

## Transcript of the Deeper Dive on Reports

Hi there! In this installment of “Deeper Dive,” we will explore a case study that gives us a little more context for approaching our PIR report. In particular, we are going to focus on three traps to watch out for when documenting an incident (Bergström 2016).

In June 2021, the cloud-based software company Salesforce published their version of a PIR report in response to a service outage across several of their products.

This report has some of the same components we learned about in this lesson. There is an incident timeline, they identify some key learnings, and there is a focus on action items along with clear diligence to see them through to completion.

But it also deviates from what we have learned in some interesting ways.

The first is inserting a section titled “root cause analysis.” This section seems to contradict itself immediately by declaring that:

“Salesforce has determined that the primary root cause has the following contributing factors” (Salesforce 2021).

This section details not one but three technical themes that played a role in causing the incident. This contradiction echoes something we have spoken about in earlier lessons—it is often the case that multiple conditions must align for an incident to occur.

Rather than shoehorn these themes into a primary root cause, this report would be better served by exploring each discussion topic on its own merits. As we have already learned, once we start narrowing in on causes, we naturally discard other fruitful areas of discussion. In this case, the hunt for cause led to the finding that someone didn’t follow procedures:

“Our incident analysis leads us to believe the process would have worked in preventing this incident had it been followed, but insufficient guardrails allowed circumvention of the change management process” (Salesforce 2021).

It’s worth taking a minute to unpack this because you might have noticed that this is, ever so subtly, documenting a scenario that never actually happened. Saying that someone did not follow a procedure is a type of counterfactual reasoning that is entirely unhelpful. Speculating on events that did not occur avoids the reality of what did happen and why it made sense for the event to occur as it did.

This speculation also overlaps with safety researcher Steven Shorrock’s definition of human error, which is:

“Someone did something that they were not supposed to do, according to someone” (Shorrock 2014, 00:02:23).

Part of the issue of labelling incidents as resulting from human error is that it leads to action items focussed on things people did not do rather than what they actually did.

In our Salesforce case study, the company vowed to add more training and to improve workflows and procedures. The irony of this approach is that adding additional guardrails for humans often adds to the system's complexity, opening the door for different types of incidents.

Another interesting phrasing is used later in the root cause analysis section of the report.

“...the EBF [emergency break fix] process should not have been used, and standard Salesforce stagger processes should not have been ignored” (Salesforce 2021).

This excerpt illustrates another trap that PIR report authors can fall into—normative language. Normative language is where the PIR leader inserts their values into the analysis of other people's performance.

Speculating on what people should and shouldn't have done is not valuable to learning. Once the result is known, it's often relatively easy to separate good decisions from regrettable decisions. It's not so straightforward without hindsight because the world is complicated and uncertain. The PIR leader needs to be a curious investigator, not a judge.

There is one more line in this report worth highlighting, and that is:

“...change management processes are in place and would likely have limited the impact had they been followed” (Salesforce 2021).

This line is an example of mechanistic reasoning. Mechanistic reasoning suggests that problems are the result of well-functioning components functioning in unexpected ways. So, we might say component X works correctly. Process Y also works just fine. If the system is doing what it's supposed to, then a human must be at fault. If the malfunctioning component is a human, then the real question is why it made sense for the human to do what they did based on their circumstances at the time.

So, here are three traps to watch out for when you are compiling your next PIR.

Beware of counterfactual reasoning—focus your attention on the things that actually happened. Beware of normative language—try not to speculate on what should have happened. And beware of mechanistic reasoning—and any logic that leads you to think that systems would work perfectly if it wasn't for those pesky humans.

Thanks for listening!

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## References

Bergström, J. (2016) 'Three analytical traps in accident investigation', *Lund University - Human Factors and Systems Safety* [video],

available: <https://www.youtube.com/watch?v=TqaFT-ocY7U> [accessed 05 Jun 2024].

Salesforce (2021) *Multi-Instance Service Disruption on May 11-12*, available:  
<https://help.salesforce.com/s/articleView?id=000390251&type=1>  
[accessed 05 Jun 2024].

Shorrock, S. (2014) 'Life after human error', *O'Reilly* [video], available:  
<https://youtu.be/STU3Or6ZU6o?t=141> [accessed 05 Jun 2024].

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