Air Traffic Services and Airport Operations
Executive Summary

Introduction

The aim of this project is to identify and discuss relevant Synergies, Dependencies, Vulnerabilities and Conflicts between Air Traffic Services and Airport Operations. Air Traffic Services promote the safe and efficient flow of aircraft both in the air and at airports and Airport Operations promote the safe and efficient flow of passengers and cargo between aircraft and airports. The International Civil Aviation Organisation sets Aviation Law. This is interpreted by the Civil Aviation Authority who then apply it to the UK Aviation System. National Air Traffic Services enforce this upon Air Traffic Control and Airport Owners enforce this upon Airport Operations.

Synergies

- ATS and AO work together to promote the safe and efficient transportation of Passengers and Cargo by air.
- ATS co-ordinate the movement of aircraft in and out the sky and on the ground and AO co-ordinate the movement of cargo and passengers between aircraft and terminal.
- In bad weather conditions when ATS cannot assist, AO vehicles are sent out to safely guide aircraft around the Airport.
- ATS and AO work together to co-ordinate parking stand and runway time slots in order to achieve efficient aircraft turnaround times.
- AO check Runways and Taxiways for safety and security threats under the control of ATS and AO then report any threats to ATS.
- AO provide airport emergency services and ATS co-ordinate the emergency responses.
- The demand placed on AO and ATS was much less in the past, but has increased rapidly and will do so in the future.
- The proposed Fifth Terminal at Heathrow and extra Runway at Gatwick will increase ATS and AO workload in the near future.

Dependencies

- In order for airlines to have a quick turn around they depend on the ground crew to do their job's quickly and efficiently.
- Air Traffic Services depend upon airport operators to over-hall the aircraft (I.e. re-fuel, sanitation)

Vulnerabilities

Past

- Air travel has increased rapidly since deregulation in the 1970's. The construction of new airports and runways has not kept the pace with the increase in air travel, leading to excessive pressure on the air traffic control system.
- With further aircraft movements there was more need for airport operations. Airports had to expand to accommodate for both aircraft and airport operations.

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- Air traffic control now has to deal with more movements around the airfield. Miscommunication between those operating on the airfield and air traffic control can lead to devastating results.

Present

- Security at airports has tightened since September 11th 2001. Staff throughout the airport have to use an I.D card to access many areas of the airport.
- There have recently been many strikes involving both airport operations and air traffic control. Strikes disrupt air travelers and the aviation system as a whole.

- Swissport went on strike in early November 2003 causing disruption to the aviation system. About 1,000 members of the Transport and General Workers Union went on a 48-hour strike in a row over pay. The strike caused disruption to London Heathrow as the company has many services at the airport. Many aircraft were diverted to Gatwick meaning that air traffic control had to allocate extra slots to the diverted aircraft and they also struggled to find available stands. Ground staff had to deal with more aircraft and try to get a quick turnaround. The vulnerability of strikes is a major problem for these two elements of the industry.
- Another example is when air travel controllers in Europe went on strike against an EU plan to put the continent's air space under international controls. The Single Skies plan would replace national air spaces with new zones of control based on international air corridors. The striking air traffic controllers believe the Single Skies system will lead to job losses and privatisation and could affect safety standards. The change in how the air traffic control system works could compromise safety.

- Air traffic control direct aircraft to stands where they are unable to park because a vehicle or a piece of equipment was left there.
- Weather affects the communication between air traffic controllers and airport operations. In adverse conditions airport operations has to rely on air traffic controllers to guide them around the airport. Miscommunication between airport operations and air traffic services can have serious effects.
- If the system were to break down then airport operations wouldn't know where to go around the airport and could end up colliding with an aircraft.
- If airport operations cause damage to an aircraft during turnaround then that aircraft will have to dormant on that stand for a while. This leaves air traffic services losing an available stand and diverting traffic around the aircraft.

Future

- Air travel to increase putting more pressure on air traffic control system and airport operations. Congestion at many airports is inevitable.
- Airports around the world continue to redevelop to accommodate for the expected rise in air travel.
- Air traffic control will handle more aircraft movements and at the same time have to direct airport operators around the airport.

Reduce vulnerabilities

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- Increase airport capacity by building new runways and airports.
- EUROCONTROL SCHEME - "The EATM Airport Operations Program aims to enhance airport capacity through the improvement of airport operations." *www.eurocontrol.int* This should solve reductions in delays caused by airport operations as well as safer and more environmentally friendly air traffic operations. It also covers improvements to the management of air traffic operations.
- The A380 is an aircraft that could reduce the amount of air movements, thus reducing the amount of available slots. However, it could lead to more pressure on airport operations.
- An efficient communication between air traffic control and airport operations is needed to reduce incursions between vehicles and aircraft.

Conflicts

Present

- Britain has the most crowded air space in Europe. The UK air traffic control system is failing to keep up with the needs of commercial aviation. Airline traffic has increase by 68% since de regulation, but the work force is one third smaller in relation traffic needs than before. The computers, radar and other equipment are generally outdated and unreliable.
- This results in extensive delays which cost airlines and passengers some £1.5 billion a year.
- Another result is decreased air safety at airports such as collisions due to air traffic control deficiencies.
- In the first 3 months of this year almost 1 in 4 flights in UK took more than 15 minutes after the expected departure. That compares to 1 in 10 flights 7 years ago.

Future

- Privatisation of the air traffic control would mean en route charges would increase which means airlines have to pay more.
- There are 2 million flights a year in UK air space this figure is expected to rise every year. More and more passengers are flying than ever before this only means more aircraft more traffic and delays.

Conclusion

The interface between ATS and AO is a vital part of the Aviation System. Both these elements aim to promote safe and efficient air transportation. AO focus upon the transition of passengers and cargo to and from aircraft and airport whereas ATS focus upon the transition of aircraft between airports.

Air travel has increased rapidly during the past 30 years and will continue to do so. Air traffic control systems and airport operations have increased their role in the system and

both most work effectively to ensure air travel safety. Airport capacity will continue to expand to accommodate for airport operations and aircraft and so the air traffic control system has to be efficient in dealing with the rise of movements.



Information Source References

VA 100 Aviation Systems Lecture Presentations
VA 103 Airport Business Operations Lecture Presentations

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