

Slide 1

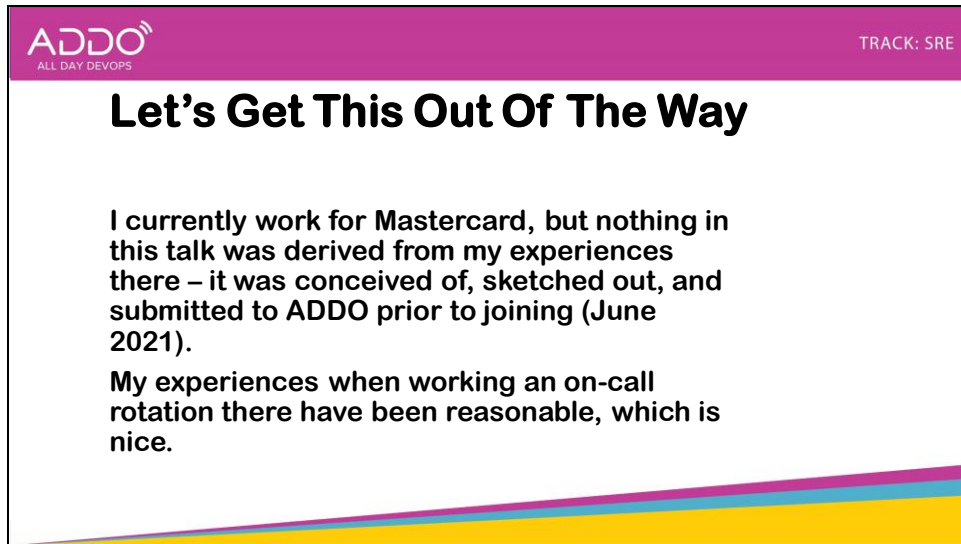


**ADDO**  
ALL DAY DEVOPS  
OCTOBER 28, 2021

Shaun Mouton

**Humane On-Call Strategies**

The banner features a purple background with a white microphone on a stand and a silhouette of a person speaking into it. The bottom of the banner has a yellow and blue gradient.



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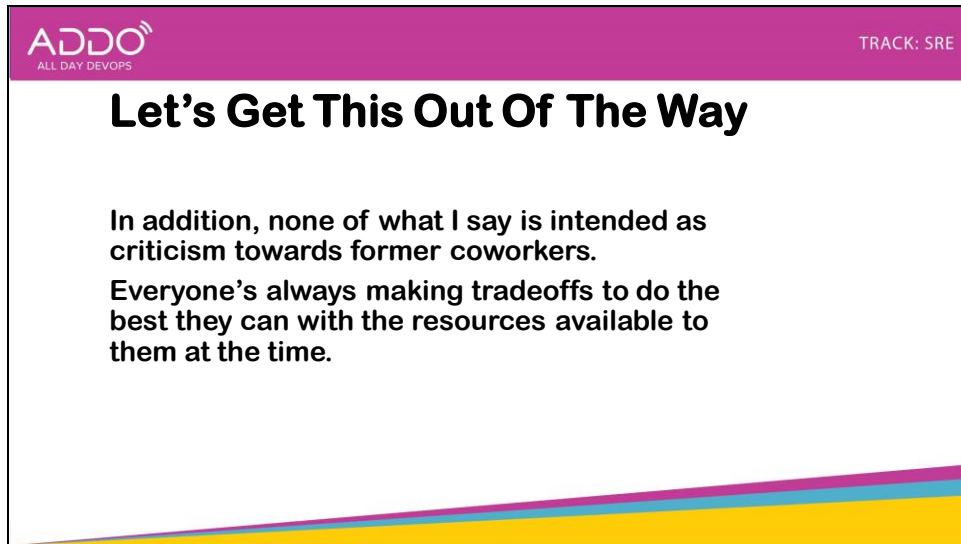
TRACK: SRE

## Let's Get This Out Of The Way

I currently work for Mastercard, but nothing in this talk was derived from my experiences there – it was conceived of, sketched out, and submitted to ADDO prior to joining (June 2021).

My experiences when working an on-call rotation there have been reasonable, which is nice.

I work at Mastercard now, but when I conceived of this talk in early 2021 I had recently joined a new company after working at Chef for around 4 years. It was the process of learning a new on-call workflow and at the same time hearing the stories of other folks who'd recently changed jobs that made me think this was something worth talking about.

