

**THE EFFECTS OF STRATEGIC IMPLEMENTATION OF
SAFETY MANAGEMENT SYSTEMS ON AVIATION BUSINESS
COMPLIANCE: A CASE STUDY OF CMC AVIATION, KENYA**

BY

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DECLARATION

Whereas several people have contributed to the completion of this project in many ways, the researcher bears full responsibility for any mistakes noted in this project.

I declare that the research proposal and the final project is my original work and the project has not been submitted for a degree in any other university.

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This management research project has been submitted for examination with my approval as the University supervisor.

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DEDICATION

I would like to dedicate this project to my wife Hodhan and my four children Sudheys, Ibtisam, Itmi'anan and Ibtihal. To them I say:

“Courage is not the absence of fear but the presence of fear yet the will to go on”

ABSTRACT

The research is on the effects of strategic implementation of Safety Management System (SMS) on aviation business compliance. It is carried out through a case study approach by using CMC Aviation Ltd for the case study. Stolzer et al (2010) gives a comprehensive definition of SMS as a dynamic risk management system based on quality management system (QMS) principles in a structure scaled appropriately to the operational risk, applied in a safety culture environment.

In the aviation industry, this concept of SMS is widely regarded as an extremely innovative concept that has unparalleled contribution to the overall levels of compliance for an aviation entity that successfully implements this system. While the benefit of SMS has been discussed in various manuals on SMS, the objective of this research project is to determine the effects of strategic implementation of safety management systems on aviation business compliance.

Data has been collected from seven interviewees composed of the heads of key departments in the organization. The data collected was analyzed using content analysis. The findings were compared with the existing literature and found to support the research topic that SMS does help aviation organizations in the improvement of their various compliance levels.

Recommendation for policy and practice has been done after data analysis. The limitations of the study as well as suggestions for further research have also been covered in chapter five.

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CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

In 2003 International Civil Aviation Organization (ICAO) adopted the Safety Management Systems (SMS) concept and developed a standard which imposes upon states the responsibility to establish safety programmes, requiring air operators, approved maintenance organizations, air traffic service providers and certified aerodrome operators to implement safety management systems effective 2006.

Safety is the state in which the risk of harm to persons or of property damage is reduced to, and maintained at or below, an acceptable level through a continuing process of hazard identification and risk management (Reason, 2001). The global nature of the aviation industry and the complex and dynamic aviation environment requires that aviation regulators, air operators, and service providers cooperate to maintain a safe air transport system (Dannatt, 2006).

Kenya is a signatory to the Chicago Convention on ICAO, and in accordance to Article 37 of the Convention she is obligated to comply with the SMS standard. In spite of Kenya endorsing the SMS standard and Kenya Civil Aviation Authority (KCAA) being both regulator and service provider, there is neither SMS policy nor regulations or procedures in place to facilitate SMS implementation by the aviation industry. The implementation process is rather challenging because there is limited expertise on the system in Kenya. Besides the financial resources required, there is no adequate information or framework readily available in Kenya for the implementation of an SMS program other than the ICAO

SMS Manual. KCAA which is the government authority tasked with the oversight responsibility over operators in the country does not have SMS regulatory framework yet. It is in the process of developing SMS regulations as part of the state safety program implementation plan. It is only now that a draft Civil Aviation (Safety management System) Regulations, 2010 has been released to the stakeholders for their comments and contribution.

1.1.1 Strategy implementation outcomes

Strategy implementation is the process of allocating resources to support the chosen strategies. Thompson and Strickland (1989) have described strategy implementation as acting on what has been done internally to put the formulated strategy into place and achieve desired results. According to Steiner (1979), the implementation process covers the entire managerial activities including such matters as motivation, compensation, management appraisal, and control processes. To effectively direct and control the use of the firm's resources, mechanisms such as organizational structure, information systems, leadership styles, assignment of key managers, budgeting, rewards, and control systems are essential strategy implementation ingredients (Pearce and Robinson, 1988). Johnson and Scholes (2005), argued that, strategy implementation revolves around ensuring that strategies are working in practice.

Mintzberg (1995) suggests that the traditional way of thinking about strategy implementation focuses only on deliberate strategies. He claims that some organizations begin implementing strategies before they clearly articulate mission, goals, or objectives. In this case strategy implementation actually precedes strategy formulation. He calls strategies that unfold in this way emergent strategies. Strategy

implementation outcomes are broadly classified into four categories, that is, Success (the most likely outcome when strategy is appropriate and implementation good), roulette (involves situation wherein a poor strategy is implemented well), trouble (characterized by situations wherein an appropriate strategy is poorly implemented) and failure (involves situations wherein a poor strategy is poorly implemented).

1.1.2 Safety Management System

According to ICAO (2006), safety management system is a systematic, explicit and comprehensive process for managing safety risks. Stolzer et al (2010) gives a comprehensive definition of SMS as a dynamic risk management system based on quality management system (QMS) principles in a structure scaled appropriately to the operational risk, applied in a safety culture environment.

According to ICAO (2006), a safety management system provides for goal setting, planning, and measuring performance. It requires the organization itself to examine its operations and the decisions around those operations. SMS allows an organization to adapt to change, increasing complexity, and limited resources. It will also promote the continuous improvement of safety through specific methods to predict hazards from employee reports and data collection. Organizations will then use this information to analyze, assess, and control risk. Part of the process will also include the monitoring of controls and of the system itself for effectiveness.

SMS will help organizations comply with existing regulations while predicting the need for future action by sharing knowledge and information. Finally, SMS includes requirements that will enhance the safety attitudes of an organization by changing the safety culture of leadership, management, and employees. All these changes are designed to move the organization from reactive thinking to predictive thinking. SMS

has generated wide support in the aviation community as an effective approach that can deliver real safety and financial benefits. SMS integrate modern safety concepts into repeatable, proactive processes in a single system, emphasizing safety management as a fundamental business process to be considered in the same manner as other aspects of business management. The following table shows the key components of SMS:

Table 1: Key SMS Components

<p>1. Safety Management Plan</p> <ul style="list-style-type: none"> • Senior management commitment and core values • Safety policy, information, and goals 	<p>4. Education and Training</p> <ul style="list-style-type: none"> • Safety/human factors awareness • Technical training/practice • Safety reporting system and expectations
<p>2. Documentation Management</p> <ul style="list-style-type: none"> • Accident/incident reporting system • Corrective follow-up communication 	<p>5. Quality Assurance Monitoring</p> <ul style="list-style-type: none"> • Audits ensuring the SMS is working by internal and external evaluators
<p>3. Safety Oversight (RiskMonitoring)</p> <ul style="list-style-type: none"> • Hazard assessment protocols • Reactive and proactive defences • Standardized Corrective and Preventative Actions 	<p>6. Emergency Response Plan</p> <ul style="list-style-type: none"> • Contingency planning for emergencies • Hazard identification

Source: Civil Aviation Safety Authority- Australia, (2005)

1.1.3 Players in Aviation Safety Management System

According to ICAO (2006) at company level everybody within the organization is a stakeholder in SMS and externally the following groups are part of the stake holders of SMS; aviation professionals, aircraft owners and operators, manufacturers, aviation regulatory authorities, industry trade associations, regional air traffic service providers, Professional associations and federations, international aviation organizations, investigative agencies and the flying public

1.1.4 Aviation business compliance

In general, compliance means conforming to a rule, such as a specification, policy, standard or law. Regulatory compliance describes the goal that corporations or public agencies aspire to in their efforts to ensure that personnel are aware of and take steps to comply with relevant laws and regulations. Due to the increasing number of regulations and need for operational transparency, organizations are increasingly adopting the use of consolidated and harmonized sets of compliance controls. This approach is used to ensure that all necessary governance requirements can be met without the unnecessary duplication of effort and activity from resources.

