

Aviation safety strategies at airports

[Environment](#), [Air](#)



Aviation Safety Strategies at Airports within the United Arab Emirates

One of the major issues that is relevant directly to airports, their management and operations is that of safety. It is the one area of the airport business that bound to cause concern to all of the business stakeholders, which includes airline operators, employees and the travel public. Recently, the international and regional airport and aviation authorities have developed a Safety Strategic Plan, which is recommended for use by all airports, indeed such a plan will become compulsory from January 2009.

However, the development and implementation of such a plan is only the first step in the process. What is more important is that the plan is operated in practice in a manner that ensures its efficiency and effectiveness in addressing the issues that it has been designed for, namely to reduce and eliminate the potential for risk in safety issues.

With the continual growth of air travel and the fact that this standard has only recently been developed it was felt that there was a need to study whether there is the willingness and necessary processes within the airport organisational structure to commit to making this plan work. Using airports within the UAE as an example, due the regions higher than global average growth of air travel, it was found that in some areas, specifically management commitment, resources and knowledge, there were areas of difficulty that needed to be addressed, particularly if the airport industry wishes to retain the confidence and trust of those that it serves, and specifically to ensure that air travel retains its safe operation record.

Table of Contents (Jump to)

Chapter 1 – Introduction

1. 1 Introduction

1. 2 Aims and Objectives

1. 3 Overview

Chapter 2 – Literature Review

2. 1 Introduction

2. 2 Airports and air travel

2. 3 Airport operations

2. 4 Airport safety

2. 5 Regulations and legislation

2. 6 Summary

Chapter 3 – Methodology

3. 1 Introduction

3. 2 Choice of research method

3. 3 Secondary data

3. 4 The questionnaires

3. 4 Performance of the research

Chapter 4 – Analysis of Questionnaire's

4. 1 Introduction

4. 2 Part 1

4. 3 Part 2

Chapter 5 – Discussion and Analysis

5. 1 Introduction

5. 2 Discussion

Chapter 6 – Recommendations

6. 1 Introduction

6. 2 Industry recommendations

6. 3 Further research

Chapter 1 – Introduction

1. 1 Introduction

As Dr Tarib Cherif (2008), general secretary of the ICAO ^[1] said in his introduction to an airport aviation summit held in Abu Dhabi in January, “*Airport and airspace congestion in certain parts of the world are currently stretching air navigation and ground facilities to the limit.*” Furthermore, as this address goes on to add, with expected increases in global air traffic set to achieve growth of nearly 6% on average during the course of the next few years, with some areas of the world seeing double this figure, this will increase the pressure on all airport facilities and operations. Similarly, as the numbers of air travellers grows, the size of aircraft needed to carry this passenger load will also increase, as has been seen with the introduction of the latest European Airbus A380. Such aircraft will also add to the pressure

at airports, both in terms of the flight operations and handling of extra passengers at times of boarding and alighting times (Wong 2008).

With the advent of these changes, none of the airport resources will become more tested than those involved with strategic airport safety systems. Safety at airports is a complex issue that affects virtually every aspect of the airport authority's operations and, in addition, it relates to all of the resources being utilised, which includes the buildings, airfields, air traffic control, internal transportation methods, passenger controls procedures and the business employees. As such, it can be seen to be an issue of significant importance to the welfare of those who use these facilities, which include the airline operators who both have operational hubs at the particular airport location and those who use the location as destination points.

As with any other aspect of corporate management within airports, the effectiveness and efficient operations of safety systems within this environment need to be established and maintained through a process of strategic planning and monitoring, a process that has to be kept continually under review to ensure that it is regular upgraded to take into account the changing demands brought about by increased passenger loads, flight frequency and aircraft design and capacity. It is therefore important that the safety requirements of all areas of the airports supply chain are incorporated within this planning process. Furthermore, insofar as security issues such as terrorism impact upon safety issues, these also have to be incorporated within the strategic planning stage of safety system development.

Because of the high level of importance that airport operational safety has for all of the business stakeholders, it follows that the concerns of these various interested parties is not only that the airports are developing safety strategic plans, but that these are being embraced by all those who work within the organisation and implemented and monitored in a manner that can be relied upon to deliver the expected performance levels and objectives, with is to ensure the safety of all and striving to address and reduce areas of safety risk. Incidents such as a near miss on runways near miss, accidents and terrorist acts within airport concourses and other safety related issues heighten concerns about airport safety and bring into question the quality of safety procedures that are in force at these locations. It is these issues that have formed the motivation for this research, namely can there be confidence and trust in the airport strategic safety planning and implementation process?

