





Not Just AI — Field-Ready Safety Support for the Worker

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Twenty years in the field, one recurring problem

WHO'S TALKING

I am not a technologist. I am a trainer and a field safety professional who got tired of watching good programs fail at the point of the work.

OSHA Authorized Outreach Trainer, Construction · NSC First Aid / CPR / AED Instructor · M.S. Occupational Safety and Health

Expert witness and safety consultant for multiple attorney organizations on workplace, construction, and OSHA matters.

Invited speaker for general industry and manufacturing, the Eastern Atlantic States Regional Council of Carpenters and Millwrights, and the Parkersburg-Marietta Contractors Association.

WHAT I TEACH AND AUDIT

OSHA 10 / 30 · Confined Space · Fall Protection

Forklift / PIT · MEWP · Rigging & Signaling

NFPA 70E · Lockout/Tagout · Machine Guarding

Trenching & Excavation · Scaffolding · HAZWOPER

Contractor safety management & jobsite oversight



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What this session is — and what it is not

SETTING EXPECTATIONS

This is NOT

- An AI theory or automation lecture
- A pitch that technology replaces safety professionals
- A dashboard demo for people who sit in an office
- A claim that software prevents incidents by itself
- Anything that removes a human from a critical decision

This IS

- What a worker holds in their hand at the point of risk
- Hazard recognition, documentation, and correction — in the moment
- Real scenarios: forklifts, ladders, guardrails, MEWPs, LOTO
- Faster communication and better records, with the same people
- Supervisors and safety pros keeping final decision authority

If a tool only helps the person reviewing the report, it never helped the person who was exposed.



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We are still losing a worker every 104 minutes

WHERE WE ACTUALLY ARE · BLS, 2024

5,070

fatal work injuries in 2024

Down 4.0% from 5,283 in 2023

104 min

between worker deaths

Up from one every 99 minutes in 2023

3.3

deaths per 100,000 full-time workers

Down from 3.5 in 2023

The trend is moving the right direction — slowly. The programs are not the problem.

Nearly every one of these events had a written program behind it. A JHA existed. A procedure existed. Training records existed. What did not exist was usable support at the moment the decision was made — by one person, wearing gloves, under production pressure, with about thirty seconds to think about it.



Source: [BLS Census of Fatal Occupational Injuries](#)

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Construction, and the same hazard we have chased for decades

FATAL FALLS, SLIPS AND TRIPS · BLS, 2024

1,034

private construction deaths in 2024

The most of any private industry sector

389

of those were falls, slips and trips

More than one in three construction deaths

95.9%

of those were falls to a lower level

Not a slip on the floor — a fall from height

48.8%

of all private-industry fatal falls

Construction alone, across every sector

This is the most trained, most cited, most inspected hazard in the country — and it is still the one killing people.

More training on fall protection is not the missing variable. Recognition and response at the edge — in the sixty seconds before someone steps past it — is.



Source: [BLS: National Safety Stand-Down / fall hazards in construction](#)

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The same ten standards, year after year

OSHA TOP 10 MOST FREQUENTLY CITED · FY2025

1	Fall Protection — general requirements	1926.501	6	Scaffolding — construction	1926.451
2	Hazard Communication	1910.1200	7	Fall Protection Training	1926.503
3	Ladders — construction	1926.1053	8	Powered Industrial Trucks	1910.178
4	Control of Hazardous Energy (Lockout/Tagout)	1910.147	9	Eye and Face Protection — construction	1926.102
5	Respiratory Protection	1910.134	10	Machine Guarding	1910.212

Five of these ten — shaded above — are things Bob will personally touch before lunch. This is not an exotic hazard list. It is Thursday.



Source: [OSHA Top 10 Most Frequently Cited Standards](#)

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Section 01

01

The Gap Between the Program and the Field

Why compliant organizations still have the same incidents

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The program is fine. The moment is the problem.

THREE DIFFERENT WORLDS

THE PROGRAM

Written, reviewed, legally sound. Lives in a binder, an LMS, a shared drive, or a three-ring folder in the gang box. Built by people with time to think.

THE MOMENT

Thirty seconds. Gloves on. Noise. Weather. A crew waiting on you. Something is different than the plan and nobody wrote a procedure for exactly this.

THE RECORD

Typed hours later, from memory, by someone who wasn't there — or never written at all, because the form was in the truck and the truck was on the other side of the site.

