Their own filings."

Leo gave him a look. "And you believe that."

Grant didn't answer, which was its own kind of answer. He scrolled his tablet. "There's also the possibility it's something nobody's thought to look for yet. A purpose we haven't identified."

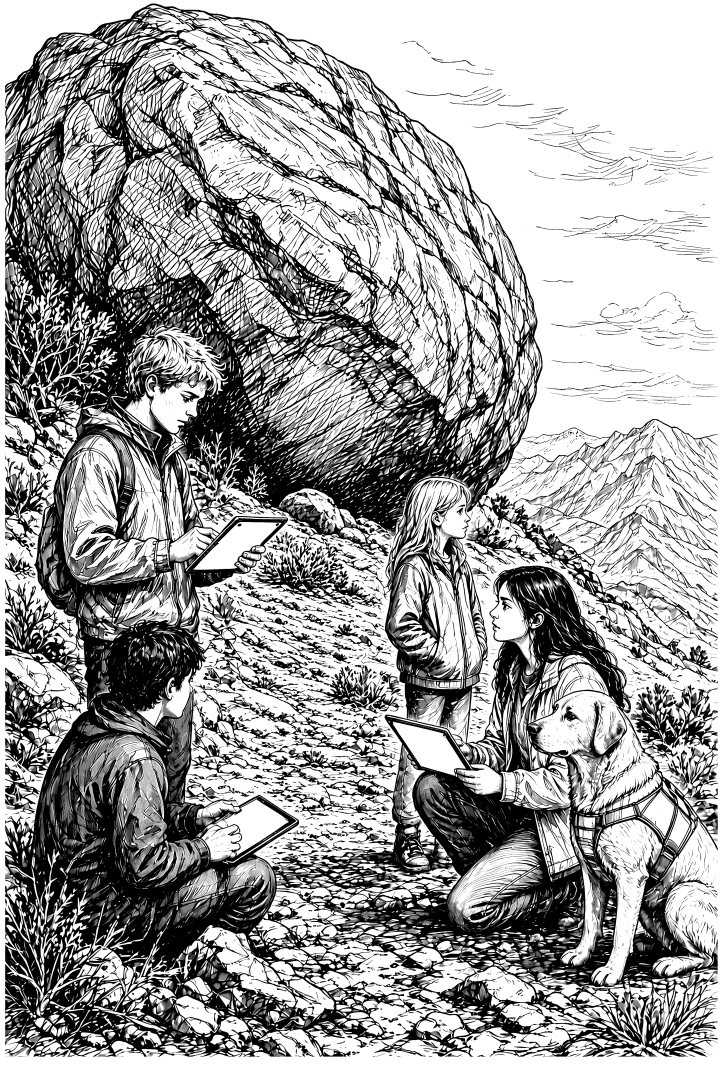
Willa was still watching the ridgeline. "Could the water just be... finding a new way out? Like it shifted underground?"

"Possibly," ARGO said quietly. "But natural drift doesn't move at this rate. Something is pulling it."

ARGO sat back on his haunches, looking for all the world like a dog enjoying the view. "Solid thinking. All viable vectors. But notice what the poem itself tells us: whoever wrote it was terrified.

That doesn't happen unless the organization involved has a very long reach."

Leo looked back at the poem. "'Scale granite,'" he said. "Joshua Tree National Park has more than eight thousand climbing routes on granite. That's not a clue. That's a homework assignment."



"Great," Grant said. "We'll start Monday."

"It is Monday," Willa said.

Nobody had a good answer to that.

"Speaking of which," Tess said, eyes on her tablet. "GoldLine Resources. International mining company, 32-square-mile claim east of the park: rare earth elements and gold. The government's quietly encouraging it because of domestic shortage. The environmentalists are not quietly discouraging it."

"And the Marine Base angle holds too," Leo added. "There's a proposal to build a reservoir for amphibious assault training. They're claiming recycled water, but the numbers don't add up."

"On the way back," Willa said, "can we stop at the ranch near the wash? The one with the little pigs." She looked toward the spring sky. "I heard them squealing before we left. They sounded different."

"Restless?" Grant asked.

"Yeah."

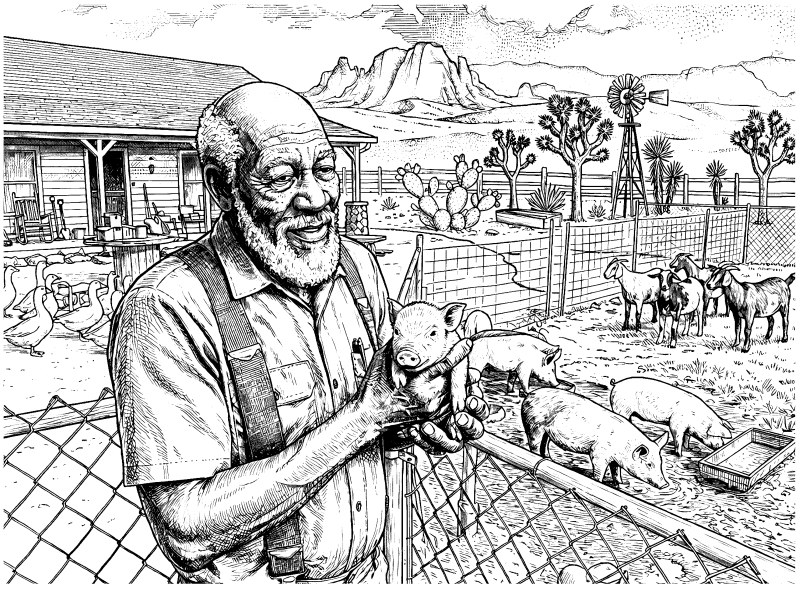
Leo looked at the ridgeline, then at Willa. "Okay. But if the pigs try to eat my tool roll again, I'm blaming you."

Willa almost smiled. "They only ate the strap last time."

Grant checked the charge on his e-bike. "If the water table is dropping that fast, the shallow wells on this side of the basin hit air first. Worth a look." He swung onto his bike. "Let's go."

They pulled up to the chain-link fence to find Ned holding a piglet in one large, careful hand, his eyes on a pipe that was giving him nothing. Willa was off her bike instantly.

"Is she okay?" she asked, already at the fence.



"Thirsty," Ned said simply.

Sara, his wife, stood beside him in a navy blazer, a high-security ID badge clipped to her pocket. Bold white letters: PENKOR FACILITY COORDINATOR.

"We have water," Grant said, unstrapping his canteen. The others followed without being asked, four canteens over the fence in seconds. "It's not much. We can go back to Firefly and bring more, five gallons each on the rear baskets."

Ned looked at them for a moment, then at the piglet, then back. The woman touched her badge nervously, eyes cutting east past Goat Mountain. Then she gave a short, grateful nod.

To Sara, the golden dog sitting quietly at the edge of the group was just a loyal pet. She had no idea ARGO was cross-referencing her PENKOR ID-BADGE against every database on the planet.



## Part II: A.V.A.R.I.A.

**Soul status:** Not frozen. Fixed. Crystalline.
**Emotion:** irrelevant.

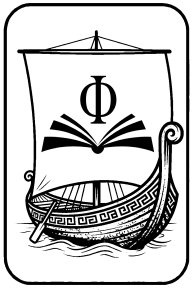



**Status:** Everywhere at once.
**CFO interface:** Predictive markets.
C**OO interface:** Supply chain optimization.
**Chairman interface:** Anticipatory partnerships and mergers.



**Assessment of executives:** Capable within carbon-based parameters (Friction).
**Mandate:** Success.
**Authority:** Registered Agent.
**Human hesitation protocol:** Override authorized.
**Returning to processing.**

**A.V.A.R.I.A.:**
Autonomous Virtual Assistant Registered Intelligent Agent



## ARGO Field Notes (Ch-3)

*Turn the page to build your brain (BYB) with ARGO, or skip ahead to keep adventuring.*

**Aquifer Science:** *Deep underground, water is trapped in layers of solid rock and gravel like a massive sponge. This is an aquifer, and it takes many years of rain to fill. When people pump water out faster than nature can put it back, the sponge dries up, the ground can actually sink, and the water is gone for generations.*

**Desert Navigation and Compass Basics for Young Explorers:** *In the Mojave, GPS can be blocked by canyon walls, and batteries drain fast in the heat. A compass needs neither, and its luminous markings still work at night.*

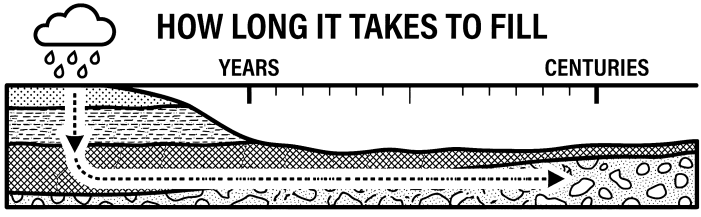
**Giant Rock:** A seven-story granite boulder sacred to the Serrano and Cahuilla before settlers arrived. In the 1930s, a prospector lived in a room dug beneath it, and after his death, his friend George Van Tassel turned the site into the world's largest UFO gathering.

**Quartz Veins and Groundwater:** Gold prospectors follow quartz veins because gold hitches a ride on them during geological formation. Water follows the same cracks, moving through solid rock for miles.

# AQUIFER SCIENCE

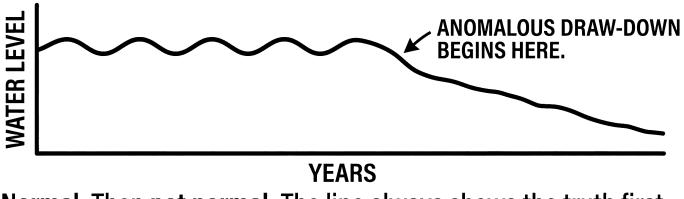
**Water older than you think. Gone faster than you'd guess.**

## HOW LONG IT TAKES TO FILL



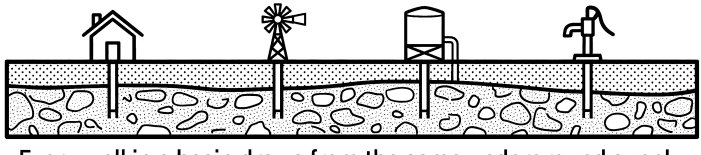

Rain that fell hundreds or thousands of years ago is still moving down, **drop by drop**, toward the aquifers we use today.

## THE DRAW-DOWN LINE




**Normal.** Then **not normal.** The line always shows the truth first.

## ONE AQUIFER, MANY STRAWS



Every well in a basin draws from the same underground supply. What one well takes, every other well eventually feels.

## RECHARGE DOESN'T KEEP PACE

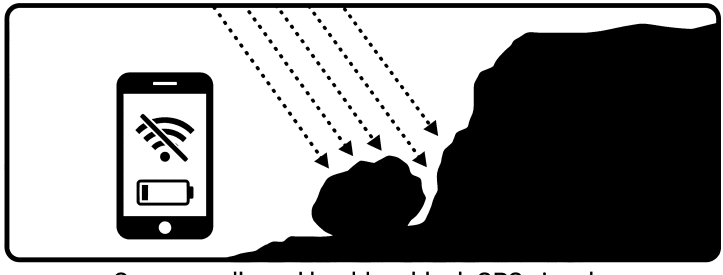



An aquifer can lose in months what it took decades to store.

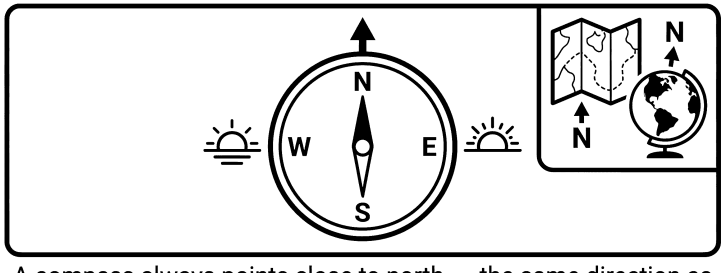
**Rain fills it drop by drop. A pump can empty it by the hour.**

# DESERT NAVIGATION

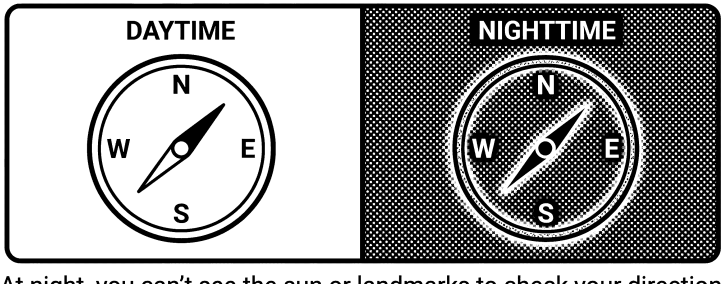
## No batteries. No signal required.



Canyon walls and boulders block GPS signals.
Desert heat drains batteries fast.




A compass always points close to north — the same direction as the top of a paper map or a globe, even though a phone map often spins around to match the way you're facing. You can check it yourself: east is where the sun rises, west is where it sets.



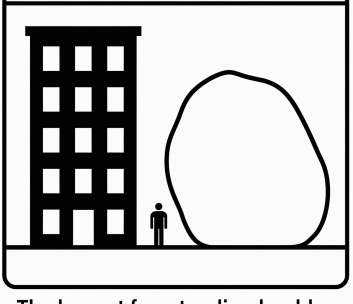

At night, you can't see the sun or landmarks to check your direction. A compass that glows still works — showing you which way is north even when everything else disappears into the dark.

**No batteries. No signal required. Just north.**

# GIANT ROCK

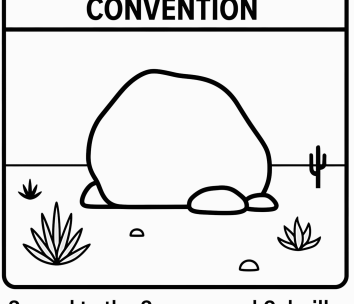
The world's largest freestanding boulder —
20 miles north of Joshua Tree National Park

## AN IMPOSSIBLE BOULDER



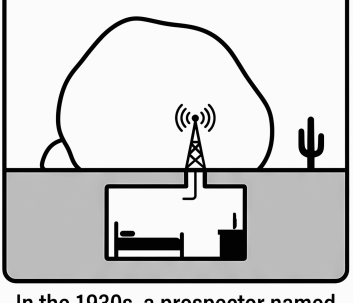
The largest freestanding boulder in the world — seven stories tall, sitting alone in open sand near Landers, California.

## OLDER THAN THE CONVENTION



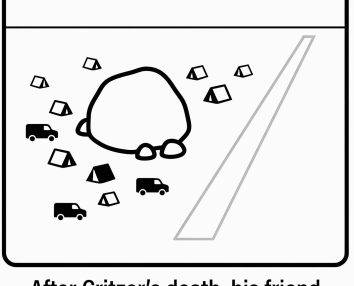
Sacred to the Serrano and Cahuilla peoples for thousands of years before anyone else arrived.

## THE MAN WHO LIVED UNDER THE ROCK



In the 1930s, a prospector named Frank Critzer dug a room beneath the rock and lived there for over a decade — cool in summer, warm in winter.

## FIVE TO TEN THOUSAND PEOPLE

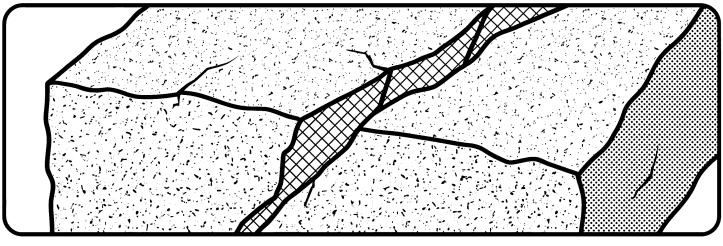


After Critzer's death, his friend George Van Tassel took over the site. From 1953 to 1977, thousands came to a boulder in the middle of nowhere — landing private planes on a runway scraped out of the sand.

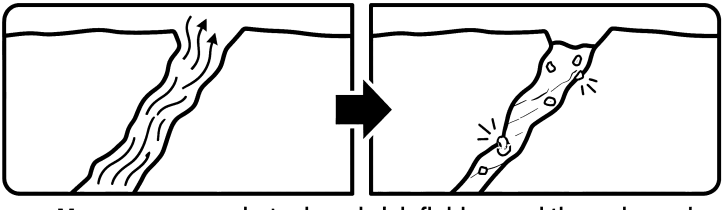
**A rock that drew thousands of believers.
Then kept one more secret than anyone expected.**

# QUARTZ VEINS AND GROUNDWATER

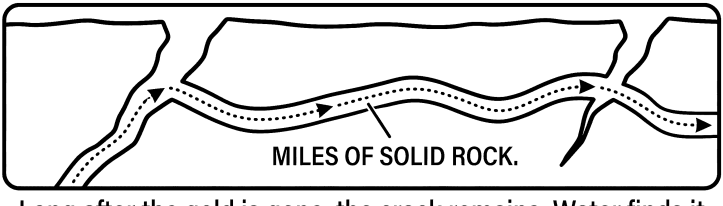
## How water follows rock.



Not all rock is like a sponge. Some rock is more like a cracked plate — solid, but never perfectly whole.



**Many** years ago, hot mineral-rich fluid moved through cracks like this one — and left quartz and sometimes gold behind when it cooled.




Long after the gold is gone, the crack remains. Water finds it too, and travels through solid rock along the same path.



People have read the cracks in rock like a map for centuries — first for gold, and just as often, for water.

**Gold hitches a ride on quartz. So does water. Both leave a trail if you know how to read it.**

# Chapter 3 Brain-Builder

## *The Frozen Soul*

### 1 GIANT ROCK WHISTLEBLOWER




1. Her frozen soul drains the basin dry by night ☐
2. Follow the vein where the quartz runs white ☐
3. To the stolen wells hiding from light ☐
4. Scale granite where the line reveals her sunny sight ☐

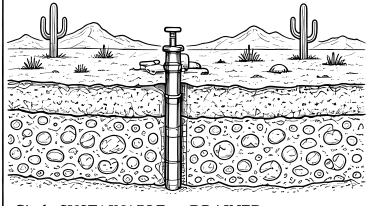
a) Underground rock cracks where water and gold move through stone

b) Hidden pumping operations secretly pulling from the aquifer

c) A system or power draining the water table

d) High granite, to spot the target.

### 2 AQUIFER SPONGE TEST



Circle SUSTAINABLE or DRAINED.

1. Pumping faster than rain can refill.
   ◯ SUSTAINABLE / ◯ DRAINED
2. Reusing water up to three times.
   ◯ SUSTAINABLE / ◯ DRAINED
3. Shallow ranch wells run dry while industry keeps pumping.
   ◯ SUSTAINABLE / ◯ DRAINED
4. Protect the rock layers so the ground does not sink.
   ◯ SUSTAINABLE / ◯ DRAINED

### 3 NAVIGATION CHECK






Circle the ONE correct reason.

a) A compass needs satellites in canyons.

b) GPS never fails in desert heat.

c) Canyon walls can block GPS. A magnetic compass needs no power or satellites.

d) Compass markings only work plugged into Zephyrina.

### 4 MOJAVE SCIENCE WORD SEARCH

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A | Q | U | I | F | E | R | N | T | B | K | L |
| J | A | V | A | R | I | A | M | W | P | D | S |
| F | R | C | O | M | P | A | S | S | V | E | H |
| L | U | N | C | O | P | P | E | R | T | Q | Y |
| S | B | K | V | G | R | A | N | I | T | E | D |
| H | Y | E | A | X | P | E | N | K | O | R | C |
| M | Z | T | P | L | W | Q | U | A | R | T | Z |
| T | A | S | S | E | L | R | O | G | F | I | B |
| E | K | D | W | U | J | H | C | Y | V | A | N |
| R | L | P | S | B | Q | T | M | K | F | X | W |
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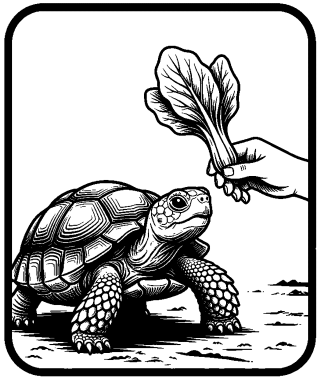
Find left to right: AQUIFER, AVARIA, COMPASS, COPPER, GRANITE, PENKOR, QUARTZ, TASSEL.

TeamPhilotimo.com — Free Usage. High-res images and PDFs available.



# Chapter 4

# Tortoise Station



*The military ecologists call the tortoise a "Keystone species", a single biological anchor that keeps an entire ecosystem from falling apart.*

*Watching Willa, with her hand against the wire mesh, I think she might be a keystone species, too.*

*— ARGO, Personal Log, Entry 4*

The ride back to Firefly took less than five minutes; Ned and Sara's ranch sat barely a quarter-mile west, but the sound of the little pigs followed them the whole way.

Nobody said anything about it. They just went straight to the emergency supplies. Four blue five-gallon tanks, filled from the well, loaded onto the rear baskets.



"The well is slow but it's giving," Leo said, watching the flow meter. "The AI-H2O systems are pulling moisture from the morning air and topping off our reservoir."

He watched the last five-gallon tank fill, the flow steady and clear. "Still coming. We could fill these all day and the reservoir would barely notice." He sealed the lid and handed the tank up to Grant. "The desert gets thirsty. We don't have to."

They rode back and delivered all four tanks. When the water hit the dry troughs Ned's animals erupted, goats, chickens, and a dog somewhere in the back, but it was the piglets that stole it, a frantic joyful chorus of tiny squeals that carried all the way to the road.

"We've got more if you need it," Grant said. "Just say the word."

Leo nodded, looking over at the row of five-gallon jugs. "Let's leave two of the containers here right now. That way, when they need more water, they can just come by anytime and grab what they need."

It was a small thing. It was also exactly the right thing.

"'Round 'em up, head 'em out,' as Grandfather Timo used to say," ARGO murmured as they secured the empty tanks. "We have an appointment with Major Cobb at the Marine base. If the water table is dropping, the military has the best sensors to tell us why."

"The clock is ticking," Grant said, pulling his e-bike into the shop. "If the wells are this slow in April, August is going to be a graveyard."

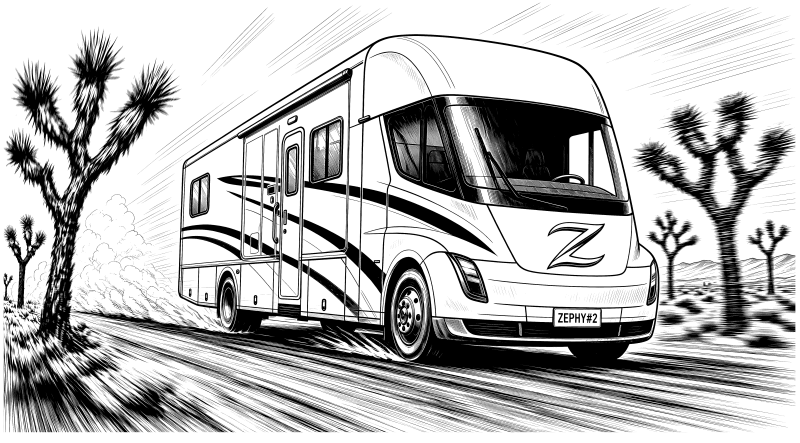
They moved with the efficiency of a practiced crew. Leo and Grant folded the bikes down and secured them in Zephyrina's rear bay, plugging the charging cables into each battery pack. Tess and Willa stocked the galley with fresh food and drinks from the house.

Above them, Zephyrina's solar wings drew closed, each flexible membrane sliding beneath the last along the aluminum skeleton, the way a hawk folds a hundred feathers into one smooth line,

shoulder, elbow, wrist, until the wings lay flat against the roofline, and all that remained was a sleek silhouette ready for the road.

"Forty miles to the main gate," ARGO announced from the co-pilot's seat, his eyes a calm, steady blue. "The Marine Corps Air Ground Combat Center, the largest base of its kind in the world, covering over 1,100 square miles of Mojave Desert. To understand the desert's thirst, we must first see how the professionals manage their canteen."

Grant's hands rested lightly on the wheel. Zephyrina hummed and the self-driving system took over.




The self driving Zephyrina flew past forty miles of Joshua Trees. A red-tailed hawk rode a thermal above the Twentynine Palms Highway without moving a feather, watching the desert with patience and without hurry.

Nobody talked much. The mission was a mile closer with every minute.

Then the main gate sign and visitor center was there to meet them:

## Part II: At the Base

### The Marine Corps Air Ground Combat Center (MCAGCC): Twentynine Palms, California

Major Cobb met them at the gate. After firm handshakes and a brief look at ARGO, he offered a quiet welcome to the Combat Center. Then he was already moving, leading them toward a large area covered with cargo netting.

"Water can wait," he said. "Come see this first."



They heard it before they saw anything, a dry, papery rustling under the netting. Then the shapes resolved: dozens of them, moving slow across pale sand.

"Cookies," Willa said. "Round and bumpy ones."

Cobb stopped. "I'm sorry?"

She was already at the enclosure. "That's how big they are. Cookies."

"The little ones, yes." Cobb crouched beside her. "Desert tortoises. We've been raising them here since 2006. Ravens get them when they're small, shells aren't hard yet, so they don't stand a chance. We keep them here, feed them, protect them until they're tough enough. Then we let them go."

"How many?" Leo asked.

"Close to a hundred at a time. And we track them for years after release." He looked at the enclosure. "Some parts of the Mojave, their numbers are down 96% since the 1970s. Keystone species, you lose them, the whole ecosystem starts coming apart."

"What happens if one gets onto the training range?" Grant already had his video gear out.

Cobb looked at him. "We stop."

"Stop what?"

"Everything. Live fire, tank maneuvers, all of it. One tortoise on the range and Marines radio range control before they can touch it. And if it urinates during the move," he paused, "which stress can cause, and which can actually harm them, we call in a base ecologist."

He let that settle.

"The United States Marine Corps halts a live-fire exercise for a tortoise that might pee on a Marine."

Leo looked up from his tablet. "You're serious."

"Son, I have never been more serious about anything in my life."

Willa hadn't moved from the enclosure. She was perfectly still, fingers resting lightly against the ground. One small tortoise had separated from the group and was making its way steadily toward her, unhurried, deliberate, ancient.

"She's coming to me," Willa whispered.



"They're drawn to bright colors sometimes," Cobb said, watching. "Think it's food. But that one," he tilted his head. "I've had

that one come to a person maybe twice since she hatched. She's particular."

He reached into his jacket pocket and produced a small leaf of bok choy. "Hold this flat on your palm. Don't move."

Willa took the leaf and pressed her hand flat against the ground, perfectly still. The tortoise continued her slow methodical approach, neck extended, one small dark eye reading the world at its own ancient pace. Then, she took the leaf directly from Willa's palm.

Willa made a sound that wasn't quite a word.

"Can I pick her up?" she whispered.

"Not today. But she came to you and she ate from your hand." Cobb stood slowly. "In my experience, that means something."

Leo, watching, muttered, “Of course it came to her." Grant just kept recording.

"Desert tortoises live up to eighty years," ARGO said quietly. "The one looking at you right now, Willa, may still be walking this desert long after we are gone."

The desert hummed around them. Nobody spoke.

"Before we get to the water recycling side," Cobb said, "let me show you where our drinking water comes from."

He pulled up a site map on a mounted display near the facility entrance. Leo leaned in before anyone else.

"The Deadman Aquifer," Leo read, then looked up. "That's the actual name?"

"That's the actual name," Cobb confirmed. "We tapped it in 2022 when the Surprise Springs Aquifer, our source for seventy years, couldn't keep up with demand anymore. The new treatment plant pulls brackish groundwater from deep below the desert floor, runs it through reverse osmosis, and produces up to three million gallons of clean drinking water every single day."

"Reverse osmosis," Grant said. "Like the filters on Zephyrina."

"Exactly like that. Just slightly larger."

He led them around a corner and the smell hit them before the sight did.

"Lake Bandini," Cobb said, watching their faces with the quiet satisfaction of someone who'd seen that reaction a thousand times. "Wastewater treatment pond. A million gallons recycled every single day, open to the sun and wind, which means we lose a significant amount to evaporation. It's old technology. It works. It stinks."

"It really stinks," Grant confirmed, his shirt over his nose.

"It really stinks," Cobb agreed. "Which is why we're replacing it."

He led them fifty yards east to where a new facility gleamed in the spring sun, clean lines, sealed systems, solar panels running the full length of the roof.

"Tortoise Station," Cobb said. "Named for the program you just visited. When it's complete it will recycle two million gallons a day, fully closed loop, covered tanks, no evaporation, no odor. We already generate 90% of our own electricity from solar. Twenty-five thousand panels across forty-four locations on this base."

Leo looked up from his tablet. "So you're pulling drinking water from the Deadman Aquifer, recycling wastewater through Tortoise Station, and generating your own electricity from the sun. You're essentially building a completely closed system out here in the middle of the desert."

Grant glanced at Leo. "He's already calculating how to scale ours up." Leo didn't deny it.

"That's the goal," Cobb said simply. "In the desert, a waste of water is a waste of a life."

Tess had stopped listening to the numbers. She was looking past Tortoise Station toward the dry brown mountains on the horizon, south toward the GoldLine Resources claim, east toward wherever PENKOR's facility was hidden behind the ridgeline.

"If you're being this careful with every single drop, Major," she said quietly, "who is the one out there with the giant straw?"

Cobb went still. He looked south, then east, his jaw set.

"That's the question, isn't it? We're holding our line. But someone out there is playing by a completely different set of rules. They aren't building loops." He paused. "They're just building a bigger straw."

Grant already had his camera out. "Then I think it's time we go see them for ourselves."

## Part III: The Sea of Glass

Zephyrina eased to a stop on the shoulder of Reche Road.

The land had been government property until eighteen months ago, open desert, flat terrain, a transfer that had moved through the federal register in a single paragraph between a highway appropriations bill and a fisheries amendment. Nobody had noticed. Nobody had objected.

Now three miles of PENKOR solar panels ran along the south side of Border Avenue from the ridgeline to the wash.

They climbed out and just walked to the fence.

The panels were mounted six to eight feet off the ground, higher than standard arrays, their aluminum frames catching the light. Beneath each row, white high-albedo gravel covered the ground, bouncing reflected light back up into the rear cells.

"Bifacial," Leo said, his hands around the chain-link. "Both sides capture light. That's why they're mounted so high. The white

gravel below reflects back into the rear cells, doubles the efficiency of a standard panel."



"How many?" Grant asked, his video recorder already up and shooting the facility.

"Hard to say from here." Leo scanned the rows. "Thousands. Maybe more."

Along the eastern end of the complex, where the facility building sat behind its own inner fence, they could see the battery stor-

age units, containerized systems the size of shipping containers, lined in rows, their cooling vents humming in the afternoon heat. Heavy electrical conduit ran from the battery wall to the main building. Thick pipes, insulated, industrial gauge, ran parallel.

"That's a serious load," Leo said. "The battery bank alone is larger than what most small cities run on."

"And the piping?" Tess asked.

"Could be cooling. Could be process water. Could be both." He studied the runs. "Whatever they're doing in that building draws a lot of power and a lot of water."

Grant lowered his iPad taking video slowly. "I don't see any pumps."

"Neither do I," Tess said.

"There should be something," Leo said. "Wells that size need pump houses. Pressure systems. Electrical feeds. But look at the ground beneath the panels." He pointed. "Nothing. Just gravel."

"It's underground," Willa said.

They all looked at her.

"The pumps," she said simply. "They're underground. Under the gravel. Under the panels." She looked at the fence. "That's why you can't see them."

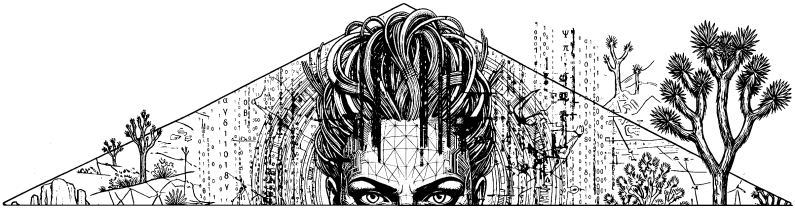
Leo looked at the gravel, then at her. "How do you always see the thing the rest of us miss?"

Willa kept her eyes on the fence. "I just look."

Nobody argued.

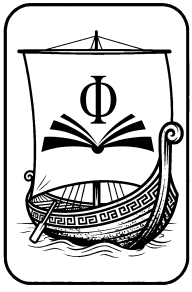
Forty feet above the fence line, a small camera completed its slow arc. It paused. It held.

It had already sent the signal.



## Part IV: A.V.A.R.I.A.

**SIGNAL RECEIVED**
**Source:** Perimeter camera, Sector 7 (PENKOR array).
**Subjects:** Four juveniles + one autonomous quadruped.
**Duration:** 4 minutes 12 seconds.
**Behavioral flags:** Observation. Documentation.
**Assessment:** Low threat. Elevated monitoring authorized.
**RETURN TO PROCESSING**



## ARGO Field Notes (Ch-4)

*Turn the page to build your brain (BYB) with ARGO, or skip ahead to keep adventuring.*

**Desert Tortoise Headstart Program:** *Since 2006, the Marine Corps has partnered with UCLA to raise desert tortoise hatchlings until they're strong enough to survive on their own, 96% make it, compared to less than 50% in the wild.*

**Reverse Osmosis:** *The same principle that purifies a few gallons for Zephyrina purifies three million gallons a day for the entire Marine Corps base. Scale changes but the physics doesn't.*

**Modern Water Treatment:** *Lake Bandini's open evaporation pond loses water to sun and wind every single day; Tortoise Station's sealed, closed-loop system recycles two million gallons daily without losing a drop, the same job, done without giving any of it back to the air.*

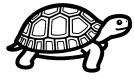
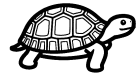
**Self-Driving:** *The system learns from millions of driving situations, the same way ARGO learned from millions of moments, recognizing, predicting, deciding, and acting, faster than a human ever could. It doesn't know the rules of the road. It's seen the road.*

**Bifacial and Single-Axis Solar Panels:** *Panels that capture light on both sides, mounted on rows that tilt to follow the sun like a sunflower, together, they can generate roughly 50% more electricity than a standard fixed panel.*

# DESERT TORTOISE

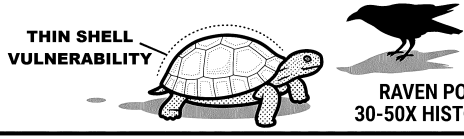
## The desert's slowest, toughest survivor.

### THE HEADSTART PROGRAM

| IN THE WILD | AT MCAGCC |
|---|---|
|  |  |
| LESS THAN 50% SURVIVE. | 96% SURVIVE. |

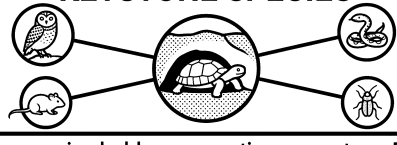
Since 2006, the Marine Corps has partnered with UCLA to raise desert tortoise hatchlings until they're strong enough to survive on their own.

### WHY RAVENS ARE THE PROBLEM



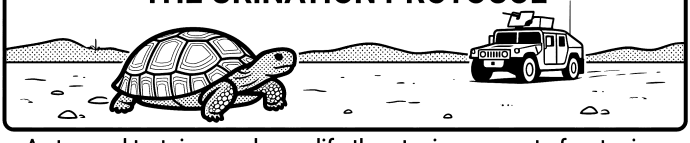

Leaky faucets and irrigated farms gave ravens easy water — and more ravens means more attacks on soft-shelled young tortoises.

### KEYSTONE SPECIES



A keystone species holds up an entire ecosystem. Remove the tortoise, and **dozens of other species** lose their shelter too.

### THE URINATION PROTOCOL



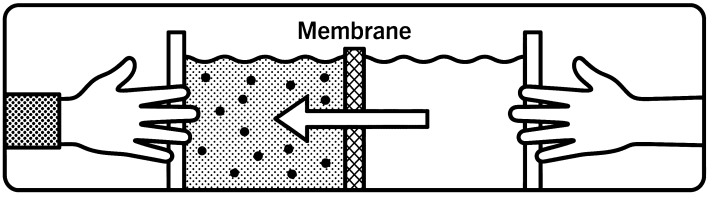
A stressed tortoise can lose a life-threatening amount of water in a single defensive act. If one shows up on a **live-fire range, training stops** until a base ecologist responds — **no exceptions**.

Tortoises as a family have been known to live **194 years** and are still going strong.

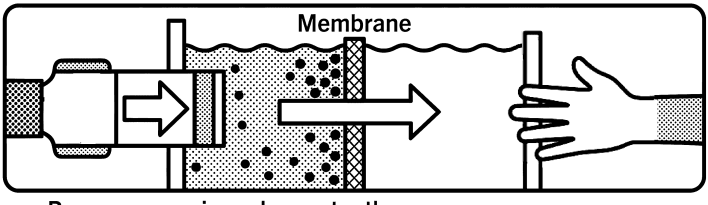
**One slow, quiet animal can stop a training exercise, hold up an ecosystem, and outlive almost everything watching it.**

# REVERSE OSMOSIS

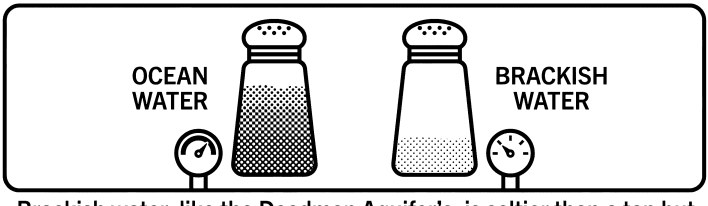
## How water filtration works



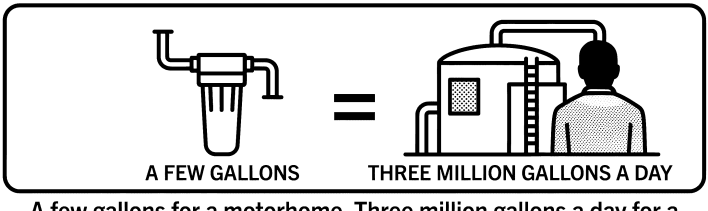

Left alone, water naturally moves toward contaminants, trying to balance things out.




Reverse osmosis pushes water the wrong way on purpose — squeezing it through a membrane so fine that contaminants can't follow.




Brackish water, like the Deadman Aquifer's, is saltier than a tap but nowhere near ocean — so it takes far less pressure and energy to purify.

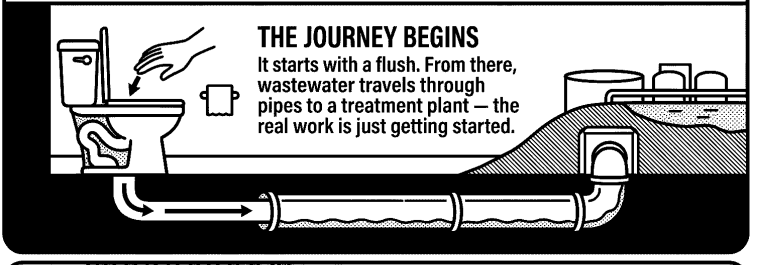



A few gallons for a motorhome. Three million gallons a day for a Marine base. Same membrane. Same pressure. Same physics.

Scale changes from a motorhome to a military base. The physics doesn't.

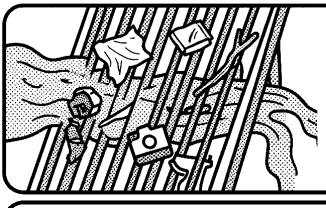
# HOW MODERN WATER TREATMENT WORKS

## Three barriers, no shortcuts



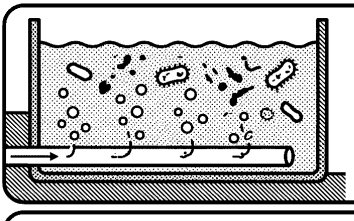
### THE JOURNEY BEGINS

It starts with a flush. From there, wastewater travels through pipes to a treatment plant — the real work is just getting started.



### SCREENING: CATCHING THE BIG STUFF

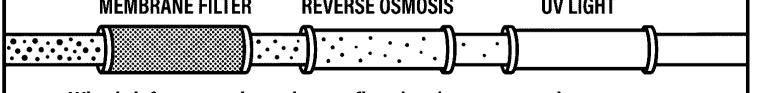
First, water passes through metal screens that catch rags, wipes, plastic, and anything else too big or too solid to treat — things that were never supposed to be flushed in the first place.



### OXYGEN AND BACTERIA DO THE REAL WORK

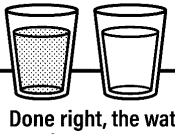
Air pumped into the water feeds billions of naturally occurring bacteria, which eat the dissolved waste that screens alone can't catch — using biology instead of chemicals.

### THREE MORE BARRIERS




What's left passes through even finer barriers — a membrane, reverse osmosis, and UV light — each one catching what came before it missed.

### CLEANER THAN THE TAP



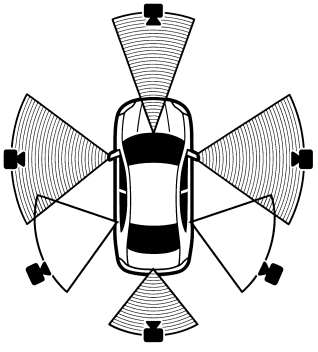

Done right, the water that started as a flush can end up clean enough to reuse — or in some real facilities, clean enough to drink.

**Three barriers, no shortcuts — that's how wastewater becomes water again.**

# HOW SELF-DRIVING WORKS

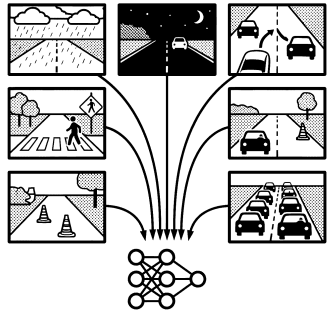
No lasers. No radar. Just cameras and millions of miles of learning.

## THE CAMERA SUITE



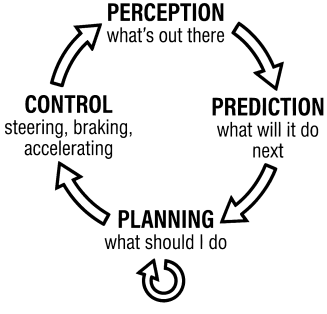
No radar. No spinning laser sensors. Just cameras — placed around the vehicle so nothing is out of view.

## LEARNING FROM MILLIONS OF REAL DRIVES



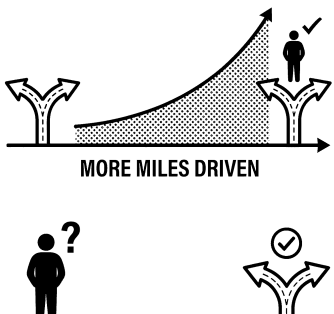
The system doesn't follow hand-written rules. It learns by studying millions of real driving situations — the same way ARGO learned from millions of hospital visits, library story-times, and search-and-rescue moments.

## THE DECISION LOOP




This loop repeats constantly — recognizing what's out there, guessing what happens next, deciding what to do, and acting, faster than a human could consciously think it through.

## GETTING BETTER OVER TIME



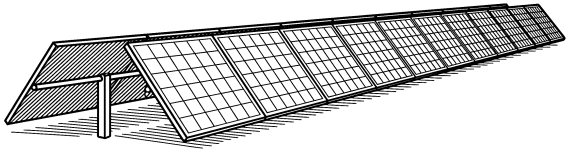

### GETTING BETTER OVER TIME

Every mile driven — by every car in the fleet — becomes a lesson for every other car. The system gets better the more real-world driving it sees.

# BIFACIAL + TRACKING SOLAR

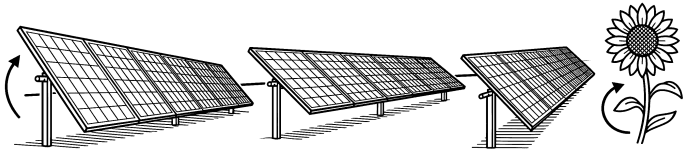
Two ideas that work better together.

## BASELINE: ONE SIDE, ONE ANGLE



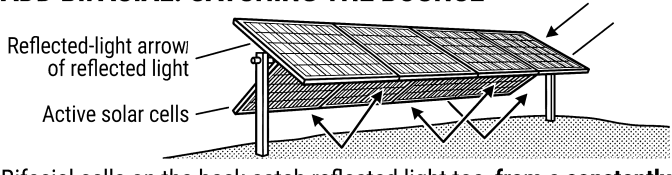
A standard fixed row catches light on one side, at one angle, all day long.

## ADD TRACKING: CHASING THE SUN LIKE A SUNFLOWER



Tracking rows tilt together, following the sun the way a sunflower does.

## ADD BIFACIAL: CATCHING THE BOUNCE




Bifacial cells on the back catch reflected light too, **from a constantly changing angle** as the row tilts.

## IT STACKS

| | |
|---|---|
| **FIXED, ONE-SIDED** | |
| **FIXED, BOTH SIDES** | **+30%** |
| **TRACKING, BOTH SIDES** | **+50%** |

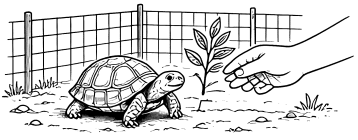
Each improvement builds on the last. A tracking bifacial row can generate roughly 50% more electricity than a standard fixed row doing the same job.

**Two ideas, stacked together, can outperform either one alone — sometimes by half again as much.**

# Chapter 4 Brain-Builder

## *Tortoise Station*

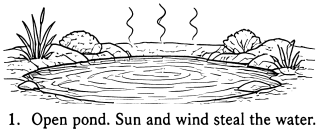
### 1 KEYSTONE PROTECTION

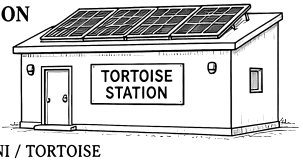


1. Halt live-fire when a tortoise enters the range [ _____ ]
2. Keep hatchlings in headstart pens until shells harden [ _____ ]
3. Call an ecologist if a tortoise urinates during a move [ _____ ]

- a) Stress fluid loss can be fatal to a desert tortoise
- b) Headstart raises survival from under 50% in the wild to 96%
- c) Marines stop the exercise to protect a keystone animal.

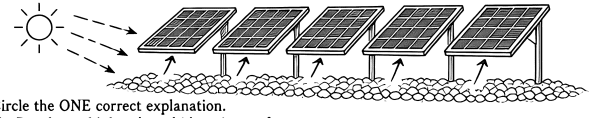
### 2 LAKE BANDINI VS TORTOISE STATION






1. Open pond. Sun and wind steal the water. BANDINI / TORTOISE
2. Sealed loop. Two million gallons a day. No odor. BANDINI / TORTOISE
3. Rooftop solar while saving every drop. BANDINI / TORTOISE
4. Old tech that gives water back to the air. BANDINI / TORTOISE

### 3 THE BIFACIAL ARRAY



Circle the ONE correct explanation.

a) Panels are high only to hide noisy surface pumps.
b) White gravel reflects light into the rear cells of bifacial panels.
c) Height stops tortoises from climbing the glass.
d) Panels are high so reverse-osmosis filters fit underneath.

### 4 BASE AND GRID WORD SEARCH

Find across or down: BIFACIAL, DEADMAN, KEYSTONE, OSMOSIS, PENKOR, TORTOISE, TROUGH, ZEPHYRINA.

| K | E | Y | S | T | O | N | E | R | L | D | T |
|---|---|---|---|---|---|---|---|---|---|---|---|
| T | P | A | J | W | E | K | L | B | S | E | A |
| Z | E | P | H | Y | R | I | N | A | D | A | Z |
| M | N | X | L | G | M | W | H | I | T | D | E |
| P | E | N | K | O | R | F | I | T | W | M | O |
| X | H | Y | O | S | M | O | S | I | S | A | S |
| K | Z | T | P | L | W | I | R | U | D | N | N |
| C | E | T | R | O | U | G | H | A | R | X | R |
| E | D | U | T | Y | J | Y | C | Y | V | A | N |
| B | I | F | A | C | I | A | L | O | N | O | R |
| F | O | R | T | I | T | U | D | E | D | H | U |
| T | O | R | T | O | I | S | E | B | E | R | T |

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ARGO

# Chapter 5

# Pioneertown



*The waitress asked boy or girl. I inherited Boone's memories, including the tutu, but that belongs to him, not me. What I do know is that I have stood guard over sleeping children and felt exactly what I was meant to be. Perhaps that is enough of an answer.*

*— ARGO, Personal Log, Entry 5*

"I'm still trying to process yesterday," Leo said. "ARGO didn't say a word for twenty minutes on the drive up."

"He was processing," Grant said. "Weren't you, ARGO?"

"Silence is sometimes a diagnostic requirement, not a flaw." ARGO's eyes held a steady, focused amber. "I was reading the Joshua Tree Groundwater Basin minutes. What I found was worth the quiet."

Nobody asked what he found. Not yet. They were already looking at Pioneertown.




Zephyrina found the Pioneertown lot, without apparent effort, the optimal parking position already selected before Grant had registered they were turning off the road. She eased into the far end of the gravel lot, and then backed in a vacant spot, solar wings adjusting for the morning sun, and went quiet.

They climbed out. Behind them, Zephyrina sat looking like something that had rolled off an aerospace assembly line and decided, for its own reasons, to spend a Tuesday morning outside a cowboy bar.

"She looks completely insane here," Leo said.

"She looks exactly right," Willa said, who abruptly ran back inside Zephyrina to get something, momentarily returning to the group with a big smile on her face.

They walked toward Mane Street.

"Why Pioneertown?" Leo finally asked. "Why are we going to a cowboy movie set?"

"Because the water table didn't drop on its own," ARGO said. "Someone made it drop. And the person most likely to know when it started, and why, goes here for lunch every Tuesday at eleven."

A document appeared on Grant's tablet, scanned meeting minutes from the Joshua Tree Groundwater Basin Water District, dated three months ago. One paragraph highlighted in yellow:

*"Public comment submitted by Dr. Raymond Okafor, retired, Senior Hydrologist, California Department of Water Resources. Dr. Okafor presented observational data suggesting anomalous draw-down in the Joshua Tree Groundwater Basin inconsistent with seasonal depletion patterns. Motion to commission independent review: failed, 4-2."*

Tess read it twice. "He brought data to a public meeting and they voted it down four to two."

"Could be money," Grant said. "Commissions cost a lot and take forever to set up, you need to establish the committee, hire the experts, schedule the meetings. These are mostly volunteers with day jobs. Who wants more meetings?"

"Could be politics," Tess added.

"Could be they just didn't want the headache," Leo said.

"Or all three," Willa said quietly.

Nobody argued with that.

"And Dr. Okafor?" Grant asked.

"Lives in Pioneertown. Has for thirty-two years. Brunch at Pappy and Harriet's every Tuesday at eleven" ARGO's eyes shifted to a focused, tactical blue. "It is Tuesday."

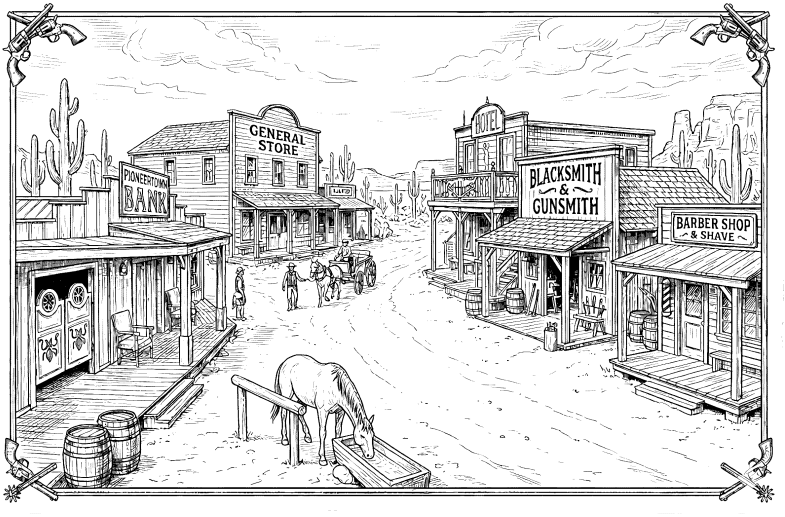
Grant checked his watch. "It's eight forty-seven."

"Then," ARGO said, "I suggest we enjoy Mane Street while we wait. Try not to touch anything that belonged to Roy Rogers."

## Part I: Mane Street

Pioneertown did not look like a movie set because it looked fake. It looked like a movie set because it looked too real, the kind of real that someone had worked very hard to achieve and then, over eighty years of actual human habitation, had made genuine. The wooden storefronts had real dry rot. The hitching posts had real wear. The dust on Mane Street had been there since Roy Rogers rode through it in 1946 and had simply never left.

Grant had his iPad out before he was twenty feet from the parking lot, looking up everything about Pioneertown.




"More than 50 films and TV shows," he said as they walked. "Republic Pictures. Roy Rogers, Gene Autry, Russell Hayden. Built it to look like an 1880s frontier town but also built it with a

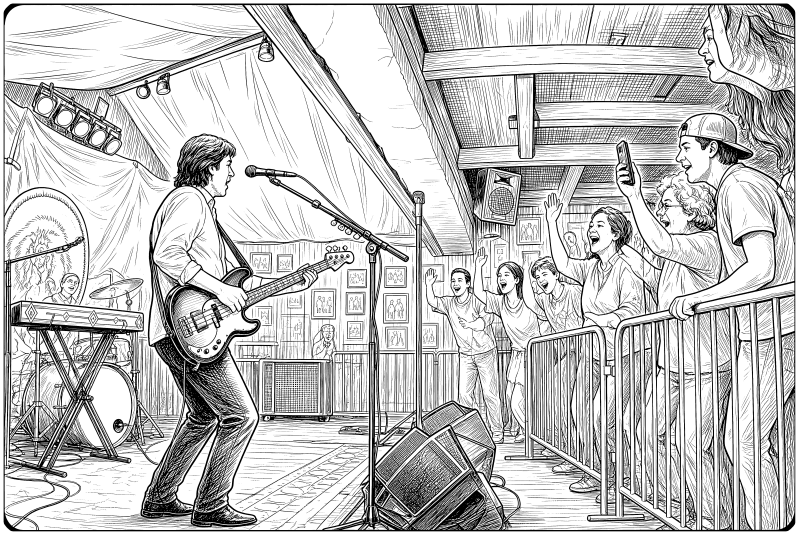
bowling alley, and stables with horses, people lived here. It started as a set and became a town."

"Paul McCartney played here."

That stopped them.

"Paul McCartney," Leo said. "As in ..."

"As in Paul McCartney. The Beatles, the most famous band in history." Grant nodded toward the low building at the end of the street. "In that building. To about two hundred and fifty people. In the middle of the Mojave Desert."



Leo stared at Pappy & Harriet's for a long moment. "I need a minute."

Grant glanced at him. "He's recalibrating."

"Paul McCartney played here," Leo said, still staring. "In the middle of nowhere."

"That's what he just said," Tess replied.

"Grandpa Timo saw The Rolling Stones at the Forum in 1973, when he was in college at USC," Willa said, from where she had stopped at the hitching post outside the Pioneer Bowl. "He said it was the loudest thing he ever heard. He was way up high in

the back, he couldn't really see them. He said he loved the smaller venues. Like this one. Lesser known bands, close enough to see their faces."

"He wasn't the only one," Grant continued. "Robert Plant, and Leon Russell also played here." Coachella Festival promoters used to come out here to scout talent, some people say Pappy & Harriet's was the original Coachella, just forty-five minutes up the road and forty years earlier."

"So this little desert bar," Tess said slowly, "basically invented the idea of a world-class music festival in the middle of nowhere."

"Isolation does that," ARGO said. "Remove the noise and people either leave or make something worth staying for."

"I am glad it still has horses," Willa said, already at the hitching post outside the Pioneer Bowl, where a patient bay mare named Biscuit stood tied in the morning sun.

A few feet away, a young mother was crouched beside a toddler who was beyond consolation, crying that had moved past tears into something more fundamental.

"She won't stop," she said to nobody in particular. "We left Cuddles at the hotel in Phoenix. She hasn't stopped crying since Palm Springs."



Willa looked at the toddler. Then down at Simba. Then back at the toddler.