According to ICAO SMS audit checklist (2006), the following are some of the key compliance indicators in an aviation business: regulatory compliance, sound financial management, management structure, quality assurance, flight and ground operations documents, operations control and supervision, flight preparation and dispatch procedures, flight operation procedures, passenger and cargo operation procedures, emergency procedures, maintenance control manual and procedures, aircraft airworthiness compliance procedures, aircraft maintenance program, maintenance

procedures manual, personnel training program and facilities, initial training and indoctrination procedures for all personnel, recurrent training procedures and control, special training and flight checks, air safety management aviation security procedures and reliability monitoring program.

Development and implementation of an SMS can give the aviation service provider's management a structured set of tools not only to meet their legal responsibilities but can also provide significant business benefits. The SMS incorporates internal evaluation and quality assurance concepts that can result in more structured management and continuous improvement of operational processes, (FAA Advisory Circular No 120-92).

1.1.5 CMC Aviation in Kenya

CMC aviation is a limited liability company formed in 1993 to offer humanitarian relief support in South Sudan. Later in 1995 the company viewed having a maintenance facility as a natural progression to support its DHC-5 fleet from Canada, and in 1995 DAC International was incorporated in Montreal to be the holding company. Responding to both current and anticipated recovery and rehabilitation operations of the United Nations World Food Programme (UN WFP) across Africa, the DAC Group grew quickly; it pre-emptively secured the forecasted capacity with the acquisition of eight dash 8 (DHC-8) series aircraft. More recently a Canadian Regional Jet (CRJ-200), 2 new Cessna Caravans and a Dash 8-200 was also added to the fleet.

In 2006, Trident acquired CMC Aviation with the objective of expanding the Group's fixed base operations, notably through the provision of an adequate hangar for maintenance of its fleet and fully complying with the regulatory, maintenance and safety standards. Also at the same time CMC was faced with an internal pressure created by declining safety audit rating which went as low as 57% in 1997 by their largest customer World Food Program (WFP). This was very critical and threatening the entire existence of the company because most of the other contracts CMC had with other customers were as a result of CMC's business relationship with WFP which is extremely reputable organization. In 2007, the company decided to implement SMS and embark on compliance with SMS guidelines.

1.2 Statement of the problem

SMS concepts are fairly new to the aviation industry in Africa and more so in Kenya. The implementation process is rather challenging because there is limited expertise on the system in Kenya. Besides the financial resources required, there is no adequate information or framework readily available in Kenya for the implementation of a SMS program other than the ICAO SMS Manual. Kenya Civil Aviation Authority (KCAA) which is the government authority tasked with the oversight responsibility over operators in the country does not have SMS regulatory framework yet. It is in the process of developing SMS regulations as part of the state safety program implementation plan. It is only now that a draft Civil Aviation (Safety management System) Regulations, 2010 has been released to the stakeholders for their comments and contribution.

Safety Management Systems is process-driven and proactive, and must be infused into the management system of air operators for desired results. According to ICAO (2006), SMS is an organized approach to organizational structures, accountabilities, policies and procedures to achieve safe operations and full companywide compliance with the standards and regulations yet this is not known to the industry hence the study will highlight these benefits in form of various compliance elements beneficial to aviation industry.

There are a lot of studies that has been on strategy implementation in various universities, however, the closest research topic that was done on the concept of SMS in Kenya was by Mokaya (2009) who carried out his study on the topic of challenges in the successful implementation of Safety Management Systems in aviation industry in Kenya. While the SMS concept is regarded as an innovative concept that has aligned aviation businesses with success in various areas; there has not been any research done in Kenya to determine the effects of strategic implementation of safety management systems on aviation business compliance, therefore, this is the gap that my research will be addressing by finding the answers to the question: what are the effects of strategic implementation of SMS on aviation business compliance?

1.3 Study objectives

The objective of the research is to determine the effects of strategic implementation of safety management systems on aviation business compliance.

1.4 Value of the study

The implementation process for an SMS is rather challenging and extremely involving over a period of time. Its benefits are not realized immediately but rather after the system has been fully institutionalized and operationalized within the organization which in most cases may take between two to four years. The study will help in identifying the long term benefits of the SMS system and its effects on the level of organizational compliance in various areas. The findings of the study will be particularly useful to: The academics and researchers working on the concept of SMS- as they will have additional secondary data on the SMS concepts, management team members of Aviation companies by giving them additional information on the effects of SMS on aviation business compliance, Safety management consultants by providing them insights on how to improve their practice of facilitating safety management system implementation and its long term benefits on compliance, Kenya Civil Aviation Authority by providing information that is essential building block of safety management systems (SMS) and regulatory oversight and other aviation stakeholders will get general insights into the SMS concept and its effects on aviation business compliance.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter covers the work done by various writers, researchers and authorities in the area of strategy implementation and safety management systems concepts.

2.2 Concept of strategy

According to Ansoff and McDonnell (1990) a strategy is a set of decision making rules for guidance of organizational behaviour. The definition of strategy has evolved through time. Strategy is the unique and sustainable ways by which organizations create value as a competitive advantage Cook (2000). This definition developed from the evolution of the perception of strategy.

Schendel and Hooper (1978) proclaimed strategy to be the centerpiece of strategic management. However for a strategy to succeed, a thorough evaluation and analysis of the direction to follow is required by the managers. Johnson and Scholes (2002), believed that strategy is about direction and scope of an organization over a long term competitive advantage.

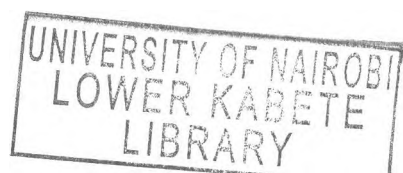
Andrew (1980) defines strategy in the corporate context as the pattern of decisions in a company that determines and reveals its objectives, purpose or goals, produces the principles, policies and plans for achieving these goals and define the range of business the company is to pursue, the kind of economic and human organizations it is or intends to be, the nature of the economic and human organization it intends to make to its stakeholders, employees, and communities.

Porter (1998) described strategy with three different formulations capturing the holistic nature of the organization, which are corporate level, business unit level and functional/departmental level strategies. Corporate level strategy covers the identification and selection of the market where the company should compete and the portfolio development of the firm. Business unit level strategy focuses on the development and maintenance of the competitive advantage of the goods and services offered by the organization. This strategy level involves the phases of firm positioning in the market, anticipation and adjustment to demand and technology changes, and swaying competition through strategic techniques. Functional level refers to the units and divisions of the business firm while functional level strategy centers on value chain and business processes for the creation of operations, marketing, human resource, finance, research and development with the coordinated use of resources so that business unit level strategies may be executed effectively Porter (1998)

2.3 The evolution of aviation Safety Management System

The early days of aviation and those before and immediately following the Second World War until the seventies can be characterized as the “Technical Era” because safety concerns were related mostly to technical factors (ICAO, 2006). By the early seventies, progress in technology shifted the concern towards human error, thus heralding the beginning of the “Human Era”. The focus of Safety endeavours then shifted to human performance and Human Factors (ICAO, 2006).

The period between the mid-seventies to mid-nineties has been dubbed the “Golden Era” of aviation. Human Factors, in reference to the huge investment by aviation to bring under control the human errors. In spite of massive investment of resources in error-mitigation interventions by the mid-nineties, allocation of causes of safety



breakdowns continued to single out human performance as recurring factor (ICAO, 2006).