We have spent twenty years perfecting the first box and the third box. The middle one is where people get hurt.

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Safety technology has been pointed the wrong direction

WHO THE TOOLS ACTUALLY SERVE TODAY

The executive

A dashboard. Trend lines, TRIR, leading indicators, a quarterly slide.

Useful — for governance.

The safety manager

An audit module, a CAPA log, an inspection app, a document library.

Useful — for management.

The worker

A paper form in a truck, a QR code nobody explained, or nothing at all.

This is the person who was exposed.

90%

of EHS professionals say workplace incidents, hazards and near misses go underreported — up from 79% the year before, in a 2026 survey of more than 260 EHS professionals.



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Source: [Benchmark Gensuite 2026 EHS Benchmarking Report, via WorkSafety247](#)

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What the worker actually has on them

DESIGN CONSTRAINTS, NOT PREFERENCES

A phone in their pocket.

Already there. Already used for everything else. Not a new device to buy or issue.

About thirty seconds.

Longer than that and they will make the call from memory and move on.

Gloves on.

Voice, camera and a button are the only realistic inputs.

No patience for a login.

Every credential prompt between the hazard and the report is a reason to skip it.

Production pressure.

Real, constant, and not going away. Anything that slows the job down loses.

A long memory for being ignored.

If the last three reports went nowhere, there will not be a fourth.

Any tool that ignores these six constraints will be abandoned in about three weeks. I have watched it happen.



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Section 02

02

Meet Bob

One worker, one ordinary Thursday, seven decision points

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Bob

THE PERSON THIS ENTIRE SESSION IS ABOUT

Fourteen years in the trade.
Knows more about how the work actually gets done than anyone in the trailer.

Multi-craft site.
General contractor, three subs, shared equipment, changing conditions every single day.

Doesn't hate safety.
Hates paperwork, hates being talked down to, and hates being asked the same question twice.

Reads at work pace, not policy pace.
He will not open a 40-page program on a phone at the top of a lift.

WHAT BOB IS ACTUALLY ASKING, ALL DAY

"Is this thing safe to run today?"

"What does the procedure actually say?"

"Am I trained for this piece of equipment?"

"Who do I tell, and will anything happen?"

"If this goes wrong, does anyone know I flagged it?"

Five questions. Every one of them has an answer somewhere in your safety program. None of those answers are where Bob is standing.

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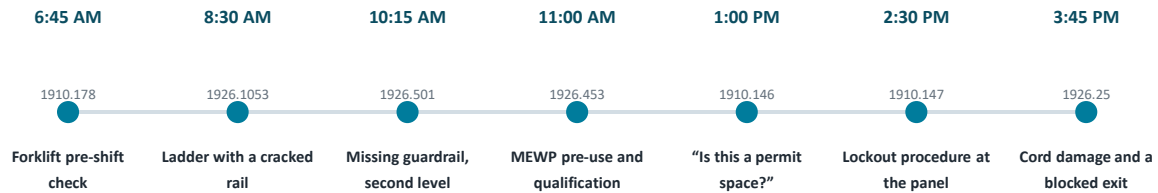
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Bob's Thursday

SEVEN DECISION POINTS, ONE SHIFT



None of this is a bad day. Nobody is being reckless, no supervisor is asleep, no program is missing. This is a completely normal Thursday on a competent jobsite — and it contains seven separate moments where the right information, in the right hands, in under a minute, changes the outcome.



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6:45 AM — The pre-shift forklift check

29 CFR 1910.178(Q)(7) • EXAMINED DAILY BEFORE BEING PLACED IN SERVICE

Bob finds a hydraulic leak and a horn that doesn't work.

- **Opens the checklist** by scanning the QR tag on the mast — the right unit, the right checklist, no hunting.
- **Photographs the leak** directly into the inspection item. The photo is the evidence, not a description of it.
- **Speaks the defect** — gloves on, no typing: “hydraulic leak at the lift cylinder, horn inoperative.”
- **Marks the unit unsafe.** The submission itself triggers the out-of-service status. Bob doesn't have to find a tag.



Elapsed time: about forty seconds. The old version of this is a paper sheet that gets filled out for the whole week on Friday afternoon.



