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Maximizing Manpower

An effective resource plan and the right tools to support it enable airlines to smoothly introduce new aircraft types into their fleet mix.

■ By Michelle Willams | *Ascend* Contributor

Fleet expansions are always an exciting time for an airline. But introducing a new fleet into the operation opens up a whole new task list of things to consider, especially from a crewing perspective.

When Singapore Airlines chose the Airbus A380 (see related article on page 8), there's no doubt it had to consider the impact on its crewing operations. However, utilization of a disciplined approach and solid tools can make changing fleet numbers and demands a smooth exercise for the entire crew and airline.

Traditionally, airlines have a designated group of employees who regularly examine the crew workforce plan, or "manpower" plan. When examining the plan, carriers answer a variety of questions, such as:

1. Where do I have a shortfall of crew?
2. Where do I have an excess of crew?
3. What duties, training classes and leave plans can be adjusted to decrease shortages?
4. When should I hire new crew?
5. From what crew groups should I move resources?

These questions may be accessed daily or monthly. Therefore, in terms of daily operations, if the carrier has a shortage of crew on a given day, it can quickly determine what duties can be moved around. The granularity of the manpower plan varies depending on the amount of information available. Of course, the accuracy of the plan is also significantly greater closer to the day of operations and less accurate further out.

Utilizing tools such as the *Sabre® AirCrews® Resource Manager* can assist an airline in aggregating this wealth of information as well as analyzing and presenting it to a crew planner for consideration and decision making.

A traditional approach to examining a manpower plan is to look at three basic categories: Availability (supply of crew), requirements (demand for the crew) and balance. Once the balance is calculated, the crew planner will study a variety of additional statistics and make several recommendations of how to smooth out the balance against the different categories.

Planning these resources should be examined within a given segregated crew group. For example, at Singapore Airlines, it is critical to examine its Boeing 747 captains separate from its Boeing 777 captains. Due to crew qualifications and other requirements,

may be able to operate the Boeing 747 and 777 and the Airbus A320. Also, the movement toward a common cockpit for some airlines is increasing the complexity of this analysis in the flight deck group as well.

Calculating Availability

The availability of crew involves information such as total headcount, contribution of different types of crew (the contribution from a particular part-time crew group), movement out of and into the group, and situations that make a crew unavailable for a given period of time. Combining this information gives

HIGHLIGHT

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the available Boeing 747 crew resources are typically the only ones qualified to fulfill Boeing 747 crew requirements. Segregating the crew becomes increasingly complicated when crewmembers can operate a variety of fleets, and the combinations are not necessarily the same among the crew members. For instance, at Singapore Airlines, cabin crew can have qualifications on up to three different aircraft types. However, there are not necessarily common group qualifications, and there are overlaps. For example, one crew may be able to operate the Boeing 777 and 747 as well as the Airbus A340, while another crew

an analyst a starting point to determining the total available crew group. *Resource Manager* calculates the value on a given day:

- Initial headcount plus crew moving in (new hires, transfers in, promotions in),
- Crew moving out (retirements, terminations, transfers out, promotions out),
- Unavailable crew (long-term leave, down time for crew, transitional training).

Considering this information gives the basic availability of the crew. *Resource Manager* is able to easily aggregate this information from all operational, leave and

training information available within the database.

Calculating Requirements

Calculating requirements is considerably more complicated than calculating available resources. Requirements rely on more forecasting, hence, introducing a greater degree of error. When calculating requirements, an analyst should consider a variety of information such as the planned operational schedule; training plans; and days-off, leave and reserve requirements. Schedule requirements can be derived from a planned pairing set, an operational schedule or even a basic aircraft plan. Training requirements should consider items such as recurrent training plans for the crew, instructor requirements and other ad hoc training requirements. Leave requirements should consider issues such as the annual leave plan, allocated leave for the crew and expected sick rates.

Typically, a combination of actual known data (such as the leave bank for the crew) and forecasted information (such as a sick bank) are considered in calculating this value. When using *Resource Manager*, this value is calculated on a given day as "Schedule + Days Off + Training + Reserve + Leave." Similar to the availability calculation, *Resource Manager* easily aggregates this information from the database. Tools such as *Resource Manager* also make it easy to evaluate different alternatives within the flying schedule. Analysts may consider different pairing or schedule options. All of these can have an impact on the final requirements, and hence, the final balance for the crew.

Balance and Statistics

The balance of available resources and the requirements on these resources is a key starting number for an airline. From these figures, carriers can evaluate the trends of their resources and determine the best movement and placement of these crewmembers.

Applying to the new Fleet

So given the challenge of incorporating a new fleet into the department, a reliable resource plan provides a strong starting point for an analyst to determine how to best incorporate the new fleet. The analyst can answer questions such as: What crew resource groups would be the best to convert or promote into this new fleet? Taking the surplus from one group and applying it to the new group and schedule is one option an airline can use when staffing a new fleet. A reliable manpower plan can also answer a key question as to how many crew the department should hire.



Photo courtesy of Airbus

The A380's India visit in May included a multi-day stopover in Mumbai for airport compatibility trials.

Along with determining how many employees to hire or move between groups, an airline needs to also determine when the crew should be trained. "Just-in-time" manufacturing should be applied to the crew resource movement. Training should be conducted with the introduction of the new fleet type. As new fleet demand grows throughout the schedule (due to the arrival of new aircraft), the airline can continue to add crew to training classes. The key is to maximize the utilization of the available crew resources across the schedule. This will reduce any overhead costs from having too many available crewmembers without enough flying, or aircraft unable to fly due to unavailable crew.

Once a reliable manpower plan is agreed upon, the airline incorporates the new aircraft type into its fleet mix. Crewmembers can be chosen for the new fleet, training classes can be added and scheduled, and all other down-line activities can begin.

The plan should be regularly re-evaluated and compared to the current status of the airline. Once new crewmembers are hired, training has begun or more accurate schedules have been received, analysts should re-evaluate the plan and make any necessary adjustments. This process protects utilization of resources and aids the airline in staying aligned with the objective to bring the new aircraft online.

One of the challenges of the crew planner is to collect all the key information required in the manpower plan. At

many airlines, this information sits within different departments and systems, and it must be manually collected and input into a spreadsheet or another tool. However, when the crewing department is managed with a common database, the information can easily be collected and analyzed. *Resource Manager* makes updating the plan a simple task. As the latest information becomes available in the database, the analyst can request a refresh on the plan, which produces reliable figures to determine the appropriate course of action. *Resource Manager* can also make suggestions to the timing of the training plan and how to manage the new resource group with items such as leave plans and recurrent training plans.

Overall, a reliable manpower plan can assure a successful introduction of new aircraft types in an airline's fleet. The manpower planning process should be conducted regularly within the airline environment. **F**

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