The slide features a purple header bar at the top. On the left side of the header is the logo for 'ADD0' with the tagline 'ALL DAY DEVOPS' underneath. On the right side of the header is the text 'TRACK: SRE'. The main body of the slide is white and contains a title and two paragraphs of text. At the bottom of the slide, there is a decorative graphic consisting of three overlapping, upward-sloping lines in purple, blue, and yellow.

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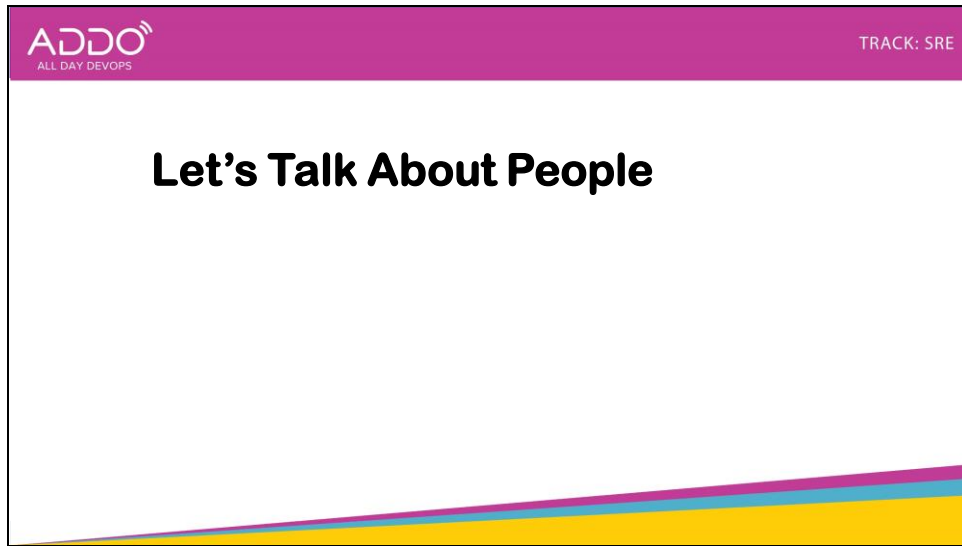
## Let's Get This Out Of The Way

In addition, none of what I say is intended as criticism towards former coworkers.

Everyone's always making tradeoffs to do the best they can with the resources available to them at the time.

In every shop there's a balancing act taking place between all sorts of budgets. For example: staffing concerns, the work in progress, the amount of time in each team member's day, and emergent issues all play a part in how an on-call rotation is constructed. We can all recognize shortcomings in the design of our systems if we step back and objectively assess our state, and it's with that in mind that I reference anything which can be traced back to my time working with a particular team.

Slide 4



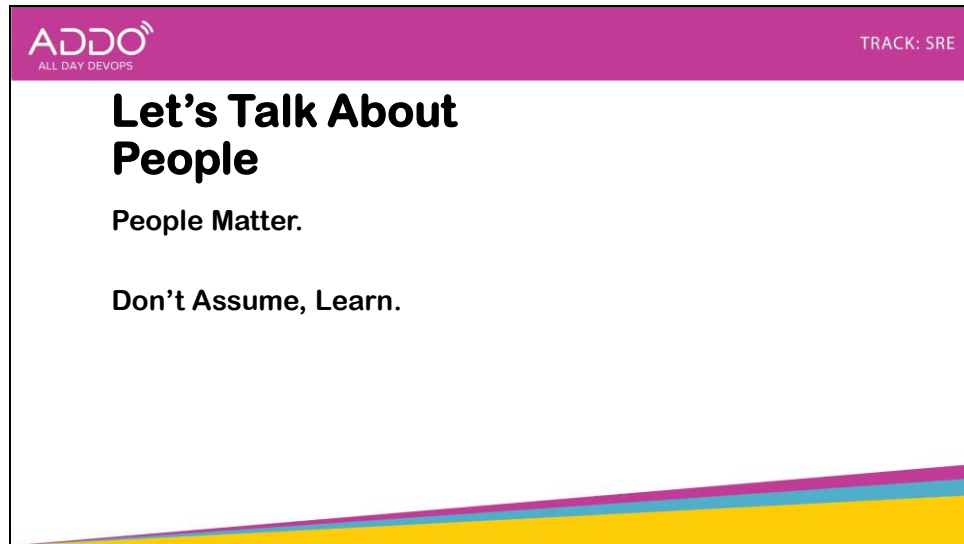
The slide features a purple header bar at the top. On the left side of the header is the logo for ADDO, with the text "ADDO" in a large, bold, white font and "ALL DAY DEVOPS" in a smaller, white font below it. On the right side of the header is the text "TRACK: SRE" in a white font. The main content area is white and contains the text "Let's Talk About People" in a bold, black font, centered horizontally. At the bottom of the slide, there is a decorative footer consisting of three overlapping, upward-sloping shapes: a yellow shape at the bottom, a light blue shape in the middle, and a purple shape at the top.

