A VECTORXPRO STORY

Where's My Part?

One fixture. Thirty-eight parts. One that nobody could find.

ACCOUNTABILITY · CLARITY · RESULTS

vectorxpro.com

A work of fiction. Brookhaven Foodservice Equipment, Midwest Heat Treating and every person in this story are invented.

Contents

PART ONE · WHAT HAPPENED

1 The Request · Jen 4

2 The Traveler · Teo 6

3 Where's My Part? · Hank 8

4 What's Missing · Darlene 10

5 Friday Night · Hank 12

6 What Do We Need? · Victor 14

Rewind 16

PART TWO · WHAT COULD HAVE HAPPENED

7 The Traveler, Again · Teo 17

8 Where's My Part?, Again · Hank 19

9 What's Missing, Again · Darlene 21

10 Friday, Again · Hank 23

11 Monday · Jen 25

Afterword: Where Is It Now? 27

PART ONE · WHAT HAPPENED

CHAPTER 1

The Request

Jen

Monday

Jen Matsuda had been a manufacturing engineer at Brookhaven Foodservice Equipment for six years, and in six years she had learned that the hardest part of any changeover was never the engineering. It was the tool room.

Not because the tool room was bad. The tool room at Brookhaven was the best part of the plant. Six machinists and toolmakers in a fenced-off corner of the building, with two CNC mills, a lathe, a surface grinder, a coordinate measuring machine in its own little climate-controlled room, and a supervisor named Hank Zielinski who had been building fixtures since before Jen was born. They could make anything.

The hard part was that everything they made disappeared into the tool room and didn't come out again until it was done, and in between, nobody outside the fence knew where anything was.

On Monday morning, Jen sent Hank an email.

> *Hank: attached is the weld fixture for the new FR-60 frypot. 38 parts, drawings attached, BOM attached. The line changes over this weekend. I need the fixture at Line 3 by Friday at 4 p.m. so the weld cell can be set up Saturday. Production starts Monday at 6 a.m. Thanks. —Jen*

The FR-60 was the biggest thing Brookhaven had launched in three years: a high-efficiency commercial fryer, the kind that ends up in fast-food kitchens by the thousand. A national restaurant chain had ordered two thousand of them for a menu rollout in the spring, and the first five hundred were due to ship in three weeks. Line 3 would stop building the old model on Friday afternoon, and over the weekend, maintenance and the weld team would tear out the old fixtures and put in the new ones. On Monday morning at six, the first FR-60 frypot would be welded in the new fixture.

If the fixture was there.

Hank called her back twenty minutes later. He had the drawings open; she could hear him clicking.

"Thirty-eight parts," he said. "Most of it's plate and pins, no big deal. The locating block's the long pole. It's got to go out for heat treat, and Midwest Heat Treating is two days if they're on time. If I get it machined by tomorrow, it's back Thursday."

"So Friday's okay?"

Hank was quiet a second. He had two other jobs on the floor and a mill that had been acting up. "Friday's tight," he said. "We'll make it."

"Great. Can you let me know how it's going?"

"Call me anytime," Hank said, and meant it.

She hung up and moved on to the next forty things on her list for the changeover: the robot program, the work instructions, the weld parameters, the operator training. The fixture was in good hands. Hank had said Friday.

In the tool room, Hank printed Jen's email and the thirty-eight drawings. He stapled a paper traveler to the front of each drawing, a half-sheet form with boxes for every step: saw, mill, grind, outside work, inspect. He wrote the job number on each one in black marker, and then he walked to the whiteboard on the wall by his desk and added a new row at the bottom.

FR-60 WELD FIXTURE — 38 PCS — DUE FRI 4PM.

The whiteboard was how the tool room knew what it was doing. It had a row for every job, and a column for every machine, and Hank kept it up by hand, every morning, from memory and from walking around. It was a good whiteboard. It was accurate about seventy percent of the time, which, Hank would tell you, was better than most.

It was the only place in the building where you could find out where the FR-60 fixture was. And you had to be standing in front of it to read it.

CHAPTER 2

The Traveler

Teo

Tuesday

Teo Banerjee machined the locating block on Tuesday morning on the number two mill, and it came out beautiful.

It was the most important part of the fixture, though nobody outside the tool room would ever know it. A solid block of tool steel about the size of a loaf of bread, with two precision bores and a ground face. Every FR-60 frypot that came down Line 3 would sit against that block while a robot welded it. If the block was off by the thickness of a sheet of paper, every frypot would be off too. And it would take that load forty times an hour, two shifts a day, for years. That was why it had to be heat treated: soft steel would wear in a week.