To provide a starting position for continued research into the issue of strategic safety planning and systems in airports, this study has concentrated solely upon the current situation as it has developed within the airports of the United Arab Emirates (UAE). This region was chosen because its size, with only six airports in total, together with the fact that it is still in the process of international airport development, means that it provides a more appropriate area to begin this analysis and evaluation because strategic safety systems might be in an embryonic stage. In addition, as will be seen within the analysis of existing data in the literature review in chapter two, the Middle East is one of the fastest growing regions in the world in terms of air travel. Furthermore, with the limited number of airport within a limited

area it was anticipated that, by choosing to focus the study on two airports in the region, the results would be a fair representation of the state of strategic safety planning in the region generally.

1. 2 Aims and Objectives

The aim of this research is to provide an assessment on whether airport authorities have engaged with and embraced the process of strategic planning for the development of an airport safety system and, if so, to what extent these have been successfully implemented and maintained. In essence, the aim of the research can therefore be encapsulated within the following hypothesis: –

“ To provide a clear understanding of the development and operational impact of the process strategic safety planning process within the six main airports that exist within the United Arab Emirates and identify whether these are efficiently implemented .”

To enable the achievement of these goals, it is intended to work towards addressing the following objectives: –

- To evaluate the needs and requirement of safety system maintenance and monitoring within the changing air travel environment.
- To provide an overview of the level of understanding and competency of airport personnel from the analysis of primary data responses.
- To provide an assessment of the effectiveness and efficiency of the strategic safety planning process when experienced within a practical environment. This is be achieved by examining the results collected from primary data resources.

It is felt that the above objectives will enable the research to provide a meaningful conclusion to the issues being addressed as well as allowing for recommendations for the future to be included where these are considered to be appropriate.

1.3 Overview

The study has been organised in a manner that enables a logical continuity of development of the issues that have been addressed and the way the research itself has been conducted, which is intended to add clarity of understanding for the reader. The following explanation therefore provides an overview of the study format.

Within chapter two, which commences following this introduction, a critical literature review is provided, within which analysis and evaluation into previous literature and studies into the issues of air travel, airport operations and safety performance issues will be addressed. It will also be used to highlight some of the areas of concerns that have been encountered by other researchers on these subjects. Moving on to chapter three, the research design and methodology will be explained in greater detail. This will incorporate the author's reasoning for the research method that has been chosen together with an explanation of how any constraints and limitations have been addressed. Furthermore, to enable others to follow the logic of this study a short explanation of the data collection methods and research performance is also included. The findings from the primary research that has been conducted in support of the aims and objectives of this study, are presented in chapter four, and these will be analysed and discussed in further details in chapter five, where they will also be compared and

evaluated by other existing data. As a result of these discussions, and where pertinent, appropriate recommendations will be presented in chapter six. These will relate both to the practical issues being faced by airport authorities when dealing with strategic safety planning and implementation, and suggest areas where further research may add more value and knowledge to this particular discipline. The study is then brought to a conclusion in chapter seven. Following the conclusion of this research paper, a list of reference sources is attached together with appendices, which includes additional information and data that was considered to be helpful in adding understanding to the study content. For example, detailed responses to primary data activity falls within this category.

Chapter 2 – Literature Review

2.1 Introduction

Business research studies set in isolation in general prove to be of little value except as forming a foundation for future research into the same issues. However, such researches are of more immediate interest where they have been set within, and compared with, the existing published literature and studies conducted within the same discipline. This critical literature review has been included with that purpose in mind. For reasons of clarity and understanding it has been segmented into three specific sections.

2.2 Airports and air travel

As was quoted from Dr Cherif's (2008) address in the introduction to this study, air travel is continuing to see growth levels of around 6%, or to be more accurate 5.8% for the industry as a whole (see table 1). However, as this table indicates this is not being achieved by a balanced pattern when

one analyses the position on a regional basis, as the same table, which covers the movements of around 94% of all international scheduled airline flights, although it does exclude the domestic travel, shows.

It is clear from this analysis that whilst North America and Europe has reached what could be considered a point of relative saturation, in other areas of the world there have been significant growth and losses being achieved. In terms of losses Africa is the major loser in terms of passenger travel and, joined with Latin America, is also losing its share of freight travel.

Table 1 Current air travel growth statistics

March 2008	RPK	ASK	FTK	ATK	
v					
March 2007	Growt h	Growt h	PLF	Growt h	Growt h
Africa	-4. 30%	-6. 00%	70. 10%	-22. 60%	-10. 80%
Asia / Pacific	4. 30%	4. 90%	76. 50%	1. 70%	2. 10%
Europe	3.	4.	77.	1.	3.

