intertek
alchemy

the breakpoints framework: less risk, more consistency

Find the predictable places operations break, and fix them before they find you

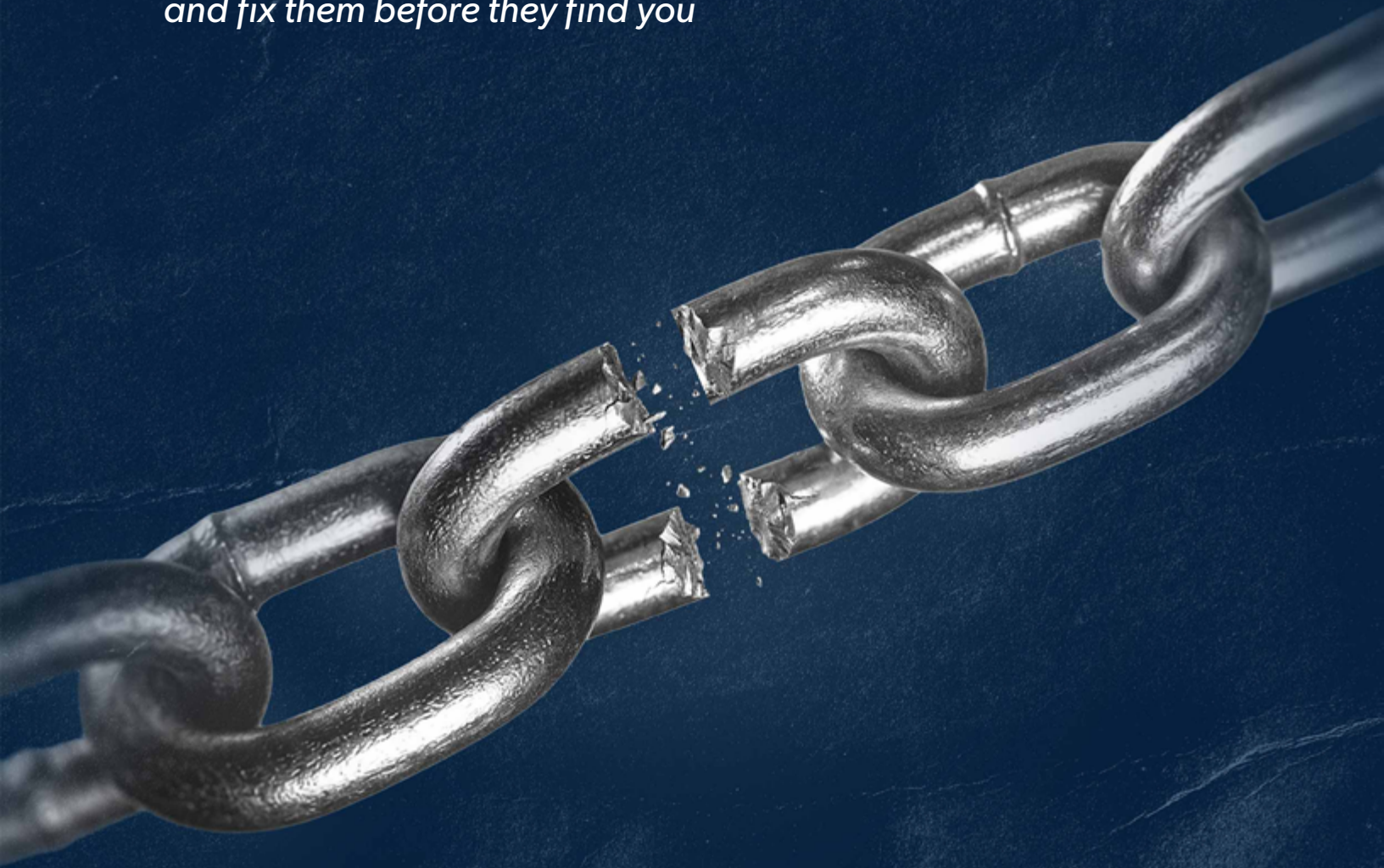


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Introduction

Plants don’t fail all at once

A plant manager in the U.S. spent a year convinced he had an execution problem. Same critical procedure, same line, same finding coming back on every audit. He retrained the crew twice. He replaced a supervisor. He put a laminated copy of the step at the station.