Teo had been a machinist for nine years. He measured the block three times, wrote the numbers on the paper traveler stapled to the drawing, and initialed the *MILL* box.

The next box said *OUTSIDE: HEAT TREAT*.

He wrapped the block in oil paper, put it in a small wooden crate with the vendor's purchase order and the traveler folded on top, and carried it to the outbound shelf by the tool room door. The shipping clerk would pick it up after lunch and put it on the Midwest Heat Treating truck, which came every Tuesday and Thursday. Two-day turnaround. Back Thursday.

On his way back to the mill, he stopped by Hank's whiteboard and wrote in the *OUTSIDE* column, next to the FR-60 row: *LOC BLOCK — HT — THU*.

That was the system. A paper traveler that went with the part, a purchase order that went with the paperwork, and a line on a whiteboard that stayed on the wall.

It worked most of the time. The trouble was that once the crate left the building, the only record of where the block was, and when it was coming back, was a handwritten line on a whiteboard that nobody outside the fence could see, and a piece of paper inside a box that was now on a truck.

The truck came at one-fifteen. The shipping clerk loaded the crate with six others, all from maintenance, and signed the driver's sheet.

At Midwest Heat Treating, forty miles away, a technician named Gary unpacked the crate on Wednesday morning. He set the block in a fixture, ran it through the furnace and the quench, and checked its hardness. Perfect. He packed it back up in the same crate, with the same oil paper.

Then he printed a packing slip, and he made a small mistake that anyone could have made.

Midwest did a lot of work for Brookhaven. Most of it was for the maintenance department, replacement shafts and pins for the production machines, under a standing purchase order that maintenance used every week. Gary was tired, and the tool room's purchase order number was folded under the traveler where he didn't see it. The maintenance order was the one he typed every week. His fingers typed it again.

The packing slip said: *Brookhaven Foodservice, PO 44718 (Maintenance), 1 pc, hardened block.*

He taped it to the outside of the crate, and it went on the Thursday truck.

In the tool room, Teo finished the pins and the plates and the clamp arms, thirty-seven parts in all, and stacked them on a cart by the fixture bench, each with its traveler. He felt good about the week. Everything was on schedule. The block would be back Thursday.

The whiteboard said so.

CHAPTER 3

Where's My Part?

Hank

Thursday

Hank Zielinski counted once. It was a Thursday a couple of years ago, and he'd made a tally mark on a sticky note every time somebody asked him where something was. By the end of the day there were sixty-one marks.

He didn't count this Thursday. He didn't have to. It felt like sixty-one by lunch.

At 7:40, Jen called. "How's the fixture?" Good, he said. Thirty-seven parts done, block back from heat treat today.

At 8:15, the production manager walked over about a broken clamp on Line 1. Where's the replacement? Hank walked out to the floor to look for it. It was on a cart by the grinder, waiting for the CMM.

At 8:50, maintenance called about a shaft for the conveyor on Line 5. Was it done? Hank didn't know. He walked to the lathe. Teo's lathe partner, Ruben, said it was done yesterday and in the bin by the door. It wasn't in the bin by the door. It turned out maintenance had picked it up at seven and forgotten.

At 9:30, the quality manager wanted to know whether the FR-60 fixture would need a first-article inspection on the CMM before it went to the line. Yes, Hank said. Friday morning. Bao, the CMM tech, said Friday morning was already full. Hank moved two things around in his head and told Bao he'd bring it first thing.

At 10:05, the Midwest Heat Treating truck pulled into the receiving dock at the far end of the building.

Hank didn't know that. He was at the whiteboard, erasing and rewriting the Line 1 clamp, because it had moved from the grinder to the CMM queue.

At the dock, Earl Biggs, the receiving clerk, signed for seven crates. Earl had worked receiving at Brookhaven for nineteen years. He checked each packing slip against the purchase orders in the system, the way he always did, and on six of them the slip said PO 44718 (*Maintenance*), and on the seventh it said the same thing. Seven crates for maintenance. Maintenance picked up their parts every Monday morning from the shelf in the receiving cage. Earl logged all seven as received against PO 44718, set them on the maintenance shelf, and went to lunch.

The tool room's purchase order, the one Teo had folded under the traveler inside the crate, still showed as *open*, *not received*. But nobody looked at open purchase orders on a Thursday afternoon. And the crate was nailed shut, so nobody saw the traveler with *FR-60* written across it in black marker.