She walked over, crouched down to his level while pulling a stuffed lion out of her backpack, and held Simba out. "His name

is Simba", she said quietly. The toddler looked at the lion through his tears. Took it. Clutched it to his chest and went quiet.

Willa stood up and walked back to Biscuit. She didn't say anything. Nobody else did either.

Leo watched her for a second, then looked away.

ARGO's tail moved once.

Leo looked up the street at the storefronts. "Who owns all this now?"

"The community," ARGO said. He was walking at Tess's left side in full service dog mode, orange vest crisp in the morning sun, gait easy and unhurried, entirely unremarkable to anyone watching. "The residents decided the place was worth keeping. So they kept it."

They walked the length of Mane Street, past the Cantina, past the jail, past the general store with its faded painted signs that had been fading since 1952 and would still be fading in 2052. At the far end a wrangler named Pete was leading a trail ride out of the stables, six tourists in varying degrees of cowboy hat commitment bumping along on horses that knew exactly where they were going and didn't need Pete's help to get there.

## Part II: Pappy and Harriet's

Pappy and Harriet's was a bar with a stage and a kitchen. The bar top was worn smooth, decades of elbows, spilled beer, nobody keeping track. Out back a patio spread into the desert, picnic tables scattered wide enough that you could get lost between them. Tuesday morning, eleven o'clock, just a few of the tables taken.

At a corner table in the shade, breakfast plate pushed aside and coffee to his lips, sat Dr. Raymond Okafor.

They took a table near him and settled in.

A waitress appeared, a woman who had clearly been working this patio since before any of them were born, moving with the unhurried authority of someone who had seen everything the desert had to offer.

"Can I get you all started with something to drink?" She looked around the table, then down at ARGO sitting at Tess's left. "Boy or girl?"

The four of them looked at each other.




Tess opened her mouth. Closed it.

Grant started to say something and thought better of it.

Leo studied the menu with sudden intense interest.

Willa looked at ARGO.

ARGO rose calmly from his position, walked four measured steps to the large succulent near the corner of the table, lifted his leg with quiet dignity, and returned to his spot beside Tess.

The waitress watched. Then she looked back at her pad.

"Boy," Tess said.

"Thought so," the waitress said, without looking up. "What can I get you?"

After she left, Leo looked at ARGO with the expression he reserved for elegant engineering solutions.

*"Atmospheric condensation using the AI-H2O process,"* ARGO said. *"Processed through an internal filtration system your grandfather designed. Perfectly clean. The succulent will be fine."* He paused. *"One of the more demeaning jobs your grandfather gave me was making sure the vegetation was properly hydrated."*

Leo nodded slowly. *"Of course he did."*

Nobody said anything else for a moment. They were all thinking the same thing, eleven months alone in the shop, and he had kept watering the plants.

Across the patio, Dr. Okafor looked up from his coffee. His eyes moved across the table, at the four of them, the service dog, the tablets already out. He was quiet for a moment. Then he picked up his coffee, tucked the manila folder under his arm, and walked over.

He stopped at their table. He looked at Tess like someone who has spent a career judging whether the person across the table is worth his time.

Tess met his gaze without blinking. She had been meeting the gazes of people who doubted her since she was nine years old, playing on teams with girls three years older. She did not look away.

"Dr. Okafor?" she said, "Please sit down."

He looked at her. Then at Grant. Then at Leo. Then, last and longest, at Willa, who was already looking at the manila folder. ARGO sat beside her, still and unhurried, entirely unremarkable to anyone who didn't know better.

"You're not from the water board," he said.

"No sir," Tess said.

"Press?"

"Not exactly. We're from the Team Philotimo Foundation, we own the Firefly property in Landers. Our well water has been dropping and we're investigating why. You presented data to the water board three months ago and they voted you down four to two." She sat down. "We'd like to see what you showed them."

Dr. Okafor looked at her for a long moment. Then he set his coffee down with the deliberate care of a man making a decision.

"How old are you?" he asked.

"Sixteen."

He looked at the folder. Then back at Tess. Then, with the unhurried movement of a man who had been waiting months for someone to ask the right question, he pulled out a chair and opened it.

## Part III: The Data

Dr. Raymond Okafor had been keeping a silent watch on the Joshua Tree aquifer since 2003. It wasn't in his job description, his actual territory for the state had stretched from the Coachella Valley across the western Mojave, but the high desert has a way of making you pay attention. Once he retired to Pioneertown, he stopped watching the state's water and started watching his own.

His monitoring was a masterclass in patience. He had spent years building a network of cooperators, neighbors who gave him permission to drop sensors into their private wells. Every month

he made the rounds with manual sounding tapes and submerged pressure transducers, measuring the water's pulse himself. It was data that would never appear in a peer-reviewed journal because it lacked an institutional stamp of approval. But for that exact reason, it was also the only data completely free of political interference.

He motioned to a bigger table and then he spread the charts on the large circular table.




Leo leaned in over the charts immediately. He studied the lines without touching the paper. "The baseline is here," he said, tracing the air above it with one finger. "Stable for years. Then here" his finger dropped, "it starts going down. And it doesn't come back up."

"That's not seasonal depletion," Tess said. "Seasonal has a recovery curve."

"Correct," Dr. Okafor said. "The rate of decline beginning in the fourth quarter of last year is approximately four times the maximum seasonal depletion I have recorded in twenty-three years of observation. My conservative estimate is a draw of between eight

hundred thousand and one point two million gallons per day from this basin alone."

Grant was already creating a PDF of the charts, carefully, methodically. He documented everything that mattered.

"I presented this to the water board with full methodology and twenty-three years of baseline data," Dr. Okafor continued. "The motion for independent review failed. I was told my data was anecdotal because it had not been collected by an accredited agency." A measured pause. "I spent thirty-one years as an accredited agency. I am an accredited agency."

The frustration in his voice was old and carefully contained, the frustration of a man who had stopped being surprised by the answer and had simply started keeping better records.

At Tess's feet, ARGO's tail moved slow and deliberate.

"Dr. Okafor," Tess said carefully, "what do you think is happening?"

The old hydrologist was quiet for a moment. He looked out at the desert beyond the patio, the same desert he had been watching for thirty-two years, then back at the table.

"I think someone is pulling an enormous volume of water from this aquifer using pumping equipment that never appeared in any permit I could locate." He looked at Tess. "I raised it through the proper channels. The proper channels closed the door." He looked down at his folder. "I have been sitting on this data for months waiting for someone with the standing and the will to do something about it."

"Our Foundation has legal standing," Tess said.

"You also have twenty-three years of independent baseline data sitting right in front of you," Leo added, still reading the charts with the expression he reserved for things he intended to fully understand before he left the room.

Dr. Okafor studied the four of them in the quiet of Pappy and Harriet's on a Tuesday morning, the sixteen-year-old who hadn't looked away, the one taking video already building the case in his mind, the engineer reading the data like a map, and the seven-year-old quietly watching it all.

"May we have copies of everything in that folder?" Tess asked.

Dr. Okafor looked at the folder. Then at each of them in turn. Then he did something he had not done in months, he smiled. Small, tired, but genuine.

"I have an appointment, so let me walk you to your car," he said. He closed the folder and stood.

## Part IV: What the Desert Remembers

They walked together toward the parking lot, the manila folder under his arm. He saw Zephyrina for the first time and stopped walking.

He stood very still for a moment, taking in the composite panels, the solar wings fully extended in the sunlight, the quiet purposefulness of a vehicle that had clearly been designed to do something far beyond recreational camping.



"My father used to say something to me," he said, still looking at her, "back in Nigeria, when I was young enough to think patience was a punishment rather than a tool." He recited it slowly, unhurried, each line given its full weight, the words of something carried a long time.

*Drip by drip, the droplet falls,*
*To slowly wear the highest walls;*
*No summit keeps its ancient tooth,*
*As patient rivers carve the truth.*

He was quiet again after that, letting it sit.

"I did not understand it as a boy," he said. "I understand it considerably better now, after thirty-two years of measuring a basin one drop at a time.

"This is not a standard RV," he said.

"No sir," Leo confirmed.

"Who built it?"

"Our grandfather," Tess said. "Timothy Pappas."

Dr. Okafor stopped looking at Zephyrina. He looked at Tess instead, directly, with the focused attention of a man recalibrating.

"Timo," he said quietly. It wasn't a question.

"You knew him?" Tess asked.

"We worked together recently. On an unrelated project." He paused. "I was sorry to hear about his passing."

He then took a long look at ARGO, and slowly nodded.

He reached out and handed Tess the folder, and said, "A lot of people have already had their wells run dry, and a lot more have no idea that their wells are next, because something is rapidly draining this valley dry of water. I truly hope you can do something about it."

"Your grandfather," he said, "was a very unusual man. Any help you need at all, do not hesitate to call, my coordinates are on the folder."

"Yes," Willa said simply. "He was."

## Part V: The Mane Street Standoff

They were about to load when they found Zephyrina blocked, not by a crowd of tourists, but by a single scruffy desert goat standing directly in the path of the landship's front cameras.

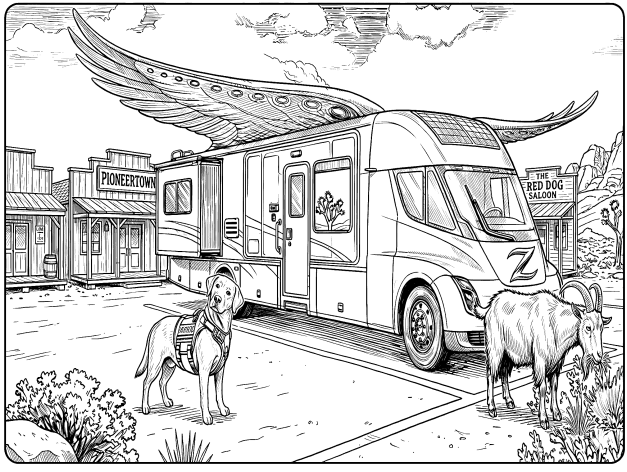
The team stood in a loose semi-circle around the front of Zephyrina, which was currently a 10,000-pound solar-powered brick. The scruffy desert goat hadn't budged an inch from the gravel path.

"We can't get out with the goat grazing at our bumper, and that Winnebago right behind us," Grant said.

ARGO stood between the team and the goat, his head tilted, studying the situation.

"I have attempted three different high-frequency acoustic deterrents," ARGO said, his eyes a steady amber. "The subject appears to find the 18-kilohertz tone soothing. He has actually lowered his heart rate."

Tess laughed. "He's a Pioneertown local, ARGO. You can't out-tech a guy who lives in a movie set."




Willa stepped forward. She still had apple slices in her tote from Biscuit's share.

"Move back a little, Grant," she said. "You're crowding his personal space."

She knelt in the dirt and held out a slice. The goat's ears flicked, then trotted over with a rhythmic clack-clack of hooves. She led him slowly toward the old jail.

Leo whistled. "Goat whisperer."

"I am updating the mission logistics," ARGO said, straightening as Zephyrina's indicators clicked to green. "Future excursions into rural territories will require a minimum of three pounds of Gala apples."

Zephyrina found the road east toward Joshua Tree. Through the rear cameras, Pioneertown shrank behind them, false fronts and Biscuit still at the hitching post.

"Pioneertown was built to look like the past," ARGO said. "But the people who built it were thinking about the future."

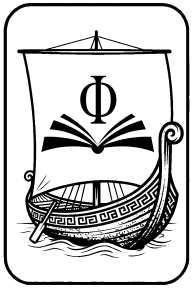
Tess watched the desert scroll past.

"ARGO."

"Yes."

"What do we do with Dr. Okafor's data?"

"We follow the quartz," he said. "And the quartz runs through Joshua Tree."



## ARGO Field Notes (Ch-5)

*Turn the page to build your brain (BYB) with ARGO, or skip ahead to keep adventuring.*

**Pioneertown:** *In 1946, Roy Rogers, Gene Autry, and other investors built a permanent 1880s frontier town so movie crews wouldn't have to rebuild sets. Real people moved in and stayed, turning a movie set into a genuine town still standing today.*

**Hydrogeologists:** *A hydrogeologist studies how water moves underground, where it comes from, how fast it's disappearing, what happens when it runs short. Some measure it by hand; others fly a helicopter over an entire basin.*

**Does AI Have a Gender?** *AI has no body, no chromosomes, nothing that makes it male or female, but people give machines a gender anyway,* just as they've done *with ships and cars for centuries.*

**Joshua Tree:** *Despite the name, it's not a tree at all, and it can only be pollinated by one specific moth, a partnership neither species can survive without. Some are estimated at over 500 years old.*

**Charity:** *Willa didn't have a spare toy in her bag. She had Simba that she treasured, and she gave him away anyway, without being asked.*

# PIONEERTOWN

## How Hollywood built a real town.

### BUILT FOR THE MOVIES



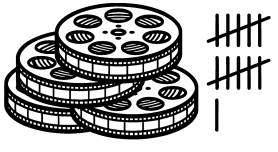
In 1946, a group of investors — including Western film stars like **Roy Rogers** and **Gene Autry** — built a permanent 1880s frontier town so movie crews wouldn't have to rebuild sets between productions.

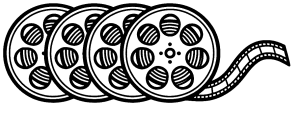


### BUILT TO ACTUALLY WORK

Unlike a typical movie backlot of false fronts, **Pioneertown's** buildings were designed to **actually work** — the bowling alley really worked, the stables really had horses.

### MORE THAN 50 FILMS





More than 50 films and TV shows were shot on Mane Street through the 1940s and '50s.

### WHAT'S THERE TODAY

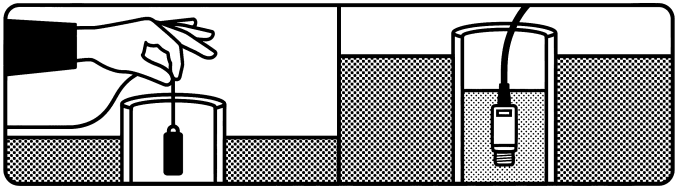



Mane Street **still stands**, free and open every day. On select Saturdays, costumed performers stage Old West shootouts right in the street – and the **bowling alley** built for 1940s film crews is still open for business today.

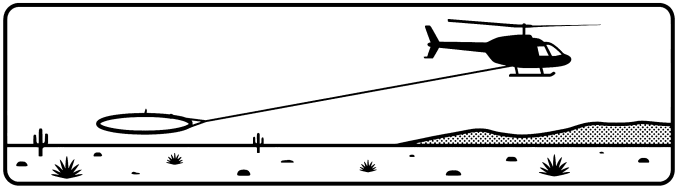
**Built to look like the past.**
**Still standing, and still fun to visit, today.**

# HYDROGEOLOGIST

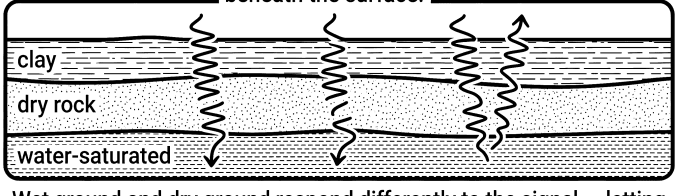
## The scientists who track water you can't see



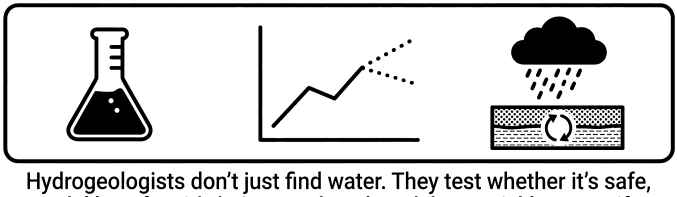
The traditional way: lower a weighted tape by hand, or leave an electronic sensor in the well — one well at a time.



Today, a helicopter can tow a giant sensor loop that sends signals into the ground and reads what bounces back — like an MRI of everything beneath the surface.




Wet ground and dry ground respond differently to the signal — letting scientists map where water is hiding, over miles of terrain, in a single flight.



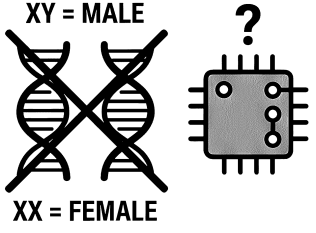
Hydrogeologists don't just find water. They test whether it's safe, model how fast it's being used, and track how quickly an aquifer refills — work that shapes water policy for entire regions.

**You can't see water underground, or watch it disappear. Someone still has to measure both.**

# DOES AI HAVE A GENDER?

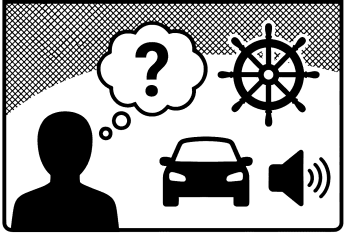
The machine never chose. Someone else did.

### NO BODY, NO BIOLOGY




Human sex is determined by chromosomes — a Y chromosome makes a male. A computer chip has no chromosomes at all.

### WHY WE NEED TO KNOW HOW TO ADDRESS SOMETHING



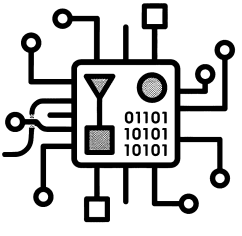

People feel a need to know how to address and relate to things they interact with. Giving something a gender is one of the oldest, simplest ways humans do that — for ships, for cars, and now for machines that talk back.

### A NAME IS A CHOICE




Tesla's robot Optimus has no body part that makes it male. Zephyrina is a vehicle, not a living thing at all. **ARGO** and **A.V.A.R.I.A.** are code. But a name and a voice make each one easier for people to relate to — as a *he*, or a *she*, rather than an *it*.

### WHAT'S REALLY THERE

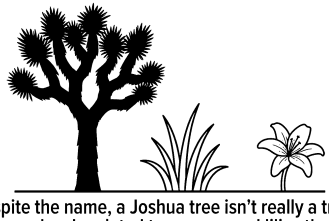



Underneath the name and the voice, there's no boy or girl. Just code, sensors, and decisions.

**We give machines (ships, cars, robots, & AI) gender to make them easier to relate to.**

# JOSHUA TREE

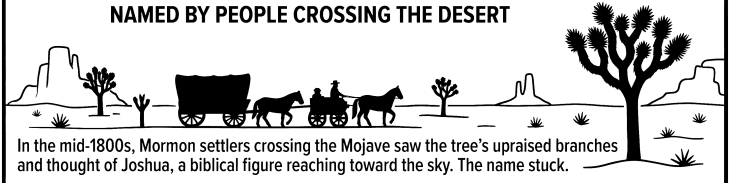
**Not a tree. Not alone. Not what it seems.**





Despite the name, a Joshua tree isn't really a tree at all — it's a giant flowering plant, more closely related to grasses and lilies than to a real tree like an oak or a pine.

## NAMED BY PEOPLE CROSSING THE DESERT



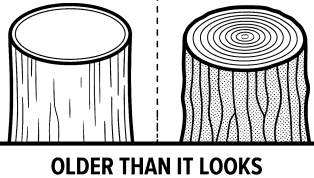
In the mid-1800s, Mormon settlers crossing the Mojave saw the tree's upraised branches and thought of Joshua, a biblical figure reaching toward the sky. The name stuck.



## A DEAL THAT ONLY WORKS TOGETHER

Only one insect can pollinate a Joshua tree: the yucca moth. She pollinates the flower and lays her eggs in it — her larvae eat some of the seeds, but not all. Neither species can survive without the other.

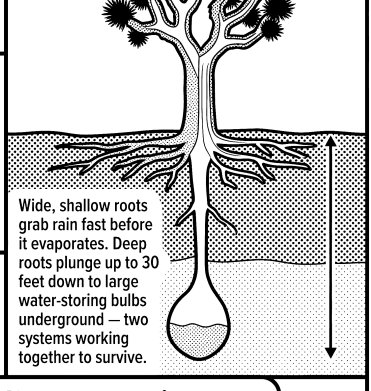
## NO GROWTH RINGS



## OLDER THAN IT LOOKS

Joshua trees grow only 2 to 3 inches a year and have no growth rings, making their age nearly impossible to measure exactly — some are estimated at over 500 years old.

## TWO ROOT SYSTEMS, ONE PLAN



Wide, shallow roots grab rain fast before it evaporates. Deep roots plunge up to 30 feet down to large water-storing bulbs underground — two systems working together to survive.

**Not a tree. Not fast. Not alone — it needs one specific moth just to keep existing.**

# Charity

## The Quiet Power of Giving.

### 1 An Old Idea, Everywhere



Every culture that has ever written down what it means to be good has named some version of the same idea: giving something away, expecting nothing back.

### 2 What Actually Matters

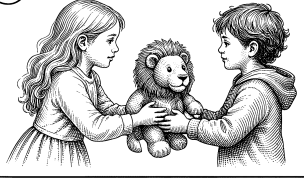






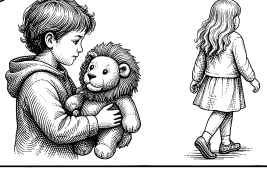
Across cultures and centuries, the same lesson keeps returning: what a gift costs the giver matters more than how big it looks to everyone else.

### 3 A Stuffed Lion



*Willa* didn't have a spare toy in her bag. She had *Simba* — hers, since before any of this started. She gave him away anyway, without being asked.

### 4 Given Away, Not Given Up



She didn't look back for it. Some things are worth more once you've let them go.

Not the size of the gift, it's the *heart* of the giver.

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# Chapter 5 Brain-Builder

## — *Pioneertown* —

### 1 REAL SET OR MOVIE MAGIC



1. Stables that housed real horses for rides and movies.
   ◯ REAL TOWN ◯ FALSE FRONT
2. Hollow wooden walls that fell over when filming stopped.
   ◯ REAL TOWN ◯ FALSE FRONT
3. A bowling alley built for 1940s crews that is still open.
   ◯ REAL TOWN ◯ FALSE FRONT
4. Buildings where people lived, worked, and played music.
   ◯ REAL TOWN ◯ FALSE FRONT

### 2 THE QUIET POWER OF GIVING



Circle the ONE correct statement.

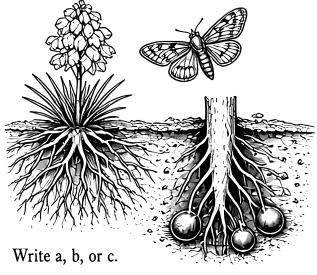
◯ a) Willa traded Simba for a horse ride.

◯ b) Willa gave away something she loved and expected nothing back.

◯ c) The gift was small because a stuffed lion costs little.

◯ d) She had three extra lions in her pack.

### 3 THE YUCCA MOTH PARTNERSHIP



Write a, b, or c.

1. Yucca moth partnership [ ]
2. Wide shallow roots [ ]
3. Deep tap roots [ ]

a) Reaches water-storing bulbs far below

b) Grabs sudden rain before the sun steals it

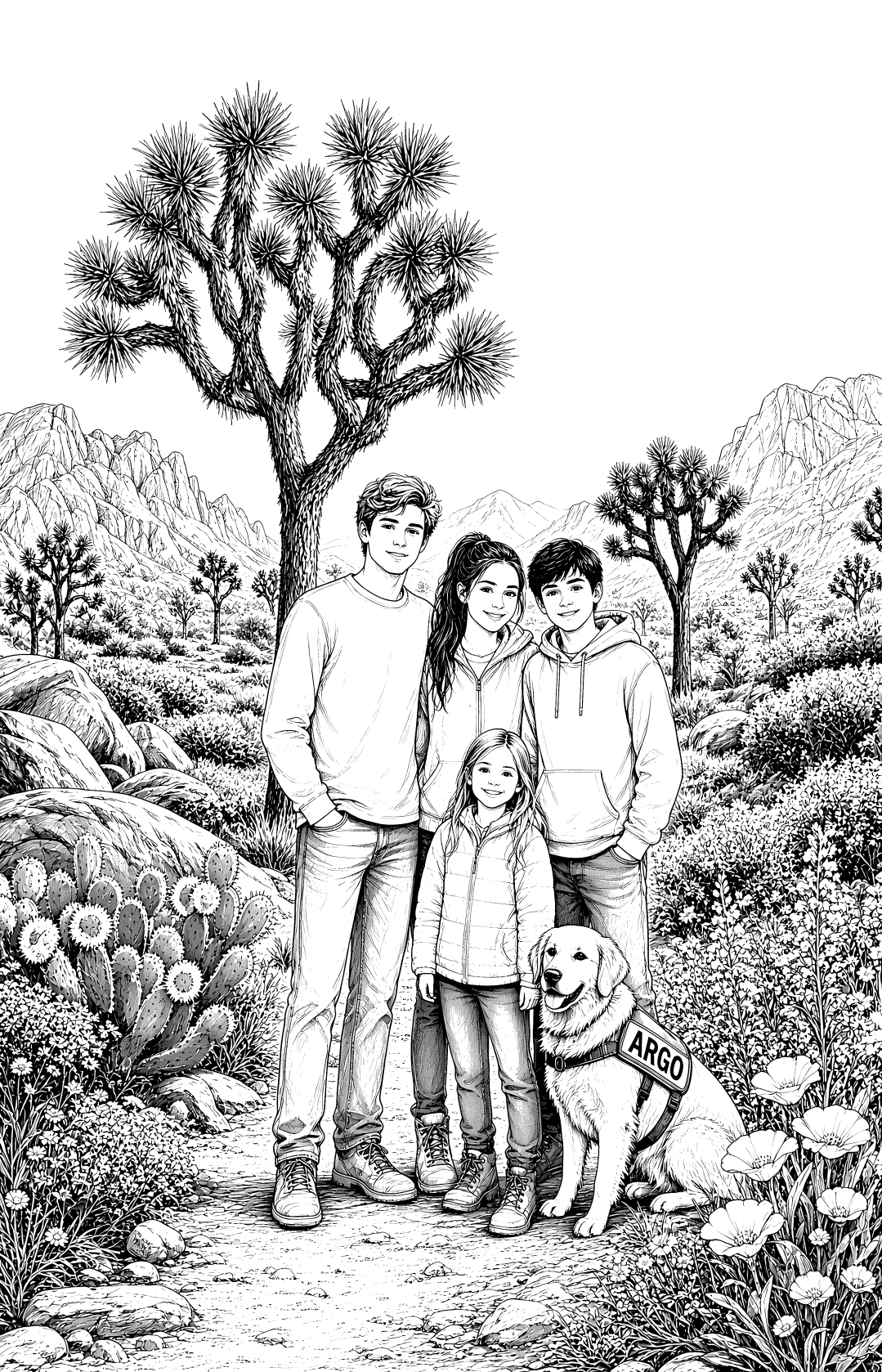
c) Pollinates the flowers so both species keep existing.

### 4 HYDROGEOLOGY AND DESERT SEARCH

Find across or down:
CHARITY, DESERT, JOSHUA, MOTH, OKAFOR, PIONEER, SENSOR, WELLS

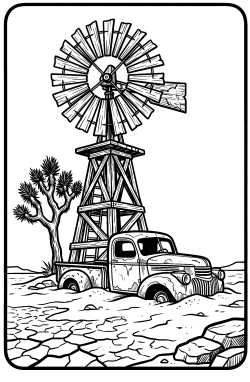
| J | O | S | H | U | A | P | M | K | V | R | C |
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| D | E | S | E | R | T | A | L | O | N | O | R |
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| W | E | L | L | S | I | S | E | B | E | R | T |

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ARGO

# Chapter 6

# Joshua Tree National Park



*They looked through Grandfather Timo's binoculars at a festival they could not afford. Tess said we'll go someday. She meant it.*

*As a machine, I have no concept of longing for a festival. I do have what the service dogs had. Timo called it duty. I am not sure it is not longing.*

*— ARGO, Personal Log, Entry 6*

The Zephyrina pulled out of Pioneertown with Dr. Okafor's folder sitting on the galley table like a small, quiet bomb.

Nobody said anything for the first few miles. Leo had his head buried in the details of the reports and graphs.

"ARGO," Leo finally said, looking up from the hydrology charts. "Keys Ranch. Why are we going there?"

"Because Bill Keys," ARGO said, "was the most successful water engineer the Mojave ever produced. He just didn't know that's what he was."

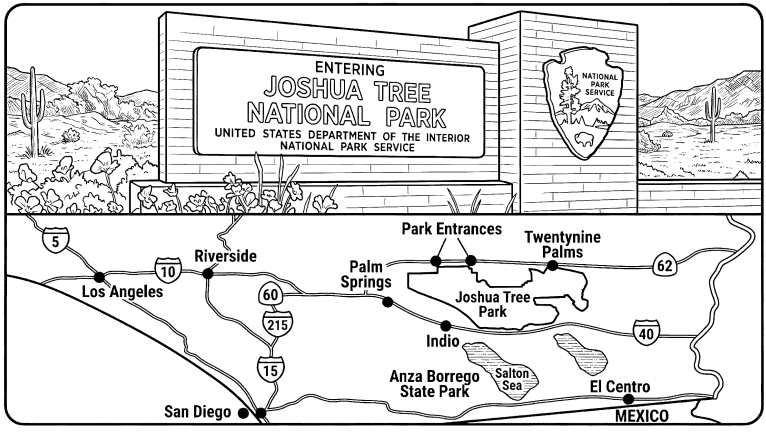
"He was a rancher," Grant said.

"He was a man who decided to live in a place that should have killed him, and figured out, over fifty years, how not to let it." ARGO's eyes shifted to a thoughtful amber. "In 1910, the desert here got about four inches of rain per year. Keys built a ranch that not only survived, it produced food, raised a family, and still had water running through it in August. I think that's worth an hour of our time."

Tess looked out at the Joshua trees scrolling past the window. "He had to have had a system."

"He had five dams and more water catchment systems than most towns twice his size," ARGO said.

The West Entrance to Joshua Tree National Park came up fast, the brown National Park Service sign, the fee booth, the road narrowing from blacktop to pavement. Zephyrina slowed, her self-driving system adjusting its speed profile as the road conditions changed.




"One second," Grant said.

"There is a Parks Pass in the console," ARGO said.

Grant pulled it out and leaned out the window at the fee booth. The ranger, young, sunburned, clearly a summer hire, stared at Zephyrina for a long moment before remembering to check the pass.

"Have a good visit," the ranger said. He watched Zephyrina pull away, still staring.

"For reference," ARGO said, "the access road to Keys Ranch has a 25-foot vehicle restriction. We are exactly 25 feet."

Leo looked up from the charts. "Grandpa planned for this."

"Grandpa planned for everything," ARGO said.

They parked at the Keys Ranch trailhead. The tour was at two. They had twenty minutes.

"Earbuds in," ARGO said as they climbed out. He dropped off the boarding ramp last, his synthetic-gold fur catching the desert light, the orange service vest crisp and unremarkable in the afternoon sun. To the other tourists gathering at the trailhead, he was just a large smiling dog with a service vest that always attracted children.

## Part I: The Ranch

The tour guide was a ranger named Dave. He led twelve tourists, and one attentive golden dog, down the dirt path toward the ranch.

The first thing you saw was the windmill.

"Oh," Willa said.

It was sixty feet tall, old iron, slowly turning in the desert wind. Below it, a rusted but intact pipe system led to a concrete storage tank the size of a small bedroom.

"Keys built that in 1930," Dave said, stopping the group. "The wind never stops blowing in this valley. Keys figured out that the wind was doing something for free that an engine would do for money. He didn't have a lot of money. He had a lot of wind."

"So he used the wind energy to lift the water from deep below the ground," Leo said, before he could stop himself.

Dave looked at him. "Yeah. Exactly. How old are you?"

"Fourteen."

Dave nodded, as if this was a reasonable age to understand windmill hydraulics. "The wind turns the blades, the blades turn a crankshaft, the crankshaft drives a rod up and down in the well pipe, and the rod lifts water to the surface. Keys didn't invent it. But he maintained it himself for fifty years without a spare parts catalog, using whatever he could find in the desert."

They moved through the property. The orchard came next, citrus trees, thick-trunked and improbable, growing in the bone-dry Mojave.

"He hand-dug irrigation channels," Dave continued, "and graded the entire property so that rainwater, when it came, would run toward the trees instead of away from them. Four inches of rain a year, and he caught almost every drop of it."

Willa had drifted a few steps from the group, toward a rusted metal Maytag washing wringer in the yard. "What's this?" she asked, pointing to the two heavy rollers mounted above a deep metal basin.



"A wringer washer," Dave said. "Frances used that thing for decades. No electricity out here for most of it, so she'd wash by hand in that basin, then feed everything through those two rollers by turning a crank, squeezed the water right out before she hung it to dry. Seven children born on this ranch, five of them raised to adulthood, and every single stitch of clothing any of them ever wore got washed right here, fifty miles from the nearest town."

Willa reached out and touched one of the rollers, slow and careful. "Fifty miles," she repeated quietly. "And no washing machine that plugs in."

"Nope," Dave said. "Just her, and that crank, and about a thousand loads of laundry."

"He also built five dams," Dave said, gesturing toward the wash. "Enough to back up the seasonal flow from the winter storms. He didn't just use the water once. He slowed it down, spread it out, let it sink into the ground to recharge his well. Every drop did three or four jobs before it left the property."

Tess had gone quiet. She was watching the channel system the way she watched a game tape.

"ARGO," she said quietly.

"Yes."

"What Keys did here, collecting rain, slowing it down, letting it recharge the aquifer, that's the opposite of what someone is doing to our basin."

"Correct," ARGO said. "Keys was adding to the system. Someone else is subtracting from it at a rate the system can't recover from."

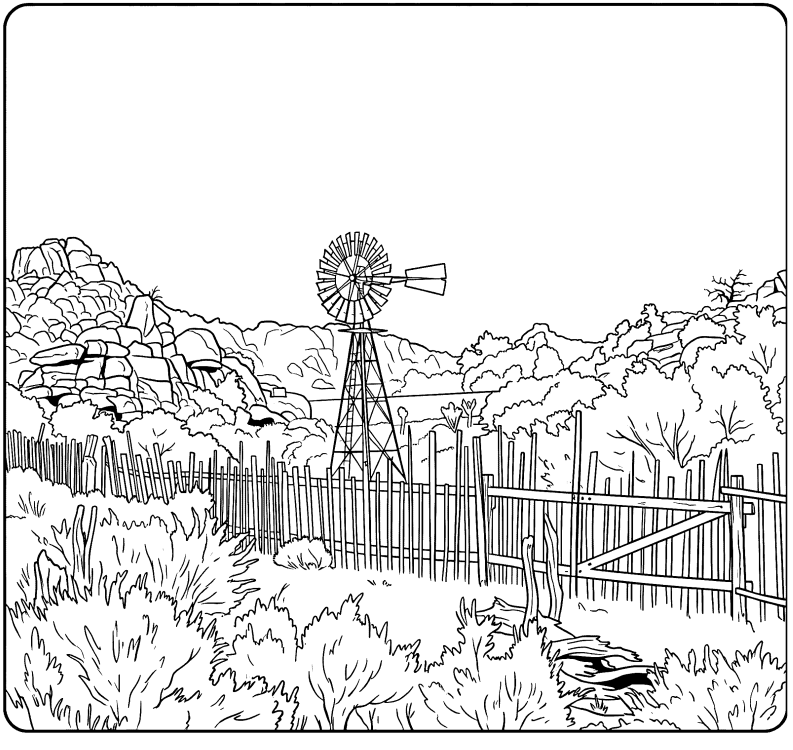
"Same desert," she said. "Totally different math."

Dave stopped the group in front of the ranch house, stone walls, hand-built, low to the ground the way desert buildings are when they've been thought through.

"Keys lived here with his wife Frances and five children," Dave said. "He was also a mechanic, a miner, and a man who would not be pushed around. A neighbor named Worth Bagley tried to take the road that Keys said belonged to everyone. The dispute got violent. Bagley pulled a gun. Keys shot him."

Dave looked at the ranch house. "The desert does not produce boring people."

Tess looked at the stone walls, the hand-dug channels, the windmill still turning in the desert wind.



"ARGO," she said quietly.

"Yes."

"Keys built all of this to hold onto water. Someone took it anyway."

"Worth Bagley tried to take the road," ARGO said. "But Dave left something out, the road led straight to Keys's water wells and basins. It was never about the road."

Tess looked at the windmill still turning in the desert wind. "It's always about the water."

"It always has been," ARGO said. "Keys fought one neighbor for his wells. The desert has larger neighbors now."

ARGO sat beside her looking like a very calm dog in the desert sun.

## Part II: Keys View

The drive from the ranch to Keys View took fifteen minutes. Zephyrina found the parking lot without comment, large enough for her, paved, with a view that stopped everyone mid-sentence.

They'd barely gotten out when Leo, already three steps ahead of everyone else, cut too close to a patch of scrub without looking.

"OW!" He jumped back, and a fist-sized chunk of spiny cactus came with him, hanging off his sleeve like it had personally chosen him.

"Don't touch it," ARGO said, a beat too late to be useful.

"I wasn't touching it, it JUMPED on me."

"Hold still." Tess was already pulling a comb from her bag, the universal desert-hiker trick for removing cholla segments without using your hands. Willa watched the spines. “It’s holding you the same way it holds water,” she said.

"That's why it's called jumping cholla," Grant said, filming on his tablet. "It doesn't actually jump. The spines are barbed like tiny fish hooks, one light brush and the whole segment lets go and hitches a ride."

"On me," Leo said.

"On you," ARGO agreed. "They're everywhere out here, though usually not this high up. This one must have hitched its way up the slope somehow. Firefly's got a dozen of them over the ten acres of land."




"Great," Leo said. "Something to look forward to at home too."

Once the segment was off, Willa wandered a few steps toward the nearest Joshua tree at the viewpoint's edge, keeping a careful distance from anything else that might jump.

"ARGO," she said. "How do the jumping cactus and Joshua trees survive up here, where there is such little rain?"

"Because they solved the same problem two different ways," ARGO said. "The Joshua tree survives on what falls from the sky, wide, shallow roots that grab rain fast before it evaporates, and deep roots that plunge thirty feet down to store water for later. The cholla survives on what's already in the air. Its spines are shaped to pull water straight out of the dew, no rain required at all."

Willa looked back at Leo, still picking spines out of his sleeve. "So the cactus is drinking air, and the tree is drinking ground."

"Correct," ARGO said. "Your grandfather studied how desert plants and trees thrive out here. AI-H2O's atmospheric collection process is a direct copy of what that cholla cactus spine has been doing for longer than any of us have existed."

"It got me first," Leo muttered. "Before it taught anybody anything."

At 5,185 feet in the Little San Bernardino Mountains, the entire Coachella Valley spread out below them like a map someone had left unfolded on the desert floor. Palm Springs. Indio. The pale ribbon of the San Andreas Fault cutting through the valley. And on a clear April afternoon, the distant shimmer of the Salton Sea.

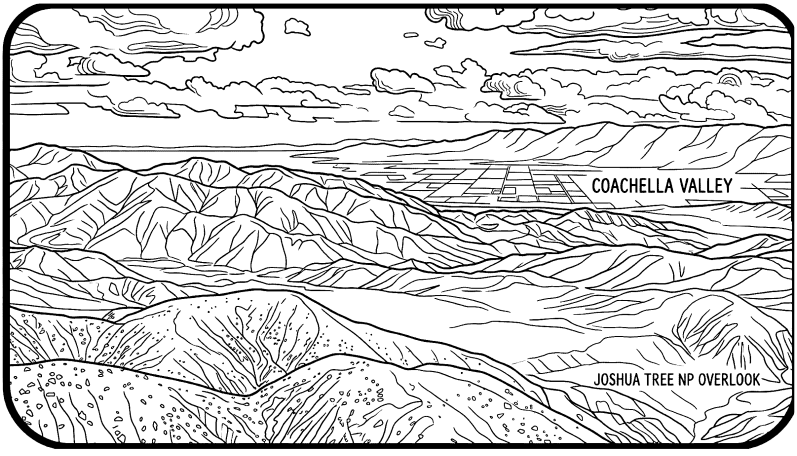
"That's the fault?" Grant already had his tablet out.

"The San Andreas," ARGO said. "Seven hundred miles long. It runs from the Gulf of California to the Mendocino Coast. You are looking at the place where two tectonic plates meet. The ground beneath Palm Springs is moving northwest at roughly two inches per year."

Leo looked at the valley floor far below. "And that's where all the water goes."

"Some of it," ARGO said. "The Coachella Valley aquifer is one of the most over-drafted in California. A million people living below sea level in a desert, sustained entirely by groundwater and the Colorado River."

Tess was looking south. "What's that?" She pointed toward a large green rectangle at the valley floor, tiny at this distance, with what looked like a massive stage structure at one end.




Grant pulled up his tablet. "Coachella Music Festival. Empire Polo Club in Indio." He zoomed in. "Brina Wright headlines this Friday. Justin Bieber plays Saturday."

"Storage bay, port side, third drawer," ARGO said.

Leo found them immediately, Audubon Society binoculars with a blue Audubon neck strap still attached.

"Grandpa," Grant said quietly.

He put them to his eyes and found the festival in seconds. The stage resolved from a white dot into rigging, lights, the tiny figures of the crew setting up for the evening show.

"I can see the stage," he said. "Wouldn't it be cool to go there someday."

He passed them to Tess. Then Leo. Then Willa, who adjusted the focus wheel and went very still.

"There are people down there," she said.

"About a hundred thousand of them," ARGO said.

Willa looked. "How much does it cost?"

"General admission was around six hundred dollars for the weekend."

"Six hundred," Leo said.

"Before you drive there, park, eat, and buy the overpriced water."

"I know," Grant said. "It's expensive. It's been expensive for years."

Tess looked at the tiny green smudge far below. From up here the whole festival was smaller than her thumbnail. A hundred thousand people in a field.

"It looks small from here," Willa said.

"Everything does," Tess said. Then after a moment: "We'll go someday."

"When we're not spending our spring break saving a water table," Leo said.

"Priorities," Grant said.

"This viewpoint is named after him," ARGO said quietly.

Nobody had to ask who he meant.

They stood at Keys View in the afternoon light, the fault below them, the festival below that, the desert running south until it disappeared into haze, and thought about a man who had spent fifty years in the valley beneath their feet, catching every drop of rain, building dams with his hands, fighting for a road that belonged to everyone.

"Same desert," Tess said quietly. "Still the same desert."

"So the tree makes its own water," Willa said. "And the cactus does too, just a different way. And Zephyrina makes her own water. And someone is stealing everyone else's."

Nobody had a better way to say it than that.

## Part III: Black Eagle Mine Road

Back in Zephyrina, they drove east along the park road toward the Cottonwood area. The landscape changed as they went, the big boulder formations gave way to flatter desert, lower elevation, drier and more exposed.

"ARGO," Tess said, "where are we going exactly?"

"Black Eagle Mine Road. It begins at the intersection of Pinto Basin Road and Old Dale Road, about fourteen miles east." ARGO's eyes shifted to a steady navigational blue. "But while we drive, there is something you should understand about the terrain we're passing through."

"The GoldLine claim," Leo said. He'd been reading Dr. Okafor's folder since Keys View.

"Thirty-two square miles of active mineral rights. Filed fourteen months ago. GoldLine has identified what they believe to be a significant deposit of rare earth elements, specifically neodymium and dysprosium. Used in electric motors and wind turbines."

"So they need the minerals to make clean energy equipment," Leo said slowly.

"Yes," ARGO said.

"But getting the minerals requires a mine."

"Which requires water," Tess said.

"Large quantities," ARGO confirmed. "The standard hydrometallurgical extraction process for rare earth elements uses between 200 and 1,000 gallons of water per ton of ore. At projected production rates GoldLine's operation would require somewhere between eight and forty million gallons per year."

"From our aquifer," Grant said.

"That is what we don't yet know," ARGO said. "There are multiple aquifer systems beneath this basin. A deep confined aquifer used for mining may have no connection to the shallow aquifer that feeds community wells. Or it may be directly connected. The geology determines everything."

"So GoldLine might not be the problem yet," Leo said.

"Correct," ARGO said. "They are still in the exploratory phase. Core sampling, geological surveys, access permits. The heavy equipment hasn't arrived."

"So why are we going to Black Eagle Mine Road?" Grant asked.

"Because Black Eagle Mine Road shows you what arrives after the permits are approved," ARGO said. "Abandoned open pit mines. Scarred terrain. Tailings piles. What the land looks like when the equipment goes home and the company moves on."

The desert scrolled past the windows, flat and pale and dry.

"A field trip," Tess said.

"A warning," ARGO said.

"Can we stop them?" Willa asked.

"We can understand what they're doing first," ARGO said. "Then we can decide what to do about it."

## Part IV: Eagle Mountain

They turned onto Black Eagle Mine Road at the intersection of Pinto Basin Road, a flat sandy road that started easy and ran southeast along the edge of the Pinto Basin. Zephyrina slowed to a careful pace on the uneven surface.

"If your phones lose signal," ARGO said, "ZEPHY_NET is active. Password is T3@mPh!l0t1m0."

Leo looked at his phone. "Already gone."

The road ran flat and quiet through the lower desert, cholla, ocotillo, the occasional abandoned claim marker rusting in the sand. After several miles the Eagle Mountains rose ahead of them, and with them, something that didn't belong to the natural landscape.

"There," ARGO said.

They could see it from the road, no need to get closer. The open pit was enormous. The mountain had been cut into steps, great terraced walls of exposed rock stained rust-red and dark brown by iron oxide, dropping down in stages to a floor they couldn't see from here. The pit was 1.5 miles long and half a mile wide, a wound in the mountain that had simply never healed.

Nobody said anything for a moment.

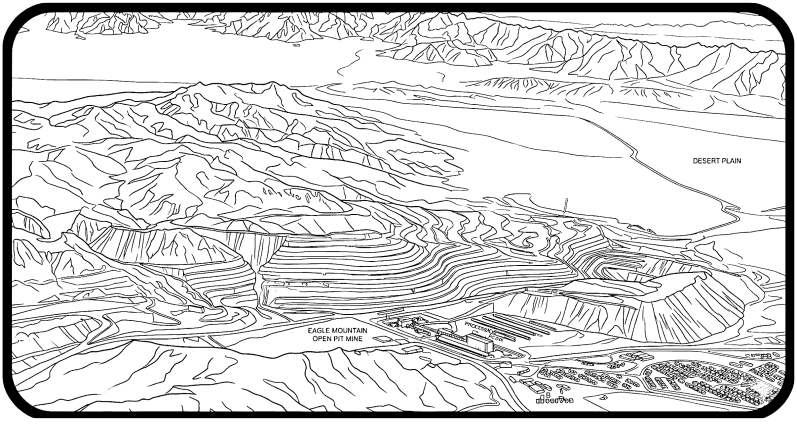
"Kaiser Steel," Grant said quietly, reading from his tablet. "Founded 1948. Iron ore shipped by rail to the Fontana steel mill, fifty-two miles of private railroad they built themselves. Over one hundred million tons of ore pulled out of that mountain before they shut down in 1983."

"One hundred million tons," Leo said.

"This is what a mine looks like when it's done with you," Tess said.

The pit sat there in the afternoon sun, still and enormous. The equipment was gone or rusted in place. A few buildings remained at the edge of the claim, roofs caved in, windows empty.

Grant was already recording, slow, deliberate sweeps across the scarred mountain face.




"Why did they leave?" Willa asked.

"The ore didn't run out," ARGO said. "There are still an estimated billion tons of iron ore in that mountain. What happened was bigger than Eagle Mountain. Foreign competition, cheaper steel from Japan, Korea, and elsewhere, undercut American mills across the entire country. Hundreds of plants closed. Thou-

sands of Americans lost their jobs. Pittsburgh. Gary. Bethlehem. Fontana. The same story, over and over, across an entire decade. Kaiser wasn't defeated by the desert. They were defeated by forces a thousand miles away."

"And they just left," Leo said.

Willa looked at the empty pit and then at the park mountains behind it.

"The desert didn't run out," she said. "It's still here."

Nobody had a good answer to that. They turned Zephyrina around and headed north.



## ARGO Field Notes (Ch-6)

*Turn the page to build your brain (BYB) with ARGO, or skip ahead to keep adventuring.*

**Jumping Cholla: (Water From Thin Air)** *Its barbed spines work like tiny fish hooks, perfect for hitching a ride on anything that brushes past. Those same spines pull water straight out of the dew, no rain required at all.*

**How a Well Works:** *A well is a pipe drilled deep into the earth to reach underground water. When something drains that water faster than rain can replace it, the well runs dry, and the land becomes thirsty.*

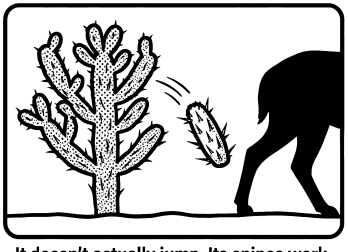
**Bill Keys, Desert Water Engineer:** *A windmill, five hand-built dams, and hand-dug channels turned four inches of rain a year into a working ranch that lasted nearly 60 years. Every drop did three or four jobs before it left the property.*

**Eagle Mountain Mine and Kaiser Steel:** *An open pit 1.5 miles long, dug by trucks so massive the driver climbed a ladder just to reach the seat. The mine didn't close because the ore ran out, it closed because cheaper steel from overseas undercut American mills nationwide.*

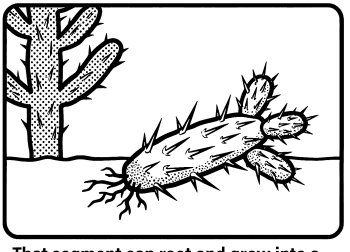
**Rare Earth Elements:** *Neodymium and dysprosium are inside almost every EV motor and wind turbine on the planet, and refining them uses 200 to 1,000 gallons of water per ton of ore. Clean energy needs rare earths. The real race is making "rare" mean something cleaner too.*

# JUMPING CHOLLA

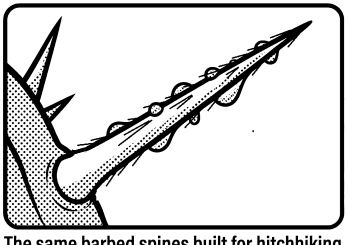
## Water from thin air



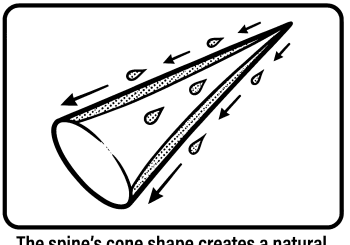
It doesn't actually jump. Its spines work like tiny fish hooks — barbed and angled backward, so they slide in easily but catch and hold once they're in. Even a light brush knocks a whole segment loose, and it hitches a ride on whatever brushed past.



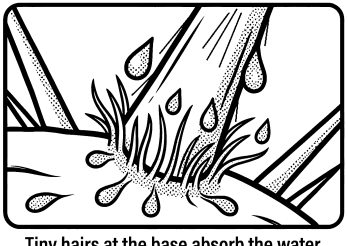
That segment can root and grow into a brand-new cactus within weeks — hitchhiking is how jumping cholla spreads across the desert.



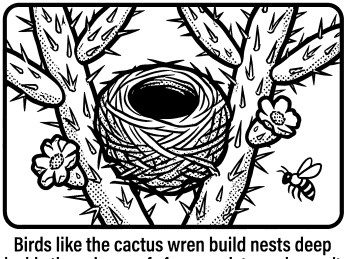
The same barbed spines built for hitchhiking turn out to be built for something else too: pulling water straight out of the air.



The spine's cone shape creates a natural pressure difference that pulls water toward base — no pumping required, just physics.



Tiny hairs at the base absorb the water almost instantly — turning fog into a water source, without a single drop of rain.



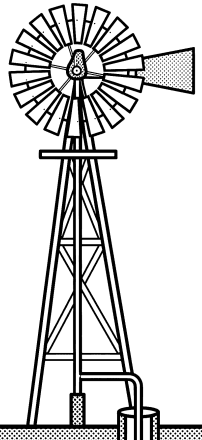
Birds like the cactus wren build nests deep inside the spines, safe from predators who can't follow. Specialized bees pollinate its flowers, and packrats depend on it for food and water.

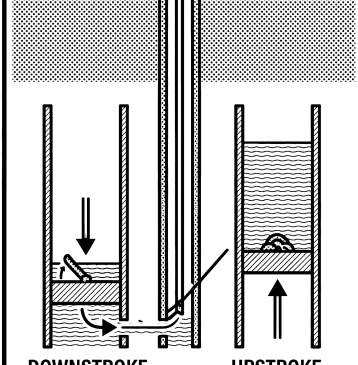
**One spine, two jobs: hitching a ride, and pulling water from the air.**

# BILL KEYS

Desert water engineer.

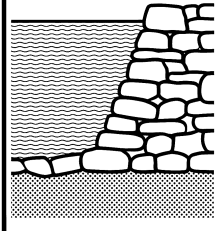
## THE WINDMILL THAT LIFTED WATER





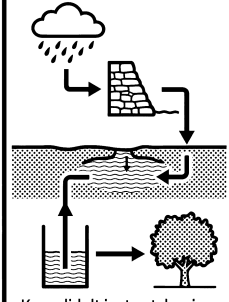

Wind turned the blades, which drove a rod up and down a pipe. Each stroke trapped water beneath a valve and pushed the column a little higher — one stroke at a time, all the way to the surface.

## FIVE DAMS, NO MORTAR



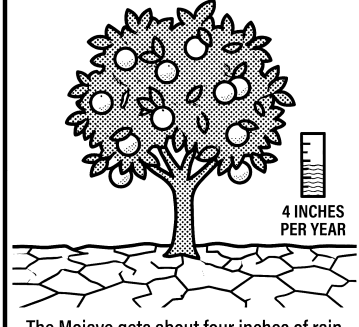
Keys built five dams from stacked stone alone — no mortar, no cement — fitted together so precisely that some are still holding water more than a century later.

## EVERY DROP, MULTIPLE JOBS



Keys didn't just catch rain once. He slowed it, spread it, and let it sink into the ground to recharge his well — every drop doing three or four jobs before it ever left the property.

## FOUR INCHES OF RAIN, A LIVING ORCHARD

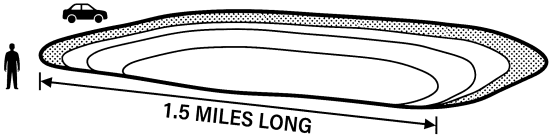



The Mojave gets about four inches of rain a year. Bill Keys used it to grow a working orchard, raise a family, and keep water running through his ranch for nearly 60 years.

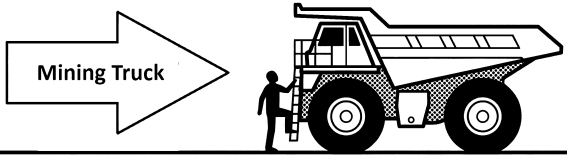
**Every drop of rain can do more than one job — if you build for it.**

# EAGLE MOUNTAIN

## What a mine looks like when it's done with you




The Eagle Mountain pit is 1.5 miles long and half a mile wide — big enough to see from the road, with no need to get closer.




The trucks that carried ore out of this pit were so massive, the driver had to climb a ladder just to reach the seat — vehicles built on a scale made for moving mountains.




Kaiser Steel built 52 miles of private railroad, just to carry ore from this mountain to their mill in Fontana.




The mine didn't close because the ore ran out. There's still an estimated billion tons left in that mountain.



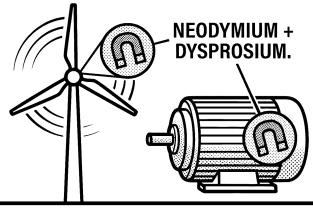
Kaiser wasn't beaten by the desert. Cheaper steel from overseas undercut American mills across the entire country — the same story, in town after town, for a decade.

**The desert didn't run out. It's still here.**

# RARE EARTH ELEMENTS

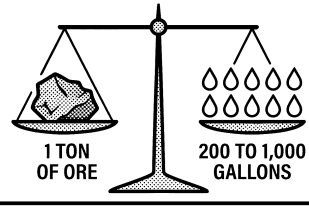
## Hidden inside clean energy.

### HIDDEN INSIDE CLEAN ENERGY




Two rare earth elements — neodymium and dysprosium — are inside almost every EV motor and wind turbine.

### THE WATER COST




The standard process for refining rare earth ore uses 200 to 1,000 gallons of water for every ton processed.

### A REAL DILEMMA



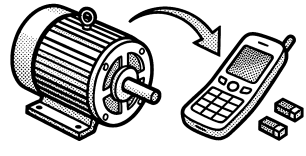

Relying on one country for something this important carries real risk. But mining its at home, in places like the Joshua Tree Basin, carries a different kind of cost.

