Minimizing costs with efficient pilot planning

Impending pilot shortages and fleet upgrades combine to create a crucial need for better transition and training planning in the airline sector. Discover the four capabilities needed to improve pilot utilization in your flight operations.
The democratization of air travel has brought many changes to how airlines operate. With growing passenger demand and a wider customer base come more opportunities to increase revenue. However, airlines are also facing stiffer competition for both profits and skilled resources — particularly pilots.

Airlines are fighting an uphill battle to solve a growing pilot shortage. While the full impact of this shortage has not yet hit the industry, analysts are predicting a massive shortage of pilots as the industry moves into the coming decade.

Apart from the rise in demand for air travel, mandatory retirement rules also contribute to the situation. By 2026, more than 30,000 veteran pilots will retire from 10 major US airlines and cargo services. While this will provide opportunities for current pilots to be promoted in their respective organizations, it will also require airlines to step up their recruitment efforts as soon as possible to fill the projected gap in pilot supply.

However, recruitment efforts are hampered by the high barriers to employment for pilots. In 2013, the FAA amended rules to increase first officer flight hour requirements, resulting in a significantly longer training period and increased training costs for recruits. These training hours, in addition to costs for lessons and certification, mean that a recruit will have to spend a minimum of $40,000 to $60,000 to enter the pilot workforce, with some programs costing upwards of $100,000.

Faced with these challenges, how can airlines mitigate the effects of relying on a finite — and increasingly thin — pool of qualified pilots?
With persistent challenges around the hiring and promotion of their pilots, many airlines have been forced to innovate. Among the methods of attracting new pilot hires are sign-on bonuses, strategies to shorten hiring timelines, training sponsorships to get candidates up to the standards required and improved flow-through agreements with affiliated regional carriers.

But are these innovations enough to cushion the impact of a pilot shortage? While a boost in hiring may alleviate the problem in the short term, it is not a sustainable solution. Training and maintaining a large, specialized workforce is expensive. Smarter manpower planning can be applied in the short term to maximize utilization of the current pilot workforce, with benefits that multiply in the long term as planning is more tightly aligned with demand. In comparison to increased hiring efforts, the implementation of a manpower planning solution to better utilize your existing pilots will lower labor costs and eliminate shortages.
Optimize the utilization of your pilots

To get the most value out of your pilot workforce, you must be able to reduce buffers, optimally plan vacation slots, and assign advanced entitlements to fully match supply and demand. The KPIs that can be measured to assist in attaining this goal include accounting for the details of pilot block hours, credit hours and assignments.

Improve operability of the schedule

Equally important are details on aircraft types and the pilots needed to fulfill the requirements of each scheduled flight. Keeping track of a pilot’s base of operations, eligible aircraft types and assigned rank will help balance the transitions of pilots in balance your airline.

Lower training and simulator costs

Training pilots en masse can be prohibitively expensive and time-consuming for many airlines. Additionally, pilots are often trained long before they are needed in their new positions — adding unnecessary costs at an early stage. Costs can be kept low by synchronizing pilot training based on training requirements for specific groups of pilots, instead of conducting individual programs for each pilot. Also, to ensure that each training period is as productive as possible, route instruction times can be incorporated into each program, leading to less excess time padded on to each plan.

Employee satisfaction

At the end of the day, pilots are essential to smooth operations for your airline. Creating plans that adhere to their preferences and vacation bidding ensure employee satisfaction and can lead to a workforce that is far less likely to commit union actions against the employer. This in turn ensures that service is not interrupted thus maintaining the airline’s positive reputation with its passengers.
Not all plans are created equal. While a less efficient plan may appear to be sufficient for your airline’s needs, you can be missing out on cost-saving opportunities. This negative financial impact is a catalyst to spurring change in the competitive airline industry. So when plans are inefficient, where does the money go? Three financial pitfalls of inefficient planning are:

**Pitfall 1: Higher salary costs**

Hiring more pilots can be the kneejerk reaction to address the problem of a pilot shortage. However, having pilots that are not rostered can raise your salary costs without actually boosting efficiency or productivity. Promoting pilots when they are about to enter a period where they are not scheduled to fly also raises salary costs. The right planning solution can give your planners visibility over pilot numbers and flying periods, thus allowing them to make plans that maximize pilot utilization while minimizing costs.

**Pitfall 2: Overlooked training costs**

To train a pilot, your airline needs to invest in instructors, equipment and facilities. To ensure that efficiency is maintained in terms of costs and time, you will also need to align these resources with your training needs. To strike a balance between ensuring the return of investment on expensive equipment — such as simulators — and training the right number of pilots, your training plans need to be supported by a solution that is able to collate all relevant information to make the best decisions.