The finding kept coming back, because the problem was never execution. Three shifts were performing that procedure in three different ways and had been for two years. Nobody was cutting corners. The standard had simply drifted a little further each time it got handed from one person to the next, and no part of his system was built to notice.

That plant didn’t have a discipline problem. It had a **breakpoint**.

Every operation carries load. New hires. New SKUs. A fourth shift. Turnover that resets the floor every ninety days. An audit on Tuesday.

Under that load, plants give way. Not everywhere at once, and not at random. They give at the seams, in the same handful of places, in operation after operation.

Those places are breakpoints: the points where an operation under load gives way. A chain doesn’t fail evenly along its length. It fails at one link, and it fails there every time. Manufacturing plants work the same way.

Which is the useful part. If a failure is predictable, it’s findable. And anything you can find before it finds you, you can fix.

> **"First-year employees account for roughly 37% of all workplace injuries and 34% of claim costs, despite making up a much smaller share of the workforce."**
>
> *— Travelers 2026 Injury Impact Report*

What a breakpoint is not

A breakpoint is not a verdict on your leadership. It's closer to physics than to judgment. Every system carrying sustained weight develops stress at the same points, and the best-run facilities in the country are managing the same short list you are.

The workarounds your supervisors invented to keep the line moving aren't incompetence. They're survival tactics from smart operators solving a real problem with what they have. The tenured operator training a new hire between his own tasks isn't cutting corners. He's covering a gap the system left him.

None of it is bad luck, and none of it is bad people. **A breakpoint is pressure falling on a system at its weakest points.**

> **"In manufacturing, an injured worker misses an average of 76 workdays. Roughly fifteen weeks."**
>
> *— Travelers 2026 Injury Impact Report*

Why they're hard to see from the inside

Breakpoints don't announce themselves. They surface later, translated into something else: a finding in an audit report, a recordable, a pallet of rework, a resignation on day 45, a customer complaint that traces back three weeks. By the time anyone is looking, the conversation is about the symptom.

The four most common breakpoints

The second reason is that your instruments are pointed at the wrong thing. A training dashboard reports completion. A record reports delivery. Neither one reports what happens at the machine at 3 a.m. when a line goes down and someone is short a step.

Across hundreds of plants, four breakpoints come up more than any others.

1. **The Onboarding Breakpoint.** When new hires hit the floor before they're truly ready.
2. **The Shift Breakpoint.** When the same SOP is executed three different ways across three shifts.
3. **The Growth Breakpoint.** When the operation grew, but the knowledge holding it together didn't grow with it.
4. **The Pressure Breakpoint.** When training holds in normal conditions and breaks the moment the pressure hits.

Most operations carry more than one. Diagnosing them is the first step, and once you know where your biggest challenges are, you can put the fixes in motion.

How to use this guide

Each chapter does four things: describes the breakpoint, gives you a question to test for it, lays out what the breakpoint costs while it stays open, and covers what it takes to close it. What closes them isn't proprietary. It's a set of requirements any operation can meet, in more than one way.

At the back is a workbook. One worksheet per breakpoint, current state and future state, with a short self-score. Fill it in, and the tally tells you where to start.

Find your breakpoint.





The Onboarding Breakpoint

When new hires hit the floor before they're truly ready.

The breakpoint

Monday is orientation. Badge, paperwork, safety video, handbook. Tuesday the line is short two people, so the new hire goes out to run it. Somebody tenured shows them the job between his own tasks, in pieces, in whatever order the shift happens to unfold. By Friday, the file says trained.

