



# SAFETY CORNER

CORPORATE AIR NEWSLETTER

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## NEXTGEN AVIATION SAFETY - STRATEGIES AND SOLUTIONS OF A SAFETY MANAGEMENT SYSTEM

### MONEYBALL IN SMS

Moneyball is a movie based on a baseball team where players for the team are picked based on their on-base percentage. By getting players with a higher average of on-base percentages, the team manager executes a plan to build a competitive team at a lower cost and eliminate the subjective and often flawed process of picking high-impact team members. This approach brought a baseball team to the playoffs with only a salary budget of about 33% of the highest salary team. Statistical Process Control (SPC) and SMS are profit makers when applied to desired operational results. When applying SPC to Aviation Safety, an operator has established measurable parameters.



### SAFETY CORNER

- Safety Policy;
- Executive Summary;
- Reporting Options;
- Reporting Drop Box;
- Reporting Flow Chart;
- SMS Reference Handbook;
- Goals;
- Trends; and
- Newsletter

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*"We have to get out of the mind-set of saying: No matter how hard we try, we will have accidents; and into: We will not have accidents."*

Federico Peña



*"A goal gives directions of action. However, arriving at the goal is what makes it measurable."*

*"Identified parameters set the stage for greater profit margin. However, precise application is what makes the difference."*

### SMS SAFETY GOALS

The concept of the movie Moneyball applies to the concept of an effective Safety Management System. Established safety goals may not all be achieved equally and some goals may totally fail. However, an objective is to make gradual, or step by step safety improvements with the result that the safety margin is being increased. A greater safety margin is equal to a greater margin of points, runs or goals in a sports game. In Quality Assurance today we see "new" and "improved" Quality Management tools, but when we boil it down, nothing is new under the sun. Getting processes "Under Control," by mapping standard operating procedures, running those procedures and analyzing the results for result and improve processes where a process needs improvement.

**SAFETY CRITICAL AREAS AND SAFETY CRITICAL FUNCTIONS**

Within a Safety Management System there are Safety Critical Areas and Safety Critical Functions. It is easy to fall into a trap that safety is equally important to all aspects of flight operations. When everything is equally important the task of leading in safety or to manage safety crumbles down to nothing else but buzz-words. This makes the tasks of accepting safety simpler, but it doesn't improve safety. Only when Safety Critical Areas and Safety Critical Functions are defined is safety in flying improved.

**WHAT ARE SAFETY CRITICAL AREAS AND FUNCTIONS**

**Safety Critical Area:**

A design, system, process or procedure that should be fail-free for safety purposes, where a failure produces an unacceptable risk level and the failure expected to be an immediate threat to aviation safety.

**Safety Critical Function:**

A function within a design, system, process or procedure and defined within the operations that should be fail-free for safety purposes, where an unintended maneuver produces an unacceptable risk level and the maneuver expected to be an immediate threat to aviation safety.

**Safety Critical Example**

Towing an aircraft is a Safety Critical Area.

- Two wingwalkers is a Safety Critical Function of towing the C208B.
- Towing the C208B with less than two wingwalkers is a non-standard towing operations.

The Director of Maintenance is the position with authority to accept or reject towing with less than two wingwalkers.

If two wingwalkers are not available after all options are exhausted, the Director of Maintenance is contacted for instructions.



Towing the Cessna Caravan safely is more than just wingwalkers. It is also to apply the tools of guidance lines in assisting the tug-operator and wingwalkers. However, at the end it's the wingwalkers and tug operator who are the final safety authority while towing.

**THIS MONTH IN HISTORY**

**CHARKHI DADRI MID-AIR COLLISION**

The Charkhi Dadri mid-air collision occurred on 12 November 1996 over the village of Charkhi Dadri, India. One aircraft was a Saudi Arabian Airlines Boeing 747-100B enroute from New Delhi to Dhahran, Saudi Arabia, and the other was Kazakhstan Airlines Ilyushin Il-76 enroute from Chimkent, Kazakhstan, to New Delhi.

**EVENT**

Just a few seconds from impact, the Kazakh plane climbed slightly and the two planes collided. This was because the radio operator of Kazakhstan 1907 discovered only then that they were not at 15,000 feet and asked the pilot to climb. The tail of the Kazakh plane clipped the left wing of the Saudi jet, severing both parts from their respective planes.

**ROOT CAUSE**

The root cause was found to be the failure of the Kazakhstan Airlines Flight 1907 pilot to follow ATC instructions. The air traffic controllers also complained that the Kazakh pilots sometimes confused their calculations because they are accustomed to using meter altitudes and kilometer distances, while most other countries use feet and nautical miles.



*"I cannot imagine any condition which would cause a ship to founder. I cannot conceive of any vital disaster happening to this vessel. Modern shipbuilding has gone beyond that."*  
Captain Edward Smith of the Titanic.