The block was on a shelf in the receiving cage, forty feet from the tool room door.

At 11:20, the mill that had been acting up all week threw an axis fault. Hank spent the next ninety minutes on the phone with the machine builder's service line.

At 1:00, Jen called again. "Block back yet?"

Hank looked at the whiteboard. *LOC BLOCK — HT — THU.* "Truck usually comes in the afternoon," he said, which was true about half the time. "Should be here any time."

At 2:30, the production manager came back about the clamp.

At 3:15, Teo asked if the block was back so he could check the bores before Darlene started assembling. Hank said he'd look into it.

He meant to. He did. He meant to walk down to receiving and ask Earl whether the Midwest truck had come. But the mill guy called back at 3:20, and then it was 4:00, and second shift was coming in and needed to know what was running, and he spent half an hour at the whiteboard explaining it.

At 4:40, Jen called one more time, and Hank told her the truth as he knew it. "Block's due today. Thirty-seven parts are done. Darlene starts assembly tonight. We're good for Friday."

"Thanks, Hank."

He hung up and looked at the whiteboard for a minute. Twenty-two jobs. Six machines. One supervisor who knew where everything was because he walked around and asked, all day, every day, and wrote it on a board.

He was very good at it. He was also, he knew somewhere in the back of his mind, the single point of failure for every part in the building. If Hank didn't know where something was, nobody did. And Hank only knew what he'd personally gone and looked at.

He hadn't gone and looked at receiving.

He went home at six. The block spent the night on the maintenance shelf, under a packing slip that said it belonged to someone else.

CHAPTER 4

What's Missing

Darlene

Thursday night

Darlene Voss was the best fixture builder Brookhaven had, and she worked second shift because she liked the tool room quiet. On Thursday at five she clocked in, found the cart with the FR-60 parts by her bench, and read every traveler before she touched a single piece. She always did. You learn more from the paperwork than from the parts, she liked to say, because the paperwork tells you what's supposed to be there.

Thirty-seven travelers. Thirty-seven parts.

The drawing said thirty-eight.

She went through the bill of materials line by line with a pencil, checking off each piece against the cart. Base plate. Two rails. Four clamp arms. Pins, bushings, stops, the bracket for the robot's touch sensor. Every one of them there, clean, measured, initialed.

Line 1: *Locating block, hardened.* Not there.

That was the one that mattered. The whole fixture was built around it. Every other part located off the block's two bores and its ground face. Without it, she could bolt the base and the rails and the clamps together, but she couldn't align anything, because there was nothing to align it to.

She walked to Hank's whiteboard. *FR-60 — LOC BLOCK — HT — THU.*

Thursday was today. It was 5:20 in the evening.

She asked Ruben, the second-shift lead, if he knew whether the heat treat truck had come.

"Usually afternoon," Ruben said. "Hank didn't say anything. Maybe it's in receiving."

Darlene walked to receiving. It was first shift only. The rolling door to the receiving cage was down and padlocked, and the lights were off. Through the chain-link she could see shelves of boxes and crates in the dim light, some labeled, some not. It could have been in there. It could have been on a truck somewhere in another county. There was no way to know from the outside of a fence.

She went back to the tool room and did what she could. She built everything that didn't depend on the block: the base plate on the leveling pads, the two rails squared to each other, the clamp arms on their pivots, the sensor bracket. By eleven, the fixture sat

on her bench, ninety-five percent done, with an empty pocket in the middle of it the exact size and shape of a loaf of bread.

She wrote a note on a sheet from the scratch pad and put it on Hank's chair, where he couldn't miss it.

> *Hank, no locating block. Everything else is built. Whiteboard says HT Thursday. Receiving was locked. Where is it? I can finish it in 3 hrs once it's here. —D*

Then she stood back and looked at the fixture for a minute, the way she always looked at a job before she went home.

It was good work. It was also a picture of something she'd seen a hundred times in twenty years of building fixtures: thirty-seven parts that everybody knew about, and one that nobody could find. The missing one was never the hard one. It was the one that had left the building, because the moment a part went out the door, it stopped existing to everyone but the person who'd sent it, and that person had six other jobs and a mill with an axis fault.

She turned off her bench light and went home.