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## Let's Talk About People

So, let's talk about people.



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# Let's Talk About People

People Matter.

Don't Assume, Learn.

One of the most fundamental things about a humane on-call strategy is how you consider your people when in the design process.

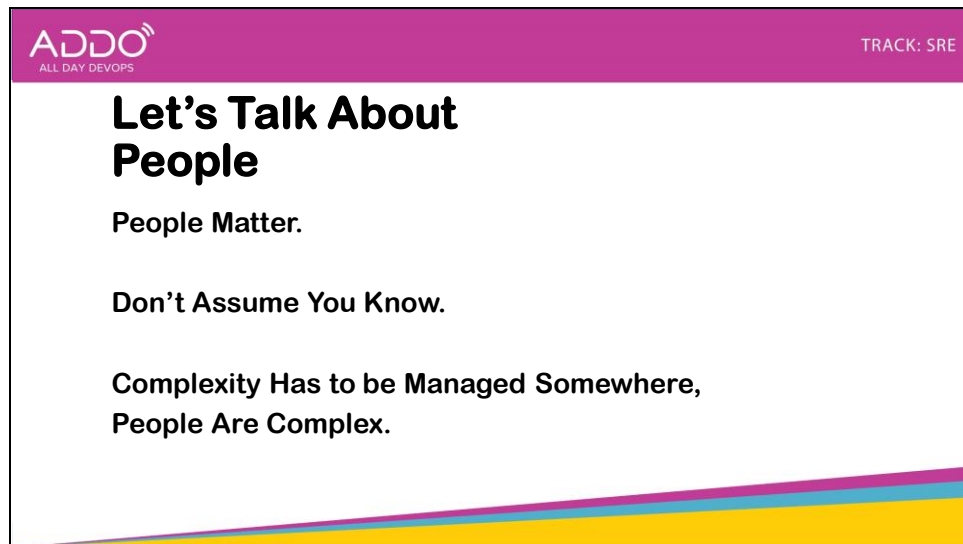
As change happens in our lives, we often come to realizations which were previously difficult to consider.

Some often used examples of this are:

Entering the workforce.

Becoming a parent.

Passing some arbitrary age threshold and realizing your body isn't what it used to be.



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## Let's Talk About People

People Matter.

Don't Assume You Know.

Complexity Has to be Managed Somewhere,  
People Are Complex.

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Some examples which might not come immediately to mind are:

Chronic Illness

Debilitating Injury or repetitive strain

Failing relationship

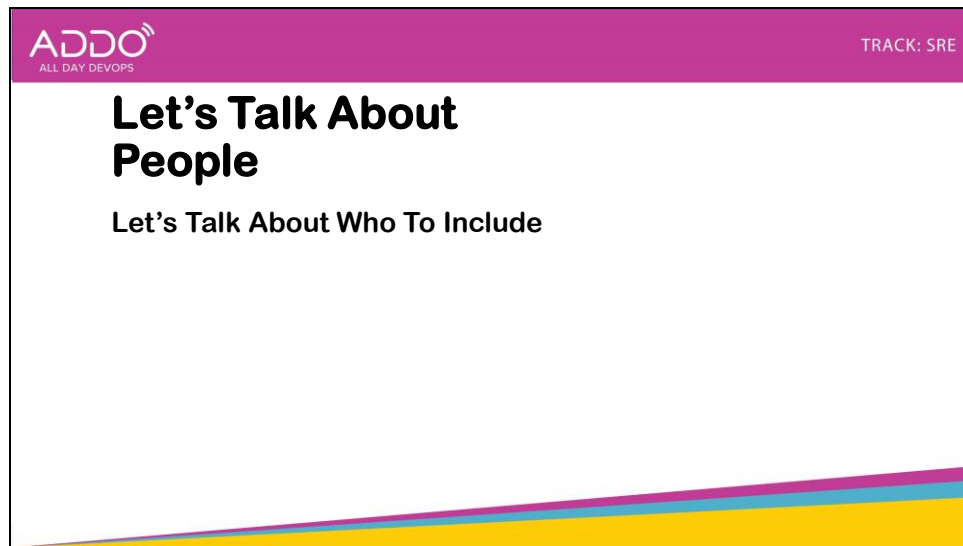
Death of a loved one

Acknowledgment of a different understanding of your sexuality

Acknowledgment of a gender different to what you were assigned at birth

Being judged or discriminated against on a reoccurring basis, and/or by someone important to you

People are the most important component of your on-call strategy and if you're not acknowledging and accommodating the complexity housed within your team that will expose itself as tension in your rotation.