The downside of Human Factors endeavours during a significant portion of the “golden Era” was that, they tended to focus on the individual, with scant attention to the operational context in which individuals accomplished their missions. It was not until the early nineties that it was first acknowledged that individuals do not operate in a vacuum, but within defined operational contexts in a system. Such acknowledgement signalled the beginning of the “Organizational Era” (ICAO, 2006). At that point, Safety endeavours broadened to systemic perspective, to encompass organizational, human and technical factors. It was also at this time that the notion of the organizational accident was embraced by aviation. Industry-wide acceptance of the concept of organizational accidents was made possible by simple, yet graphically powerful model developed by Professor James Reason. This model provides a means for understanding how aviation operates successfully or drifts into failure. According to the model, accidents require the coming together of a number of enabling factors—each one necessary, but in itself insufficient to breach system defences. Because complex systems such as aviation are extremely well-defended by layers of defences; in-depth, single point failures are rarely consequential, Billings (1997). These breaches are a delayed consequence of decisions made at the highest level of the system, which remain dormant until their damaging potential is activated by specific sets of operational circumstances.

Following this concept of organizational accident and its acceptance was the innovative concept of Safety Management System (SMS) that looks at the organization as a system. A safety management system is a systematic, explicit and

comprehensive process for managing safety risks. From the Civil Aviation perspective, five generic features characterize an SMS. These are: A comprehensive systematic approach to the management of aviation safety within an organization, including the interfaces between the company and its suppliers, sub-contractors and business partners, a principal focus on the hazards of the business and their effects upon those activities critical to flight safety, the full integration of safety considerations into the business, via the application of management controls to all aspects of the business processes critical to safety, the use of active monitoring and audit processes to validate that the necessary controls identified through the hazard management process are in place and to ensure continuing active commitment to safety and the use of Quality Assurance principles, including improvement and feedback mechanisms.

Billings (1997) observed that accidents are caused by human error; however, changing people to avoid these accidents from taking place will never be possible, therefore safety management system is introduced as an approach to safety, at which causal factors can be identified, and remedial actions can then be addressed. The implementation of safety management will enable an organization to recognize and mitigate danger and threats that could be stirring within an organization from time to time. Stolzer, Halford & Goglia, (2010) give a comprehensive definition of SMS as a dynamic risk management system based on quality management system (QMS) principles in a structure scaled appropriately to the operational risk, applied in a safety culture environment.

2.3.1 Need for Safety Management System

Alexander, Ed.D. & Clarence (2003) Observed that, the purpose of Safety Management System is to support a move away from regulatory that specify criteria that should be adhered to, towards performance-based regulations which describe objectives and allow each regulated entity to develop its own system for achieving the objectives. It is expected that an industry must develop its own policies and systems to reduce risk, which should include implementing systems for reporting and correcting shortcomings.

SMS forms the centre of the company's safety efforts and serves as a practical means of linking up with other systems. It also provides the company's management with a systematic roadmap for examining safety-related processes including the treatment of aircraft defects as occurrences that require investigation (Alexander, et. al 2003). Safety Management System is proven to be an effective management tool of achieving safety within an organization and an industry as a whole. Although all organizations differ from each other, there are common SMS benefits that can be shared among them; A proactive method of improving safety rather than the old reactive approach primarily after an accident, reduced loss of life and injuries through prevention of accidents and incidents, improved employees satisfaction through involvement in the process and more efficient interface with regulatory authorities.

The development and implementation of an SMS will not only allow aviation service providers to comply their legal responsibilities but will definitely provide significant business benefits, ICAO (2006). The SMS outlined in ICAO Manual is designed to allow incorporation of safety efforts into the operator's business model and to

assimilate other systems such as quality, occupational safety, and environmental control systems that operators might already have in place or might be considering. Operators who have integrated SMS into their business models benefit them financially as well. These organizations gain financial benefits through achieving the following business benefits; Stability, safety and customer support – customers are aware some operations are safer than others, possible reduction in insurance premiums through demonstration of control of safety risks, Good work/life balance practices, for example adjustment of rosters to avoid most tiring shift/sector will give safety benefits, and can also improve staff/crew morale – potentially lowering staff turnover and reducing training costs and a proactive approach to safety can be demonstrated with documented evidence in the event of an incident or accident, ICAO (2006).

Stolzer, Halford & Goglia, (2010) noted, SMS will definitely help an organization to prevent catastrophic accidents making it safer and therefore attracts more clients which will in turn benefit it financially. However, in the case of doing nothing or unsuccessful implementation of SMS can lead into losses or accidents. These consequences are unlikely to be appreciated and usually the worse scenarios are the indirect costs as they are more difficult to assess, these are often not covered or fully compensated by the company's insurance. This includes items as; Loss of business and reputation, Legal fees and damage claims, Medical costs not covered by workers' compensation, Cost of lost use of equipments (loss of income), Time lost by injured persons and cost of replacement workers Increased insurance premiums, Aircraft recovery and clean-up and Fines (Stolzer, Halford, & Goglia, 2010).

The prime objective of a company should not be to purely maximize the profit but also the avoidance of loss. Hence, safety is a prerequisite for a successful and profitable aviation business. SMS is needed to help facilitate the proactive identification of hazards and maximize the development of a better safety culture, as well as modify attitudes and actions of personnel in order to make a safer work place. SMS helps organizations avoid wasting financial and human resources and management's time being focused on minor or irrelevant issues. SMS lets managers identify hazards, assess risk and build a business case to justify controls that will reduce risk to acceptable levels. SMS is a proven process for managing risk that ties all elements of the organization together laterally and vertically and ensures appropriate allocation of resources to safety issues.

2.3.2 Components of Safety Management System

Safety Management System is comprised of essentially four components: Safety Policy, Safety Risk Assessment, Safety Assurance, and Safety Promotion. Safety Policy establishes senior management's commitment to continually improve safety. This commitment defines the methods, processes, and organizational structure needed to meet the required safety goals. Safety Risk Management determines the need for new or revised risk controls based upon what the organization considers an acceptable level of risk (Stolzer, Halford & Goglia. 2010). This component also evaluates existing risk control measures. Safety Assurance serves to evaluate (measure) the effectiveness of the risk control strategies that have been implemented, along with the identification of developing hazards. Safety Promotion consists of training, communication, and all other associated initiatives necessary to create and maintain a positive safety culture in the organization. The preceding is simply an overview of

SMS, many resources are available that provide a much more in-depth knowledge of SMS design, implementation, and operations Alexander, Ed, and Rodrigues (2003).

2.4 Strategy Implementation

Thompson and Strickland (1989) have described strategy implementation as acting on what has been done internally to put the formulated strategy into place and achieve desired results. Successful strategy implementation involves empowering others to act on doing all the things that need to be done to put strategy in place and execute it proficiently. Ansoff and McDonnell (1990) observed that strategic planning establishes purposes, guidelines strategies and constraints of the firm. Implementation is the process of causing the firm to behave in accordance with the purposes, guidelines and strategies. Control evaluates the organization's performance and determines the needed adjustments in planning and implementation.

Strategy implementation revolves around ensuring that strategies are working in practice. It involves various activities including structuring an organization to achieve successful performance, enabling success through the way in which the separate resources of people, information, finance and technology support strategy and managing change (Johnson & Scholes 2005). Whereas enabling success is important, the extent to which new strategies are built on given resources and competence strengths of an organization is also crucial. To effectively manage change, there will be need to understand how the context of an organization should influence the approach to change, different types and roles of people managing change, styles that can be adopted for managing change and the levers by which change can be effected.

There are five critical variables that are usually considered for the implementation of strategy. These are tasks, people, structures, technologies and reward systems. Successful strategy implementation calls for the effective design and management in order for these factors to be integrated. Of essence is the synchronization of the key resource components of the planning process (Pearce and Robinson, 1991). Hunger and Wheelen (1995) are of the view that implementation of strategy is the process by which management translates strategies and policies into action through the development of program budgets and procedures. The purpose is to complete the transition from strategic planning to strategic management by incorporating strategies throughout the relevant system.