Forty feet away, in the dark receiving cage, on a shelf marked *MAINTENANCE — MONDAY PICKUP*, a wooden crate sat with a traveler folded inside it, under oil paper, that said FR-60 in black marker. If anyone had opened it, they'd have known exactly whose it was.

Nobody opens a maintenance crate on a Thursday night.

CHAPTER 5

Friday Night

Hank

Friday

Hank found Darlene's note on his chair at 6:30 on Friday morning, and read it twice, and felt the floor tilt a little.

Midwest Heat Treating opened at eight. He called at 8:01.

"Brookhaven block?" said the woman at Midwest, clicking. "Ran Wednesday. Shipped Thursday on our truck. Delivered 10:05 a.m., signed by E. Biggs."

Thursday. 10:05. While Hank was erasing the Line 1 clamp on his whiteboard, forty feet away.

He walked to receiving fast. Earl Biggs wasn't there. Earl had taken a vacation day, his first in months, to go to his granddaughter's school play. The temp covering the dock was a nice kid named Marcus who'd been at Brookhaven for three weeks.

"A crate from Midwest Heat Treating?" Marcus pulled up the receiving log. "We got seven from them yesterday. All for maintenance." He pointed at the shelf marked *MAINTENANCE — MONDAY PICKUP*. Seven wooden crates. "They're logged against the maintenance PO."

Hank looked at the crates. They all looked exactly alike: plain wood, a Midwest packing slip taped on each one, every slip saying the same thing. Maintenance. He didn't think to pry them open. Why would he? The paperwork said they were maintenance's. Midwest did six or seven maintenance jobs a week. His block had come in on the same truck; it must have gotten set down somewhere else.

They looked everywhere else. The inbound staging lanes. The shipping area, in case it had gone back out. The tool room, under every bench. The quality lab. Ruben called second shift's people at home to ask if anybody had seen a crate. By eleven, Hank had personally walked past the maintenance shelf three times on his way to somewhere else.

At noon, he called Jen.

She was quiet on the line for a long moment, and then she said, "Okay," in the voice people use when it isn't. "What are our options?"

There were two, and both were bad. Wait until Monday, when Earl was back and might remember where he'd put it, and miss the changeover. Or make a new block,

today.

A new block could be machined in about six hours. But heat treat was two days, minimum. A new block made today would be soft.

"How long will a soft block last?" Jen asked.

"On a fixture taking a frypot forty times an hour? A few shifts before it starts to wear," Hank said. "Maybe a week before it's out of tolerance. We'd run it, send a second one out for heat treat Monday, and swap it in Thursday."

Jen took it to the production manager, who took it to the plant manager, who said what plant managers say three weeks before a big customer's first shipment: run the soft block, get the line up Monday, swap it as soon as the hard one's back. Nobody liked it. Everyone agreed it was the least bad option.

Teo started machining at one o'clock. He'd made the first block on Tuesday in four hours with no pressure. This one took him six, with Hank standing behind him half the time and the plant manager stopping by twice. It came out right.

Bao stayed late to run it on the CMM. Every dimension was in tolerance, and he signed the report at 7:40, and said what everyone was thinking: "It's good. It's just soft."

Darlene came in early for second shift and finished the fixture in three hours, the way she'd said she could. At 11:15 on Friday night, the FR-60 weld fixture was complete. Thirty-eight parts. One of them would wear out in a week.

At two in the morning on Saturday, Hank and Ruben rolled it out to Line 3 on a pallet jack, where the weld team was waiting with coffee to start the setup.

Hank drove home at three. The roads were empty. He thought about the block, the real one, the one that had been hardened perfectly in Midwest's furnace on Wednesday morning and was, at that moment, somewhere in his building. He'd spent fourteen hours looking for it. He'd walked past it three times.

He didn't know that yet. He'd find out on Monday morning, at 7:05.

CHAPTER 6

What Do We Need?

Victor

Monday

Victor Haines had run the Brookhaven plant for seven years, and he'd come up through the business side: purchasing, then operations, then this. He didn't know how to run a mill. He knew how to ask the people who did what they needed, and he asked it the same way every time: *What do we need?* People liked working for him because he meant it, and because when you told him, he usually got it for you.

Line 3 started up at 6:00 a.m. Monday, right on time. The first FR-60 frypot dropped into the new fixture, the robot welded it, and a small crowd of engineers and supervisors clapped. Jen took a picture. Victor shook Hank's hand.