**Pitfall 3: Shortages leading to cancellations**

Without the right planning tools, even the best planners can create manpower plans that inadvertently lead to pilot shortages. If these shortages are not addressed, the results for both your company and your customers can be catastrophic — canceled flights, unhappy passengers and costly compensation claims.

The costs of decreased efficiency
To stay competitive, airlines must constantly innovate in their processes and operations. Better planning efforts — whether with spreadsheets, homegrown systems or off-the-shelf solutions — are just one approach to this challenge, but are their best plans truly the most efficient? True efficiency can be difficult to achieve due to a number of factors, all of which can be addressed with the right planning solution.

Barriers to true efficiency include:

**Lack of clarity**

When schedules are repetitive and predictable, it may be tempting to fall back on the simplest form of planning. However, the simplicity of manual plans can be deceptive. Manual plans are difficult to manage and prone to human errors. A lack of automation also means that these errors are easily overlooked and sometimes it’s too late to properly re-plan. Additionally, what-if scenarios are rarely ever considered and a lack of clarity on the effect of specific decisions on KPIs causes planners to miss out on potential cost-saving opportunities.

**Lack of visibility**

Another barrier to truly efficient plans is a lack of visibility. The common practice of creating high-level plans — planning by month or season, as opposed to fortnight or week — means that details are often obscured. This can potentially cause missed opportunities to plan around training, vacation and transition times, all of which would be far more visible in a more granular plan.

**High complexity**

There’s more to planning pilots than just the pilots. Flight schedules and fleet changes can also affect pilot planning — for example, pilots of phased-out aircraft might want to be prioritized in a transition plan. Training must also be included in the plan: instructor and simulator capacity issues can hamper training efforts, while using third-party services incur extra costs. Even if a plan only included pilots, specific details such as pilot seniority, labor agreements, internal rules and safety regulations and other variables can quickly lead to incredibly complex considerations.

**Low adaptability**

With manual planning systems, creating a single plan takes a lot of time and effort — and a new plan has to be drawn up (sometimes literally) every time. The difficulty in changing details in these plans significantly decreases your ability to be responsive and adaptable, leading to disruptions when new criteria and conditions are added.
To overcome these barriers, you need a solution that is equipped to handle complex puzzles in your business reality. The right solution must include:

**True optimization**

True mathematical optimization in planning is rare. Many solutions rely on oversimplified rules of thumb that work in theory but are less solid in real-world applications. These rules also ignore the many possibilities that can be found through better optimization techniques. The best optimization tools are not only driven by your company’s own sets of data, but also allow planners to set their own KPIs and weigh factors to match their business strategies, even if those may change to adapt to market conditions.

**Strategic decision support**

Airlines often make changes to their fleet to meet growing demand and improve customer experience as well as mitigate the cost of operating older aircraft. Phasing in new aircraft and phasing out older aircraft has to be considered in the long-term planning of pilots. Being able to execute strategic scenario planning before finalizing decisions on fleet and personnel helps planners make the best decisions possible and gives them visibility on how certain choices affect KPIs. This also ensures that the plans made are aligned with your company’s high-level goals.

**High configurability**

Good planning solutions will be aligned with current industry standards and best practices, but is that enough? Even the best solution can fall short if it does not fit your airline’s exacting operations. Union constraints add to that complexity. With rules that differ from one airline to the next, how can you be assured of getting a solution that will consider all the options within those rules to find a cost-effective schedule? The right solution needs to be configured to fit your unique environment, rules and constraints, using your own sets of data.

**Planning on all time horizons**

The level of detail needed in a plan varies at different points of the plan’s time horizon. Planning pilots involves a long-term viewpoint, covering many months and even years into the future. Long-term plans do not require a high level of detail as circumstances change over time. However, for short-term plans, solid data such as simulator schedules, pilot bids and flight schedules need to be taken into account.

For transition plans, precision can be added by including details such as each pilot’s seniority, vacation and training requirements. Making plans with each individual pilot in mind — as opposed to planning solely based on capacity — enables the creation of plans that are highly accurate. It also gives planners a view on the ripple effects that take place when a change is made.
Pilot shortages and fleet turnovers are the core issues surrounding the impending pilot shortage in the aviation industry. Make the most of your resources and prepare for the future with the only solution that gives you true optimization, no matter what your business reality may be.

**Contact Quintiq today** to find out how we’ve helped leading airlines maximize their efficiency and save on costs.