70% 00% 50% 90% 70%

Latin
 America
 a

19.	15.	75.	-15.	13.
70%	80%	30%	20%	50%

Middle
 East

15.	16.	74.	15.	17.
40%	30%	90%	20%	30%

North
 America
 a

6.	6.	82.	8.	3.
30%	10%	80%	80%	50%

Industr
 y

5.	6.	77.	3.	4.
80%	00%	70%	30%	20%

YTD
 2008

RPK	ASK		FTK	ATK
-----	-----	--	-----	-----

v YTD
 2007

Growt h	Growt h	PLF	Growt h	Growt h
------------	------------	-----	------------	------------

Africa

-0.	-2.	69.	-11.	-4.
-----	-----	-----	------	-----

		30%	50%	60%	90%	70%
Asia / Pacific	5.	5.	76.	2.	-3.	
	90%	50%	50%	60%	00%	
Europe		4.	5.	74.	4.	5.
		20%	40%	00%	70%	50%
Latin America	21.	19.	74.	-10.	12.	
	90%	60%	90%	80%	80%	
	a					
Middle East		14.	15.	74.	15.	15.
		30%	00%	80%	80%	00%
North America	6.	6.	78.	7.	4.	
	50%	80%	00%	80%	70%	
	a					
Industry		6.	6.	75.	4.	4.
		60%	90%	60%	40%	10%

- Explanation of measurement terms:

- RPK: Revenue Passenger Kilometres measures actual passenger traffic
- ASK: Available Seat Kilometres measures available passenger capacity
- PLF: Passenger Load Factor is % of ASKs used. In comparison of 2007 to 2006, PLF indicates point differential between the periods compared
- FTK: Freight Tonne Kilometres measures actual freight traffic
- ATK: Available Tonne Kilometres measures available total capacity (combined passenger and cargo)

Source: http://www.iata.org/pressroom/facts_figures/traffic_results/2008-05-02-01.htm

However, what is more important in terms of the objectives of this research is the position being achieved within the Middle East, both in respect of the month against month and year to date comparisons. In terms of passenger and freight air travel this region has experienced a growth rate in excess of 15%, which, when considered against a 74.9% passenger load factor, indicates that there has been a considerable increase in the number of travellers that area using the UAE airport facilities. Furthermore, in terms of its share of the international passenger market, the UAE now accommodates around 8% (see figure 1).

When this is compared with the share that the region held as of 2001 (see figure 2), it confirms that the region's air travel passenger growth pattern is increasing at significant rate, quadrupling in the space of the past six years, with similar growth being achieved within the freight market share.

It is apparent from these increases that, when compared with airlines in other areas of the world market, the Middle East airport systems are having

<https://assignbuster.com/aviation-safety-strategies-at-airports/>

to contend with a level of change in the services and products that they provide to the travelling passenger. In addition, the increase in the numbers of flights and operators using the airport facilities present these airports with additional pressures in terms of air traffic control and other infrastructure issues (Wells and Rodrigus 2003).

2.3 Airport operations

As Anne Graham (2003, p. 98-99) in her study of airports and their management has rightly observed, the increase in air traffic and indeed the shape of airline travel, has changed dramatically during the course of the past few decades. Growth of passengers and changes in their expectations has led to an increase in the number of facilities being offered in an effort to improve the traveller's experience. This includes the expansion of retail and refreshment areas within the waiting areas and departure lounges (Graham 2003, p. 100). This aspect of the airport expansion of revenue attracting resources has now become a significant contributor to the airport's total revenue (Graham 2003, p. 147). In addition, the airports have had to respond with major improvements to their sites in order to cater for the increase in aircraft traffic, which has in some cases included additional runways and maintenance facilities and well as administrative offices for these corporations. An example of this expansion can be seen in the development and improvements that have been made to the Abu Dhabi airport over past few years (News 2008). As this article, following a doubling of passenger traffic between 1998 and 2006, with this growth expected to continue at around 30% by 2010, the airport authority has invested in excess of \$230 million in increasing the runways and other

internal facilities being offered by the airport. The Dubai airport underwent a similar process of transformation in the 1970's and 1980's (DIA History 2008).

The relationship between the airports and the airlines that it services has also changed, especially following the successes and growth of the “ low-cost” or budget sector (Graham 2003, p. 100). Not only did this mean that these airlines no longer required the lavish offices and passenger reception lounges that were available to them in the past (Delfmann et al 2005), but because of the nature and small margins of the low-cost airline model there have been increasing demands made upon the airport industry to reduce the carrier cost, for example by these carriers seeking reduction in landing fees (Wells and Rodregues 2003. Delfmann et al 2005 and Graham 2003). With the budget airlines being willing to transfer their business to secondary airports, who were prepared in most cases to cooperate over these issues, the major airports found themselves under increasing pressure to follow suite. Furthermore, part of the cost saving exercise for the low-cost carrier's have been achieved by a process of improving turnaround times at airports (Wells and Rodrigues 2003). This is another issue that creates pressure for the airport, both in terms of the changes in the performance levels needed by air traffic control and then additional speed and resources that needs to be attached to enable the ancillary services, such as baggage handling to carry out their tasks.