At 7:05, Earl Biggs came back from his vacation day, and the maintenance crew came down for their Monday pickup, and a maintenance tech pried open the seventh crate from Midwest Heat Treating on the receiving dock and found, under the oil paper, not a shaft or a pin but a perfect block of hardened tool steel with a folded traveler on top that said *FR-60 — TOOL ROOM* in black marker.

He carried it to the tool room himself. Hank looked at it for a long time without saying anything. Then he asked where it had been.

"Our shelf," the tech said. "Packing slip said maintenance."

At 10:40, the soft block started to go.

It went faster than anyone had guessed. Hardened steel takes a clamp load forty times an hour without noticing. Soft steel takes it, and gives a little each time. By the middle of the first shift, the face where every frypot sat had worn just enough that the robot's welds were landing a fraction of a millimeter off. Quality caught it at the end-of-line check at 10:52. They pulled every frypot made since eight. A hundred and forty of them had seams out of position, enough that they'd have leaked oil in a restaurant kitchen a year from now.

Line 3 stopped.

It took Darlene and Teo three and a half hours to pull the soft block, install the hardened one, and get the fixture back through Bao's CMM. Line 3 restarted at 2:30. The hundred and forty frypots went to rework, a day and a half of a welder's time grinding

out seams and redoing them. To make the first shipment, second shift would work Saturday.

At four o'clock, Victor sat at the head of the conference table with Jen, Hank, Earl, the production manager and the quality manager, and asked his question.

"What do we need?"

They told him. Overtime Saturday, which he approved. Rework hours, which he approved. A call to the restaurant chain's purchasing manager, telling her the first shipment was on track but tight, which he'd make himself. All of it was the right answer, and all of it was expensive, because by Monday afternoon, every fix was a fix for something that had already happened.

"Where was it?" Victor asked. "The block. Where was it all weekend?"

"In receiving," Hank said. "On the maintenance shelf. Forty feet from my door. Since Thursday at 10:05."

"Who knew?"

Earl looked at the table. "The receiving log knew," he said quietly. "I logged it. But I logged it as maintenance, because that's what the slip said. I didn't open it. I never open them."

"The traveler knew," Hank said. "It was inside the crate."

Victor nodded slowly. Nobody had lied. Gary at Midwest had typed the wrong purchase order number, the way anybody might on a Wednesday. Earl had done exactly what the paperwork told him to. Hank had believed his whiteboard, because his whiteboard was right most of the time. Darlene had checked everything she could check from outside a locked cage. Every person in the chain had done their job.

The part had just stopped existing the moment it left the building, and it never really came back.

"Let me ask you something," Victor said to Hank. "On a normal day, how many times does somebody come to you and ask where something is?"

Hank didn't have to think about it.

"Sixty-one," he said. "Last time I counted."

Victor sat back in his chair. Six of the best machinists and toolmakers in the state, he thought. People who could make anything. And the man who ran them spent half of every day walking around answering one question, because the only place the answer lived was on a whiteboard and in his head.

He didn't have a fix for that yet. He just knew what the question was.

Rewind

Monday

The same Monday. The same FR-60. The same thirty-eight parts and the same Friday at four o'clock.

Jen Matsuda doesn't send Hank an email. She opens the shop's request screen and fills in a request: what it is, the drawings, the bill of materials, the date she needs it, the line it's for. It lands in Hank's queue with her name on it.

Hank routes it the way he always has in his head, but this time he does it on the screen, where everyone can see it: saw, mill, grind, outside heat treat, CMM, Darlene's bay, quality check, Line 3. Thirty-eight parts, each with its own path.

And each part gets a code. A small printed label with a barcode, one for every piece, stuck to the traveler and, for anything that leaves the building, wired to the part itself.

After that, every time a part moves, somebody scans it. Into a machine. Out of a machine. Onto the CMM. Out the door. In the door. Into Darlene's bay.

That's all. One scan, every move.

Hank's whiteboard stays on the wall. He just doesn't have to stand in front of it anymore to know what it says. Neither does anyone else.

CHAPTER 7

The Traveler, Again

Teo

Tuesday

Teo Banerjee machined the locating block on Tuesday morning on the number two mill, and it came out beautiful, just as before. He measured it three times and scanned it off the mill. The screen asked him the next step, and he tapped *Send to outside work*.

Vendor: Midwest Heat Treating. Process: harden. Promise date?