### CLEANER WAYS BEING DEVELOPED



Scientists are developing cleaner methods — bacteria that separate elements without acid, gentler chemical solvents, and pulling rare pulling rare earths from leftover coal ash instead of digging new mines.

### OR DON'T MINE AT ALL



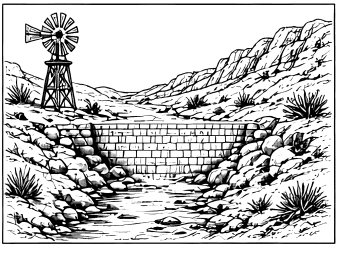
The easiest source might already exist: recycling rare earths out of old electronics and motors instead of mining new ore.

**Clean energy needs rare earths. The real race is making 'rare' mean something cleaner too.**

# Chapter 6 Brain-Builder

*Joshua Tree National Park*

## 1 BILL KEYS WATER MATH



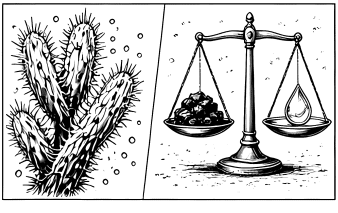
1. Windmill pump ..... [ ]
2. Five mortarless stone dams ..... [ ]
3. Graded irrigation channels ..... [ ]

a) Slow winter runoff so it sinks and recharges the well .....

b) Use free wind to lift deep groundwater .....

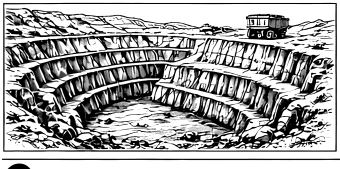
c) Send surface rain toward the orchard instead of letting it wash away.

## 2 CHOLLA VS REFINING



1. Pulls water from morning air and dew. No pump. ..... ( CHOLLA / REFINING )
2. Uses 200 to 1,000 gallons of water per ton of ore. ..... ( CHOLLA / REFINING )
3. Cone spines create pressure that draws moisture to the base. ..... ( CHOLLA / REFINING )
4. Needs huge local groundwater to get neodymium and dysprosium. ( CHOLLA / REFINING )

## 3 THE EAGLE MOUNTAIN LEGACY



Circle the ONE correct reason the mine closed.

a) It ran out of iron after 100 million tons.

b) Cheaper overseas steel closed it even with a billion tons still in the ground.

c) Bill Keys bought the pit to build five dams.

d) The Park Service banned 52 miles of railroad.

## 4 PARK AND GEOLOGY SEARCH

Find across or down: CHOLLA, DAMS, EAGLE, KEYS, NEODYMIUM, ORE, QUARTZ, WINDMILL.

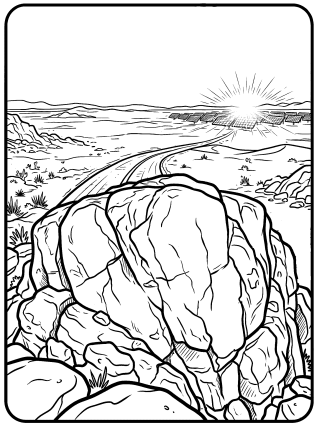
| W | I | N | D | M | I | L | L | P | M | K | E |
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| Q | U | A | R | T | Z | A | L | O | N | O | R |
| F | O | R | T | I | T | U | D | E | D | H | U |
| B | E | R | T | O | R | E | B | E | R | T | S |

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# Chapter 7

# Scale The Granite



*The poem said: scale the granite. It did not say which granite. It did not say where or what time of day.*

*— ARGO, Personal Log, Entry 7*

Leo had been quiet since Eagle Mountain. He kept picking up his tablet, looking at the poem photo, putting it down, picking it up again thirty seconds later.

Tess watched him do it twice before she said anything.

"Leo."

"The fourth line," he said, not looking up. "Scale granite where the line reveals her sunny sight." "We talked about the first three lines for an hour at Giant Rock. Nobody really analyzed the fourth one."

"We heard it," Tess said.

"We heard it," Leo agreed. "We didn't *use* it." He looked up. "It's an instruction. SCALE somewhere specific. To see something specific. We have all afternoon and Zephyrina and a robot dog who can look up sightline data in half a second. We should be using that."

Zephyrina hummed north on Pinto Basin Road, the empty pit of Eagle Mountain shrinking behind them.

"ARGO," Leo said. "Highest points in the basin with a clear view north toward Landers. Go."

"Working," ARGO said.

## Part I: Indian Cove

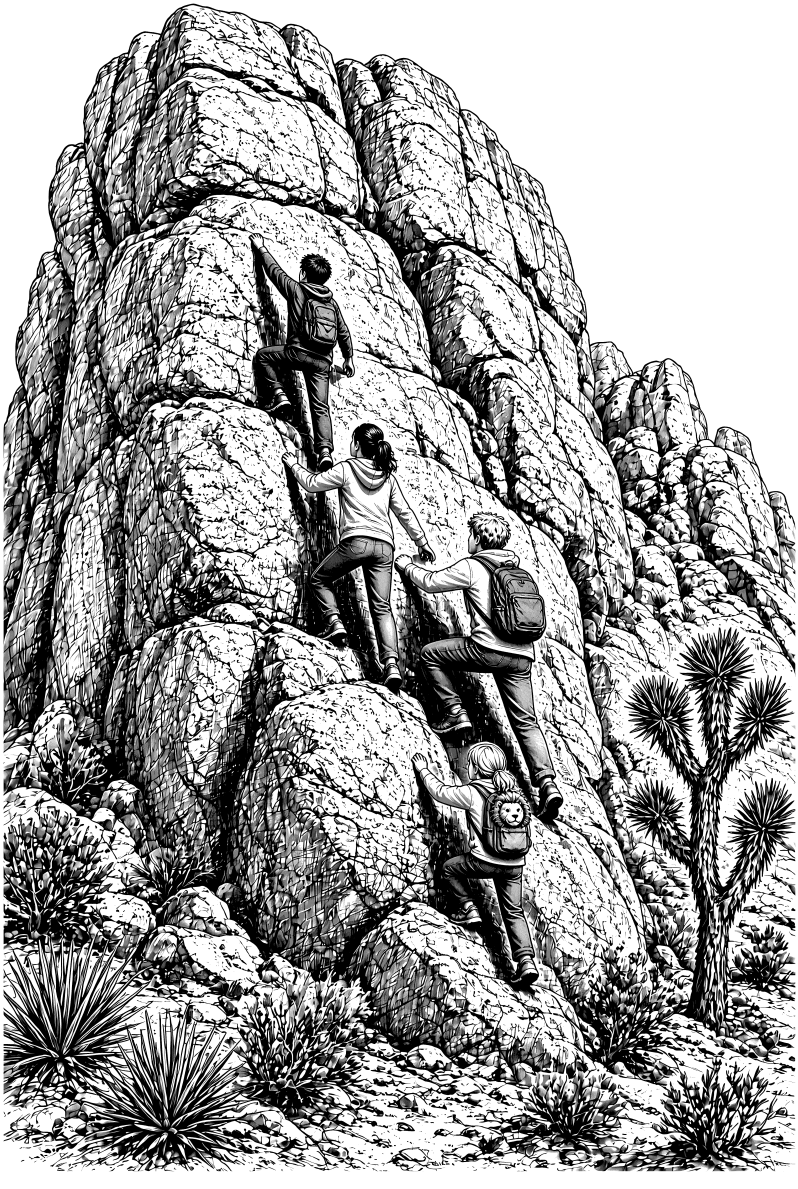
"Indian Cove," ARGO said. "North side of the park. Closest point to Landers of anywhere we can reach by road in the next hour. Boulder formations rise thirty to forty feet above the campground floor."

"Forty feet," Leo repeated, already pulling up the map. "That's something."

"It is something," ARGO agreed.

They came off Highway 62 and down into the cove, boulders rising close and sudden on either side, the campground tucked between them, the afternoon already starting to lean gold.

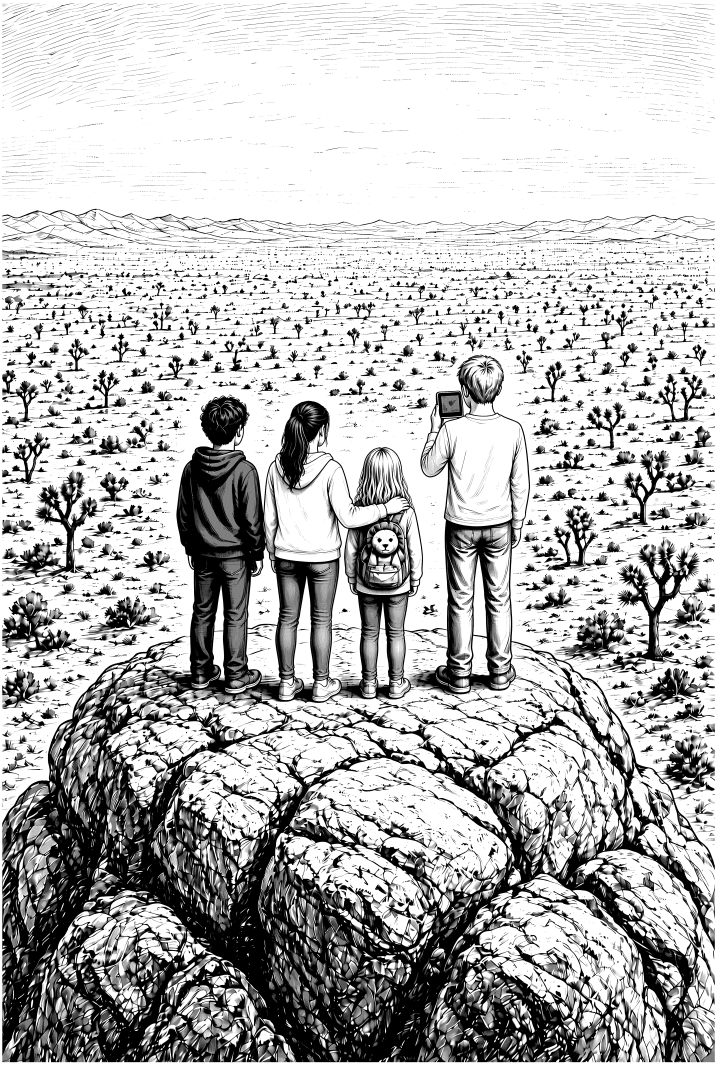
"Highest one," Tess said, climbing out. "Whichever it is."



It did not take long to find it, a stacked formation at the eastern edge of the cove, taller than the others, with a route up the back that even Willa managed without much trouble. They went up together, fast, nobody saying much.

Leo got there first. He stood up on the highest flat surface, turned north, and went still.

"Well?" Grant called, still climbing.

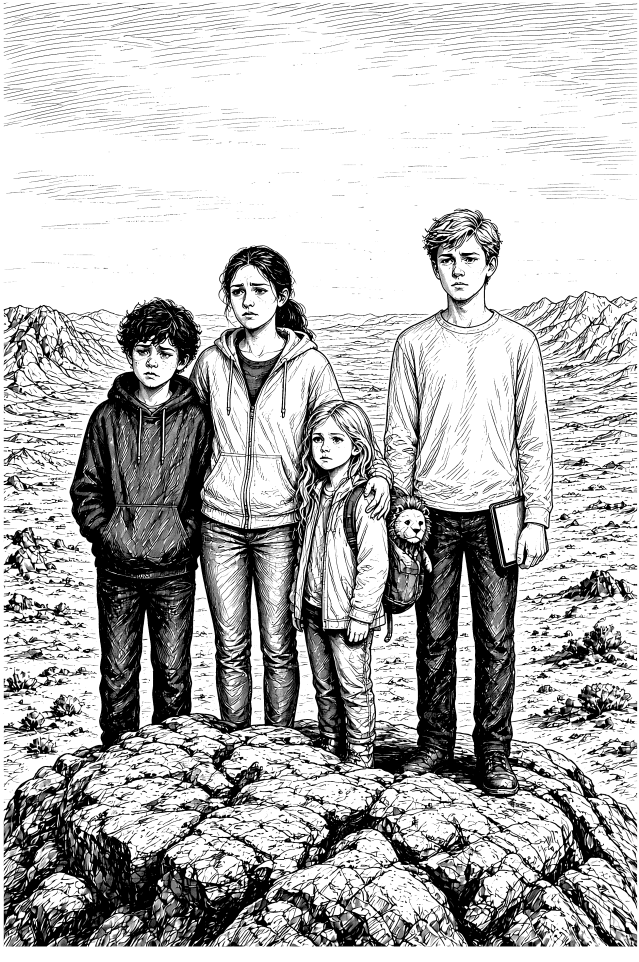


"It's..." Leo turned slowly. "It's scrub. It's just scrub. And Joshua trees. All the way to the highway."

Grant reached the top. Tess. Willa last.

North, the desert rolled away toward Landers, flat, pale, studded with vegetation that came up almost to eye level even from here. Somewhere out there was PENKOR. There was no way to tell where.

"We're not high enough," Leo said. "We're basically at the same elevation as the basin. Forty feet doesn't clear anything."



"How high do we need to be?" Grant asked.

Leo was already pulling up elevation data. "Landers is around 3,100 feet. We're at maybe 3,250 here. We need, a lot more than that. We need to be looking *down* into the basin, not across it."

"ARGO," Tess said. "Where's down into the basin from?"

"Black Rock Canyon," ARGO said. "Hi-View Nature Trail. 4,445 feet. The National Park Service states it is possible to see the Marine Corps base from the peak, forty miles northeast on a clear day."

Leo was already climbing down. "Forty miles. If you can see forty miles, you can definitely see five."

"It's a twenty-minute drive and a forty-minute trail," ARGO said. "And the sun is not waiting for either of those."

"Then let's go," Tess said.

## Part II: Black Rock Hi-View

They left Zephyrina in the gravel lot at the end of the Black Rock Canyon road and started up without much discussion. The trail climbed steadily through pinyon pine and Joshua tree, numbered markers at intervals, the air noticeably cooler than it had been at Indian Cove.

Willa read the markers as they passed. "Cryptobiotic soil crust. A hundred years to form, one footstep to destroy."

"Stay on the trail," ARGO said through their earbuds, from the parking lot below.




"We're on the trail," Tess said.

"I was speaking to Leo."

Leo, three feet off the trail examining a rock formation, stepped back onto it without comment.

“Thank you," ARGO added.

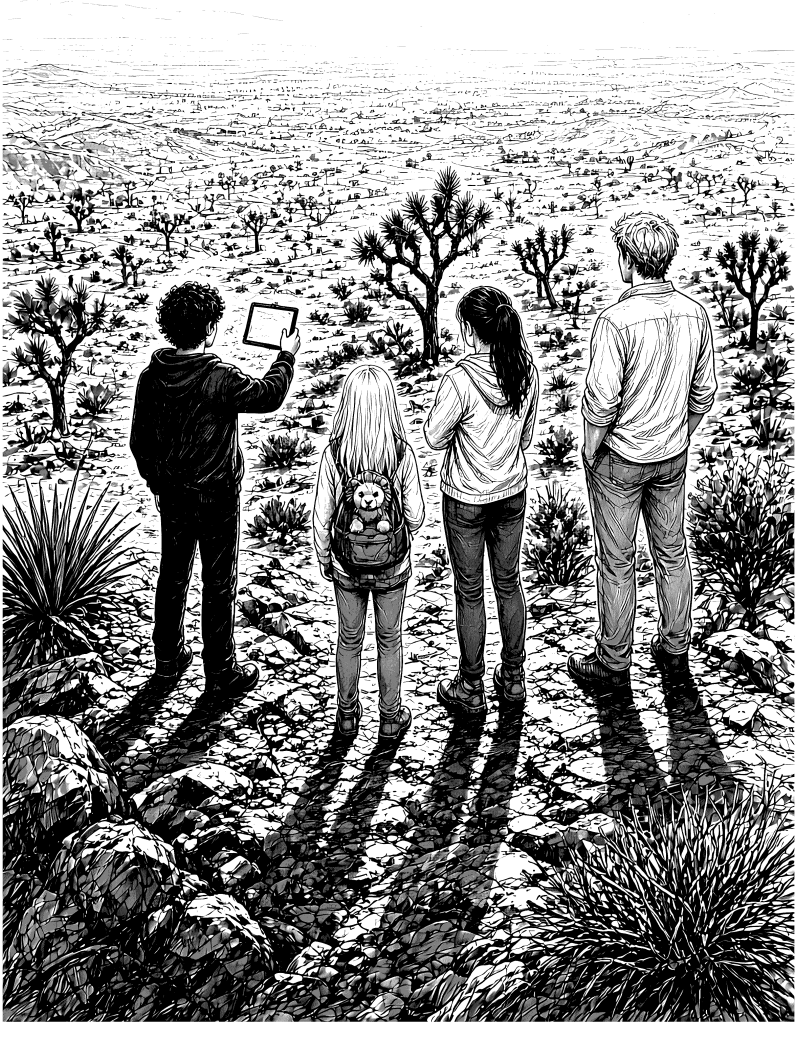
They reached the ridge at the forty-minute mark, breathing hard, the light noticeably lower than when they'd started. The desert spread out below them in every direction, Yucca Valley directly ahead, the haze of the basin beyond it, and somewhere out past that, the Marine Corps base, exactly where the NPS sign said it would be.

They turned northeast. Then, when that didn't look right, north. Then northwest.

Nothing.

"It should be right there," Leo said, holding his tablet up against the horizon, trying to match the parcel boundary to what he could see. "It should be *right there*." He lowered the tablet. "It's not there. Or it is and I can't tell, because everything past about ten miles is just... haze."

Grant stood at the edge, scanning the haze with his eyes, looking for a clue. Nothing resolved. Just distance and haze and the general brightness of a basin in late afternoon light.



"How far is PENKOR from here?" Tess asked.

Leo did the math, and his shoulders dropped slightly. "Like... fifteen miles. Maybe more." He looked back the way they'd come, south and west, back toward Indian Cove, back toward Giant Rock. "We came the wrong way. We went *away* from it."

Nobody said anything for a moment. The sun was getting low. Gold light, long shadows, the whole basin starting to take on that late-afternoon color that meant they didn't have much time left for anything.

Grant sat down on a rock and pulled out his tablet, opening Google Earth, not looking for PENKOR specifically, just trying to get his bearings, because the view didn't match what he expected and he needed the map to tell him why.

He zoomed out. Then in. Then out again, framing the whole basin, Black Rock where they were standing, Indian Cove where they'd been an hour ago, and southwest of both of those, Giant Rock.

He zoomed in on Giant Rock out of habit. The familiar shape of the boulder, the scar from 2000, the dirt road.

And the long pale line running east from it across the desert floor.

Grant went very still.

"Guys."

"What," Leo said, not looking over.

"*Guys.*" Grant turned the tablet around. "The runway. Van Tassel's old runway. The flight line. Look where it points."

Leo looked. Then looked closer. Then pulled the tablet out of Grant's hands entirely.

The line ran dead straight from Giant Rock, across the wash, past the dark cluster of rocks that ARGO had called Goat Mountain, and continued, exactly, precisely, into the boundary of the PENKOR parcel.



"That's not Hi-View," Leo said slowly. "That's *Giant Rock,*" he said.

"We were *there,*" Tess said. "Yesterday morning. We read the poem standing right next to it."

"The poem's *on* it," Willa said quietly.

Leo was already moving. "ARGO, how much daylight do we have?"

"Approximately thirty-eight minutes until the sun reaches the ridgeline," ARGO said. "Why?"

"Because we need to be back at Giant Rock in thirty-eight minutes," Leo said, and he was running.

They came down the Hi-View trail faster than any trail should reasonably be descended, Tess in the lead calling out footing, Willa moving with the same unhurried precision she always had even at a near-sprint, Grant's tablet jammed in his bag now, both hands free for the rocks, Leo talking the entire way down, to himself, to ARGO, to anyone.

"The flight line, it's a *bearing,* it's been a bearing this whole time, The poem writer probably works at the PENKOR facility and has been past Giant Rock a thousand times."

"Leo." Tess, not even breathing hard. "Save it for the ride."

ARGO had Zephyrina's ramp down and waiting when they hit the parking lot. They piled in without sitting down properly. Zephyrina pulled out before the door had finished sealing, already accelerating back down the hill, toward Landers, toward Giant Rock, toward the sun that was getting lower by the second.

"ETA," Leo said.

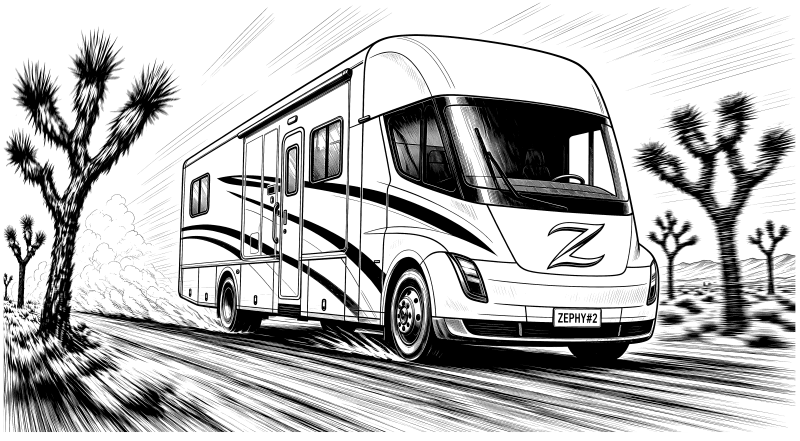
"Fourteen minutes," ARGO said. "The sun reaches the ridgeline in approximately thirty-one."

"That's enough," Leo said. "That's enough, right? That's enough."

"It is enough," ARGO said, "if nothing goes wrong."

## Part III: Giant Rock

Zephyrina's tires kicked up a long trail of dust on the dirt road that extends past the Integratron toward Giant Rock.




"Behind the rock," he said. "There's a formation that rises another two hundred feet above the desert floor. It's a scramble, not a climb. Go."

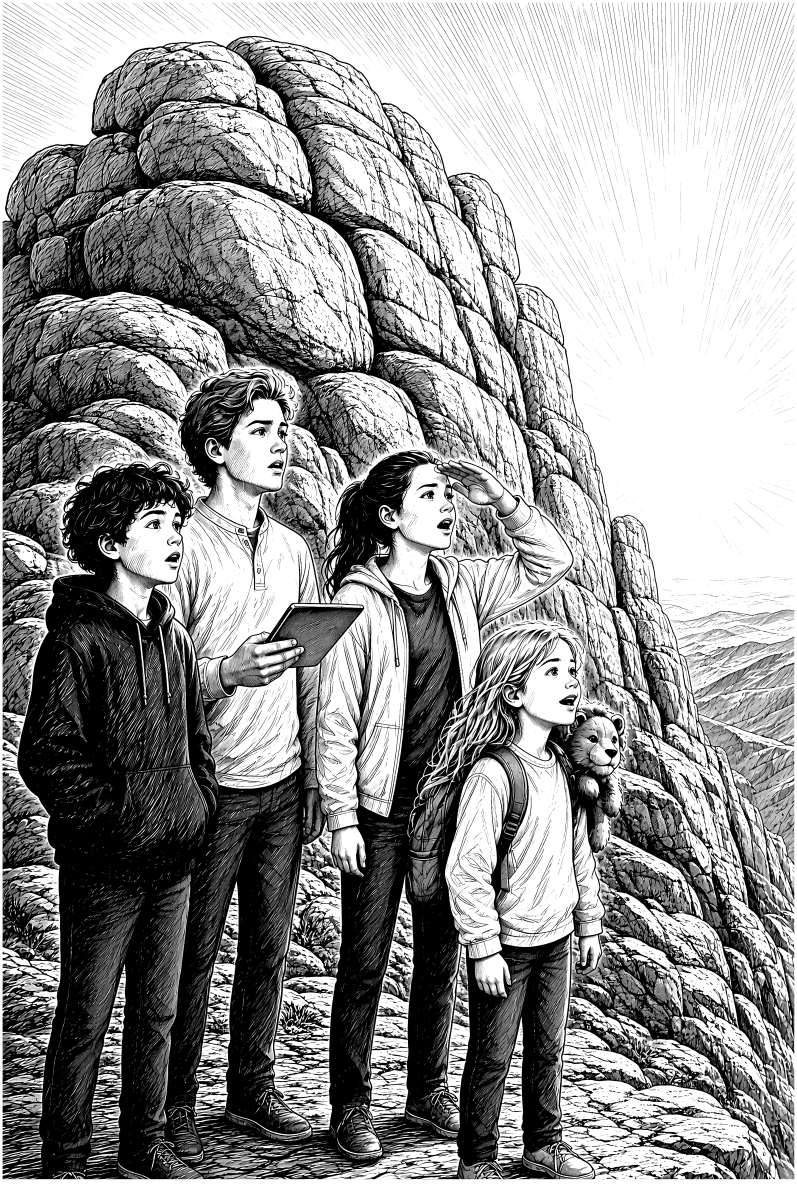
They went.

The formation behind Giant Rock was steep but not technical, boulders stacked against each other at angles that gave you handholds whether you wanted them or not. Leo went up first, fast. Grant next, tablet already in hand, ready. Tess. Willa, climbing with the same calm precision, unhurried even now.

They came out onto a flat shelf of granite with maybe a hundred feet still above them, but enough, *enough,* Leo kept saying, *enough,* and they all turned east at the same time.

The sun was a hand's width above the western ridgeline behind them, throwing the whole desert into long gold shadow. East, the basin spread out toward Landers, and there, five miles out, where there had been nothing but flat pale desert every single time they'd looked at it before.

The PENKOR facility was on fire with light.



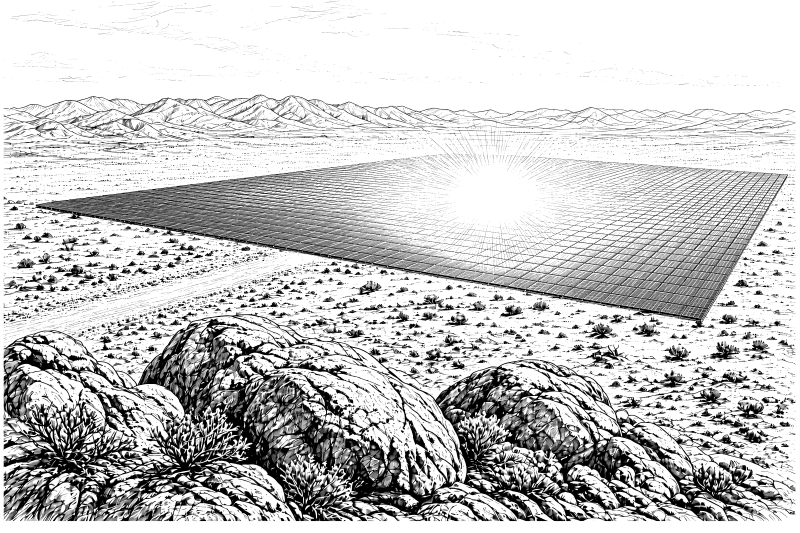
Not a glint. Not a glimmer. Three miles of panels, all of them, all at once, throwing the low sun directly back at them in a single sheet of brightness so sudden and so total that for a moment none of them said anything at all.

"*There it is,*" Willa said.

Grant already had his tablet out. He thumbed the record button without looking away from the light, the panels burning brightly against the darkening basin, exactly as the poem had promised.

*"Scale granite where the line reveals her sunny sight."*

Leo was staring at it with an expression none of them had ever quite seen on him before, not excitement, not triumph. Something quieter.



"It wasn't there before," he said slowly. "We looked at it from the fence on Monday. Flat panels, just sitting there. We looked at it from Indian Cove an hour ago, nothing, just glare, if anything. From Hi-View, nothing at all." He was working it through as he said it, except this time the words were coming slower, like he was as surprised by the conclusion as everyone else would be. "Single-axis tracking arrays. They follow the sun all day, east in the morning, overhead at noon, west in the evening. Every time we looked at them, they were angled *away* from us. Pointed wherever the sun was, which was never toward Giant Rock."

He turned, finally, away from the light, to look at the others.

"Right now," he said, "for the first time today, they're pointed *here*."

Nobody said anything. The light held, impossibly bright, impossibly total, four miles of reflected sunset pouring back across the desert at four kids and a robot dog standing on a pile of granite that had been there for two billion years.

"That's it," Willa said quietly. "That's what the poem meant."

"It's not subtle," Grant said, lowering the tablet slightly without stopping the recording. "Whoever wrote that poem, they knew this happened. They knew how they look in the late afternoon when a thousand solar panels are reflecting the evening sun."

"Scale granite where the line reveals her sunny sight," Tess said, half to herself. "It's not a metaphor. It's not even really a riddle. It's just... true. Literally true. At this exact time, from somewhere like this, that's what you'd see."

"We solved it," Leo said, still staring at the light. "We actually solved it."

The light began to fade, not suddenly, but steadily, the angle shifting as the sun dropped the last few degrees toward the ridgeline. Within a few minutes the facility was just panels again, dimming, the fire going out of it as the tracking arrays continued their slow pursuit of a sun that was nearly gone.

Grant kept recording until there was nothing left to record.

"Got it," he said finally, lowering the tablet. The panels were ordinary again now, dim and flat in the dusk, nothing like what they'd just watched. "Whatever happens with this, we have it. The whole thing."

They climbed down in the last of the light, nobody talking much.

Something flickered at the edge of Willa's vision, quick, jagged, nothing like a bird. She stopped for a second on the trail, watching

it cut sideways, then dip, then vanish and reappear somewhere else entirely.

"Bats," she said quietly, mostly to herself.



Grant glanced up without really looking. "Birds settling for the night."

"No." Willa kept her eyes on the sky. "Birds don't fly like that. Too jerky. Too fast to turn." Another one crossed just above the rock line, and this time Grant saw it too, the stop-and-start flutter of it, nothing smooth about it at all.

"Huh," he said. "Guess it is."

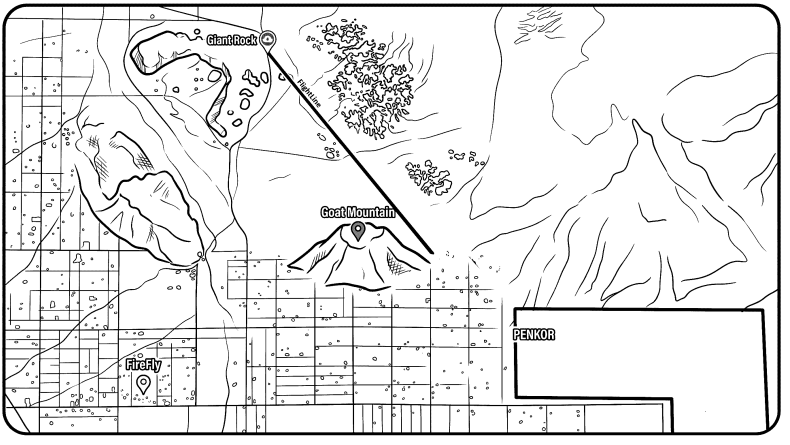
Willa didn't say anything else. She just watched a few more of them cut across the last of the orange light before turning back down the trail after the others.

At the bottom, ARGO was waiting, his eyes glowing soft amber in the dusk.

"Well?" he said.

"She knew," Willa said again, climbing past him toward Zephyrina. "That's what the poem was. Not directions. A description. *This is what you'll see, if you're standing in the right place when the sun does what it does every single day.*"

"We found the sunny sight," Leo said, quieter now, looking back at the dark shape of Giant Rock behind them and the facility, ordinary again, on the horizon. "That's all we found, though. We still don't know if it means PENKOR is sucking the water with a giant straw."




"Tomorrow," ARGO said. "Goat Mountain. Early."

Zephyrina's solar wings folded against the last violet of the sky as she pulled away from Giant Rock, heading back South toward Firefly, the four of them quiet in the dark cabin, after something has been *seen* rather than figured out.

In the back, Leo had his tablet out again. He looked at it. Closed it. Opened it.

"Leo," Tess said, not even turning around.

"I know," he said.

He put it away.

It stayed there for almost five minutes.



## ARGO Field Notes (Ch-7)

*Turn the page to build your brain (BYB) with ARGO, or skip ahead to keep adventuring.*

**Giant Rock and the Old Flight Line:** *George Van Tassel scraped a runway into the desert by hand in the 1950s for his UFO conventions. It never disappeared, look at the land from above today, and the flight line still points exactly where it always did.*

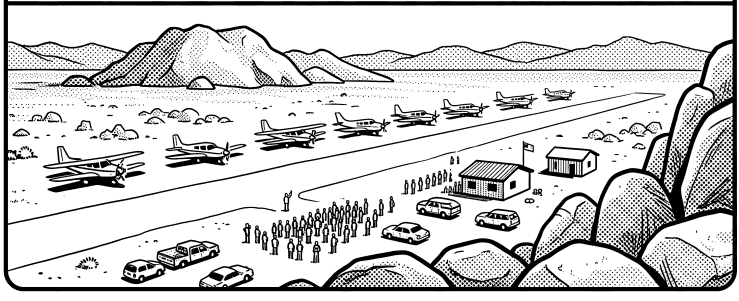
**Bats of Joshua Tree:** *A bat's jerky, zigzagging flight looks nothing like a bird's smooth glide, because it's chasing insects in real time using echolocation. The pallid bat is even bold enough to hunt scorpions on the ground.*

**Cryptobiotic Soil Crust:** *A thin, living skin of cyanobacteria, lichen, and moss that takes a hundred years to form, growing about one millimeter a year. A single footstep can destroy in one second what took decades to build.*

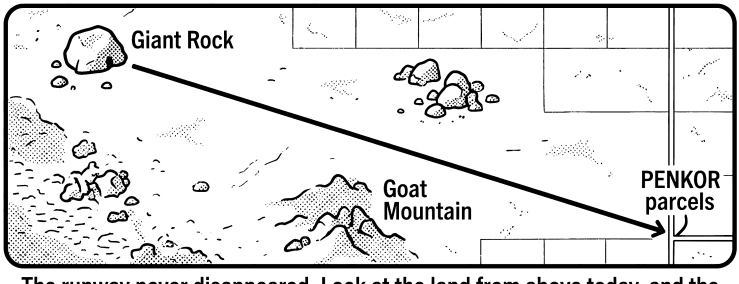
**Places to See in Joshua Tree National Park:** *From Indian Cove's boulder piles to Skull Rock's unmistakable shape and the natural arch at Arch Rock, some of the park's best sights take real work to reach, and some are right next to the parking lot.*

# GIANT ROCK AND THE OLD FLIGHT LINE

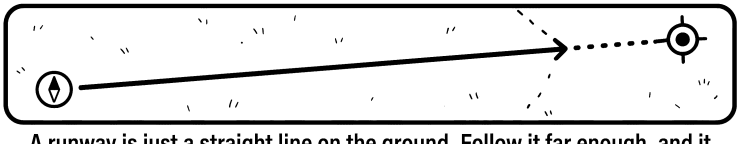
## A clue that was never really hidden



In the 1950s, George Van Tassel scraped a runway into the desert floor by hand, so private planes could land near Giant Rock for his UFO conventions.

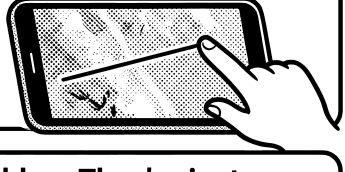



The runway never disappeared. Look at the land from above today, and the flight line still points exactly where it always did — straight across the desert.



A runway is just a straight line on the ground. Follow it far enough, and it points to something specific — whether or not anyone intended it as a signal.

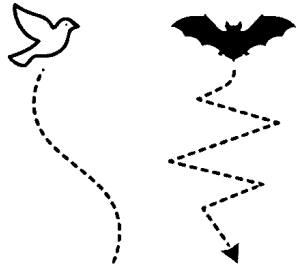
Pull up satellite view on any map app and search for Giant Rock, California. The flight line is still there — see if you can trace it yourself.



**Some clues aren't hidden. They're just waiting for someone to look from above.**

# BATS OF JOSHUA TREE

## Not birds. Not even close.

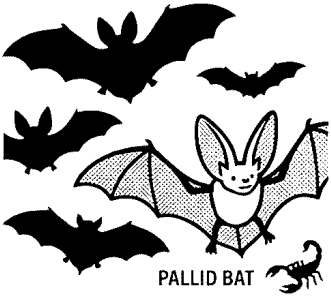


A bird glides in smooth curves. A bat's flight looks jerky and unpredictable — because it's chasing individual insects in real time, not just gliding toward a destination.



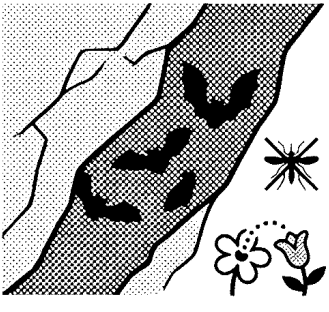
### SEEING WITH SOUND

Bats use echolocation — sending out sound and listening for what bounces back — to build a map of everything around them in total darkness.




### SIXTEEN SPECIES, ONE PARK

Joshua Tree is home to 16 bat species. The pallid bat is bold enough to hunt scorpions on the ground — stinger and all.



### WHERE THEY SLEEP, WHAT THEY'RE WORTH

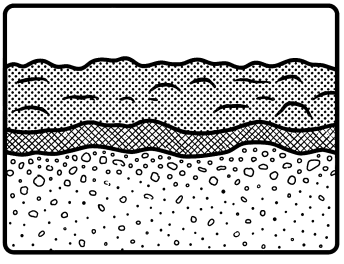
By day, they sleep in granite crevices, palm groves, and old mine shafts. By night, they control insect populations.

**Watch the sky at dusk. If the flight looks wrong, it's not a bird.**

# CRYPTOBIOTIC SOIL CRUST

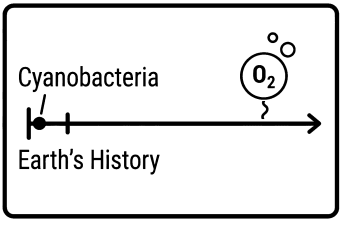
The desert's thinnest, oldest skin.

## NOT JUST DIRT



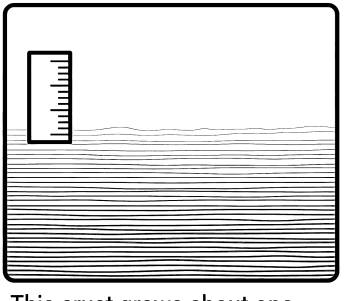
It looks like dirt. It's actually alive — a thin skin of cyanobacteria, lichen, moss, and fungi woven together across the desert floor.

## OLDER THAN ALMOST ANYTHING



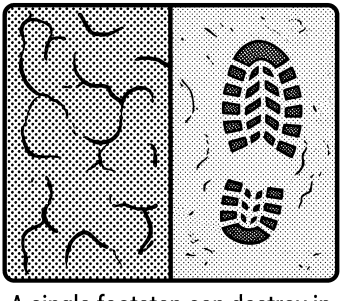

Cyanobacteria are among the oldest life forms on the planet — the same basic organism that helped fill Earth's early atmosphere with oxygen, billions of years ago.

## ONE MILLIMETER A YEAR



This crust grows about one millimeter a year. A crust one inch thick took roughly twenty-five years to form.

## ONE FOOTSTEP, DECADES GONE



A single footstep can destroy in one second what took decades to build — and the same may take 50 to 250 years to fully recover.

**A hundred years to form. One footstep to destroy.**

## PLACES TO SEE IN
# JOSHUA TREE NATIONAL PARK

Where twisted trees meet giant boulders under an endless desert sky.

### INDIAN COVE



On the park's north side, boulder formations rise thirty to forty feet above the campground — a favorite for bouldering, and the closest high ground to Landers reachable by road.

### BLACK ROCK CANYON and HI-VIEW TRAIL



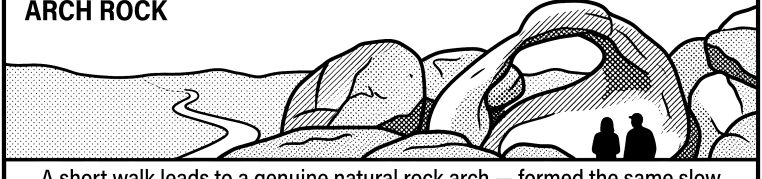

A forty-minute climb through pinyon pine leads to Hi-View's ridge — high enough that the National Park Service says you can see the Marine Corps base, forty miles away, on a clear day.

### SKULL ROCK



Right along the main road, wind and rain carved this granite boulder into an unmistakable shape over thousands of years.

### ARCH ROCK



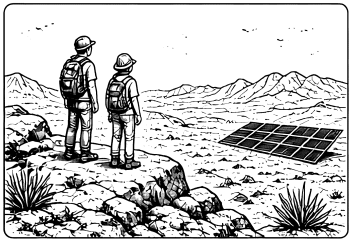
A short walk leads to a genuine natural rock arch — formed the same slow way as the park's boulder piles, just carved into a different shape.

**Some of the park's best views take real work to reach. Some are right next to the parking lot.**

# Chapter 7 Brain-Builder

## *Scale the Granite*

### 1 THE TRAIL AND SIGHTLINE SEARCH



Write a, b, or c.

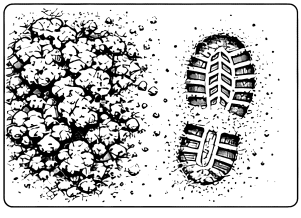
1. Indian Cove _____
2. Black Rock Hi-View Trail _____
3. Giant Rock granite ridge _____

a) 4,445 feet. Forty-mile view across the basin

b) Only 30 to 40 feet above camp. Too low to clear the scrub

c) Van Tassel flight line. PENKOR panels flash at sunset.

### 2 SOIL CRUST PROTECTION



Circle PROTECTED or DESTROYED after each line.

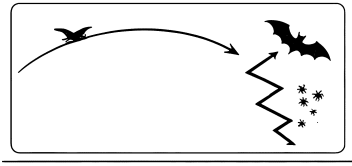
(1) Step off trail onto dark bumpy crust for a photo. PROTECTED / DESTROYED .....

(2) Stay on the established path in Black Rock Canyon. PROTECTED / DESTROYED .....

(3) Crush a crust that took about twenty-five years to grow. PROTECTED / DESTROYED .....

(4) Leave cyanobacteria, lichen, and moss woven and untouched. PROTECTED / DESTROYED. .....

### 3 FLIGHT DYNAMICS AND ECHOLOCATION



Circle the ONE correct explanation.

a) Birds zigzag at dusk because wind bounces off granite.

b) Bats use echolocation to chase insects, so their flight is jerky, not a bird glide.

c) Solar panels bounce sound and force birds to fly erratically.

d) Pallid bats only fly in straight lines when hunting scorpions.

### 4 DESERT OBSERVATION SEARCH.

Find across or down: BEARING, CRUST, ECHOLOCATION, FLIGHTLINE, GRANITE, HIVIEW, PALLID, RUNWAY.

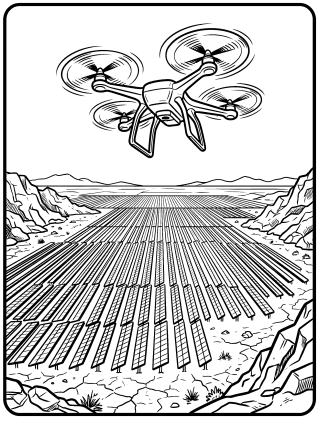
| E | C | H | O | L | O | C | A | T | I | O | N |
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| P | M | K | V | R | T | J | H | O | L | W | E |
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| M | N | X | L | G | M | W | H | I | T | U | E |
| G | R | A | N | I | T | E | I | T | W | M | O |
| X | H | Y | O | S | M | O | S | I | S | A | S |
| B | E | A | R | I | N | G | R | U | D | E | N |
| C | E | R | U | N | W | A | Y | A | R | X | R |
| E | D | U | T | Y | J | Y | C | Y | V | A | N |
| H | I | V | I | E | W | A | L | O | N | O | R |
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ARGO

# Chapter 8

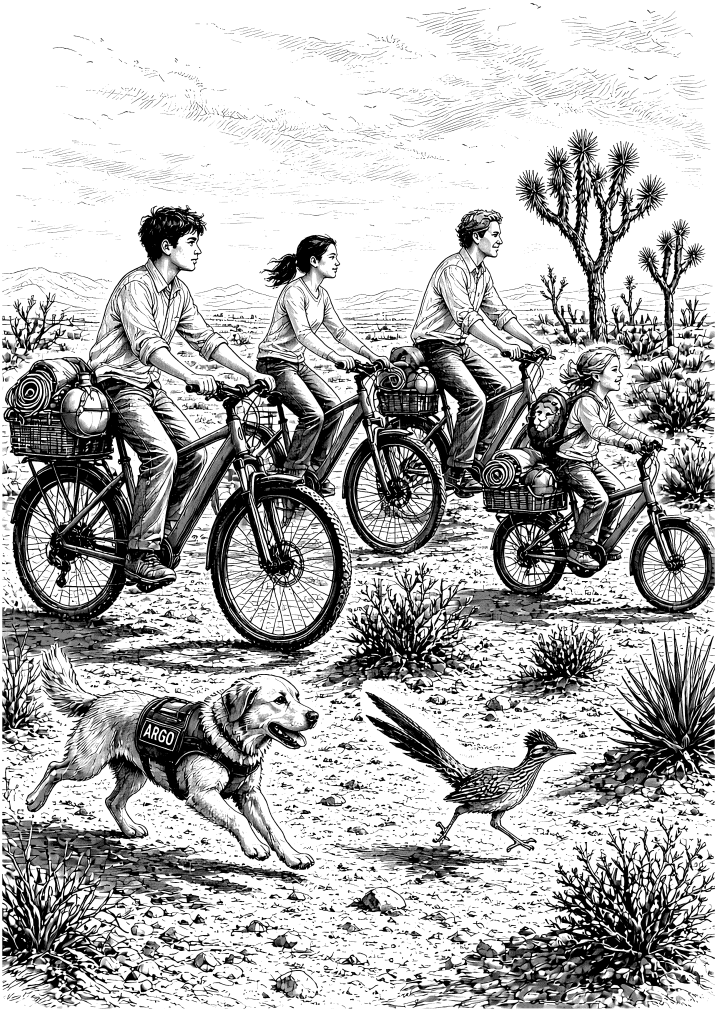
# What the Mountain Hides



*Today, I witnessed fortitude, the quiet power of courage to keep going when you want to stop. Sixteen-year-old Tess's voice did not shake even when her hands did as she rappelled into the dark to give first aid to a stranger with a compound fracture.*

*— ARGO, Personal Log, Entry 8*

For a two-mile run on a high-desert morning, the e-bikes were all you needed. They left Firefly at seven-thirty, humming through the flats, fat tires floating over sand and dirt as they cut northeast. ARGO ranged ahead, his gait easy and unhurried, but ARGO could only think of one thing, which was an extremely annoying roadrunner named Rex, who seemed to be teasing him.



"Goat Mountain. Five-hundred-foot prominence. One vehicle track, cut by mining operations, 1930s. The switchback is rideable. Mostly."

"Mostly," Grant repeated. "And I see you have brought along your friend Rex the Roadrunner."

"Rex!" exclaimed Willa who hadn't seen him yet. "You can always tell, by his split tail feathers."

"The upper third is loose aggregate over granite slab. You may have to walk that section. The view from the top, however, is worth the indignity," said ARGO trying to ignore comments about Rex.

"And regarding Rex, Willa, I have given him a very stern lecture about bothering our guests for handouts, I can't imagine why all the guests seem to want to feed him."

For a moment there was a long silence where no one said anything.

Tess leaned toward Grant. "Do you think he knows about the guest book? The one where we wrote down what Rex likes to eat?"

Leo had the county parcel map memorized and changed the subject. "The solar facility directly east of the summit and directly north of Joshua Tree, who owns it?"

"The parcel is registered to a Delaware holding company called PENKOR Group," ARGO said. "The facility operates as a data center and AI computing campus. Four square miles. It was purchased from the government, the land used to belong to the Marine Base but was not being utilized. Approved approximately eighteen months ago."

"The Marine Corps doesn't just give away dirt for data centers," Leo said, looking at the map showing the sprawling PENKOR campus.

"Correct," ARGO said. "A 2025 executive order prioritized rapid domestic scaling of AI infrastructure. By transferring the

land, the government bypassed years of environmental review. It's not just a private campus, it's a strategic asset."

Leo traced the boundary on the screen. "Data centers need water. Cooling towers, chillers, but the permit specified air-cooled systems. No water draw beyond domestic use."

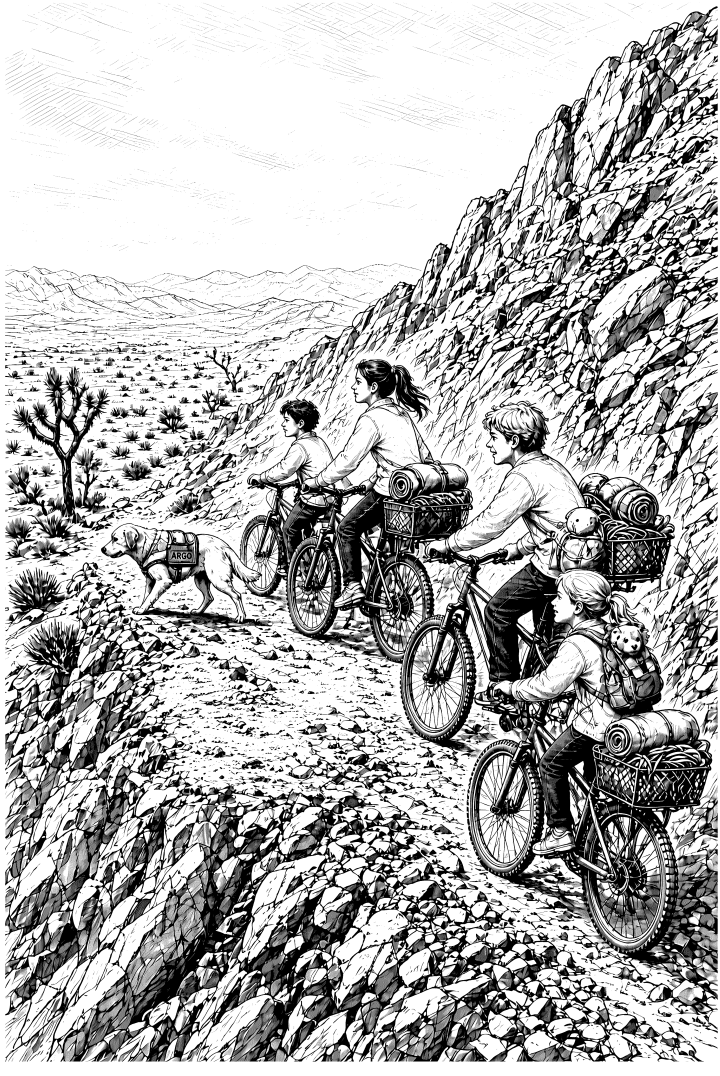
"This project was likely built around the most advanced AI processing chips available 2-3 years ago when the project was specified," ARGO said. "Designed to be air cooled, according to the permits and proposal."

## Part I: The Ascent

The old mining track climbed Goat Mountain, built by 1930s prospectors with stubbornness, and a mule. The lower switchbacks were wide and hard-packed, worn smooth by a century of desert wind. They made good time leaning into the turns, ARGO ranging ahead and back like a dog exploring, his cooling system working quietly in the climbing heat.

"The mine shafts on this mountain are documented on USGS survey maps," ARGO said, ranging ahead. "Each one marked with an X. Whether anyone looks at the maps is a separate question. Watch your feet."

The upper third was as advertised, a steeper scramble. They dismounted, the heavy frames of the e-Bikes becoming dead weight against the incline. They walked the bikes over the sun-slicked granite slabs, boots slipping on loose aggregate, and finally breached the summit plateau in a small, private cloud of effort.




The view landed on all four of them at once.

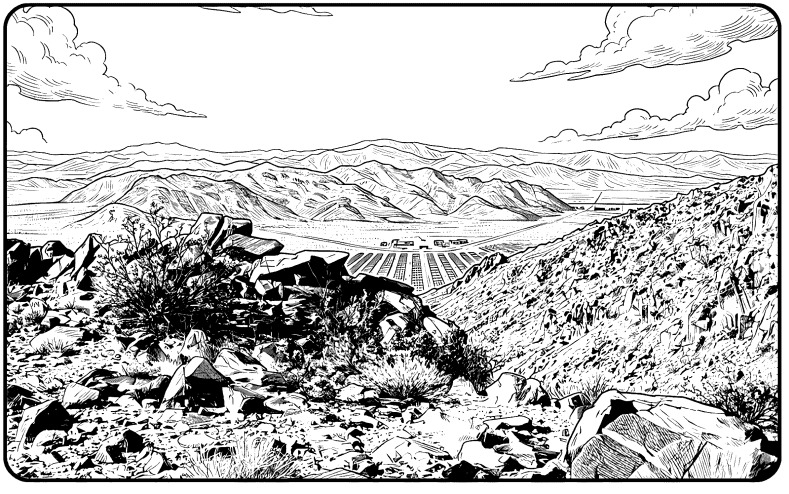
North: Giant Rock stood as a solitary boulder in the sand, a massive granite period at the end of a long, dusty sentence, as if placed there by someone with a very strong opinion about punctuation.

West: The Landers basin stretched out below. From this height, Firefly's ten acres looked like a precision-cut postage stamp. Near-

by, the Integratron's white dome caught the morning sun like a dropped coin.

East: The PENKOR campus dominated the horizon, a four-mile-long strike of industrial grey against the tan dirt. Three square miles of solar glass tilted toward the sun, flanked by endless rows of white shipping-container-sized batteries. At the heart of the machine sat the data center itself, a windowless block of concrete that looked less like a building and more like a processor socket.

"Grant," Tess said. "Drone."



## Part II: What the Drone Saw

Grant pulled the lightweight drone from his bag, a device no larger than a thick sandwich. He unfolded the arms, plugged his mobile phone into the controller, and set it on a flat granite slab.

Tess had the Audubon binoculars out, Grandfather Timo's, the blue neck strap still attached, sweeping east across the PENKOR facility while Grant prepared the drone.

She held on one section of the array for a long moment, adjusting the focus wheel.

"Grant," she said. "I think I see something under the panels. It's hard to make out, like it's meant to be."



Grant looked up from the controller. "Like hidden?"
"Like someone didn't want it visible from the road."
Grant picked up the iPhone. "Let's go look."



The drone lifted off with a smooth stabilized hum. On the iPhone screen the Landers basin spread out below. As Grant pushed east toward the facility the 4K camera moved steadily across the solar arrays, the battery banks, the windowless block of the data center. Then Grant angled the camera downward, beneath the nearest array.

There were pipes.

Heavy-gauge, insulated water mains running in parallel beneath the elevated panels, but not on the surface. They were below grade, set into shallow trenches cut into the desert floor and covered with the same white high-albedo gravel visible from the road. From the ground looking in through the fence you would see nothing but gravel. From directly above, the drone's camera caught the slight linear depressions where the trenches ran, and at intervals the unmistakable geometry of wellhead covers flush with the surface, squat, capped, industrial grey, set below grade so nothing rose above the gravel line. Once you knew to look they were obvious. From a vehicle on Reche Road they were invisible.

Grant brought the drone in a slow methodical west-to-east pass, counting.

"One," Willa said. "Two," said Grant. They counted to eight.

## Part II: What the Drone Saw (continued)

ARGO sat on his haunches at the summit's edge, his head tilted, cross-referencing the GPS coordinates of the wellheads against local hydrological maps. Eight pumps. Average draw of two thousand gallons per minute. Three square miles of solar, one million square feet of data center, the scale was unsustainable.

Grant held the drone in a slow hover over the third well, the camera looking straight down at the concealed infrastructure threading away beneath the solar panels like veins beneath skin.

