Operations Planning
Agenda

- 0900 - 0930  Introductions and Opening Remarks
- 0930 – 1015  Operations Planning
- 1015 – 1045  Break
- 1045 – 1215  Operations Control
- 1215 – 1330  Lunch
- 1330 – 1500  Operations Cost Management
  - Cost of Delay
- 1500 – 1530  Break
- 1530 – 1630  Operations Management - exercise
- 1630 – 1645  Operations Cost Assessment – explanation
- 1645 – 1700  Summary – Key Takeaways
- 1700  Closing Remarks – ACC Update Information
Operations Planning – Team Discussion

- At your airline, or in your view,
- What does “Operations Planning” mean?
- What are some major components of Operations Planning?
  - Prioritize 5
- What are some major objectives of Operations Planning?
  - Prioritize 5
Operations Planning Objective

Balance Productivity, Efficiency, Cost vs. Revenue

Productivity

Efficiency

Financial

Airline Schedule or Plan
Operations Planning – Airline Schedule

To produce an operational schedule that is

✓ operationally achievable
✓ recoverable
✓ amendable

✓ at lowest possible cost
The schedule/operational model is one of the most complex tasks.

Operations Planning is a very complex task.
What are some major cost drivers to consider in developing the Operations Plan or Schedule ???
Schedule Planning - Cost Drivers

- **Schedule Design**
  - Marketing Objectives
  - Schedule Design Complexity
  - Schedule Recovery Options
  - Service Reliability Objectives

- **Asset Management**
  - Aircraft Assignment and Utilization
  - Maintenance Requirements
  - Crew Staffing and Utilization
  - Ground Facilities, Equipment, Personnel

- **Key Planning Components**
  - Required time(s)
  - Required services
Where to Begin?

Does the Schedule or Plan work???
Schedule Building Blocks

- Accurate operational times are critical for developing a viable operational schedule and maintaining an On-time airline

- 4 basic components
  - Blocktime
  - Ground-time
  - Maintenance time
  - Crew requirements
Operations Planning - Blocktime

- What is a “Blocktime”??

- Blocktime is the time from gate/pad departure (brake release) to gate arrival (brake set)
  - Taxi-out time
  - Flight time – takeoff to touchdown
  - Taxi-in time

- What does a scheduled blocktime represent??
Blocktime Scheduling

Example:
50% = 4:00
65% = 4:05
80% = 4:10

"Blocktime Standard"
What are some factors that would induce variation in the actual blocktime performance?
Blocktime Scheduling

Variability

- Type of Aircraft
- Time of Day
- Airport Environment
  - Arrival/Departure Capacity
  - Airport Ground Congestion
  - ATC System Capability
- Seasonal Wind Variability
- Crew Operating Policy

80% is typically a maximum Blocktime Standard
Blocktime Reliability - Going to Work

- Average Time enroute
- Potential for disruptions (traffic congestion, train schedule, weather)
- Likely level of variance (:05 to :30 minutes)

- Potential risk of inaccurate or less reliable time allotted
  - How early do I want to depart for work to ensure an on-time arrival with a high degree of reliability?
  - What level of late arrival will my boss accept?
Blocktime Standard – Schedule Reliability

Scheduled Blocktime
4:00 hours

Sked ARR Time
XYZ 1200

Depart
ABC 0800

Standard ground time
:50

Sked Depart
XYZ

Potential for Delayed Departure

50%
4:00

65%
4:05

80%
4:10

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Schedule Reliability

Flight 1
Scheduled Time

Required
Ground Time

Flight 2
Scheduled Time

On-Time
Departure

On-time
Arrival

Late
Arrival

Late
Departure

Late
Arrival

Flight 1
Actual Time Enroute

+ :10

Required
Ground Time

+ 

Flight 2
Actual time Enroute

+ :10

Downline Delay

:30

+ :10
Blocktime Standard and On-Time

As a general rule,

- a 5% increase in block-time standard above 50%
- will produce a 3 – 4% increase in arrival performance
- with a corresponding improvement in departure performance
- dependent on the accuracy of the scheduled ground time
Schedule Building Blocks

- Accurate operational times are critical for developing a viable operational schedule and maintaining an On-time airline
  - Blocktime
  - Ground-time
Operations Planning - Ground Time

- Ground-time is time from arrival of aircraft at gate or pad to departure on next assignment
  - “block arrival to block departure”
- Must include time to perform all required services
  - Passenger Services – “above the wing”
  - Ramp Services – “below the wing”
- Support Functions – Security, Immigration, Passenger Transfer/Transportation
Groundtime

- Standard Schedule = 1:15 (STT)
- Minimum Required time = :55 (MTT)

**Example:** Preparing for work
- :30 Personal preparation (shower, shave, fix hair)
- :10 Coffee (optional)
- :05 Locate and select clothes
- :10 Dress for work
- :10 Check email (optional)
- :05 Gather material or tools (wallet, purse, computer, car keys)
- :05 Walk to car or bus/train
Ground Time Requirement

Aircraft Servicing Turnaround Timelines

Note: Dark line defines “critical path” or minimum required time
Accurate Blocktimes & Ground Times