He typed *Thursday*, because that was what Midwest always promised, and the block's line on the screen changed to *At Midwest Heat Treating — promised Thu.*

He wired a printed tag to the block itself, a little card in a plastic sleeve with the barcode and *FR-60 FIXTURE — TOOL ROOM — LOC BLOCK* printed in big letters, and he stuck a second label on the outside of the wooden crate. Then he wrapped the block in oil paper and set the crate on the outbound shelf.

The shipping clerk scanned it on the way out the door at 1:15. *Shipped to Midwest Heat Treating.*

At Midwest, forty miles away, Gary unpacked the crate on Wednesday morning, hardened the block, checked it, packed it back up, and printed the packing slip. He was just as tired as he'd been all week. The tool room's purchase order was still folded under the traveler where he didn't see it. His fingers typed the maintenance order number, the one they typed every week.

The packing slip said *PO 44718 (Maintenance)*. It was exactly the same mistake.

But this time the crate had a barcode on the outside that said *TOOL ROOM*, and the block inside had a tag that said the same thing in letters an inch high.

Gary didn't notice any of that. He didn't need to. He taped the slip to the crate and it went on the Thursday truck.

Back at Brookhaven, Teo finished the other thirty-seven parts and scanned each one onto the cart by Darlene's bench. Every time he did, the FR-60 job on the screen updated: *37 of 38 at Bay 2. 1 at Midwest Heat Treating, promised Thu.*

Jen checked it from her desk on Tuesday afternoon, between the robot program and the weld parameters. She didn't call Hank. She didn't have to. She could see where every

one of her thirty-eight parts was, and the one that wasn't in the building had a name next to it and a day it was due back.

She went back to her robot program.

CHAPTER 8

Where's My Part?, Again

Hank

Thursday

Hank Zielinski's phone rang eleven times on Thursday before lunch. He noticed, because it usually rang about thirty.

Jen didn't call at 7:40. She'd looked at the FR-60 job at 7:35, seen thirty-seven parts in Bay 2 and one at Midwest promised today, and gone to her robot meeting.

The production manager didn't walk over about the broken clamp on Line 1. He looked it up on his phone: *CMM queue, second in line.* He walked to the CMM room instead and asked Bao how long.

Maintenance didn't call about the conveyor shaft. The shaft showed *Picked up by maintenance, 7:02 a.m.* on the screen, and the tech who'd picked it up saw that and remembered where he'd put it.

Hank spent the morning doing the thing he was actually good at, which was running a tool room. He got the mill with the axis fault fixed by ten. He had a real conversation with Ruben about the second-shift schedule. He walked the floor because he wanted to, not because it was the only way to find anything.

At 10:05, the Midwest Heat Treating truck pulled into the receiving dock.

Earl Biggs signed for seven crates. He checked each packing slip against the purchase orders, the way he always had. Six said PO 44718 (*Maintenance*), and so did the seventh.

Then he scanned them, because that was the rule now: anything with a code got scanned at the dock, before it went on a shelf. Six crates beeped and came up the way their slips said: maintenance parts, PO 44718. The seventh beeped, and Earl's handheld showed something else.

> *FR-60 FIXTURE — LOCATING BLOCK. Returning from outside work (Midwest Heat Treating). Deliver to: Tool Room, Bay 2.*

Earl frowned at the screen, then at the packing slip, which still said maintenance. Then at the crate, where a label said TOOL ROOM in letters an inch high. Nineteen years in receiving had taught him that when the paperwork and the part disagree, the part is usually right.

He set it on his cart instead of the maintenance shelf and called the tool room.

"Hank, it's Earl. Your heat treat block's here. Came in with a maintenance packing slip, but the tag's yours. Want me to bring it down?"

"I'll come get it," Hank said. It was forty feet.

He walked down to receiving, picked up the crate, and scanned it into the tool room. Across the plant, on every screen that was watching, the FR-60 job changed: *38 of 38 at Bay 2*.

Jen saw it come in during her robot meeting and gave a small fist pump under the table that the robot programmer pretended not to see.

Back in the tool room, Hank pried the crate open. The block was perfect, hardened, ground face clean under the oil paper, with its tag wired on and the traveler folded on top. He handed it to Teo, who checked the bores and scanned it onto Darlene's cart.

Hank sent one email that afternoon, to Midwest Heat Treating, and kept it friendly: *Got our block, thanks. FYI, packing slip had the maintenance PO on it instead of ours. Our tags caught it, but wanted you to know.* Gary wrote back an hour later. *Sorry about that! Will watch for it.*

The whole thing, from the truck to the bench, took about twenty minutes. Nobody walked past it. Nobody looked for it. It didn't sit on a shelf for four days under someone else's name, because the moment it came through the door, the building knew whose it was.