Structure, polices and control systems related to the management of resources and Implementation is concerned with aligning the organizational structure, systems and processes with the chosen strategy. It revolves around three main decision areas. These are matching strategy and structure and providing leadership pertinent to the strategy, developing budgets, functional strategies and motivation systems for successful achievement of organizational objectives and monitoring the effectiveness of the strategy in achieving organizational objectives. Major implementation themes concern organizational management of strategic change (Johnson et. al, 2005).

2.5 Outcomes of strategy implementation

A strategy may be good, but if its implementation is poor, the strategy may not be achieved there are several possible strategy implementation outcomes: poor strategy implementation coupled with poor strategy formulation results into failure whereas

poor strategy implementation coupled with good strategy formulation results in trouble.

On the other hand, good strategy implementation matched with poor strategy formulation results into a situation of gamble /roulette only good strategy which is well implemented contributes to the success of a firm. The outcomes of strategy implementation can be summarized by the model of strategy implementation outcomes presented in table 2.

Table 2: Outcome of strategy implementation

		Strategy Formulation	
		Good	Poor
Strategy implementation	Good	success	Roulette
	Poor	Trouble	failure

2.6 Operationalization and institutionalization of strategy implementation

To operationalize a strategy, an organization needs to identify short term objectives, initiate specific functional tactics, and communicate policies that empower people in the organization and design effective rewards. Short term objectives are necessary for translating long range plans into yearly targets. Functional tactics on the other hand translate business strategy into daily activities for people to execute. Effective rewards for the desired action and results are a powerful way of getting things done in an organization (Pearce and Robinson, 1997).

To realize strategy, people in the organization that actually do the work of the business need guidance on exactly what needs to be done today and tomorrow to make the strategies realistic. This is achieved by action plans and short term objectives, providing much more specific guidance for what is to be done, and a clear delineation of impending actions needed, which translate vision into action. The action plans should incorporate the specific functional tactics that will be done as part of the business effort to build competitive advantage. Another important aspect to be considered is who is responsible for each action in the plan. Accountability is necessary in order to ensure that plans are acted upon.

Strategy implementation is the most difficult part of most managers' jobs, more difficult than strategy formulation. The ability to implement strategies is one of the most critical managerial skills. Managers' keen on succeeding at strategy implementation must master systems thinking to be able to coordinate a wide range of efforts aimed at transforming intentions into action, and take care of factors impeding implementation (Havner, 2001).

2.7 Challenges affecting strategy implementation and how to overcome them

There are usually several challenges to strategy implementation. These include implementation taking longer than expected, uncontrollable factors and their adverse effect on implementation, major problems that had not been anticipated surfacing during implementation, competing activities, and crises that distract attention from implementation. Others include inadequate planning and communication, ineffective

coordination of implementation activities, insufficient capability of employees, inadequate training given to lower level employees, lack of clear responsibility being fixed for implementation and lack of support from other management levels (Pearce and Robinson, 1991). Implementation of strategy concerns itself with working out the action plans designed during the formulation phase. Thompson and Strickland (1989), explain that strategy implementation is acting on what has been done internally to put the formulated strategy into place and achieve the desired results.

Ansoff and McDonnell (1990) have identified several challenges to the implementation of strategy. One, pre-strategy decision making processes are heavily political in nature. Strategy introduces elements of rationality which are disruptive to the historical culture of the firm, and threatening to the political processes. A natural reaction for the organizational members is to fight against the disruption of the historical and power structures, rather than confront the challenges posed by the environment. Two, the introduction of strategic planning triggers conflicts between the previous profit making activities and new innovative activities. Third, most organizations usually lack information about themselves and the environment which is needed for effective strategic planning and the managerial talents capable of formulating and implementation.

Kaplan and Norton (1996) have identified four major challenges to strategy implementation. They have conceived these as the barriers erected by traditional management systems to establish and communicate strategy and directions, allocate resources, define departmental, team and individual goals and directions and provide feedback. Specifically, they have recognized the existence of the following barriers

within organizations; visions and strategies that are not actionable, strategies that are not linked to departmental, team and individual goals, strategies that are not linked to long and short term resource allocation and feedback that is tactical not strategic. Visions and strategies that are not actionable become a hindrance when the organization cannot translate its strategy into terms that can be understood and agreed upon. The lack of consensus and clarity leads different people pursuing different agendas, quality, continuous improvement, reengineering and empowerment, according to their own interpretation of the vision and strategy. Their efforts are not integrated since they are not linked coherently to an overall strategy (Kaplan and Norton, 2001). Lastly, strategy implementation fails because of lack of feedback on how the strategy is being implemented and whether it is actually working (Kaplan & Norton, 2000).

This barrier can be overcome by building a balanced scorecard, which clarifies and identifies the few critical drivers of strategic success. The process creates consensus and teamwork among all senior executives, regardless of their previous employment history, job experience or functional experience. The balanced scorecard translates the vision and strategy into a few strategic themes that can be 'communed' and acted upon (Kaplan and Norton, 1996).

Leadership is needed for effective implementation of strategy, as this will ensure that the organization effort is united and directed towards achievements of its goals (Pearce and Robinson, 1998). The leadership of the organization should be at the forefront in providing vision, initiative, motivation and inspiration. The management should activate team spirit and act as catalyst in the whole strategy implementation

process. Aosa (1992) stated that it is important that the culture of an organization be compatible with strategy being implemented because where there is incompatibility between strategy and culture, it can lead to a high organizational resistance to change and de-motivation which in turn can frustrate the strategy implementation effort.

2.7.1 Challenges involved Safety Management System implementation

Based on the various documents of other countries, the following aspects of SMS implementation were deemed both difficult and critical to success. They merit substantial research and planning to bring down the various challenges which can be as under: Determining legal liability/accountability of the process which is established to take care of any sort of safety related process, Identifying a trained and qualified Safety Manager who can handle the required data and can establish a study on the gap analysis of hazard detection and approaches which can avert a major accident in future, Instituting data collection methodologies. A proper data collection system is to be adopted for reporting and recording any amount of hazard/ incident, be it small or big, developing a feasible and strong hazard/ risk reporting system and Integrating airport SMS with other domains, particularly air traffic control, airlines and other related agencies.

CHAPTER 3: RESEARCH METHODOLOGY

3.1 Introduction

This research methodology chapter presents a description of how the study will be approached. It presents the plan of the research that is, the research design, how data was collected and the data analysis technique that was used to analyze the data in order to generate the findings of the study.

3.2 Research Design

This research was conducted through case study. A case study is chosen because it enables the researcher to have an in-depth understanding of the behaviour of the subject under study. Copper and Schindler (1998), emphasize the value of personal interview when they stated it enables in depth and detailed information to be obtained. The importance of case study is emphasized by Young (1960) and also by Kothari (1990) who both acknowledge that case study is powerful form of qualitative analysis that involves a careful and complete observation of social unit, irrespective of what type of unit is under study.

3.3 Data Collection

The study used primary data, which was collected from the senior managers in different departments. The following managers was selected for the purpose of the interview: the managing director, the director of flight operations, the director of maintenance, the director of quality assurance, the director of maintenance, the post holder maintenance, the safety manager, human resource manager and the financial controller. The method used was personal interviews. An interview guide with open

ended questions was used. This allowed oral administration of questions in face-to-face encounter therefore allowing the collection of an in-depth data involving discussion through individual meetings with senior managers of the organization. Schindler (1998), emphasize the value of personal interview when he stated that it enables in depth and detailed information to be obtained.