Nobody has watched that person run the job clean at normal line speed, let alone on a bad day. The record closed before the capability did. That gap, between hired and actually ready, is the Onboarding Breakpoint.

It isn't a hiring problem. You can hire well and still land here. The system moved someone into production before it could prove they could hold the standard there.

The floor already knows. Ask a supervisor which of his new people he'd put on a critical line unsupervised tonight, and he'll answer in a second. Ask where that judgment is written down and the answer is now here.

How to spot the onboarding breakpoint: Four signs you're at risk



Your onboarding record documents what was delivered, not what was demonstrated.



Ramp time varies by who happened to be free to train that week.



Supervisors are still answering first-week questions in week five.



Scrap, near misses, and deviations cluster around your newest badge numbers.

Ask yourself:

Which of your hires from the last 30 days are competent, and which are still guessing?

Where it shows up

The safety exposure is the sharpest of it, and it lands early, in exactly the window where a new hire is least equipped to recognize a hazard and stop the line.

The rest is quieter and constant. Rework and scrap from work that was almost right. Tenured operators pulled off their own jobs to cover for training that didn't take, which costs you two people's output instead of one. Ramp time stretched by weeks, because it restarted every time a different person taught a different way.

Then there's turnover, which compounds all of it. People leave jobs where they never felt capable, and they tend to leave early. Every one of those exits sends you back to day one with the same process that produced the last exit.

Audits find this one too, though rarely under its own name. It shows up as a human error finding with a corrective action that says retrain, written against a program that already trained.

What it takes to close it

This doesn't take a bigger onboarding program. It takes a different finish line. There's more than one way to solve this, and here's how you do it:

- Define competency in observable terms, role by role. Not "understands the SOP." What the person does, at what speed, to what standard, that tells you they can run it.
- Provide training for the job in the order they will do it. Week one should cover what they'll touch in week one.
- Verify on the floor before unsupervised work. Someone qualified watch the task performed correctly and sign their name to what they saw.
- Record the verification, not just the delivery, so it survives a turnover wave and answers an auditor without translation.

Intertek Alchemy pairs a ready library of role-specific frontline courses with a way for supervisors to record what they watched, right at the line, so a job qualification means someone saw the work done.



In the field

A parts distributor was staffing three distribution centers through a hiring wave and couldn't hold on to the newest people. Onboarding records were complete. Turnover inside the first month kept climbing anyway.

When they looked at when people were actually leaving, it wasn't at 90 days. It was in the second and third week, right after the experienced picker who had been quietly covering for them went back to his own zone.

Three things changed:

- New hires learned in short group sessions using Intertek Alchemy running in two languages at once, so nobody was decoding a new language and a new job at the same time.
- The courses had them answer interactive questions rather than watch a video and sign a sheet, because a room that has to respond finds the gaps that a completion screen hides. And nobody worked a zone unsupervised until a supervisor watched the task performed correctly and logged it on a phone on the floor.
- It added a step, not a program. Ramp time came down, and the onboarding record turned into something an operations manager could actually read on a Monday morning.



carparts.com

Client Snapshot

84% new hire retention, a 30% improvement in new hire retention overall, and a 34% improvement in safety.

Read the case study



The Shift Breakpoint

When the same SOP executes three different ways across three shifts.

The breakpoint

First shift runs the procedure the way it was written. Second shift learned it from first shift's supervisor, who taught the version he actually uses. Third shift learned it from second, at 2 a.m., short-crewed, with a workaround attached to keep the line up.

Nobody decided any of that. It's what happens when a standard travels person to person instead of arriving intact. The name for it on the floor is "shift drift," and it runs a predictable slope: first shift good, second shift okay, third shift is where it comes apart.

Meanwhile the document your auditor reads describes first shift. So does your training material, and so does the process map on the wall. The floor at 3 a.m. describes something else, and has for a while.

Audits don't fail on bad paperwork. They fail because the paperwork stopped matching the reality of the floor three shifts ago.