The slide features a purple header bar with the ADDO logo (ALL DAY DEVOPS) on the left and the text 'TRACK: SRE' on the right. The main content area is white with the title 'Let's Talk About People' in large, bold black font, followed by the subtitle 'Let's Talk About Who To Include' in a smaller black font. At the bottom of the slide, there is a decorative graphic consisting of three overlapping, upward-sloping lines in purple, blue, and yellow.

I do not think there is any way to design a humane on-call rotation in an organization that does not engage in real work to value in particular the experiences of team members who have experience in marginalized communities. Pick anything that negatively impacts humans, people with less privilege are impacted more strongly.

If your organization is passively or actively hostile to people who are Black, people with disabilities, people who identify as LGBTQIA, people who are from other countries than the majority or culture the company was founded in, this is exposed as friction, as waste, in the systems you design and in the processes you put in place.

Design for accessibility. Design for ease of access. Design for the experiences of folks on the margins and everyone involved will be more supported, and will have a better experience.

Daniel Terhorst-North talked about designing software systems that fit in your head. Design processes around on-call that are clearly documented, simple to reason about, consistent, iterable, repeatable, and so on.

In thinking about the shortcomings of abstractions: they leak, but they also obscure. Don't design process abstractions that make it easy for you to forget that you're throwing humans at business problems.


Slide 8

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## Let's Talk About What To Do

I CARE ABOUT THIS ALOT



<http://hyperboleandahalf.blogspot.com/2010/04/alot-is-better-than-you-at-everything.html>  
The Alot is © Allie Brosh

OK, that was a lot.

Taking that into consideration and keeping it in consideration for the rest of our time, let's talk about this from another perspective. You've got an inkling that something's wrong with your on-call rotation and you need to figure out what to do about it.

Great!



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## Let's Talk About What (not) To Do

### Antipatterns in On-Call Rotations

- 24/7/365 for all your apps
- 24/7/365 for all your customer-facing apps
- 24/7 for any one person
- 24 for any one person?

Maybe you're seeing one of these antipatterns? These are all big ones.

I wish I could say that "I can't believe we're still seeing this in 2021" but I'm still seeing folks report these experiences. Every human needs sleep.

Factor this into your on-call rotation.

Chart your application traffic and past high severity issues (revenue- or reputation- impacting issues? Be smart about this) to figure out something reasonable so no one human is at risk of a panic attack waiting for PagerDuty (I can use that name like Kleenex, you all know what I'm talking about here) to blow up their phone in the middle of their sleep cycle or picking the kid up at school or whatever.

Not all your applications are worthy of a critical severity alert.

If you're allowing disk full alerts on the 3<sup>rd</sup> replica of your staging database server to wake someone up at 2AM or miss their family member's birthday party, you are causing psychological harm that is challenging to measure but is absolutely impacting the performance of your team. Fix it.

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## Let's Talk About What (not) To Do

Why This Is So Important




Image credit: One Life to Live, ABC (1979?)

“sleep apnea, but for nagios lovers” – hcoyote

We know a lot about repetitive stress disorders, and mostly talk about physical ones: carpal tunnel, etc

For some reason the mental side of things doesn't get as much attention even though we know that long-term exposure to traumatic stress has physical effects.

@karlkatzke

Work stress can permanently, irreversibly affect your health.  
Once you break that stuff you DON'T get it back

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## Let's Talk About What To Do

**Patterns in On-Call Rotations**

- Retrospective Practice
- Participation from ProdEng
- Regular Metrics Review
- Feedback Cycle into Rotation Design
- Attention from CxOs?

Here's some patterns to include in your design.