At four o'clock, Hank looked at his whiteboard for a minute, out of habit. It still had the FR-60 row on it in his handwriting, *LOC BLOCK — HT — THU*. He erased it. The screen already knew.

CHAPTER 9

What's Missing, Again

Darlene

Wednesday night to Thursday night

Darlene Voss still read every traveler before she touched a part. That hadn't changed. But on Wednesday night, a day before she was due to start the FR-60, she did something she'd never been able to do before: she looked at Thursday's job from her own bench, a day early.

Her bay queue showed the FR-60 fixture, next up. Under it, a short list called *What's missing*. It compared the drawing's bill of materials against every part that had been scanned to her bay, and listed anything that wasn't there yet.

There were two lines.

Locating block — at Midwest Heat Treating, promised Thu. She'd expected that one.

Shoulder bolt, 1/2 x 2, qty 4 — not received. Not ordered.

She hadn't expected that one.

She pulled up the drawing. There they were, four shoulder bolts for the clamp-arm pivots, purchased hardware, not machined. They were the kind of thing that lived in a parts drawer in the tool room. Except the tool room had run out of that size in September, and nobody had reordered, because nobody had needed one since.

In another week, in another version of this job, she'd have found that out on Thursday night at nine o'clock, with the fixture half built and every hardware store in the county closed. She'd have robbed four bolts off an old fixture in the back, or left a note on Hank's chair, and Friday would have started with one more emergency.

Instead, on Wednesday at 10:15 p.m., she flagged the line. *Out of stock in tool room. Need 4 by Thu afternoon. —DV*

It went to Hank's queue. He saw it at 6:40 Thursday morning with his first cup of coffee, called the fastener supply house in town when it opened at 7:30, and had four shoulder bolts on his desk by 11:00. He scanned them into Darlene's bay, and the line disappeared from her list.

The locating block came in at 10:25 that morning, caught at the dock by a scan instead of left on a shelf, and that line disappeared too.

When Darlene clocked in at five, her *What's missing* list was empty.

Thirty-eight travelers. Thirty-eight parts. Plus four bolts she'd caught a day early. She checked them off anyway, with a pencil, against the drawing, because some habits are worth keeping.

Then she built it.

The block went in first, the way it should. Everything else located off it: the base, the rails, the clamp arms on their new shoulder bolts, the sensor bracket. She indicated every surface twice. By 9:20 p.m., the FR-60 weld fixture sat on her bench, complete, with a hardened block of tool steel in the middle of it, exactly where it belonged.

She scanned it out of her bay. *FR-60 fixture: complete. Next: CMM, Friday 7 a.m.*

Then she did what she always did. She stood back and looked at the job for a minute before she went home.

It was good work. It was also, she realized, the first time in twenty years she could remember building a fixture without spending part of the night looking for something. Nothing had gone missing. Things had just been where the screen said they were, and when they weren't, the screen had said that too, a day before it mattered.

She turned off her bench light and went home before ten. Her husband was still awake. He asked what was wrong.

CHAPTER 10

Friday, Again

Hank

Friday

There was no note on Hank's chair on Friday morning.

At seven o'clock, he and Ruben rolled the FR-60 fixture into the CMM room on a cart, first in line, the way Hank had promised Bao on Thursday. Bao ran the first-article inspection: every bore, every locating face, every pin, measured against the drawing to the ten-thousandth of an inch. It took two hours. Hank didn't hover. He went and ran his tool room.

At 9:05, Bao scanned the fixture through quality. *Pass.* The report attached itself to the job.

Jen saw it from the plant floor, where she was walking the weld cell with the maintenance crew, getting ready to tear out the old fixtures that night. She texted Hank a thumbs-up. He sent one back.

At 3:40 in the afternoon, twenty minutes early, Hank and Ruben rolled the FR-60 weld fixture out to Line 3 on a pallet jack and set it beside the weld cell, where the night crew would mount it on Saturday morning. Hank scanned it one last time. *Delivered to Line 3.*

Across the plant, on Jen's screen and the production manager's screen and Victor Haines's screen, the FR-60 job turned to *Complete.*

Hank stood beside the fixture for a minute. The real block sat in the middle of it, hard as a hammer, exactly where it belonged.