How to spot the shift breakpoint: Four signs it's open



Ask three shift leads to walk you through the same critical task and you get three different walkthroughs.



Deviations, holds, and quality escapes cluster on one shift, and everyone can name which one.



Process knowledge for nights lives in one supervisor's head, and his vacation week proves it.



Changes made off-shift to keep production moving never make it back into the SOP.

Ask yourself:

If an auditor walked a critical line at 3 a.m., would it match what they'd see at 10 a.m.?

Where it shows up

Findings first, and the kind that don't close cleanly. The corrective action gets written against a procedure only one shift was following, so you correct it, the auditor comes back, and the same observation returns with a new number on it.

Underneath that is variation you pay for daily. Yield that swings by crew. Rework concentrated overnight. Customer complaints that trace to a window of time rather than a machine.

And the exposure nobody prices: every certification, customer approval, and supply contract you hold assumes one process runs across all of your hours. Each one was written against the shift that works days.

What it takes to close it

- One source of truth for the standard, and one version of the training carrying it. When the SOP changes, every shift gets the change at the same time in the same form.
- Reinforcement that doesn't depend on who's working nights. Supervisors across all shifts working from the same short list of what matters, not their own read of it.
- Verification that samples every shift. If you only observe when the plant manager is on site, you only measure the shift he works.
- Visibility by crew. Competence reported shift by shift, so shift drift surfaces as data before it surfaces as a finding.

In the field

A food manufacturer was running three shifts around the clock. Ahead of a compliance audit, they pulled competence reporting by crew for the first time.

On paper, all three shifts sat at 100% completion on the same allergen procedure. Watching that allergen procedure on the line told a different story. Day shift ran the verification step at the changeover, where it was designed to sit. Night shift ran it at the end of the run, which technically satisfied the checklist and defeated the entire point of the step.

Nobody was cutting corners. Night shift learned it that way, from someone else who learned it that way, two years earlier.

The fix wasn't taking people off the floor and finding time to retrain everyone.

Using Intertek Alchemy's app, one updated version of the procedure went to all three crews on the same day, and competence started climbing.

Observations got scheduled at 3 a.m. instead of only at 10 a.m.



Consistency became the standard. And before an auditor walked the floor, an Alchemy consultant performing an internal audit walked it first, against the paperwork, so what they found was a gap to close rather than a finding to address.



LSG Sky Chefs

Client Snapshot

More than 17,000 employees on one training standard across North America and Latin America, with records ready on demand for client, federal, and internal audits.

"Alchemy is central to our operations and training strategy. We use it to onboard new employees, deliver refresher courses, maintain compliance, and adapt quickly to operational or regulatory updates. It's a very important tool for our operational training initiatives."

— Marcos Oliveira, Compliance Training and Development Manager

Read the case study



The Growth Breakpoint

When the operation grew, but the knowledge holding it together didn't grow with it.

The breakpoint

You added something. A fourth shift. A second site. A new SKU, or a line running a format the plant has never run.

For years the operation ran on people who knew it cold. They trained the next person over their shoulder, corrected them in real time, and carried every exception in their heads. That worked, and it's worth calling it like it is: that tribal knowledge isn't a documentation failure. It's a workforce that knows its job.

Growth is what breaks it. Not because the knowledge got worse, but because there's suddenly more work than there are people holding it. Your veterans get split across two sites. Or one retires, and thirty years of judgment leaves with a cake in the break room. The temporary fixes people invented to keep things moving harden into the way it's done, and nobody wrote any of it down.

The timing is what makes the growth breakpoint hard to catch. It doesn't appear during expansion. Everyone is focused, the veteran employees are filling gaps, and the numbers hold. It surfaces months later, in a quarter where nothing notable happened.

How to spot the growth breakpoint: Four signs you're at risk



The newer site's numbers lag the original and nobody can name the reason precisely



There are one or two people everyone calls, and they spend more time on the phone than on their own work



Onboarding takes longer now than it did at half the headcount



A retirement in the next two years would walk a process out the door, and you can name the person.

