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# The pilot that could not fail

*It worked, people liked it, roll it out. If that was the only way your pilot could end, the verdict was available before it began. The fix is one signed page.*

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Ask how the last safety technology pilot in your organisation ended. Perhaps the answer has three parts. The system worked. The crews liked it. We are rolling it out.

Now ask what result would have led to withdrawal. If nobody can say, the pilot was a demonstration. It may have been a good one. It was not a test, and the organisation learned nothing it could not have read in the brochure.

## Why pilots drift towards yes

Nobody sets out to run an empty pilot, and the drift needs no bad faith. Check five things about your last one.

- Did the person who proposed the system also run the trial and write the report?
- Did the supplier hold the data?
- Was the pass mark agreed after the results were in, when everyone could see which number would be convenient?
- Were quiet periods reviewed, or only the alarms? Missed events hide in the quiet periods.
- Did withdrawal have an owner, as adoption had a budget line and a launch date?

Each arrangement is reasonable alone. Together they leave a process with one possible outcome.

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## One page, signed first

The remedy is dull and cheap. Before the first run, the sponsor signs a one-page charter with seven clauses.

1. **Exposure.** The fatal risk, the task, the place, who is exposed and the moment exposure begins.
2. **Comparator.** The best conventional control for the same exposure, with its cost.
3. **Protective action.** Who receives the signal, what they do, and by when, on every shift.
4. **Envelope.** The equipment, software revision, layout, light and shifts tested. Everything else is untested.
5. **Reference.** How the truth of each trial is established without asking the system under test.
6. **Pass, fail and stop.** The number of trials, the result that passes, the result that fails, and what halts the pilot at once.
7. **Data and people.** What is collected, who sees it, how long it is kept and how workers were consulted.

The technical authority for the hazard sets clause 6. The supplier does not sign and does not hold the reference data.

EXHIBIT

| CLAUSE | WHAT TO WRITE | COMMON FAILURE |
|---|---|---|
| **1. Exposure** | The fatal risk, the task, the place, who is exposed and the moment exposure begins. | "Improve vehicle safety." No task, no moment. |
| **2. Comparator** | The best conventional control for the same exposure, with its cost over the same period. | Comparing the technology with doing nothing. |
| **3. Protective action** | The recipient, the action and the deadline, on every shift and for contractors. | A dashboard for managers with no action at the workface. |
| **4. Envelope** | Equipment, software revision, mounting, layout, light, weather, speed, shifts. State what is excluded. | Testing one machine by day and accepting for the fleet. |
| **5. Reference** | How each trial's true state is established without using the system under test. Who adjudicates disagreement. | Scoring the system against its own log. |
| **6. Pass, fail, stop** | The number of trials per challenge, the result that passes, the result that fails, and what halts the pilot at once. | "Performance will be reviewed." |
| **7. Data and people** | Data collected, purpose, access, retention, and how workers were consulted. Who can refuse a request to reuse it. | Footage later used to rank individuals. |

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## The clause most often missing

It is the comparator. A pilot that compares a camera with nothing will always find the camera better than nothing. The useful comparison is with the barrier, the one-way route or the locked gate.

Sometimes that comparison ends the pilot in its first fortnight, because the conventional control removes the exposure and costs less. That is a successful pilot. It should be reported as one.

## The boundary someone drew

Clause 4 deserves more attention than it gets. In February 2017, three contractors died at a mill in DeRidder, Louisiana, when a tank exploded during hot work. The US Chemical Safety Board found that the atmosphere had been tested before work began. It was tested outside the tank. The flammable atmosphere was inside.

Every monitoring function inherits a boundary someone drew for it. A pilot that tests only inside that boundary will pass, and will say nothing about the hazard next to it. So one of the five challenges in our method places the hazard where the function cannot sense, with nobody exposed, and asks what the crew does.

## Liking it is not evidence

Crews may well like a new system. That matters for adoption, and it should be asked properly. In one US survey, 59% of construction field workers said they would not voluntarily use a location-tracking wearable. One sample, with a size we could not see, so it predicts nothing about your site. It is a reason to consult before collecting data, as the EU's safety and health agency advises.

Approval is still not protection. A system can be popular and late.

## The strongest case against this article

**"This is bureaucracy. Real learning is iterative."** Iterate on the design as much as you like, in a development phase with a different name. Once you ask whether to rely on the function, the rules have to hold still. A changed pass rule restarts the count.

**"Suppliers know their product best. Keeping them out is wasteful."** They do know it best, and they should state its envelope and failure states in writing, support the installation and answer questions. What they should not do is hold the reference data or set the pass mark. That is a conflict of interest, however honest the people.

**"A failed pilot damages the sponsor."** Only where the organisation treats a pilot as a launch. A sponsor who withdraws a system on evidence has saved the fleet rollout and the false comfort that would have come with it. Executive committees should say in advance that withdrawal is an acceptable result, and mean it.

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**"Small sites cannot staff all these roles."** They can keep two apart: the person who proposed the technology and the person who records what really happened in each trial. Borrow the second from another shift or site.

## What a sponsor does

- Asks, before signing: "What result would make us withdraw this?"
- Checks that the comparator is priced and the pass rule has numbers.
- Keeps every existing control in place for the duration. The pilot adds. It removes nothing.
- Names one person and a deputy on each shift who can halt the pilot.
- Refuses a decision paper built on devices installed, hours logged or "no incidents during the pilot".
- Accepts one of four written decisions: adopt within the tested limits, extend, redesign or withdraw.

## What would change our view

A published pilot, run with pre-signed criteria and an independent reference, that ended in adoption and held up afterwards. We would like to cite one. We would be as glad to cite one that ended in withdrawal.

The test of a pilot is simple. Could it have failed? If so, whatever it found is worth knowing.

> **Read the full manual.** *Prove it on site: a field manual for piloting safety technology against critical controls* is published by Riskopilot Research on Riskolabs.

### Sources


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2. Fugate, H. and Alzraiee, H. (2023). Quantitative analysis of construction labor acceptance of wearable sensing devices to enhance workers' safety. *Results in Engineering* 17, 100841. ScienceDirect. Single source, sample size not visible to us.
3. European Agency for Safety and Health at Work (2024). Principles for implementation and use: smart digital systems to improve workers' safety and health.


*The charter, the roles and the five challenges are a Riskopilot proposal. The five checks on why pilots drift are our reasoning about incentives. They are not findings from a study. Nothing here is engineering or legal advice.*

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