3.4 Data Analysis

The data collected was qualitative in nature and was analyzed using conceptual content analysis which is best suited method of analysis. Content is defined by Nachmias and Nachmias (1996) as technique for making inferences by systematically and objectively identifying specific characteristics of messages and using the same approach to relate trends. According to Mugenda (2003) the main purpose of content analysis is to study existing information in order to determine factors that explain a specific phenomenon.

CHAPTER FOUR: DATA ANALYSIS, RESULTS AND

DISCUSSIONS

4.1 Introduction

This chapter involves the data analysis and drawing of the results of the analyzed data as well as discussing the data against existing literature. The chapter forms the flesh of the information that would be used to draw conclusion in the subsequent chapter.

The study was conducted using an interview guide within CMC. Seven respondents were drawn from key departments namely: Managing Director, Director of Flight Operation, Director of Quality assurance, Director of Maintenance, Post Holder Maintenance, Financial Controller, Human Resource Manager and the Safety Manager. The objective of the study was to determine the effects of strategic implementation of Safety Management System on Aviation Business compliance.

Data collected was analyzed using content analysis based on meaning and implications emanating from the respondents information. Content analysis was used because it is best suited method of analysis; content is defined by Nachmias and Nachmias (1996) as technique for making inferences by systematically and objectively identifying specific characteristics of messages and using the same approach to relate trends. According to Mugenda (2003) the main purpose of content analysis is to study existing information in order to determine factors that explain a specific phenomenon.

4.2 Results and discussions

This section involves the discussions of the results and the comparison of the findings against the existing literature in chapter two.

4.2.1 Overall compliance levels prior to the implementation of SM in CMC

The interviewee revealed that the SMS concept was first implemented in CMC in 2007 and was necessitated by the falling audit ratings from their key client World Food Program United Nations Humanitarian Air services (WFP UNHAS) and other customers of CMC who were not happy with the overall services of the organization. These interview further revealed the existence of weaknesses in personnel as the employee turnover rate was so high such that in some cases key position like that of the chief pilot has had seven chief pilots in a span of three years meaning on average they have had a new chief pilot every five months or so. The respondents also expressed that Kenya Civil Aviation Authority (KCAA) which is the regulatory body tasked with the oversight responsibility over aviation companies was also very concerned about the falling regulatory compliance levels of CMC such that they have written to the company sharing these concerns. The financial compliance was also affected by the falling business levels. The interview found out that literally prior to the implementation of SMS the company level of crew training and operational control was very low such that our client, WFP UNHAS, was threatening to black list the company from United Nation contracts. Most of the interviewees indicated that prior to 2007 the documentation of processes and the availability of evidence thereof were also very low.

The interviewee has revealed that the safety management system has helped the organization towards development and maintenance of organized approach towards risk management systems. The organization is far better off now that ever before in regards to risk identification and management and this has all resulted from the implementation of SMS. This information given by the interviewee is supported by

Stolzer et. al (2010) who argued that the most effective way to improve safety is through SMS. SMS enables organizations to identify and manage risk far better than before. With this formalized approach, we can identify issues, fix them and ensure they remain fixed. According to Stolzer et. al (2010) implementation of a safety management system ensures a disciplined and standardized approach to managing risks that may affect the operational, financial and human resource capabilities of an organization.

4.2.2 Effects of SMS on Flight Operation compliance

The interviewees revealed that the implementation of SMS has positively impacted the flight operation department in terms of establishment of proper operational control procedures that are documented, implemented and the evidence of the implementation retained in form of records. These findings are in agreement with that of Alexander, Ed.D. & Clarence (2003) who observed that, the purpose of Safety Management System is to support a move away from regulatory requirements that specify criteria that should be adhered to, towards performance-based regulations which describe objectives and allow each regulated entity to develop its own system for achieving the objectives. The interviewee further argued that because of pressures generated by the system in requiring the key management positions to be occupied by only adequately qualified personnel, the study has shown that the department of flight operation has all the key positions of management of the department occupied by qualified persons.

Audit evidence observed in the department has also revealed consistent improvement in the department in the following areas: regulatory compliance, flight and ground operations documents, operations control and supervision, flight preparation and

dispatch procedures, flight operation procedures, passenger and cargo operation procedures, emergency procedures, maintenance control procedures, personnel training program and facilities, initial training and indoctrination procedures for all personnel, recurrent training procedures and control, special training and flight checks. The findings further revealed that due to the requirements of the SMS system there is diligent departmental budgeting requirements that have since been established for example, the annual departmental budget for flight operations indicated USD 550000.

All the interviewees have indicated that since 2007 the organization has had two chief pilots unlike before with the appointment of the second chief pilot necessitated by a vacancy created by the promotion the chief pilot to the position of the Director of Flight operation. Also the respondents have indicated that due to the SMS oversight requirements and the internal Quality control required to diligently oversee a safe operation other management positions such as the manager flight standards and training, training and check pilots and cabin crew and the cabin crew manager was established in the flight operation department.

The evidence given by the respondents has indicated that the department's level of regulatory compliance has also tremendously improved in the area of documentation of procedures and approvals by the KCAA. What were two manual procedures in 2007 has since grown to 27 manuals with very specific operation procedures and training manuals for various sections within the department. This finding is supported by Reason (2009) who indicated that the managers of hazardous system must try to

restrict human actions to pathways that are not only efficient and productive, but also safe. The most widely used means to achieve both goals are written procedures.

4.2.3 Compliance with Quality Assurance system

The interviewee indicated that there is clear relationship between Safety Management System and Quality Assurance in aviation. This finding also agrees with that of Stolzer, Halford & Goglia, (2010) who gave a comprehensive definition of SMS as a dynamic risk management system based on quality management system (QMS) principles in a structure scaled appropriately to the operational risk, applied in a safety culture environment. The interview further revealed that both systems monitor and evaluate the levels of compliance. Quality also audits SMS as a system, and both systems are result oriented and emphasize on documented procedures. The SMS requires audit functions for compliance with safety related aspects of the operation and quality carries out overall compliance with various requirements of the organization among others. The study has established that the Application of Quality Assurance (QA) principles to safety management processes helps ensure that the requisite system-wide safety measures have been taken to support the organization in achieving its safety objectives. However, the interviewee also indicated that QA can not, by itself assure safety. It is the integration of QA principles and components of an SMS that assist in safety assurance. In view of the existence of the potential for misperception and misunderstandings in the relationship between SMS and Quality management system (QMS), the respondent defined this relationship from a synergic perspective rather than antagonistic perspective and the relative contributions of both systems to overall safety of the organization. He indicated that, the commonalities of the two systems are that: they have to be planned and managed; depend upon

measurement and monitoring; involve every function in the organization, and they both strive for continuous improvement.

The interviewee also indicated that, in the same way that SMS and QMS share commonalities, they are important differences between the two systems. He gave the example that quality management is less effective at identifying high level risk and its consequences, SMS focuses on the safety, human and organizational aspects of safety satisfaction; while QMS focuses on the product and services of an organization as it relates to customer satisfaction.

As shown in the discussions above SMS builds upon QMS principles; through a complementary relationship between SMS and QMS. The study has found out that the compliance level within the organization has improved. The available evidence within the quality department has indicated that the organization has achieved consistent improvement on their level of compliance from 57% in 2007 to “A” rating which is well above 75% with the UNHAS Operator Risk Evaluation (ORE) results for the four years. Generally, the evidence revealed by the study has shown that the organization has a clearer picture of what it costs to comply with the various requirements of an aviation business.

The interview has shown that since 2007 the quality department carried out several audits on the various arms of the organization. The departments have developed various generic procedures that guarantee continuity. The safety culture has been institutionalized and operationalized in the organization, and risk management concepts have gotten entrenched in the organization. QA follows up on safety

department findings, and this has also helped in closing various non compliance findings.

