

Airport Operations and Service Quality

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Contents of this presentation

- **What constitutes Airport Operations**
- **Who provides the services of 'Airport Operations'**
- **How is airport service quality measured**
- Assistance from many sources, other consultants and colleagues, too many to be named individually, is acknowledged. Reference made to ICAO & DGCA documents, and analysis and presentations made regarding them.

Some Basic Questions about Airport Operations

- How are performance criteria and standards defined
- What is meant by Airport Operations?
- Which physical facilities are critical parts of Airport Ops?
- Which organizations provide what service at an airport?
- Who coordinates all their working? AOCC? ATC?
- Who decides when different flights will operate?.. i.e. Slots
- Who provides safety and security at an airport?
- Who provides Air Navigation Services? Aka Air Traffic Control, and the equipment – Radars, ILS, DVOR, DME etc.?
- What does the Meteorology Department do? What is RVR?
- Who provides the required action in an emergency?
- Who provides regulatory services inside the terminal?

What are other questions that you have?

Airport Management: The Departments

- **Operations - which include airside facilities, ARFF and Pax & Cargo Terminals**
- **Air Navigation Services**
- **Engineering & Planning**
- **Finance & Accounts**
- **Human Resource**
- **Marketing**
- **Commercial development**
- **Administration & Company Secretary**
- **Vigilance – in-house**

In India Airports are licensed by the DGCA, Directorate General of Civil Aviation

Security oversight is by BCAS, Bureau of Civil Aviation Security.

Airport Regulators

- **Ministry of Civil Aviation**
 - Aircraft Act & Aircraft Rules
- **DGCA, Directorate General of Civil Aviation**
 - Regulates all safety aspects
 - Licenses airports
- **BCAS, Bureau of Civil Aviation**
 - Prescribes & Maintains Security Oversight
- **AERA, Airport Economic Regulatory Authority**
 - Regulates Tariffs for Major Airports
 - MoCA regulates tariffs for smaller airports
- **Other Regulatory bodies provide oversight in their respective areas, e.g. Customs, Immigration, Health.**

Objective of “Airport Operations”

from the perspective of the Airport Operator

Provide a Safe, Secure and clean facility and environment for convenient handling of aircraft, air passengers, cargo 24x7.

- Airport Operations is a complex task.
- It involves accommodating numerous organizations, inside and outside the airport;
- Providing physical facilities for them;
- Coordinating their working.

KEY FACTOR: Which agency, and which officer, is responsible for specified actions.

- Operations cover:
 - i. ‘Airside’ functioning
 - ii. ‘Terminal’ – Passenger and Cargo operations
 - iii. Support services
 - iv. ‘Land side’ operations

Airside Operations

Services Provided:

- Air Navigation Services
- Airport Perimeter Security
- Rescue & Fire Fighting & Emergency Services (ARFF)
- Bird Hazard Control
- Airport Engineering
- Vehicular Control in Operations Area,

Terminal Operations

**Services Provided: Facilitation at Passenger & Cargo Terminals,
Coordination of all agencies through Airport Operations
Control Centre and specialized committees,**

- **Passenger Terminals: Domestic and International**
- **Cargo terminals: Domestic and International**
- **Regulatory agencies to serve passengers and other users, aka Facilitation**
- **Airport Operations Control Centre**
- **Terminal Engineering**
- **Information systems**
- **Security services for Pax. and baggage and cargo**

Landside Operations

Services Provided: Approach Roads & other surface access, Car-parks, Metro Stations, Boats Marina, Vehicular Control, Horticulture & Water supply, Airport Engineering, Cleanliness of airport environs, esp. for Bird Hazard Control, Law & Order and Traffic Control, Airport Security

- **Surface Access Control**
- **Airport Security**
- **Law & Order control**
- **Traffic Control**
- **Airport Engineering**
- **Cleanliness of Airport environs**
- **Horticulture & Water Supply**

Measuring efficiency: Airspace Use

Air Navigation Service, ANS

- Availability of Airspace Routes
- Air Traffic handled at Various levels
- Mix of Traffic mix, Int'l / Domestic
- Types of aircraft
- Capacity by no.'s of flights in a defined period.
Specified by DGCA when issuing the Licence.
- Standard Operating Procedures
- Incidents that may happen (e.g. Near miss)

Measuring efficiency: Airside

ANS, Airport Operator, Met. Dept., Security

- Airport capacity vs. Demand
- Hours of Operations of the airport.
- Weather conditions in which the airport can be used.
- Mix of Traffic and aircraft mix, Int'l / Domestic
- Use of available Runways, Taxiways (Runway Occupancy Time, Parallel & Exit taxiways,)
- **Use of aprons, Numbers & aircraft type handled, numbers, in-contact or remote etc. on a daily basis**
- Normal turn around time of flight & during disruptions
- Access to Service providers e.g. Refueling, Ground Handling Agencies, Maintenance, Special movements
- Standard Operating Procedures
- Incidents that may happen (e.g. Near miss)

Coordination thru' Airport Operations Coordination Comm.

