

URL: <https://stvp.stanford.edu/clips/lessons-from-spacex>

Virgin Hyperloop co-founder Josh Giegel describes the most important lessons he learned from his time at SpaceX, including the value of "first principles" analysis and the importance of overcoming the limitations of your tools.



Transcript

- So I ended up applying to SpaceX.. 00:00:05,650 Ruth really was pushing me to go there.. And I interviewed the week between, the two weeks between flight three and flight four on Falcon 1, which was the very baby rocket that they did, and this was make or break for the company.. And you could feel that energy, the same thing I'd experienced going to Stanford.. You could feel this energy.. It was palpable.. People were excited.. Some of these people were the smartest people I've ever worked with.. And you could feel that just passion for what was going on.. One of the guys that started it with Elon was a guy named Tom Mueller, who happened to be my boss, head of P.ropulsion..

And when I turned in my acceptance letter, he was there.. It was like 9:00 p.m.. on a Friday night.. And he took me around.. He showed me all around the machine shop.. He showed me everything that we were going to be working on.. And it was awesome.. And that, I'll never forget that, just how excited he was.. And he had been there for six or seven years at that point.. But the responsibilities were amazing for a 24 year old coming out of school..

We got to develop these rocket engines, the Merlin engines that you see flying on Falcon 1 today, SuperDracos, all kinds of different ones.. We had to design them all and basically responsible for them working.. Microgravity fluids for spacecraft.. All of these things, the responsibility was absolutely crazy.. And I got to learn the joy of doing things hard and doing them really, really fast.. One of the other key things that learned there was first principles analyses.. So Elon has this view of what is the raw material cost of what you're doing and what is the cost that you're paying for it.. And that multiple is really the measure of how good of an engineer you are.. And that thought of whether it's first principle costs or first principle physics, that is so critical to evaluating your next business venture, whatever it might be.. And then one of my mentors, there was a guy named Dave Calta, and Dave gave me this other one..

So we were working on this problem.. Software couldn't do what we needed to do.. And I just remember him looking at me and saying, "Don't be a slave to your tools." And he walked away.. And like, that was like a magic statement, right? That was like a profoundly magic statement.. It was liberating.. And from that moment on, I've never been a slave to my tools again.. And it's been really exciting...