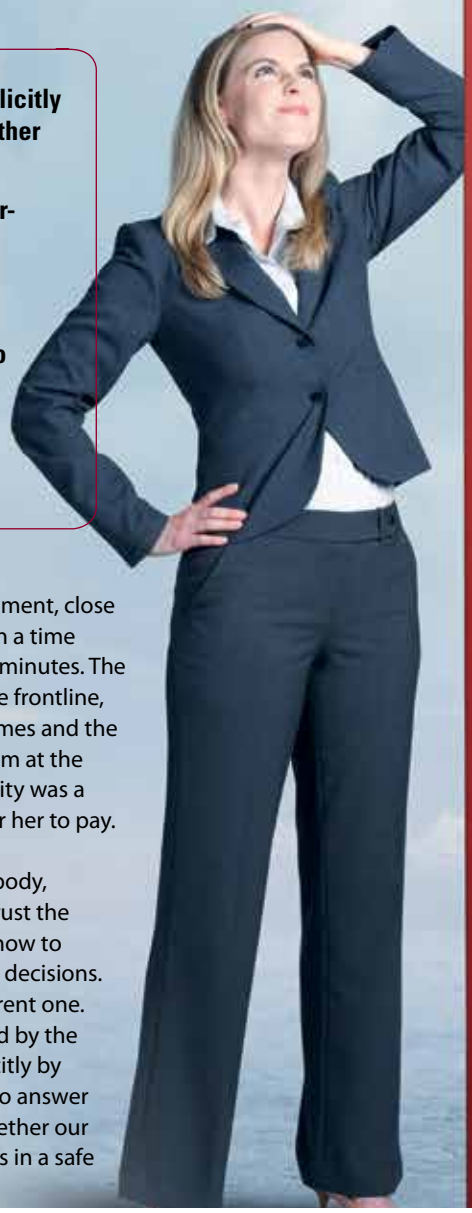
REGULATORY AND OVERSIGHT COMPETENCY:

THE LADDER OF ABSTRACTION

The focus of competency and expertise is often on front line staff. What about others, further away from the front line but whose decisions affect operational performance? They too need competency and expertise, but of a different nature, as **Stefano Oberti** explains.

KEY POINTS

- **Oversight bodies are mandated by the State (and implicitly by the public opinion) to answer the question of whether industry operates in a safe way.**
- **This requires competencies and expertise, both different and complementary from those of frontline staff.**
- **Oversight staff need competency and expertise to work on different levels of abstraction, to both understand the concrete work of frontline staff and to follow the more abstract reflections at the regulatory level.**
- **Oversight bodies need your help, as controllers, pilots and other readers, to do this.**



It is December 2011. I am sitting in my office together with a young ANS inspector to review the mandatory trial period for new staff. She recently joined the team, after some years spent as an ACC controller. She already produced good quality work with us. It was an easy decision for me, but I did not foresee her reaction, when I told her that she finally got the job. "I'm not quite sure this is the right job for me", she replied. "I'd like to extend the trial period".

In the next months, I closely followed her work and we regularly shared our views. Eventually, we both concluded that it was indeed not the right job. As an ACC controller, she used to work in a dynamic environment, close to pilots and with a time horizon of a few minutes. The distance from the frontline, the long timeframes and the missing dynamism at the oversight authority was a price too high for her to pay.

As an oversight body, we rely on and trust the frontline's knowhow to take appropriate decisions. Our job is a different one. We are mandated by the State (and implicitly by public opinion) to answer the question whether our industry operates in a safe

way, avoiding unacceptable safety risks for staff, passengers and the population on ground. This requires competencies and expertise, both different and complementary from those of frontline staff.

We are expected to understand how work is done at the sharp end and at the managerial level of the ANSP, and to judge whether this corresponds to the intention of the regulator. We must be able to evaluate how much of what front staff discloses about their work, matches with what they really do. If necessary, we request that their management takes action.