Ask yourself:

What scaled in your operation this year, and what didn't scale with it?

Where it shows up

Every new line has a slower ramp up, because there's no clean way to teach it. Startup scrap that stays elevated well past what the plan assumed. Quality that varies by location, which becomes a customer conversation the first time they audit the newer plant.

Key-person risk is expensive. When a process lives in one head, you're carrying an unfunded liability. The day that person is out, retired, or recruited, you find out precisely which parts of the operation were load-bearing.

Then there's the cost that rarely gets counted. Operations reach a point where they can't take the next line, shift, or customer, because the constraint stopped being equipment and quietly became the ability to make more people good at the work.

What it takes to close it

Capture what's in people's heads while they're still there. Not a documentation project. A short, specific record of how the work actually gets done, built with the people who do it.

- Standardize before the next expansion, not after. Whatever version you scale is the version you'll live with at every site.
- Make training capacity grow with headcount, so adding people doesn't mean borrowing your best operators to teach.
- Measure capability by site and role, so you see the gap between the flagship and the new plant before a customer does.
- Track training and competence in real time, so it's easy to tell who could be ready to step into a supervisor role if someone were to be sick or absent from work.



In the field

A frozen foods manufacturer opened a second plant a few hundred miles from the original and staffed it with a mix of transfers and new hires. A year in, the new site trailed the flagship on yield, and nobody on the leadership team could point at the cause. The equipment was newer. Staffing was full. The SOPs were identical, because they were copies.

What hadn't moved was thirty years of practical judgment sitting with four operators at the original plant. The new site had the procedures. It didn't have the hundred small judgment calls those procedures quietly assume somebody already knows how to make.

The training program hadn't moved either. Sign-in sheets in a binder at one plant, a spreadsheet at the other. Survivable at one site. Not at two.

They filmed those judgment calls where they happened, at the line, and turned them into short courses the second plant could run on its own. Training plans got built by role instead of by site, and both plants started reporting into one place.

That last part paid twice. It made the newer site auditable on demand, and it made obvious for the first time who was two courses short of a job the plant had been struggling to fill.



MARS

Client Snapshot

Total training time cut by 50 to 60% and onboarding reduced from two days to one, across 800+ associates.

Read the case study



The Pressure Breakpoint

When training holds in normal conditions and breaks the moment the pressure hits.

The breakpoint

Your completion report says 100%. Your dashboard is green. Every certification is current.

Then orders get tight. A line goes down. Two people call out and a changeover lands on a crew that's already behind. That's when the shortcuts come back, and they come back from people who passed the quiz on Monday.

They didn't forget. The test happened in a quiet room with nothing else going on, and the work happens when everything is going on at once. How someone performs in calm conditions predicts very little about how they perform under pressure, and pressure is when a missed step costs the most.

Completion is not compliance. A record saying somebody can do the task isn't the same as watching them hold the standard while everything goes wrong at once. This is the breakpoint that hides in plain sight. Every instrument you own says you're fine, right up until the moment you aren't.

How to spot the pressure breakpoint: Four signs it's open



Incidents, deviations, and quality escapes cluster around peak demand, changeovers, and short-staffed shifts.



Your corrective action for human error is to retrain, and the same finding comes back.



You can produce a training record for any employee, but not a recent documented observation of that employee doing the task.



Certain shortcuts are widely known, informally tolerated, and written into nothing.

Ask yourself:

When did you last watch someone hold the standard under real pressure, instead of reading a record that said they could?

Where it shows up

Recordables, and the investigations behind them, which reliably end at a procedural step somebody skipped under pressure.

Repeat findings, because retraining someone who already knew the step doesn't address why it got skipped. That cycle burns your quality team's hours and your auditor's patience at the same rate.

Quality escapes at the worst moment, since pressure and volume arrive together. The batch that ships wrong usually comes from the week you were running hardest.