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What happened in the forty seconds after Bob hit submit

THE PART THE WORKER NEVER USED TO SEE

01
Defect captured
Photo, voice note and unit ID time-stamped together

▶

02
Unit tagged out
Status changes to out of service across the whole site

▶

03
Supervisor notified
Push notification with the photo, not a nightly summary

▶

04
Work order opened
Routed to maintenance with the defect already described

▶

05
Record created
The daily examination is documented whether or not anyone follows up

Bob did one thing. The system did five. That ratio is the entire argument — the worker's effort has to stay near zero, or the reporting stops. Everything downstream is the tool's job, not his.

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8:30 AM — The extension ladder with a cracked side rail

29 CFR 1926.1053(B)(16) · DEFECTIVE LADDERS SHALL BE WITHDRAWN FROM SERVICE

How this usually goes

- Bob notices the crack and mentions it to somebody
- “Somebody” has four other problems this morning
- There is no other ladder within 300 feet and the work is due
- The ladder stays in the rotation, unmarked
- Next week a different crew uses it, knowing nothing

How this goes with support in hand

- Photo of the crack, tied to that ladder's asset ID
- “Do Not Use” status applied at the moment it is reported
- Replacement request opens automatically, with the photo attached
- Every other crew sees the status before they pick it up
- The withdrawal from service is documented, not remembered

The standard says defective ladders shall be withdrawn from service and tagged. The failure is almost never the rule — it is that “withdrawing from service” took more effort than the work itself.

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10:15 AM — Missing guardrail on the second level

29 CFR 1926.501(B)(1) · 1926.502(B) · THE #1 CITED STANDARD, FIFTEEN YEARS RUNNING

A section of top rail is down. Nobody knows who took it out, or when.

- **Photo with location** — the image carries the level, the bay and the time. No one has to reconstruct where.
- **Hazard submitted in under a minute** from where Bob is standing, without walking to the trailer.
- **The area is flagged** for every other worker on site who opens the map, not just for Bob's crew.
- **Correction is assigned to a human** — with a name and a clock on it, not to a queue.



Bob does not decide whether the work stops. He makes sure that within sixty seconds, the person who does decide is looking at a photograph.



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Nothing is allowed to go quiet

ESCALATION, FROM THE WORKER'S SUBMISSION OUTWARD

T + 0 min	Worker submits	Photo, location and description are captured and time-stamped at the point of risk
T + 0 min	Supervisor notified	Push notification with the image attached — not a line item in tomorrow's report
T + 15 min	Area safety lead	If nobody has acknowledged the hazard, it escalates. Silence is treated as a failure state
T + 60 min	Site safety manager	Still open, still unacknowledged — now it is on the manager's board with an age on it
Always	Back to Bob	He is told what happened. This single step is the difference between a reporting culture and a dead form

Escalation timers are a policy decision, not a technology decision. You set them — the tool only refuses to let the clock stop.



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11:00 AM — MEWP pre-use check, and a QR code on the rail

29 CFR 1926.453 • ANSI/SAIA A92.22 • PRE-USE INSPECTION AND FAMILIARIZATION

Different machine than yesterday. Different controls, different capacity chart.

- **Scan the rail tag** — this machine's operator manual and capacity chart, not a generic PDF library.
- **Pre-use inspection** walks item by item, with photo capture on anything that looks wrong.
- **Familiarization check** — has this operator been familiarized on this model, per A92.22?
- **Site conditions prompt** — ground, slope, wind, overhead lines, swing radius, and who is below.



Familiarization is machine-specific by design. A worker who is trained on a scissor lift is not automatically familiarized on a boom.



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“Am I actually qualified to run this today?”

TRAINING VERIFICATION AT THE EQUIPMENT, NOT AT THE FILING CABINET

WHAT THE SCAN RETURNS

Operator record — Is this person certified for this class of equipment?

Currency — Current, expiring, or expired — shown before the machine moves.

Evaluation date — Powered industrial truck operators require re-evaluation at least every three years, per 1910.178(l)(4)(iii).

Restrictions — Any documented limitation on this operator for this equipment.

Expired training is one of the quietest failures in the industry. Nobody notices until an inspection, an incident, or a deposition.

The record usually exists — in an LMS, a binder, or a spreadsheet that lives with one person who is on vacation.

Surfacing it at the machine turns a compliance artifact into a pre-task control.

Nothing here is new information. It is the same record you already keep — delivered thirty seconds before it matters instead of thirty days after.



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1:00 PM — “Is this a permit-required confined space?”