However, perhaps the major issue that is affected by the growth in air travel for the airports, in addition to the extra facilities provided and the developing and changing relationship they have with the airlines, is in the area of safety.

2. 4 Airport safety

As mentioned before, airport safety is of paramount importance (Graham 2003). This applies to the activities that take place within the terminal building, the airfield itself and the surrounding areas and ancillary services and facilities. For those who use the airport safety and comfort are paramount to their enjoyment (Delfman et al 2005, p. 564) of the airport terminal facilities. Similarly, with rapid aircraft turnarounds, keeping runways and taxiing areas safe and working efficiently has an equal level of importance.

Safety and security is part of the same process within an airport environment and it is important for the authority controlling these facilities to ensure that the standards employed to maintain the safety of such an environment (Wells and Rodrigues 2003), by ensuring that the right level and content of safety measures is in force at all times and, furthermore, that these measures include a process for regular monitoring and changing as and when the changes in the environment suggests is necessary (Graham 2003). Amongst other issues this means being able to identify and address issues such as hazards that may cause concerns within or external to the facility (Graham 2003, p. 111). Another important element is the training and awareness programmes needed for all of the employees (Wells 2005 and Graham 2003) aimed to ensure that a) safety rules are obeyed and b) that in

the event of a safety incident the employees is able to respond rapidly and efficiently to resolve the problem.

In addition to the importance of safety measures for the obvious practical needs, the airport also have a duty to maintain these standards simply in order to ensure that their procedures comply with the relevant regulations and legislation that apply to their industry and operations.

2. 5 Regulations and legislation

Internationally, the airports have to comply with many of the safety regulations and standards that have been set by the ICAO, which lays down certain procedures that must be carried out in the cases of safety breaches, for example accidents, injury and illness (Wells and Rodrigues 2005, p. 72). In 2002, the ICAO was responsible for the adoption of the “ *Aviation Security Plan of Action* ”, which also included within its structure the safety aspects of running an airport (Graham 2003, p. 259).

In an effort to ensure that the airport employees are sufficiently aware of and trained in the internationally accepted standards, the ICAO has produced a number of publications and runs training workshops (Wells and Roderigues 2005, p. 99). Although the airport authorities are not obliged to use these facilities, they do have to ensure that their own training methods are sufficient to ensure that the key safety personnel within the business are qualified to the requirements laid down within the international standards. In the case of the UAE, the responsibility for airport operations and security and safety issues is dealt with through the regions own General Civil Aviation

Authority, whose role and regulations reflects that of the international organisation.

Recently, the ICAO/GCAA have developed and introduced a programme known as Safety Strategic Plans. The intention is that every airport will be required to have such a document in written format within their operational facilities and that every employee must be trained and have complete knowledge of the safety procedures that are in force within the total airport complex. This document will have all the necessary reporting forms included and contain procedures for the monitoring of the safety programme in the practical environment (GACC). In addition to internal monitoring and auditing of the implemented safety strategic plan, the intention is that in the future, representatives from this organisations will act as external monitors to ensure that the safety standards and requirements are being adhered to by the individual airport. At present this plan is a voluntary process, but it will become mandatory from the beginning of 2009 (ICAO).

The ICAO and GCAA standards are directly related to safety as it impacts specifically upon airports and airlines (Graham 2003, p. 111). However, in addition to these regulations, or in some cases incorporated within them, the airport will also be regulated by the other national health and safety legislation.

2. 6 Summary

It can be seen from the research into previous and current literature that the air travel industry has changed significantly over the past few decades.

Changes in the structure of the airlines, with the introduction of the low-cost

carrier have led to a rapid expansion of the numbers of passengers that travel by air, with this growth expected to continue for the foreseeable future. This growth rate, which in the UAE is running at three times the global average, is placing additional pressure upon airport operations and their management. Responding to the loss of revenue as airlines have reduced their use of terminal facilities, the airports have reacted by increasing retail space and other facilities. However, the other impact that expansion of air travel has had is to bring additional pressure to bear upon existing airport facilities. An area that is of particular concern as a result of this situation is that of safety, both within the terminal complex and in the external areas of the airport. In an effort to address these concerns, the national, regional and international regulators are developing a safety strategic plan, which is intended to ensure that safety systems are maintained at a level that is sufficient to meet the current demands of the airport environment. The findings presented in chapter five and subsequent discussions and analysis in chapter six will assess how successful these new safety developments have been in practice.

Chapter 3 – Methodology

3.1 Introduction

One of the difficulties with addressing an issue such as the performance of safety programmes within an airport environment is that, because of the delicacy of the issue, incidences that can be deemed to have resulted from a breach of these regulations or poor implementation and monitoring