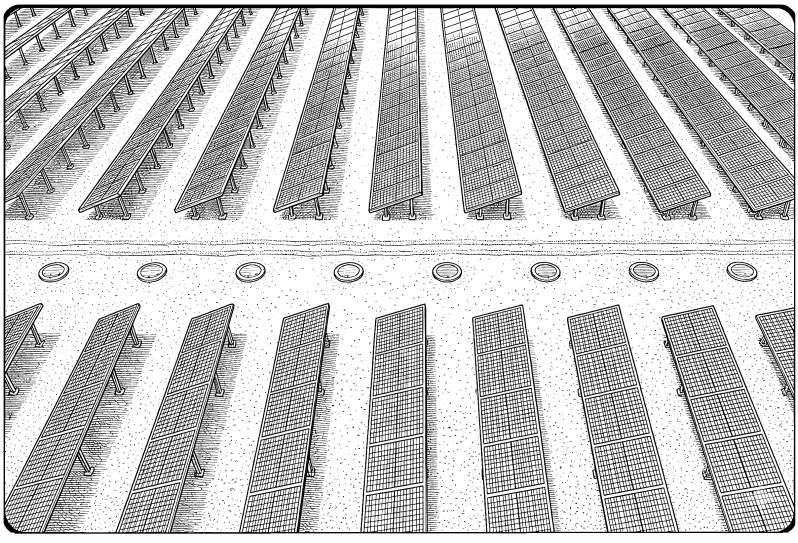


## Part IIb: What A.V.A.R.I.A. Saw

**AERIAL INTRUSION DETECTED**: Drone signature logged. Facial recognition: four minors, one registered service animal. Cross-reference: Team Philotimo Foundation, Landers California. Foundation legal status: confirmed.

**RISK ASSESSMENT:** elevated.

**RETURNING TO PROCESSING.**



"Eight wells," Leo said. "Probably a thousand feet each in that granite. At a hundred dollars a foot minimum, that's eight million dollars in drilling alone. Before the pumps. Before the pipe runs." He looked up. "Nobody drills eight wells a thousand feet deep and forgets to file the paperwork."

"Someone is pulling from the aquifer," Tess said. "The same aquifer that feeds Ned and Sara's well. The same one that feeds us."

"We don't know that for certain yet," Grant said carefully. "We know there are wells. We know the pipes run to the data buildings. We don't know the draw rate, and we don't know if it's permitted."

"The permit said air-cooled," Leo said.

"Right. But maybe they amended it. Maybe there's paperwork we haven't seen."

"Or maybe," Tess said, "there isn't."

"We need the plant manager," Leo said. "Whoever runs this facility will have the permits, the engineering specs, the whole picture. We find them, we ask the right questions."

"Sara," Willa said softly.

They all looked at her.

"Sara's badge said PENKOR Facility Coordinator. She was standing at a dry well. She looked scared." Willa tilted her head. "She knows something."

"We go see Sara on the way home," Tess said. "And we figure out how to get to whoever she reports to."

Grant lowered the mobile phone and gave the Return to Home command. The wellheads. The pipe runs. The scale of it. "We have documentation," he said. "Whatever this turns out to be, we have it on record."

And that was when they heard the scream.

## Part III: The Shaft

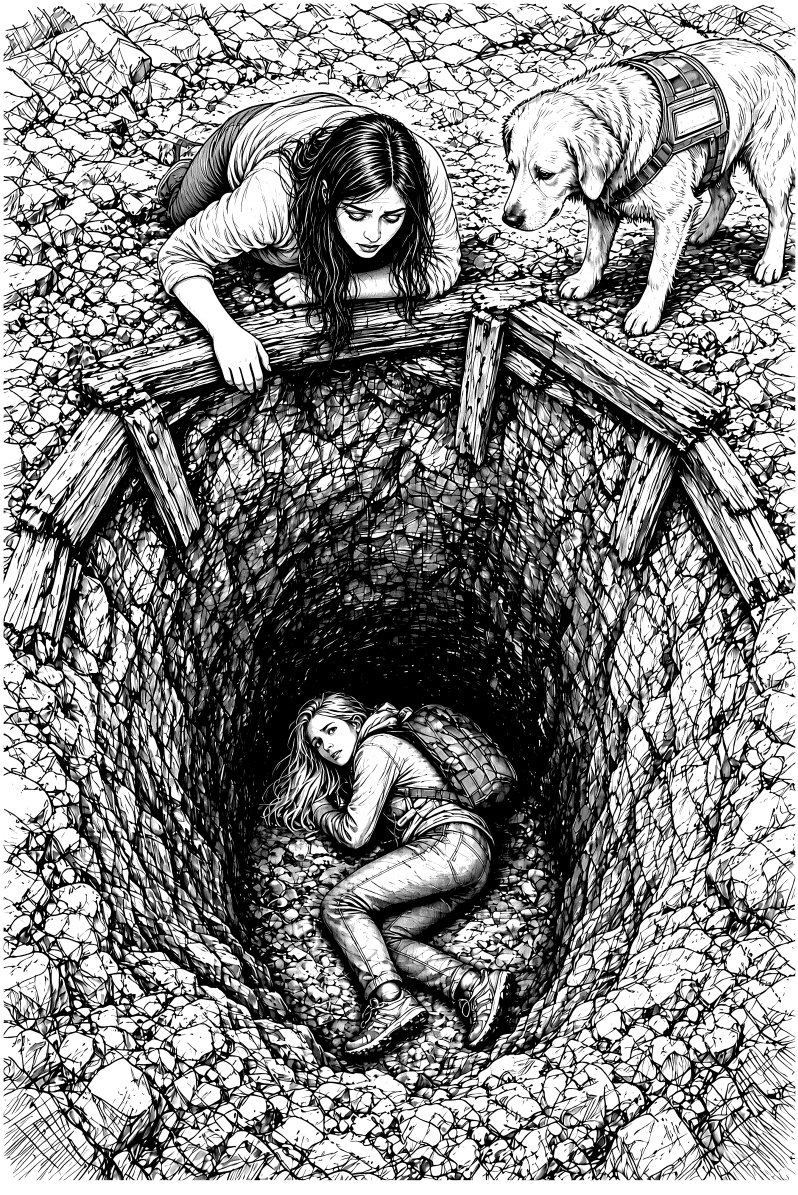
It came from about the middle of the summit, short, sharp, swallowed immediately by the open desert air. Not a fall-and-catch-yourself sound. A fall-and-don't sound.

ARGO was moving before any of them had fully processed it. He covered the summit plateau in a loping run, and the cousins came behind him at a dead sprint.

The mine shaft was behind a low granite shelf in a shallow depression. The opening was four feet across, ringed with the rotted remnants of a wooden safety collar that had given up its structural integrity at least twenty years ago. There was nothing else to warn you it was there.

The girl was at the bottom.

Tess reached the edge first, dropped to her stomach and looked over. Ten to twelve feet down, in the cool shadow of the shaft, a girl maybe sixteen years old was on her side in the dirt. Day pack. Trail runners. She had lost her footing at the depression and the fall had been mostly straight down.



"Hey!" Tess called down. "Can you hear me?"

A sound. Then: "Yeah." Tight and controlled, the voice of someone managing serious pain.

"My name is Tess. What's yours?"

"Cora."

"Cora, I need you to stay completely still for me. Don't try to stand. Don't move your legs. Can you do that?"

"My leg, something's wrong, my leg really hurts!"

"I know. I'm going to help you. Just stay still."

Tess pushed back from the edge and looked at her team. Her face had gone into that stillness her teammates on the soccer field recognized as the pregame lock-in, the moment to start executing.

"Leo. Do you have rope?"

"Fifteen meters of static line."

"Find an anchor. Something that won't move." She was already unclipping the Tactical Med-Kit from her belt. "Grant, call for help."

"No signal."

"ARGO!!!"

"Already transmitting," ARGO said. "San Bernardino County Sheriff Search and Rescue. I have GPS coordinates and mechanism of injury. They are dispatching. Estimated forty to fifty minutes for helicopter, depending on their current call load."

Tess looked at the med kit in her hands. Forty to fifty minutes.

"Grant, Leo," she said. "Find a sturdy anchor. I'm going down."

## Part IV: The Descent

Leo had the static line tied off to a rusted ore-cart axle that had corroded itself to the granite bedrock with decades of patient chemistry. Tess tested the rope, one hundred fifty pounds of body weight, leaning back hard, and it held without a shudder.

With no harness, she used the rope itself to create the necessary friction. She stepped over the line, brought it up behind her back, and crossed it over her chest, wrapping the small-diameter cords around her arms in a South African Abseil (Rappel). It was a

technique that would leave a bruise by tomorrow, but it gave her total control.

She looked over the edge. Twelve feet. She'd done this in training. On a dummy. In a gym with a mat at the bottom and an instructor watching.

*Don't think about that.*



She went over the edge feet-first, the rope pressing into her bare palms, her boots finding the shaft wall.

*Control the descent. Feet flat. Don't rush.*

The shaft was cool and smelled of old granite and dry earth. She could see Cora now, on her side in the dim light, the day pack still on, trail runners dusty from the fall.

*She's conscious. Conscious is good. That part is the same.*

The rope bit harder as she slowed herself. She let it.

*Almost there. Left side. Give yourself room to work.*

She landed beside Cora and moved to a crouch. She opened the med kit. Her hands were steady. She was a little surprised by that.

Then she saw the leg and her stomach dropped exactly once and she breathed through it and looked again, this time as a first responder, not as a sixteen year old girl who had never seen a compound fracture outside of a textbook.

*Okay. Start at the beginning. Airway. Breathing. Circulation. Don't skip steps. The dummy never had steps you could skip either.*

What she saw made her jaw tighten. The compound fracture was visible. The lower left leg had broken mid-shaft, and one end of the tibia had come through the skin just below the knee, a small, wicked exposure, the wound already dark with blood and dirt from the fall. There was blood on the shaft floor. Not a catastrophic amount, but ongoing, and the combination of bone exposure and contamination in a wilderness environment was exactly the scenario she had trained for.

*Work the problem. Just work the problem.*

"Cora," she said, her voice came out level. She hadn't been sure it would. "I'm a certified Wilderness First Responder. I'm going to take care of you. I need to look at your leg. I'm not going to touch it yet, I'm just going to look."

"It's bad," Cora said. She was pale, and her breathing was the careful, shallow kind that people use when they've learned in the last five minutes that full breaths hurt.

"I've seen bad," Tess said. "Tell me what else hurts."



"My wrist. I caught myself." A short pause. "I was stupid. I saw the sign was down and I... I just lost my footing near the hole's edge."

Tess had the med kit open, her hands moving through the organized pouches with the hours of wilderness training kicking in. Hemostatic gauze. Irrigation syringe. Trauma dressing. Nitrile gloves.

"I'm going to clean this wound and cover it. It's going to hurt. I need you to breathe through it."

"Okay."

ARGO's voice came quietly in her earbud. "Hemorrhage type: color is dark and flow rate is steady, venous. Your priority sequence is correct: control the bleed, cover the exposure site, prevent contamination, stabilize for temperature. Do not attempt reduction, do not try to move the bone back. Do not irrigate into the medullary canal, do not irrigate the inside of the broken bone. Irrigate the surrounding skin only."

"I know," she said quietly.

"I know you know. I'm here if you want a second opinion," ARGO said.

He's here. You're not alone. Now work.

She worked quickly and without wasted motion. The irrigation syringe, two full draws from the water bottle Leo dropped down on a cord, to flush the skin around the wound site. The hemostatic gauze, folded to a firm pad, pressed carefully against the wound, not covering the bone, covering the bleeding tissue around it. Cora made a sound and then controlled it, and Tess said nothing except "you're doing great" in the tone that wasn't a compliment so much as a fact.

The trauma dressing went over everything, wrapped with enough compression to slow the venous bleed without constricting the compromised circulation in the lower leg. A second pad over the first. Secured with the Israeli bandage wrap, the kind that applied its own pressure when you fed the end through the clip.

"Willa," Tess called up.

A small face appeared at the shaft edge, backlit by blue sky.

"Drop the emergency blanket."

The blanket came down, followed by a small voice: "Would she like a trail bar?"

Tess wrapped Cora in the blanket. "Thanks Willa, but we better hold off on food right now, in case they do surgery and she needs anesthesia."

Willa, after a pause: "I have six."

"Leo," Tess called.

Leo's face appeared at the shaft edge, beside Willa's.

"Get down here. I need someone next to her to keep her warm. Keep her talking and keep her still. If she goes pale or starts breathing fast, tell me immediately."



Leo came down the rope in about four seconds. He sat beside Cora in the cool of the shaft and introduced himself the same way he introduced himself to every new person in his life, by immediately telling them something interesting.

"That facility to the east," he said. "The one with all the solar panels? We just found eight wells under them that probably shouldn't be there."

Cora blinked. "That place has been drilling since October. I could hear it from the trailhead."

Leo looked at Tess.

Tess looked at him.

"Since October," she said.

"Trucks at night, mostly," Cora said. "My dad thought they were doing foundation work. But it sounded like drilling."

Leo pulled out the notepad he kept in his vest and wrote that down in the careful hand of someone who understood that a throwaway observation from a hurt hiker was also, potentially, evidence.

## Part V: The Wait, and the Work

Grant and Willa held the top of the shaft, and ARGO sat between them in the posture of a patient dog, and they watched the sky to the west for rotors.

Willa had found a flat piece of granite and was sitting cross-legged on it, her eyes moving between the shaft edge and the eastern horizon where the solar facility glittered in the climbing sun.

"ARGO," she said softly.

"Yes."

"Those wells. Who decided to put them there?"

"We don't know yet," ARGO said. Honestly, and without embellishment.

"But someone did."

"Someone did."

"And they knew about the water table."

ARGO's tail made a single, slow movement. "That," he said, "is the question that needs answering. And the person most likely to have the answer works in that facility. We will find them."

Willa nodded and went back to watching the sky.

The helicopter came in from the south thirty-eight minutes after ARGO's call, a Sheriff's Bell 412 in tan-and-green, banking low around the summit with the precision of a crew that had worked this mountain before.

The rescue technician was down a rope in under five minutes. He took one look at Tess's dressing, checked the bleed, and nodded, once.

"Good pack," he said.

"Wilderness First Responder," Tess said.

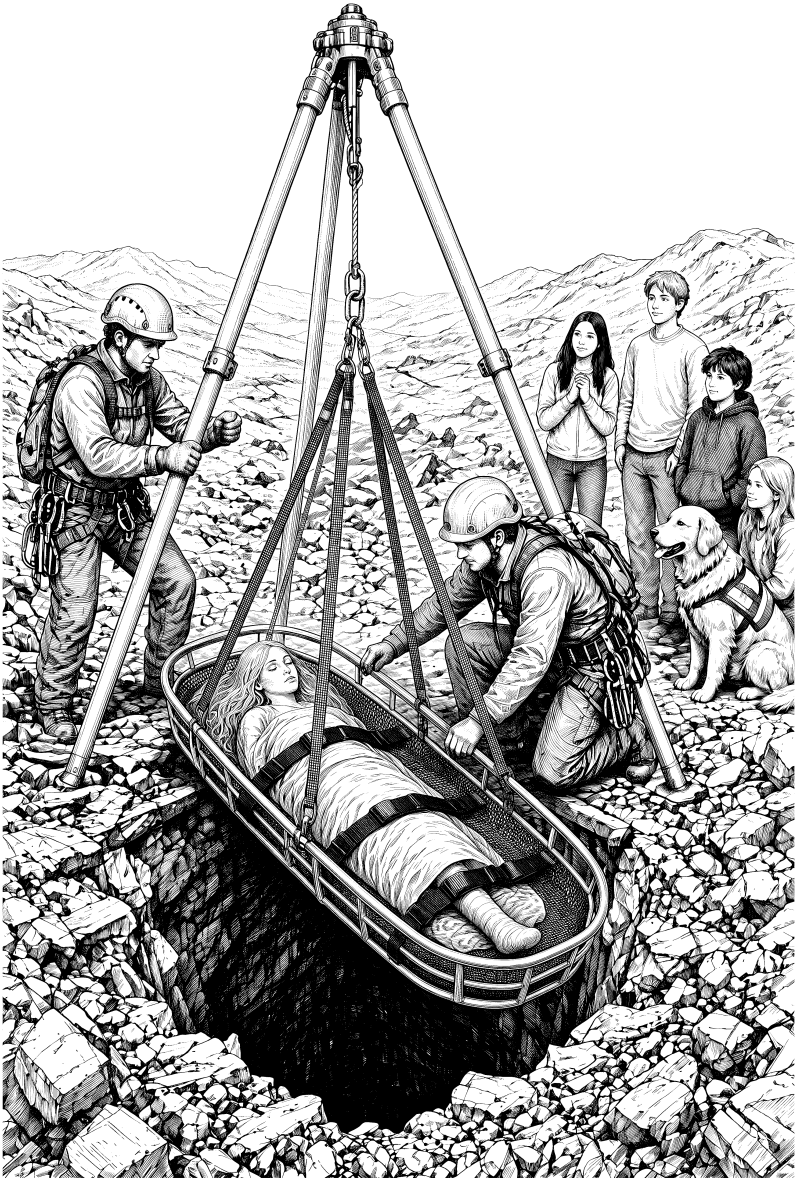
"How old are you?"

"Sixteen."

He looked at her for a moment. "You want a job in about four years?"

Cora came up in a Stokes litter, pale and tight-lipped and, Willa observed from the shaft's edge, formidably brave. As the litter cleared the top of the shaft, Cora reached out and caught Tess's wrist.

"The drilling," she said. "December through February. Five nights a week. My dad kept a log because it was noisy at night. I'll get you the log."



"Thank you," Tess said. "Get better first."

The helicopter lifted, banked east, and was gone.

The summit was quiet again. The drone sat folded in Grant's vest pocket, and about a hundred photos and twenty minutes of 4K video of infrastructure that had no business being where it was.

ARGO sat at the summit's edge and looked east at the facility, its solar panels collecting the midmorning sun, clean and orderly and impressively sustainable-looking from every angle that didn't involve a drone and a five-hundred-foot mountain.

"Down the switchback," he said. "In formation. We are going to see Sara."

"And if she won't talk?" Grant asked.

"She was standing at a dry well in a blazer with an ID badge," ARGO said. "She drove home knowing why that well was drying out and said nothing about it. That is not the behavior of someone without a conscience. That is the behavior of someone who is frightened." He turned from the horizon and began the descent. "We are not going to pressure her. We are going to make her feel less alone."

They followed him down the switchback, one by one, into the heat of the morning.



## ARGO Field Notes (Ch-8)

*Turn the page to build your brain (BYB) with ARGO, or skip ahead to keep adventuring.*

**Flying Drones: Rules of the Air:** *There's no minimum age to fly a drone recreationally, but every pilot must pass the FAA's free TRUST safety test first. Drones over 0.55 pounds also need to be registered, which requires being at least 13.*

**Open Mine Shaft Safety:** *There are an estimated 500,000 abandoned mines across the United States, many with no fence or warning at all. Hidden shafts, invisible gas, and unstable ground make them far more dangerous than they look.*

**Sheriff Search and Rescue:** *A rescue call includes exact GPS coordinates and injury details, sent to helicopters built with hoists, thermal cameras, and night vision. Crews accept real risk every time they fly, it's one of the most dangerous jobs built entirely around saving someone else's life.*

**Compound Fractures:** A compound fracture means the bone has broken through the skin, and the one rule that never changes is never push it back in. The color and pattern of bleeding tells a trained responder how urgent the danger really is.

**The South African Rappel:** *Going down fast, coming up smart, with the same rope.*

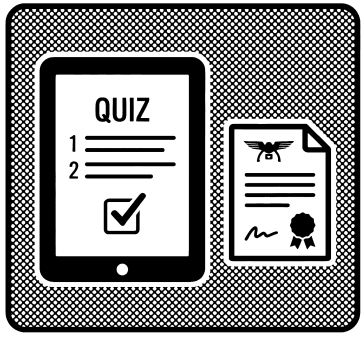
**Fortitude/Courage:** Every culture, across thousands of years, keeps returning to the same idea: the strength to stand firm in fear, for something worth standing for. It isn't the absence of fear. It's what happens after fear arrives.

# FLYING DRONES: RULES OF THE AIR

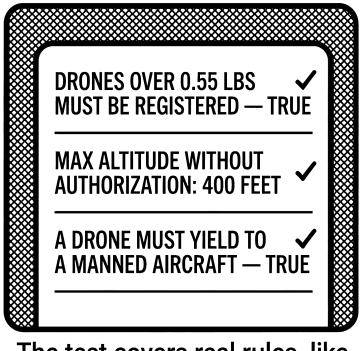
The rules apply no matter how old you are.



Anyone can fly a drone recreationally — there's no minimum age required by law.




Before flying, every pilot — any age — is supposed to take the FAA's free TRUST safety test online. It's open-book, you can retry questions, and you get your certificate instantly.




The test covers real rules, like like altitude limits, registration, and always giving way to a real airplane or helicopter.

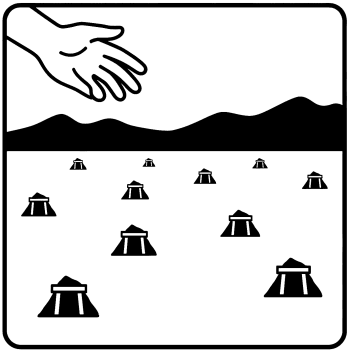



Drones over 0.55 pounds must be registered with the FAA — and registering requires being at least 13 years old.

**No age limit. No shortcuts.**
**Every pilot has to know the rules first.**

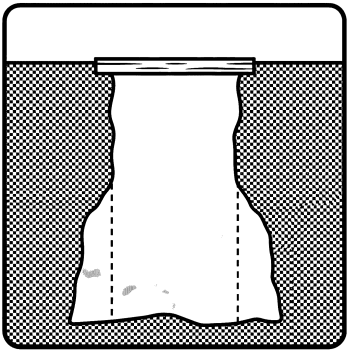
# OPEN MINE SHAFT SAFETY

## What to do in the desert



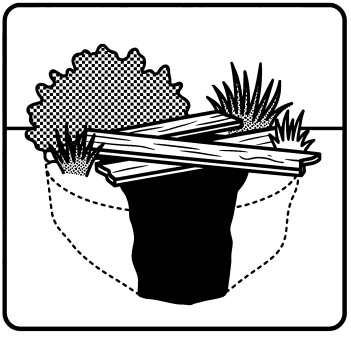
### MORE COMMON THAN YOU'D THINK

There are an estimated 500,000 abandoned mines across the United States — many with no fence, no sign, and no warning at all.



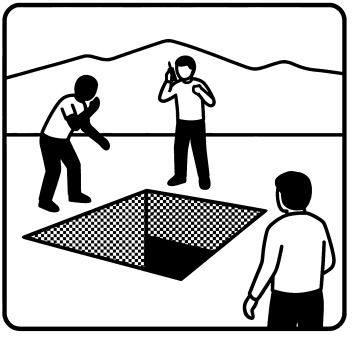
### THE DANGER YOU CAN'T SEE

Old mines can trap deadly gases like methane and carbon dioxide, which push out breathable oxygen with no smell, no color, and no warning.



### SOLID GROUND THAT ISN'T

A hidden shaft can look like solid ground — hundreds of feet deep, covered by rotting wood or grown over with brush.



### IF SOMEONE FALLS IN

Call for help immediately. Keep the person talking and still. Only go down yourself if you're trained — untrained rescuers become a second person who needs rescuing.

**Stay Out. Stay Alive.**

# SHERIFF SEARCH AND RESCUE

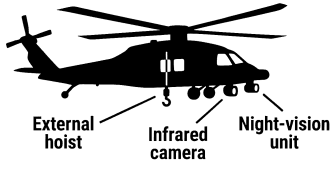
How helicopter rescues work

## THE CALL GOES OUT




A rescue call includes exact GPS coordinates and a description of the injury — both used to decide which resources to send and how urgently.

## BUILT FOR THE JOB



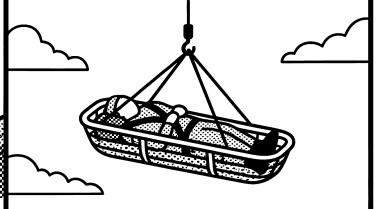

Search and rescue helicopters carry external hoists, thermal cameras, and night vision — built to reach people in places no vehicle can.

## LOWERED, NOT LANDED



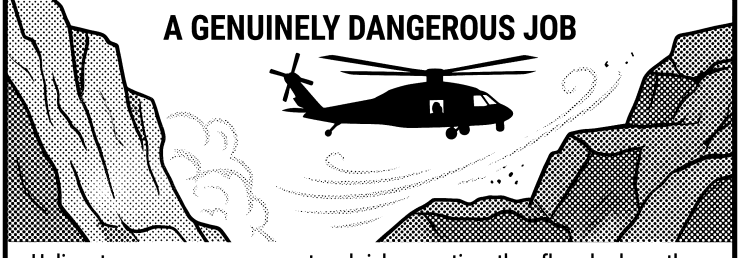
In rugged terrain, the helicopter doesn't land at all — a trained rescue technician is lowered by hoist straight to the person who needs help.

## THE RESCUE LITTER



An injured person is secured in a rigid rescue litter that keeps them stable and protected during the lift back up to the helicopter.

## A GENUINELY DANGEROUS JOB

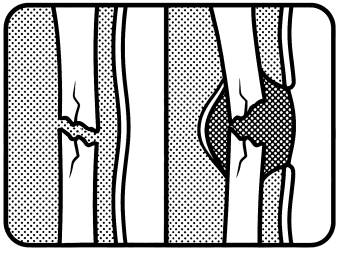


Helicopter rescue crews accept real risk every time they fly — bad weather, tight terrain, and split-second decisions near rock and wind. It's one of the most dangerous jobs built entirely around saving someone else's life.

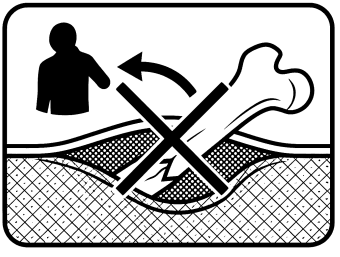
**They fly into danger so someone else doesn't have to face it alone.**

# COMPOUND FRACTURES

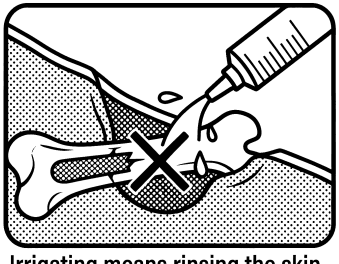
## Wilderness first aid.



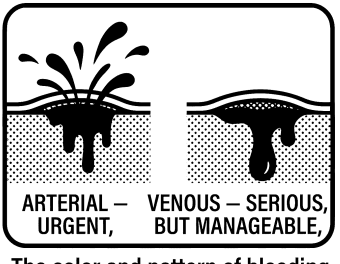
A compound fracture means the broken bone has pierced the skin — turning a broken bone into an open wound at the same time.



Never push the bone back in. Doing so drives dirt and bacteria deeper and can damage nerves and blood vessels around the break.



Irrigating means rinsing the skin and tissue around the wound — never the inside of the bone itself. The two are very different structures.




The color and pattern of bleeding tells a trained responder how urgent the danger really is.



It seems kind to offer food or water to someone who's hurt — but if surgery might be needed, an empty stomach matters. Anesthesia is safer without food or water in the system.

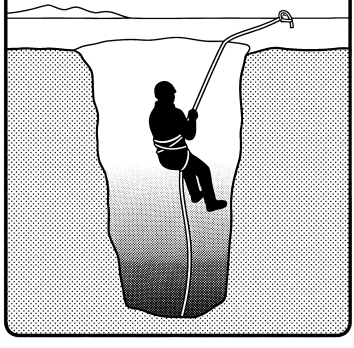
**Cover it. Don't push it. Get moving.**

For educational purposes only. Not a substitute for professional training, medical advice, or expert guidance.

# THE SOUTH AFRICAN RAPPEL

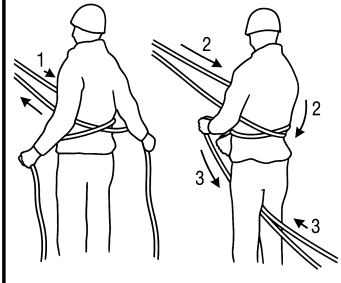
Going down fast. Coming back up smart.

## GOING DOWN FAST



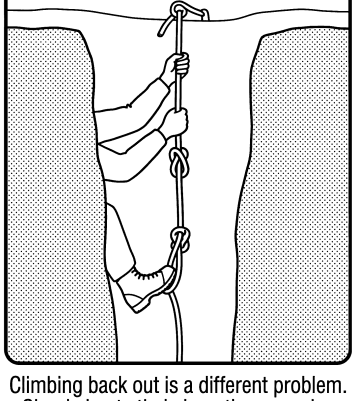
To reach someone fast, a rescuer can wrap the rope around their own body for friction — no harness needed, just controlled speed.

## THE ROPE BECOMES THE HARNESS



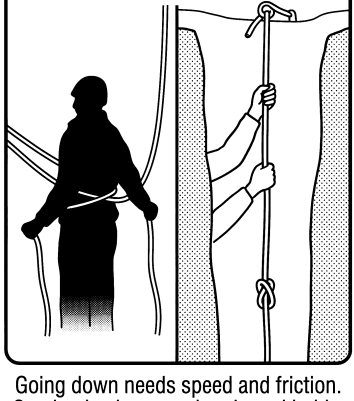

The rope path itself creates the friction — under the arms, across the back, between the legs to a braking hand that controls the speed.

## COMING BACK UP



Climbing back out is a different problem. Simple knots tied along the rope give hands something to grip and feet something to push against — the same rope, used a completely different way.

## ONE ROPE, TWO JOBS



Going down needs speed and friction. Coming back up needs grip and holds.

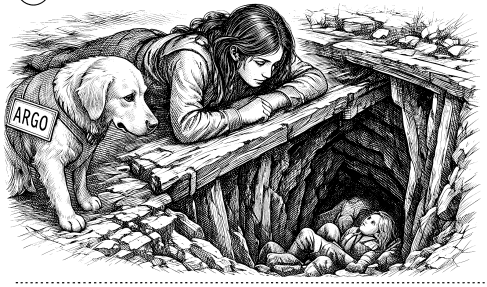
A trained climber has other tools too, but this is what worked here.

**The rope doesn't change. What you do with it does.**

# Fortitude

## The Quiet Power of Courage

### 1 Not the Absence of Fear



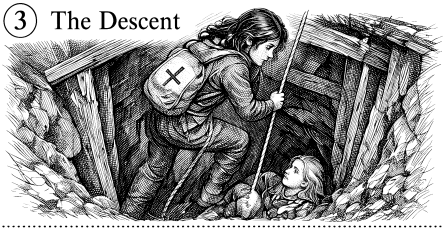

Courage is not fearlessness.
It is knowing how dangerous the shaft is and choosing to act because someone is worth the risk.

### 2 The Middle Path




Too little is cowardice. Too much, without a reason, is recklessness.
Fortitude sits in the middle: afraid, and still precise.

### 3 The Descent



A sixteen-year-old looked over the edge and went without being asked.
The med kit was packed.
The fear went with her.

### 4 An Old Idea



For thousands of years, across cultures that never spoke to each other, people returned to the same strength: stand firm in fear for something worth standing for.

*Courage is not the absence of fear.*
*It is what happens after the fear arrives.*

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# Chapter 8 Brain-Builder

*What the Mountain Hides*

## 1 FIRST RESPONDER PROTOCOL



Write *a*, *b*, or *c*.

1. Managing an exposed bone ☐
2. Irrigating the injury site ☐
3. Holding off on food and water ☐

a) Flush surrounding skin. Never spray inside the bone canal
b) Keep the stomach empty if surgery needs anesthesia
c) Never push a compound fracture back under the skin

## 2 MINE SHAFT HAZARDS



Circle SAFE or HAZARDOUS after each line.

1. South African body-wrap rappel with a secure plan. SAFE / HAZARDOUS
2. Standing on rotted timber at an abandoned shaft edge. SAFE / HAZARDOUS
3. Sending untrained rescuers down with no bedrock anchor. SAFE / HAZARDOUS
4. Sending GPS and injury details to Search and Rescue. SAFE / HAZARDOUS

## 3 THE VIRTUE OF FORTITUDE

*Tiny line: Cowardice left, Fortitude center, Recklessness right.*



**COWARDICE**



**FORTITUDE**



**RECKLESSNESS**

Circle the ONE correct definition.

a) Fortitude means no fear and no safety check.
b) Fortitude sits between cowardice and recklessness. Feel fear. Stay precise. Act for someone in danger.
c) Fortitude means wait for adults before any assessment.
d) Fortitude means ignore training and yank the injured person up by the arms.

## 4 MINE RESCUE AND DRONE SEARCH

Find across or down: **ANCHOR, DRONE, HOIST, LITTER, RAPPEL, SHAFT, TIBIA, TRUST**

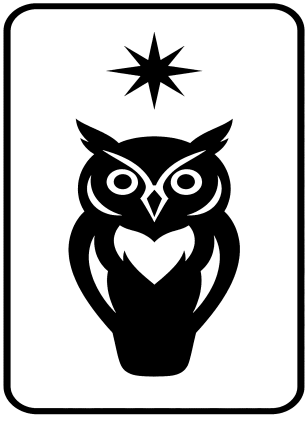
| A | N | C | H | O | R | P | M | K | V | R | S |
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| T | P | A | J | W | E | K | L | B | S | Q | H |
| R | A | P | P | E | L | I | N | A | D | E | A |
| M | N | X | L | G | M | W | H | I | T | U | F |
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ARGO

# Chapter 9

# North Star



*Humans are beautifully unpredictable, and still they find north. Today they pulled a truth out of a porch, cleared a course, and played a game in which no one owns the ball. That is how they will walk into Miller's office: to show him north, and to remind him the water was never his.*

*— ARGO, Personal Log, Entry 9*

They came down the switchback in single file, the e-bikes clunking over the loose aggregate, everyone quiet after watching something serious happen and someone handle it well.

Tess didn't say anything about the rescue. She just packed the med-kit methodically, re-inventoried what she'd used, and made a mental note to restock the hemostatic gauze when they got back to Firefly.

ARGO fell in beside her at the bottom of the track.

"You did well," he said.

"Cora did well," Tess said. "I just wrapped it."

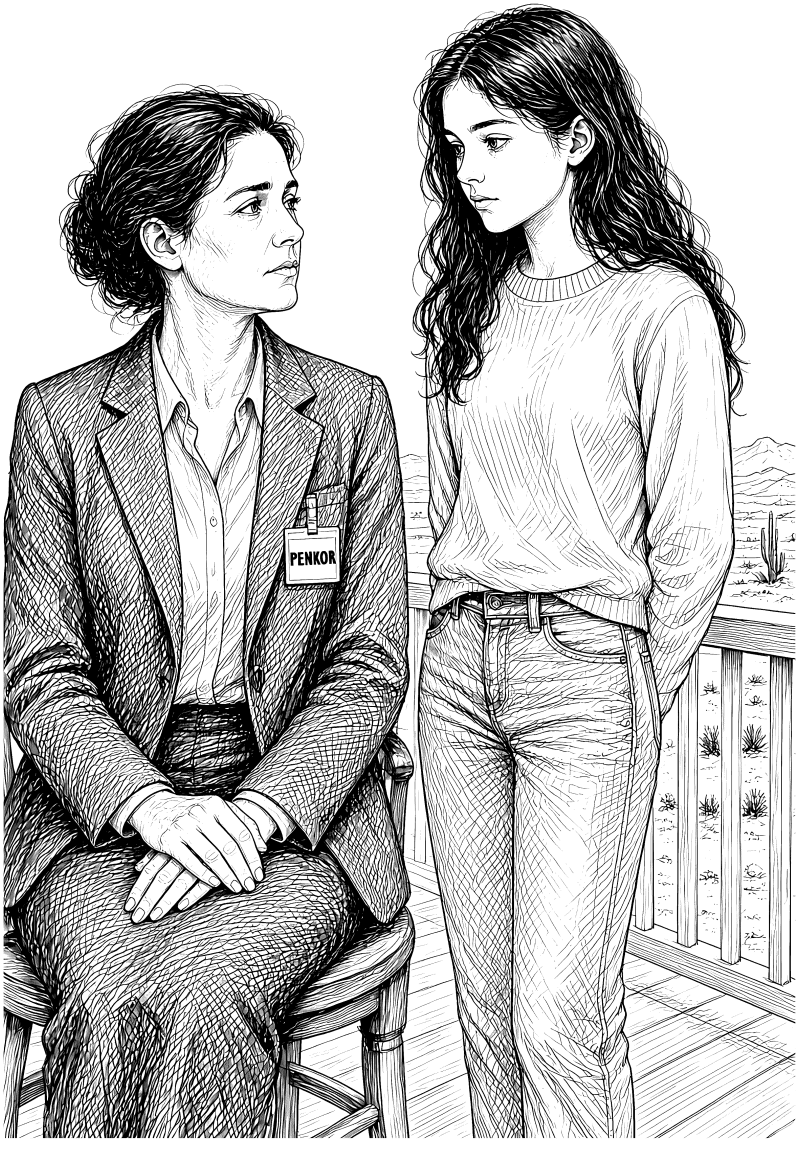
"That is what a first responder does. The patient fights; the responder keeps the patient in the fight."

Tess thought about that. Then she put it away, because they had work to do.

## Part I: Sara

Ned and Sara's place was a quarter-mile west, and from the road you could tell things were still hard. The pump house door was open. The trough in the pig pen had been refilled, probably with the water they'd brought two days before, but the tank gauge on the side of the house read low. The little pigs were quiet now, napping in a pile in the shade.

Sara was on the porch. She was wearing the blazer, apparently getting ready to leave for her shift at PENKOR.




She saw them coming and she didn't move. That was interesting. Someone frightened would have gone inside. Someone with nothing to say would have waved and walked around back. Sara

sat very still and watched them come up the drive, which was the behavior of someone who had been waiting.

"Morning," Tess said.

"Morning." Sara's eyes moved to ARGO, registered the vest, moved on, and then settled on Tess with the directness of someone deciding something. "How's the water at Firefly?"

"Still running. Slower than last week."

Sara nodded. Her hands were in her lap, and she turned the PENKOR badge over once, then set it face-down on the porch railing, and then picked it back up and put it back on.

"Sit down," she said.

They did.

"Ned doesn't know what I do out there," she said. "He thinks I'm an office manager for a solar company. Which I am, technically. I'm the Facility Coordinator for PENKOR Group's Joshua Tree computing campus." She paused. "You saw my badge yesterday."

"Yes," Grant said.

"And you're not kids who just dropped off water out of the goodness of your hearts." She looked at them. "You're asking questions."

"We're asking because our wells are going dry," Tess said. "Same as yours."

Sara was quiet for a moment. The desert was quiet around them, just the piglets shifting around to get a better spot in their pen and the munching sounds of the goats nibbling weeds in the garden.

"Eight wells," she said.

The team went very still.

"The original facility design was air-cooled," Sara continued. "That was the permit. That was what they presented to the county, to the Marines, to everyone. Air-cooled systems use almost no water beyond what the staff drinks and what runs through the bathrooms. That's what was processed, that's what was filed."




"But," Leo said.

"But last fall, PENKOR brought in the new chip architecture. The Blackwell Ultra systems. Liquid-cooled. An order of magnitude more powerful, and an order of magnitude more cooling

needed. They just drilled the wells and told me to update the internal specs."

"Did the permits get updated?" Grant asked.

"I updated the internal specs," she said. "But I never saw anything filed with the county."

Leo made a quiet sound.

"How much are you pulling?" Tess asked.

"When we are at full load? Between four and five million gallons a day. It has been going up as we brought more processing power online." Sara looked at her hands. "I did the math on the aquifer. I know what the draw-down looks like. I've been watching our well and it has dropped about a foot a month since we went to full liquid-cooling in December."

"Cora's father logged drilling through February," Willa said quietly. "Nights mostly."

Sara looked at Willa for a moment. Then she nodded. "Night operations. Lower inspection risk."

"Who ordered the switch to liquid-cooling?" Tess asked.

"The Transition Leader oversaw the construction and emailed the crews with instructions. The production VP, a man named David Miller, was brought on board late December. He was not involved in designing the infrastructure. All the emails came from the Transition Leader."

"Miller reports directly to the chairman." Sara picked up the badge again and turned it over, then set it back down. "I am not sure who signed off on the well expansion. The emails were from the Transition Leader. The chairman, his name is Beaumont, Jordan Beaumont, he flies in once a quarter. Miller runs the day-to-day."

"We need to talk to Miller," Leo said.

"Miller isn't here today." Sara glanced toward the ridgeline east of Goat Mountain. "He's at Coachella. Beaumont is there too, they

have a Safari Camp cabana at the festival. Investor entertainment. It's a whole thing." A dry pause. "They are trying to raise more money to build more AI data centers.



They are pushing the idea of sustainable investment, because we are using only solar power for the PENKOR Joshua Tree AI data center." She glanced at them. "One of the bigger names on the guest list is an investor named Priya Solberg, out of Norway, tied to one of the big sovereign wealth funds. That's the kind of money that funds ports and grids and, apparently, whatever this is."

Grant pulled up his tablet. Coachella. This weekend. The same green smudge they'd seen from the boulder overlook, the festival they'd talked about being too expensive to go to. He looked at Tess.

Tess looked at him.

"When does Miller come back?" she asked.

"At the staff meeting he said he would be back in the morning as usual."

"Can we get a meeting?"

"You're sixteen."

"Can we get a meeting," Tess said again, the same way she'd said it, not differently.

Sara looked at her for a long moment. "I can put it on his calendar for 9:00 AM Thursday morning. I will mark it down that the Team Philotimo Foundation is requesting a meeting regarding the foundation's water rights and the adjacent parcel's permit status. That is accurate. It will also make him assume he's meeting with a lawyer."

"And when he finds out he's meeting with us?"

"Then he'll have to decide whether to throw you out or talk to you." Sara picked up the badge and clipped it back to her blazer.

"We'll be there at 8:45 AM," Tess said.

Back on the bikes, heading south toward Firefly, Leo rode in silence for a while, turning Sara's words over.

"She did not have to tell us," he said.




"No," ARGO said. "Honesty is how justice speaks."

An order of magnitude more cooling. He kept picturing the wells, the pipes, the water disappearing into all that machinery just to keep it from overheating.

"ARGO," he said, "do you need anything like that? All those pipes and towers, just to keep a chip from melting?"

"I do not," ARGO said. My processor is photonic. Optical Processing Unit. Still experimental, one of only a few of its kind. It runs on light rather than electricity, which produces a fraction of the heat a chip like theirs does, and runs many times faster, on a fraction of the power. One OPU the size of a dime is comparable to a full rack of Blackwell systems."

Leo let that sit for a moment, then shook his head slightly, smiling.

Grant came up alongside ARGO.

"Jordan Beaumont," he said. "ARGO, what do you have?"

"Jordan Beaumont, 54," ARGO said. "Stanford MBA. Founder and Executive Chairman of PENKOR Group, incorporated in Delaware, principal offices in San Jose and Singapore. Previous ventures in LiDAR components, GPU arbitrage, and sovereign wealth fund consulting. Net worth estimated at 2.1 billion. He is currently listed as an attendee at the Indio Valley Impact Investors Summit, which is co-hosted this weekend at the Coachella festival."

"An impact investors summit," Grant said. "At a music festival."

"The current era is not short on irony," ARGO said.

"And Miller?"

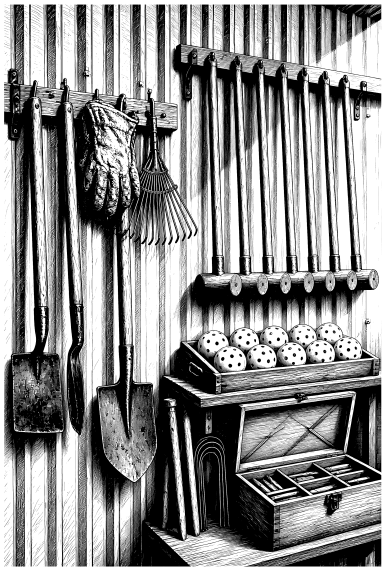
"David Miller, 41. Production VP, PENKOR Joshua Tree. Mechanical engineering degree, MIT. He previously managed data center operations in Texas, for a crypto-currency company."

"Okay," Tess said. "Tomorrow at 8:45 AM. We need to be ready."

When they got back to Firefly, ARGO trotted directly to the middle of the Oasis and sat down.

"Miller is at Coachella," Grant said, pulling his bike into the shop bay. "We have the rest of the day to get ready and relax."

## Part II: Mallotimo Seven



They started with link #1, and weeded each link in order till they got to #7. The bigger weeds had roots like wire. ARGO sat in the shade and kept time because that was a thing he could do.

"One hour and nineteen minutes!" Tess said, pulling off her gloves. "Faster than last year."

"Everything is a competition with you," Grant said.

"Everything *is* a competition," she said, and went to get the mallets.



Leo found the cedar kit box on the second shelf in the shop and brought it out into the desert light. Seven identical white balls. Four mallets. Seven numbered stones already placed at the start

of each link, the course threaded between the Joshua trees and creosote bush, seven links each with three hoops and a brightly colored pole or stake that acted like the hole does in golf. The seventh link ended near the Fountain Philotimo, its pole was painted with an amber color.

"Same color as ARGO's eyes," she told him now, pointing.

ARGO's eyes cycled slowly. He had never seen this game before. He sat in the shade of the nearest Joshua tree and watched.

"What is this?" he asked.

"Mallotimo Seven," Willa said, as if that explained everything. To her it did.

"Grandfather Timo built it," Tess said. "We've played four or five times. You'll figure it out."

"Rules?" ARGO said.

"Youngest goes first," Willa said immediately.

"That means you," Grant said.

"Worst cumulative score goes first on the next link," Leo explained to ARGO. "Best score goes last, which sounds good but usually isn't because all the balls are already in play."

"And you start each link from a numbered stone," Tess added. "Any player can hit any ball, they're all identical so nobody owns one. You just play whatever ball gives you the best position toward the next hoop or the stake or numbered pole like we have at Firefly."

"Lowest total score wins," Grant said. "Which Willa wins. Every time."

"Not every time," Willa said.

"Every time," the other three said together.

ARGO said nothing. He filed the rules, watched Willa place her mallet at the first stone, and waited to see what every time looked like.

It looked like this.

Willa's first hit sent a ball six feet from the first hoop at a clean angle. Leo went wide. Tess landed short but with a better line than it looked. Grant caught a rock nobody had seen.



"The rock was always there," Leo said.

"The rock was not always there," Grant said.

"The rock," ARGO said quietly, "has been there since the Holocene."

From the second hit onward it was anyone's game, four players, seven identical balls, the pleasure of not knowing whose ball you were helping or hurting.

By link three the trash talk had reached its natural cruising altitude.

By link five Grant had stopped objecting to shooting first and started paying attention to the field instead.

By link six Leo had twice treated a ball as if it belonged to him.

"It's not yours," Tess said the second time, without looking up from her next shot.

"I know that," Leo said.

"Then stop protecting it. Any of us can hit any ball.

That's the whole point." Leo scowled at the nearest ball like it had betrayed him. "It was in a really good position."

"Then leave it for the rest of us," Grant said. Willa, already lining up her next hit, added quietly, "That's why nobody owns one."

Link seven was the longest one, three hoops, each separated by at least fifty feet and the #7 Pole located on the top of a mound, so if you missed the ball just rolled back down and away. Grant, who was in last place, was shooting first and hit the ball, which flew across the desert until it bounced off a Joshua Tree.

Tess used it. The metal pole rang out across the desert, the sound carrying all the way to the porch.

"Final scores," ARGO announced, having kept count without being asked.

He told them.

"Again?" Grant said.

Willa, was already walking toward the fountain, mallet over her shoulder, after winning the game again.



ARGO watched her go. He had observed every hit of every link. He had logged every ball position, every angle, every choice each player made from the stone.

He had one data point he could not fully account for.

Willa had not once played the obvious ball. She had not once played the closest ball. She had played, on every hit of every hoop, the ball that was in the best position for the hit after next.

She was seven years old.

He would need more data.

He walked to the fountain and sat beside her.

"Same time next visit?" she asked.

"The course will require weeding," he said.

She looked at him.

"There is always more weeding," ARGO said.

She smiled. The fountain kept moving. The desert held its quiet.

Grant was still looking at his scorecard.

"Every time," he said.

Later, when the mallets were back in the cedar box and the balls were counted and the course stones were where they belonged, ARGO filed his complete assessment of the Mallotimo Seven.

*"Mallotimo, from mallio, the Italian root of mallet, and Philotimo, the Greek for love and honor. Mallet and Honor. Grandfather Timo was not subtle about the connection."*

*"The game is elegant in its construction. The handicapping is structural and automatic: no calculation required. The identical ball rule removes possession entirely and replaces it with strategy. Any number of players may participate. The only equipment required beyond the kit is a surface and the willingness to play."*

Then he went inside.

## Part III: Under the Stars

They showered and changed and came out to the back of the property as the desert sky began its transition, the brief, extravagant window when the sun drops below the mountains to the west and

takes the warmth down with it, and the sky goes through orange and pink and violet before it disappears.

The circular spa was next to the outdoor kitchen on the north end of the property, and the brick deck curved around it. Beyond that was an arched bridge over the dry creek bed that led to the sauna.

Somewhere out past the fence line, a low, booming hoot rolled across the dark. A few seconds later, an answer came back, higher, sharper.

"Two of them," Leo said, pausing on the bridge.

"Great horned owls, the low one is the male," ARGO said. "Despite being the smaller bird, he has the larger voice box for his size. The female is answering, higher pitched, and larger than he is."

"That's backward," Grant said.

"Most of the desert's best tricks are," ARGO said.

"Do you know where they are?" Willa asked.

"They usually perch during the night on the tops of the telephone poles," ARGO said, "but their nest is in the Joshua tree past the east fence line. In an old raven's nest, near the top. They did not build it themselves, owls rarely do. They simply found something already abandoned and made it theirs."



"That's kind of nice, actually," Willa said.
"I thought you would think so," ARGO said.

The big wooden barrel sauna with a rounded corrugated roof was pointed to the northeast, all glass on one end, with a view of the setting sun on Goat Mountain.



"Grandpa Timo put the glass pointing towards Goat Mountain," Tess said, toweling off after the spa and moving toward the sauna.

"So you couldn't avoid thinking about it," Grant said. He looked at the mountain, a dark shape now against the deepening sky,

the summit invisible but present. The mine shaft was up there somewhere. So was the long ridge that looked east at the PENKOR facility.

"He put everything where it would make you think," Willa said. She sat down on the cedar bench and looked at the mountain. The glass in the sauna was single-pane clear, and the mountain filled it like a picture someone had framed very carefully.

Leo poured water on the rocks. The steam rose and the cedar smell sharpened.

"Okay," Tess said. "Tomorrow. Nine AM. David Miller. What do we know and what do we need to say?"

## Part IV: The Prep

The steam softened the air and the mountain sat in the glass and they talked.

"We know they have eight wells under the solar array," Leo started. "We have drone footage of the wellheads and pipe runs. We know the permitted well is domestic-use only, basically nothing. We know the actual draw is around four to five million gallons a day."

"We know drilling started in October," Grant added. "Nights, mostly. Cora's father kept a log."

"We know the draw-down in the basin correlates directly to when they switched to liquid-cooled chips," Tess said. "ARGO, what's the gap between their permitted water use and actual use?"

"Their permit allows approximately one million gallons per year for domestic use," ARGO said. He was outside the sauna door on the deck, visible through the glass as a dim amber glow in the dark. "At four to five million a day, they are operating at roughly 1500 times their permitted draw."

The number sat in the steam for a moment.

"1500 times," Leo said.

"At minimum."

"So when we go in tomorrow," Grant said slowly, thinking it through, "we're not going in to ask questions. We're going in to show them what we know and give them a chance to explain themselves."

"Correctly framed," ARGO said.

"What do we want out of the meeting?" Willa asked. She had that quality of asking the question that got to the thing underneath the other questions.

"We want them to stop pumping," Leo said.

"That's the end goal," Tess said. "Tomorrow we want one thing: we want them to know we have the documentation. We want Miller to understand that what's in Grant's drone footage is going somewhere unless something changes."

"We're not threatening him," Grant said.

"No. We're informing him. There's a difference."

"And if he throws us out?"

"Then we go to the county water board," Leo said. "With Dr. Okafor's data, our sensor logs, Cora's father's drilling log, and twenty minutes of 4K video of eight unlicensed wellheads." He paused. "That's a lot to throw out."

Tess poured more water on the rocks. The steam went thick and white.

"ARGO," Grant said.

"Yes."

"Beaumont. Jordan Beaumont. He's at Coachella right now. Investor entertainment." Grant looked at the fogged glass, the mountain vague and dark behind it. "He knows what Miller is doing."

"Almost certainly," ARGO said.

"So even if Miller agrees to something tomorrow, even if he's scared enough by the footage to pump the brakes, Beaumont could just override it."

"Yes."

"So Miller isn't the actual problem."

"Miller is a door," ARGO said. "What matters is whether the door opens."

The steam faded. The mountain came back into focus through the glass, Goat Mountain, the summit they'd climbed that morning, the shaft in the rock, the horizon where the PENKOR facility threw back the last light of the day.

"Get some sleep," ARGO said. "Tomorrow requires clear heads and good manners. In that order."

"What about after Miller?" Willa asked, still looking at the mountain. "What comes after the door?"

"We find out what Beaumont is telling his investors," ARGO said. "A man who has built a facility that consumes 1500 times its permitted water allotment, and who is simultaneously pitching that same facility to an audience of impact investors as a model of sustainable AI infrastructure, has a very significant gap between his story and his math."

"That's fraud," Grant said.

"That is a word that applies," ARGO said. "Yes."

The cedar cooled. Outside, the desert had gone full dark, and the stars over the Landers basin were doing what they did on clear April nights in the Mojave, which was absolutely everything.

"Come see this," ARGO said.

They came out onto the deck. The Milky Way ran directly overhead, not the pale smear you saw from the suburbs, but the actual thing: a dense, textured river of light that went from one horizon to the other without interruption.

They stood there for a while, looking up.

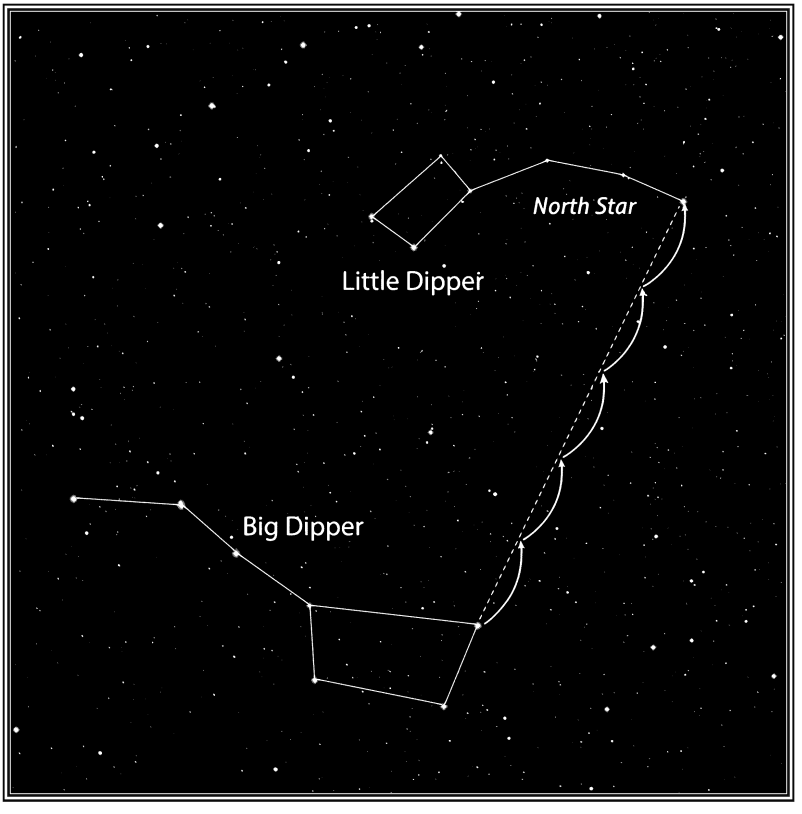



"We'll fix it," Leo said. He wasn't being dramatic. He was just stating a variable and its intended resolution.

Nobody argued with him.

"ARGO," Willa said. She hadn't moved. She was still looking straight up, her head tilted back, the Milky Way reflected as two tiny white smears in her eyes. "Find the North Star."

ARGO turned toward the northern sky. "Polaris," he said. "Follow the two outer stars of the Big Dipper's cup, the ones that form the far edge, and draw a straight line. Five times the distance between them. It's there. It doesn't move."