29 CFR 1910.146 · 29 CFR 1926 SUBPART AA · THE HIGHEST-STAKES QUESTION OF THE DAY

What the tool does

— Pulls this specific space's classification and permit record

— Shows entry requirements: testing, ventilation, attendant, rescue

— Surfaces the last atmospheric test and who performed it

— Identifies the entry supervisor and the rescue plan on file

— Documents that Bob asked the question, and when

What the tool does NOT do

— Authorize entry — ever

— Sign, issue, or amend a permit

— Replace atmospheric testing or a calibrated instrument

— Substitute for the entry supervisor's judgment

— Decide that conditions are acceptable

Confined space kills people who were confident. The value here is getting Bob to the right question and the right person — fast — not getting him an answer.



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The hard lines, stated once, plainly

GUARDRAILS ON THE TECHNOLOGY ITSELF

It will never:

✗ Authorize a confined space entry

✗ Sign, issue or close a permit

✗ Clear or verify a lockout/tagout

✗ Certify that a worker is competent or qualified

✗ Close out a corrective action on its own

✗ Overrule a worker's stop-work authority

✗ Replace a competent person's on-site judgment

✗ Decide that a condition is acceptable

Every one of those is a human decision with a human name attached to it. If a safety technology ever offers to take one of them off your plate, that is the moment to walk away from the vendor.



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2:30 PM — The lockout procedure, at the panel

29 CFR 1910.147 · #4 ON OSHA'S MOST-CITED LIST · MACHINE-SPECIFIC PROCEDURES REQUIRED

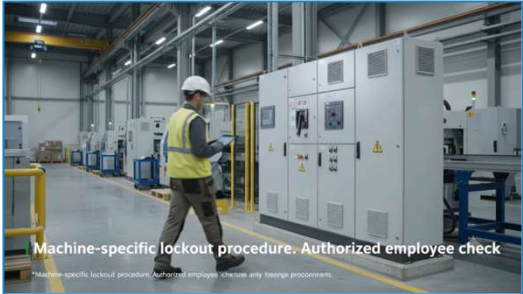
The procedure exists. It is in a binder, in an office, on the other side of the plant.

▪ QR tag at the disconnect returns the procedure for this machine — not the generic company LOTO policy.

▪ Energy sources listed — electrical, pneumatic, hydraulic, stored, gravity, thermal. All of them, every time.

▪ Verification steps in order with a place to record who verified zero energy state, and when.

▪ Authorized employee check — is this person authorized for this procedure, or are they affected only?



Machine-specific lockout procedure. Authorized employee check

Machine-specific procedures are required. The common failure is not that they were never written — it is that they were never where the lock goes on.



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3:45 PM — The small stuff nobody reports

29 CFR 1926.25 · HOUSEKEEPING · AND THE FRAYED CORD BY THE SAW

A frayed cord

Twenty seconds to photograph. Nobody has ever filled out a form for it.

A blocked egress path

Material staged in front of an exit. It will be moved tomorrow. Probably.

Debris on the walking surface

The thing that becomes the “slip and fall” line on next quarter’s report.

These are the leading indicators.

Every organization in this room wants leading-indicator data. We build scorecards for it and report it to leadership quarterly. And then we ask a worker in a lift, at the end of a ten-hour shift, to walk to a trailer and fill out a form about a frayed cord.

The reason we do not have good leading-indicator data is not that workers do not see the conditions. It is that we made reporting them cost more than ignoring them.



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Section 03

03

The Loop, and Who Closes It

Where authority sits, what changes, and what it takes to start

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A finding that never closes is just a documented hazard

THE CLOSED LOOP

IDENTIFY

Worker sees it

Photo, voice, at the point of risk

DOCUMENT

It becomes a record

Time, place, asset, person

NOTIFY

The right human

Immediately, with the evidence

CORRECT

Assigned, with a clock

To a name, not a queue

VERIFY

Someone confirms

A human closes it, not the reporter

CLOSE

And Bob is told

The loop returns to where it started

The first step is the one we automate least and need most. The last step is the one we skip entirely — and it is the only reason the first step ever happens again.