And the cost that appears on no report at all: false confidence. Every decision you make about staffing, throughput, and risks rest on a training completion report telling you information it isn't equipped to tell you.

What it takes to close it

The pressure breakpoint doesn't yield to more discipline; it's a system-based problem, and it takes a system answer.

- Train under conditions resembling the work. Time pressure, distraction, and consequence, not a quiet room.
- Reinforce actively rather than annually. Pulling knowledge back out beats reviewing it, and short repeated practice holds where one long session doesn't.
- Verify at the machine, under normal operating conditions, by watching.

Combine methods. Group practice, on-the-job training, and supervisor verification each cover what the others miss. No single format closes this one alone.

In the field

A vegetable processor had a clean training record and a finding that kept coming back. Every pack season, the same handful of procedural steps got skipped, and every corrective action said the same word: retrain.

The fourth time it returned, the quality director stopped retraining and started watching. What she found was that training had always happened at a desk, quietly, one person at a time, and the work happened at speed with three things going wrong at once. Nobody was failing the standard. They had never practiced it under anything resembling the conditions where it counted.



They moved to short group sessions using Intertek Alchemy where people answered live, on a remote, in front of each other.

Every answer was captured, so the team could see which steps the room actually got wrong instead of guessing at it. Sessions ran in short bursts through the year rather than once before the season opened. And supervisors observed at the machine during pack weeks, when the conditions were the ones that had been breaking the standard.

The finding stopped returning.



NORTERA

Client Snapshot

Six years with no lost-time incidents, while frontline skills and product quality both rose.

"Alchemy Coach helps us verify the effectiveness of training to confirm that people are taking what they learn in training and actually applying it on the floor."

— Lyane MacDougall, QA Coordinator

Read the case study

System problems, not people problems

Four breakpoints, four failures that look nothing alike. Onboarding reads as a hiring story. Shift reads as a documentation story. Growth reads as a staffing story. Pressure reads as a behavior story.

But at the core, they're the same story.

In every one of them, a standard exists somewhere, and something happens to it on the way to the floor.

During onboarding, the standard never fully arrives. During the shift, it arrives and then drifts. During growth, it exists only in somebody's memory. Under pressure, it's known and abandoned. What actually breaks is the connection between what's supposed to happen and what does.



How to find your breakpoints

Go back through the four previous "what it takes to close it" sections and the same four requirements sit underneath all of them:

- Define the standard in terms someone can observe.
- Deliver it the same way to everyone who needs it.
- Verify it on the floor, under real conditions.
- Prove it with a record that means something.

That's the whole repair. It isn't a product. It's a set of requirements, and there is more than one way to meet them.

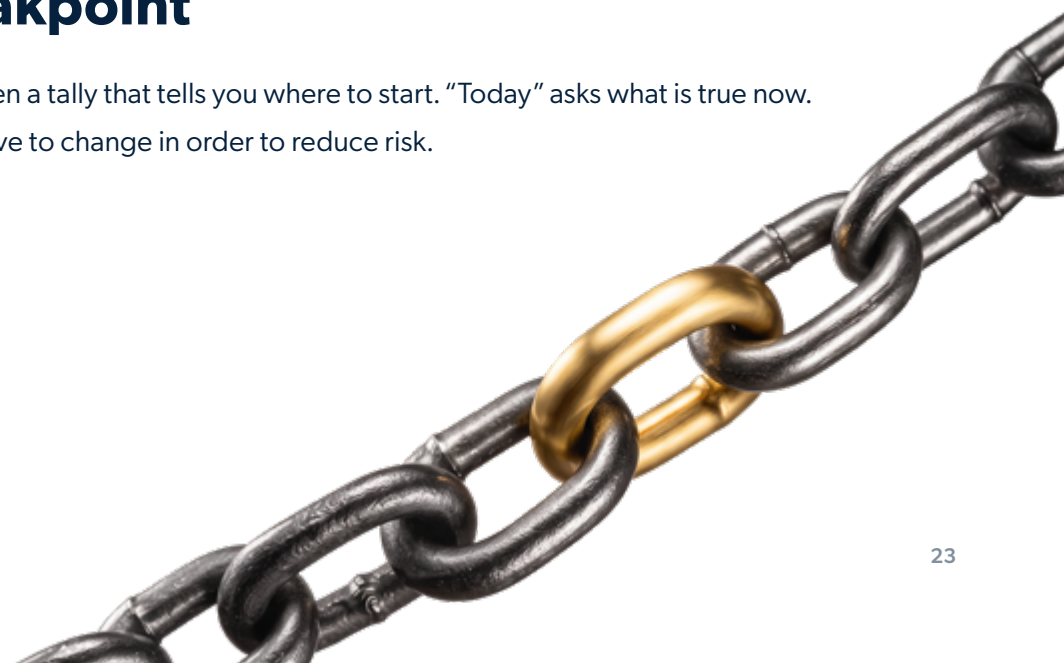
It's also why none of this is a people problem. Each of these breakpoints is a system handing capable workers an impossible assignment: hold a standard nobody defined observably, learned from a version that drifted, carried in someone else's head, under conditions the training never resembled. Your workforce isn't the weak link. They're what has been holding it together despite the gap.

