Airline Crew Resourcing:
Why Your Crew "Optimizer" May Be Letting You Down

Most airline CEOs, CFOs and COOs believe crew costs (cockpit and cabin crew), which typically can account for up to 18% of their cost base regardless of business model, are lowered through the use of crew scheduling optimizers. Although optimizers do increase crew efficiency, airlines still experience crew cost overruns. Lacking understanding of the root cause of overruns, airlines often fail to take effective corrective actions, thereby missing their targeted budget for crew costs. This exposure takes many forms.

Management actions and behavior. Automated crew planning systems may construct a number of pairings that appear optimal and legal on paper, but in fact provide little buffer to absorb disruptions. Some airlines prefer longer pairings (approximately six days) versus shorter pairings (approximately two days), as the former may offer a lower cost, according to the optimizer. In reality, though, certain scheduling practices leave little room for error and often result in crew costs that are significantly higher than the budget permits. The delay in recognizing the crew cost overrun also leads to an ineffective feedback loop, repeating the same poor pairings and scheduling practices month after month.

Furthermore, scheduling of additional crew activities, such as internal meetings, trainings and check rides/initial operating experience, often disrupts pairings. While management may think the number of disrupted pairings are small, the actual cost could be very high because both the original crew and the covering crew have to be paid, potentially at overtime rates. In one example, an airline spent approximately $2 million annually for company (non-union) business.

Crew behavior. As crew members earn seniority and gain flexibility in scheduling, they are able to "game the system," taking advantage of loopholes that can dramatically increase their pay while offering no added benefit to the airline. Although legal, such practices drive up overall crew costs unnecessarily and confound crew optimizers, which create the

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pairings before crew members bid for their schedule. Because crew payroll doesn't perform a productivity/effectiveness audit, airlines rarely discover these abuses. For the typical mid-size airline, this could lead to some pilots earning up to and in excess of double their base pay by gaming the system. Add it all up and it can equal $4 million to $6 million per year in additional crew cost for a typical mid-size airline with little or no increase in flying hours or productivity.

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Post processing system limitations. Given the complexity of the typical collective bargaining agreements, crew payroll is either handled by a pre-programmed "black box" or, at some airlines, calculated manually. Yet this process, which incorporates no effective checks and balances, is biased against the airline; an underpaid crew member makes sure it is corrected, whereas overpayments go uncorrected. Compounding the error are the additional personnel costs for the staff needed to respond to and act on crew inquiries over pay discrepancies. Our analysis across airlines indicates that manual mistakes alone can account for an increase in crew cost of approximately 5% for a mid-size airline.

Compensation design vs. reality. Given the highly complex nature of crew compensation, many airlines design their programs or union agreements to "intuit" the most efficient and effective structure of crew compensation plans. However, reality does not match the conditions present when the compensation plan was designed. And the optimizers adjust according to the current set of rules and pay — they don't say when certain conditions in the plan are unduly driving up overall compensation.

In addition, without knowing the potential cost of its actions, the crew planning group often must make a number of policy decisions by the seat of its pants, such as the following:

- Optimal level of reserves vs. overtime

- Level of reserves required in order to cover IROPs

- Optimal mix of long and short pairings

- Optimal length of pairings vs. potential for broken pairings

- Potential cost savings of longer pairings vs. increased cost to cover broken pairings

- Part 117 (and its global equivalent) duty hour-related challenges

- Tradeoff between out-and-back crew rotation vs. "fly around the network" crew rotation practices

- Keeping cabin and cockpit crews together vs. optimizing crews separately

All in all, few airlines have the right tools to accurately forecast crew costs. Given the magnitude of crew cost overruns airlines are likely experiencing now, they simply must devote more resources to understanding the root cause of these cost overruns. Airline crew planning and scheduling systems often are focused on publishing the next month's pairings and on matching bids to pairings. They fail to spend enough time and resources on analyzing the effect of their policy decisions, not to mention the cause of cost overruns. The incremental costs of suboptimal crewing should motivate airlines to conduct deeper analysis and acquire advanced analytical tools. Better tools would not only allow them to optimize their policies, but also build in proper buffers, pay crew correctly, understand potential work rule changes during labor negotiations and reduce total crew cost.

There are specialized vendors (not suppliers of the current crew optimizer systems) that effectively help airlines reduce their crew costs through tackling this problem. One such vendor that has worked successfully with L.E.K. Consulting is Rainmaker Technologies. The Rainmaker crew analytics and crew pay rules engine allows airlines to effectively measure crew productivity and costs across all significant phases of their crewing process. On a recent deployment the Rainmaker suite was able to:

- Identify and support the implementation of improved reserve utilization/productivity and reduced related premium through improved modelling of both operational and crewing demands

- Proactively manage pairing length/mix to mitigate the impact of crew "self rostering" by dropping trips for leave or sick during peak months

- Support a significant reduction in training and line check-related disruptions to the planned schedule

The immediate savings for a mid-size carrier based on its existing performance was roughly $4 million per annum.

The C-suite may treat these products and services as yet another "optimizer," but in reality, the current process of optimize-bid-award-modify-fly-pay is sub-optimal. It neither affords the airline feedback nor provides an effective tool for analyzing the root cause of cost overruns. Applying analytical tools to address the crew cost issue allows airlines to avoid creating expensive pairings, identify and potentially prevent expensive abuses of the system, and determine and avoid the costs of various management actions.

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