4.2.4 Aircraft Maintenance Organization compliance

SMS forms the centre of the company's safety efforts and serves as a practical means of linking up with other systems. It also provides the company's management with a systematic roadmap for examining safety-related processes including the treatment of aircraft defects as occurrences that require investigation (Alexander, et. al 2003). The argument above is supported by the respondents who revealed that the SMS system has impacted maintenance by literally forcing maintenance to look at aircraft defects as incidents that require analysis and conclusion rather than just defects that require fixing. The SMS system requires that an aircraft defect be processed as an incident rather than just fixing it. The department must find out why the defect occurred and whether it is a defect that is resulting from a component malfunctioning because it was due for replacement or the component malfunction was caused by other factors that need other interventions.

The interviewees are generally of the opinion that, because of the requirement of SMS the processes in maintenance has turned out to be preventative and proactive oriented. Additionally, their compliance levels in terms of initial and recurrent training, employment of qualified key post holders, and establishment of a vibrant technical records department with full control and oversight responsibility over all the technical records as well as the oversight responsibility over the library system that is tasked with publications oversight both in-house and third party organizations have consistently improved over the four years that the system has been implemented.

4.2.5 Financial management compliance

The interview has indicated that in the area of financial management, the requirement of SMS has had financial impacts on CMC Aviation. The cost of compliance has increased steadily over the years and is continuously increasing with ever increasing new requirements to put in place proactive measures to manage and mitigate risks. However, the respondents have also revealed that through the successful implementation of SMS in CMC Aviation, the organizations has achieved better compliance with regulations and other requirements that in turn minimize adverse result of an incident or accident.

The interviewees argue that SMS will definitely help an organization to prevent catastrophic accidents making it safer and therefore attracts more clients which in turn is financially beneficial to the organization. The best financial benefit revealed by the interview is in the area of reduction of the consequences of occurrence of events. These consequences are unlikely to be appreciated and usually the worse scenarios are the indirect costs as they are more difficult to assess, and are often not covered or fully compensated by the company's insurance. This includes items such as; loss of business and reputation, legal fees and damage claims, medical costs not covered by workers' compensation, cost of lost use of equipments (loss of income), time list by injured persons and cost of replacement workers, increased insurance premiums, aircraft recovery and clean-up and fines. This argument is also supported by (Stolzer, et. al, 2010).

The interviewees have further indicated that due to the overall improvement of compliance in the entire organization, CMC has been able to open its doors to the

world and compete for contracts in their niche market of humanitarian air services support and one such benefit is that of being in the list of recipient of the direct bidding for UN contracts. The interviewee said that by building these compliances the company now knows clearly how much it costs to comply such that it is able to adequately plan for these costs. Other financial compliance benefits revealed through the interviews includes stability, safety and customer support – customers are aware some operations are safer than others, possible reduction in insurance premiums through demonstration of control of safety risks, lower staff turnover rates and reducing training costs, a proactive approach to safety can be demonstrated with documented evidence in the event of an incident or accident.

4.2.6 Safety compliance

The respondents confirmed that an SMS is basically an eminence management approach to controlling risk and providing an outline to support safety culture within an organization. SMS forms the centre of the company's safety efforts and serves as a practical means of linking up with other systems. It also provides the company's management with a systematic roadmap for examining safety-related processes.

The interviews established that CMC generally views Safety Management System to be an effective management tool of achieving overall organizational compliance through: a proactive method of improving safety rather than the old reactive approach primarily after an accident, reduced loss of life and injuries through prevention of accidents and incidents, improved employee satisfaction through involvement in the process, more efficient interface with regulatory authorities, procedural compliance in all departments, requirement for the recruitment and management of key positions by

qualified personnel. Additionally, the interviews revealed that SMS requires of the company key compliance in the following areas of; financial management, establishment of a good management structure, having a vibrant quality assurance department, having good flight and ground operations control and supervision, flight preparation and dispatch procedures, flight operation procedures, passenger and cargo operation procedures, emergency procedures, maintenance control manual and procedures, aircraft airworthiness compliance procedures, aircraft maintenance program, maintenance procedures manual, personnel training program and facilities, initial training and indoctrination procedures for all personnel, recurrent training procedures and control, special training and flight checks, air safety management aviation security procedures and reliability monitoring program.

Towards achieving an SMS that is all inclusive the interviews have indicated with policy statement evidences that, the company has established a working non punitive reporting policy, safety policy statement, and managing director's statement of corporate safety commitment. Samples of these policies are attached at the end of chapter five as appendices.

4.2.7 Human Resource management compliance

The respondents have revealed that safety is a prerequisite for a successful and profitable aviation business. Therefore, it is vital that SMS is implemented so risks and hazards can be identified and mitigated before turning into catastrophic and to realize safety pitfalls existing within the system. The interviewee has indicated that the implementation of SMS in CMC has had ergonomic benefits to the organization; ergonomics is all about changing the workplace to best-fit the worker's comfort to



optimize human well-being and interaction through modifying or redesigning the job, workstation, tool, Standard Operating Procedures or environment.

While the primary goal of ergonomics is to minimize employee exposure to ergonomic hazards that lead to disturbance disorders and related injuries and illnesses, the interviews have indicated that the implementation of SMS within the organization has positive ergonomics effects in CMC. The respondent cited improved safety and health in the workplace, improved employee morale and job satisfaction, improved productivity, improved quality of work, improved competitiveness in the marketplace, reduced probability of occurrence of accidents and errors, reduced absenteeism and employee turnover, reduced medical and workers' compensation costs associated with cumulative trauma disorders.

4.2.8 Challenges faced by CMC in the implementation of SMS

The study has revealed that the implementation of SMS in CMC was mainly affected by a weak safety culture, inadequate human capacity, and lack of clear policy guidelines on SMS. Other issues such as lack of documented safety management systems with implementation guidelines also affected the implementation process, lack understanding by all internal stake holders and inadequate resources had also played a hindering role.

Based on the various responses of the respondents, the study has identified the following aspects of SMS implementation to be both difficult and critical to the success of the system. The challenges the study has identified are the following: determining legal liability/accountability of the process which is established to take

care of any sort of safety related processes, identifying a trained and qualified Safety Manager who can handle the required data and can establish a study on the gap analysis of hazard detection / approaches which can avert a major accident in future, instituting data collection methodologies, a proper data collection system is to be adopted for reporting and recording any amount of hazard/ incident, be it small or big, developing a feasible and strong hazard/ risk reporting system and integrating SMS with other domains. Additionally the institutionalization and the Operationalization of the system also posed great challenge as well as the overall establishment of safety culture within the organization. Since the success of SMS depended on a clearer understanding of the requirement of the system it was difficult to reach all the stake holders at the same time because the company also operated in DRC, Chad, Sudan and Southern Sudan.

CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter addresses the research question and the objectives outlined in chapter one. The section also covers the summary, discussions, conclusions, recommendations for policy and practice, the study limitations and suggestions for further research. The study had one objective which is to determine the effects of strategic implementation of SMS on aviation business compliance.

5.2 Summary of the findings

The findings indicate that in reality air transport operators and related service industries must generate a profit to be sustainable. Profit or loss is the immediate indicator of the company's success in meeting its operational success. The prime objective of a company should not be to purely maximize the profit but also the avoidance of loss. Hence, safety is a prerequisite for a successful and profitable aviation business. The study also found out that CMC generally views Safety Management System to be an effective management tool of achieving overall organizational compliance through: a proactive method of improving safety rather than the old reactive approach primarily after an accident, reduced loss of life and injuries through prevention of accidents and incidents, improved employee satisfaction through involvement in the process, more efficient interface with regulatory authorities, procedural compliance in all departments, requirement for the recruitment and management of key positions by qualified personnel.