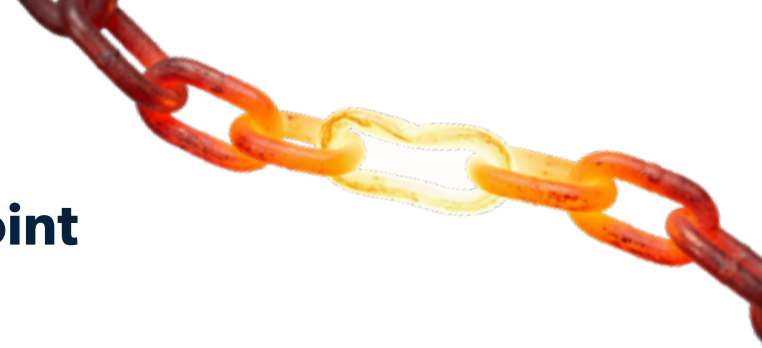
Operations that close the Onboarding Breakpoint stop worrying about new hires permanently, because what made new hires risky was never the new hires. That's what it means to close one. A repaired link isn't stronger because the metal is harder. It's stronger because it's the one link someone examined, understood, and rebuilt on purpose. Every other link is holding by default.

The next section is where you **find your breakpoint.**

Find your breakpoint

Four questions, four scores, then a tally that tells you where to start. "Today" asks what is true now. "Needed" asks what would have to change in order to reduce risk.





The Onboarding Breakpoint

When new hires hit the floor before they're truly ready.

Which of your hires from the last 30 days are competent, and which are still guessing?

Today

How do you know a new hire is ready to work unsupervised? Who decides, and on what evidence?

Needed

What would you need to see with your own eyes before signing off on a new hire?

Rate your maturity

How do you decide when a new hire is ready? Score your operation from 1 to 5.

1	2	3	4	5
Shift-by-shift	**Taking shape**	**Shared standard**	**Cross-shift**	**One standard**
Sign-off happens when the checklist is complete.	Some critical behaviors are observed but observation stops there.	Some new hires get observed on the floor, depending on the supervisor and the week.	Critical behaviors are observed, but observation and documentation aren't yet consistent.	New hires are almost always observed, and that observation is documented.



The Shift Breakpoint

When the same SOP executes three different ways across three shifts.

If an auditor walked a critical line at 3 a.m., would it match what they'd see at 10 a.m.?

Today

Where do your deviations, holds, and complaints concentrate by shift? Do you know, or are you estimating?

Needed

Which numbers would you want broken out by shift, and how often would you look at them?

Rate your maturity

How does one standard reach every shift? Score your operation from 1 to 5.