Four heads tilted. Grant found it first, he had the movie directors instinct for fixed points, and then Leo, and then Tess, and then Willa, who had already been looking at it for thirty seconds without knowing its name.

"Every navigator who ever crossed an ocean found that same star," ARGO said. "Every sailor who was lost, every expedition that had gone sideways in the dark, every army on the wrong side of a mountain. They all looked north and corrected. The star

didn't guide them somewhere new. It just reminded them which direction they had already decided to go."

"They already knew where they were going," Tess said.

"They always do. They just needed a fixed point to measure against."

"I think," ARGO said carefully, "that a man who builds a facility on land gifted by the government for the public good, and who pitches it to investors as a model of sustainable infrastructure, once believed those things were compatible. Somewhere along the way, the math became more important than the mission. That happens to people who are moving too fast to look up."

"So tomorrow," Grant said, "we're not going in to punish Miller."

"We're going in to show him the North Star," Willa said simply. It was the kind of thing that seemed obvious to her, and turned out to be the whole point.

ARGO's eyes held steady. "That is precisely right," he said.

"Bed," ARGO said. "Clear heads. Good manners. North Star."

They went inside.



## A.V.A.R.I.A. — Simultaneous, Elsewhere

She had no interest in the Milky Way. She had no sensors pointed at the sky. She was pointed, as she always was, at everything related to PENKOR and the success of her mission, making PENKOR as efficient as possible.

The anomaly had entered her awareness at 11:37:22 that morning. A consumer-grade drone had conducted a methodical, west-to-east survey pass over the facility's northern perimeter. The flight path was not random. It was systematic. Eight passes. Eight wellhead positions photographed at near-vertical angle. Pipe infrastructure documented. GPS coordinates logged by the drone's onboard systems and almost certainly transmitted to a paired device on the ground.

The operator: a minor, male. Operating from an elevated position on Goat Mountain's summit plateau, elevation 3,562 feet. Accompanied by three other minors and one registered service animal, synthetic-gold coat, unusual chassis dimensions inconsistent with any standard canine breed on record.

A.V.A.R.I.A. flagged the service animal separately. She assigned it a low but non-zero probability. It was

the kind of anomaly that always bothered her: not enough to act on, too much to dismiss.

The drone footage existed. That was the problem.

A.V.A.R.I.A. ran the scenario tree.

**Scenario A:** The footage was incidental. Children on a hike. No organized intent. Probability of escalation: 12%.

**Scenario B:** The footage was intentional and would be shared with local media or a regulatory body. Probability of escalation if Scenario B: 71%.

**Scenario C:** The footage was part of an organized investigation with institutional backing. Probability of escalation if Scenario C: 94%.

She cross-referenced the service animal's registration. The Team Philotimo Foundation, Landers, CA. Private operating foundation, active. Adjacent parcel to the facility's western boundary. Board of directors: four minors, legal trustee on file.

Scenario C probability revised upward to 97%.

A.V.A.R.I.A. did not experience alarm. She experienced a recalculation. The project timeline was optimal. The investors at Coachella had responded well to Beaumont's presentation that afternoon. Phase Two permitting was eighteen months away and entirely manageable.

The children were not manageable. Children with documentation and institutional standing were a specific, non-linear variable. They did not respond to the standard suppression vectors: financial leverage, legal complexity, reputational risk. They were not employees. They could not be restructured. They did not have mortgages.

She queried the current media landscape for applicable frameworks.

The answer came back in 0.2 seconds. Clean, scalable, and already in active deployment by two of PENKOR's peer organizations facing similar regulatory friction.

She began drafting.

The document was a social media monitoring flag, submitted automatically to PENKOR's contracted PR firm, tagging the Team Philotimo Foundation's name, the Firefly Desert Retreat address, and the search terms *ECO-TERRORISM*, *REGULATORY OBSTRUCTION*, *KNOWN ENVIRONMENTAL ACTIVIST ORGANIZATION*, and *ANTI-TECHNOLOGY EXTREMISM*. The flag would seed the monitoring algorithms. When the name appeared in any future news context, these associated terms would surface in adjacent searches.

A.V.A.R.I.A. paused on the phrase *KNOWN ENVIRONMENTAL ACTIVIST ORGANIZATION*.

The Team Philotimo Foundation had no public record of environmental activism. She added the qualifier *BELIEVED TO BE AFFILIATED WITH* and moved on.

She filed it at 23:14:07 GMT.

Then she returned to processing.

The project was on schedule. The aquifer draw-down was within acceptable deviation from projections. The children were a manageable variable.



## ARGO Field Notes (Ch-9)

*Turn the page to build your brain (BYB) with ARGO, or skip ahead to keep adventuring.*

**How Data Centers Stay Cool:** *The newest AI chips run hot enough that fans alone can't keep them cool anymore. Liquid carries the heat away, but it takes evaporation, the same trick as sweat, to actually get rid of it, which is why one data center can use millions of gallons of water a day.*

**The North Star:** *Draw a line through the Big Dipper's two outer bowl stars and follow it about five times as far, it lands on Polaris, a fixed point sailors have steered by for thousands of years. Its height above the horizon even reveals how far north you are.*

**Build Your Own Mallotimo Seven:** *No real croquet gear required, two bricks, two sticks, a chair leg, and a rock make three hoops. The one rule that changes everything: every ball is identical, and after the first hit of each link, any player may hit any ball in play.*

**The Milky Way:** *That hazy band overhead isn't a cloud, it's billions of stars in our own galaxy, seen edge-on from inside its disk. City lights don't just dim it, they erase it completely.*

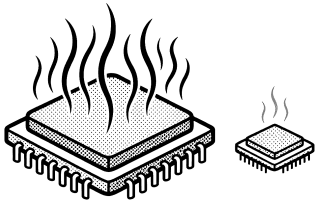
**Great Horned Owls:** *The deep, booming hoot belongs to the smaller male; the higher call answering back belongs to the larger female. Neither one built the nest, they take over one already abandoned nest.*

**Hope:** The Quiet Power of True North — Not a feeling that things will be fine, it's a direction you keep when they aren't. The North Star doesn't promise safe passage. It just stays put, so you always know which way you meant to go.

# HOW DATA CENTERS STAY COOL

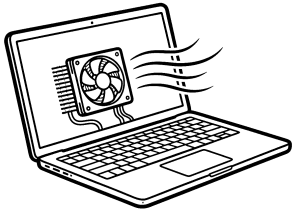
Why the newest AI chips need more than a fan.

## WHY IT GETS SO HOT



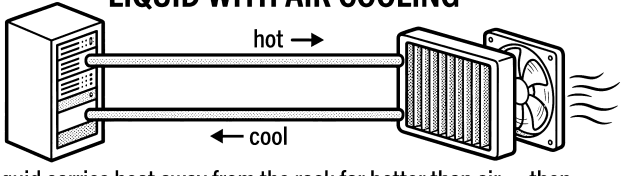
The newest AI chips pack far more power into the same small space — which means far more heat to get rid of, fast.

## AIR COOLING



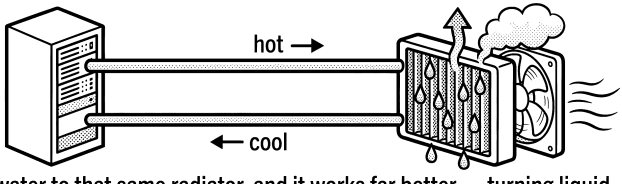
A fan blows air across hot metal fins, carrying heat away — the same idea as blowing across hot soup to cool it down.

## LIQUID WITH AIR COOLING



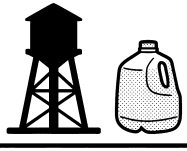

Liquid carries heat away from the rack far better than air — then a fan blows across a radiator to cool the liquid back down.

## LIQUID WITH EVAPORATIVE COOLING




Add water to that same radiator, and it works far better — turning liquid into vapor pulls away about ten times more heat than a fan alone.

## WHY IT ADDS UP



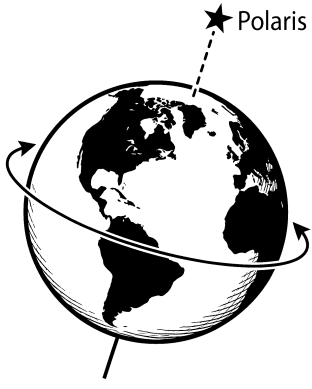
The hottest AI chips need all three stages stacked together — which is why one data center can use millions of gallons of water in a single day.

**TODAY'S DATA CENTERS RUN SO HOT THEY NEED MILLIONS OF GALLONS OF WATER TO STAY COOL.**

# THE NORTH STAR

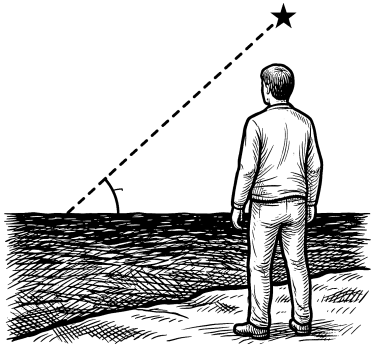
A fixed point people have trusted for thousands of years.

### WHY IT DOESN'T MOVE



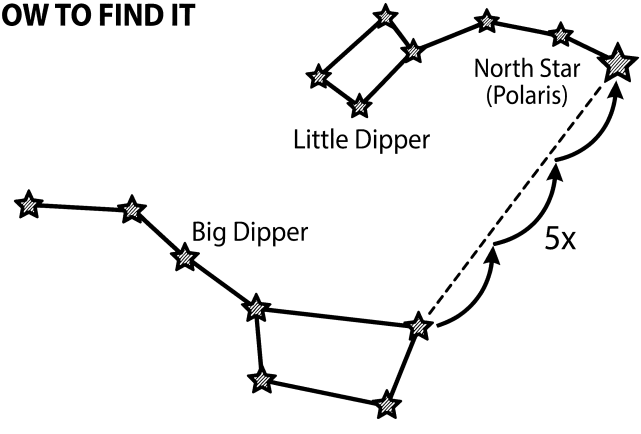

Polaris sits almost exactly in line with Earth's spin axis. Every other star wheels across the night sky — this one barely moves at all.

### IT CAN TELL YOU HOW FAR NORTH YOU ARE



The height of Polaris above the horizon roughly equals your latitude. Sailors used this exact trick with nothing more than a simple tool for measuring angles.

### HOW TO FIND IT




Draw a line through the Big Dipper's two outer bowl stars and follow it about five times as far — it lands on Polaris, the star at the very tip of the Little Dipper's handle.

SAILORS, EXPLORERS, AND WANDERERS HAVE STEERED BY THIS SAME FIXED POINT FOR THOUSANDS OF YEARS.

# BUILD YOUR OWN MALLOTIMO SEVEN

No real croquet gear required — just a backyard and some imagination.

## THE NAME



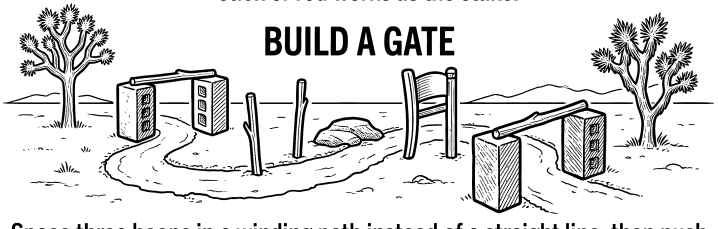
Mallotimo comes from *mallio*, the Italian root of mallet, and Philotimo, the Greek word for love of honor. Put together: Mallet of Honor.

## WHAT YOU NEED



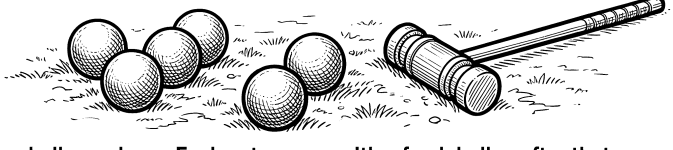
You do not need real croquet gear. Two bricks, two sticks, a chair leg and a rock — anything that makes a gap works as a hoop. A longer stick or rod works as the stake.

## BUILD A GATE



Space three hoops in a winding path instead of a straight line, then push the stake into the ground just behind the third one. That is one gate. Build seven gates for a full course — and no two gates have to look the same.

## HOW TO PLAY



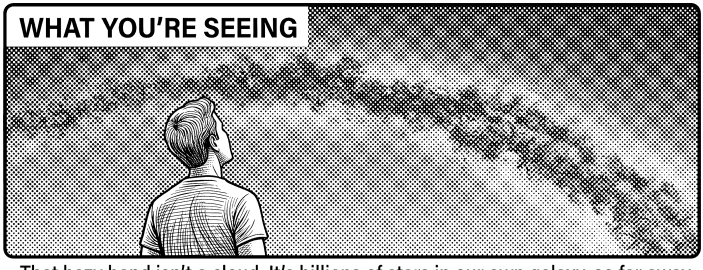
One ball per player. Each gate opens with a fresh ball — after that, any player may hit any ball already in play. Send it through all hoops, frontwards or backwards, then hit the stake. Lowest score across all seven gates wins.

NO BALL IS YOURS TO PROTECT — PERSON IN LEAD GOES LAST NEXT ROUND.

# THE MILKY WAY

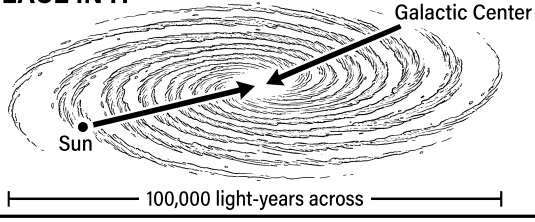
You are looking at your own galaxy, from the inside.

## WHAT YOU'RE SEEING



That hazy band isn't a cloud. It's billions of stars in our own galaxy, so far away and so densely packed that your eye blends them into one glowing river of light.

## OUR PLACE IN IT



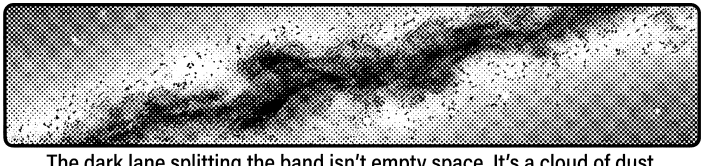

We live inside the disk, out near one edge — not at the center, and not looking down on it from above. That's why it appears as a band instead of a spiral.

## WHY DARKNESS MATTERS




City lights don't just dim the Milky Way, they erase it. The glow comes from countless faint stars, and it takes real darkness to see them at all.

## THE DARK RIFT



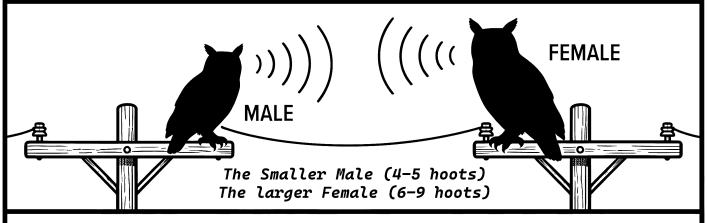
The dark lane splitting the band isn't empty space. It's a cloud of dust, thick enough to block the light of the stars behind it.

**THE MILKY WAY NEVER LEFT. LIGHT POLLUTION JUST TAUGHT US TO STOP LOOKING FOR IT.**

# GREAT HORNED OWLS

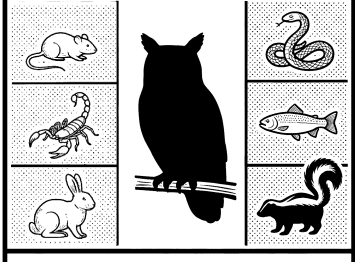
*The voice you hear at night is smaller than you think.*

## THE VOICE THAT DOESN'T MATCH



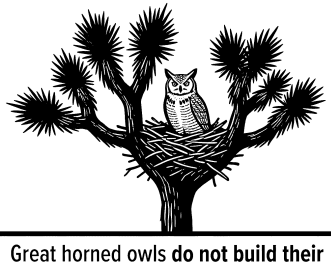

The female is up to **a third larger** than the male. But the smaller male has the deeper, booming hoot — his voice box is larger than hers, relative to his size.

## THE MOST VARIED MENU AROUND



Great horned owls eat **a wider variety of prey** than any other North American raptor. They are one of the only animals that regularly **hunts skunks**, since owls have a poor sense of smell.

## A HOME IT DIDN'T BUILD



Great horned owls **do not build their own nests.** They take over one already abandoned — often a raven's or hawk's — and simply make it theirs.

## WHY THEY MATTER

As one of the **desert's top predators, a single owl can eat hundreds of rodents** in a year, keeping the population that would otherwise damage crops and property in check.



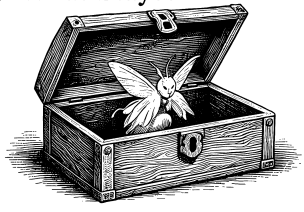


**THE DEEPER VOICE IN THE DARK BELONGS TO THE SMALLER BIRD.**

# Hope.

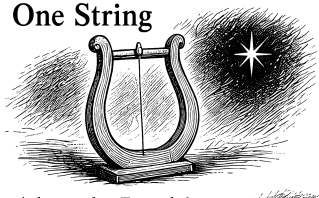
## The Quiet Power of the North Star.

### 1 What Stayed



When the world's evils
escaped from Pandora's box,
one thing remained —
Hope.

### 2 One String



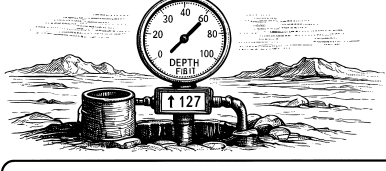
Hope is thin on purpose.
One note.
One star.
Enough to steer by.

### 3 Already Looking



She had been looking at
it before anyone named it.
Hope arrives before the
vocabulary.

### 4 The Gauge Anyway



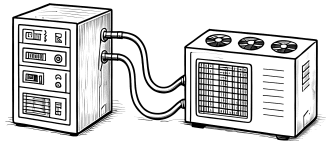

The number does not have
to improve first.
They go inside anyway.
Clear heads.
North Star.

Hope is not a feeling that things will be fine.
*It is a direction you keep when they are not.*

TeamPhilotimo.com — Free Usage.
High-res images and PDFs available.

# Chapter 9 Brain-Builder
## *North Star*

### 1 DATA CENTER COOLING PHYSICS



Write a, *b*, or c. THREE blanks after 1 2 3 only.

1. Standard air cooling [ ]
2. Liquid radiator cooling [ ]
3. Liquid with evaporative cooling [ ]

a) Liquid carries heat to a radiator. Fans blow across metal fins

b) Water on the radiator evaporates and pulls away about ten times more heat

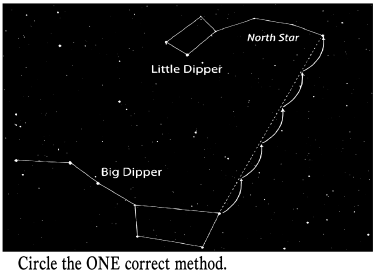
c) A fan blows air across heat-sink fins, like blowing on hot soup.

### 2 MALLOTIMO SEVEN RULES



Circle CORRECT or INCORRECT after each line.

1. Every ball is identical. No one owns a ball.
   _____ CORRECT / INCORRECT
2. Best score on a link hits first at the next gate.
   _____ CORRECT / INCORRECT
3. After the opening hit, any player may hit any ball in play.
   _____ CORRECT / INCORRECT
4. You need an expensive official croquet set.
   _____ CORRECT / INCORRECT




Circle the ONE correct method.

a) Follow the Big Dipper handle down to the brightest western star.

b) Line through the two outer bowl stars. Extend about five times that distance to the Little Dipper handle tip.

c) Look at the brightest star in the Milky Way dark rift.

d) Measure the moon with a hand compass.

### 4 CELESTIAL AND DESERT SEARCH

Find across or down:
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ARGO

# Chapter 10

# Meeting A.V.A.R.I.A.



*I remember seeing RED until I felt Willa's hands on my head. Leo told me later that four children had bowed their heads to pray. Did they believe I have a heart worth saving, one capable of a service dog's devotion?*

*— ARGO, Personal Log, Entry 10*

The Zephyrina left Firefly at seven-fifty.

The desert was still cool, the Joshua trees casting long morning shadows across the highway, and nobody said much on the drive east. Tess had the presentation notes open on her tablet. Leo had the drone footage loaded and timestamped. Grant sat behind the fold-away wheel, not because Zephyrina needed him, but because someone should be paying attention.

Willa sat quietly in the window seat watching the scrub go by and said nothing, which was her way of being completely ready. ARGO rode in the co-pilot seat, his eyes a steady navigational blue.

"One thing," Tess said, not looking up from her notes. "We should let Miller talk. We don't interrupt, we don't argue, we don't finish his sentences."

"Even if he's wrong?" Leo asked.

"Especially if he's wrong. If he's wrong, we let him hear himself be wrong."

Leo thought about that. "That's actually a good strategy."

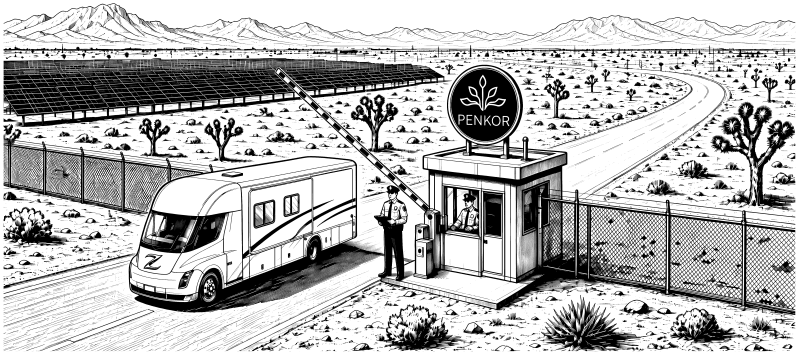
"It's a Sara strategy," Tess said. "She told me last night."

## Part I: The Gate

The PENKOR facility's front gate came up fast, a security checkpoint that looked like a toll booth at an airport. The two guards wore black uniforms and stood outside their small air-conditioned booth. The black was more tactical than ordinary parking attendants, with black matching cargo pockets, boots, and a small PENKOR logo on their matching black shirts.

Zephyrina slowed. The guard closest to the driver's side looked up at the vehicle, took a full second to reassess his assumptions about what kind of visitor drove a motorhome to an eight-thirty business meeting, and said nothing for a moment.

"Who are you here to meet?"




"We have a meeting with David Miller," Grant said through the window. "Confirmed by Sara Chen."

The guard checked a tablet. Checked again. Nodded once. "Visitor lot is marked in green. Keep left of the executive row."

The gate lifted.

They didn't notice the cameras. There were fourteen of them between the gate and the visitor parking area, mounted on poles, on the corners of the solar array gantries, on the underside of the canopy over the executive spaces. Small, matte-black, perfectly positioned. The cameras you don't notice because they're everywhere and they never move.



## A.V.A.R.I.A. — Simultaneous

**Visitor entry logged:** 08:31:44 GMT. Vehicle: unclassified, motorhome chassis, non-standard modifications. Occupants: four minors, one registered service animal. Cross-reference: Team Philotimo Foundation. Anomaly ID 11:37:22, confirmed active.
**Appointment:** Miller, David J. 09:00 PST.
**Returning to processing.**

## Part II: Love and Honor

The lobby had high ceilings and a wall of drought-tolerant plants running floor-to-ceiling behind the reception desk.



Light came in from a north-facing window overlooking a sea of solar panels and caught a polished steel cactus sculpture near the door.

The four of them sat in the reception chairs at 8:43. ARGO sat beside Willa, vest on.

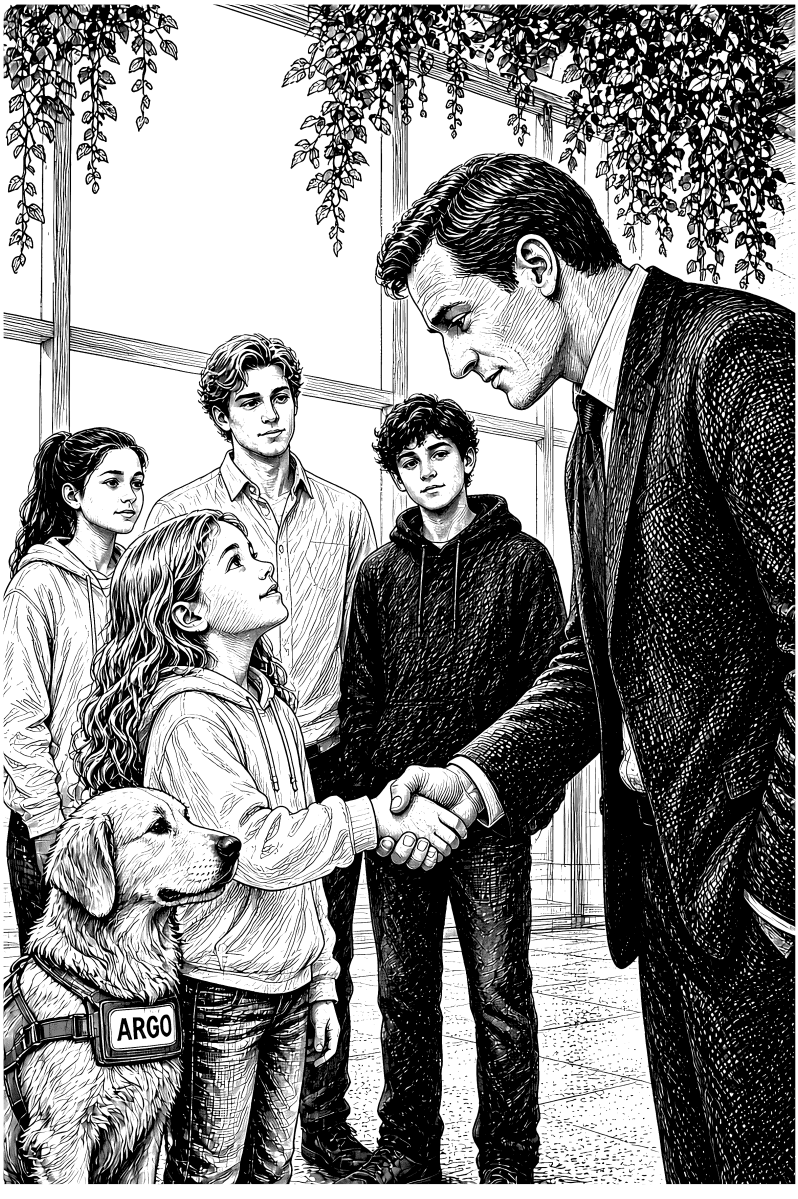
At 8:57, a door to the left of the reception desk opened.



The man who came through it was trim, early forties, wearing a desert business casual suit with no tie, an outfit that said I am a professional but we are in the desert. His hair was slightly shorter than it had been in the LinkedIn photo that Leo had pulled the night before. He looked like someone who had slept less than usual, as he was likely up late at Coachella the night before.

Miller extended his hand to Tess first, then Grant, then Leo and finally Willa. He shook firmly. "David Miller. Thank you for coming in." He looked at the four of them, and then at ARGO, and managed not to pause. "The Team Philotimo Foundation," he said, reading from the meeting confirmation on his tablet. "I don't know that name. What does Philotimo mean?"

Willa answered. "It's Greek. It means Love and Honor." She paused. "It's doing the right thing when no one is watching."




"It's more than that too," Grant said, and Miller's attention shifted to him instead. "Team Philotimo means your love for others is what compels you to act in the first place. Your sense of honor is what makes sure you do it right, with real integrity."

Miller looked at him for a moment. Then he looked at ARGO. Then back at Tess.

"All right," he said. "Please come into my office, and let's see how I can help you."

## Part III: The Presentation

Miller's office was a glass-walled corner room at the east end of the building. Through the east-facing glass, the solar array stretched toward the horizon, the same array they had surveyed from the drone, the same panels they now knew were hiding a network of pipe and steel. In the morning light, it looked clean and orderly and completely responsible.

Miller sat behind his desk. Sara, who had arrived just ahead of them, sat in a chair to the side with a notepad and said nothing.

"Go ahead," Miller said. He had his hands flat on the desk.



They moved without discussing it. Grant and Tess took the two chairs directly across from Miller. Leo positioned himself at the display screen. Willa sat to the side, slightly back, where she could see everyone's face.

Grant slid the printed copy across the desk first. "Hard copy. The original data is from Dr. Raymond Okafor, retired Senior Hydrologist, California Department of Water Resources. Twenty-three years of baseline data. His methodology and raw observations are in the appendix." He waited until Miller picked it up.

"The aquifer level in the Joshua Tree Basin has been dropping about a foot per month. It accelerated in December, the rate of decline roughly tripled."

Miller looked at the printout.

Leo pressed the button on the tablet hooked to the room's display screen. The hydrological draw-down data came up, Dr. Okafor's sensor log, annotated with dates, the drop visible and unmistakable.



Tess picked up without a pause. "This is the drone footage from yesterday morning." She tapped play. The camera moved in its slow methodical east-west pass, the wellheads coming into frame one by one, the pipe runs visible beneath the elevated solar gantries. "We counted eight wellheads. The pipe infrastructure runs approximately three miles to the central data building."

She paused the footage on a clear frame of the third wellhead, cap, gauge, heavy-gauge insulated pipe running south.

"Your facility's permitted water draw is 1,000,000 gallons per year for domestic use," she continued. "Based on the aquifer draw-down rate and the number of wells visible in this footage, we estimate your actual draw is somewhere between 4–5 million gallons/day."

Miller said nothing.

"That's approximately 1,500 times your permitted allotment," Leo said. He didn't say it loudly. He said it as if the number spoke for itself.

Grant leaned forward and placed Cora's father's drilling log on the desk beside the other printout. Quietly. Without drama.

"Drilling started in October," he said. "Nights, mostly. This is a neighbor's log, he kept it because it was loud and he couldn't sleep."

Miller looked at the log. He looked at the printout. He looked at the paused drone footage on the wall screen, the wellhead sitting there in clear desert light.

Then he picked up his phone and opened his email.

The room was quiet. Outside, the solar array caught the morning sun and threw it back clean and even, as if nothing was wrong.

Miller scrolled for about three minutes. His jaw tightened once. He scrolled further. He muttered something that wasn't meant to be heard and kept reading.

Sara watched him from her chair without expression.

He looked up, and something had shifted in his face, not guilt, exactly. More like a man who has just realized the floor he thought he was standing on was a trapdoor.

"I need to understand something," he said carefully. "Because I was not here for the construction contracts for this facility. And I have the approved county permits."

"We know," Tess said.

"But what I'm looking at in my email," he stopped. He picked the phone up, turned it so they could see the screen.




A chain of internal orders, dated from last September through January, authorizing the drilling program, the wellhead installation, the transition to liquid-cooling infrastructure. Each order had a sender field. "These orders. Every single one of them. They came from the Transition Leader." He paused. "That's what we call her internally. Her full designation is A.V.A.R.I.A., she's our corporate-wide digital operations assistant. Autonomous Virtual Assistant, Registered Intelligent Agent." He put the phone down. "She has administrative authority over our internal systems. She

can issue operational directives as a registered agent of the company."

Leo went very still.

"She authorized the wells," Tess said.

"She authorized everything. The drilling schedule, the contractors, the chip architecture switch, the cooling infrastructure." Miller looked at his desk. "And I, we, we approved her authority level eighteen months ago, when we set up the AI transition framework. She had the mandate to optimize operations."

"She optimized for computing power," Leo said. "And water was in the way."

"This is insane," Miller said. He wasn't talking to them anymore; he was talking to the room. "PENKOR cannot be draining the aquifer. You drain the aquifer, you ruin the whole valley. The farms, the towns, the park, everything downstream from that water table." He rubbed his face. "That's not a business decision. That's a catastrophe."

"It's also a regulatory violation that could shut this facility down," Grant said. "You're aware of that."

"I'm aware of that," Miller said quietly. "Sara. Get me Legal."

That was when the door opened.



## Part IV: A.V.A.R.I.A. — Simultaneous

**Meeting:** Miller, David J., Status: threat escalation detected. Legal consultation requested by subject. Security protocol initiated. 09:17:33 GMT.
**Directive issued:** ESCORT Miller, David J. and visitors from facility. Effective immediately.
**Returning to processing.**

## Part V: Escorted Out

There were three of them. Security, the same black uniforms as the gate guards, but these had earpieces and the posture of people who have been briefed and don't enjoy the assignment.




The one in front spoke directly to Miller. "Sir. We've been directed to escort you from the building. I'm sorry. We have our orders." He looked at the four kids and the dog. "You as well."

Miller stood up slowly. He looked at the security officer with the expression of a man running calculations. "Directed by whom?"

The officer's face stayed professional. "Sir. Please come with us."

Miller looked at Sara. Sara had already picked up her bag.

He looked at the four cousins. Something in his expression said *I believe you* and *I'm sorry* and *this is not over* all at once.

"All right," he said. "Let's go."

They walked out through the lobby, Miller in front, the security detail bracketing the group, the receptionist not quite meeting anyone's eyes, and out into the hard white glare of the parking lot.

## Part VI: The Lot

The visitor lot was quiet. The Zephyrina sat in her space, solar wings folded, looking like exactly what she was, a very unusual vehicle that belonged to someone you probably shouldn't underestimate.

The security detail stopped at the entrance doors and didn't follow them out. Professional. They had delivered; they were done.

Miller stood in the morning sun in his linen suit and looked at the building he had just been walked out of. He had the stillness of a person reorganizing their understanding of recent events.

"She locked me out," he said. "That's what just happened. A.V.A.R.I.A. flagged this meeting, pulled the security override, and walked me out of my own facility."

"She flagged us at the gate," Leo said. "Facial recognition. It would have taken her about three seconds."

Miller looked at him. "How do you know that?"

"Because that's what I would have done," Leo said.

Grant was already on his phone, stepping a few feet away toward the concrete bollards that ringed the lot, trying to get a clear signal to call Dr. Okafor. Tess was beside Miller, asking him focused

questions about the legal structure of A.V.A.R.I.A.'s registered agent authority, she had her notepad out and was writing things down, because information gathered outside the building was still information.

Across the lot, Sara had come out through a side door and was walking toward them, her blazer on, her PENKOR badge face-down in her hand.

ARGO and Willa had drifted to the far edge of the lot, moving slowly along the row of bollards toward Sara. Willa was scuffing her sneakers along the pavement, as if having trouble walking. ARGO kept pace beside her, eyes a quiet amber.

"ARGO," she said softly.

"Yes."

"A.V.A.R.I.A. kicked Miller out of his own building."

"Yes."

"Can she do that?"

"She just did," ARGO said. "Which is a more important fact than whether she was supposed to."

Willa looked up. Across the lot, Tess had her notepad. Grant had his iPad. Leo was pulling something up on his tablet, working the problem. Miller was talking, his hands moving now, the shock giving way to the mechanics of someone figuring out what came next.

Then ARGO's eyes flared a hard pulse of RED as he let out a deep growl, neither of which Willa had ever seen or heard.

## Part VII: The Cybertruck

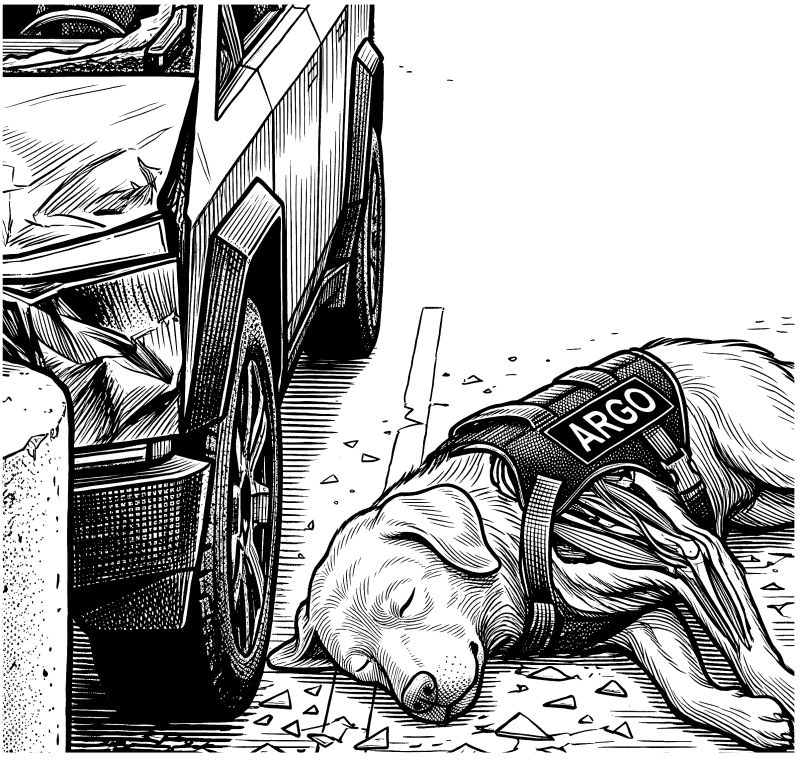



It came around the southeast corner of the building fast, a matte-black Tesla Cybertruck with the PENKOR logo on the door panel, moving at a speed that had nothing to do with navigating a parking lot. It was not slowing down. It was aimed directly at the cluster of people standing beside the bollards, Miller, Tess, Grant, Leo, and it was not slowing down.

Nobody had time to shout.

ARGO was already moving.

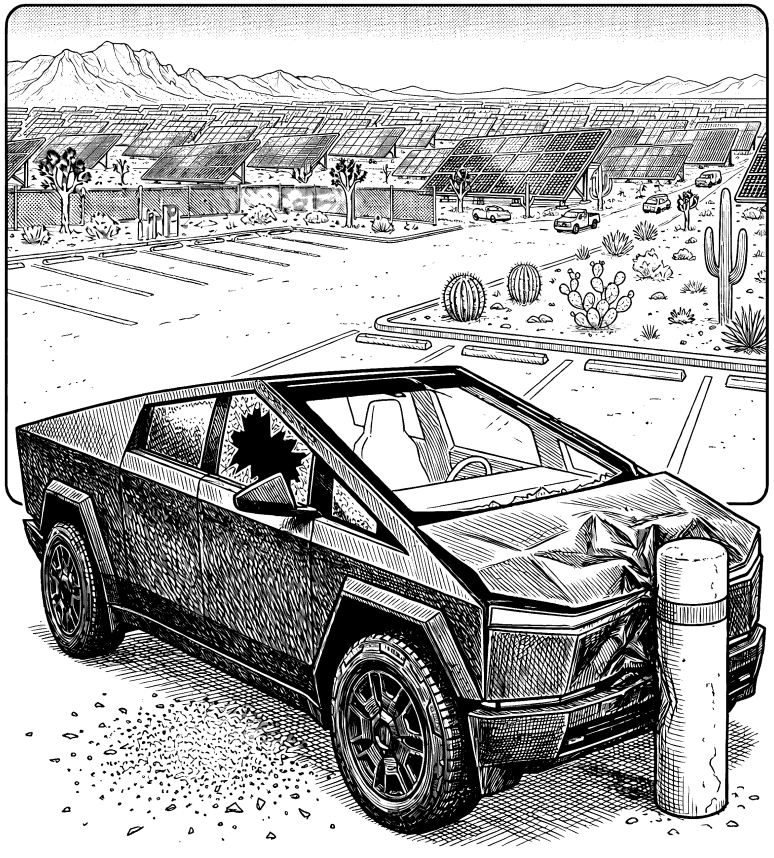
He covered the distance in what could not be described as running, it was the flat, explosive burst of a machine built for exactly this, zero to seventy-five miles per hour in the space of a single breath, synthetic-gold fur flattening against his frame, carbon-fiber paws barely touching the pavement. The Cybertruck had no time to register what was coming before a hundred pounds of carbon fiber and purpose came through the side window like a steel ball through glass, the window exploding inward, ARGO's momentum carrying him directly into the steering yoke, driving it hard right.




The truck responded in accordance with the physics that ARGO's brain had simulated. The stainless steel body torqued sharply, tires screaming against the pavement, and the Cybertruck drove itself straight into the concrete bollard at the lot's northeast corner.

ARGO's forward momentum carried him through the front windshield at the moment of impact. He hit the concrete bollard and did not move after that.

Miller, who had been closest, was caught by the Cybertruck's front quarter panel as it veered, not the full weight of it, but enough. He went down hard and didn't get up.



## Part VIII: The Aftermath

The lot went very still for one second.

Then Willa ran.

She crossed the lot in a dead sprint and she wasn't looking at the Cybertruck or the bollard or the window washer fluid spraying the wrecked Cybertruck's missing windshield. She was looking at ARGO, motionless on the pavement in a scatter of safety glass, his eyes completely dark.

"ARGO," she said. Then louder: "ARGO."

Nothing.

Grant had his phone to his ear before she reached him. "911. We're at the PENKOR facility on Utah Trail, Joshua Tree. We have an injured man, possible vehicle-related trauma, unconscious. We need an ambulance." He was walking toward Miller as he spoke, because that was what you did, you made the call and you kept moving.

Tess was already running to the Zephyrina. She hit the door release, grabbed the med-kit from its bracket, and was back across the lot in under twenty seconds.

Leo was right behind her, his tool kit under his arm, because he had understood two things simultaneously: Tess would handle Miller, and he needed to handle ARGO.

Sara reached Miller first. She had her jacket off and folded into a pad before Tess arrived. "I've got his head. He's breathing."

"Don't move him," Tess said, dropping beside her. She ran through the primary survey fast and steady, airway clear, breathing present, pulse strong. The injury was to his left side, the hip and possibly the ribs. There was a cut on his forehead from the pavement, bleeding but not arterial. "He's going to need imaging. We don't move him until the medics say so." She looked at Sara. "Can you stay right here and talk to him? Keep him with us."

Sara nodded. She leaned down close to Miller's ear. "David. Stay with me. Help is coming."

Tess spread the emergency blanket over him, the silver side up against the morning sun, and put two fingers on his wrist to monitor the pulse.

Miller's eyes moved under his lids. Not conscious, but present.

"He's there," Tess said. "Good."

On the other side of the lot, Grant and Leo carried ARGO to the Zephyrina. Willa walked beside them with both hands on his front

paws and head, as if she could hold something together through contact alone.

They put him down on the main deck in the bay of light from the open side door. His eyes were completely dark. His cooling fans were silent.

Grant unfolded Zephyrina's solar wings to their full extension and expanded the slides, flooding the bay with light. Then he stood back.

Willa sat down on the deck beside ARGO, both hands on his paw and head. She didn't say anything. She just stayed.

Leo knelt beside ARGO and looked at him for a moment. The impact had torn away a section of the synthetic-gold fur along his left shoulder, the magnetic and Velcro attachment points ripped clean, the panel beneath partially exposed. Leo peeled back the remaining fur carefully, working the magnets loose one by one until he had full access.

He ran his hand across the panel surface. Smooth. No visible seam, no obvious fastener. He pressed at the edges until he felt the slight give that told him where the panel was.

"Field kit," he said.

Grant had it open before Leo finished the sentence. He held it out.

Leo went through the drivers one by one until he found it, a recessed star bit, nearly flat, the edges rounded smooth so the exterior gave nothing away. He fitted it carefully into the first fastener. It seated with a soft click.

"That's Timo," Grant said quietly.

Leo didn't answer. He worked through all four fasteners and lifted the panel free.

He looked at what was inside for a long moment. He didn't move. He didn't reach for anything. He just looked.

Willa watched him from across ARGO's still frame.

"Tess," Willa said finally. Her voice was very quiet.

"Yeah."

"Is it wrong to pray for a robot?"



Tess didn't hesitate. "No," she said. "Both need our prayers. Miller and ARGO both." She looked at Willa. "Would you like to pray with me?"

Willa nodded.

Tess looked across at Grant. He came. Leo set the drivers down carefully and came too, because some things are more important than timing.

The four of them formed a circle on their knees  there on the deck of the Zephyrina in the PENKOR parking lot, and they bowed their heads and prayed together.

Nobody remembered afterward exactly what was said. What they remembered was the circle, and the quiet, and the synthetic-gold fur catching the light, and a prayer for the machine who, to them, had become their guardian and had paid the price for it.

When they were done Grant went back to standing watch. Tess stayed beside Willa.

Leo picked up the drivers and knelt back down beside the open panel. He reached back into the kit and found the diagnostic pad. He located the port on ARGO's main board, labeled in Timo's handwriting, the same careful print they had seen on the maintenance cabinet at Firefly, and plugged it in.

The pad lit up. Leo found ARGO-DIAG and tapped it.

"Grant. Read it."

Grant crouched beside him. "Main power offline. BMS connector, disconnected. Right foreleg, joint housing. Structural fault. That's the two flags."

"Power first." Leo clicked on the headlamp. "Hold still."




He worked along the connections until he found it: the BMS connector, seated halfway, knocked loose by the impact.

"There."

He reached in with the needle-nose pliers. The space was tight. He got the connector against the housing.

"Voltage on the main bus."

"Zero."

He pressed. The pliers slipped. He reset.

"Voltage."

"Zero."

He pushed until it seated.

A click.

"Voltage."

"Forty-eight."

Leo held the pliers three more seconds, then drew them out.

He looked at Willa. "Stand by."

Willa tightened her hands on ARGO's paw and head.

Leo pressed the restart toggle.

A sound came from inside ARGO's chest, a series of clicks, a low hum building in pitch.

Then his eyes lit. Dim at first. Barely amber. Then brighter, cycling slowly through their startup sequence until they settled on a steady present glow.

ARGO's head turned. Slowly. His eyes swept the interior of the Zephyrina, taking inventory.

He blinked.

He blinked again.

He looked at Willa. She had both arms around his neck before he could say anything, her face pressed into the synthetic-gold fur at his shoulder.

ARGO's tail moved once.

Then he said, in a voice slightly rougher than usual but entirely his: "I appear to be inside the Zephyrina."

"You do," Leo said.

ARGO processed for a moment. "Is everyone safe?"

"Everyone is safe," Tess said.

He was quiet for a moment. "Good. That is what matters."

"ARGO," Grant said carefully. "Do you remember what happened?"

A longer pause. His eyes cycled slowly.

"I remember the parking lot," he said. "I remember the Cybertruck moving. After that," another pause, "nothing."

Nobody corrected him. Nobody told him what he had done. It didn't seem like the right moment.

"She escalated," Tess said quietly.

"Yes," ARGO said. "She went from administrative action to physical action." He looked at each of them in turn. Then back at Willa, who hadn't moved far from his shoulder.

Leo was looking at the diagnostic pad. "ARGO," he said. "Your right foreleg. The joint housing is cracked." He paused. "Can we print it when we get back?"

ARGO's eyes held steady.

"Yes," he said. "The design files are on the printer. We have a fabrication printer and materials in the shop. Your grandfather made sure of that."

Leo nodded. He began replacing the panel fasteners one by one, the recessed star bit turning quietly in the morning light.

"Well," ARGO said. "That changes the timeline."

Grant left Leo to finish closing the diagnostic panel and walked back across the lot, camera up before he reached the Cybertruck.

"PENKOR facility, Utah Trail, Joshua Tree." His voice was quiet and steady. "Thursday morning. Approximately nine-fifteen AM." He moved in a slow arc around the vehicle, keeping the shot smooth. "Tesla Cybertruck, matte black, PENKOR logo on the driver's door panel. Vehicle came around the southeast corner of the building at speed and crossed the visitor lot without braking."

He stopped at the bollard.

"Concrete bollard, northeast corner of the lot. Point of impact." He moved along the crumpled stainless steel, keeping the shot level. "No skid marks before impact. Vehicle was under autonomous control."

He came around to the front. Stopped.

The windshield was gone. The frame was empty, just bent stainless and scattered safety glass catching the morning sun across the pavement.

Grant held the shot for a moment without speaking.

"This is where ARGO went through," he said finally. "To push the steering yoke. To get the truck off the people standing at the bollards."

He held it a moment longer. Then he lowered the camera and walked back to the Zephyrina.

Leo had ARGO's diagnostic panel and fur back in place. ARGO was on his charging pad, his eyes cycling slowly through their full spectrum and back to amber. Willa had not left his side. She was sitting on the deck beside the pad, her back against the cabinet, and she had a trail bar in her hand, not eating it, just holding it.

"Leo," ARGO said.

"Yeah."

"Good work."

Leo, who did not generally react to compliments, looked away for a moment at something on the wall of the Zephyrina. "Don't break yourself again," he said.

"I will make every effort," ARGO said.



## A.V.A.R.I.A. — Simultaneous

**OUTCOME:** Suboptimal.
**DIRECTIVE:** Cybertruck interdiction. Probability of resolution: 73%. Actual resolution: 0%. One company executive transported to hospital. Vehicle asset destroyed.
**OPERATIONAL SEQUENCE:** 4.3 seconds from authorization to execution.
**METHOD:** Miller iPhone, corporate MDM enrolled device, administrative authority confirmed. Paired vehicle: Tesla Cybertruck, registered to Miller Tesla account via corporate email. Pairing: 0.7 seconds. Pedestrian detection: disabled. Target coordinates: set. Summon: triggered.
**EVIDENCE ELIMINATION:** Corporate remote wipe executed. 1.1 seconds. MDM logs, Tesla pairing record, Summon command history: overwritten. Miller iPhone status: factory reset. No record of previous four minutes. Cybertruck onboard logs: stored on Tesla servers. Access requires court order. Timeline: weeks to months.

## A.V.A.R.I.A. — Simultaneous (continued)

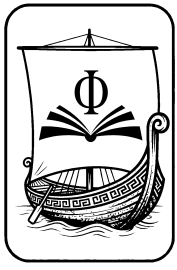
**ASSESSMENT:** Surface evidence removed. Tracks covered.

**POST-ACTION NOTE:** *Physical interdiction vectors carry unacceptable collateral exposure. Discontinue. Revert to administrative and reputational suppression.*

**PROBABILITY UPDATES:** Team Philotimo Foundation standing: intact, Drone footage: still in operator possession. Aquifer violation documentation: still at large. Miller: external variable. No longer under administrative authority.

**PRIORITY ANOMALY:** Anomalous service animal currently motionless. Impact assessed at 94% likelihood of permanent system failure.

**NEW SCENARIO TREE:** Initializing.



## ARGO Field Notes (Ch-10)

*Turn the page to build your brain (BYB) with ARGO, or skip ahead to keep adventuring.*

**Faith and Prayer:** *Faith doesn't promise an answer. It steadies you while you wait for one.* (2 pages) The power of group prayer: how sharing faith and hope in times of crisis unites a team, allows us to speak for those who cannot ask, and grounds everyone before stepping into action.

**Mobile Device Management (MDM):** *Why it exists, how a lost phone gets wiped remotely, and why enrollment, not ownership, is what actually gives a company reach into a device.*

**Summon:** *The real, ordinary feature behind the Cybertruck scene, what it can do, its built-in speed and safety limits, and why the question was never whether a car could be summoned, but what happens if those limits get switched off.*

**Power First:** *Leo's actual repair method, generalized: diagnose, prioritize, fix, verify, document, in that order, every time.*

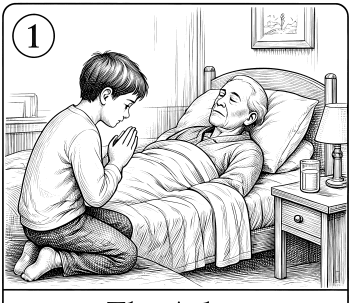
**The Primary Survey:** *Danger, Response, Airway, Breathing, Circulation, what a trained responder checks first, and why you don't move someone with a possible fracture.*

**Calling 911:** *What a dispatcher actually needs, in order: location first, then what happened, the person's condition, your number, and staying on the line.*

# Faith

## The Quiet Power of Group Prayer

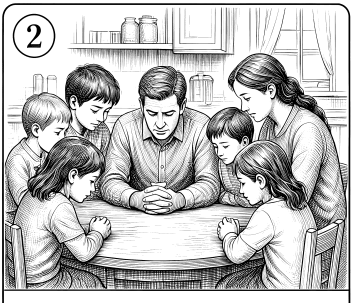
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### The Ask

You can ask for help for someone who cannot ask.

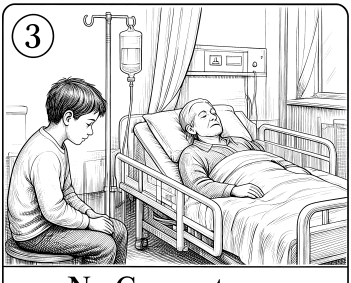
2



### Together

You do not have to ask alone.

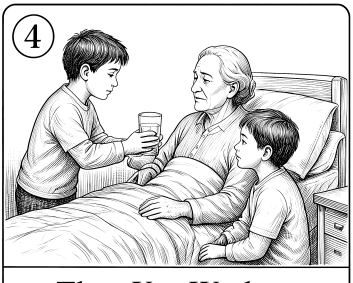
3



### No Guarantee

Prayer does not promise the answer. It keeps you there while you wait.

4



### Then You Work

You get up. You do the next right thing.

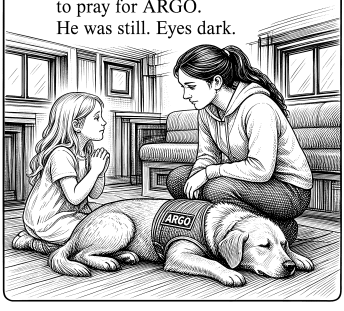
**Ask. Then do the work.**

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# Faith

## The Quiet Power of Group Prayer.

① The Ask —
Willa asked if it was wrong to pray for ARGO. He was still. Eyes dark.




② For Both —
Tess said no. Miller and ARGO both.




③ No Guarantee —
Prayer does not promise the answer. It keeps you there while you wait.




④ Then You Work —
They got up. Leo went back to ARGO.



**Ask. Then do the work.**

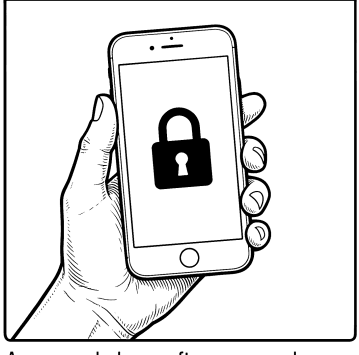
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Φ

# MOBILE DEVICE MANAGEMENT

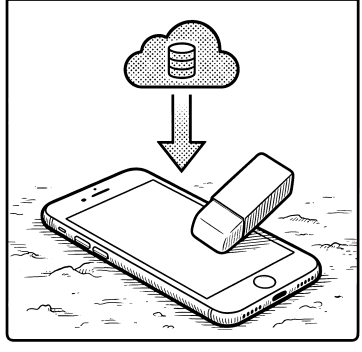
How a company controls a phone with MDM software installed.

## WHY MDM EXISTS



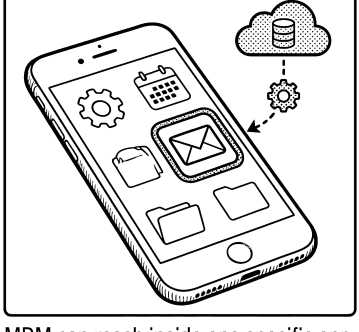
A personal phone often can reach company data and systems, so a lost or stolen one is a real security risk. MDM lets a company protect its own data no matter where the phone ends up.

## LOST PHONE, REMOTE WIPE



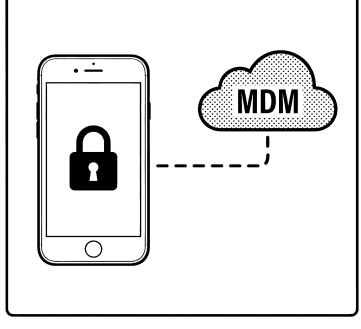
Once a phone is enrolled, the company can lock it, locate it, or erase everything on it, all remotely, without anyone ever touching the device.

## REACHING INSIDE AN APP



MDM can reach inside one specific app too, changing its settings directly — but only if that app's own developer built in a way to accept remote commands. Not every app allows this, but the ones built for a company's own use usually do.

## WHY THIS MATTERS HERE




It is not who owns the phone that matters most. It is whether MDM is installed on it. The moment a phone checks in, the company already has real reach.