When you don't have a mindful blame-aware retrospective process (blameless postmortems are literally a thing of the past, read up and catch up) you're missing the opportunity for feedback from your incidents to go anywhere effective by design. Every incident of Critical severity (if not high severity) should trigger a retrospective, which should generate actions, a review log, the whole enchilada. Taking the time to do this properly with participation from appropriate stakeholders is worthwhile. If everyone feels like their time was wasted, that's valuable feedback. Maybe your alerting is too noisy and this wasn't a critical incident. Maybe the engineering team responsible for the incident isn't getting enough time to handle "non-functional requirements" or documentation that would have allowed someone to design an auto-healing solution.

Maybe you need to re-examine your retrospective process, or give the person running the retrospective a refresher on how to run the meeting.

When you're not getting participation in your on-call rotation from engineering, something is wrong. That doesn't necessarily mean your software engineers need to be on-call, but it does mean that if you have an application generating a high-severity alert, there's someone from engineering to escalate to. Maybe you've got a few thousand engineers and a mature SRE practice, or maybe you're a 60-person shop and your 4-person ops team is currently catching pages: there should always be an engineer with deep knowledge of the software available to whomever gets a critical alert via a defined process that the on-call person is aware of.

When you aren't regularly reviewing your defined metrics: Service Level Objectives, Response Time Objectives, Time To Recovery, et cetera, for derived and delivered value, you're missing opportunities to recognize that your processes aren't working the way you think they are. If you don't immediately think of Goldratt's "Tell me how you measure me, and I will tell you how I behave" when I say this, I'm talking about making sure you're measuring and reporting on things that matter to your customers and team and not generating busywork that does not generate value.

When you're not taking the outcomes of what I've previously discussed and feeding that back into your on-call rotation itself, you're missing opportunities to reduce the burden on your staff. Happy People Make Happy Work. Make your people happy.

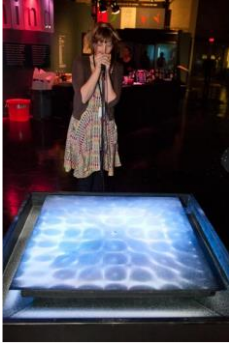
Lastly here, when you're not getting attention from your C-levels (or in a huge organization, whatever your senior leadership is), there's something wrong. There's valuable information in your incident processes for senior leadership, if you're not finding a way to convey your struggles and successes appropriately it's likely that folks are missing opportunities for recognition, that engineering time is being directed towards work that is lower priority to your business, and that your senior leadership is being allowed to gloss over operational costs that have led to missed growth for your business.

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# Let's Talk About What To Do

## Patterns in On-Call Rotations



"Exploratorium After Dark: Senses" by the\_exploratorium is licensed with CC BY-NC-SA 2.0.

In An Elegant Puzzle when he's talking about team sizing, Will Larson says on-call rotations want 8 engineers. I think this is a function of his idea about the ideal team size in general. In my experience, if you want to support your team in a way that allows more than one person on the team to be out at any time, and allow for some time to perform follow-up work after a major incident, you could look to expand that to 12 people if you're supporting a complex aggregate of applications which do require 24/7/365 support. I can't really go into the details here but if you have questions please reach out after the talk.

In "wat" and some other posts, Dan Luu tries to raise awareness of the normalization of deviance. Correcting an issue where this is the case might be andon-pull important

<https://danluu.com/wat/>

The paper has specific sub-sections on how to prevent normalization of deviance, which I recommend reading in full.

- Pay attention to weak signals
- Resist the urge to be unreasonably optimistic
- Teach employees how to conduct emotionally uncomfortable conversations
- System operators need to feel safe in speaking up
- Realize that oversight and monitoring are never-ending

Dekker, Woods, the Lund folks have all put out a ton of material on the causes of failure, how humans operating within a system are probably not individually responsible for most "failures" – it's the system itself, the prevailing patterns of behavior and

Easy Wins, Easy Losses. Both still easy.