He thought about how close the week had come to going the other way, and how little anyone outside the tool room would ever know about it. A vendor in another county had typed the wrong number on a packing slip. A drawer had run out of shoulder bolts in September. Either one could have turned this Friday into a fourteen-hour day and a pallet jack at two in the morning. Both had happened. Neither had mattered, because both had shown up on a screen a day before they could hurt anybody, with someone's name next to them.

The whiteboard was still on the wall by his desk when he got back. He looked at it, and thought about taking it down, and decided not to. It was a good whiteboard. He'd

spent twenty years keeping it right seventy percent of the time. He'd use it for the things that didn't fit anywhere else: birthdays, the fantasy football standings, a reminder to call his mother.

He went home at 5:30. It was the first Friday in a month he'd made it home before dark.

His wife was in the kitchen. She looked at the clock, and then at him.

"Something wrong at work?" she asked.

"No," Hank said, and found that he was smiling. "Nothing went wrong at all."

CHAPTER 11

Monday

Jen

Monday

Line 3 started up at 6:00 a.m. Monday, right on time. The first FR-60 frypot dropped into the new fixture, the robot welded it, and a small crowd of engineers and supervisors clapped. Jen took a picture. Victor Haines shook Hank's hand.

Then everyone went back to work, and the line kept running.

At 10:52, quality pulled frypots off the end of the line for the first in-process check: seam position, weld size, leak test. Every one passed. At 2:30, they checked again. Every one passed. The hardened block took its forty clamp loads an hour and didn't give at all.

By the end of the first shift, Line 3 had built three hundred and twelve FR-60 frypots, every one of them in tolerance, every one of them headed for a restaurant kitchen somewhere that would never know Brookhaven existed. The first shipment of five hundred would go out on time, with nobody working Saturday.

At three o'clock, Victor walked out to Line 3 and found Jen watching the robot.

"What do we need?" he asked. It was what he always asked.

Jen thought about it honestly.

"Nothing," she said. "We're good."

Victor looked at her for a moment, as if he wasn't sure he'd heard her right. It was not an answer he got very often. Then he nodded, and walked across the plant to the tool room, and found Hank at his desk, actually sitting down.

"Can I ask you something?" Victor said. "How many times today has somebody come to you and asked where something was?"

Hank thought about it.

"Four," he said. "And one of them was my wife, asking where I put the truck keys."

Victor laughed, the kind of laugh that comes from somewhere a little deeper than the joke.

On her way out at the end of the day, Jen stopped at the tool room fence and looked in. Teo was running a job on the number two mill. Darlene had come in early and was laying out her next fixture, reading every traveler first. On the screen by Hank's desk, every part in the room had a line, and every line said where it was.

She'd been a manufacturing engineer for six years. For six years she'd thought the hardest part of any changeover was the tool room.

It had never been the tool room. It had been not knowing.

Afterword: Where Is It Now?

Read Part One again and count how many times someone asked where something was.

Jen asked four times in one day. The production manager asked twice. Maintenance asked. Quality asked. Darlene asked a locked fence. Hank had counted sixty-one questions on an ordinary Thursday, and every answer lived in the same two places: a whiteboard on the wall, and his head.

The block wasn't lost because anyone was careless. It was lost because the moment it left the building, it stopped existing to everyone except the man who'd sent it, and he had twenty-two other jobs. When it came back with the wrong paperwork, nothing in the building knew whose it was. So it sat on a shelf forty feet from the tool room door for four days while six skilled people made a worse one.

In Part Two, the same things went wrong. The vendor typed the same wrong number. The drawer ran out of the same bolts. What changed was that every part had a code, and every move was a scan.

Anyone could see where a part was, without asking. Jen checked her thirty-eight parts from her desk. The production manager found his clamp on his phone. Hank's phone rang eleven times instead of thirty.

Parts that left the building didn't disappear. The block went out with a vendor, a process and a promise date that the whole plant could see.

The dock knew whose a part was, whatever the paperwork said. One scan at receiving sent the block to the tool room in twenty minutes instead of to a maintenance shelf for four days.

What was missing showed up before it mattered. Darlene saw the missing bolts a day early, from her own bench, and they were on Hank's desk by eleven the next morning.

A shop doesn't need more people who can make things. It needs the people who can make things to stop spending half their day finding them.

VectorXPro builds Vector Workflow around that: requests that come in one place, a route for every part, one scan at every step, outside work with promise dates, a clear list of what's missing, and an answer to "Where's my part?" that anyone can see.

vectorxpro.com/workflow