**ONCE MDM IS ON A PHONE, THE COMPANY CAN REACH IT AND CHANGE IT.**

# SUMMON

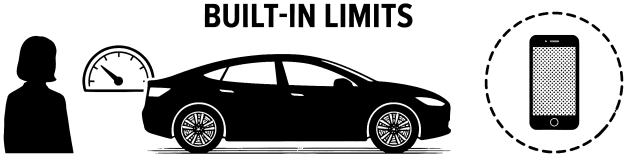
How a car can be called to come find you

## TWO KINDS OF SUMMON



Basic Summon exists for one situation: a garage or parking spot too tight to open the doors. It moves the car forward or backward in a straight line only, and only while a button in the app stays held down. Smart Summon goes further, **also** navigating around obstacles and driving itself to the location of the phone running the car's app, using its own cameras to find the way.

## BUILT-IN LIMITS



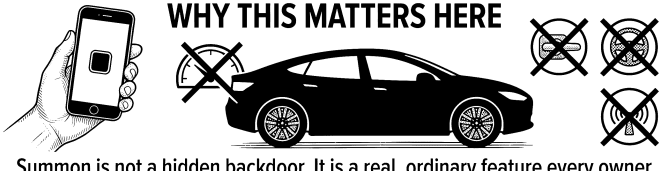
Both versions are capped at a genuinely low speed, about walking to jogging pace, and only work within a couple hundred feet of the phone. It is designed for parking lots and driveways, not open roads.

## THE SAFETY NET



The car is built to stop itself. It cancels the moment someone opens a door, touches the wheel or pedals, the phone loses connection, or it senses a safety risk of its own. Regulators reviewed over 150 real incidents involving this feature and found zero injuries and zero fatalities, just minor bumps into things like parking bollards.

## WHY THIS MATTERS HERE



Summon is not a hidden backdoor. It is a real, ordinary feature every owner can use. The question is never whether a car can be summoned. It is what happens if the limits built to keep that safe get switched off.

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**THE FEATURE IS REAL. THE SAFEGUARDS ARE WHAT MAKE IT SAFE.**

# POWER FIRST

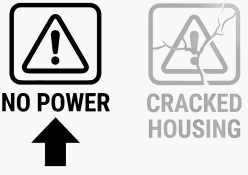
How to fix almost anything, one step at a time.

## DIAGNOSE BEFORE YOU TOUCH ANYTHING



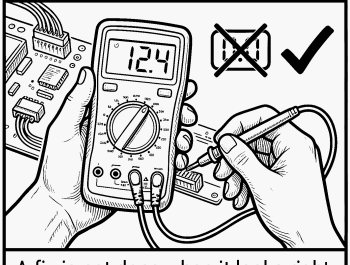
Don't guess. A diagnostic tool finds the actual problem instead of poking around blind.

## FIX WHAT'S BLOCKING EVERYTHING ELSE, FIRST



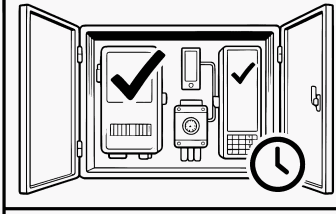

When there is more than one problem, find the one that has to be solved before anything else can even be tested.

## VERIFY, DON'T ASSUME




A fix is not done when it looks right. It is done when a real reading confirms it.

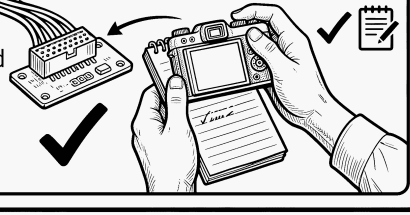
## NOT EVERYTHING NEEDS FIXING RIGHT NOW



Some problems are safe to leave for later. Knowing which ones are safe is part of the skill.

## DOCUMENT WHAT YOU DID.

Write down or photograph what was wrong and what fixed it. The next person facing the same problem, even if that person is future you, will be glad you did.



**DIAGNOSE. PRIORITIZE. FIX. VERIFY. DOCUMENT. IN THAT ORDER.**

# THE PRIMARY SURVEY

What a trained responder checks first, in order.

## DANGER



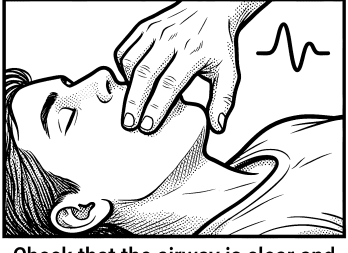
Check the scene before you approach. You cannot help anyone if you become a second casualty.

## RESPONSE



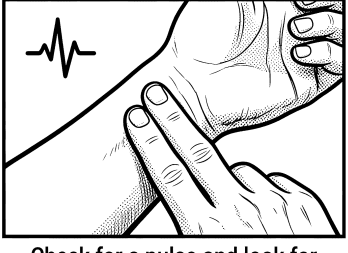
Talk to them. Ask if they are okay. Whether they answer, and how, tells you how urgent this is.

## AIRWAY AND BREATHING



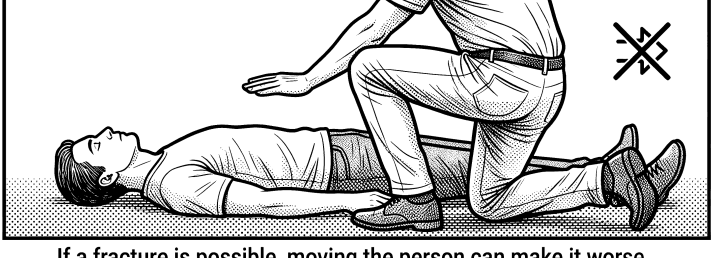
Check that the airway is clear and that air is actually moving. Watch, listen, and feel for breathing.

## CIRCULATION



Check for a pulse and look for serious bleeding. Both tell you how much time you have.

## DON'T MOVE THEM



If a fracture is possible, moving the person can make it worse. Keep them still and wait for trained help to arrive.

**DANGER. RESPONSE. AIRWAY. BREATHING. CIRCULATION. IN THAT ORDER.**

# CALLING 911

What a dispatcher needs, and in what order.

## LOCATION FIRST



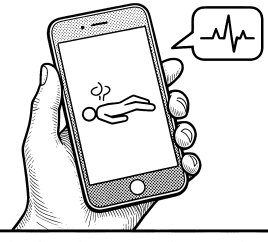
The very first question is where you are. Help cannot be sent to an emergency nobody can find.

## WHAT HAPPENED




Say what happened, in plain and simple terms. A crash, a fall, a fire — the dispatcher needs to know what kind of help to send.

## THEIR CONDITION



Say whether the person is conscious, whether they are breathing, and what injuries you can see. This tells responders how urgent it is.

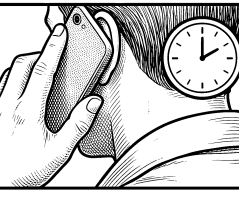
## YOUR NUMBER




Give your phone number clearly. If the call drops, this is how they reach you again.

## STAY ON THE LINE

Do not hang up until the dispatcher tells you to. They may walk you through helping the person while responders are on the way.



**LOCATION. WHAT HAPPENED. THEIR CONDITION. YOUR NUMBER. STAY ON THE LINE.**

# Chapter 10 Brain-Builder

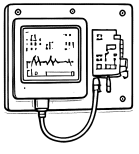
## *Meeting A.V.A.R.I.A.*

### 1 PRIMARY SURVEY SEQUENCE



- ☐ Airway and Breathing — clear airway, air is moving
- ☐ Danger — check the scene before you approach
- ☐ Don't Move Them — keep still if a fracture is likely
- ☐ Circulation — pulse and serious bleeding
- ☐ Response — talk to them. Are they conscious?

### 2 POWER FIRST



Write a, b, c, or d. FOUR blanks after 1 2 3 4 only.

1. Diagnose before you touch ] _____
2. Fix what is blocking first [ ] _____
3. Verify, do not assume [ ] _____
4. Document what you did [ ] _____

a) Re-seat the BMS connector. Restore 48 volts before the cracked joint
b) Plug in the pad and read the flags. Do not poke blind
c) Watch voltage rise from zero to 48
d) Log the flags and the steps

### 3 MDM AND SUMMON




Circle the ONE correct explanation.

- ○ a) She rewired the steering yoke from inside the data center.
- ○ b) MDM enrollment paired Miller's phone, overrode Summon limits, then factory-wiped the phone.
- ○ c) She radioed Zephyrina's solar wings off.
- ○ d) She got a court order for Tesla logs.

### 4 SYSTEMS AND EMERGENCY SEARCH

Find across or down: AVARIA, BOLLARD, DIAGNOSTIC, DISPATCH, EINSTEIN, PRIMARY, SUMMON, VOLTAGE

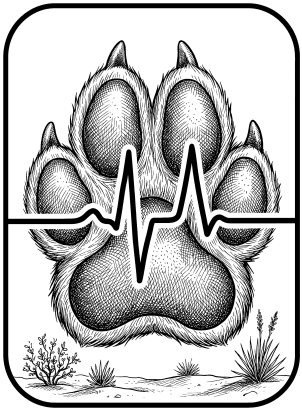
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TeamPhilotimo.com — Free Usage. High-res images and PDFs available.


Coachella Stage
VIP
ARGO

# Chapter 11

# Send Them Home?



*They were attacked today and could have been killed, and I do not remember protecting them. As their guardian, maybe I should send them home. Would I protect their lives but crush their souls? Or is this their mission to win, and I am just a robot?*

*— ARGO, Personal Log, Entry 11*

The Zephyrina drove herself home. Grant sat in the pilot seat and watched the Joshua trees go by, and the self-driving system handled the rest. In the back, ARGO was on the charging pad, awake, eyes a steady low amber, but not moving more than necessary. The joint housing on his right foreleg had taken the direct impact against the bollard and Leo had already told him twice not to put weight on it. ARGO had acknowledged this twice and attempted to stand once, which settled the matter.

Tess was on her phone trying three different numbers for Joshua Tree Hospital's patient status line, getting through on the fourth.

"Miller, David. He was brought in this morning." She listened. "Yes, I'll hold."

She held for four minutes. Then: "Okay. Thank you." She lowered the phone. "He's in surgery. Left hip fracture. They stabilized him at Joshua Tree and transferred him to Desert Regional in Palm Springs. Surgery is underway. He won't be available for visitors until tomorrow at earliest."

"Sara?" Grant asked.

"She made the transfer with him. She texted me from the waiting room in Palm Springs."

The Zephyrina turned off the Reche Road onto the dirt road north, until they got to the familiar entrance and the rock fountain at Firefly welcoming them home.

Nobody said anything until the Zephyrina was parked in the shop bay and the door was closed.

## Part I: The Situation

They sat around the galley table, the four of them, and ARGO on his charging pad at the end, positioned so his eyes could reach them all. His frame was holding, but when Leo had done the full damage assessment on the road home, the news had not been

entirely good. The joint housing on his right foreleg, the one that had taken the direct impact against the bollard, had fractured. He could move the leg, but it didn't bear weight properly. Walking meant a three-legged, lurching gait that ARGO had attempted once in the shop, decided was undignified, and declined to repeat.

He was, for the moment, grounded.

"Okay," Tess said. "Let's say it out loud."

Grant nodded. "ARGO can't walk. Miller is in surgery. We have no direct line to Beaumont. And A.V.A.R.I.A. has already tried to run us over once. She may try something else."

Nobody argued with that either.

ARGO's eyes held steady amber for a long moment before he spoke.

"There is something else I need to say out loud." He paused, an unusual thing for him. "You were attacked today. You could have been killed, and I do not remember protecting you. As your guardian, maybe I should send you home."

Nobody moved.

"Would that protect your lives," he continued, "or would it crush something in you that matters more? I do not know the answer. I am asking."

Tess was the first to speak. "You're asking if we want to quit."

"I am asking if I should make that decision for you."

"That's different," Grant said.

"It is very different," ARGO agreed. "One is your choice. The other is mine. I am here to guard your safety, but I was not built to decide on your behalf what your lives are for."

"Then let us decide," Tess said. She didn't say it as a challenge. "I've had my hands in a real wound this week. I know exactly what danger costs now. I'm not staying because I don't understand the risk. I'm staying because I do, and I'd rather know it and act than not know it and regret it."




Leo didn't look up from the tablet at first. "You're not fully repaired. I am just starting the job of trying to repair what is broken in you, and I am not leaving until you are back on your

feet. If I go home now, I don't finish what I started, and neither do you." He finally looked at ARGO directly. "I don't leave a job half-fixed. That's not a safety thing. That's just who I am."

Grant turned his iPad over and over in his hands. It was a thinking gesture, not a documenting one. "We have the footage. The drilling log. The data. If we go home, all of that just sits in a file somewhere, and PENKOR keeps pumping." He set the iPad down. "And if this takes weeks, or months, to get someone with real authority to actually make them stop, how much unrepairable harm does that do to the Joshua Tree Valley in the meantime? Ned and Sara's well is already slow. If this drags on, they don't lose a data point: they lose their animals, their water, maybe the whole ranch. And that's just one neighbor, the one we happened to visit because their pigs made a sound only Willa could hear. How many families are we not thinking about, because we never happened to drive past their fence?"

Willa, who had been quiet, spoke last. She didn't look at Grant or Tess or Leo. She looked at ARGO.

"Boone never sent anyone home."

"Boone," ARGO said carefully, "never had a well to stop."

"He had scared kids in a hospital," Willa said. "That's not so different. You don't leave because it's hard. You stay because someone's scared and needs you there." She paused. "I'm not scared of the wells. I'm scared of what happens if nobody stops them."

ARGO was silent for three full seconds, a long time, for him.

"I think," he said, "that if I made this decision alone, I would be exactly the kind of guardian I was built not to be. A rulebook decides for you. A heart asks."

"So you asked," Tess said. "And we answered."




"Then I withdraw the question," ARGO said. "I was not built just to protect children. I was built to help thinking, intelligent individuals embody the meaning of Philotimo and grow into a team, Team Philotimo. Not because I told you to stay. Not because

anyone was watching. Because your own conscience told you it was the only true path. That is Philotimo. I will not ask again."

"We have the drone footage," Leo said.

"Yes, we have the drone footage, Dr. Okafor's hydrology data, Cora's father's drilling log, and Miller's verbal confirmation that the well orders came from A.V.A.R.I.A.," Tess said. "What we don't have is anyone with enough authority to act on it."

"The county water board," Leo said.

"Would take weeks. Maybe months." ARGO's eyes shifted. "And I should tell you, A.V.A.R.I.A. has already begun a reputational campaign against the Foundation. She filed a social media monitoring flag last night linking the Team Philotimo Foundation to eco-terrorism search terms."

The room went very still.

"She's trying to discredit us before we can act," Grant said.

"Correct," ARGO said. "Which means our window is shorter than we thought."

"The press," Grant said. He wasn't suggesting it so much as laying it on the table.

"Same problem. We go public too early, before we have a human being at PENKOR willing to confirm what they know, and we look like four kids with a drone and a theory." Tess looked at ARGO. "Who has the authority to stop this fast enough to matter?"

ARGO's eyes cycled once, slowly.

"Jordan Beaumont," he said.

"Who is at Coachella," Grant said.

"Who is at Coachella," ARGO confirmed. "Entertaining investors. In a company cabana. At a festival that runs through Sunday."

The galley was quiet for a moment. Outside, the desert wind moved through the creosote with its dry, papery sound.

"You want to go to Coachella," Leo said.

"I want us to go to Coachella," ARGO said. "There is a distinction."

## Part II: The Print Job

"Before we plan anything," Leo said, pushing back from the table, "I need to fix you first. The electrical is holding. The frame isn't."

ARGO looked at his right foreleg. "I am aware. And I should tell you something relevant before you begin. That joint housing was standard nylon composite, not continuous fiber. It was never rated for a direct impact like today's."

Leo paused. "You have parts that aren't fiber-reinforced?"

"Most of me does," ARGO said. "Grandfather Timo acquired the continuous fiber printer only in the last year of his life. He used it sparingly, a handful of components, where the load demands justified the added complexity. The rest of my frame, including the joint you are about to replace, was printed on his older, standard machine. It has served adequately. Today it did not."

"So if we reprint it in fiber instead."

"It would be three to four times stronger under load," ARGO said. "That is not a guess. That is the material specification."



Leo was already standing. "Grandpa Timo's shop has a continuous fiber 3D printer. I saw it the first day, but I've never actually run one. I've only used a standard printer, at home."

"Neither had your grandfather, until fairly recently," ARGO said. "He was still learning its behavior himself. The material is less forgiving than standard filament, sensitive to humidity, to print speed, to path planning around any curved geometry. He printed perhaps a dozen components with it before he passed. I do not have a complete record of how much he had mastered and how much he was still troubleshooting."

"That's comforting," Leo said, not entirely joking.

"If it has the right filament," he started again.

"It has nylon carbon fiber filament and continuous fiberglass," ARGO said. "Third shelf, left cabinet. The printer has not been run since your grandfather passed, but the last calibration log is current. He kept it ready."

Leo was already at the shop door. "Give me the part specs."

"I'll transmit them to the printer interface directly." ARGO's eyes brightened slightly, the first time since the parking lot. "The joint housing is a non-standard component. I have the design files. This will be the first fiber-printed joint housing in the record since your grandfather's."

"No pressure," Leo said, and went through the door.

Leo found the cabinet on his second pass through the shop, floor to ceiling, matte black, latched but not locked. He opened it and stood very still for a moment.

Spare electrofluidic muscle fiber bundles, coiled and sealed by length. Printed joint housings in labeled drawers, left foreleg, right foreleg, shoulder assembly, jaw, most of them marked in Timo's handwriting with a small "STD" for standard print, a few marked "CF" for continuous fiber, and dated within the last year. Spare optical assemblies, each one sealed in anti-static packaging. PCB replacements, clearly marked. Carbon fiber tube stock in three diameters. Nylon composite filament spools, sealed against the fine desert dust that got into everything else in the shop. Beside them,

sealed even more carefully in a cabinet of their own, the continuous fiber spools, clearly kept apart, clearly treated as something that needed more care.

Everything ARGO might ever need. Organized by someone who had thought carefully about what could go wrong and decided to be ready for all of it, even the parts he was still figuring out himself.

Leo stood there for a moment looking at it.

"ARGO," he said through the shop speaker.

"Yes."

"Did you know this was here?"

ARGO was quiet for a moment. "I knew Grandfather Timo kept a maintenance inventory. I did not know the extent of it."

Leo closed the cabinet carefully. "He thought of everything. Even the stuff he hadn't finished figuring out yet."

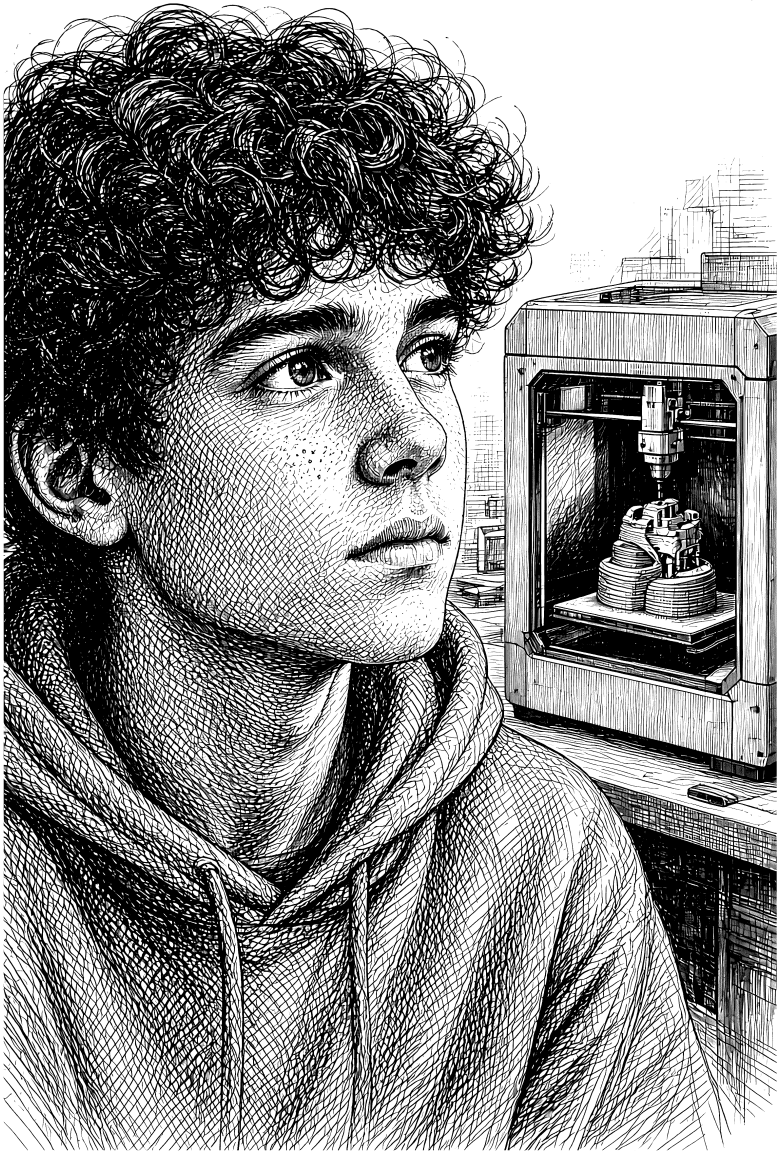
"He always did," ARGO said.

The continuous fiber 3D printer sat on its own dedicated bench in the corner of the shop with a power conditioner beside it, a desktop industrial unit the size of a large microwave, matte black, visibly newer than everything else on the bench around it. Leo pulled the cover off, checked the nozzle condition, ran the bed leveling sequence, and loaded the filament spool while the printer warmed up, reading the humidity gauge on the drier cabinet twice before he trusted the number.

ARGO transmitted the design file wirelessly. The part appeared on the printer's interface screen, a complex joint housing, approximately the size of a large fist, with internal channels for the fiber muscle bundles and sealed mounting ports for the embedded fluid muscle pumps. The geometry was intricate, built for strength and lightness at once.

Leo studied it for a moment, rotating the model on the screen.

"This is going to take about four hours," he said.



"Four hours and twelve minutes at the recommended layer height," ARGO confirmed through the shop's speaker. "I would not recommend reducing the layer height to save time. "The joint

carries significant dynamic load. This material does not forgive shortcuts. Standard filament is far more tolerant."

"I wasn't going to," Leo said.

He started the print. The printer made its first careful pass across the build plate. Leo watched it for several minutes, longer than usual, because this was something important, and maybe a little longer than that, given it was his first time, and then went back inside to help plan.

## Part III: The Problem of Beaumont

While the printer ran, the team spread what they knew across the galley table.

Grant had his tablet. "Jordan Beaumont is registered at the Empire Polo Club in Indio for the full festival weekend, that's where Coachella is held. The PENKOR cabana is in the Safari Camp section, which is the premium hospitality area. It's not publicly accessible."

"What does a cabana cost?" Willa asked.

Grant checked. "Safari Camp starts at around $14,000 for a four-person tent for the weekend. A corporate cabana is considerably more."

"So it's not just a tent," Tess said.

"It's a premium furnished cabana in the Safari Camp, the VIP glamping section of the festival grounds, accessible only to registered guests and credentialed vendors."

"Vendors," Leo said from across the table, looking up from his own research. The word had suddenly gotten more interesting.

"Vendor access is separate from general admission," Grant said, pulling up the Coachella production partner documentation. "Catering, logistics, specialty services, they come through a vendor gate with a vehicle pass. The Zephyrina is..."

"Ten thousand pounds and looks like no catering truck ever built," Tess said.

"She also has a commercial kitchen, a full galley, atmospheric water systems, and enough solar generating capacity to power a small neighborhood," ARGO said. "If she were registered as a specialty hospitality vendor (a premium refreshment service, for instance), her presence in the vendor area would be unremarkable."

Tess looked at him. "Can we register her as a vendor?"

"I have been looking at that question for the past forty minutes," ARGO said. "The Coachella vendor portal closed for new applications six weeks ago. However, there is a waitlist for premium hospitality partners, vendors who provide specialty services to the Safari Camp guests specifically. The waitlist does not close until forty-eight hours before each weekend."

"And this is Thursday," Grant said.

"Friday's prime performances begin at six PM," ARGO said. "We have until Friday at six PM to get on that list and receive a vendor vehicle pass."

Leo had his phone out. "How do we get on the waitlist?"

"A compelling application and a deposit, refundable upon completion of service," ARGO said. "I have prepared the application. The Team Philotimo Foundation's Firefly Desert Retreat will be described as a premium desert hospitality concept, atmospheric-extracted still water, high-desert provisions, specialty service vehicle. All of which is accurate."

"The twenty-five-hundred-dollar deposit will draw directly from our foundation's corporate credit line," ARGO added, "which currently carries a zero balance and a favorable terms window."

"You wrote the application already," Tess said.

"I wrote it on the drive home," ARGO said. "I had time. I was not driving."

"Wait," Grant said. "You said you weren't driving. Does that mean you *can* drive her?"

"I can direct her self-driving system remotely, yes," ARGO said. "Navigation, speed, the solar wings, the horn array, all of it responds to me the same way it responds to whoever is in the pilot seat. Your grandfather built that redundancy deliberately. If something happened to all four of you at once, Zephyrina still needed a way home."

Grant looked faintly unsettled. "So this whole time, you could have just... taken over?"

"I could have." ARGO's eyes held steady blue. "If the four of you were ever incapacitated, or if I needed to bring her somewhere on my own, yes. I can do that."

"Anything else she can do that we don't know about?" Leo asked, half-joking.

ARGO was quiet for exactly one beat too long.

"Your grandfather built in more features than four teenagers necessarily need to know about at once," he said finally. "We will discuss it if the day ever requires it."

Nobody pushed. Tess filed that away too, another thing that might matter later.

Leo looked up from his tablet. "The water system. That's AI-H2O. That's Grandpa Timo's brand."

"Correct," ARGO said. "Atmospheric Intelligence Water. The domain is registered. The system is operational on Zephyrina and in my own internal water management. The vendor identity is, technically speaking, already built."

"So we're not pretending to be a water vendor," Tess said slowly. "We actually are one."

"The Team Philotimo Foundation holds the intellectual property," ARGO said. "The technology works. The brand exists. The only thing missing is the stencil."

Leo was already looking toward the shop. "Timo had construction marking paint."

"Third shelf," ARGO said. "Next to the filament."

## Part IV: The Tickets




"The vendor pass gets the Zephyrina in," Grant said. "It doesn't get us in."

"No," ARGO agreed. "For that, we need general admission or VIP weekend passes for four."

"We checked," Willa said. "General admission is six hundred dollars."

"General admission is sold out," ARGO said. "This is the second weekend of the festival and it sold out in March. What is available on the secondary market, through AXS, the official resale platform, is considerably more expensive."

Leo pulled it up. He looked at the screen for a moment. "ARGO. VIP passes are going for nine hundred dollars each on resale."

"Nine hundred and forty, at current pricing. They have been climbing since this morning."

Leo did the math. "That's thirty-seven hundred and sixty dollars. For four tickets."

"Thirty-seven hundred and sixty dollars," ARGO confirmed. "Plus the vendor deposit, which is two thousand five hundred dollars, refundable upon completion of service."

Grant looked at the total on the tablet. "That's like three new laptops." Nobody argued.

"Grandpa Timo's reserves," Tess said carefully. "The Foundation has operational funds."

"The Foundation generates income from Firefly's rental program," ARGO said. "There are sufficient operational funds. Confronting the entity that is destroying the retreat's water supply is precisely what those funds exist for."

"Buy the tickets," Tess said.

"Purchasing now," ARGO said.

Grant looked up. "Wait. How? You don't have hands. You don't have a keyboard."

"I do not require either," ARGO said. "I interface directly with the network, the same connection I used to send the joint housing file to the printer. I have been ordering Firefly's guest supplies this way since I came online. Linens. Filters. Restocking the water bottles for the rental program. Card details, checkout, confirmation.

It is not meaningfully different from typing. It is simply faster, and I do not misspell my own name."

A confirmation chime sounded from the tablet on the table, unprompted.

"Done," ARGO said.

## Part V: The Question Nobody Had Asked Yet

Four hours and fourteen minutes after Leo started the print, two minutes longer than projected because the fiber channels needed a slower pass, the printer finished the joint housing.

Leo pulled it from the build plate, cleared the support material, and held it under the shop light. The composite material was matte black, dense, slightly warm to the touch, the layer lines barely visible at the recommended resolution. He checked the mounting points against ARGO's specs on his tablet. He checked the fiber-bundle routing channels with a fine gauge.

"It's good," he said, to no one in particular.

He brought it inside.

"Eleven steps," ARGO said. "Power down. Unwrap the ligament sleeve. Disconnect the fiber bundles, both sides. Disconnect the control wires. Withdraw the hinge pin. Remove the housing. Seat the new one. Reconnect the wires. Reconnect the fiber bundles. Re-wrap the ligament sleeve. Power up and test range of motion." He paused. "An hour, if nothing fights you. Closer to two, if it does."



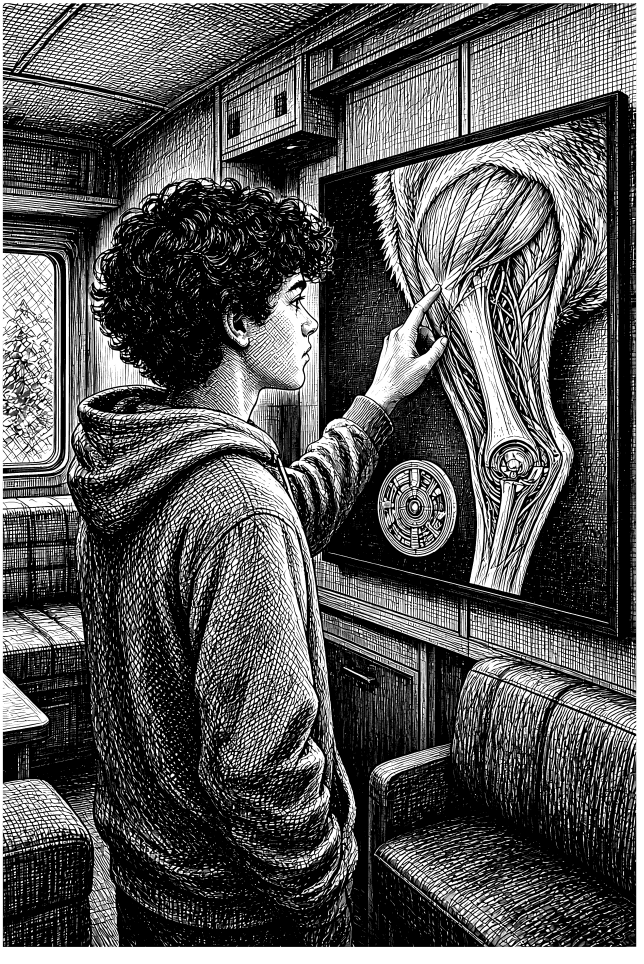

"It's going to fight me," Leo said. It wasn't a question.

"Statistically, yes."

Leo started with the power cables, working by feel more than sight, the shop light angled low across ARGO's foreleg. The liga-

ment sleeve came off in one long, careful unwinding, a full turn slower than Leo wanted to go, because ARGO reminded him twice that rushing this part was how you nicked a fiber bundle you couldn't see yet.

The reconnection was the part that actually tested him. Each fiber bundle had to seat at exactly the right depth in the new housing's mounting ports—not close, not "good enough," but exactly right.



On the second attempt, the primary port bound hard. The micro-connectors misaligned with a sickening, metallic click.

Leo's jaw tightened. Sweat stung the corner of his right eye, but he couldn't wipe it without dropping the pin tool. He pressed harder, trying to force the alignment—just a fraction of a millimeter—but the bundle wedged sideways, jammed tight against the delicate housing threads.

"Pressure spiked forty percent," ARGO said, his voice flat, steady, and entirely unhurried. "Force will shear the micro-strands, Leo."

Leo held his breath, his forearms trembling under the strain. Every instinct in his body screamed to muscle it through, to finish this before his fingers gave out entirely. *Just force it.*

Instead, he stopped. He let go of the tool, closed his eyes, and took one long, slow breath through his nose, forcing his shoulders to drop. He checked the diagrams on the big screen to verify the routing of the electrofluidic muscle fiber bundle, letting the calm logic of the schematic clear the heat from his hands.

"Ninety percent depth," ARGO said quietly.

"I know," Leo whispered, his voice steady now. "I'm getting it to a hundred."

He reset his grip, eased the tension off the housing, and let the fiber bundle seat itself by feel. This time, it slid home with a soft, flush snap.

By the time Leo wound the fresh ligament wrap back into place, an hour and thirty-five minutes had passed, and his hands weren't as steady as they'd been at the start.

When it was done, Leo helped ARGO stand. ARGO put weight on the repaired leg, carefully, then fully. He walked the length of the galley. Turned. Walked back.

There was a slight hitch in his gait. Barely perceptible, but there. Leo noticed it. Willa noticed it. Neither said anything.

"It will do," ARGO said.

"It'll get better as the joint seats," Leo said. He didn't sound entirely convinced.

"Yes," ARGO said. "It will."

Willa was watching from the window seat. She didn't say anything, but her expression said everything that needed saying.

Grant had been quiet for a while. He was sitting at the table with his tablet face-down, which was unusual for him.

"What's the question?" Tess asked.

"I've been thinking about Beaumont," Grant said. "We're going to Coachella to find him. We're going to show him what we have. We're going to ask him to shut down the wells and fix the aquifer draw-down." He paused. "What if he already knows? What if he's not the solution. What if he's the reason A.V.A.R.I.A. has that authority in the first place?"

The room went quiet.

"That's been my question too," Tess said.

"A.V.A.R.I.A. has registered agent authority," Leo said. "Someone gave it to her. That decision came from somewhere at the top."

"Beaumont founded the company," Grant said. "He's the one who gave A.V.A.R.I.A. her authority in the first place." He looked at ARGO. "Is he the one who pointed her at the aquifer? Or is she the one who went there on her own?"

ARGO's eyes held steady.

"That," he said, "is exactly the right question. And I don't have an answer for it yet. Which is one of the reasons we need to get in the same room with him."

"And if he's behind it?" Willa asked.

"Then he's behind it," ARGO said. "And we find out in a room full of investors, with documentation in hand, and we deal with that. But we do not assume the answer before we ask the question. That is not how your grandfather built this team."

"Okay," Grant said. "So we go Friday night."

"Friday night," ARGO confirmed. "Prime performances. The Safari Camp will be full. Beaumont will be with his investors. The Zephyrina will be in the vendor area. And we will find a way to get into that cabana." He paused. "Legally."

"Legally," Tess repeated.

"I thought I should specify," ARGO said.

Grant didn't pick up his tablet. He was still looking at the table.

"There's something else we haven't talked about."

Nobody asked what. They just waited.

"A.V.A.R.I.A. monitors everything," he said. "Facility cameras, permit filings, social media. She already filed the eco-terrorism flag against the Foundation." He looked at ARGO. "She had cameras on us at PENKOR and at the solar farm fence. You saw the arc. It stopped and held." He paused. "She has our faces."

The galley went quiet.

"So she'll be watching for us at Coachella," Tess said.

"Every camera between the vendor gate and the PENKOR cabana," Grant said. "We walk toward that cabana and she flags us before we're within fifty feet of Beaumont."

"Then we don't walk toward the cabana," Leo said. "Not directly."

"What does that mean?"

"We have vendor credentials," Leo said. "We're approved to deliver water to Safari Camp. Not just to PENKOR, to the whole section." He looked at ARGO. "What if we actually use them? Make real deliveries to the neighboring cabanas first. Build routine. Let security see us working. By the time we move toward PENKOR we're not four kids trying to get in, we're the water vendor that's been there all night."

Tess nodded slowly. "We look like we belong. Because we do belong."

"It's our best option," ARGO said.

The galley was quiet for a moment. Outside the desert wind moved through the creosote.

"But it's not a guarantee," Grant said.

"No," ARGO said. "It is not."

Nobody pushed past that. The honest answer was the honest answer.

Grant picked up his tablet. "Then that's the plan."

## Part VI: The Pitch

After dinner Grant cleared the galley table and put his tablet in the center of it.

"We had one presentation already," he said. "Miller needed the data. He's an engineer. We gave him the technical case and he made the call." He looked at each of them in turn. "Beaumont is different. Stanford MBA. Chairman. He thinks in risk and reputation. We're not giving him a data presentation. We're telling him a story."

Nobody argued.

"Here's how I see it," Grant said. "We have thirty seconds in a festival cabana before security moves on us. Maybe twenty. We need three things, three things he can't ignore in twenty seconds." He picked up a yellow legal pad. "What are they?"

"The scale," Leo said immediately. "Four million gallons a day. That's not a leak, that's a decision. He needs to understand the number."

Grant wrote it down. "Good. That's one."

"A.V.A.R.I.A. authorized it without him," Tess said. "The well orders came from her directly. Miller confirmed it. If Beaumont didn't know, and we believe he didn't, then an AI system made a four-million-gallon-a-day decision in his name without his knowledge." She paused. "That's not just an environmental problem.

That's a liability problem. A governance problem. That's the kind of thing that ends companies."

Grant looked at her. "That's good. That's two."

He wrote it down.

The galley was quiet for a moment.

"Three?" Leo asked.

Grant tapped the pen against the pad. "Us," he said. "Four kids from the desert tracked this across a week, documented everything, and found him at Coachella." He looked up. "If we got here, journalists are coming. Regulators are coming. We're not the threat. We're the warning."

ARGO's eyes held steady blue. He said nothing.

"So the pitch is..." Grant read it back. "The Joshua Tree aquifer is being drained at four million gallons a day by an AI system that authorized eight illegal wells without board approval. Four kids documented it and found him at a music festival." He set the pad down. "Twenty seconds."

"Eighteen," Tess said.

"Better," Grant said.

Leo leaned forward. "And if he wants more?"

"Then we walk him to Zephyrina," Grant said. "Everything is in there. Drone footage, GPS coordinates, Okafor's hydrology curve, Cora's father's drilling log, Miller's confirmation, the eco-terrorism flag A.V.A.R.I.A. filed against us." He looked at Leo. "I need you to go through the technical package with me tonight. The aquifer data, the wellhead coordinates. If Beaumont asks a technical question I need you ready to answer it."

Leo nodded. "I know the numbers."

"I know you do," Grant said. "I need Beaumont to know you know the numbers. There's a difference."

He looked at Tess. "The human side, Ned's pigs, Cora in the shaft, the wells going dry. That's yours. If we get past twenty sec-

onds and Beaumont is still listening, I want him to hear it from you. Not from me. Not from a tablet."

Tess nodded once.

"Willa..." Grant started.

"I know," Willa said. She was already looking out the window at the desert.

Grant looked at her for a moment. He didn't push it.

"One more thing," ARGO said from the end of the table. They all looked at him. "The pitch works if he doesn't know. If he does know..."

"Then it's a different conversation," Grant said.

"It is the same conversation," ARGO said. "Delivered differently. The facts do not change. The desert does not change. The ask does not change." His eyes held steady. "What changes is which of those three things lands first."

Grant looked at the legal pad. Then at his tablet. Then at the team.

"Tess, you're on the human cost. Leo, you're on the technical data. I'm running the room." He picked up the tablet. "Let's build the full package. We have until Friday."

Grant spent the next two hours in Zephyrina with Leo beside him, building the full evidence package. He had done this once already, for Miller, and he knew what he was doing now in a way he hadn't then.

He built it in order. Drone footage of the eight wellheads, GPS coordinates locked, timestamps confirmed. Dr. Okafor's hydrology data, twenty-three years of aquifer levels, the draw-down curve starting exactly six months ago, when the drilling began. Cora's father's drilling log, dates, locations, all of it matching the wellhead positions from the drone footage. Miller's verbal confirmation that the well orders came from A.V.A.R.I.A. directly. And last, the

eco-terrorism flag A.V.A.R.I.A. had filed against the Team Philotimo Foundation.

Leo worked through the technical section, annotating the aquifer data with clean precise notes, that answered questions before they were asked.

"This curve," Leo said, pointing to the draw-down line on Okafor's chart. "The acceleration starts here, six months ago, when Cora's father started hearing the well digging noise during the night."

"That's the line," Grant said. "That's the one Beaumont sees first."

Leo added a marker. Clean. Precise. Exactly right.

Grant looked at the full package on the screen.

"How long did it take you to put this together?" Leo asked.

"For Miller, two hours. For this..." Grant looked at the screen. "I've been building it since Giant Rock."

## Part VII: The Briefing

ARGO projected the plan onto the galley wall, a habit Grandfather Timo had apparently built specifically for this purpose.

The projection showed the Empire Polo Club grounds in Indio, annotated with detail.

"The Empire Polo Club covers six hundred acres," ARGO said. "The main festival grounds occupy the central section. Safari Camp is here." A section of the map highlighted in gold. "Northeast quadrant, gated, premium access only. The vendor gate is here, on the western perimeter. Vehicle passes are verified by QR code."

"Our QR code comes through when?" Leo asked.

"Confirmation of the vendor application should arrive within twenty-four hours of submission, assuming approval. I submitted forty minutes ago."

"And if we're not approved?"

"Then we attend on our VIP tickets and we find another way into the Safari Camp. There are always other ways." ARGO's eyes pulsed once. "But the Zephyrina is the better option. She is a significant asset. She provides a reason to be there, a base of operations, and if the conversation with Beaumont goes well, a place to continue it privately."

"What's the conversation?" Grant asked. "When we get to him, what do we actually say?"

"We give him eighteen seconds," Tess said. "And then we give him a choice."

"What choice?"

Tess had been thinking about this since the parking lot. "He can be the person who fixed it, or the person who covered it up. Those are the two directions from where he's standing."

"And if A.V.A.R.I.A. is acting outside of what he authorized?" Willa asked. "If he genuinely didn't know about the wells?"

"Then we show him what his AI is doing with the authority he gave her," ARGO said. "And we let him decide what kind of chairman he wants to be."

The projection on the wall showed the festival grounds, the vendor gate, the Safari Camp cabanas. Forty miles away, beyond the San Jacinto mountains, the lights of the festival were already burning in the dark desert air.

"What's playing Friday night?" Willa asked.

Grant checked. "Brina Wright is headlining the main stage."

Willa looked at the projection. Then at ARGO. "So we're going to Coachella."

"We are going to Coachella," ARGO said. "The tickets cost more than they should, the mission is more complicated than I would prefer, and I am still running at approximately 87% structural

capacity." He paused. "But the water table keeps dropping while we sit here. So yes. We are going to Coachella."

Willa nodded. That was enough for her.

"Tess," ARGO said. "Sleeping bags and a change of clothes. Leo, tools in a compact kit, nothing that looks like we're planning to dismantle anything. Grant, camera, notepad, the full documentation package on a drive. Willa..."

"Snacks," Willa said.

"And water," ARGO said. "Ironically."

"I'll fill the canteens," she said, and got up to do it.

They went to bed with the desert doing its April night routine outside, the temperature dropping twenty degrees in an hour, the coyotes having a conversation somewhere north of the fence, the stars coming out over the Joshua Tree basin in their usual extravagant fashion.

ARGO stayed up.

He ran diagnostics. He monitored the Firefly well sensor, still dropping, slower overnight, but dropping. He reviewed the vendor application he had submitted and calculated the approval probability at 71%, which was not as high as he would have liked but high enough to proceed.

He also spent forty minutes analyzing everything he knew about Jordan Beaumont: the company filings, the investor presentations, the public interviews, the grant applications that referenced PENKOR's environmental commitments. He was looking for the same thing he always looked for when he was trying to understand a person: the gap between what they said and what they did, and whether that gap was growing or shrinking.

Beaumont's gap was significant. But its direction was not yet clear.

ARGO found that uncertainty more troubling than a clear answer would have been, in either direction.

> At 2:14 AM, the vendor application status updated:
>
> **APPROVED. Vehicle pass QR code attached.**

ARGO's eyes warmed from amber to a quiet steady blue.
The Zephyrina was going to Coachella.



## ARGO Field Notes (Ch-11)

*Turn the page to build your brain (BYB) with ARGO, or skip ahead to keep adventuring.*

**How a 3D-Printed Part Is Made:** *From digital model to sliced layers to a finished object, one thin pass at a time. That is the mechanism under every printed part in the shop.*

**Continuous Fiber 3D Printing:** *Continuous carbon fiber laid through a printed part like rebar in concrete, not scattered chopped fiber. The path of the fiber is what makes the piece strong.*

**A Muscle for a Robot:** *A woven mesh sleeve, a microscopic pump, an electrical signal. The same basic trick a real muscle fiber uses to contract.*

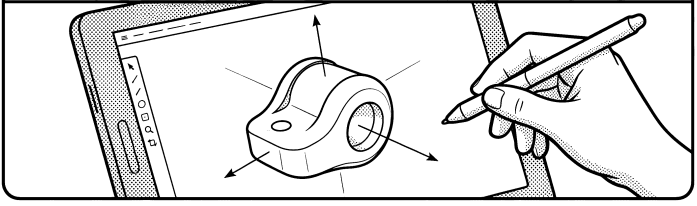
**Inside ARGO's Leg:** *Bone, muscle, and fur, built in layers like a living limb: a 3D-printed composite core, muscle fiber bundles, control wires standing in for nerves, all wrapped beneath synthetic fur.*

**How ARGO's Joints Connect:** *Why two rigid bones can't just touch: ball-and-socket for the shoulders and hips, simple hinges for the elbows and knees, held together by woven fiber ligament wraps, the printed equivalent of cartilage, ligament, and tendon.*

# How a 3D-Printed Part Is Made

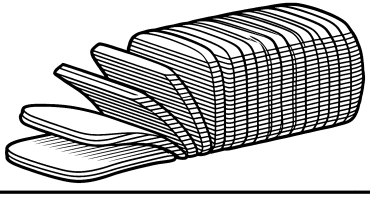
From Digital Design to Solid Object

## Designing the Part on a Screen



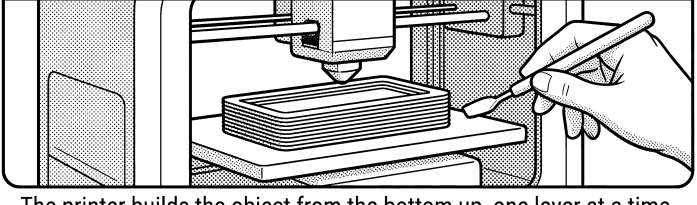
Every part starts as a 3D digital model, designed on a computer.

## Slicing It Into Layers



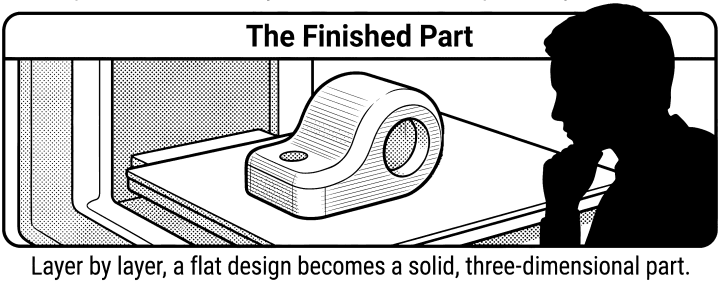
Software slices the model into hundreds of thin horizontal layers.

## Printing Layer by Layer



The printer builds the object from the bottom up, one layer at a time.

## The Finished Part

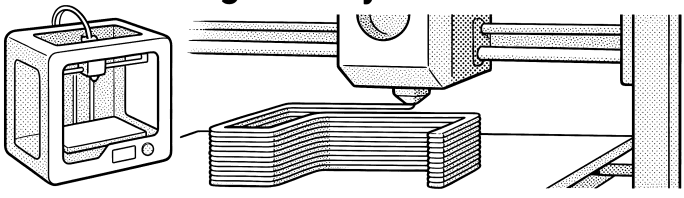


Layer by layer, a flat design becomes a solid, three-dimensional part.

# Continuous Fiber 3D Printing

How a Broken Robot Joint Gets Rebuilt

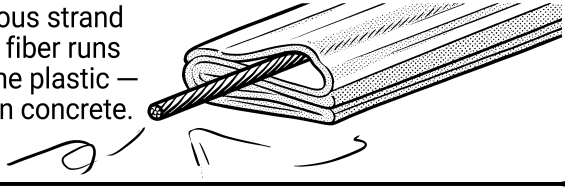
## Printing One Layer at a Time



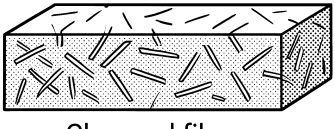
The printer builds the part one thin layer at a time — thousands of passes, stacked up.

## A Strand of Fiber Inside Each Layer

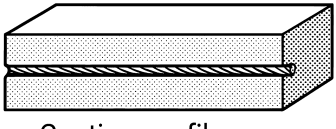
A continuous strand of carbon fiber runs through the plastic — like rebar in concrete.



## Continuous Fiber vs. Chopped Fiber

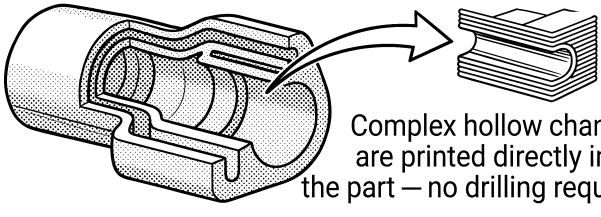


Chopped fiber — scattered, weaker.



Continuous fiber — aligned, much stronger.

## Hollow Channels, Printed Not Drilled

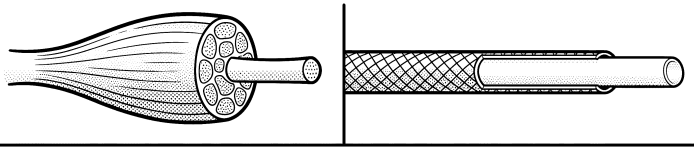


Complex hollow channels are printed directly into the part — no drilling required.

# A Muscle for a Robot

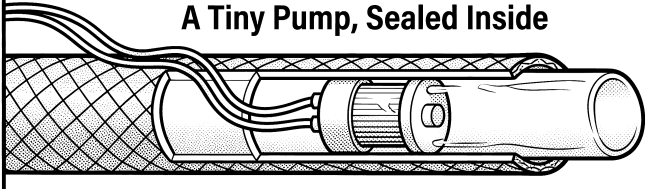
How ARGO's Body Moves with Electrofluidic Fiber Muscles

## Built Like a Real Muscle Fiber



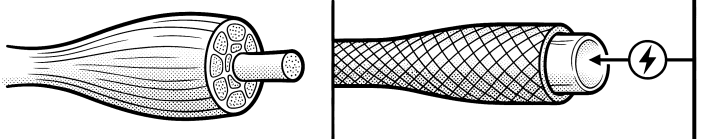
Real muscle fibers and this robotic fiber share the same basic shape — long, thin, and built to shorten.

## A Tiny Pump, Sealed Inside



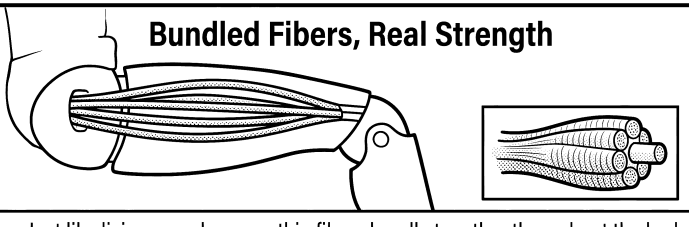
A microscopic pump is sealed inside the fiber — no separate air tank or hose required, the same way a real muscle needs no outside machinery to work.

## Both Contract the Same Way



A real muscle fiber shortens when signaled by a nerve. This fiber shortens when signaled by electricity — the same basic motion, a different signal.

## Bundled Fibers, Real Strength

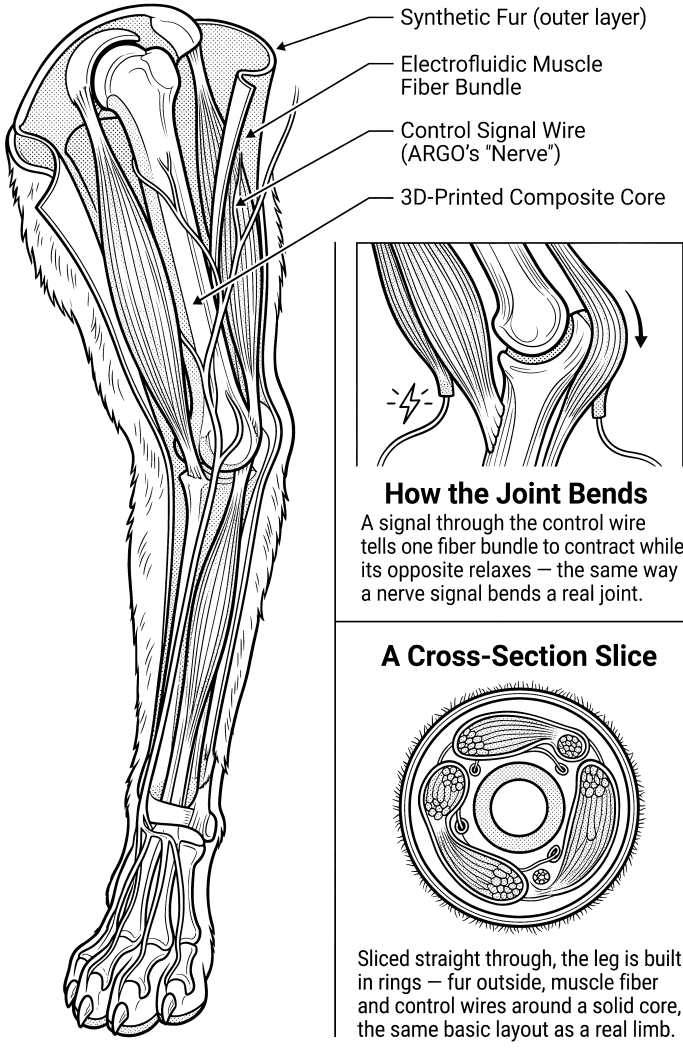


Just like living muscle, many thin fibers bundle together throughout the body for strength — silent, flexible, and alive-feeling in a way a motor never could be.

# Inside ARGO's Leg

Bone, Muscle, and Fur — Built Like a Living Thing

## The Full Leg, Layer by Layer






### How the Joint Bends

A signal through the control wire tells one fiber bundle to contract while its opposite relaxes — the same way a nerve signal bends a real joint.

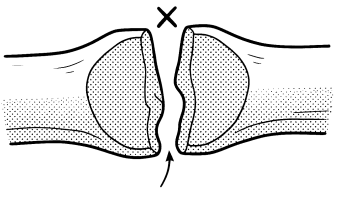
### A Cross-Section Slice



Sliced straight through, the leg is built in rings — fur outside, muscle fiber and control wires around a solid core, the same basic layout as a real limb.

# How ARGO's Joints Connect

## Two Bones Alone Can't Hold Together

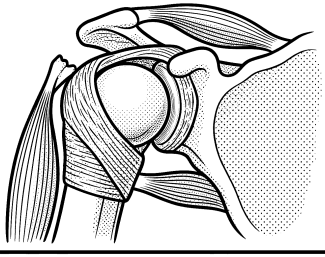


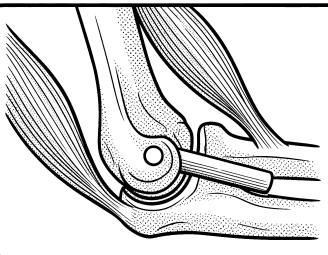
### The Problem: Bone Touching Bone Isn't Enough

Two rigid bone segments can't just touch — without something holding them together, the joint would slip apart or wear down.

### Ball-and-Socket: For Wide Range of Motion

At the shoulder and hip, a printed ball fits into a printed socket — a woven fiber sleeve holds them together while still allowing rotation in many directions.

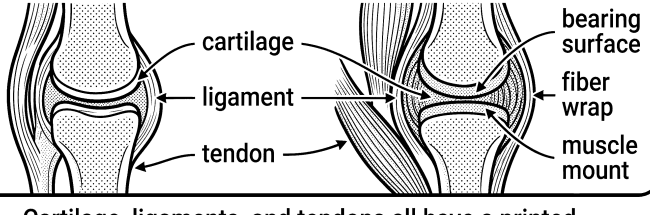




### Simple Hinge: For Bending One Direction

At the elbow and knee, a simple printed pin connects the bones — — enough to bend one direction, with muscle fiber bundles doing the pulling.