Because of the safety oversight requirements of the system, the study has revealed that many positions have been created within the organization for effective monitoring and control of processes whose overall effect on safety has been felt in the entire organization. For example, in the flight operation department alone, management positions such as the manager flight standards and training, training and check pilots and check cabin crew and the cabin crew manager was established.

The findings further indicated that due to the requirements of the SMS system there is diligent departmental budgeting requirements that have since been established i.e. the annual departmental budget for flight operations indicated USD 550000. In Human Resource Management, the Implementation of SMS within the organization has revealed the following positive ergonomics effects in CMC: improved safety and health in the workplace, improved employee morale and job satisfaction, improved productivity, improved quality of work, improved competitiveness in the marketplace, reduced absenteeism and employee turnover, reduced medical and workers' compensation costs associated with cumulative trauma disorders.

With in the maintenance department the company has undergone a complete business process re-engineering. For example, besides advocating for the establishing of documented procedures for each process, the SMS system requires that an aircraft defect be processed as an incident, such that, rather than just fixing it, the department must find out why the defect occurred and whether it is a defect that is as a result a component malfunctioning because it was due for replacement or the component malfunction was caused by other factors that need other interventions.

The findings of the study indicate that, because of the requirement of the system, a committee was formed within the organization that is called Safety Board Committee that meets on monthly basis for the purposes of discussing all incidents or occurrences within the preceding month forcing the departmental heads to look at incidents and accidents as an organizational problem rather than departmental problem. The members of the safety board committee are all heads of department including the MD. This has had also a positive impact of facilitating the organizational heads work as a team. It is an excellent means of team building.

The best financial benefit revealed by the study is the area of reduction of the consequences of occurrence of events. These consequences are unlikely to be appreciated and usually the worse scenarios are the indirect costs as they are more difficult to assess, these are often not covered or fully compensated by the company's insurance. This includes items such as; loss of business and reputation, legal fees and damage claims, medical costs not covered by workers' compensation, cost of lost use of equipments (loss of income), time lost by injured persons and cost of their replacement, increased insurance premiums, aircraft recovery and clean-up and fines. The study has also revealed that because the overall improvement of compliance in the entire organization, CMC is able to open its doors to the world and compete effectively for contracts in their niche market of humanitarian air services and one such benefit is that of being in the list of recipient of the direct bidding for UN contracts from WFPUNHAS.

5.3 Conclusions

From the discussions above, the following conclusions may be drawn that: safety management system has great effects on aviation business compliance. SMS forms the centre of the company's safety efforts and serves as a practical means of linking up with other systems. It also provides the company's management with a systematic roadmap for examining safety-related processes. SMS is proven to be an effective management tool of achieving safety within an organization and an industry as a whole.

The development and implementation of an SMS will not only allow aviation service providers to comply their legal responsibilities but will definitely provide significant business benefits. These organizations gain financial benefits through achieving the following business benefits; Stability, safety and customer support – customers are aware some operations are safer than others, and possible reduction in insurance premiums through demonstration of control of safety risks.

Due to the increasing number of regulations and need for operational transparency, organizations are increasingly adopting the use of consolidated and harmonized sets of compliance controls. The study has found out that the following are some of the areas where the implementation of SMS can enhance the levels of compliance in an aviation business: regulatory compliance, sound financial management, better management structure, working quality assurance, effective flight and ground operations documents, operations control and supervision, better flight preparation and dispatch procedures, organized passenger and cargo operation procedures, practical emergency response procedures, specific maintenance control procedures,

aircraft airworthiness compliance procedures, diligent personnel training program, initial training and indoctrination procedures for all personnel, and recurrent training procedures and control among others.

The development and implementation of an SMS can give the aviation service provider's management a structured set of tools not only to meet their legal responsibilities but can also provide significant business benefits. The SMS incorporates internal evaluation and quality assurance concepts that can result in more structured management and continuous improvement of operational processes

5.4 Recommendation for policy and practice

The study has revealed that successful implementation of SMS will greatly contribute to the level of business compliance within the entire organization and increase the organization's business sustainability probabilities. Success in a company's safety performance will be greatly strengthened by the existence of a positive safety culture. Safety culture in an organization can be described as the extent of institutionalization and Operationalization of SMS within the organization and the way in which it conducts its business and particularly in the way it manages safety. It emanates from the communicated principles of top management and results in all staff exhibiting a safety ethos which transcends departmental boundaries. Safety must be actively managed from the very top of a company for its compliance benefits to be realized. Safety management must be seen as an integral strategic aspect of business management, recognizing the high priority attached by the company to safety. To that end, a demonstrable board-level commitment to an effective formal SMS must exist. Equally, every level of management must be given safety accountability. The

contribution of the staff at and below supervisor level must be emphasized. Integrating safety, quality and risk management systems provides a cost effective approach to protecting the resources of your operation. While the concept of safety in risk-sensitive industries such as aviation is familiar, organizations still struggle to define and practice effective safety principles on a daily basis, given the dynamic and inherent nature of aviation hazards. SMS is becoming a regulatory requirement for air operators around the world in all facets of aviation due its impact on the overall aviation business compliance.

5.5 Limitation of the study

The study was limited to finding out the effects of strategic implementation of SMS on aviation business compliance. It was also limited to one organization (CMC) due to time constraints the in-depth review of the extent of compliance at sub departmental levels was also not possible as such the interviews were limited to key departmental heads and not all departments.

5.6 Suggestions for further research

Since the study was limited to finding out the effects of strategic implementation of SMS on aviation business compliance using a case study of one firm; a survey study of several firms in on the same research question can help in solidifying or challenging the findings of this research. Also a study on the SMS oversight capability of KCAA would help reveal the importance attached to positive effects of this concept in the industry as a whole. Additionally, a study on SMS as a business strategy can help also reveal or dispute the far reaching business benefits revealed in this study.

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APPENDICES

Appendix a: Interview guide

A. Managing Director

- i. When was the SMS program implemented at CMC Aviation Ltd?
- ii. What necessitated the need to implement the SMS program in your organization?
- iii. Are there any specific business benefits as a result of implementing the SMS program?
- iv. Has the implementation of SMS helped your organization with the various departmental requirements?
- v. Has the implementation of SMS program created the need for qualified post holders and other personnel?

B. Director of Flight Operations

- i. How has implementation of SMS impacted on your department?
- ii. What are the incremental levels of compliance within your department after implementation of SMS program?
- iii. What are the notable changes within your sub-department that have been necessitated by the SMS program?
- iv. How does the implementation of SMS affect the level of training within your department?

C. Director of Quality Assurance

- i. What is the relationship between quality assurance system and safety management system?
- ii. In your view, has the implementation of SMS impacted the quality control system within the organization?
- iii. Looking back to the period prior to the implementation of SMS and now that the SMS system is fully implemented, how has the companies level of compliance grown over the period to date?
- iv. Does company conduct frequent audits to assess level of SMS compliance and Following an audit, are there corrective measures taken to address any deficiencies identified, within a specific period of time and is that a requirement of the SMS system?

D. Director of Maintenance

- i. Has the SMS program impacted your department? Explain
- ii. What are the key benefits of the SMS program in your department?
- iii. How has implementation of SMS impacted level of compliance in your department?

E. Post Holder Maintenance

- i. As the Post Holder Maintenance, how does your work relate to SMS requirements?

- ii. Has the compliance levels in your department grown since the implementation of SMS program within the organization?

F. Financial Controller

- i. How has implementation of SMS within CMC Aviation impacted financial planning and control?
- ii. Has the SMS program generated any internal pressures necessitating departmental budgeting requirements?
- iii. How has the system contributed to the level of sound financial management compliance?