1	2	3	4	5
Fragmented	**Early standardization**	**Somewhat consistent**	**Mostly consistent**	**Fully consistent**
Each shift is trained separately, and each shift lead runs it their own way.	A standard is starting to take shape, but different shifts still rely on different training, habits, or leaders.	One standard exists, but consistency and reinforcement are weak.	The same standard reaches every shift, but reinforcement, verification, or follow-through still varies by crew.	Every shift gets the same standard, reinforcement, and verification, and competence is reported by crew.



The Growth Breakpoint

When the operation grew, but the knowledge holding it together didn't grow with it.

What scaled in your operation this year, and what didn't scale with it?

Today

Name the people you'd have to call at 2 a.m. when a line goes down. What do they know that isn't written down anywhere?

Needed

What knowledge would need to be captured, and from whom, before your next expansion?

Rate your maturity

How does process knowledge get passed on? Score your operation from 1 to 5.

1	2	3	4	5
Shared knowledge	**Informal know-how**	**A bit of both**	**Somewhat captured**	**Fully documented**
Critical process knowledge lives with individuals and isn't documented.	Some procedures are documented, but employees still rely heavily on experienced people to learn how the work really gets done.	Core procedures are documented, but the practical know-how still comes from a handful of veterans.	Most critical know-how is documented and teachable, but it isn't always kept current or consistently used.	How the work actually gets done is captured, current, and teachable without borrowing our best operators.



The Pressure Breakpoint

When training holds in normal conditions and breaks the moment the pressure hits.

When did you last watch someone hold the standard under real pressure, instead of reading a record that said they could?

Today

Where does your training happen, and how closely does that setting resemble the floor at its worst?

Needed

What would you need to observe, and how often, to trust the standard holds under pressure?

Rate your maturity

How do you verify the standard holds? Score your operation from 1 to 5.

1	2	3	4	5
Analytics	**Supervisor sign-off**	**Observed sometimes**	**Demonstrated**	**Verified ready**
We rely on completion records and annual training.	We check that training happened, but verification is occasional and inconsistent.	We reinforce regularly, but verification still happens away from the machine.	We verify critical tasks at the point of work, but observations aren't yet consistent across people or shifts.	We practice under realistic conditions, verify at the point of work, and can show a recent observation for every critical task.

Tallying your score

Count your score from each breakpoint maturity scale, and write the score in the table below. Review what you wrote for each one, and write down what you need to fix first.

Breakpoint	Score	The one thing to fix first
Onboarding		
Shift		
Growth		
Pressure		

Reading your results

Start with your lowest score. Not the breakpoint that worries you most, and not the one your last audit landed on. The one with the least structure behind it, because that's where a small amount of work produces the biggest change.

Tied at the bottom? Take the one carrying the most load right now. Hiring wave, start with Onboarding. Expansion or a retirement coming, start with Growth. Audit on the calendar, start with Shift. Peak season, start with Pressure.

Two or more at 1 or 2? Don't run four fixes at once. Close one, prove it out, and use it as the template.

Nothing below a 4? Test it. Pick one critical task and go watch third shift perform it. The gap between what a score says and what the floor shows is its own finding.

Then take one of these to your next staff meeting. The conversation it starts is usually worth more than the score.

Finding your breakpoints takes work. Closing them takes a system.

Intertek Alchemy is a frontline performance system, not a training platform layered on top of operations. It puts the standard in front of every worker, verifies it on the floor, and proves it when an auditor asks. Three parts, built to work together.



Platform

Skills tracking, on-the-job training management, and behavior validation. Built for the floor, not adapted for it.



Courseware

500+ courses in 80+ languages, aligned to GMP, HACCP, GFSI, and OSHA standards.



Consulting

Consultants who audit your program, build the plan, and support you through the rollout.

Reported by Alchemy customers:

60%
fewer OSHA recordables
— Tyson Foods

50%
lower workers' compensation costs
— Red Diamond

Ready to fix your breakpoints?

Talk to an Alchemy expert about the breakpoints showing up on your floor.

Schedule a consultation →

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