Constantly Do Root Cause Analysis

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Christopher Kalitin Blog (https://ckalitin.github.io/posts/root-cause-analysis/)

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- Root Cause Analysis of victories and failures in history have many parallels, mangement and operations isn't too different between fields, it's its own field
- Good management is extremely high leverage, can quote the solar post
- Making 100 engineers 1% more productive results in more work being done than what you can do as an engineer
- Good technical leadership is very rare, ~1% of UBC Solar members, maybe 2%. At least to my standards, those that grealy increase the probability of success of the team, instead of keeping the status quo.

Section on student design team failures RCA:

- Operational failures (SUBC, Solar motor wire, liquid rocket program)
- Pure Technical failures (concrete canoo, space concordia)
- Behind almost every technical failure is an operational failure
- Solar integration testing is an operational change that increases the probability of success. A few wasted meetings, but better on net. Also note this isn't required if EVERYONE has a good enough technical intuition, which isn't true on a design team.
- Really it's about making good low-level decisions that positively impact the project on a high-level, tradeoffs need to take everything into account (Solar mass to distance calculation)

Procedures reduce the risk of operational failures, but slow the organization. Removing procedures accelerates rate of work, but possibly at the expense of success. In certain programs this is a valid tradeoff.

If the technical intuition of your team is good enough, you don't need procedures, see the Musk companies.

I still got it.

This blog post spwaned from many hours of thinking and talking, and in a single moment came up as a fully formed thought.

Good leadership helps to cure bad technical intuition. Management solving a technical problem, common theme of this blog post!

Operational solutions to technical problems!!! (Ship 36)

Structure:

- Introduce Root Cause Analysis
- It presents many similarities between disparate fields (the valley and war)
- My recent exploration of student design team failure root cause analysis
- Management is extremely important
- Procedures minimize operational failures but this only works if everyone has good technical intuition
- Good leaders are very rare and leadership is very high leverage

Opening:

- This blog post gives:
  - RCA of everything
  - Design team examples
  - Operational / Leadership solutions to technical problems

supp low being low is a function of if members are good enough to remember to watch for that LED, example

Heres an Elon example of instantly making a technical decision, what you can do when you have good technical intuition. Also get the Elon quote of having to make decisions, even if 2”% are wrong and undone later, if no decisions are made we die.
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Always be taking in new context. Use this to update your world model, then use your world model. This adds an important delay from acqusition of new information to new action, which is always present. When responding to new situation youre using priors and heuristics anyway, let these new situations update your world model as well.