CHANGING JOBS: OLD HABITS DIE HARD

A change of ATC discipline, or a change of aircraft type, brings obvious changes and changes that are subtle or hidden. These changes can affect performance in unexpected ways, but can be understood in terms of how they affect our mental processes, as **Caroline Fauquembergue** explains.

KEY POINTS

- **When changing operational role, some changes are obvious, but others are more subtle or hidden.**
- **'Obvious' changes can be dealt with consciously. 'Hidden' changes need an analysis of our own cognitive processes.**
- **We can understand changes in terms of how they affect how we understand situations, make decisions, act, and check the result.**

Three years ago, I started the most challenging professional change I ever encountered: I decided to transfer from Reims ACC to Nantes TWR/APP, in France. I knew from the beginning that it wouldn't be easy. We often say it's a totally different job. I knew I would have to reconsider a lot of the things I learned. But to what extent?

During my time in Reims, I got involved with the training department and I gained a lot of experience as an on-the-job training instructor (OJTI). I thought that even if the environment, procedures and methods are different, the mental processes would remain the same. I thought I would just have to make a few adaptations.

I arrived in Nantes (after a refresher course on theoretical knowledge at the Ecole Nationale de l'Aviation Civile [ENAC]), with a core of validated solutions and actions from 20 years in Reims ACC. This was a mix of 'rules' or 'what if' solutions ("if x occurred, then I will do y"), and skills, involving unconscious cognitive processes.

Of course, I had to experiment. I tried things I had never done before. But I also had to analyse and understand how I worked in Reims, and let go of some old validated solutions and skills that were outside the new core of validated solutions. I could adapt some other old skills, but had to do this consciously to understand the changes.

What kind of changes are we talking about? Those who know a little about ATC will know that en-route and approach control are very different tasks, dealing with two different phases of flight. En-route is managing mainly commercial instrument flight rules (IFR) flights at high level and with similar speeds. Approach takes different forms due to the mix between commercial and private, IFR and VFR (visual flight rules) flights. Guiding and managing flights for a feasible approach procedure brings more complexity.

So there are changes in objectives and rules. Those are quite obvious, but I also encountered subtle changes, which may seem quite minor. For instance, when I started ground training, I had the tendency to keep the strips of the arrival

flights, sometimes 10 minutes after they got to the gate. I soon realised that I was used to "saying good bye" with a frequency change, and in Nantes, pilots don't have to call back on stand. So I kept the strips because in my mind they were not transferred. The action to put aside the strips was intimately connected to the phrase "Contact XXXXX, frequency YYYYY, bye". This is a good example of an ingrained skill, which can create confusion when you want to adapt.

I then understood that I was prepared (and ready to learn) for the obvious change but that I wasn't aware of all the hidden things that I would have to change.

The changes can be understood in terms of some of the mental processes. Dealing with traffic is like any situation: we have to understand in order to decide, act and check the result. As the situation is dynamic and continuous, we have to do this as a loop.

Understand

Understanding the situation used to start with looking at my radar display and finding the flight. So I tried to do what I did when I was training at the tower position. I wanted to see each DR400 joining west downwind each time I looked outside. I failed. Adding to the obvious change of my field of view, I realised that I really needed to see aircraft on a few very strategic positions. I had to learn to focus my gaze only on specific moments. To do this, I had to fight my instinct to try to find the aircraft on each cycle.

Figure 1: The Understand-Decide-Act-Check cycle.
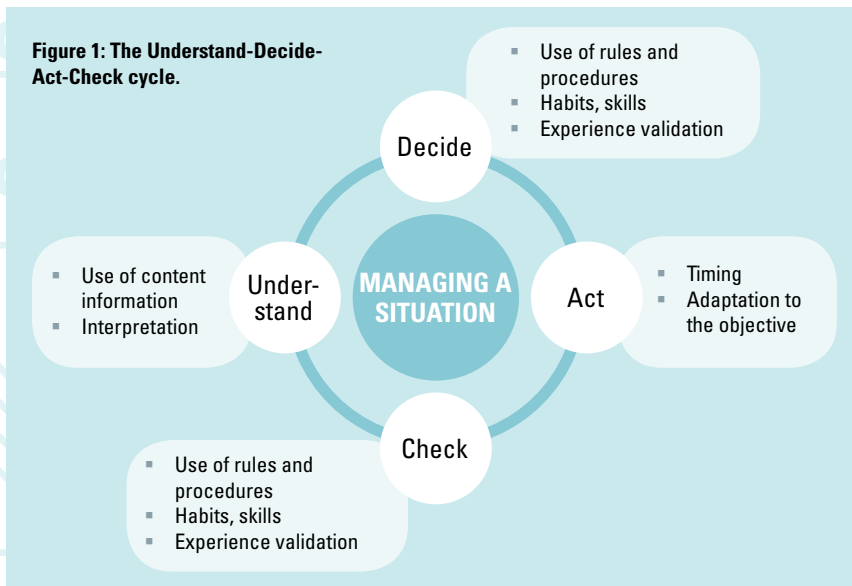
Decide

The main thing to decide is the type of action. In ACC we used variations and combinations of four actions (turn, change level, speed, rate). In TWR/APP you have to add the VFR separation strategy to the mix, and that often involves the VFR pilot!

As an ACC controller I was used to assessing separation using my radar screen and being able to measure it (5NM or 1000ft of separation). When I started my training at the tower position, the obvious change was to decide if a VFR flight in downwind would be able to land and vacate the runway in time before the IFR commercial flight that was starting its approach. Even if I could see both of them, there's no way to measure that they won't be on the runway at the same time, especially because you don't really know how the VFR pilot will handle his flight.

That leads me to the hidden change: I was not used to involving the pilots in my decision process. I would tell a pilot to turn and he or she would do it. With VFR flights, it's sometimes necessary to state our intention, and ask what they can do about it.

Act

The obvious change when you want to act as a tower or approach controller is the phraseology you have to use. I quickly realised that not only the vocabulary was different (specific for approach and runway procedures), but also that it was longer, e.g., from "descend FL360" to "descend altitude 3000 ft, QNH 1023".

The hidden change for me was the perception of timing. In ACC you manage the timing of your action regarding conflicts. If you are interrupted at the moment you intended to act, you would give a bigger adjustment for the same result. In APP, and specifically when you manage a lot of arrivals, timing is more critical. You have a very small amount of time to give the last heading to intercept the final approach, and if you miss it, it can create consequences for all the aircraft involved (further vectoring, speed reduction).

Check

In order to check, we first have to extrapolate the situation. While we have some tools to help us, we mainly use our experience and training, especially to be able to monitor the multiple parameters of the flight (level, speed, rate, etc). When I arrived in Nantes,

I was not used to the changes of speed (below FL100, during the final approach…). And now, I know that a BE90 can remain number one on approach, even if the A320 seems faster.

I found a subtle change in the methodology I used to scan my situation in approach. I first tried to use geographical scanning (as I did previously) but I soon realised that I needed to use axis-centred scanning, especially when dealing with a lot of arrivals.

I realised that most of the obvious changes occurred when rules had to be adapted ("If *X* occurs, then I can't do *Y* anymore. The speed is not the same.") and when I had to learn a new solution outside of my former range of experience. But some skills were quite difficult to change because they were deeply ingrained. An example of this is where to write on the strips.

So when changing roles or working situations, we need to let go of some old ways of working that are outside the new working context. We can adapt some other old skills. And still other skills we must acquire from the beginning. ▪

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