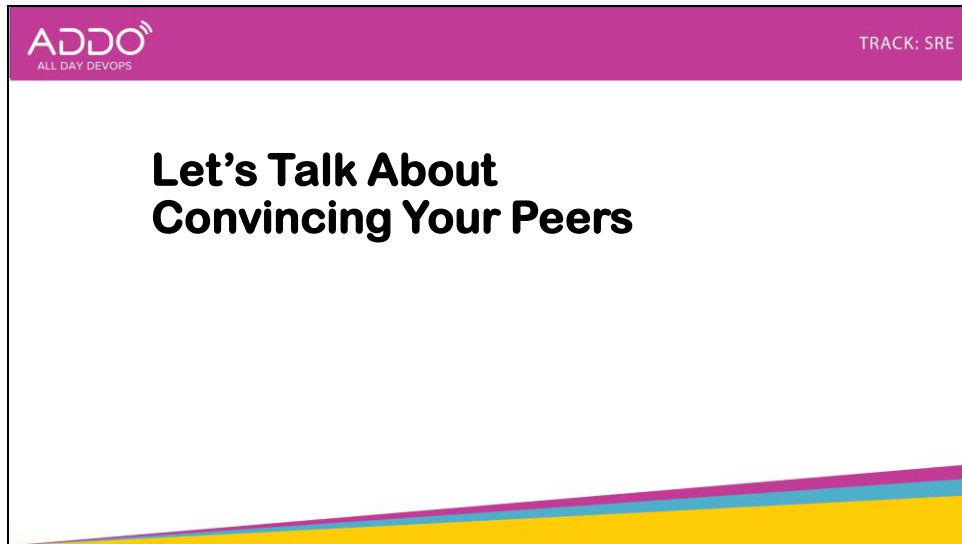
Certificate Expiration: srsly wtf, nagios monitor for this in 2011.

Database incrementers, type limits: srsly wtf. Personally seen this >10 times in the past 2 years.

Capacity Reasoning: maybe not as easy?

When you get paged for something where there is not an immediately obvious associated action, I would like to offer the following thanks to czarbeque:

The remediation for this alert is to delete the alert.



The slide features a purple header bar with the ADDO logo (ALL DAY DEVOPS) on the left and the text 'TRACK: SRE' on the right. The main content area is white with the title 'Let's Talk About Convincing Your Peers' centered in bold black text. At the bottom of the slide, there is a decorative graphic consisting of three overlapping, upward-sloping lines in purple, blue, and yellow.

I've convinced you there's something to improve in your on-call rotation? Great!

Some of the most satisfying work in my career has been convincing my peers that this is the case and producing something better. Let's talk about that first part.

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## Let's Talk About Convincing Your Peers

- Build Cases tailored for your Audience
- Show Data that Matters to Them

We've been talking about this stuff for years, but I'll give a quick overview to reinforce the shared context. You need data to back up your points, and it needs to be shared in a way that matters to your audience. Yes, this is extra work up-front. Yes, it matters when it comes to getting buy-in.

If your teammates are resigned to the status quo, show them a plan to improve your situation.

If your prodeng teams don't have a reason to care about outages because they're insulated from them, share the pain. Every time someone in the on-call rotation gets woken up and there's not someone in prodeng engaged, escalate to them.

Throwing humans at a problem created during the development process is a pathological behavior.

If your senior leadership doesn't think on-call is wasteful in a meaningful way, build a case that there's budget and deliverable impact. Show the time spent remediating issues that arise in production and not addressing them earlier in the pipeline. Draw the lines between incidents and dollars.

"We lost X amount of money over night because this thing keeps paging and we couldn't do anything with it. Or we've done it so many times and requested help fixing it permanently that we missed the page and slept through it."



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**Let's Talk About  
Engaging Outside Silos**

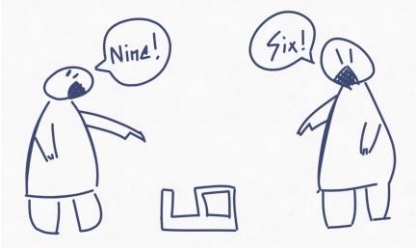
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## Let's Talk About Engaging Outside Silos

- The Elephants and the Cave



I drew this picture since I couldn't find the source of its inspiration search "perspective 6" on google to find that

Different philosophical traditions have things to say about perception vs reality. Plato's allegory of the cave and the story of the blind sages and the elephant originating in India get at the idea that your perception of current state often doesn't reflect actual state.

We've talked about that in context of making sure you're measuring and alerting on the right things, what about the possibility that your shared preconception of your operating environment does not reflect actual state?


I've walked into a place where the incumbent development and operations senior leaders were on-call 24/7/365 for everything. I've worked places where when resolving an outage one human might be actively working towards a solution for more than 24 hours.

In those moments you can say "this isn't reasonable" but a week later if you're not engaging all your resources to make sure that sort of situation never is allowed to occur again, it's likely you've accepted something completely unreasonable as part of standard operating procedures, and in doing so you're missing a very large harmful part of current state.

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## Let's Talk About Engaging Outside Silos



"Silos de Trigueros" by Jesus Belzunce is licensed with CC BY-NC 2.0.

This is likely influencing how you're approaching your relationships with "external" partners. Shifting your perceptions about how your teams interrelate, and what the relationship is, can be powerful.

