

Perspective on Crew Management: Crew-centric versus Assignment-centric performance metrics

Or: ACPIs, the greatest thing since sliced bread?

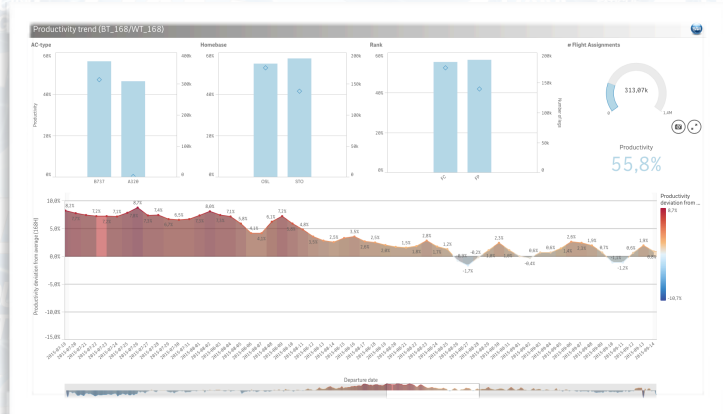


The traditional way of creating metrics for crew management takes a crew-centric view of the world. Metrics are built to capture aspects of efficiency and cost structure, and are based on pay components such as duty day count and overtime hours. This approach leads to metrics such as block hours per calendar day, block hours per month and monthly duty time. These metrics are useful because they are close to the rules that govern crew planning, mimicking the pace of the planning process, and are often fairly good at reflecting the operator's costs and crew need. But, do they provide the insights needed for process control and improvement work?

Assignment-Centric Performance Indicators (ACPI) are metrics from the perspective of an assignment of a particular flight to a particular crew member. Predicted level of alertness is an example of a performance metric that only makes sense when constructed in this way. The predicted alertness level is not correlated to traditional crew-centric performance indicators such as monthly duty time.

The alertness level will instead primarily depend on what is leading in to the flight assignment; i.e. what happened in the days prior in regards to sleep opportunities and workload? The closer in time something happened, the more important. It is easy to see that this is useful from a flight safety perspective; all that matters for the safety level on a flight is what leads in to that flight and the flight itself. Not what follows after and aggregations on day or month have little or no importance.

Can an assignment-centric approach to performance indicators also help us understand and control the crew management process better? Well, we are talking about a process, and ACPIs do enable a more continuous follow-up of our planning. Most of the traditional



Example of an ACPI measuring the average ratio of block per duty hour, looking back 168h from arrival of each assignment

crew-centric metrics are discrete in nature. The metric "monthly block time" is the same for every flight on a given roster in a given month. Applying more of a process monitoring approach using an ACPI such as "block time in preceding 168h", would mean that a meaningful and comparable metric for medium-term workload is available for every flight assignment in the plan, which in turn allows for a closer follow-up and monitoring where you can spot trends more easily. This provides additional insights and opportunities for a better understanding of the complex mechanisms of the overall process.



There are of course also challenges in using ACPIs. Their absolute numbers are not always meaningful when aggregated, so you need to adapt your mind to doing analysis in terms of trends and relative differences rather than sums and averages. ACPIs are there for guiding you to better results, while the traditional crew-centric metrics are there to quantify them.

We are still in the early days of ACPI usage in crew management, today pioneered by the customers of Jeppesen Concert. As we now have the first 100 ACPIs well defined and rolled out in Concert, the operational learning process is starting. We do not yet know which metrics will turn out to be most useful ones, or how quickly we can take them to heart. But it does look very promising for both powerful analytics and benchmarking.



ACPIs provide new perspectives as seen in this Block Density visualisation. Block time in the preceding 168h is calculated looking back from arrival of each flight assignment.

If you are interested in quantifying your own ACPIs, Jeppesen Concert is available for a two-month free trial period until September 1, enabling you to look back on several years of data, also for the largest operations. You can look at both planned and flown rosters regardless of which crew solution you use today. Speak to your Jeppesen account manager or contact us via frm@jeppesen.com for more details. Welcome to a new fresh view into your processes. Insights guaranteed.

Further reading:

[Jeppesen Concert](#)
[SPIs found in BAM/Concert/CrewAlert](#)