MAXIMIZING CREW PRODUCTIVITY

Combining analytical models with the reality of under-the-hood airline business practices

Presented by:
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Who Am I?

Martin Harrison, Principal at ICF

- Former COO – *Ground, Tech & Flight Ops (including ex Head of Crew Planning)*

- Served in network, LCC, and regional business models

- JAA Form 4 Approved Post Holder
Who is ICF?

- One of the world’s largest, most experienced aviation consultancies
  - 52 years in the air transportation industry
  - 85 aviation staff located in 7 offices worldwide, including Hong Kong
AGENDA

- The Challenge
- The Theory
- The Practice
THE CHALLENGE

The Crew Planning Manager is constantly walking the tightrope of too many crews or not enough crews.
THE CHALLENGE

Too many crews means you are costing too much...

Too many

...but having too many crews will never get you fired

Too few
LCCs seem to be more adept at the balancing act

**Average flight hours per pilot**

Sources: 2012 UK CAA, Ryanair 20-F
THE CHALLENGE

Note the industry is seeing an increasing share of airline employees being pilots and cabin crew.

*Share of pilots and cabin crew out of total employees*

- Being proficient at managing your crew resource cost is growing ever more important

Source: IATA WATS
AGENDA

- The Challenge
- The Theory
- The Practice
First of all, you have to think about crew related expenses and their different natures.

**Crew benefits**
- Fixed salary
- Variable salary
- Pension
- Insurances (loss of licence, health)
- Flight & duty base allowances
- Temporary allowances

**Crew indirect costs**
- Hotel
- Ground transport
- Flight positioning
- Training
Cost structure depends on the nature of operations

Crew cost structure

Flybe
- Pilot salaries
- Pilot training
- Cabin crew salaries + training

Virgin
- Pilot allowances
- Pilot other costs
- Cabin crew allowances

Source: UK CAA, ICF analysis
THE THEORY

Crew productivity is driven by many factors, aircraft utilisation being one, but only a starter..

Flight Crews per Aircraft vs. Average Daily Utilization

Sources:
- IATA World Air Transport Statistics (WATS);
- ACAS;
- Annual reports
Simpler work rules and leaner operations put the LCCs on the lower end of the spectrum in terms of how many crews they need.

- Their advantage is substantial compared to some legacies
- Even though LCCs tend to operate out of multiple bases

Source: IATA WATS, Easyjet, Ryanair annual reports.
Rule of thumb: more aircraft hours means more crews, but how many more?

Additional pilots per additional hour of utilisation (heads / hr)

- In the industry downturns, airlines tend to be able fly more aircraft hours with less pilots
- As the good times are returning, are we losing that focus?

Source: IATA WATS
**THE THEORY**

*Best Practice Operations Planning* developed analytical systems and processes to optimize for efficiency and financial impact…

<table>
<thead>
<tr>
<th>1970s – 80s</th>
<th>1990s – 00s</th>
<th>2000s – today</th>
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<tbody>
<tr>
<td><strong>Incident Focus</strong></td>
<td><strong>System Focus</strong></td>
<td><strong>Profit Focus</strong></td>
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<tr>
<td>– Manage incident recovery, fire-fighting</td>
<td>– Plan for upcoming events</td>
<td>– Integrated planning to optimize resources</td>
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<tr>
<td>– Zero-sum decision making</td>
<td>– Balance maintenance and operational needs</td>
<td>– Customer and financial impact at center</td>
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<tr>
<td><strong>RESULT</strong></td>
<td><strong>FOCUS</strong></td>
<td><strong>RESULT</strong></td>
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<td>– Silo-based decision-making</td>
<td>– Coordinated business decisions</td>
<td>– Integrated planning and execution structure</td>
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<td>– Blame culture, wasted effort</td>
<td>– Problem-solving culture</td>
<td>– Innovative planning and control</td>
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<td>– Department metrics only – results in mixed performance</td>
<td>– Joint metrics – improves focus on system performance</td>
<td>– Feedback metrics for continuous improvement</td>
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“What happened” [Diagram]

“How will it happen” [Diagram]
THE THEORY

...whereas in *Crew Planning*, the sophistication of systems has often outpaced the effectiveness of implementation

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<tr>
<th>Focus</th>
<th>Outcome</th>
<th>Risks</th>
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| **Comprehensive crew coverage of flight schedule** | ▪ Labor intensive  
▪ Time consuming  
▪ Unrecognized efficiencies | **Weak Optimization** |
| **Complex algorithms geared toward finding efficiencies** | ▪ Improved schedule efficiencies  
▪ Integrated fleet and crew planning processes | **Weak Calibration** |
| **Maximizing crew efficiencies with schedule preferences** | ▪ Optimized schedules based on commercial needs and crew preferences | **Weak Strategy** |
AGENDA

- The Challenge
- The Theory
- The Practice
Three Organizational Considerations

**Focus:** Organization structure, business policies, responsibilities, incentives

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**Focus:** Procedures, logic, algorithms, data use, communication, decision making, schedule recovery, misconnects, feedback loops

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**Focus:** Automation and optimization capabilities, integration, management information

**Strategies:**
- Business model
- Growth
- Commercial flexibility
- HR marketplace
Crew efficiencies typically slip at four points (in my experience)

1. The classic ops vs. commercial tussle

2. Something optimised vs. something resilient

3. The tightrope bias as mentioned before

4. These are real people (yes, they have feelings, they need rest and they are in demand)
An airline need routine, comprehensive assessment

**Strategy**
- Business Plan
- Fleet Plan
- Commercial Plan
- Aircraft Mx System

**Planning**
- Flight Schedule Planning
- Aircraft Mx Checks
- Crew Establishment

**Scheduling**
- Crew Leave Management
- Crew Training
- Crew Pairing Builds
- Crew Bid Process
- Roster Changes/Trades
- Hotel/Transport Management
- Tail Allocation

**SOC**
- Flight Watch
- Crew Tracking
- Crew Comms
- Dispatch
- Disruption Management

**The right KPIs**
- Pay to BH ratio
- Crew hotel & deadhead
- Staffing vs plan
- Roster BH distribution
- FRMS
- Roster stability

*You must understand upstream and downstream effects*

Key: Other functions Crew Planning
And finally, as one can learn from LCCs, often simple is best...
Thank you!

For questions regarding this presentation, please contact:

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