- Determine the airline “published schedule”
- Used in assessing and costing
  - Number of aircraft required to operate the schedule reliably?
  - How many pilots/attendants are required to fly the schedule?
  - How the daily aircraft patterns and crew schedules flow?
  - How much Maintenance time and resource is required?
  - How the airports operate? Resources required?
  - Passenger/baggage/crew connection times
  - The Budget Cost to operate the schedule

“Essential” building blocks for airline Operations Planning
Schedule Building Blocks

- Accurate operational times are critical for developing a viable operational schedule and maintaining an On-time airline

- Blocktime
- Ground-time
- Maintenance time
Operations Planning - Maintenance

- Like your car, aircraft require routine, scheduled maintenance, but, they are **mandatory**

- All airlines are required to follow a continuous maintenance service and inspection “program” approved by their airworthiness regulatory authority

- Maintenance “checks” are **mandatory periodic inspections** that must be done on all commercial aircraft after a **specified amount of utilization** (i.e.: hours flown, cycles operated)
Maintenance “Checks”

- “A” Check (Service Check)
  - every 500 - 800 flight hours or 200 – 400 cycles

- Formerly known as “B” Check (Packaged Service Visit)
  - approximately every 3-6 months
  - typically accomplished in conjunction with several “A” checks

- “C” Check
  - whole aircraft is inspected approx. every 15–24 months

- “D” Check
  - Heavy Maintenance Visit (HMV) every 5–6 years
Operations Planning for Maintenance

- Must ensure airline schedule includes sufficient time for all maintenance tasks to be accomplished
  - within prescribed intervals in accordance with all Safety and Regulatory requirements
- “A” and “B” check requirements must be planned and coordinated with aircraft ground time opportunities in daily schedule
- Due to extensive downtime associated with “C” and “D” checks, they must be carefully built-in/coordinated with the airline’s operating schedule and long-term schedule development plans
Schedule Building Blocks

- Accurate operational times are critical for developing a viable operational schedule and maintaining an On-time airline

- Blocktime
- Ground-time
- Maintenance time
- Crew requirements
Operations Planning - Crew

- Operationally critical & high cost component of planning process

- Must balance
  - crew staffing, training, assignment
  - marketing plans and schedule requirements

- To ensure
  - a qualified crew in position to operate the schedule as needed
  - without requiring excess staffing and training
  - with the highest possible individual productivity
  - in compliance with all regulations
  - in agreement with labor contracts
Crew Cost Distribution

- Productivity: 62%
- Training & Transition: 34%
- Administration: 4%
Planning for Crew Productivity

- Changes to the schedule and aircraft fleet drive operations planning challenges and significant crew cost

- Crew Cost drivers
  - complex fleets
  - undergoing a fleet change
  - high schedule seasonality

Having a high % of pilots in training or non-productive status causes significant cost impact
Operations Planning for Schedule Reliability

- Validate Schedule Components
- Incorporate Required Times
  - If unable, adjust schedule accordingly
- Buffer – Operational Contingency / Schedule Recovery
- Track – Actual Results / Determine Root Cause
- Correct – Delay Cause / Schedule Inadequacies
- Adjust Schedule or Operation
Operations Planning for Cost Control

- Proper Planning components facilitate Schedule Reliability

- Schedule Reliability enables
  - service quality & revenue retention
  - efficient crew & aircraft utilization
  - maintenance reliability
  - efficient resource management
  - related cost control

- Maintenance Reliability facilitates
  - operational Safety
  - asset productivity
  - revenue generation

*Operations Planning must continuously seek balance between Schedule Reliability and Cost Control to maximize airline profitability*
How to Plan?

- IATA Recommendation:
  - *Integrated Operations Planning*
Integrated Operations Planning

- A corporate process for schedule design, review, and analysis which includes
  - all corporate functions or departments that are impacted by the schedule composition
  - and, all corporate entities that can influence airline performance against schedule or plan
- Ensures all have appropriate input for
  - schedule design & development
  - associated cost impact

Shared responsibility for performance results
Integrated Operations Planning

- How does your airline handle the operations planning process
  
- Which departments or functions should be included in the “Integrated” Planning process
  
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Facilitate collaboration between Commercial objectives and Operational requirements in planning and scheduling

Optimize financial results from a balanced design perspective taking into account revenue, cost, and operational performance

Enable an airline to efficiently manage and respond to changes in global and competitive environment

*Integrated Operations Planning is critical for success in today's ever-changing airline industry environment*
Operations
Planning
Challenge
General Rule

- The earlier in the planning process an airline can "build in" the operational requirements and infrastructure to support its commercial and planning objectives,

- the more reliably and cost effectively the airline will perform
to represent, lead and serve the airline industry

Thank you!
Schedule Reliability vs. Crew Cost

Example:
- 50% = 4:00
- 65% = 4:05
- 80% = 4:10

Potentially very costly dependent on Crew Contract
Integrated Operations Planning Strategy

- Develop and sustain a balanced schedule/operations design to
  - maximize revenue at minimum cost
  - enable highest levels of operational performance/customer service
- Create a highly flexible schedule and infrastructure that can
  support any required changes to airline strategy
  - expand and contract the network quickly
  - while continuously optimizing revenue and controlling cost
- Provide a mechanism for operating groups to participate in
  planning and scheduling process
  - discuss enterprise impact of operational requirements and problems
  - evaluate new or alternative schedule/operational plans