Inspectors are required to master interview techniques and risk assessment methods. They need to be able to question the answers they receive. Empathy and assertiveness are two essential character traits. Perseverance is of good help to cope with the long time frames, e.g., to see corrective actions being implemented.

We focus on the aviation system as a whole; our decisions are taken based on impact analysis of the entire system, not on a single actor. This requires the ability to shift from the detail to the 'big picture'. Finally, we report our observations to the regulator in order to complement their view on the way work is done. We are the trait d'union between the sharp-end and the blunt-end, between the frontline operators and the abstract government level. We need sufficient knowledge about the operations and technology subject to our oversight. At the same time, we have to speak the regulator's language.

Oversight professionals are required to be able to work on different abstraction levels, moving along an imaginary 'ladder of abstraction'. We need to be able to verify the match between four 'varieties of human work' (Shorrock, 2016): what front-line operators disclose about their work (work-as-disclosed); what they really do (work-as-done); the more abstract intentions of the rule maker (work-as-imagined, in the future); and the written rules (work-as-prescribed). We then report observations in the appropriate language.

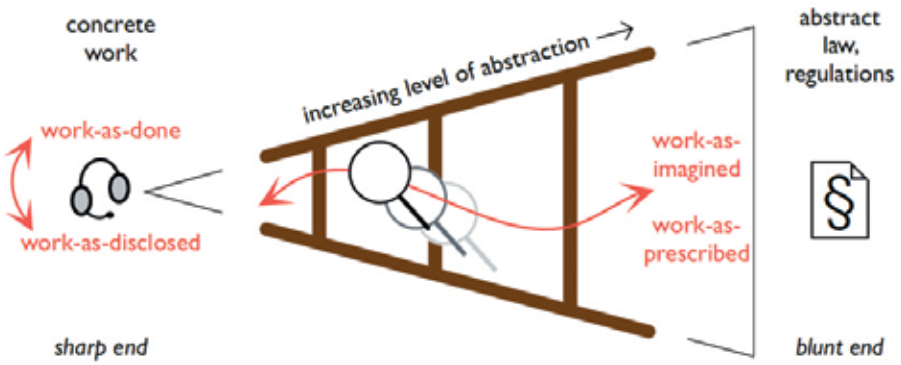


Figure 1: The ladder of abstraction

In order to get this expertise, we have adopted the following approaches in Switzerland.

First, our inspectors spend a few days per year in an ATC unit as observers. In these on-the-job-visits, they get an insight into the daily operations. In turn, controllers get to know them without the 'inspector's hat', fostering trust and communication.

Second, we 'train the trainer': we offer a team member tailored training and task him or her to give it further. Once per year, in a two-day workshop, one expert leads us in a discussion on a subject, where we draw conclusions for our work. We started in 2015 with socio-technical systems, supported by the system thinking learning cards by EUROCONTROL (EUROCONTROL, 2015), and by examples from EUROCONTROL 'ES2 – Experience Sharing to Enhance Safety'. In 2016, human factors and human performance was on the agenda, and in 2017 we deepened our expertise in meteorology and ATFCM.

The 'safety reminder of the week' remains one of my preferred tools to foster my inspector's expertise. I email them with 'food for thought': quotes, articles, videos – sometimes provocative – taken from various sources, like humanisticsystems.com, HindSight magazine, literature from aviation and other disciplines. Recently I have posted a TED Talk by Lera Boroditsky on 'How language shapes the way we think'.

In summary: oversight staff need competency and expertise to work on different level of abstraction, to both understand the concrete work of frontline staff and to follow the more abstract reflections at the regulatory level. It is like inspectors are asked to move along an imaginary ladder of abstraction. And we need your help, as controllers, pilots and other readers, to do this.

References

EUROCONTROL. (2014) *Systems thinking learning cards*: Moving towards Safety-II. Brussels: EUROCONTROL. Retrieved from http://www.skybrary.aero/bookshelf/books/3380.pdf

Shorrock, S. (2016, December 5). *The varieties of human work* [Blog post]. Retrieved from bit.ly/HSTVOHW

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