Measuring efficiency: Airfield Emergencies

ANS, Airport Operator, Airlines, Security

- What are the types of emergencies
- SOP for dealing with Emergencies for all agencies at and near the airport and implementing them.
- **ARFF & CFT response time**
- Control of entry at airport and all operational areas
- Bird & Animal Control
- Availability of Commercial & Emergency Power and switch-over times
- Removal of Disabled aircraft
- Access to Service providers e.g. Refueling, Ground Handling Agencies, Maintenance, City Fire Service

**Coordination thru' Airport Emergency Coordinator & AOCC.
Business Continuity Management post-Emergencies**

Measuring efficiency: Passenger Terminals

Airport Operator, Airlines, Security, Regulatory agencies,
Commercial Service Providers

- Peak period Capacity vs. Demand, Domestic and International
- Time for passage through terminal, embarking and disembarking, Transfer pax. procedures and equipment
- **Service & Waiting times at service counters**
- Walking or ride distances
- Waiting space Standards, in Q, with baggage; in security hold standing & sitting
- Flight Information Display System, Timely, Accurate and Legible
- Baggage handling & security check, equipment and procedures
- Equipment in terminals, e.g. CCTV & Communication system
- Assistance for differently-abled/ challenged people
- Shops and Concessionaires, and their storage and service areas
- Actions during emergencies, e.g. building fire, delayed flights

Coordination thru' AOCC

Measuring efficiency: Cargo Terminals

Airport Operator, Airlines, Security, Regulatory agencies,
Commercial Service Providers

- Peak period Capacity vs. Demand, Domestic and International
- Tonnage handled per sq.m./per year
- **Service & Processing and dwell times**
- Level of electronic processing of information reg. freight documentation and related procedures
- Level of mechanization in physical handling
- Storage & Handling of dangerous goods, High Value goods
- Tail to tail transfers
- Building & Cargo security
- Ramp access
- Cold storage
- High Speed handling, e.g. of perishables

Measuring efficiency: Land Side Developments

Airport Operator, Police, Surface Transport agencies, Security,
Commercial Service Providers

- **Availability of Rapid and reliable city/airport surface transportation**
 - Travel time, distance, congestion, delay
 - Terminal kerb access capacity
 - Parking availability and convenience of accessibility to/ from terminal
- **Rail and Bus**
 - Service frequency, reliability and travel time
 - Convenient access to / from terminal
- **City Terminal baggage check-in and security handling**
- **In some places boat marinas are important, e.g. Agatti airport Lakshadweep & Male airport in Maldives**

Measuring efficiency: Utilities & Support Services

Airport Operator, State & City Authorities, Police
Regulatory Agencies

- Municipal Authorities
- Building Height Control
- Surrounding area drainage
- Airport Engineering
- City Utility Services – Power, Water, Sewerage
- Aircraft Refueling storage and distribution
- Flight Catering
- Hotels etc.
- Office buildings
- State Pollution Control Board
- Environment Control in vicinity of airport
- Waste Disposal

Strategic issues in Operations

- **Physical asset base changes slowly compared to quickly changing parameters of demand.**
 - The experience of dealing with controls in air travel during the last two years of the Covid pandemic is an excellent example of rapid change of parameters requiring adjustment of capacity in existing facilities.
- **So, how is the additional capacity to be provided?**
- **There has to be an improvement in data-driven decision making. There is a lot of historical data and current data but analytical tools have to be developed.**
- **New technologies will help in increasing capacity but new thinking and approach by all service providers is required.**
- **The airport operators goal has to be to improve performance, improve pax. experience, reduce costs and improve revenues.**
- **Significant improvement in airport coordination amongst stakeholders & service providers is required**

Enhancing airport capacity - traditionally

- **Improve Efficiency and throughput**
- **Expand Airports**
 - Lengthen runways, more runways, more parking aprons for larger aircraft
 - Build more terminals, Share traffic between existing airports
- **Build More airports**
 - Mumbai, Delhi are in the process of getting 2nd airports.
 - Goa now has two airports
 - New airports for Regional Connectivity Services are being built
 - Regional Airport Development Study is required.
 - Speed up development time
- **Policy review required**
 - 150 kms. distance between airports to be scrapped

How is the capacity of Airside and airspace space to be enhanced?

In Air Navigation Services

- Reduce runway and taxiway occupancy times & improve their availability
- Optimize Gate turn-around times
- Introduce automated low emission GSE, e.g. 'taxibots' are being experimented with to reduce aircraft emissions while taxiing
- Gate assignment to reduce crowding
- Improve staff scheduling
- Upgrade ANS equipment and services

Improvements in Passenger Terminals

- **Reduce Service times**
- **Reduce passenger touchpoints/ counters to report to while passing through the terminal**
 - Walk through security check
 - Facial recognition
 - Bag drop off
 - Bag pick up and belt allocation
- **Biometric self-boarding technology - paperless air travel but with assistance for those who are not regular travelers**
- **Data mining & recall systems in Immigration Control**
- **Sustainable structures, solar panels, grey water reuse.**
- **Airport cyber-systems to be 'super safe'**

Questions, Questions, Questions

THE END

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