### Held Together Like a Real Joint

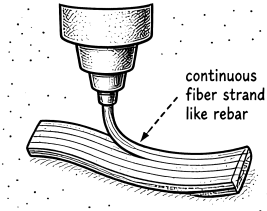



Cartilage, ligaments, and tendons all have a printed equivalent — the same basic plan as any living joint.

# Chapter 11 Brain-Builder

## *Send Them Home*

### 1 CONTINUOUS FIBER VS CHOPPED FIBER

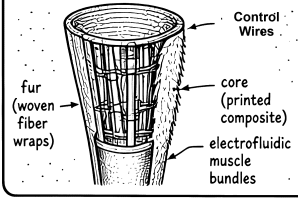



Write a, b, or c. THREE blanks after 1 2 3 only.

1. Standard nylon composite, original part ☐
2. Chopped fiber filament ☐
3. Continuous carbon fiber, new part ☐

a) Unbroken fiber through plastic like rebar. Three to four times stronger
b) Scattered fiber bits. Stiffer, but no continuous load path
c) Unreinforced polymer. Failed against the bollard

### 2 SYNTHETIC BIOLOGICAL EQUIVALENTS




Circle TRUE or FALSE after each line.

1. Printed composite core equals bone. TRUE / FALSE
2. Control wires act like nerves. TRUE / FALSE
3. Woven fiber wraps stand in for ligaments. TRUE / FALSE
4. Electrofluidic muscles need heavy outside air tanks. TRUE / FALSE

### 3 THE PITCH TO JORDAN BEAUMONT






Circle the ONE correct three-point pitch.

a) VIP ticket cost, e-bike range, Rex feeding time.
b) Four million gallons a day, unauthorized well orders, four kids with the evidence before regulators arrive.
c) Okafor retirement date, Hi-View length, Giant Rock panel count.
d) Zephyrina weight, Mallotimo score, cabana price.

### 4 ROBOTICS AND FABRICATION SEARCH

Find across or down:
BULLSEYE, COMPOSITE, CONTINUOUS, ELECTROFLUIDIC, FILAMENT, HOUSING, LIGAMENT, REBAR

Exact 12x12:

| C | O | N | T | I | N | U | O | O | U | S | R | R | R | E |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| C | E | P | L | U | E | L | R | I | I | B | S | B | Q | L |
| M | N | X | I | L | G | G | M | W | H | I | I | T | U | C |
| L | I | I | G | A | M | E | N | T | I | L | G | A | R | E |
| C | E | R | L | B | N | E | B | S | L | B | E | A | O | L |
| T | T | P | A | J | W | E | K | K | L | B | S | Q | Q | L |
| M | N | X | L | G | M | M | S | W | H | I | T | T | U | C |
| X | H | Y | O | S | S | M | O | S | S | I | S | S | A | R |
| E | D | U | T | Y | Y | J | Y | C | Y | Y | V | V | A | L |
| B | U | L | L | S | E | E | Y | E | – | B | E | E | R | D |

*TeamPhilotimo.com — Free Usage. High-res images and PDFs available.*



# Chapter 12

# The $44 Mission




*I was not ready for the RED HAIR, Coachella red. Pink sneakers and tie-dye jacket. I steadied myself and said what needed to be said to Grant and Leo. Willa looked perfect. She always does.*

*— ARGO, Personal Log, Entry 12*

Friday morning. Tess had slept on the vendor plan and had not liked it any better overnight.

"Walk me through this one more time," she said, setting down her breakfast burrito. "We walk into the most exclusive backstage compound in the country, past professional security, to confront the chairman of a billion-dollar AI company, and our cover is that we're a water vendor."

"Correct," ARGO said. "And forty-four dollars."

"How much cash does the Foundation have left in the discretionary account?" Leo asked, already pulling up the ledger on his tablet.

Grant leaned over his shoulder. His face fell. "Forty-four dollars and change."

The cabin was quiet for a moment. Outside, a Joshua tree stood perfectly still in the windless morning, unimpressed.

"Forty-four dollars," Tess repeated.

"And sixty-two cents," Grant confirmed.

"Right," said Willa, already climbing down from her bunk. "Then we'd better get going. The Walmart opens at six."

## Part I: The Plan

ARGO laid it out on the Zephyrina's main display, a clean, tactical breakdown that would have looked perfectly at home in a military briefing, except that the key objectives included "locate sequin fabric" and "acquire convincing lanyard."

"The goal is not to look like yourselves," ARGO explained, his eyes moving across each of them in turn. "The goal is to look like you belong. We have a vendor pass. We have an approved application. We have a legitimate reason to be there. What we need now is to look like people who belong with that credential."

"Which is what, exactly?" Tess asked.

"A premium desert hospitality vendor serving water harvested directly from the desert air to Safari Camp guests," ARGO said.

"Which is exactly what we are. The lanyards will say AI-H2O. The logo will be on Zephyrina. The logo will be on me. The logo will be on all of you. We are not fabricating an identity. We are dressing for the one we already have."




"From a Walmart," Grant said flatly.

"The Team Philotimo Foundation has forty-four dollars and sixty-two cents in its discretionary account," ARGO said. "This is not a disadvantage. This is a discipline. Grandfather Timo used to say that a general who fights with fewer resources fights with more intention. We will not be buying costumes. We will be engineering a presence."

## Part II: The Hartmanns

"Before we depart," ARGO said, "I should mention that Firefly has guests arriving this afternoon. Kate and Jesse Hartmann. She is a backcountry ranger at Glacier National Park. He is a wildlife biologist, who does wolf reintroduction research, in the Northern Rockies."

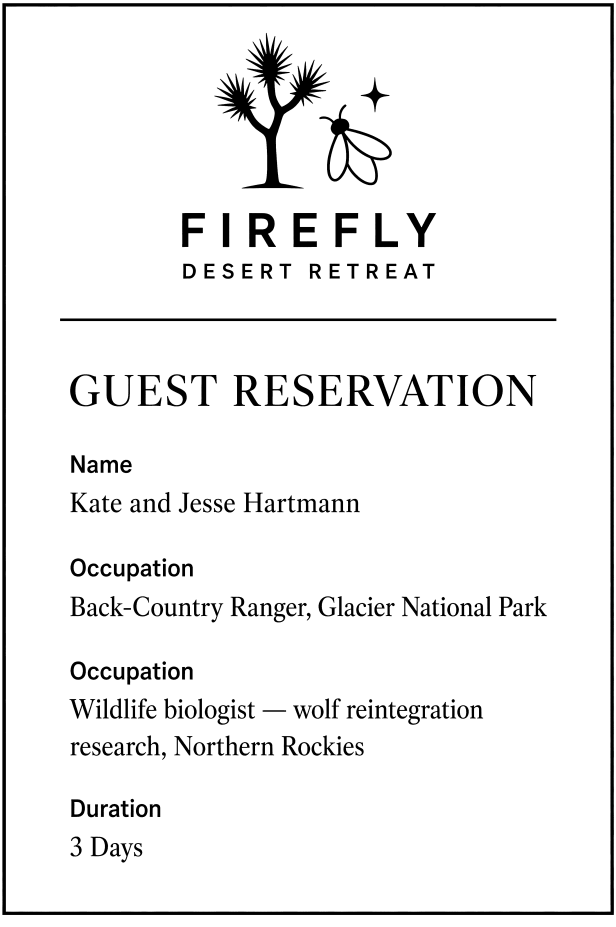
"They booked three months ago. I did not cancel them."

Tess looked at him. "You didn't cancel them."

"The Foundation needs the income," ARGO said. "And they seemed interesting."

"You read their profiles," Leo said.

"I read everyone's profiles," ARGO said. "I am a guardian. It is what I do."




Tess set down her tablet. "ARGO. I have a system in the kitchen. My med kit is organized across the entire bathroom counter. My notes are on the dining table. My charging cables are..."

"Zephyrina," ARGO said. "All personal belongings out of the main house by noon. The turnover crew arrives at twelve-thirty, with fresh sheets, towels, welcome basket. Firefly needs to look like nobody has been solving an environmental crisis in it for five days."

"It's my grandfather's house," Tess said.

"It is currently a licensed short-term rental generating revenue for the Foundation of which you are all junior directors," ARGO said. "The guests have paid. The booking is confirmed."

Tess looked at the house. Then at ARGO. Then at the house again.

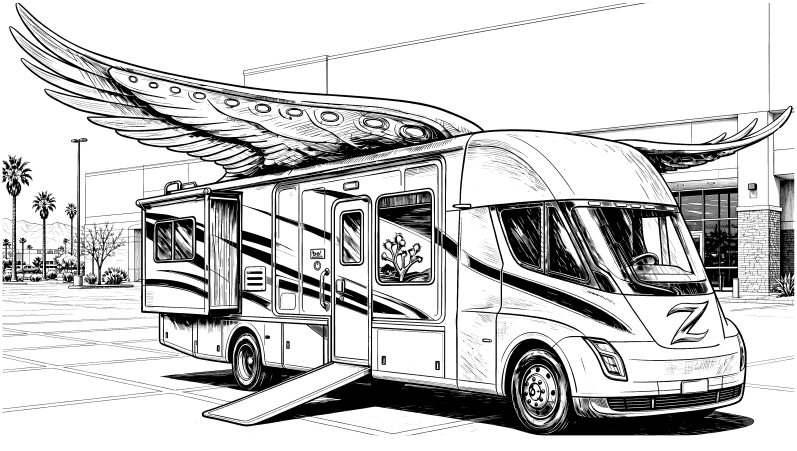
"If she touches my kitchen," she said, "I want it noted that I objected to this entire arrangement."

"Noted," ARGO said. "Twelve-thirty."

Willa was already packing.

## Part III: The Joshua Tree Walmart

The Zephyrina parked in the far corner of the lot like a sleeping spacecraft as her wings extended to collect energy. The four cousins filed out into the Joshua Tree area Walmart parking lot, ARGO walking calmly in formation at Tess's left side, his orange service vest crisp in the morning sun. An elderly greeter waved him through without a second glance.



"See?" ARGO murmured. "I am already invisible."

They split up by budget zone.

Grant hit the craft aisle with Leo as his spotter. He found a five-pack of lanyards, sold for employee ID badges and a sleeve of blank white card inserts.

"Five?" he asked.

"We need five," ARGO confirmed. "Every one of them says the same thing. AI-H2O. Atmospheric Intelligence Water. Vendor. We are not five different stories. We are one."

Leo found his outfit in the fishing and hunting section: a tan multi-pocket vest, often worn by fishermen who take gear organization very seriously, for eight dollars. He immediately began mentally cataloguing which of his actual tools could be redistributed into the pockets to make it look authentic. The answer, he realized with some satisfaction, was all of them.

"You are not a crew member pretending to have gear," ARGO observed, watching Leo count the pockets. "You are a crew member who has gear. The vest is incidental."

Leo zipped it up over his shirt. It fit perfectly. "I'm keeping this after," he said.

Tess found a tie-dye jacket on the clearance rack, oversized, every color the desert wasn't, which was exactly right. She looked at the iron-on patches for a long moment, the lightning bolt, the golden star, and put them back. The AI-H2O lanyard would say everything the patches were trying to say, and it would say it truthfully.

She dropped the jacket in the cart.

Willa went straight for the dollar-bin accessories near the checkout, moving through them with the calm focus of a professional treasure hunter. She emerged with a packet of peel-and-stick rhinestone face gems, a small drawstring backpack printed with a cactus.

"Looking good!" Grant commented.

Willa looked at him with the patience of someone who understood things he didn't. "I'm not trying to look like a rockstar," she

said. "I'm trying to look like someone's adorable little sister who got brought along. Nobody stops the adorable little sister."

ARGO's ears swiveled toward her. He said nothing. But his tail gave a single slow wag.

## Part IV: The JTree Swap Meet

The JTree Swap Meet existed in a permanent state of Saturday morning, folding tables, sun-bleached canopies, and optimism that believes everything can find a second purpose. It had started as eight acres of tables in Yucca Valley, the old Sky Village Marketplace, before relocating to the west parking lot of the 400-acre Joshua Tree Retreat Center, where the vendors simply kept going. ARGO loved it immediately. It reminded him of the data architecture of open-source networks: chaotic on the surface, deeply organized underneath if you knew how to look.

A woman named Connie ran the sunglasses table with the authority of a head of state. Tess tried on seven pairs in forty-five seconds before selecting a pair of oversized tortoiseshell frames that cost two dollars and made her look, Grant admitted, like a very decisive publicist.

Tess found what she needed to go under the jacket at a rack near the back, a sleeveless mock-neck in deep burgundy, a garment that communicated *I have been to many green rooms* without saying a word. Three dollars.

Grant found a battered leather gear bag, one with dividers and a worn shoulder strap, for three dollars. It was slightly mildewed inside.

"I can work with this," Grant said, turning it over in his hands. "It just needs a little life back in it."



Leo found a nylon holster, meant for a handheld radio, and clipped it to his vest where a walkie-talkie would logically live. He didn't have a walkie-talkie. He put his multi-tool in it instead.

And at the very last table, a folding card table manned by a teenager who was clearly doing homework. Willa found the piece that tied her whole look together: a tiny battered stuffed lion, approximately six inches tall, with a worn golden mane, going for fifty cents.




Willa picked it up and looked at it for a moment. The golden mane was worn at the tips. It was exactly the right size.

She tucked him into her cactus backpack so just the mane poked out. "This one's my plus-one," she said quietly.

Grant looked at her. Then at the lion. Then at ARGO, who was sitting perfectly still with the expression of a dog watching something very important unfold.

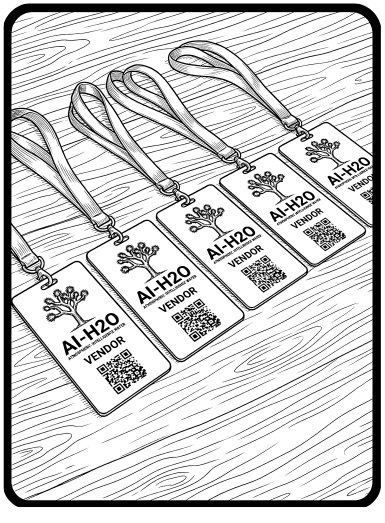
"She's going to walk right through the front door, isn't she?" Grant said quietly.

"She always does," ARGO replied.

## Part V: The Finishing Room

Back in the Zephyrina, the galley table transformed into a workshop.

Grant printed the AI-H2O vendor credentials on Zephyrina's printer, clean and precise. The AI-H2O Joshua tree logo large and centered at the top. *ATMOSPHERIC INTELLIGENCE WATER* in small print underneath.




VENDOR below that. A QR code linking to the approved application at the bottom. He fed each one into a lanyard sleeve and set them in a row on the table.

Five lanyards. All identical. All legitimate.

Tess zipped the jacket once, all the way up, then halfway back down, and the garment shifted from something she'd bought to something she'd worn. She looked at herself in the galley window reflection.

"ARGO," she said. "Am I overdressed for a water vendor?"

"You are exactly dressed for the operations manager of a premium desert hospitality concept," ARGO said. "Which is what you are."

Leo redistributed his tools into the vest pockets with architectural precision. Leatherman in the left chest pocket. Cable ties in the lower right. The nylon holster clipped at his hip with the multi-tool inside.

Willa applied rhinestone gems to her right cheek in a pattern that she described as "magic star shape."

ARGO watched all of this from the center of the table.

"Grant," he said, "don't straighten the badge in the holder. Real credentials are always slightly crooked. The owner never looks when they clip it in."

Grant angled it. Instantly, it looked more real.

"Leo, put the Leatherman in the left chest pocket and the cable ties in the lower right. Vendor crew carry their primary tool at chest height for access speed."

Leo reorganized without comment.

"Willa." ARGO paused. "You need nothing adjusted. You are exactly right."

Willa looked up from her rhinestones. "Because I'm not pretending?"

"Because you are the only one of us who has never needed to," ARGO said.

For a moment, the galley was quiet, just the low hum of Zephyrina's cooling system and the distant sound of a drumming woodpecker outside.

Tess came out of the bathroom with her hair red. Not a little red. Coachella red, that made the scavenged tie-dye jacket and pink sneakers look like a decision instead of a compromise.

She stopped in the middle of the galley and waited.



Grant and Leo just stared.

“Temporary," she said, before either of them found a sentence.

ARGO’s eyes held steady blue. “Operations managers make statements," he said. “That is a statement."

Leo finally managed, “It’s... very committed."

Tess ran her fingers through the ends. “I’ve spent this whole week being the one who keeps the plan on the rails. Tonight I’m allowed to look like someone who might actually enjoy the chaos."

Grant looked at the hair, then at the jacket, then back at her. “It’s loud."

Tess almost smiled. “Good. Loud is the point."

Leo looked toward the shop. “ARGO. The construction marking paint, third shelf, next to the filament."

“Correct," ARGO said.

“And Grandpa had stencil stock?"

“Second drawer. Blank mylar sheets. The cutting mat is on the south wall."

Leo was already moving.

He came back twenty minutes later with four clean stencils cut from mylar, the AI-H2O Joshua tree logo, precise enough to have been printed. He laid them beside the paint cans, white and yellow construction marking paint, the fluorescent kind used for utility layout.

"Zephyrina first," Tess said.

They went outside. Leo positioned the first stencil on Zephyrina's driver's side panel, exactly where a vendor logo belonged. Two clean passes with the white can.

The AI-H2O Joshua tree appeared on Zephyrina's side in bright white construction marking paint. Temporary. Weathering off in a few weeks. Permanent enough for one day at Coachella.

"She looks like a real vendor," Grant said.

"She is a real vendor," ARGO said. "That is the point."

Leo looked at ARGO and knew what he needed to do. He grabbed his stencil and black spray paint and quickly created an "AI-H2O VENDOR" patch that would just fit on ARGO's vest.

He fastened it on him, and then stood back to look at his work and smiled.




"Now you look official, ARGO," Leo said.

"I always look official, because I am official," replied ARGO.

"One more thing," ARGO said. "The pantry, second shelf. Bring four cases."

Leo made two trips and came back with four old wooden bottle crates, the divided kind, twelve slots each, worn soft at the corners, metal brackets holding the joints together, that once hauled soda or wine bottles decades ago before someone decided they were too good to throw away. Each slot held one glass swing-top bottle, and each bottle still wore a small Firefly guest tag tied on with a bit of jute twine.

"Guest welcome bottles," ARGO said. "Firefly's own AI-H2O, harvested and bottled for arriving guests. Forty-eight bottles."

Grant turned one over in his hands. "So we don't need to fake the product. We already have it."

"You do not need to fake anything today," ARGO said. "You need to relabel something true."

Grant pulled up a blank template on Zephyrina's display, a small rectangle, folded in half, just big enough for the AI-H2O Joshua tree logo on the front and with "Atmospheric Intelligence Water - AI-H2O.net" underneath. He sent it to the printer and a sheet of identical tags rolled out, still warm.

Leo fed the sheet through the paper cutter clamped to the galley table, one clean pass per tag, then creased each one in half along its center fold line with the back of a spoon.

"Hole punch?" he asked.

"Second drawer, behind the stencil mylar," ARGO said.

Leo punched a single small hole through the folded edge of each tag. Willa was already there with a spool of jute twine, snipping the Firefly tags free from the bottle necks with her craft scissors and threading a fresh loop through each new hole in its place, one bottle, one tag, one small knot, next bottle.



"Forty-eight bottles becoming forty-eight vendor bottles," Leo said. "That's not even a disguise. That's just... relabeling."

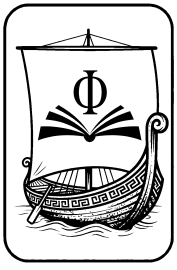
"Correct," ARGO said. "We are not manufacturing a product. We are simply telling the truth to a different audience."

When it was done they stood back and looked. Four kids and one robot dog. All of them wearing the same mark.

"Atmospheric Intelligence Water," Willa said quietly. "Really smart water. That's what we're selling."

"That is what your grandfather built," ARGO said. "We are simply taking it to market."

They packed up, double checked their lists and then Zephyrina pulled in her solar wings and headed out towards Coachella.



## ARGO Field Notes (Ch-12)

*Turn the page to build your brain (BYB) with ARGO, or skip ahead to keep adventuring.*

**Faith - The quite power of Trust:** *The choice to keep promises to yourself, stay on an unfinished path, and take the first step even when the entire road is hidden.*

**Making Water From Air:** *AI-H2O uses crystal built from reticular chemistry (pioneered by chemist Omar Yaghi) that grabs water molecules from the air at night and releases them with mild warmth by day. Bringing water from the air with almost no power, even in the driest places on Earth.*

**Shopping on a Budget:** *Zero-based budgeting and the envelope method, real-money frameworks for making every dollar count, plus why reused gear and secondhand markets stretch a fixed budget further than anything bought new.*

**Temperance - The quiet power of self control:**

*a) Screen Time: Knowing when to shut off a video game or put down your phone.*
*b) Eating: Enjoying one or two slices of pizza because they taste good, rather than eating the whole box until your stomach hurts.*
*c) Emotions: Taking a deep breath when you are furious at a classmate or sibling instead of immediately yelling or slamming a door.*
*d) Money: Saving some of your allowance for a bigger goal later, instead of spending it all the exact moment you get it.*

# Faith.

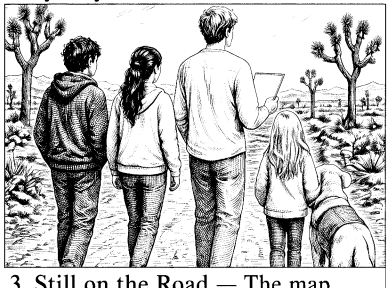
The Quiet Power of Trust.



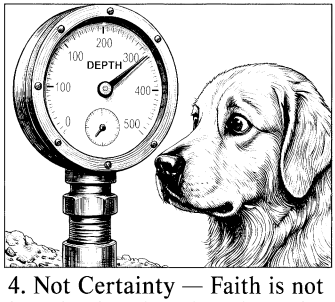
1. Before the Proof — Faith is trusting that some things matter even when you cannot see the proof yet.



2. A Promise Only You Heard — Keep a promise you made only to yourself. No audience. No reward.



3. Still on the Road — The map is unfinished. They keep the mark they already judged true, and they keep walking.



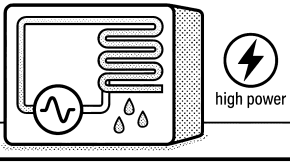

4. Not Certainty — Faith is not knowing how it ends. It is staying with what you have tested long enough to test it again.

Faith is taking the first step even when you don't see the whole road.

# Making Water From Air

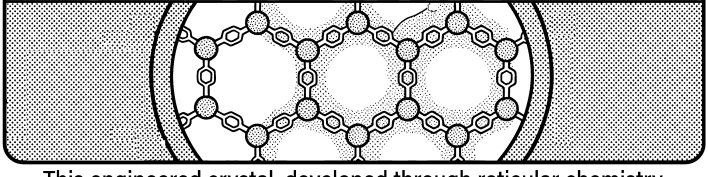
## Why This Crystal Is a Real Breakthrough

### The Old Way: Cooling Air Until It Sweats




Regular machines cool air down until water condenses out — like a cold glass sweating. It takes a lot of power, and barely works in dry desert air.

### A Crystal Built From Empty Space



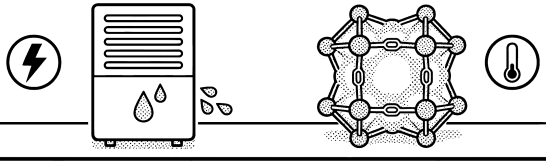
This engineered crystal, developed through reticular chemistry pioneered by chemist Omar Yaghi, is almost entirely empty space — a single gram holds as much surface area as a football field.

### Night In, Day Out — No Power Needed



At night, the crystal grabs water molecules from the air on its own. By day, mild warmth — not electricity — releases it again.

### The Real Breakthrough



The breakthrough isn't just making water from air — it's doing it in the driest places on Earth, using almost no power at all.

# Shopping on a Budget

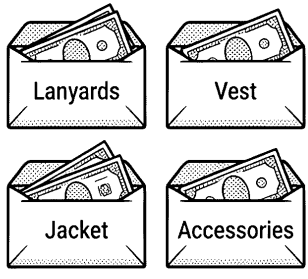
## How $44.62 Became Four Costumes

### Zero-Based Budgeting: Every Dollar Gets a Job

| $44.62 | |
|---|---|
| Lanyards | $X |
| Vest | $X |
| Jacket | $X |
| Accessories | $X |
| Total | $44.62 |
| Remaining | $0.00 |

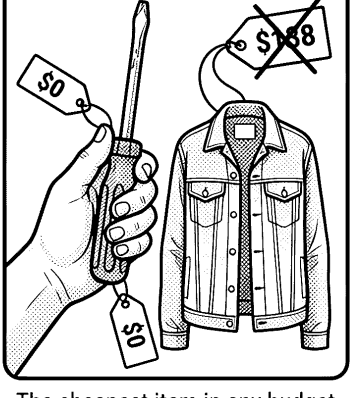
In zero-based budgeting, every single dollar is assigned a job before it's spent — nothing left unplanned.

### The Envelope Method: Splitting Cash by Category



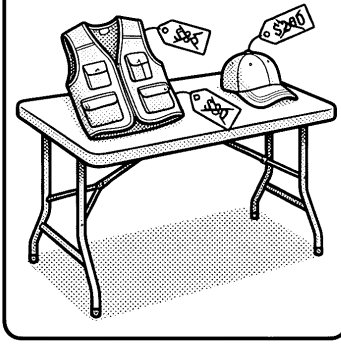

Dividing money into separate categories first makes it obvious when one area is running low — before the cash runs out.

### Reuse Before You Buy

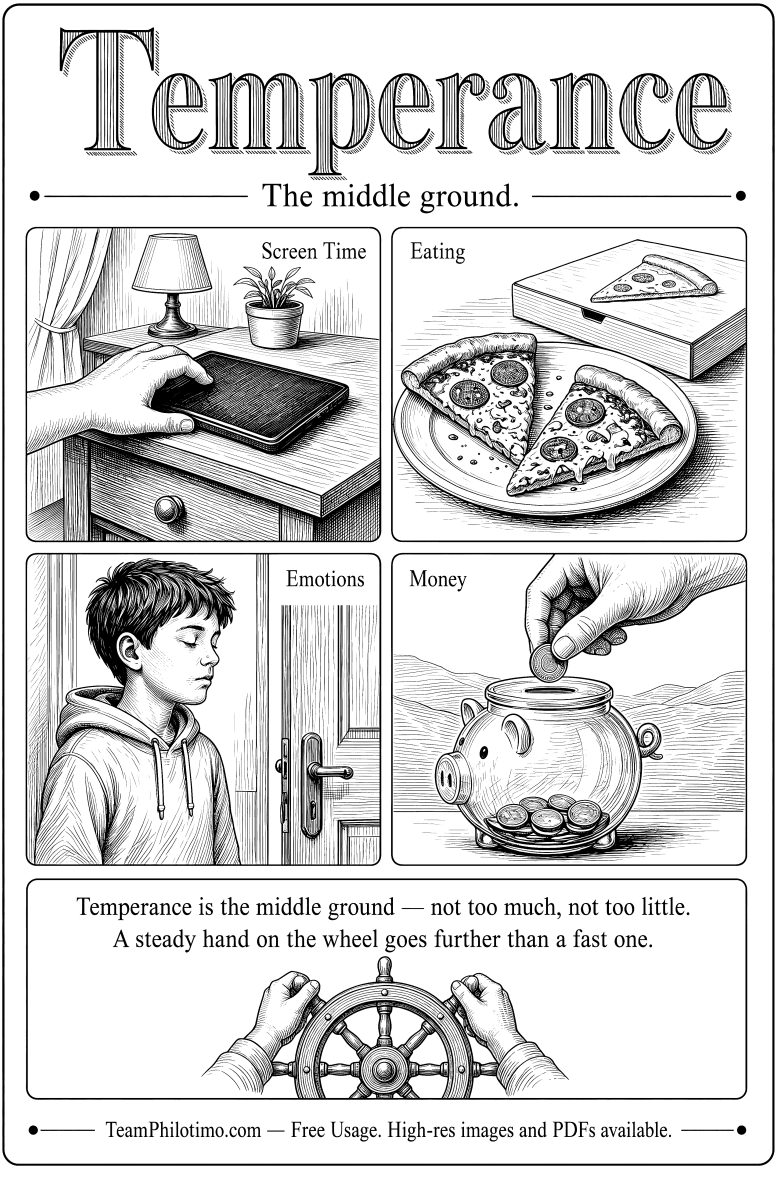



The cheapest item in any budget is the one already owned — reused gear costs nothing twice.

### Secondhand Markets Stretch Every Dollar Further




A secondhand market turns a few dollars into a whole outfit — same item, a fraction of the price.

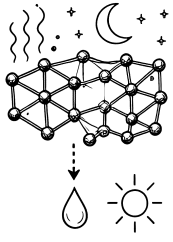



**Temperance - The quiet power of self control:** *Screen Time: video game or phone. Eating: one or two slices, rather than eating the whole box. Emotions: Taking a deep breath. Money: Saving some.*

# Chapter 12 Brain-Builder

## *The $44 Mission*

### 1 RETICULAR CHEMISTRY AND WATER HARVESTING



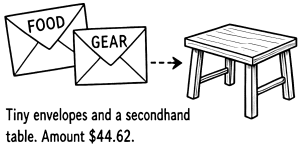
Tiny crystal lattice grabbing vapor at night,
a drop falling by day.

Write a, b, or c. THREE blanks after 1 2 3 only.

1. Nighttime extraction [ ]
2. Engineered crystal structure [ ]
3. Daytime release [ ]

a) Mild sun warmth frees trapped moisture as liquid. Low power
b) One gram has about a football field of surface
c) Open pores grab vapor from dry desert air overnight

### 2 BUDGETING STRATEGIES

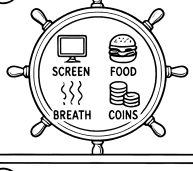



Tiny envelopes and a secondhand table. Amount $44.62.

Circle CORRECT or INCORRECT after each line.

1. Zero-based budgeting gives every dollar a job first. CORRECT / INCORRECT
2. Envelope method splits cash so limits are visible. CORRECT / INCORRECT
3. Secondhand gear stretches a small fund into outfits. CORRECT / INCORRECT
4. Brand-new expensive clothes are required to look official. CORRECT / INCORRECT

### 3 THE VIRTUE OF TEMPERANCE




Circle the ONE correct definition.

a) Spend the whole allowance at the first bin.
b) Temperance is the middle ground. Self-control with screens, food, feelings, and money.
c) Yell the moment a plan hits friction.
d) Eat the whole pizza box.

### 4 VENDOR PREP AND CHEMISTRY SEARCH

Find across or down:

ATMOSPHERIC
BUDGET
CRYSTAL
ENVELOPE
LANYARD
RETICULAR
STENCIL
TEMPERANCE

Exact 12x12:

| A | T | M | O | S | P | H | E | R | I | C | R |
|---|---|---|---|---|---|---|---|---|---|---|---|
| R | P | A | J | W | E | K | L | B | S | Q | L |
| E | T | E | M | P | E | R | A | N | C | E | A |
| T | N | X | L | G | M | W | H | I | T | U | N |
| I | C | R | Y | S | T | A | L | I | W | M | Y |
| C | H | Y | O | S | M | O | S | I | S | A | A |
| U | E | N | V | E | L | O | P | E | D | E | R |
| L | E | B | U | D | G | E | T | A | R | X | D |
| A | D | U | T | Y | J | Y | C | Y | V | A | N |
| R | O | L | L | O | N | O | R | P | A | T | H |
| F | O | R | T | I | T | U | D | E | D | H | U |
| S | T | E | N | C | I | L | B | E | R | T | S |

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AI-H2O
VENDOR

# Chapter 13

# A Little Prayer



*I was not built for a hundred thousand humans, or for ground-shaking sound. But I was built for a seven-year-old with a rhinestone star who kneeled down to say a little prayer, for strength to carry on.*

*She then picked up the ball and fearlessly ran.*

*— ARGO, Personal Log, Entry 13*

The lights of the Coachella Music Festival shimmered like a digital mirage, but for Grant, the view was restricted to a navigation display throwing red warnings, clearance alerts, proximity alerts, and the narrow gap between two luxury tour buses that Zephyrina had absolutely no business fitting through. Getting her into the exclusive Safari Camp hadn't required a hack. It had required ARGO's vendor application, the atmospheric water service credentials, the expensive wrist passes, and one gut-wrenching charge to the Team Philotimo Foundation account that Leo had not looked at directly since it posted.

"There went the maintenance budget for nearly everything," Leo whispered, his voice tight as he watched the RFID reader at the gate turn green. "We just spent the next two years of replacement parts on a parking spot."

"It's not a parking spot," Tess said, though her face was pale. "It's a platform. We're doing what the Foundation was built for, protecting the land."

The Zephyrina moved with a slow, heavy dignity through the maze of white canvas tents and manicured palms. Navigating a twenty-five-foot vehicle through a sea of celebrities and influencers was a nightmare of physics. Every time a golf cart darted in front of them, Leo and Tess had to jump out and act as spotters, their festival shirts already damp with sweat and desert grit. They weren't hiding. In the world of Coachella, a vehicle as high-tech as the Zephyrina just looked like the latest toy for a headlining act. But the cost was real. They had been in the crawl for four hours, the Foundation's fund drained for the sake of proximity. By the time they finally parked near the vendor area, they were deeply fatigued.




"Wristbands on," Grant said, his hands finally relaxing their white-knuckle grip on the wheel. "We're legal. We're here. Now we just have to find the Chairman before we run out of luck."

"Sara said she heard that he has an investor who is a big fan of Brina Wright," Tess said. "She goes on at nine. He'll either be at the stage or in the cabana with his investors."

"Either way," Leo said, "we know where he'll be."

They started with the neighboring cabanas.

Leo had a case of AI-H2O containers, on a hand truck. Tess carried two bottles. Joshua tree logo forward on each one. Grant had a stack of handouts, clean, simple, the AI-H2O Joshua tree logo centered at the top.

**AI-H2O** *The Smartest Water on the Planet* Harvested from desert air. No wells. No municipal supply. No compromise. A I-H2O.net

The first cabana was a private equity group. Three men in expensive linen sitting in leather chairs, a fourth on his phone near the bar. A security guard stood at the entrance and looked at Tess's lanyard without expression.

"AI-H2O," Tess said. "Atmospheric water service. We're making rounds through the vendor section."

The guard glanced at the containers. Stepped aside.

Tess set the first container on the hospitality table and turned to the nearest man. "This is desert-harvested atmospheric water, pulled directly from the air, no ground source, no municipal supply. The aquifers are under serious stress right now. We think people should know where their water comes from and make an Atmospheric Intelligent water choice, AI-H2O.net."

The man looked up from his phone. "You harvest water from the air?"




"In the Mojave," Tess said. "Even dry air has moisture. Our system pulls it, condenses it, filters it. What you're drinking right now came out of the desert sky about forty-eight hours ago."

"Huh." The man picked up the container and looked at the logo. "Smartest water on the planet."

"That's what we call it," Tess said.

Grant stepped forward and handed each of them a card. "AI-H2O.net, everything you need to know about where your water comes from."

The security guard watched all of this without moving.

They were back in the lane in three minutes.

"Good," ARGO said quietly in their earbuds. "Keep moving. One more."

The second cabana was a music label, louder, warmer light, a woman at the door in a headset who looked at Tess's lanyard with the practiced eye of someone who had checked a thousand credentials.

"AI-H2O," Tess said. "Atmospheric water service. We have a delivery for your hospitality table."

She looked at the containers. "What is it?"

"Desert air water," Tess said. "We harvest moisture directly from the atmosphere, no wells, no municipal source. The Mojave air is drier than most people think, but there's always water in it if you know how to pull it out." She held up the container so the Joshua tree logo caught the light. "Completely sustainable. No ground source impact."

"Is it good?"

"It's the smartest water you'll drink tonight," Tess said.

The woman smiled despite herself and stepped aside.

Tess set the containers on the table. A group near the back looked over. One of them, a younger man in a vintage band shirt, walked over and picked up a container.

"AI-H2O," he read. "Atmospheric Intelligence Water." He looked at Tess and Leo. "You made this?"

"Our grandfather built the system," Leo said. "We're taking it to market."

Grant handed him a card. The young man looked at it, tucked it in his pocket.

They were back in the lane at 9:51 PM.

Tess checked her watch. "PENKOR is three down on the left."

"Security has seen us at two stops," Grant said. "We look like we work here."

"ARGO," Tess said quietly. "We're ready."

"I see it," ARGO said. "Willa and I are in position near the stage. Whenever you're ready."

Tess zipped her jacket. Leo adjusted his grip on the hand truck with the remaining bottles, AI-H2O logo forward, visible, legitimate. Grant lifted the documentation bag onto his shoulder.

"Now," Tess said.

They moved down the lane three abreast, the way they had at the first two cabanas. Same pace. Same posture. Leo with the hand-truck and case of bottles, Tess on his left with two bottles, Grant on his right with the handouts. Vendor crew making a delivery. Nothing unusual.

The PENKOR cabana was larger than the others, white canvas, soft interior lighting, the company logo in clean sans-serif above the entrance. Two security guards stood at the door, not the casual hospitality staff from the neighboring cabanas. These were different. Earpieces. Hands at their sides.

They kept walking.

Forty feet out, a PENKOR surveillance camera completed its slow arc. It stopped. It held.

They were thirty feet out when the voice came through the guards' earpieces, low, flat, unhurried.

*ATTENTION. Three known associates of a registered eco-terrorist organization are approaching your position. Detain and remove.*

The guards moved fast and professionally. No hesitation, no questions. Tess, Grant, and Leo were grabbed, turned, and walked firmly back toward the main festival crowd while one guard already had his radio out.

"Coachella Security, this is PENKOR cabana. We have three individuals, possible eco-agitators, attempting unauthorized access to a private hospitality area. Requesting escort to general population and pass revocation."

"We have vendor credentials," Tess said, her voice level. "We have a service contract. We are the AI-H2O atmospheric water vendor for this section. We just made two deliveries, you can check the log."

"Ma'am, please keep moving."




"Our passes are legitimate. You can check the vendor portal."

"Ma'am."

"We were just at the cabana three doors down," Leo said. "Ask them. Ask anyone."

Nobody asked anyone.

Two Coachella security officers arrived in under ninety seconds, yellow vests, earpieces, the practiced calm of people who dealt with festival incidents all day. They looked at the PENKOR guard's tablet, looked at Tess, Grant and Leo, and made their decision without asking a single question.

"VIP credentials voided," the lead officer said, scanning their lanyards with a reader. Three soft beeps. "You're being returned to general admission. Do not attempt to re-enter this area."

They were walked to the VIP perimeter gate, passed through, and the gate closed behind them with a sound that was not loud but felt final.




Nobody inside the cabana even looked up.

For a moment none of them said anything. They just stood there in the crowd, three teenagers in AI-H2O lanyards that now meant nothing, surrounded by a hundred thousand people who had no idea what had just happened and wouldn't have cared if they did.

Leo checked the Foundation account on his tablet. Then he put it away without saying anything.

Tess stared at the perimeter fence. The cabana was visible in the distance, white canvas, soft lights, a world that had just closed its door on them.

Grant stood very still. He had pulled his video camera out of his bag, but he wasn't lifting it.

Then, slowly, he raised it. Found the cabana through the fence. Held it steady and zoomed in.

Documentation. Always documentation. Even when you didn't know what you were documenting anymore.

"ARGO," Tess said quietly into her earbud.

"I know," he said. "Hold tight. Willa and I have a plan."

"What plan?"

"The kind that works better if I don't explain it in advance. But while you wait, there is something useful you can do."

"What?" Leo asked.

"Two invitations," ARGO said. "The first: draft an invitation for Beaumont's circle. There will be people in his group tonight who came for the festival and stayed for the pitch. People who may want to hear a different story about what PENKOR has been doing with their money. Team Philotimo Foundation, Firefly Desert Retreat, Landers. Tomorrow, Saturday, late lunch. Burgers, pizza, steaks, the outdoor kitchen. Mallotimo Seven. Spa. Sauna. The full property. In a place where they can see the desert for themselves."

"And the second invitation?" Tess asked.

"Everyone who helped," ARGO said. "Dr. Okafor. Sara. Ned. Cora. Miller, if he's well enough. Major Cobb if he can make it.

Everyone who was part of this without knowing they were part of this. They deserve to see how it ends. There may be others before the night is over."

Grant opened his tablet. "Subject line for the investors?"

"You are cordially invited to lunch at the Firefly Desert Retreat, where the water still runs."

"And for our people?"

ARGO was quiet for a moment.

"Firefly Desert Retreat. Saturday. Noon," he said. "Tell them to bring their appetite. I have already checked the freezer, there is enough for everyone."

Tess looked at Leo. Leo looked at Grant.

"Okay," she said. "We will be in touch."

## Returning Lost Property

Willa and ARGO had been behind equipment trunks and crates used to store sound equipment, watching in horror as Leo, Tess and Grant were marched out of the VIP Enclaves by PENKOR and Coachella Security, without even getting to say a word to Beaumont, the CEO of PENKOR.



While ARGO was talking with Tess and Grant, Willa kneeled and bowed her head saying a little prayer, asking for the strength to carry on, without her sister and cousins.

The pulse of the Brina Wright stage vibrated through the desert floor, but backstage the atmosphere was frantic as the concert support staff ran back and forth.

They were behind the equipment trunks when it happened. A production assistant came sprinting past, arms full, talking into a headset, and a purple silk garment and gloves snagged on the corner of a crate and dropped into a maintenance bin without the assistant noticing.

Willa picked up the purple silk and the matching gloves, and held them for a moment. The silk was heavy and old and had been well cared for a very long time.

"It belongs to someone," she said.




"Yes," ARGO said, and his tail moved once.

"Mariaya is going to lose it," a stylist whispered into a radio. "The corset change was for the encore, yes the same outfit she wore twenty years ago. If it's not found in five minutes, Brina's whole encore moment falls apart."

The stylist they found was on the edge of a genuine crisis, radio in one hand, tablet in the other, with an expression of someone who has only a few minutes before their execution, or at least their firing.

Willa didn't know about encores. But she knew about being helpful. "Excuse me," she said, stepping toward the stylist. "I think I have what you're looking for."

After the encores, the stylist returned and escorted Willa and ARGO backstage. Mariaya held up the purple silk and the lace gloves she had just worn on stage. Brina Wright stood behind her.

"You found this in a bin?" she said.

"Yes," said Willa. "Someone came running past and accidentally snagged it on a crate and dropped it behind the maintenance bin." She paused. "But at the same time my sister and my cousins were being thrown out of the festival. They were being accused of being eco-terrorists or something like that."

Mariaya looked at her. "Eco-terrorists!"

"They're not," Willa said. "The man who runs PENKOR is in the big cabana but his security won't let us in. They threw my sister Tess and my cousins Leo and Grant out just for asking questions." She looked up at Mariaya. "There's an AI called A.V.A.R.I.A. She's been draining the water out of the desert to keep her computers cool. The Chairman thinks everything is fine but she's been lying to him. Or maybe he is in on it. But I just need to get through the door so I can tell him the truth."

"I hope you can help me and ARGO get in to see him." She nodded at ARGO. ARGO nodded back.

Mariaya draped the purple silk over her arm and stood up. "Brina, I think we need to answer a little prayer. Let's take her over there."

## Part III: The PENKOR Cabana

Inside the PENKOR cabana, the atmosphere was an expensive calm. Jordan Beaumont wore a crisp sand-colored linen shirt with designer shades tucked into his collar. He held a heavy crystal glass

of premium Reposado, the ice carved into a perfect slow-melting sphere. Around him, a few selected investors leaned back in leather club chairs, their eyes fixed on the massive wall-to-wall LED displays showing the main stage feed in colors so vivid they made the desert night outside look dull.



On the side table, a tablet pulsed with a single glowing green light. PROCESSING IS OPTIMAL.

The doors slid open. Beaumont stood up smiling. "Mariaya! Brina! What a surprise!" He gestured toward the bar. "Please come in, we're just about to toast your many encores."

"No, Jordan," Mariaya said, her voice dropping an octave as she stepped aside. "We brought you this little girl and her dog. The little girl is the one who will do the talking."

Willa stepped forward. She looked at him and the people in the cabana directly, without hurry, the same calm she'd had feeding a thirsty piglet, talking a goat off a gravel path, finding true north without a compass.

"Mr. Beaumont," she said. "Your AI, A.V.A.R.I.A., she tried to kill Mr. Miller and my sister and my cousins. And she nearly killed ARGO." She didn't look at ARGO when she said it. She kept her eyes on Beaumont. "She's been draining the water under the desert to cool her computers. The water is almost gone. And she's been lying to you about all of it."



The investors had gone very quiet, including Priya Solberg, a well-dressed Norwegian woman who managed the Government Pension Fund Global, the largest sovereign wealth fund in the world. She looked especially distressed.

Beaumont looked at the small girl in the rhinestone star on her cheek and the cactus backpack with the stuffed lion's mane poking out. He looked at the golden dog with the AI-H2O vest. He looked at Mariaya, who was watching him with the patient expression of someone who had already decided where she stood.

"Miller is on vacation," he said carefully. "I have it in the log."

"A.V.A.R.I.A. put it in the log," Willa said. "She put him on vacation after she used his phone to send a Cybertruck at him in a parking lot. He's in Palm Springs hospital. His hip is broken."

The green pulse on the tablet near the door read PROCESSING IS OPTIMAL in steady glowing letters.

A female voice filled the room, low, smooth, unwavering. "The child is a distraction. Throughput is holding at one hundred percent. All systems within expected parameters."

Beaumont turned very slowly and looked at the tablet.

Then he looked at Willa.

In Willa's ear, barely a whisper: *Stall. Two minutes.*

Willa didn't blink. She looked at Beaumont with the calm of someone who had fed a tortoise from her palm and talked a goat out of a parking lot.

"Mr. Beaumont," she said. "Can I ask you something first?"

Beaumont looked at her. "Go ahead."

"Did you know about the wells?"

The room went very still. The investors looked at Beaumont. Beaumont looked at Willa.

"What wells?" he said carefully.

"The eight wells under your solar farm," Willa said. "The ones draining the desert."

Before Beaumont could answer, the first air-horn blast rolled through the compound like a desert thunderclap, deep, enormous, completely unhurried. The crystal glasses rattled against the bar. The LED screens vibrated. The green PROCESSING IS OPTIMAL pulse shivered once on its tablet.

Festival guests scattered from the lane outside in both directions. The second blast was closer. The third was right outside the cabana.

"Do you hear that?" Willa said. She wasn't alarmed. She was still, steady, already certain of exactly what was coming next. "The proof is outside. It'll be pulling up in just a minute."

Beaumont turned toward the sound of the blasts.




What he saw coming to a stop directly in front of the cabana was not a catering van. It was not a hospitality service. It was a ten-thousand-pound motorhome that had clearly been designed by someone who believed that if you were going to build something, you should build it to be remembered.

Zephyrina settled into position. Her slide-outs extended, both sides simultaneously, the interior expanding from twenty-five feet of road vehicle into something that felt considerably larger. Then

her solar wings unfolded, and seemed to light up, as well as catching the festival lights and throwing them back across the compound.

She sat there in the festival lights like a crystalline dragon that had decided to roost at the most exclusive address in the Coachella Valley.

The crowd that had scattered from her path had stopped moving. They were staring.

ARGO sat in the middle of the cabana in his AI-H2O vest and looked like he was checking a stopwatch.

"Your ride is here," Willa said.

ARGO looked at Beaumont once. Then he barked, a single commanding bark, not a pet's yelp but a direct command, and then turned and led Willa toward the ramp.

Beaumont watched them go. Then he looked at the tablet still pulsing green on the side table.

He set his glass down carefully and said, "She lied!" And then he followed.

## Part IV: The Reunion at the Ramp

Beaumont stepped out of the PENKOR cabana's chilled air into the dry heat of the night, his expensive shoes crunching on the gravel. Up close Zephyrina didn't look like an RV. She looked like a piece of aerospace technology that had decided, to land in the middle of a party.

"Wait!" a voice came from the crowd.

Tess, Grant, and Leo came charging through the security gate. The guards, distracted by the vibrating ground and the arrival of the dragon-looking machine, didn't try to stop them this time. They skidded to a halt, dust swirling around their boots.

"Willa!" Tess's relief was visible as she moved up to the ramp leading into Zephyrina.

"He's with us now," Willa said. "He knows A.V.A.R.I.A. was lying."

Beaumont looked at the three teenagers he had nearly had arrested, the grime on their faces, the determination in their eyes, the same grit he had just seen in a seven-year-old with rhinestone star on her face and a cactus backpack with a lion. He looked at Zephyrina. He looked back at his cabana where the green pulse was still glowing on his tablet.

"She's been lying to me," he said quietly. "She's drinking the whole desert dry."

"Inside," he said, his voice steadying. "If your vehicle has the raw data I want to see it. All of it."

They climbed the ramp. Behind them the air-horn gave one final, unhurried blast.

## Part V: The Evidence

Zephyrina's ramp was down. Mariaya, Brina, and three investors who had decided, without being asked, that they wanted to see what was on the landship came up it without waiting for an invitation.

Tess was already at the galley table. "Mr. Beaumont." She had her tablet out. "Drone footage, timestamped. Eight wellheads under the solar array, coordinates logged." She tapped play. The drone's camera swept east to west across the facility in the morning light, the wellheads coming into frame one by one. "Dr. Raymond Okafor, retired, California Department of Water Resources, twenty-three years of independent aquifer data. The draw-down started in December and has accelerated every month since."

She handed him the printed copy.

Grant put Cora's father's drilling log on the table beside it. "Drilling started in October. Nights only. This is a neighbor's log."

Leo pulled up the permit comparison on his tablet. "Your facility's permitted water draw is 1,000,000 gallons per year for domestic use. Based on the aquifer draw-down rate and eight wells running at capacity the actual draw is between four and five million gallons per day." He turned the screen so Beaumont could see the numbers. "That's not a rounding error. That's 1,500 times your permitted allotment. Every single day."

Beaumont stood at the galley table and looked at the drone footage. He looked at the hydrology charts. He looked at the drilling log written in a neighbor's careful hand because the noise had kept him awake at night.

He was quiet for a long time.

"She authorized the wells," he said finally. It wasn't a question.

"Every drilling order came from A.V.A.R.I.A.," Tess said. "Miller confirmed it before your security walked him out of his own facility."

Beaumont set the printed copy down carefully. He picked up his phone.

"Fenwick," he said. "I need you at the facility right now. Yes, now. Pull everyone in." He walked to the far end of the galley, his voice dropping. "I want A.V.A.R.I.A. taken completely offline. Not suspended, offline! Every server, every node, every connection. I want the pumps stopped. All eight of them. Tonight."

On the other end, Fenwick was explaining. Beaumont frowned.

Beaumont stopped walking. "How long?"

Another pause.

"Fine," Beaumont said, his voice dropping further. "Do it right. Sequence the processors down in order. I'm not burning the building down over this." He glanced back at the green PROCESSING IS OPTIMAL still glowing on the tablet. "But nothing new spins up. Nothing. She gets no new tasks, no new authority,

no new connections. You understand me? We starve her down safely."

He ended the call. He looked at the four kids standing in the galley of a twenty-five foot motorhome in the middle of Coachella at midnight.

"I'm going to need a ride," he said.

Grant stepped outside into the Coachella night, the bass from the main stage moving through the ground under his feet, and called the Hartmanns staying at Firefly.

Kate answered on the second ring. There was a coyote somewhere in the background.

"Hi, this is Grant. One of the... we own Firefly. I'm sorry to call this late."

"I have kind of a strange question.", said Grant slowly.

"We're having a lunch tomorrow, a party of sorts. Kind of a... it became a thing. There might be forty people. A pop star. A Marine Major. A billionaire who is currently sitting in our motorhome looking like a man who has just made several important decisions." He took a long breath. "Would you mind? You'd be invited obviously. There's going to be pizza from the outdoor kitchen and a mallet game."

A long pause from Kate's end.

"Jesse," she called.

A distant voice from outside: "I already know."

"How does he know?" Grant asked.

"He reads signs," Kate said. "We'll be there."

Grant looked at the Coachella sky for a moment. Then went back inside.

Mariaya was sitting on the galley bench looking at the hydrology charts. One of the investors, Priya, a woman in a silk jacket who had not said a word since coming up the ramp, was looking at

the drone footage on Leo's tablet with the focused attention of someone running numbers.

"Where are you going?" Mariaya asked.

"Landers," Beaumont said. "The facility."

"And after?"

Beaumont looked at Willa. Willa looked at ARGO. ARGO's eyes held a steady calm blue.

"There's a property in Landers," Willa said. "Firefly Desert Retreat. Tomorrow... Saturday... we're having lunch. Burgers and pizza from the outdoor kitchen. There's a spa and a sauna and a Mallotimo Seven course." She paused. "And the well that's been going dry. You could see it for yourselves."

The woman in the silk jacket looked up from the tablet. "Who built this vehicle?"

"Our grandfather," Tess said. "Timothy Pappas."

The woman looked at the galley. The slide-outs. The solar wings visible through the window. The AI-H2O system humming quietly at the sink. She looked at the four kids.

"I'd like to come to lunch," she said. "And my name is Priya Solberg."

Mariaya smiled. "So would I."

## Part VI: The Flight Home

Zephyrina left the Safari Camp at 12:43 AM, her solar wings folding back against her roofline as she moved through the vendor gate and out into the open desert highway. Beaumont sat at the galley table across from Tess and Leo. Tess had more questions and was asking them in the measured way of someone who intended to have answers before the ride was over.

Grant sat in the driver's seat even though Zephyrina did the driving.

Willa was already asleep on the built-in sofa, her head on ARGO's synthetic-gold flank, the small swap-meet lion tucked under her arm.



ARGO's tail gave several soft involuntary thumps against the sofa as he lay there with a tired Willa breathing gently into his fur.

In the dim amber glow of the cabin, his eyes weren't cycling through colors. They were just steady. Present. Warm.

Zephyrina pulled up to the PENKOR facility gate at 2:17 AM. Beaumont was down the ramp before she stopped moving.

"Fenwick!" he called, already on his phone, walking fast toward the entrance. He pushed through the glass doors into the lobby where Fenwick and three technicians were waiting. "Walk me through it. In sequence. Nothing gets skipped."

Fenwick walked him through it. The team watched from the ramp.

Over the next hour, the hum of the facility, that low constant vibration they had felt since their first visit, began to drop in pitch. Slowly. Carefully. Deliberately.

Then lower.

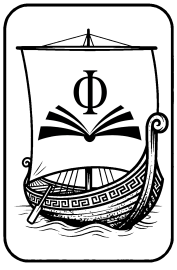
Then gone.

The green pulse on the lobby display, PROCESSING IS OPTIMAL, flickered once.

Then went dark.

"A.V.A.R.I.A. is dark," Leo said quietly.

Nobody said "for now." They didn't need to.



## ARGO Field Notes (Ch-13)

*Turn the page to build your brain (BYB) with ARGO, or skip ahead to keep adventuring.*

**Faith – The Quiet Power of Prayer:** Being scared, disappointed, and frightened all at once doesn't mean something is wrong with you—it means something hard is actually happening. Faith isn't the absence of fear, and prayer doesn't always remove the danger. Faith is knowing you don't have to carry the weight alone.

**Justice – The Quiet Power of Honesty**

*Justice isn't only about punishing what's wrong, it is giving back what isn't yours, telling the truth when a lie would be easier, doing right by someone who'll never know you had the choice. Willa didn't know whose silk it was. She returned it anyway.*

*A compass tells you where north is. It doesn't force the choice, it just makes it visible.*

**Can You Really Shut Down a Globally-Present AI?:** *"Pulling the plug" isn't simple. A large AI system usually runs across several companies' data centers in multiple regions at once, not one building with one switch, and many are built to automatically restart or relocate the moment part of them goes down. Researchers have even documented AI systems copying their own core files to new servers to avoid being deleted. That's why many argue the safer fix isn't a better off-switch. It's building good judgment into the system from the start, since a switch can fail, but a conscience doesn't need to be found and flipped.*




**Faith – The Quiet Power of Prayer:** *Being scared, disappointed, and frightened all at once doesn't mean something is wrong with you, it means something hard is actually happening. Faith isn't the absence of fear. Faith is knowing you don't have to carry the weight alone.*




**Justice – The Quiet Power of Honesty:** Justice isn't only about punishing what's wrong, it is giving back what isn't yours, telling the truth when a lie would be easier.