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Who decides what — nothing here moves down a level

AUTHORITY, UNCHANGED

	WORKER	SUPERVISOR	SAFETY PRO	THE TOOL
Recognize the hazard	•	•	•	assists
Capture the evidence	•	—	—	captures
Exercise stop-work	•	•	•	never
Authorize an entry or permit	—	—	•	never
Assign the correction	—	•	•	routes
Verify and close it out	—	•	•	tracks
Final decision authority	—	•	•	never

Read the last column top to bottom. It says assists, captures, never, never, routes, tracks, never. That is the whole design philosophy.



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Be honest about what the technology is good at

AND WHAT IT WILL ALWAYS BE BAD AT

Genuinely good at

- Retrieval — finding the right procedure for the right machine, fast
- Capture — photo, voice and location without typing
- Consistency — the same checklist, every unit, every shift
- Routing — getting the report to the right person immediately
- Memory — the ladder's history survives crew changes
- Language — turning spoken plain English into a usable record

Humans must own

- Judgment — whether this condition is acceptable right now
- Context — what changed on site in the last two hours
- Authority — stopping work, issuing permits, clearing energy
- Competence — being the competent or qualified person
- Accountability — someone's name on the correction
- Trust — the reason a worker reports anything at all

Notice the left column is all logistics and the right column is all judgment. Any vendor blurring that line is selling you risk.



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Reporting behavior follows friction, not posters

WHAT ACTUALLY CHANGES CULTURE

When reporting costs something

- A walk to the trailer at the end of a shift
- A paper form, from memory, hours later
- A conversation that might sound like complaining
- No visible result, three times in a row

Result: workers stop. Not out of apathy — out of arithmetic.

When reporting costs nothing

- Thirty seconds, from where they are standing
- A photo instead of a description written later
- A record with their name on it, time-stamped
- A notification back: here is what happened

Result: volume goes up. That is a healthy program, not a worsening one.

Warn your leadership before you start: hazard reports will spike. That number going up is the system working, and somebody needs to have said so in advance.



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The four objections you will hear, and honest answers

ASK THEM IN YOUR OWN SHOP BEFORE A VENDOR ASKS THEM FOR YOU

“This is surveillance.”

It is, if you deploy it that way. Report hazards and equipment conditions — not worker location, not productivity. Write that boundary into policy before rollout and share it with the crew.

“My guys will never use an app.”

They will use one thing that saves them a walk. They will not use eleven modules. Launch with one hazard type and one button, and expand only after it is habit.

“There is no signal in the tank.”

Correct, and that will not change. Ask where capture actually happens, at the entry point, at the panel, at the lift, verify coverage locations. Plenty of tools, mine included today, need a connection. Know that before, not in the hole.

“What if the AI gets it wrong?”

Assume it will, sometimes. That is exactly why it never holds authority. It surfaces information to a qualified human who decides. Wrong information reaching a competent person is a manageable failure. Wrong information holding authority is not.



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If you try this, start smaller than you want to

A REALISTIC FIRST NINETY DAYS

DAYS 1–30	One hazard, one crew	Pick a single hazard type and ten workers. Not the whole site, not every module. One button they can find with gloves on.
DAYS 1–30	Answer every submission	Every single one, within the shift. Nothing kills a rollout faster than the third report that goes nowhere.
DAYS 31–60	Tag the equipment	QR codes on the machines and ladders you actually inspect. Asset identity is what gives the equipment a memory.
DAYS 31–60	Train supervisors first	Before the workers. If supervisors are not ready to respond, do not turn on reporting.
DAYS 61–90	Measure time-to-closure	Not report volume. Volume will rise and that is fine. Closure speed is the number that predicts outcomes.

Every failed rollout I have seen failed the same way: too many modules, too many users, and nobody assigned to answer the reports.



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Five things you can do without buying anything

MONDAY MORNING

- 01** Ask one worker how they would report a hazard right now
Then time it. That number is your reporting friction, and it explains your near-miss data better than any survey.
- 02** Find your last ten hazard reports and check the closure loop
Did the person who reported each one ever find out what happened? If not, you have found the cheapest fix available to you.
- 03** Put the procedure where the work is
You do not need AI to QR-tag a disconnect or a ladder. Start there — it is the highest-value, lowest-cost move on this list.
- 04** Write the surveillance boundary before you evaluate anything
Decide what your organization will and will not capture, and say it out loud to the crew first.
- 05** Decide which decisions will never leave a human
Write that list down. Then hold every vendor — including mine — against it.

Four of those five cost nothing but attention. That is the honest version of this talk.



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Questions

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