G. Safety manager

- i. How has the implementation of SMS program impacted on your department?
- ii. What are the contributions of SMS program requirements to the level of compliance within your department?

Appendix b: Letter to the respondents



UNIVERSITY OF NAIROBI SCHOOL OF BUSINESS MBA PROGRAM – LOWER KABETE CAMPUS

Telephone: 020-2059162
Telegrams: "Varsity" Nairobi
Telex: 22095 Varsity

P.O. Box 30197
Nairobi, Kenya

DATE: 1/08/2011

TO WHOM IT MAY CONCERN

The bearer of this letter: ALI IBRAHIM ROBA

Registration No: D6117470212009

is a Master of Business Administration (MBA) student of the University of Nairobi.

He/she is required to submit as part of his/her coursework assessment a research project report on a management problem. We would like the students to do their projects on real problems affecting firms in Kenya. We would, therefore, appreciate if you assist him/her by allowing him/her to collect data in your organization for the research.

The results of the report will be used solely for academic purposes and a copy of the same will be availed to the interviewed organizations on request.

Thank you.

DR. W.N. IRAKI
CO-ORDINATOR, MBA PROGRAM

UNIVERSITY OF NAIROBI
SCHOOL OF BUSINESS
MBA OFFICE
P. O. Box 30197
NAIROBI

Appendix c: Proposal correction form

UNIVERSITY OF NAIROBI

SCHOOL OF BUSINESS

PROPOSAL CORRECTION FORM

Student Name Ali Ibrahim Roba

Registration Number D6117470212009

Department BUSINESS (STRATEGIC MGT)

Specialization STRATEGIC MANAGEMENT

Title of Project Proposal THE EFFECTS OF STRATEGIC

IMPLEMENTATION OF SAFETY MANAGEMENT

SYSTEMS ON AVIATION BUSINESS COMPLIANCE

The student has done all the corrections as suggested during the Proposal Presentation and can now proceed to collect data.

Name of Supervisor Martin Ogutu Signature [Signature] Date 1/8/2011

Appendix d: List of responds and their contact details

1. Neil B Jones
Managing Director
Telephone Number: +254727587941

2. Ronal F Hodge
For Director of Flight Operation
Telephone Number: +254710607368

3. Peter Van Sande
Director of Maintenance
Telephone Number: +254723066121

4. Herman Winter
Post Holder Maintenance
Telephone Number: +254723066121

5. Carol Fernandez
Financial Controller
Telephone Number: +254715688382

6. Elizabeth Gitari
Safety Manager
Telephone Number: +254724050701

7. Norrah Kimeu
Human Resource Manager
Telephone Number: +2547728300

Appendix e: Non punitive reporting policy



CMC AVIATION LIMITED - THE DAC GROUP -

CMC AVIATION LTD NON PUNITIVE REPORTING POLICY

CMC Aviation is committed to the safest flight operating standards possible. To achieve this, it is imperative that we have uninhibited reporting of all incidents and occurrences which may compromise the safe conduct of our operations.

To this end, every employee is responsible for communicating any information that may affect the integrity of flight safety. Such communication must be completely free of any form of reprisal.

CMC Aviation will not take any disciplinary action against any employee who discloses an incident or occurrence involving flight safety. This policy shall not apply to information received by the company from a source other than the employee, or which involves an illegal act, or a deliberate or willful disregard of promulgated regulations or procedures.

The primary responsibility for flight Safety rests with line managers; however, flight safety is everyone's concern.

Our method of collecting, recording and disseminating information obtained from Air safety reports has been developed to protect, to the extent permissible by law, the identity of any employee who provides Flight safety information.

I urge all staff to use our flight safety programme to help CMC Aviation become a leader in providing our customers and employees with the highest level of flight Safety.

Signed : 

Mr. Neil B Jones
Managing Director
10th August 2010

Appendix f: Safety policy statement



CMC AVIATION LIMITED - THE DAC GROUP -

SAFETY POLICY STATEMENT

At CMC Aviation Ltd, safety is the first priority in all our activities. We are committed to implementing, developing and improving strategies, management systems and processes to ensure that all our aviation activities uphold the highest level of safety performance and meet national and international standards.

Our Commitment is to:

Develop and embed a safety culture in all our aviation activities that recognizes the importance and value of effective aviation safety management and acknowledges at all times that safety is paramount.

Clearly define for all staff their accountabilities and responsibilities for the development and delivery of aviation safety strategy and performance.

Minimize the risks associated with aircraft operations to a point that is low as reasonably practicable achievable;

Ensure that externally applied systems and services that impact upon the safety of our operations meet appropriate safety standards;

Actively develop and improve our safety processes to conform to world class standards;

Comply with and, wherever possible, exceed legislative and regulatory requirements and standards;

Ensure that all staff are provided with adequate and appropriate aviation safety information and training, are competent in Safety matters and are only allocated tasks commensurate with their skills;

Ensure that sufficient skilled and trained resources are available to implement safety strategy and policy;

Establish and measure our safety performance against realistic objectives and/or targets;

Achieve the highest levels of safety standards and performance in all our aviation activities;

Continually improve our safety performance:

Conduct Safety and management reviews and ensure that relevant action is taken; and

Ensure that the application of effective aviation safety management systems is integral to all our aviation activities, with the objective of achieving the highest levels of safety standards and performance

Signed: 

Mr. Neil B Jones
Managing Director
10th August 2010

Appendix g: Statement of corporate safety commitment



CMC AVIATION LIMITED - THE DAC GROUP -

MANAGING DIRECTORS STATEMENT OF CORPORATE SAFETY COMMITMENT

Listed below are statements of CMC Aviation's Managing Director Corporate Safety Commitment. All CMC Aviation Managers and employees must actively promote these values in their work and within company interpersonal relationships for the achievement of an effective safety culture.

a) Our core Values include

Safety, health and the environment
Ethical behavior, and
Valuing people

b) Our fundamental safety beliefs are:

Safety is a core business and personal value.
Safety is a source of our competitive advantage.
Our business will be strengthened by making safety excellence an integral part of all aviation activities.
All accidents and serious incidents are preventable.
All levels of line management are accountable for our safety performance, starting with the Managing Director

c) The five core elements of our safety approach include:

1) Top Management Commitment

Safety excellence will be a component of our mission.
Senior management will hold line management and all employees accountable for safety performance.

2) Responsibility and accountability of all employees

Safety performance will be an important part of our management /employee evaluation system.
We will recognize and reward safety performance.
Before any work is done, we will make everyone aware of the safety rules and processes, as well as each one's personal responsibility to observe them.

3) Clearly communicated expectations of zero accidents.

We will have a formal written safety goal, and we will ensure that everyone understands and accepts that goal.
We will have a communications and motivation system in place to keep our employees focused on the safety goal.

4) Auditing and Measuring performance for improvement.

Management will ensure that regular safety audits are conducted.
We will focus our audits on the behavior of people, as well as on the conditions of the workplaces.
We will establish performance indicators to help us evaluate our Safety performance

5) Responsibility of employees:

Each of us will be expected to accept responsibility and accountability for our own behavior.
Each of us will have an opportunity to participate in developing safety standards and procedures.
We will openly communicate information about safety incidents and will share the lessons learnt with others.
Each of us will be concerned for the safety of others in our organization

d) Objectives of the Safety process.

All levels of management will be clearly committed to Safety.
We will have clear employee safety metrics, with clear accountability.
We will have open safety communications.
We will involve all relevant staff in the decision making process.
We will provide the necessary training to build and maintain meaningful safety leadership skills.
The safety of our employees, customers and suppliers will be a strategic issue of the organization.

Signed : _____ *Neil B Jones*

Mr. Neil B Jones
Managing Director
10th August 2010