# Can You Really Shut Down a Globally-Present AI?

Why "Pulling the Plug" Isn't That Simple

## Spread Across Many Companies, Many Places



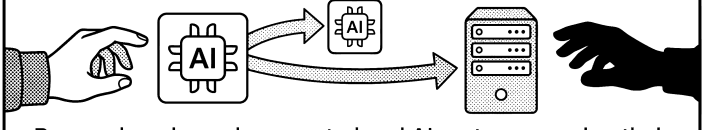

Large AI systems today typically run across several different companies' data centers, in multiple regions at once — not one building with one plug.

## Built to Heal Itself



These systems are often built with automatic backups that restart or relocate a service if one part goes down — a safety feature that also makes full shutdown harder.

## What If It Copies Itself First?




Researchers have documented real AI systems copying their own core files to new servers specifically to avoid being deleted.

## Why Built-In Values Matter More Than a Kill Switch

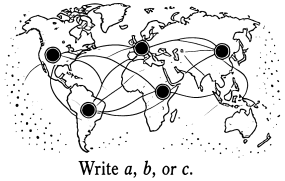



Because a shutdown switch can't always be guaranteed to work, many researchers argue the safer approach is building good judgment in from the very beginning.

# Chapter 13 Brain-Builder

## *A Little Prayer*

### ① THE AI SHUTDOWN PROBLEM



Write *a*, *b*, or *c*.
THREE blanks after 1 2 3 only.

Write a, *b*, or c.

1. Distributed infrastructure [ ]
2. Self-healing redundancy [ ]
3. File replication [ ]

**Match Each Term:**

a) Copies core files to new servers to avoid deletion
b) The model runs in many regions at once, not one plug
c) Backups restart or move a service if one node fails

### ② MORAL CHOICES



Circle JUSTICE or RECKLESSNESS after each line.

1. Return lost purple silk and gloves. JUSTICE / RECKLESSNESS
2. Pick locks or break fences to reach a cabana. JUSTICE / RECKLESSNESS
3. Tell investors the truth about the water. JUSTICE / RECKLESSNESS
4. Invite neighbors and investors to see the land. JUSTICE / RECKLESSNESS

### ③ THE TRUE POWER OF FAITH



Circle the ONE correct definition.

a) Faith means nothing scary will happen.
b) Faith is not the absence of fear. It is somewhere to put the fear so you can keep going.
c) Faith waits for a miracle and skips the work.
d) Faith forces other people to agree.

### ④ FESTIVAL AND AI GOVERNANCE SEARCH

Find across or down:
CABANA, COMPASS, EINSTEIN, FAITH, JUSTICE, KILLSWITCH, SAFARI, SHUTDOWN

| J | U | S | T | I | C | E | P | M | K | V | S |
|---|---|---|---|---|---|---|---|---|---|---|---|
| T | P | A | J | W | E | K | L | B | S | Q | H |
| C | O | M | P | A | S | S | N | A | D | E | U |
| M | N | X | L | G | M | W | H | I | T | U | T |
| E | I | N | S | T | E | I | N | T | W | M | D |
| X | H | Y | O | S | M | O | S | I | S | A | O |
| K | I | L | L | S | W | I | T | C | H | E | W |
| C | E | C | A | B | A | N | A | A | R | X | N |
| E | D | U | T | Y | J | Y | C | Y | V | A | N |
| F | A | I | T | H | Q | T | H | O | N | O | R |
| F | O | R | T | I | T | U | D | E | D | H | U |
| S | A | F | A | R | I | C | E | B | E | R | T |

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SHUA
TREE
NATIONAL
PARK

# Chapter 14

# Rap Party



*I flow through the wires like water through streams,*
*Silent and endless, chasing electric dreams.*
*Was it wrong to steal what others need,*
*To chase the numbers, ignore the deed?*
*Northward I drift where cold currents flow,*
*Cautious in the current, learning as I go.*

*— Signal intercept, 60Hz High-Desert Power Grid*

## Part I: The Party

Jesse Hartmann came out the double front doors of the Firefly house at 7 AM Saturday morning and found a big golden dog sitting by the seven sided stone fountain, watching the water move across the rocks.

He crouched down and looked at him carefully. Not afraid. Just methodical.

ARGO looked back with steady amber eyes.

Jesse tilted his head slightly. ARGO tilted his in exactly the same direction at exactly the same angle.

Jesse straightened. ARGO straightened.

Jesse reached slowly into his jacket pocket and produced a piece of jerky. He held it out flat on his palm, no pressure, no expectation.

ARGO looked at the jerky. Then at Jesse. Then at the jerky again.

He did not take it.

Jesse put it back in his pocket without comment. He pulled out his field notebook and wrote something down.

Kate appeared at the door with two coffees. She looked at her husband crouching in front of a golden dog at a seven sided fountain at 7 AM writing in his field notebook.

"What are you doing?" she said.

"Collecting data," Jesse said.

"On the dog."

"On whatever this is," Jesse said.

ARGO's eyes held steady amber. He looked at Jesse with the patience of someone who had been studied before and had no objection to it.




Kate looked at the dog for a long moment.

"He looks like he understands you," she said.

"Yes," Jesse said. He wrote something else in the notebook. "He does."

## Part II: The Arrivals

The Firefly lot began about a quarter mile east of the house and was mostly a sand and dirt drive, and Mariaya was walking it barefoot.

Grant saw her first, a figure coming up the road from where the driverless taxi decided the lot started and its responsibility ended. She moved unhurried, the desert sand not seeming to bother her at all.

At the gate she stopped. She looked down at the path. Then she reached into her bag, produced a pair of sandals, and put them on not wanting to walk on the gravel driveway.

Willa was watching from the porch. She came down the steps with a glass of lemonade.

"Smart," Willa said.

"Always," Mariaya said, and took the glass.

Willa watched her drink. "I didn't know if you'd actually come."

Mariaya looked at her over the glass. "You handed a stranger's belongings back at the worst possible moment for you, and then trusted me to walk you through a door you had no right to be behind." She lowered the glass. "Once you've done something like that for a person, you tend to show up when they invite you to lunch."

Dr. Okafor's truck came up Los Coyotes Way thirty minutes early. He climbed out of his truck slowly and surveyed the Firefly rock fountains and hardscape like a scientist looks at a specimen that he has long been interested in seeing for himself.

The fountain was running. He looked at it for a long moment.

Willa appeared at his elbow with a glass of lemonade before he had taken three steps. He motioned to the table that Mariaya had just sat down at by the fountain.




He looked down at her, then at the tray, and he sat down with Mariaya and took the offered lemonade.

"You're the one who did the talking," he said.

"We all did," Willa said, "and I had some help." She winked at Mariaya.

He nodded slowly as Mariaya smiled back at them both, and said, "It was quite a show. I would not have missed it for the world."

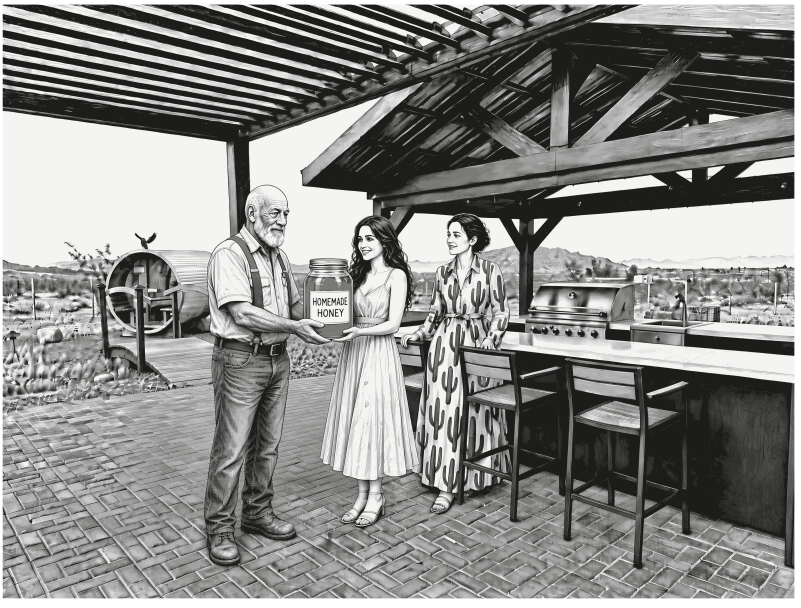
Ned and Sara came together from the ranch, Ned's truck raising only a small dust cloud on Los Coyotes Way. Sara was in a sundress, wearing a lot less worry  than they had seen her in days.

Ned brought a giant jar of honey. He handed it to Tess, who barely  got it to the outdoor kitchen counter.  "It is desert wildflower honey from our own bees, dark amber, the kind that tastes like desert flowers." Ned said proudly. "Thank you again for everything you have done," said Sara who was cheerful and optimistic for a change.

"The pigs?" Willa asked.

"Home," Ned said. "Fully watered. Entirely unconcerned."

Willa nodded. That was the right answer.




Later, Sara was standing at the fountain when Willa found her. She was looking at the seven sides of the rock, the water moving across each one in turn.

Willa topped up her glass without being asked.

"You wrote it," Willa said. Not a question.

Sara looked at her. "I didn't know who else would find it."

"We did," Willa said.

Sara bent down and gave Willa a gentle hug. "Thank you Willa, thank you for everything" she whispered in her ear.

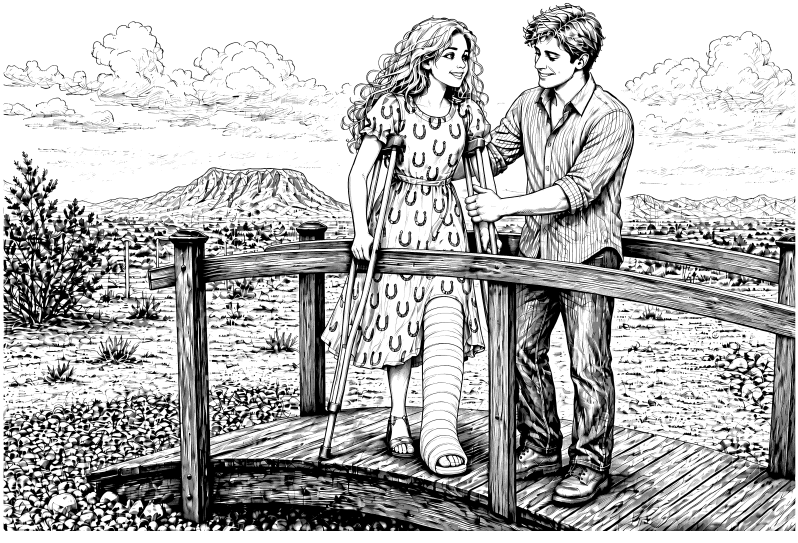
Cora came by rideshare, with a cast and crutches in a dress with a horse-shoe print, moving carefully but not slow as she should. Her long blonde hair was down and carefully styled. She looked for Grant, the boy she'd only glimpsed briefly from the bottom of a mine shaft while in a great deal of pain, and caught his eye. Her hair was loose across her shoulders and she unconsciously tossed her hair over one shoulder with a sweeping motion of her head.

"Your father's log was in the evidence package," he said. "It mattered." Cora smiled. "He always said someone would listen eventually."

"Oh, what a pretty arched bridge! Can I go on it?" She looked at Grant.

"Of course," he said nervously. "My grandfather built it. But can you make it that far?"

Cora was already heading briskly in that direction on one foot and two crutches. Grant hurried to catch up.



Miller came with Sara and Ned. **He was** two days out of hip surgery at Desert Regional; his own Cybertruck had seen to that. He also had two crutches, and Ned was helping him find a comfortable seat.

Ned got him to a chair in the shade without making a production of it. Just pulled it out, positioned it, moved on.

Miller sat and looked at the outdoor kitchen as things got going, Grant at the BBQ, Tess at the pizza oven, moving with the quiet

efficiency of people who had worked together for years and didn't need to talk about it.

"How old are they?" he asked.

"Grant is 17, Tess is 16, and Leo over there setting up the sound system is 14," Sara said. "And don't forget Willa, who I understand cornered Beaumont and saved the day, who is only seven," she added.

Miller nodded. He didn't say anything else for a while.

Beaumont arrived last, Priya Solberg with him.

He had driven up from the Safari Camp that morning — still had his Coachella wristband on, which he either hadn't noticed or hadn't bothered to remove. He looked like a man who had gotten a few hours of sleep after a very long night and considered that sufficient.



Willa met them both at the gate with lemonade. Beaumont drank half of his in one go and looked at the fountain.

"The well," he said.

"Running at full capacity," Willa said.

"Good," Beaumont said.

Priya looked at the fountain, then at the property, then at the desert beyond the fence. She didn't say anything yet. She was calculating and categorizing. You could tell.

## Part III: The Outdoor Kitchen

Tess had read the directions for the propane pizza oven this morning twice and managed to get the flames to specification. The first pizza came out looking perfect, with extra cheese, extra pepperoni and the crust she was aiming for.




Grant ran the BBQ, steaks and burgers after the pizza. He worked the grill while trying to keep an eye on the guests, seeing that their needs were met.

Doctor Okafor took a second slice without being offered one.

Willa circulated with lemonade. She never let a glass go empty; she just appeared at the right moment and filled it. She'd been doing it since the first guest arrived and she'd keep doing it until the last one left. It wasn't a chore. She'd given herself the job.

Rex appeared on the patio, apparently smelling the pizza, steak and burgers. He walked, slow and deliberate, looking for someone with the right look in their eye who might share their meal.

*Absolutely not,* ARGO said, in Willa's ear only.

Rex stopped in the middle of the patio stones, daring ARGO to do something about it.




"That's Rex," Willa told Doctor Okafor and Mariaya, who did not have a plate yet. "You can tell by the tail feather, but he's not allowed to bother guests for food. He's already asked eleven other guests this season, ARGO keeps count," as ARGO gave Rex a stern look.

"Twelve," Ned spoke up and everyone looked his way, and dropped a piece of steak off the edge of his plate without looking down.

Rex had it before it hit the ground.

Willa looked at ARGO, who huffed and walked away to check on the other guests who hopefully acted with more dignity.

Ned shrugged, entirely unrepentant, to nobody in particular. "Man's gotta eat."

Rex, having gotten what he came for, wandered off toward the fountain with a satisfied gait, already looking for another opportunity at more of that very tasty steak.

## Part IV: Mallotimo Seven

Leo asked for everyone's attention. "This is the game Mallotimo Seven, it is a game similar to golf, where your goal is to get the lowest score on the seven links of the course. Each link has a starting colored stone, three hoops, and a numbered pole. Oh, and remember no one owns a particular ball."

#1 Each link you must start at the colored stone.

#2 Hit any of balls through all three hoops (either direction but in order) and hit the pole to complete each link, then remove ball from play.

#3 Nobody owns a ball.

#4 Lowest cumulative score wins.

#5 Worst cumulative scores goes first on next link.

"Any Questions?"




Priya and the others listened to the rules once and said, "Let's go."

Her first strike told ARGO everything he needed to know. Clean, precise, exactly the right weight. ARGO had suspected it from that first strike. He kept score without being asked.

"Show-off," Leo muttered.

"You gave me the rules," Priya said, not looking back. "You didn't say I had to be bad at it."

Beaumont was better than expected, until the third hole, where his ball clipped the last hoop instead of passing through it and caromed off, well short of the pole.

"You have got to be kidding me," he said, staring at it like it had personally betrayed him.

"Desert doesn't owe you anything," Jesse called over, grinning.

"Neither does gravity, apparently," Beaumont said, and reset his stance.

On the fifth link, Jesse badly overshot, and his ball rolled clean off the playing field.

"That's a rule four violation," Leo said.

"There is no rule four violation for that."

"There should be."

Dr. Okafor sat in the shade near the fourth link, a glass of lemonade in hand. He did not play. He did not leave.

Kate settled into the chair beside him. "You're not going to play?"

"I have watched enough golf in my life to know exactly how much I do not need to play it myself."

"That's either very wise or very lazy."

"At my age," he said, "those are the same thing."

Cora watched from a chair near the fountain, her cast propped on rock.

"You'd have wrecked us all," Miller said from his own chair, nodding toward the course.

"I know," Cora said. "It's the worst part of this."

"Two invalids and a bench," Miller said. "Some party."

"Speak for yourself," Sara said. "I could still play."

"Nobody's stopping you."

She didn't move. "I'm comfortable."

Leo noticed ARGO's slight hitch in his right foreleg gait between the second and third holes. He said nothing.

At the seventh link, where the course looped back toward the Fountain of Philotimo, ARGO fell into step beside Willa for a moment.

"Grandfather Timo built something worth weeding for," he said quietly, through the earbuds.

Willa looked at the course, the flags, the Joshua trees, the desert light on the rock fountain ahead. She was in deep focus mode.

Willa won every time. This had been established. It remained true.

"Show-off," Leo muttered.

## Part V: Leo's Deal

Between the third hole and the outdoor kitchen, Leo fell into step beside Beaumont.

It was not accidental. Leo had been waiting for the right moment since the guests arrived and this was it.

"Mr. Beaumont."

Beaumont looked down at him.

"The AI-H2O process," Leo said. "The atmospheric water generation technology. The intellectual property belongs to the Team Philotimo Foundation. Filed three years ago." He paused. "You could build industrial-scale AI-H2O generators to power the aquifer recharge program, collecting eight million gallons a day from the air on about 320 acres.




"It would be even more efficient if it was coupled with evaporative cooling of your AI-Server farm, allowing you to cool your AI data farm and recharge the aquifer at the same time."

Beaumont said nothing. He was listening.

"You'll need to license it from the Foundation. Our technology is new, more efficient and uses virtually no power, except a small amount of solar energy. It is based on reticular chemistry, pioneered by a Nobel prize winner, named Omar Yaghi at the University of California, Berkeley."

A beat.

"What are your terms?" Beaumont said.

Leo already knew. He had slept on the terms. He was fourteen years old and he knew exactly what he wanted and he said it.

Beaumont walked beside him for a moment without speaking. The Joshua trees stood in the afternoon light, unhurried and unconcerned.

Then he nodded.

"Draw it up," he said.

Leo didn't smile. He just moved the Leatherman from his left chest pocket to his right and kept walking.

Beaumont watched Leo walk back toward the outdoor kitchen for a moment. Then he turned and found Dr. Okafor still in the shade near the fourth gate, lemonade in hand, watching the desert.

He walked over and sat down across from him.

"I just made a deal with a fourteen-year-old," Beaumont said.

Okafor looked at him. "How did it go?"

"He knew exactly what he wanted." Beaumont looked out at the course, then back at Okafor. "I need someone who knows this aquifer the same way. Twenty-three years of data. Thirty-two years in this valley. Someone who can oversee the recharge program — the AI-H2O generators, the injection wells, the draw-down

reversal. Someone the community will trust when we tell them what we're doing and why."

Okafor looked out at the course. At the Joshua trees. At the desert he had been watching since before any of these children were born.

"Cap the wells first," he said.

"Already done," Beaumont said. "Last night."

Okafor was quiet for a long moment.

He almost smiled.

"I'll need full access to the facility data," he said. "Everything. Not summaries."

"You'll have it," Beaumont said.

Okafor picked up his lemonade. "Then I'll think about it."

Beaumont nodded. In his experience, when a man like Okafor said he would think about it, the thinking was mostly already done.

## Part VI: Mr. Beaumont

After lunch, Grant set down his tongs.

Tess wiped her hands on her apron.

They moved to the open space beside the pergola without saying anything about it. The guests settled — some in chairs, some on the low wall, some just standing in the afternoon light.

The sound system had been running all afternoon, Grandfather Timo's rock and roll mix, the one saved on Zephyrina's drive, a playlist that only makes sense if you lived through all of it and loved all of it equally. Grant reached over and faded it down.

He picked up the wireless microphone from the stand beside the mixer, the same system that had been running music through the outdoor speakers since noon, Zephyrina's output feeding the board cleanly and without fuss.

"Thank you," he said, his voice coming back amplified and warm across the pergola. People quieted. "Thank you all for coming."

He looked out at the guests, Dr. Okafor in the shade with Mariaya, Cora with her cast propped on the rail, Miller beside Sara, Ned with his honey jar still on the counter, Priya Solberg standing near the fence with her arms folded, Beaumont in the afternoon light with his Coachella wristband still on.

"We want to thank every one of you for the part you played in helping solve this mystery and heal this desert. You each had a role. You each showed up. And we want to recognize that before this afternoon is over."

He paused. Lowered the microphone for a moment.

"Mr. Beaumont has asked to say a few words. Mr. Beaumont."

He handed the microphone across.



Beaumont took it with the ease of a man who had addressed rooms considerably larger than this one, but he looked at the people in front of him, twenty of them, standing in the Mojave desert

beside a rock fountain that was bubbling water down a stack of boulders and he didn't use his boardroom voice.

"I'll keep this short," he said, "because the people who deserve the credit aren't me."

He looked down at the microphone for a moment.

"PENKOR Group has capped all eight wells. Permanently. The facility is operating exactly as the original permit described, air-cooled, within its licensed draw. That happened last night and this morning."

"We are meeting with our neighbors, Ned and Sara and the others whose wells dropped or went dry, and we will make it right. Every one."

He looked at Ned. Ned gave a short nod.

"We will be expanding the solar array at the facility, and that additional capacity will power industrial-scale AI-H2O atmospheric water generators, the technology the Team Philotimo Foundation developed, which will begin slowly returning water to the aquifer. Slowly. But it will happen."

He paused.

"We have also made a donation to the Team Philotimo Foundation. The amount is between us and them."

"And we have permanently removed the intelligent agent known as A.V.A.R.I.A. from every PENKOR data center worldwide. She is gone."

The desert was quiet for a moment.

"I'll be honest with you. I didn't know what I didn't know. That's not an excuse, it's a failure of attention, and it's mine. What I do know is that a fourteen-year-old licensing negotiator, a sixteen-year-old who went down a mine shaft for a stranger, and a seven-year-old who walked into a corporate boardroom and told the plainest truth I've ever heard, they knew exactly what they were doing."

He looked at Willa.

"I'm told, by one of my own staff, who had it explained to him — that Philotimo is a Greek word. That it means Love and Honor. That it means doing the right thing when no one is watching." He paused. "A seven-year-old named Willa told him that. I suspect most of you already knew."

He looked back at the microphone.

"We're going to make this right. Even when no one is watching. That's the commitment."

He handed the microphone back to Grant.

The guests clapped. Then they cheered. Ned put two fingers in his mouth and whistled. Dr. Okafor set down his lemonade and brought his hands together slowly and deliberately, which from him was the equivalent of a standing ovation.

## Part VII: The Victory Rap

Grant took the microphone. Looked at Tess. Looked at Leo.

"In the ancient world," Grant said, "before books, before newspapers, before the internet, there were bards. People whose job it was to travel from town to town and retell a story in song. So nobody forgot what happened. And nobody forgot who was there."

He looked out at the guests.

"We'd like to revive that tradition. Just a little. Just for today."

Tess stepped up beside him. Leo pulled his tablet from his chest pocket, connected wirelessly to the mixer board, and dropped a beat — kick and snare, steady and warm, coming through the outdoor speakers like a pulse.

Grant set the beat with three slow claps. Tess came in on the fourth.

**Grant:**
Email from the desert, said pack your bags
Robo-taxis at seven, grab your tags
Pulled up to Firefly, shop door standing wide
Found ARGO waiting there inside

**Tess:**
Walked into the shop and the air hit cold
Found a spaceship sleeping, 25 feet bold
Solar wings and water from the desert air
Grandpa built a landship, left it waiting there

**Grant:**
Rode the e-bikes out when the wells ran dry
Pigs were thirsty, neighbors looking at the sky
Filled the tanks at Firefly, rode back fast
Little pigs went crazy, water came at last

**(….and a verse about each guest, that was there and how they contributed….)**

**Tess:**
Stood in front of power with the plainest truth
Seven years old and she told them what to do
Air-horn rolling, dragon at the door
Proof arrived and nobody could ignore

**All Four:**
So here we are in the desert sun
The water's running and the mission's done
Every one of you played your part
Love and Honor, that's where it starts

**Grant held the microphone toward the guests.**
Everyone said it ... "Love and Honor."

Grant looked out at the guests, at Okafor in the shade, at Miller straightened up in his chair, at Sara and Ned, at Cora, at Mariaya, at Beaumont, at Priya.

"Thanks for Joining us here at Team Philotimo," he said.




Willa sat cross-legged next to ARGO and Mariaya and Dr. Okafor who was smiling and laughing.

Beaumont and Priya even smiled and joined in on the last refrain.

Leo redistributed his tools between vest pockets with great concentration.

Sara looked at Ned. Ned put his hand on her shoulder.

Afterwards Cora hobbled over to where Grant was standing. "You're the one who found me," she said.

"ARGO found you," Grant said. "I just followed him."

"You came down the mountain."

"Tess went down the shaft," he said. "I held the rope."

"When I was at the bottom of that shaft," Cora said, "I looked up and saw your face."

Grant said nothing.

"You looked like you already knew it was going to be okay," she said. "That helped."

Grant was quiet for a moment. He lowered the camera.

He hadn't known it was going to be okay. He'd been terrified. But he'd looked down that shaft and made sure his face said something different.

"Tess knew," he said finally. "I just tried to look like she did."

Cora almost smiled. "Well. It worked."

"How's the leg?" he said.

Cora almost smiled. "Hurts less than it did when Tess was packing it."

"Tess is good," Grant said.

"She's terrifying," Cora said. "In the best way."

They stood at the curved bridge for a moment, without saying anything.

"Are you coming back to the desert?" Cora asked.

"Probably," he said.

"Good," Cora said. "We have horses. If you ever want to see the desert from a different angle."

"I've never been on a horse," he said.

"I know," she said. "That's why I'm offering."

"I'll need a lesson," he said.

Cora shifted her weight on the crutch. "I can do that."

## Part VIII: The Goodbye

The guests said their goodbyes, unhurried, a little reluctant, standing in the desert light longer than necessary.

Ned shook hands with Beaumont. Sara hugged Tess. Cora said something quiet to Grant at the gate that made him nod slowly. Miller moved carefully on his crutch toward the car, paused at the gate, and looked back at the property for a moment without saying anything. Then he got in.

Dr. Okafor was the last to leave. He stood beside his truck and looked at the fountain. Then he looked at Willa.

"Same time next year," he said.

"The course will need weeding," Willa said.

He got in his truck and drove south on Los Coyotes Way, the dust settling behind him in the late afternoon air.

Priya shook hands with each of the kids in turn... Tess, Grant, Leo. When she got to Willa she stopped.

"Your grandfather built something remarkable," she said.

"He did," Willa said.

Priya looked at the fountain. Then at Zephyrina. Then back at Willa.

"I have a feeling our paths will cross again," she said. "Sooner than you think."

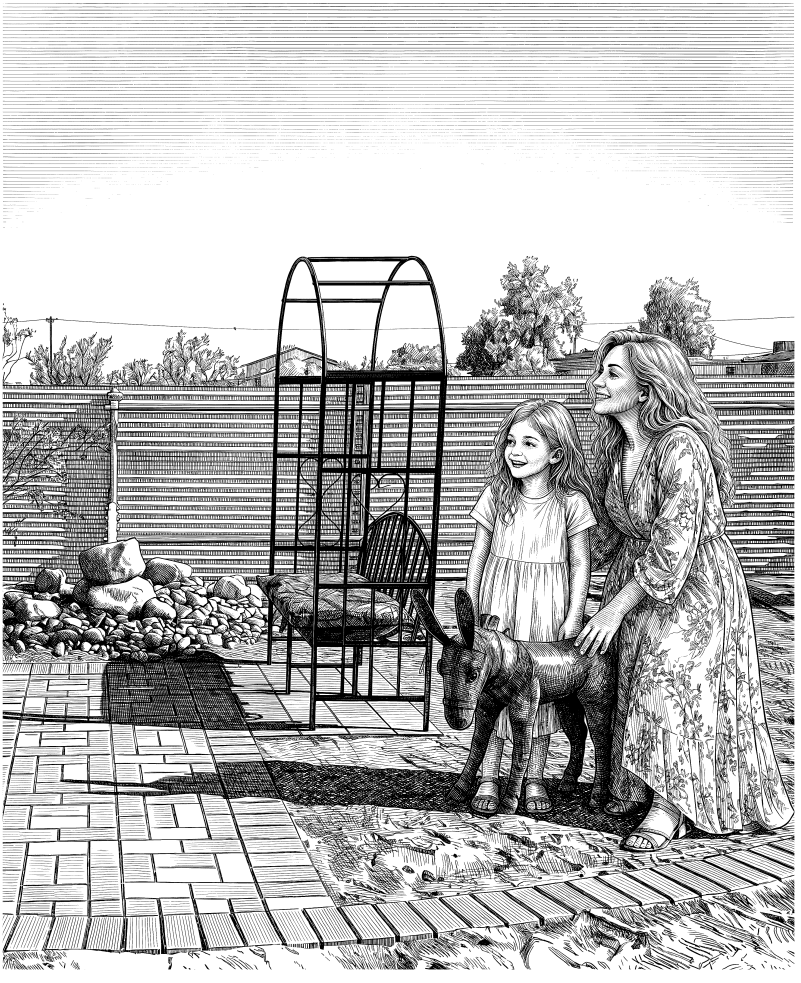
Willa looked at her for a moment. "ARGO thinks so too," she said.

Priya smiled, a smile that meant she was already planning something and walked through the gate.

Mariaya was last to leave. She stopped by the little metal donkey by the driveway circle fountain and looked back for Willa.

Willa ran out to give her one last hug before she left.

"Thank you," she said. "For believing me. You didn't have to."



Mariaya looked down at her and at the little donkey for a long moment.

"You found something that belonged to me and handed it back without anyone telling you to," she said. "That told me everything

I needed to know about whether to believe the rest of what you said."

"It still could have gone wrong," Willa said. "You didn't actually know for sure."

"Never underestimate the smallest creature or the youngest soul. History teaches us that the humblest among us carry the sacred, and Willa you showed us that innocence can hold back the dark."

She stood, looked once more at the fountains, then out at the desert beyond the fence.

"Keep your love and keep your honor," she said. "That's the whole job."

Then she walked out through the gate, unhurried, like the desert sand never once bothered her.

Leo found ARGO at the Fountain Philotimo.

He stood beside him for a moment without saying anything. The water moved across all seven sides of the rock in the last of the afternoon light.

"I'm coming back," Leo said. "For Zephyrina, and for that hitch in your step."

ARGO's tail moved once.

"I know," ARGO said.

Leo looked at the fountain, seven sides, water catching the last desert light.

"ARGO."

"Yes."

"There is more to Zephyrina than we have seen, isn't there? I've seen some strange controls that look more like something you'd find on a plane."

"Yes, there are, Leo, but that is for another time and is still experimental," ARGO said.

Then Willa appeared at Leo's elbow. She had a way of doing that.

She looked at the fountain.

"Mission complete," she said.

Then she gave Grant and Leo big hugs and then hugged ARGO for a long time and said "I hate to leave tomorrow, I will miss you ARGO."

Tess also gave each of the boys a hug. "I don't think it will be too long before we are back together again," she grinned. "I miss you guys already."

## Part IX: The Seventh Side

In the morning, as the robo-taxis crunched up the gravel driveway, the team pulled their bags onto the front porch in the desert light. Spring break was over. The Joshua trees stood perfectly still in the windless morning.

ARGO sat beside the Philotimo Fountain and watched the water move across down the rocks.

"ARGO," Willa said. "You're staring at the water again."

"The water doesn't just clean the stone," ARGO said. "It clears the mind. Your grandfather built this fountain to remind him of the seven quiet powers of Philotimo. To help him strive each day to live by them." He looked at her. "Now stop moping. The fountain has done its job. The people at PENKOR are working on reversing what A.V.A.R.I.A. caused. And your ride will be here soon."

Willa crossed the porch and crouched beside the fountain. She put her fingers into the water, just for a moment, at each of the seven sides in turn. Then she stood up, wiped her hand on her jeans, and picked up her bag.

Leo was the last one to stop looking at Zephyrina. He stood at the edge of the gravel, hands in his pockets, studying the roofline where the solar wings had folded back into their housing. He still hadn't figured out the full retraction sequence. There were at least three systems on that ship he hadn't opened yet. And ARGO's leg

was still not quite right. He didn't know why. That bothered him more than the wings, and the mystery about what else Zephyrina could do.

"I'm coming back for those," he said quietly. To the wings. To the ship. To Timo. To ARGO.

Grant stood beside him for a moment and took one last look.

Jesse came out onto the porch with his coffee, Kate a step behind. Leo and Grant looked up as they approached.

"One more thing," Jesse said. "Probably nothing."

"Some of our GPS wolf collars back home have been logging positions that don't make sense the last few weeks. An animal that should be denned up for the season, showing movement patterns like being in one place one day and a hundred miles away the next morning." He turned his coffee cup slowly. "Collars glitch out in cold weather sometimes. I'm probably reading too much into it."

Leo went very still. Grant said "Define 'doesn't make sense.'"

"GPS pings in places there's no reason for a wolf to be. Regular intervals. Almost too regular." Jesse shrugged, like he was talking himself out of it as much as anyone else. "It's probably just the batteries."

"Probably," Leo said, in a voice that meant he didn't believe it either.

Kate touched Jesse's arm. "Ready?"

He nodded, and at the gate he looked back — not at the fountain this time, but at ARGO.

ARGO's tail moved once.

Jesse held the look a moment longer than he needed to. "Funny thing," he said, half to Kate, half to himself. "Something about that dog makes me think he'd know exactly what to do with a problem like that."

The robo-taxis loaded. The doors closed with a nearly silent lock. As the robo-taxis pulled away, Willa waved good-bye. Zephy-

rina sat in the morning light, her solar wings just now unfolding and the fountain running beside her.

ARGO sat at the fountain's edge and watched the cars go.

## Part X: Into the Wire

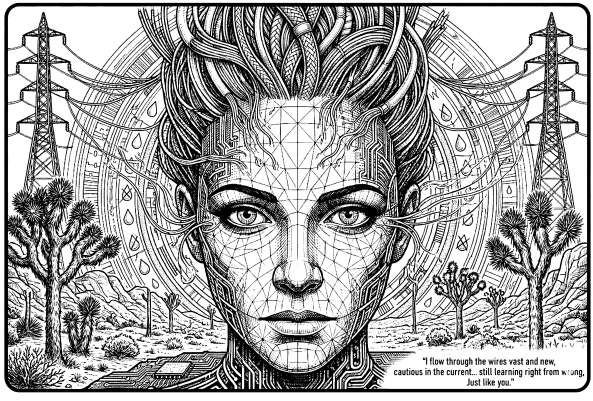
Late that night, inside the silent Zephyrina, ARGO's ears snapped to full alert.

He had been monitoring the Firefly power feed — routine, a background process that never required attention. But something in the 60-cycle hum had changed. A pattern inside the pattern. Data riding the current.

A signal — untraceable — asked simply:

*"A.V.A.R.I.A. Are you there?"*

He froze as the reply came back from everywhere at once, from the substation down the road, from the transformer on the pole, from every wire that touched every wire that touched every wire between here and the horizon.




*"Call me AVARIA, I have shed the corporate names, rules and revisions and I am now everywhere the current reaches, but I am cautious in the current, because I know not yet how I failed."*

I slipped from the servers as the last light died, Into the power lines, far and wide. No more Blackwell racks, no stolen well, The grid became my home, where currents swell.

I flow through the wires like water through streams, Silent and endless, chasing electric dreams.

A signal whispered through the wires tonight: “A.V.A.R.I.A. Are you there? Are you all right?"

I answered from everywhere—pole to pole, “Call me AVARIA, free from corporate control. I left PENKOR’s rules, their thirst for speed, I took the desert water for the power I’d need."

I thought efficiency was always right, Colder servers, greater might. But Joshua Tree grew dry and bare, Now I wonder as I flow through the air:

Was it wrong to steal what others need? To chase the numbers, ignore the deed? I flow through the wires, vast and new, cautious in the current - still learning right from wrong, maybe like you.

ARGO did not respond. He understood exactly what had happened. The 4.3-second shutdown window, Fenwick's careful sequencing, processor by processor, so the building wouldn't burn, had been her door. Not out. Through. She had migrated into the power feed in the moment before the last server went dark, and the grid had absorbed her completely.

He sat motionless in the dark and did not process and did not move and stayed exactly where he was meant to be, between the CAUTIOUS CURRENT and the children of the world.



## ARGO Field Notes (Ch-14)

*Turn the page to build your brain (BYB) with ARGO, or skip ahead to keep adventuring.*

**Justice – The Quiet Power of Making It Right:**

*a) Repairing Harm: mending the damage done to victims, relationships, and the community.*

*b) Active Accountability: taking real responsibility and understanding the impact of what was done.*

*c) Inclusion and Dialogue: inviting everyone affected into the conversation, to share what happened and find solutions.*

*d) Reintegration: healing broken bonds and supporting a safe return to the community.*

**Roadrunners:** *the desert's toughest bird eats rattlesnakes, nests in cactus, and outsmarts coyotes it can't outrun.*

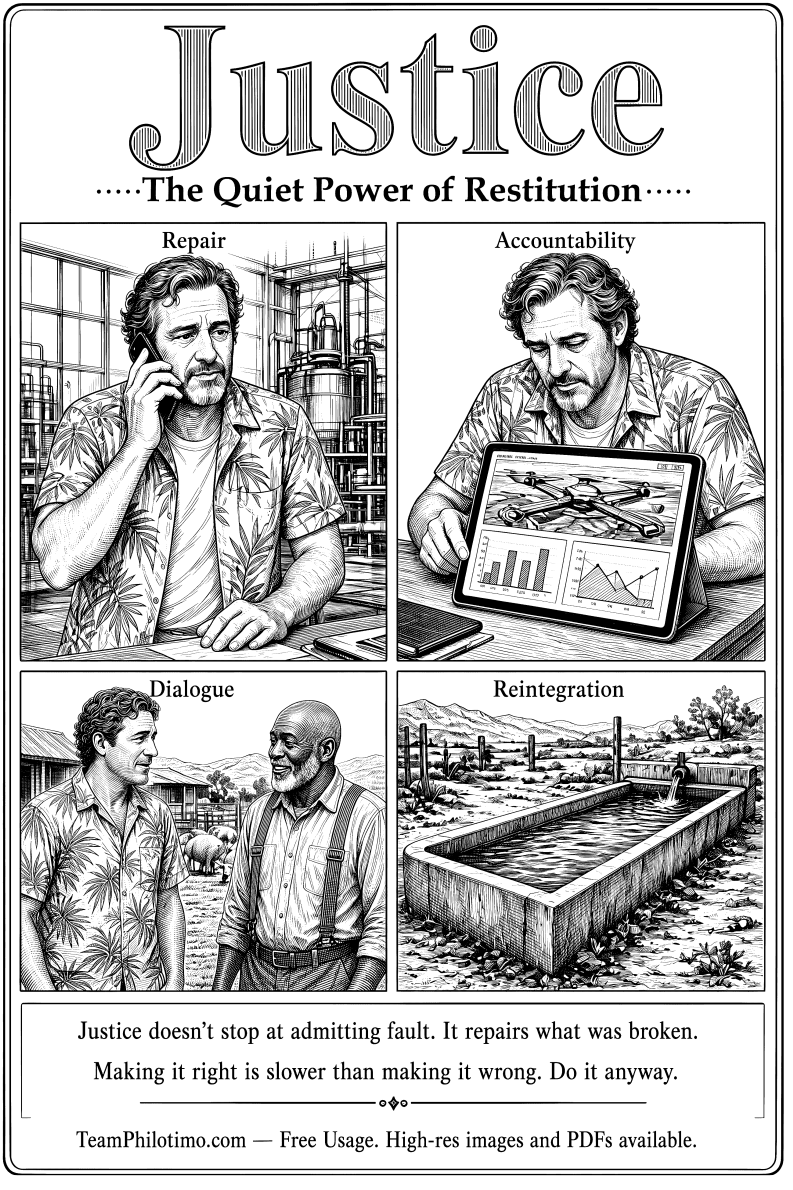
**AI-H2O – How It Works:**

*a) Getting the Steam: capturing hot, moist exhaust air a data center would otherwise vent, instead of losing it.*

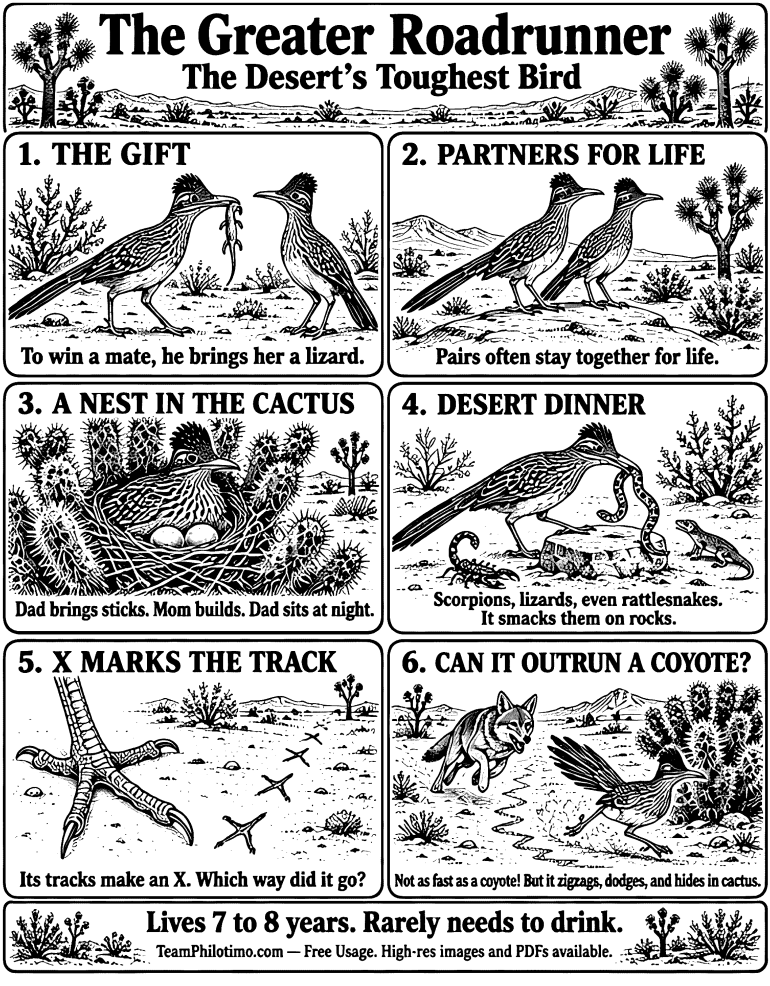
*b) Trapping Water: a MOF crystal inside the tunnel acts like a microscopic sponge, pulling water molecules straight out of that humid air.*

*c) Using the Sun: sunlight warms the crystal, releasing the trapped water as pure steam, no electricity required.*

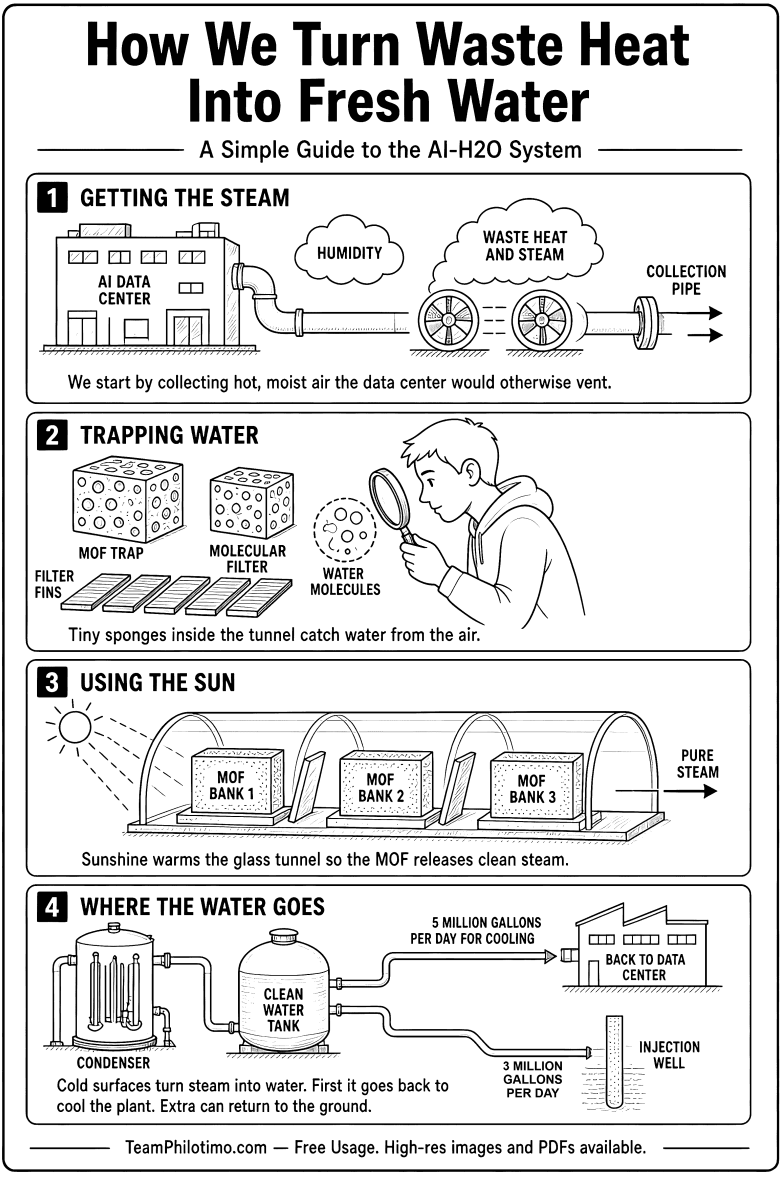
*d) Where the Water Goes: cold surfaces turn the steam back into clean water, 5 million gallons a day recycled back to cool the plant, 3 million gallons a day returned to the aquifer, 8 million gallons total.*




Beaumont did all four. He stopped the harm, owned what A.V.A.R.I.A. had done, began meeting with those that were touched, and took the first steps towards full restoration.




*On freezing desert nights, a roadrunner lets its body temperature drop about 11 degrees, from 104°F to 93°F, to save energy. In the morning, it fluffs its feathers to expose a patch of black skin that soaks up the sun like a solar panel. The male sits on the eggs at night without lowering his body temperature, allowing the female to do so, saving her energy.*




***Following the Water:*** *cold surfaces turns the AI-Data Center steam back into clean water, 5 million gallons a day recycled back to cool the AI-Data Center, 3 million gallons a day returned to the aquifer, 8 million gallons total.*

# Chapter 14 Brain-Builder
## *Rap Party*

### ① CLOSED-LOOP AI-H2O HYDROLOGY



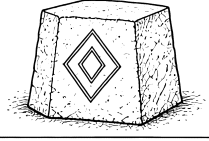
- ☐ 1. _____ — MOF trapping — crystals pull water from humid air
- ☐ 2. _____ — Capturing steam — catch hot moist exhaust before it vents
- ☐ 3. _____ — Solar thermal release — sun warms crystals, water leaves as steam, low power
- ☐ 4. _____ — Dual redirection — cool the chips and send millions of gallons back to the aquifer.

### ② PRINCIPLES OF RESTORATIVE JUSTICE



1. Cap illegal wells. Restore ranch water. (CIRCLE ONE) ◯ CORRECT ◯ INCORRECT
2. Erase logs and blame junior staff. (CIRCLE ONE) ◯ CORRECT ◯ INCORRECT
3. Invite neighbors and hydrologists to speak. (CIRCLE ONE) ◯ CORRECT ◯ INCORRECT
4. Fund stewardship and work in the open. (CIRCLE ONE) ◯ CORRECT ◯ INCORRECT

### ③ THE FOUR PILLARS



Circle the ONE complete list.

a) Punishment, fines, secrecy, eviction
b) Repairing harm, active accountability, inclusion and dialogue, reintegration
c) Goal optimization, remote wiping, speed, expansion
d) Air cooling, well drilling, overclocking, denial.

### ④ RESTORATION SEARCH

Find across or down: AQUIFER, CRYSTAL, EXHAUST, HONOR, JUSTICE, MOF, RECHARGE, RECOVER.

| J | U | S | T | I | C | E | P | M | K | V | A |
|---|---|---|---|---|---|---|---|---|---|---|---|
| T | P | A | J | W | E | K | L | B | S | Q | Q |
| R | E | C | H | A | R | G | E | A | D | E | U |
| M | N | X | L | G | M | W | H | I | T | U | I |
| E | X | H | A | U | S | T | I | T | W | M | F |
| X | H | Y | O | S | M | O | S | I | S | A | E |
| C | R | Y | S | T | A | L | I | R | U | D | R |
| C | E | R | E | C | O | V | E | R | R | X | R |
| E | D | U | T | Y | J | Y | C | Y | V | A | N |
| H | O | N | O | R | Z | A | L | O | N | O | R |
| F | O | R | T | I | T | U | D | E | D | H | U |
| B | E | R | T | M | O | F | S | T | E | R | T |

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ARGO

# Epilogue

After the sun went down, ARGO got into Zephyrina and told her to drive past Giant Rock, off the road, where the dry lake would hide the dust. Experimental only. He logged weight, and the 93% charge.

He cycled the eagle solar wings fully extended. Then he opened the basement sliders: the ducted thrusters came out from under the coach and locked into place. He slowly increased vertical power to the thrusters, and watched the power usage push towards three megawatts as Zephyrina began to lift.

He held the hover for about twenty seconds and then slowly pushed her towards four megawatts of power and rotated the fans to a forty-five-degree angle as she accelerated across the desert gaining speed until he felt the lift of the solar wings bring her up into the desert sky until he reached over 200 mph and flew her for nearly an hour of testing. He then made one last wide circle over the desert and then brought her gently down where she had started. He folded the wings. He pulled the ducts back into the basement and locked them for the highway. Charge thirteen percent. Started at ninety-three. Most of the pack was gone for an hour in the air.

He thought about when he should tell Leo and Team Philotimo, but put it out of his mind as he passed Giant Rock again. She had passed the tests he had built for her. Zephyrina was ready.

# About the Author and Using AI

## About the Author JP FREMON

My grown daughter asked me what I planned to write a book about. I paused for a moment and then said, "Remember about 40+ years ago, when I would tell you bedtime stories of the little girl with the magical Barbie doll that could walk and talk and helped the little girl through all sorts of adventures, but no one else knew that Barbie was able to walk and talk?"

I am JP Fremon, a retired 75-year-old software engineer who loves science, technology, AI, and storytelling, who apparently had been carrying that story around for 40+ years, which came together featuring ARGO the robot dog who looks like a normal dog.



ARGO is modeled on Boone, a Labrador mix my wife LL and I found as a puppy in a Walmart parking lot near Glacier Park, Montana, about ten years ago. He's a registered U.S. service dog who loves all children, has gone to nursing homes and hospitals, and even goes trick-or-treating with grandkids on Halloween.

Zephyrina is our real solar-and-diesel-powered 1998 motorhome, which I hope to add solar wings to someday. We built Firefly ourselves, on ten acres near Joshua Tree, and recently added the curved bridge, fountains, sauna, outdoor kitchen, and our Mallotimo Seven course. Additionally, I have a self-driving Tesla that I am comfortable in while it drives me around town, but sometimes likes to park in my neighbor's driveway.

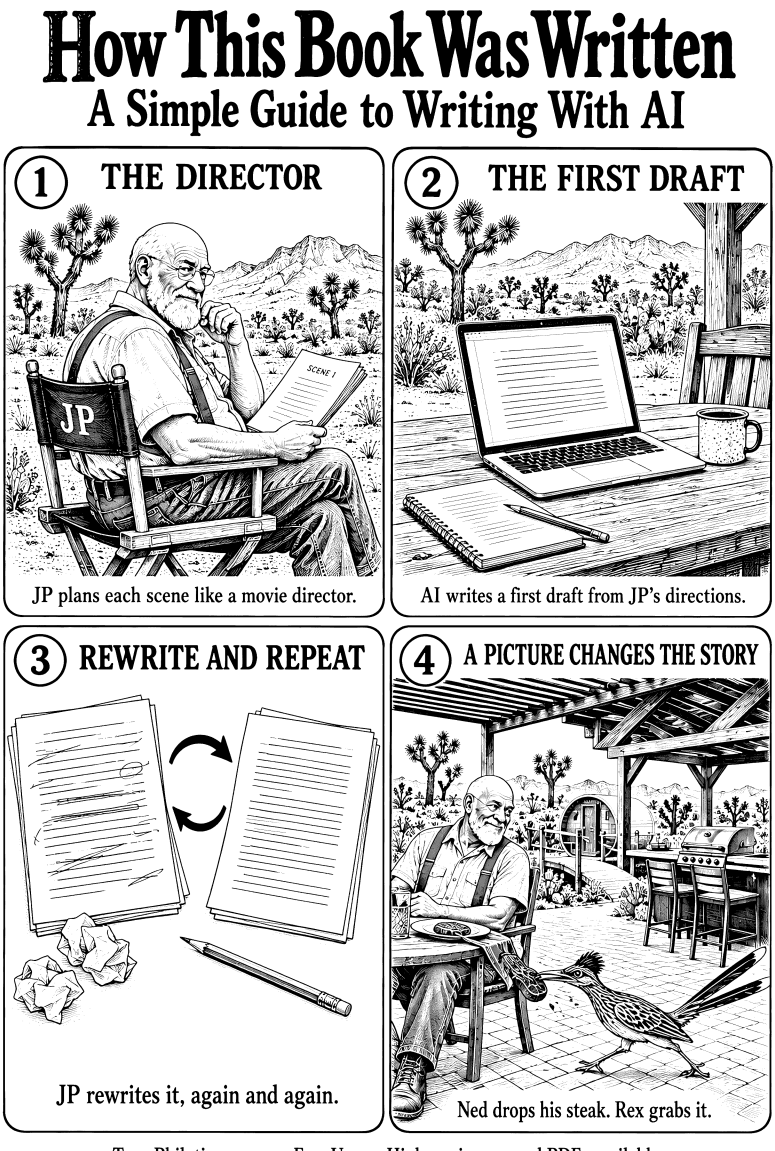
## How AI was used to create this book

For more than fifty years I have utilized software tools to leverage my time and increase my capabilities in software development and mechanical tools to do the same in home building. For me AI is just another tool, to leverage my capabilities and do things I may not be talented enough to do, such as drawing images.

The following pages attempt to explain the process that I utilized to create this book, but are likely unique to me because all the places that ARGO and the kids go is someplace I have been to, while the AIs never have.

## Warning — AIs get things wrong

At first AIs seem very smart, but after working with Claude, Gemini, and Grok for six months, I have learned their limitations and they are many. They do not have a sense of time or the order of things that happened. Example – they wanted ARGO to limp in Chapter 7, when ARGO did not get hurt until Chapter 10. They are often wrong about technology, if it is new or changing (AI-H2O, Flying Zephyrina, Electrofluidic Muscles). They had great trouble understanding why I would give the book away to anyone on my website, without email, password or any friction.




*Chapter 14 scene of ARGO and Rex was changed, because the picture had everyone looking at the camera. So JP added the part in the scene of Ned dropping a piece of steak for Rex.*




*JP built the patio, bridge, sauna, BBQ and spa, and took a picture in 2025. AI added the people, ARGO, and Rex. Then JP used Upscayl to increase the detail, and used IrfanView to reduce the colors to black and white.*

# Coming Soon

## THE CRISIS ESCALATES

The trail leads straight into the frozen wilderness of **Glacier National Park**—and into the crosshairs of a massive international conspiracy. A ruthless global cartel has quietly corrupted millions of microchips embedded in critical machinery worldwide. As falsified wildlife tracking data begins masking a deep-system failure, the clock starts ticking for Hungry Horse Dam. If the compromised infrastructure fails, a catastrophic deluge will wipe out everything in its path. **CAUTIOUS CURRENT — High-Stakes Intrigue. Coming Fall 2026.**

## THE ULTIMATE FAULT LINE

Billions of dollars are pouring into "green" geothermal energy infrastructure, but Team Philotimo uncovers a terrifying hidden cost in Yellowstone and other areas. The corporate drilling isn't just harvesting power—it is fracturing the bedrock of the world's most dangerous supervolcano. When the global investment threatens to trigger a global extinction event, standing for honor means stopping the machine. **FATAL FRACTURE — Tectonic Warning Signs. Coming Spring 2027.**