One truth about engaging outside your silo (or collection of silos) is that doing so from the position "you folks are causing us this pain and you need to fix it" is usually counterproductive.

Earlier I talked about incentives in terms of sharing the pain. One can also think about things in terms of what your team can do for another team, and integrating work that alleviates your team's pain into that work is the primary way I've found success outside of relying on some other incentive structure to get another team to shift the way they're behaving.

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As of when I am giving this talk in October 2021 it should be clear to everyone that there are many opportunities out there for tech workers of any tribe.

If your assessment of your organization's need for change and timeline within which they're likely to implement it feels wrong to you, perhaps it's time to move on.

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**Let's Talk About Moving On**

- Rule of Two Feet
- Repetitive Stress Requires Recovery
- It's Not Me, It's You

When you leave, the folks who are left will have to pick up the burden. The manager will have to hire someone new, your coworkers will realize the amount of relief they gained from your presence, and you're providing them opportunities to escalate those concerns in a way that wasn't possible when you were taking up the slack and absorbing that pain.

That's not to say that leaving will cause positive change, just that it's not definitely going to be bad. Don't feel guilty about making the decision to move on.

However, if you're leaving in part because of the impact of a poorly-designed on-call rotation, it's likely that you're already in a state of burnout.

There is no way to recover from a state of burnout without giving yourself space to do so and practicing recovery.

If you are lucky enough to be able to do so, take a copious amount of time off in between jobs. Make your decision about where to go next carefully. Be as sure as you can that you will be allowed space to decompress and process the things you've set aside.

Make time for the non-work parts of your life in between jobs, and when you start your next position manage your schedule with care so not to overload yourself. Talk with your teammates and management if you're able, to let them know you're recovering from burnout. Hopefully they got to know you well enough in the interview and onboarding process to realize that you bring valuable experience which cannot be shared without the benefit of processing.

Don't forget, you are one of the humans who is important in a sustainable on-call practice!

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## Let's Talk About Moving On

- Budgets again?



"Build your budget" by eric731 is licensed with CC BY-NC-SA 2.0.

It's good to figure out what your change budget is!

Different types of organizations process change differently. A good example of this would be a small business or startup might be able to implement change very quickly, while a large enterprise might need years to undergo change.

That slowness isn't necessarily all bad, there are different types of lessons to learn in a large enterprise, and a stability that can be desirable after the relative chaos of a fast-changing startup.

Regardless, your tolerance for a lack of change is YOURS, and you should determine what it is just like you'd figure out how long you're willing to stay at a party you think is too loud or where your friends have already left. Knowing something about your tolerance is very handy and will keep you from cognitive dissonance when you know something's not right for you.



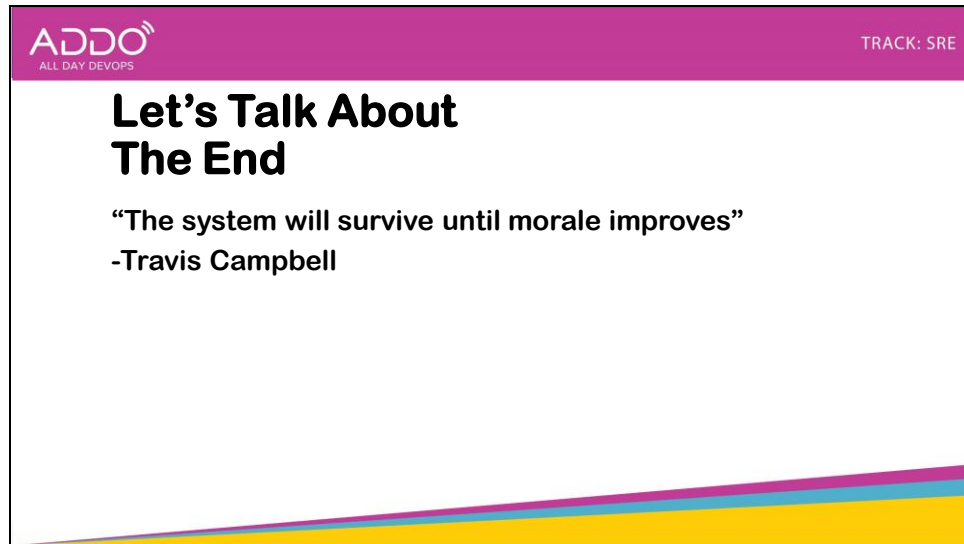
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# Let's Talk About The End

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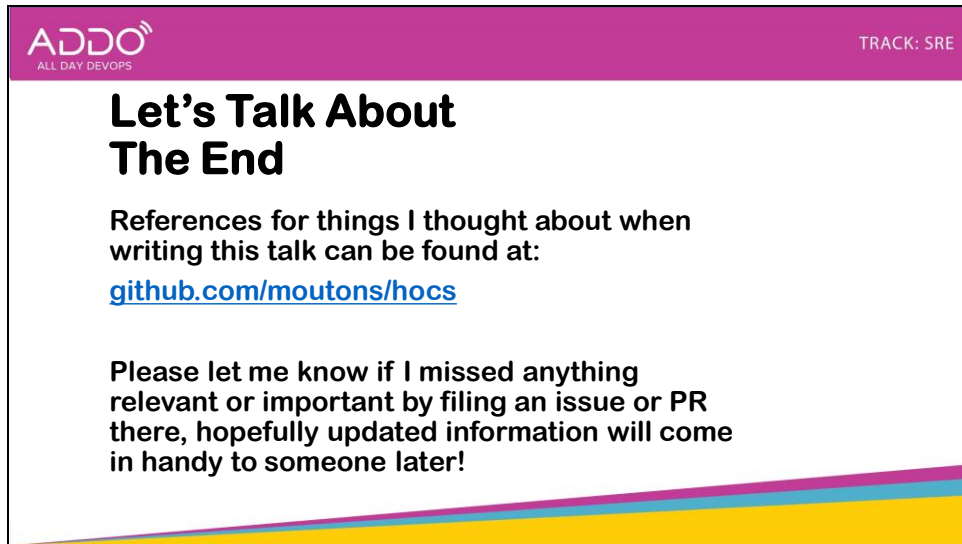
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## Let's Talk About The End

**"The system will survive until morale improves"**  
-Travis Campbell

I'll end things here with a quote from my friend Travis Campbell and hope you find it as amusing as I did.



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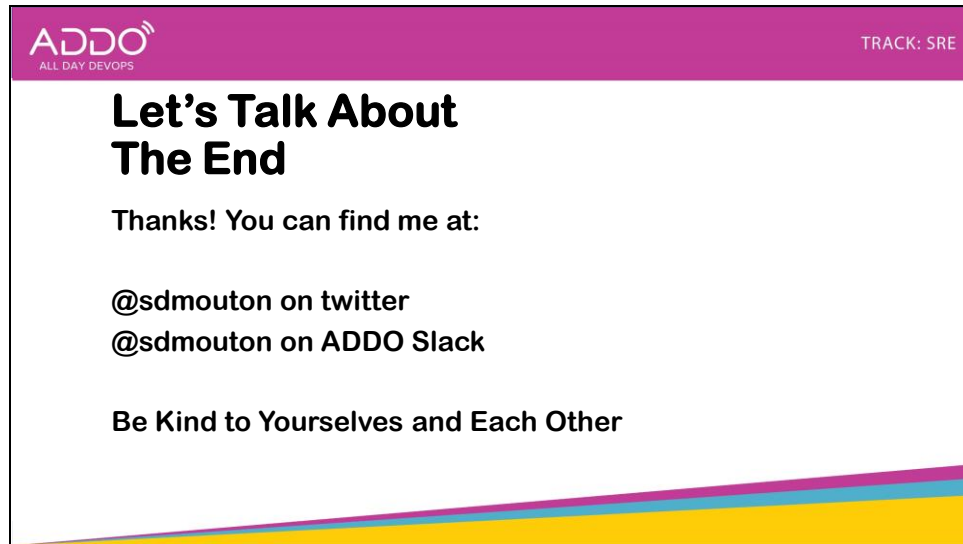
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## Let's Talk About The End

References for things I thought about when writing this talk can be found at:  
[github.com/moutons/hocs](https://github.com/moutons/hocs)

Please let me know if I missed anything relevant or important by filing an issue or PR there, hopefully updated information will come in handy to someone later!

I've created a repository on GitHub to store notes and thank folks who helped and/or inspired this talk, please visit if you want to build your own body of knowledge on this topic or share something which could be useful to others.



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## Let's Talk About The End

Thanks! You can find me at:

**@sdmouton** on twitter  
**@sdmouton** on ADDO Slack

**Be Kind to Yourselves and Each Other**

Lastly, here's where to find me if you want to reach out,

Thanks very much and good day!